

TECE 

**SANITARY
SYSTEMS
TECHNICAL
GUIDELINES**

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Flushing Technology

<u>TECElux – The toilet terminal</u>	<u>1-1</u>
<u>TECE push plates – The collection for toilet and urinal</u>	<u>2-1</u>
<u>TECEprofil – Dry-wall modules and pre-wall installation</u>	<u>3-1</u>
<u>TECEbox – Brick-wall modules</u>	<u>4-1</u>
<u>TECEbox 8 cm – Brick-wall modules 8 cm</u>	<u>5-1</u>
<u>TECE flushing technology – The innovative technology with a system</u>	<u>6-1</u>

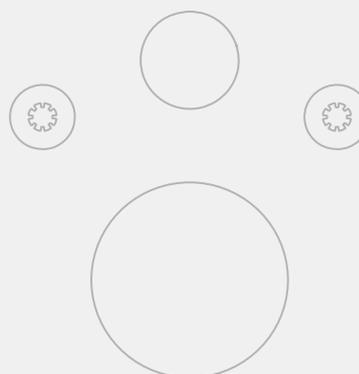
Drain Technology

<u>TECEdrainprofile – Beautiful, practical, recessed. The shower profile from TECE.</u>	<u>7-1</u>
<u>TECEdrainline – The floor-level shower with a system</u>	<u>8-1</u>
<u>TECEdrainpoint S – Drain range made of plastic</u>	<u>9-1</u>

Sanitary systems

TECElux

TECHNICAL GUIDELINES



Introduction	1-4
Design	1-4
Advanced features	1-5
Product range	1-6
TECElux module	1-8
Upper glass facings with actuation unit	1-10
Lower glass attachment facings for toilet attachment	1-10
Accessories	1-12
Shell installation	1-13
Installation in a TECEprofil pre-wall	1-13
Installation as an individual module in front of a solid wall	1-14
Installation in a floor-to-ceiling C-profile metal stud wall	1-18
Installation in floor-to-ceiling metal stud wall with UA-profiles	1-18
Installation in a wooden stud wall	1-19
Attaching individual modules to the floor	1-20
Connecting the drain bend	1-20
Panel facing and wall construction	1-20
Power supply	1-23
Power and water connection with TECEone	1-25
Fine installation	1-26
Lower glass attachment facing for standard toilet	1-26
Lower glass attachment facing for shower toilet and seats	1-28
Lower glass attachment facing for TECEone	1-35
Upper glass facing with manual actuation unit	1-38
Upper glass facing with electronic actuation	1-39
Programming the sen-Touch electronics	1-42

TECElux – Introduction

Introduction

The TECElux toilet terminal conceals the working parts behind the wall. An extremely flat glass facing closes the inspection opening and conceals the cistern, connections for water and power and, depending on the version, an odour extraction or height adjustment for the ceramic.

Design

With its simple aesthetics, TECElux blends in with the architecture of any bathroom. The terminal's large glass surface consists of two parts that give the appearance of a single unit. The glass facing serves as a splash guard for the wall and means that the wall does not have to be tiled.

The toilet terminal can be combined with practically any ceramic and even with shower toilets.

TECElux has already received numerous awards for its intelligent combination of design and function.



reddot design award
winner 2011



product
design award

2012

INNOVATIONSPREIS



ARCHITEKTUR+TECHNIK



Designpreis
Deutschland
2012
NOMINIERT

DESIGN PLUS



Advanced features

Electronic “sen-Touch” flush actuation



A simple touch with the finger actuates the flush. The flush can also be activated without contact, by moving to within in a 10 mm range. A sensor ensures energy-saving consumption – and effortless toilet flushing.

With the manual actuation option, the flush is actuated via buttons. These are available in various colours and material variants.

“ceramic-Air” air purification system



Odours are drawn away at the source, and the cleaned air is passed back into the room. There is no need for any additional fresh air which would first have to be warmed. The air purification system starts when someone approaches, and stops automatically after a short run-on time. This avoids unnecessary power consumption. The activated carbon filter has a long life and does not have to be replaced until around five years.

Note: Certain ceramics are not suitable for using “ceramic-Air” – see the table on page 8-8.

“m-Lift” height adjustment



TECElux enables you to adjust the height of the toilet ceramic at any time, even after the module has been installed. The ceramic does not have to be removed to do this. The height can be continuously adjusted in an 8 centimetre range by means of an adjusting spindle. The glass front moves with the ceramic, so the overall appearance is not marred by any joints or gaps.

“smart-Connect” interface



Additional functions on the toilet require space, and frequently also a power connection or extra water connection. Up until now, the technology was simply added on to the ceramic, and the water and power lines were laid visibly next to the toilet. These makeshift solutions are now a thing of the past.

The new toilet terminal takes equal account of aesthetic and functional factors: TECElux integrates the system components into the pre-wall module invisibly and safely. The large inspection opening is covered by a flat glass facing that permits quick access to the components behind it at any time.

As an open interface between the toilet functions and the bathroom architecture, the toilet terminal can be combined with virtually any ceramic and also with shower toilets.

TECElux – Range

Product range

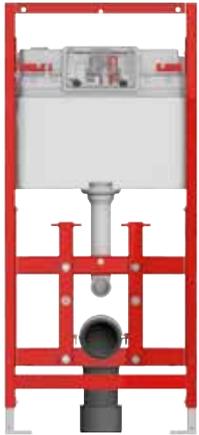
A TECElux toilet terminal always consists of:

(A) a TECElux module

(B) an upper flush plate and

(C) a lower facing for toilet attachment and notches for different power and water connections.

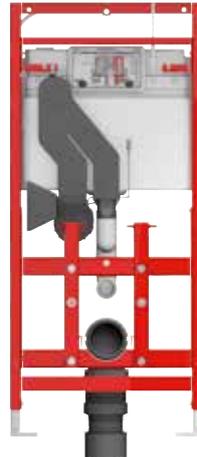
A TECElux module



TECElux 100
Order no. 9600100



TECElux 200
Order no. 9600200



TECElux 400
Order no. 9600400

B Upper flush plate



"sen-Touch" (w)
Order no. 9650002
"sen-Touch" (s)
Order no. 9650003



White buttons (w)
Order no. 9650000
Black buttons (s)
Order no. 9650005

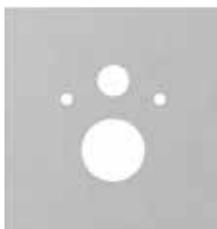


Bright chrome buttons (w)
Order no. 9650001
Bright chrome buttons (s)
Order no. 9650004

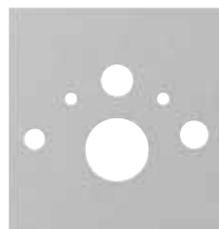


TECElux toilet terminal (w/s)

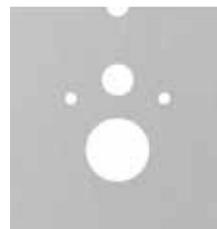
C Lower attachment facing



Standard toilet (w)
Order no. 9650100
Standard toilet (s)
Order no. 9650105



Shower toilet (w)
Order no. 9650101
Order no. 9650103
Order no. 9650104
Shower toilet (s)
Order no. 9650106
Order no. 9650107
Order no. 9650108



Shower toilet seat (w)
Order no. 9650102

(w) = white glass, (s) = black glass

C Overview of lower attachment facings and accessories for toilets and shower toilets

							
	9650100 (w) 9650105 (s)	9660001	9650101 (w) 9650106 (s)	9650102 (w)	9650103 (w) 9650107 (s)	9650104 (w) 9650108 (s)	9650109 (w) 9650110 (s)
Standard ceramics (connection dimension 180 mm)	X						
TOTO Neorest AC * TOTO Neorest EW *		X	X				
TOTO Washlet CF TOTO Washlet EK (with side connections: TCF6632G#NW1) TOTO Washlet GL (with side connections: TCF6532G#NW1) TOTO Washlet Giovanni		X		X			
TOTO Washlet SG TOTO Washlet EK (with concealed connections: TCF6632C3GV1) TOTO Washlet GL (with concealed connections: TCF6532C3GV1)		X				X	
Duravit D-Code		X		X			
Duravit Sensowash Starck Duravit Sensowash Slim					X		
Villeroy & Boch Viclean U		X		X			
Villeroy & Boch Viclean U+		X				X	
Villeroy & Boch Viclean L					X		
Geberit AquaClean 8000 Geberit AquaClean 8000 plus			X				
Geberit AquaClean 5000 Geberit AquaClean 5000 plus				X			
Geberit AquaClean Sela Geberit AquaClean Mera						X	
Grohe Sensia Grohe Sensia Arena						X	
TECEone							X

* TECElux 400 not required, as odour extraction is already included with the TOTO Neorest.

When using the "sen-Touch" upper flush plate, the TOTO remote actuation remains without function.
If using the manual actuation, order control cable (order no. 9820259).

(w) = white glass, (s) = black glass

TECElux – Range

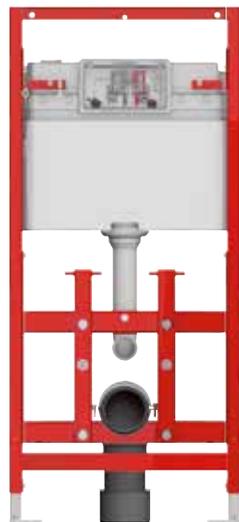
TECElux module

The TECElux module is a dry-wall construction element, available in three different versions. All modules consist of the same self-supporting, stable mounting frame and the tried and trusted TECE dual-flush cistern.

Other common components:

- Robust, self-supporting mounting frame. All toilet modules are statically self-supporting and can withstand a max. load of 400 kg.
- Can be installed in a C-profile, UA-profile, TECEprofil or wooden stud wall. Corner installation also possible.
- For combination with the upper glass facing with actuation unit and the lower toilet glass facing
- For standard ceramics with a fixing centre of 180 mm.
- Integrated foot brake facilitates height adjustment.
- Adjustable foot support for floor construction of 0 to 200 mm. For attaching to the floor or on a TECEprofil rail.
- Toilet drain bend with DN 90/100 adapter.
- Clearly visible meter marking sticker.

TECElux 100 module



With TECE concealed cistern and dual-flush technology.

The flush is actuated mechanically by buttons or electronically via “sen-Touch”.

The module can be optionally fitted with the “ceramic-Air” air purification system (only in conjunction with the “sen-Touch” upper glass facing with actuation unit).

Order no. 9600100

TECElux 200 module



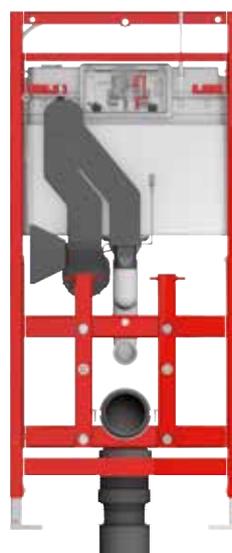
With TECE concealed cistern, dual-flush technology and manual height adjustment.

The flush is actuated mechanically by buttons or electronically via “sen-Touch”.

The module can be optionally fitted with the “ceramic-Air” air purification system (only in conjunction with the “sen-Touch” upper glass facing with actuation unit).

Order no. 9600200

TECElux 400 module

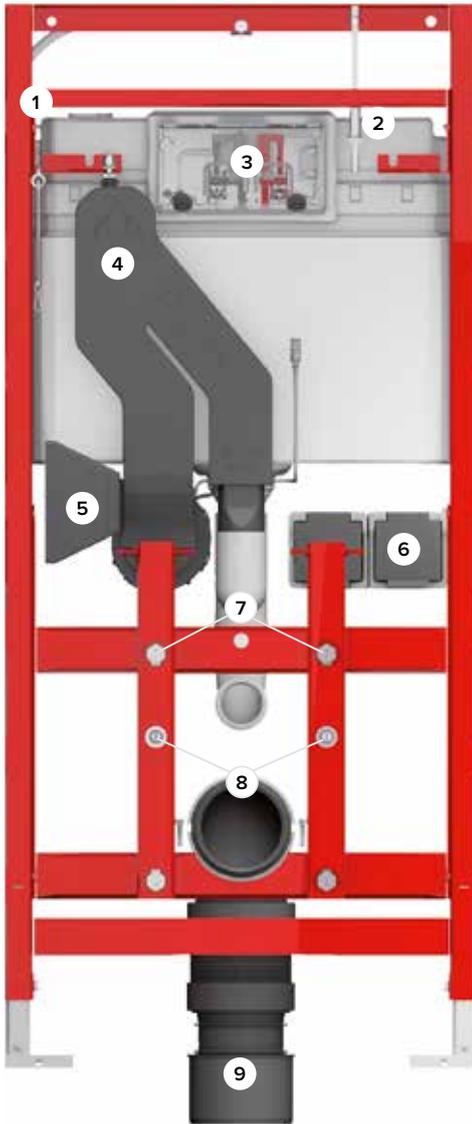


With TECE concealed cistern, dual-flush technology, manual height adjustment and “ceramic-Air” air purification system.

The flush is only actuated electronically (sen-Touch).

Order no. 9600400

TECElux 400 module technology



- 1) flexible water connection (concealed)
- 2) set screw for height adjustment
- 3) electronic dual-flush activation
- 4) "ceramic-Air" odour extraction
- 5) exit opening for cleaned air, activated carbon filter
- 6) power connection, sockets*
- 7) depth-adjustable support for the lower glass facing
- 8) holding bolts for ceramic
- 9) flexible drain bend

* not within the scope of delivery

Note:

It is possible to install the "ceramic-Air" odour extraction system in all well-known toilet ceramics. However, the flushing water remains standing in the flush pipe of some ceramics with a higher sitting position or higher flushing rim, resulting in the bowl becoming partially or completely full.

The following table lists ceramics for which the use of "ceramic-Air" was not possible at the time this document was written:

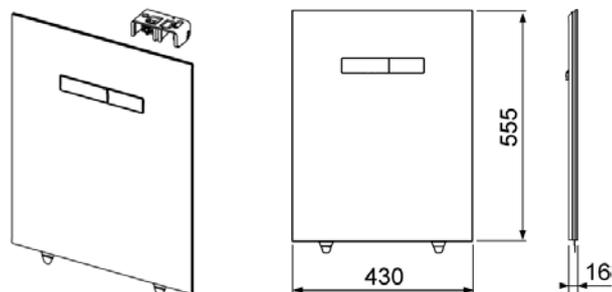
Manufacturer	Product	Item no.
Catalano	Zero	1VSxxN00
Duravit	Strength 1	021009
	Strength 3	221509
	Architec (Duraplus)	254609
Ideal Standard	Mia/SimplyU	J4521xx
	SoftMood	T3226xx
	Ventuno Stand-WC	T3161xx
Keramag	4U RimFree	203460
	500 by Citterio - tief	202100
	CASSINI - tief	203200
	EMANI by Citterio - tief	207800
	ERA - tief	208800
	It! RimFree	201950
	Plus 4	202010
	Silk - flach	203670
	Visit	2063xx
Laufen	LP3	20681
Villeroy & Boch	Omnia classic	66 65 10
	Omnia O.novo	66 95 10

TECElux – Range

Upper glass facings with actuation unit

Upper glass facings with manual operating unit

Upper glass facing for TECElux module with two-spring mounted actuation buttons.



Including actuating rods and mounting material.

Dimensions: 430 x 555 x 16 mm

Design in white glass, white buttons:

Order No. 9650000

Design in white glass, bright chrome buttons:

Order No. 9650001

Design in black glass, black buttons:

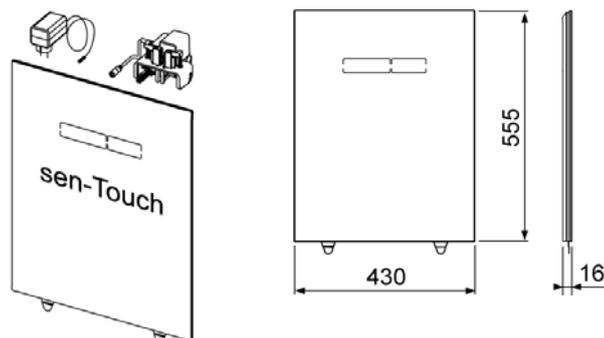
Order No. 9650005

Design in black glass, bright chrome buttons:

Order No. 9650004

Upper glass facing with electronic “sen-Touch” actuation

Upper glass facing with actuation unit for TECElux module with electronic “sen-Touch” actuation buttons and mounting material.



Incl. plug-in power pack (230 V connection voltage) with dual-flush actuation motor

Dimensions: 430 x 555 x 16 mm

Design in white glass

Order no. 9650002

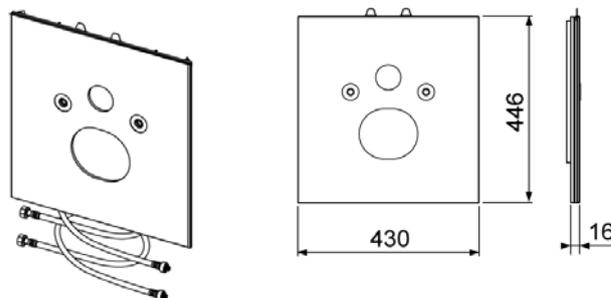
Design in black glass

Order no. 9650003

Lower glass attachment facings for toilet attachment

Lower glass facing for TECEone

Lower glass facing for combination with the TECEone ceramic with shower function.



Includes sound-insulation kit and two long reinforced pipes for the hot and cold water connections.

Dimensions: 430 x 445 x 16 mm

Design in white glass

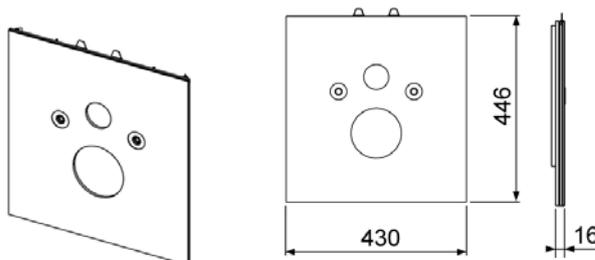
Order no. 9650109

Design in black glass

Order no. 9650110

Lower glass attachment facing for standard toilet

Lower glass facing for combination with toilet ceramics, distance 180 mm.



incl. sound insulation kit

Dimensions: 430 x 445 x 16 mm

Design in white glass

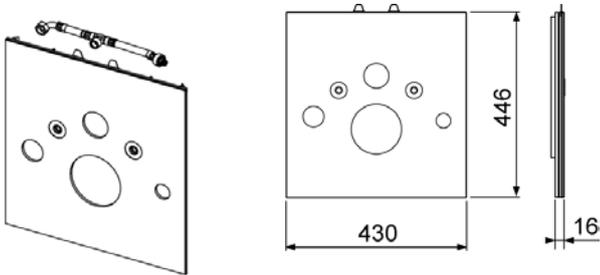
Order no. 9650100

Design in black glass

Order no. 9650105

Untere Befestigungsglasplatte für Dusch-WC (TOTO, Geberit)

Lower glass facing for combination with shower toilet TOTO Neorest AC and EW or Geberit AquaClean 8000/8000 plus.



incl. sound insulation kit and replacement reinforced pipe for cistern.

If a TOTO shower toilet is installed, use shower toilet connection set (9660001).

Dimensions: 430 x 445 x 16 mm

Design in white glass

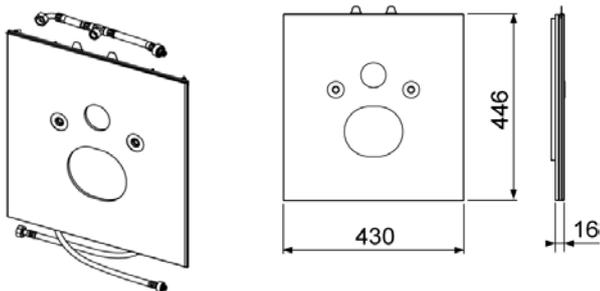
Order no. 9650101

Design in black glass

Order no. 9650106

Lower glass facing for Duravit shower toilet.

Lower glass facing for combination with Duravit shower toilet SensoWash C.



incl. sound insulation kit, replacement reinforced pipe and long reinforced pipe.

Dimensions: 430 x 445 x 16 mm

Design in white glass

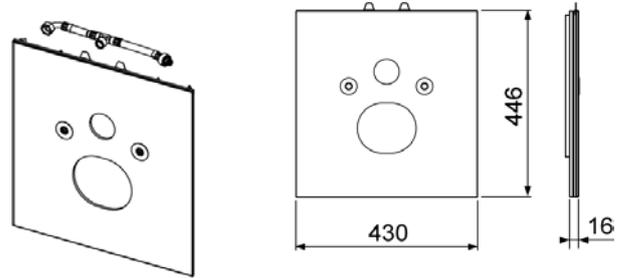
Order no. 9650103

Design in black glass

Order no. 9650107

Lower glass facing for Geberit Aquaclean Sela shower toilet.

Lower toilet glass facing for combination with Geberit AquaClean Sela shower toilet.



incl. sound insulation kit, and long reinforced pipe.

Dimensions: 430 x 445 x 16 mm

Design in white glass

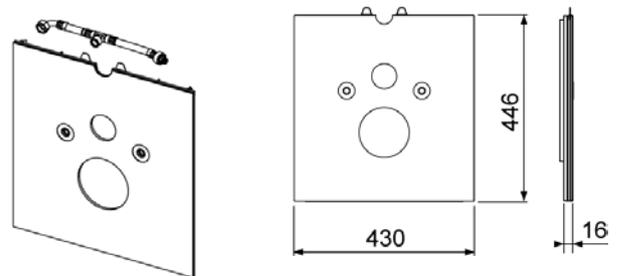
Order no. 9650104

Design in black glass

Order no. 9650108

Lower glass facing for shower toilet seat

Lower glass facing for combination with shower toilet seat TOTO Washlet GL and EK, Washlet Giovannoni, V & B viClean U and Geberit Aquaclean 5000 and 5000 plus.



incl. sound insulation kit and replacement reinforced pipe for cistern.

If a TOTO shower or V & B shower toilet seat is installed, use shower toilet connection set (9660001).

Dimensions: 430 x 445 x 16 mm

Design in white glass

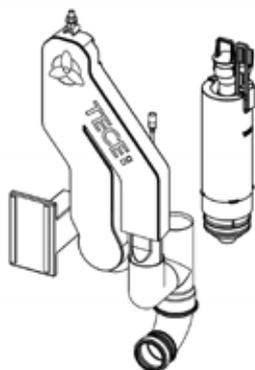
Order no. 9650102

TECElux – Range

Accessories

“ceramic-Air” extraction upgrade kit

Upgrade kit for subsequent installation of “ceramic-Air” odour extraction for TECElux 100 or TECElux 200 toilet terminals.

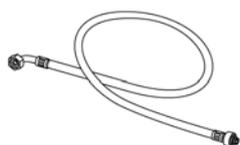


Upgrade kit consists of:

- odour extraction housing incl. fan and air outlet
- Filter cartridge
- Mounting materials
- Flush pipe with connection for odour extraction
- Drain valve

Order no. 9660000

Connection set for shower toilet



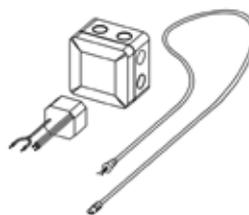
Connection set comprising:

- long reinforced hose with connection for TOTO Neorest, TOTO Washlet and V & B ViClean U

Order no. 9660001

Connection set for electrical connection

For fixed electrical connection of the “sen-Touch” glass facing in protection area II.

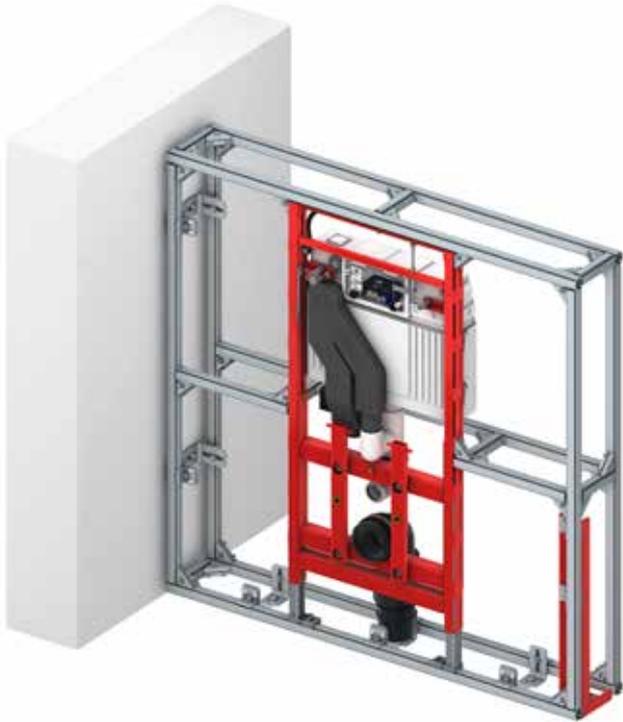


Connection set comprising:

- Empty socket, protection class IP 44
- Transformer 230/12 V.
- “sen-Touch” connection cable

Order no. 9660002

TECElux – Shell installation



Installation in a free-standing TECEprofil wall

Installation as an individual module in front of a solid wall

The TECElux module is also suitable for individual mounting. Compatible attachments are available for various installation situations. The TECElux module is statically designed so that, in standard cases, it only has to be attached to the load-bearing structural shell at four points. The mounting material supplied with the attachment units is suitable for mounting on solid walls. Use suitable cavity plugs when mounting in front of lightweight partition walls. The partition wall should also be reinforced at the mounting points. The procedure should be followed in line with the dry-wall construction.

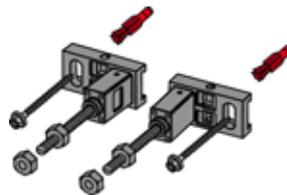
Take into account the installation instructions for the dry-wall system used.

Individual mounting with depth-adjustable universal attachments

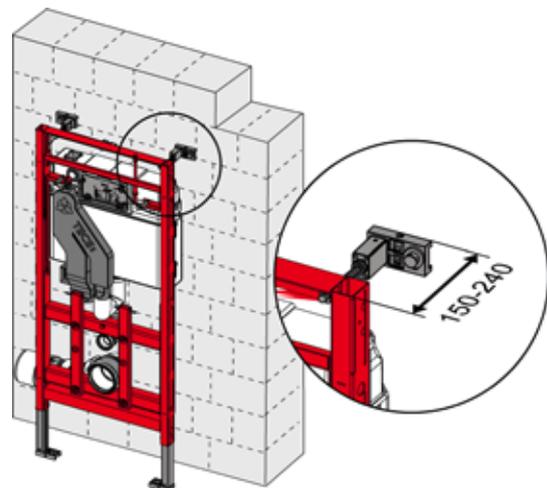


Individual mounting with depth-adjustable universal attachments

The universal module is placed directly against the wall. The pre-wall depth can be adjusted using the universal attachments. The module's height can be adjusted by means of the extractable module feet. The foot brake prevents the module from sinking down. In this way, the module can be accurately positioned before the module feet and universal attachments are attached to the structure.

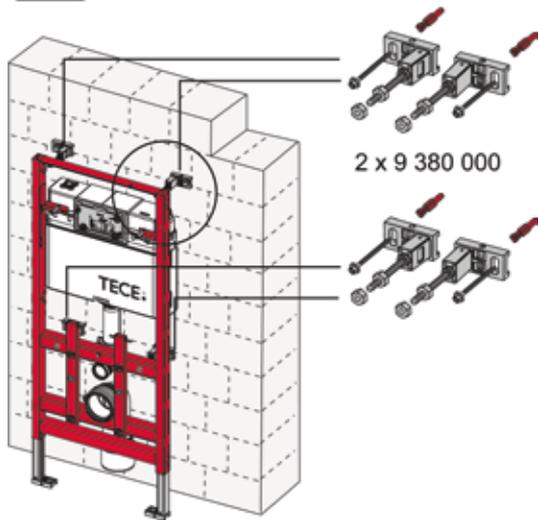


Universal attachment 9380000



Adjustment range of universal attachment 150-240 mm

When using the TECElux 100 without barriers in front of a solid wall, an additional mounting set is required in the module's bowl area.



Adjustment range of universal attachment 150-240 mm

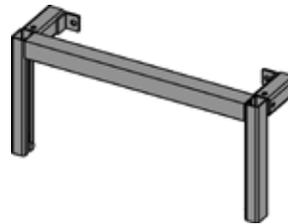
Mounting in this way with four attachments is sufficient to meet the increased static demands of a barrier-free toilet system. The second mounting set is not required for TECElux 200 or 400 due to the stronger frame construction.

Individual assembly with height-adjustable module attachment

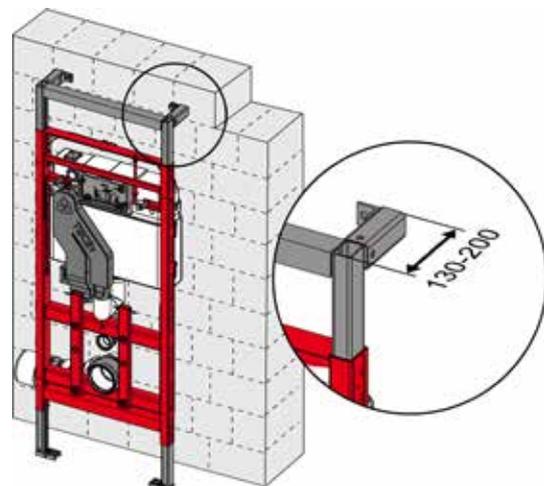


Individual assembly with height-adjustable module attachment

With the height- and depth-adjustable module attachment, variable supporting structure heights of 1160 mm to 1300 mm can be achieved. In this way, for instance, the height of the module can be adjusted to suit a given tile pattern.



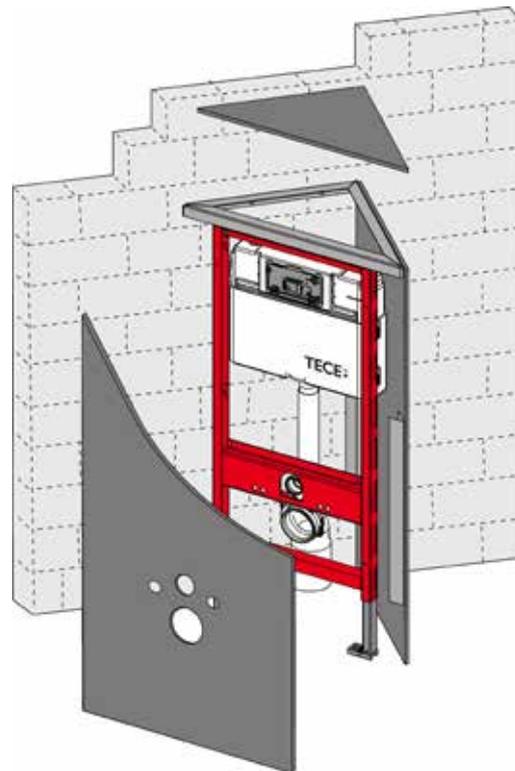
Universal attachment 9380002



Adjustment range of the height-adjustable module attachment 130-200 mm

TECElux – Shell installation

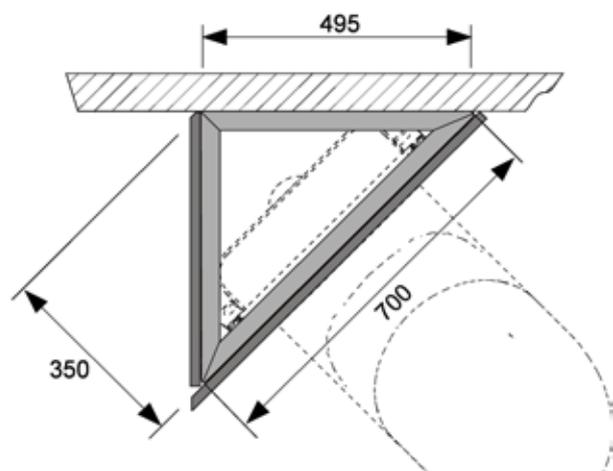
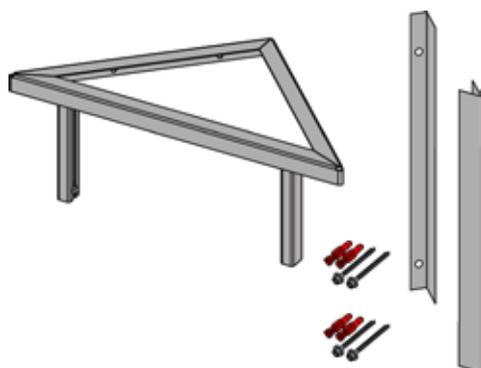
Installation with module attachment for wall corner installation



Individual module installation with module attachment for wall corner installation

With the module attachment for wall corner installation, TECElux modules can be attached to a solid structural wall at an angle of 45°. In the process, only one side is screwed into the structure. Two angle brackets are included for mounting the panel facing. Thanks to the small side length of the attachment, structures with a base area of just 0.14 m² are possible.

Mounting the module attachment for wall corner installation



Dimensions of module attachment for wall corner installation

Module attachment for wall corner installation 9380004

Installation with module attachment for variable corner installation

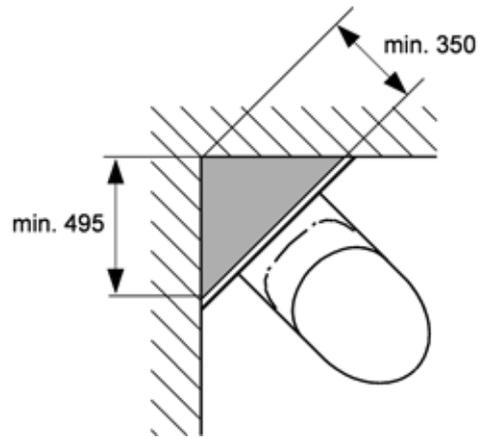


Module attachment for variable corner installation 9380003

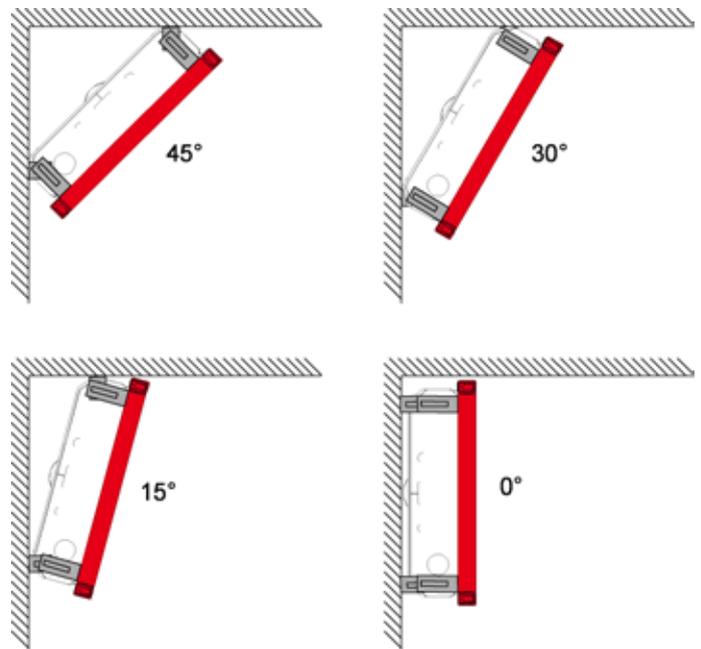


Installation of module attachment for variable corner installation

The universal module can be directly attached to the structure with the corner attachment. The corner attachment enables a TECEprofil brace to be mounted in parallel. A storage surface can be created with two TECEprofil panels, an angle bracket and a corner attachment. The corner installation requires very little space. The mounting set has a side length of just 49.5 cm. The depth from the front edge of the module up to the corner is only 35 cm. Despite the small installation depth, it is possible to install a DN 100 drainage pipe behind a toilet module.



Dimensions of module attachment for variable corner installation



Installation examples with module attachments for variable corner installations

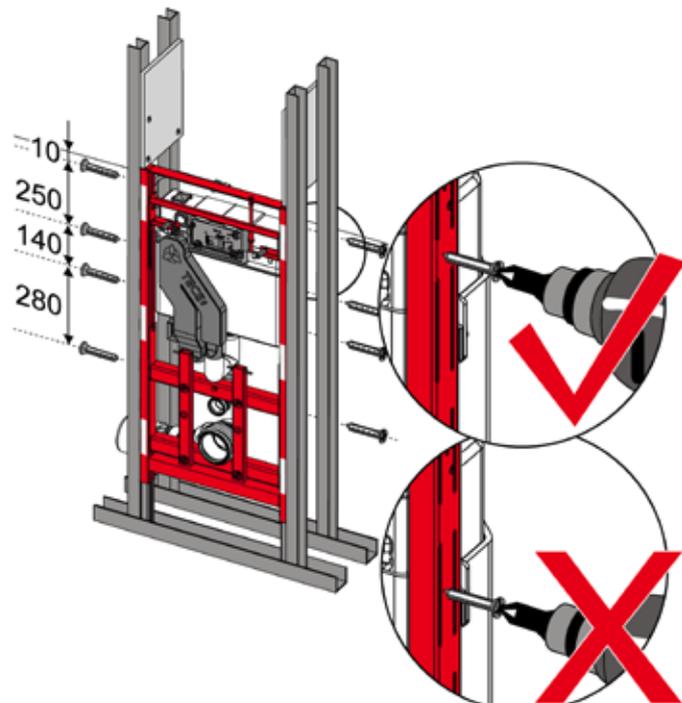
TECElux – Shell installation

Installation in a floor-to-ceiling C-profile metal stud wall



Installation in a floor-to-ceiling C-profile metal stud wall

In double-stud walls, the individual stud rows must be tightly connected to each other in accordance with DIN 18183. To achieve this, 30 cm long brackets are screwed between the C-profiles. Two reinforcement brackets must be attached directly above the universal module. Using the supplied self-tapping screws, the module is screwed to each of the four points with the wall profiles. The module feet are at the front under the horizontal C-profile and can be dowelled to the floor.



Module attachment with installation in a floor-to-ceiling C-profile metal stud wall

Follow the installation instructions for the dry-wall system used.

Installation in floor-to-ceiling metal stud wall with UA-profiles



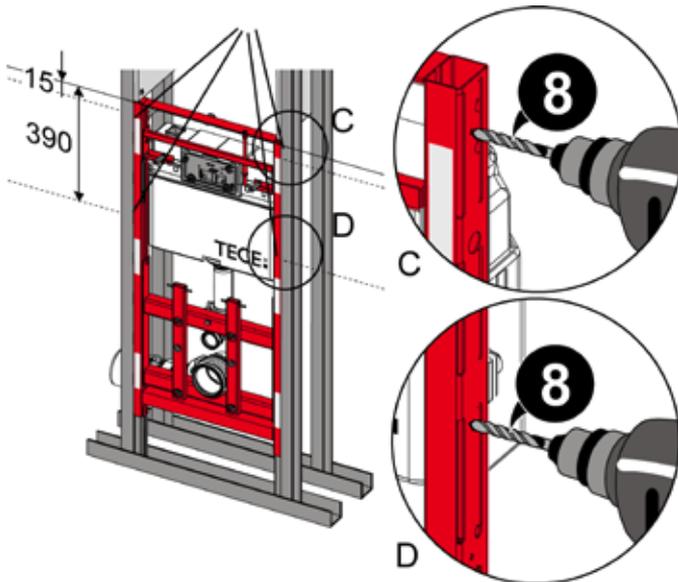
Installation in a floor-to-ceiling UA-profile metal stud wall

If particularly wide or high walls have a higher rigidity, UA-profiles (DIN 18182 part 1) can be used instead of C-profiles. This measure is only relevant for toilet and bidet modules.

For a disabled toilet facility only UA-profiles may be used for the front and rear struts for strength reasons. The installation of toilet facilities in public places for disabled and elderly people must be carried out in accordance with DIN 18040-1.

To attach a TECElux module 200 or 400, two holes (8 mm) must be drilled on both sides of the TECElux module frame at a distance of 15 and 390 mm beneath the upper edge of the module.

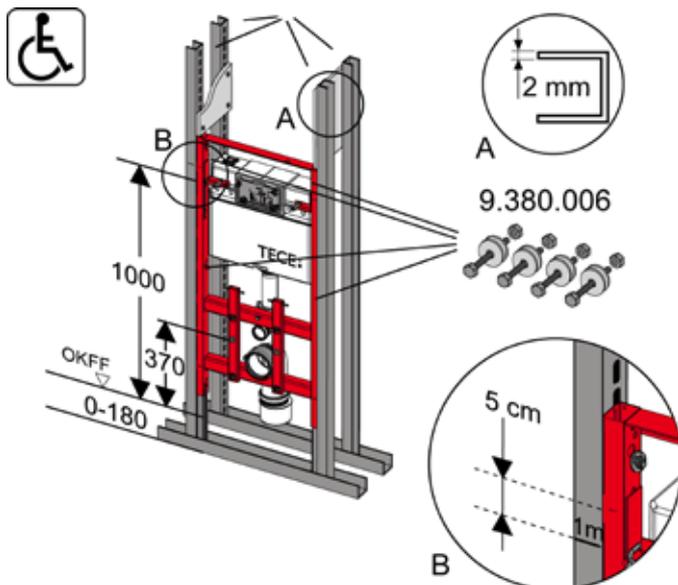
The module is then attached to the UA profile using mounting set (9380006).



Installation in a wooden stud wall



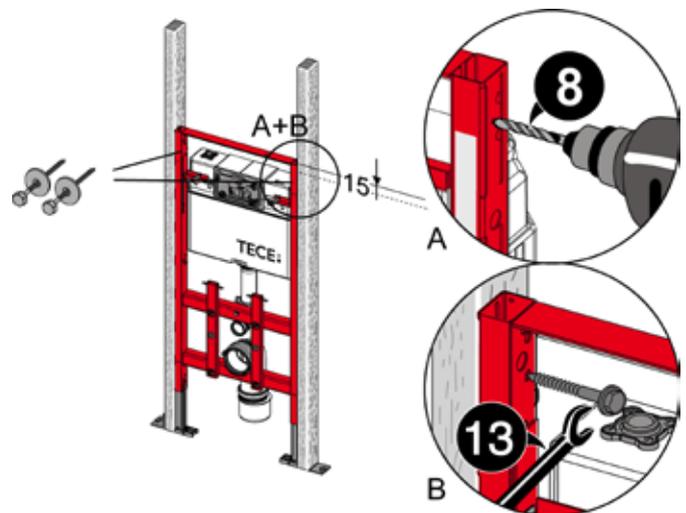
Mounting holes must be drilled to attach the module



Module attachment with installation in a floor-to-ceiling UA-profile metal stud wall

Installation in a wooden stud wall

In addition to metal stud walls, the module can also be installed in wooden stud walls in accordance with DIN 4103-1. For this purpose, the frame can be mounted using special wood screws (order number 9380005) on the vertical struts.



Module attachment during installation in a wooden stud wall

To attach a TECElux module 200 or 400, two holes (8 mm) must be drilled on both sides of the TECElux module frame at a distance of 15 and 390 mm beneath the upper edge of the module. The module is then attached to the wooden studs.

TECElux – Shell installation

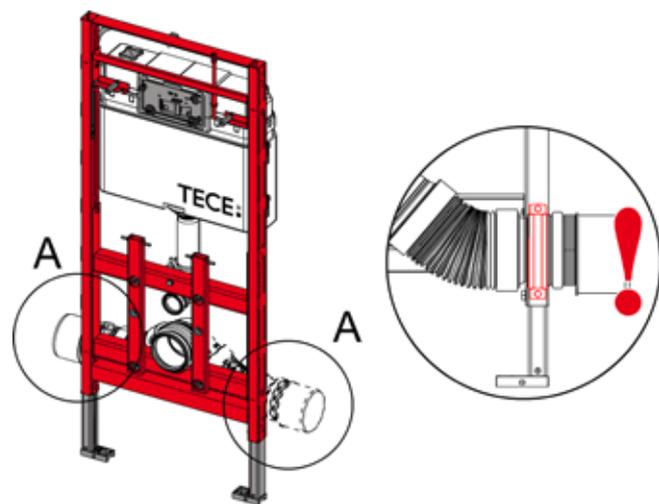
Attaching individual modules to the floor

Unless screwed tightly to a section tube, the feet of the TECElux modules should be attached to the bare floor using the screws and dowels supplied. In the process, the entire length of the dowels must be anchored in the screed. The screed's compression strength must be at least 5 N/mm². If mounting on a wooden floor, reliable fastening to the floor structure must be ensured.

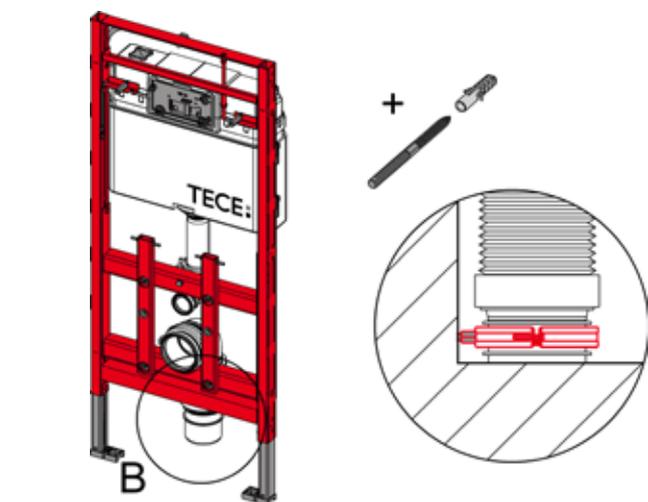
Connecting the drain bend

A connection to the DN 90 or DN 100 connecting sleeve can be created using the drain bend. It is possible to create a welded connection with the DN 90 connection trims of the flexible drain bend (only on modules with "m-Lift" function, TECElux 200 and 400).

The flexible drain bend can be installed horizontally on both sides, or vertically downwards.

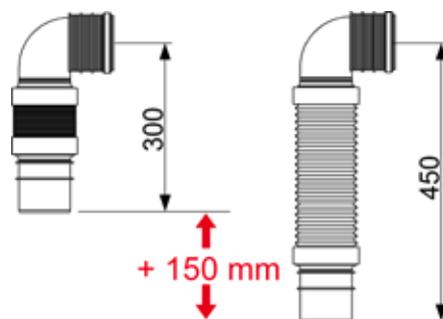


Horizontal installation of the flexible drain bend (TECElux 200 and 400)



Vertical installation of the flexible drain bend (TECElux 200 and 400)

If installed horizontally, the fastening clip is directly screwed onto the module frame. If installed vertically, the clip must be screwed into the wall.



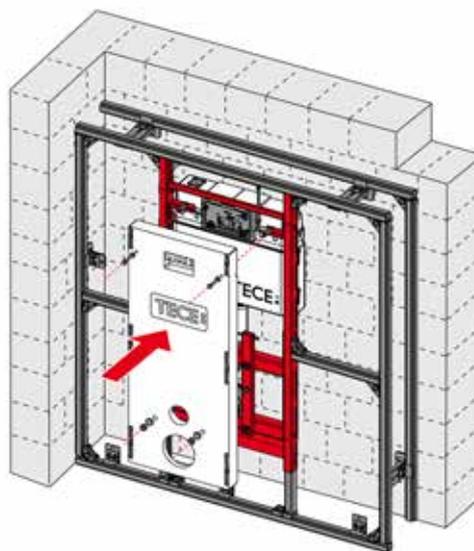
Flexible length extension

If the flexible drain bend is used, cleaning spirals should not be inserted as they could damage the flexible element.

Panel facing and wall construction

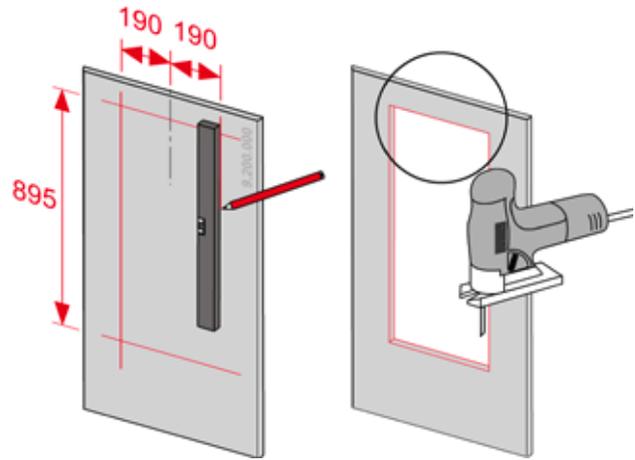
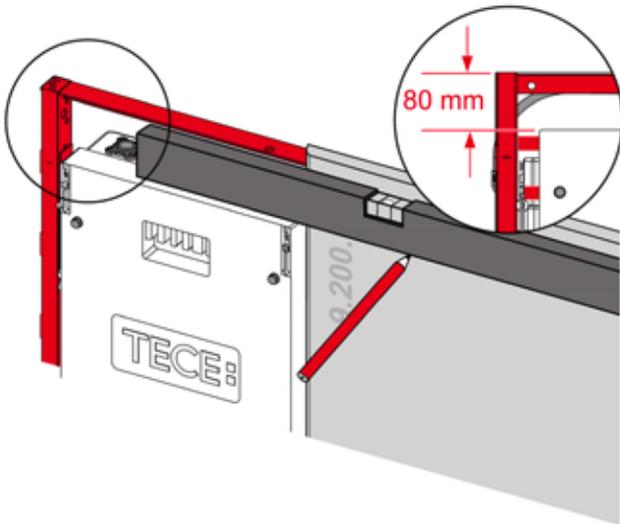
The pre-wall is clad with conventional wet room boards (e.g. TECEprofil panel plates 9200000), at least 18 mm or 2 x 12.5 mm.

The large bare-wall protection must also be mounted.



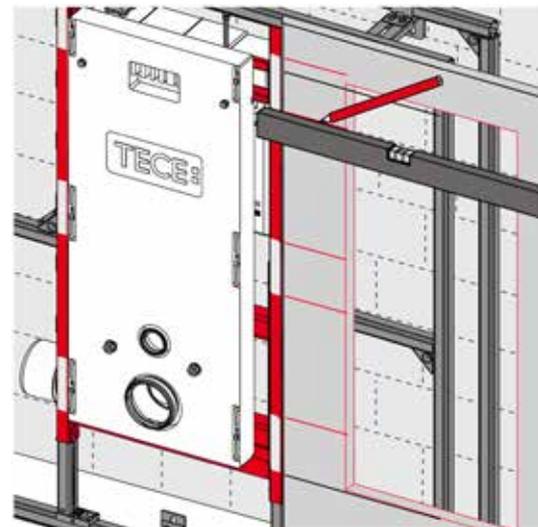
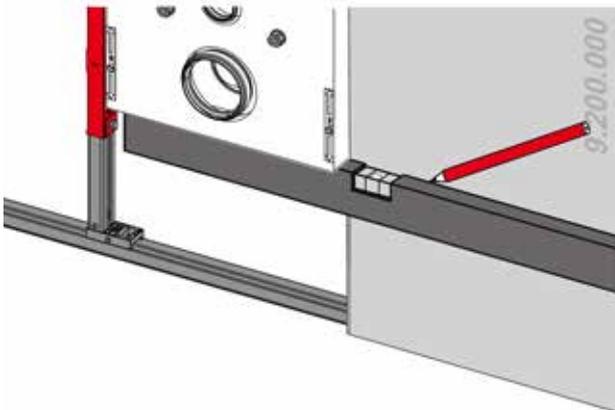
Attach the bare-wall protection to the module.

Transfer the exact dimensions of the bare-wall protection to the plaster board.



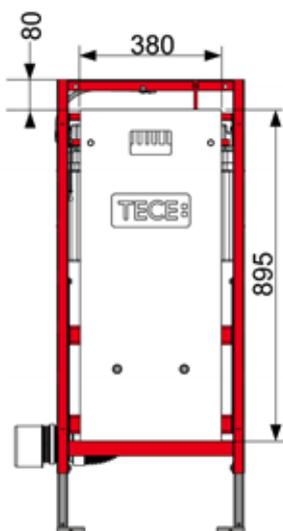
Cutting out the wall recess

To ensure height adjustment of both TECElux 200/400 modules, the module frames should not be drilled through in certain areas. These are indicated by 2 x 3 stickers on the frame.

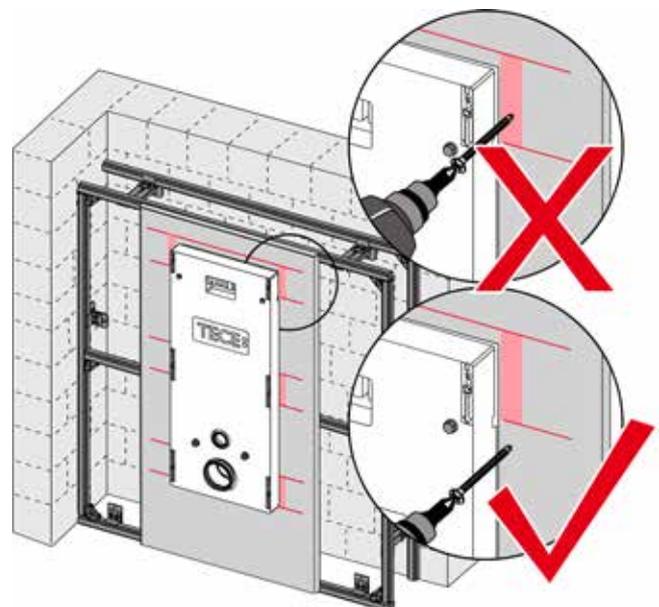


Transfer the markings to the plaster board

Transfer the top and bottom markings to the panel plates.



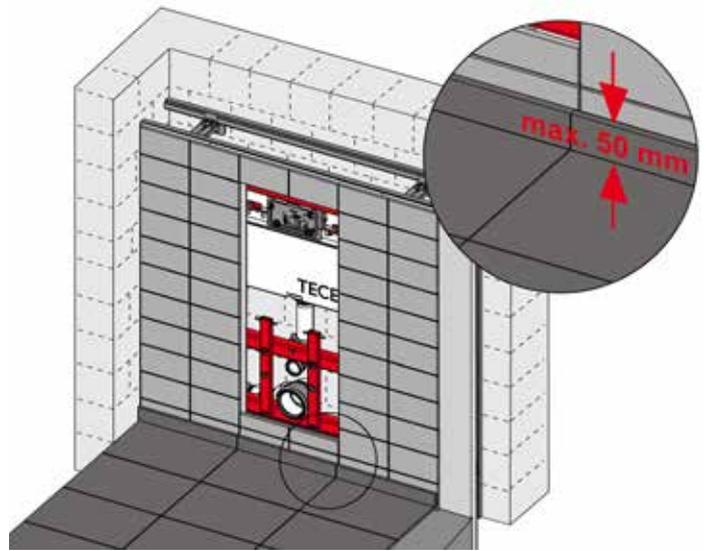
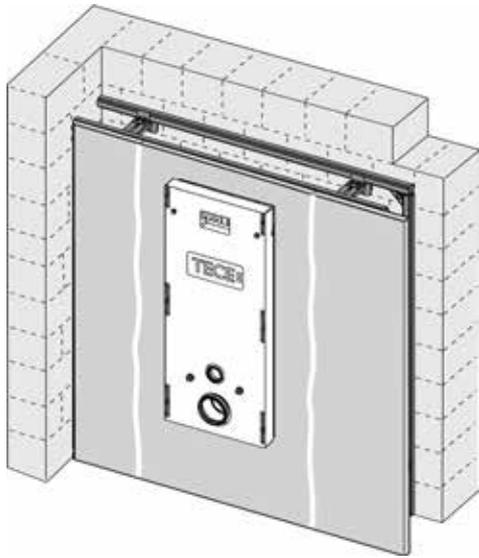
Dimensions of bare-wall protection or wall recess



Do not drill through the indicated areas

TECElux – Shell installation

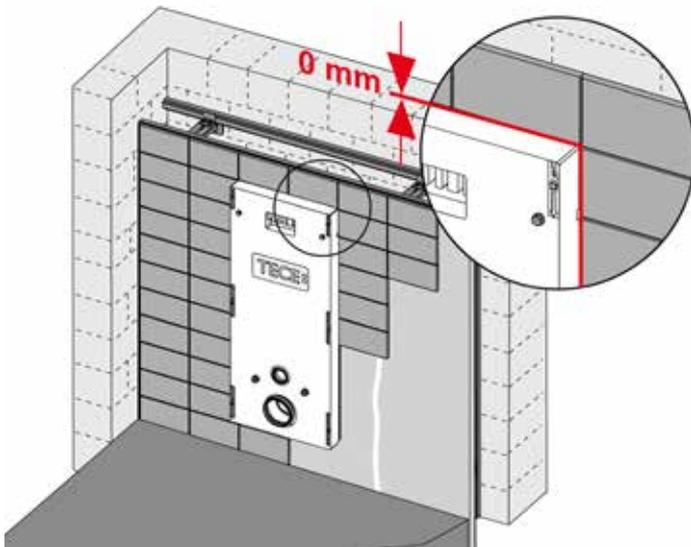
After attaching the panel plates, cover the welts.



Plinth height max. 50 mm

Covering welts of the plaster board.

When tiling the wall, make sure that the wall covering is applied seamlessly right up to the bare-wall protection.



Applying the wall covering

When tiling the floor, make sure that the plinth height is maximum 50 mm, otherwise the lower glass attachment facing could collide with the plinth.

Power supply

Electrical requirements and safety zones in bathrooms

DIN VDE 0100-701 (0100 part 701) 2010-08 applies to rooms in which a person washes in a bath and/or shower, and in which baths and/or shower devices are permanently attached.

These rooms also include rooms with prefabricated bath, shower or whirlpool devices and shower spaces without shower tray (e.g. with TECEdrainline shower channels). The standard does not apply to rooms with showers which are only used in an emergency, e.g. emergency showers in laboratories.

The safety zones in these rooms are divided into three classes:

Zone 0 – pertains to the bathtub or shower tray area. Electrical devices are prohibited in this zone.

Zone 1 – is limited by

- the finished floor surface area and the horizontal surface area at the height of the highest permanently attached shower head or water outlet, or the surface area up to 225 cm vertically above the finished floor.
- the outer edges of the bathtub or shower tray,
- the inner edges of the walled tray,
- the surface area at a distance of 120 cm from the permanently attached shower head or water outlet.

This zone also includes the surface area under the bathtub or shower tray. Electrical devices are also prohibited in this zone.

Zone 2 – is limited by

- the finished floor surface area and the horizontal surface area at the height of the highest permanently attached shower head or water outlet, or the surface area up to 225 cm vertically above the finished floor.
- the surface area at a distance of 60 cm to zone 1.

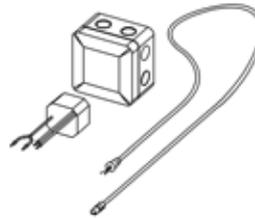
Zone 2 does not apply to showers without a shower tray.

No safety zones have been specified for washstands, toilets or similar devices.

Therefore, a TECElux module with an electrical connection (for a “sen-Touch” flush plate or connection to a shower toilet or shower toilet seat) may only be installed in zone 2, outside the safety zone.

Installing TECElux in zone 2

When installing an electrical connection in zone 2, the connection set for permanent electrical connections (9660002) must be used.



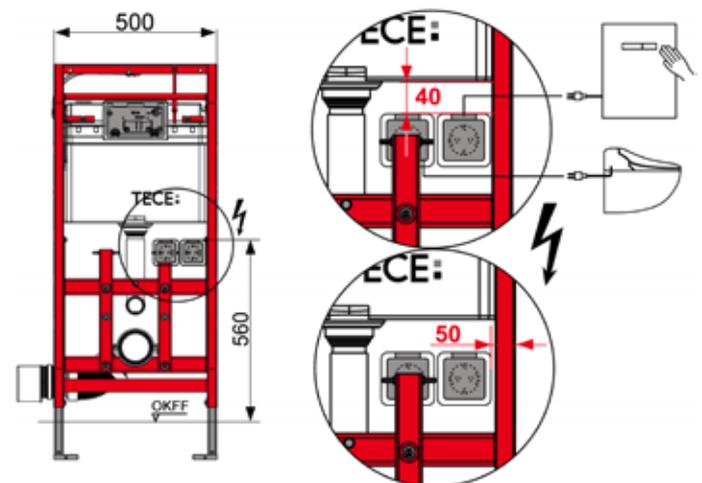
Connection set for electrical connection 9660002

Installing TECElux outside the safety zone

To create a simple interface to the power supply, it is sufficient to fit a surface-mounted socket (protection class IP 44) into the wall during the shell installation phase (see assembly instructions of manufacturers Legrand, Jung, Merten, Busch Jäger, etc.). During the detailed installation phase, the fitter can make the connection for the electronic actuation very simply with a plug-in power pack.

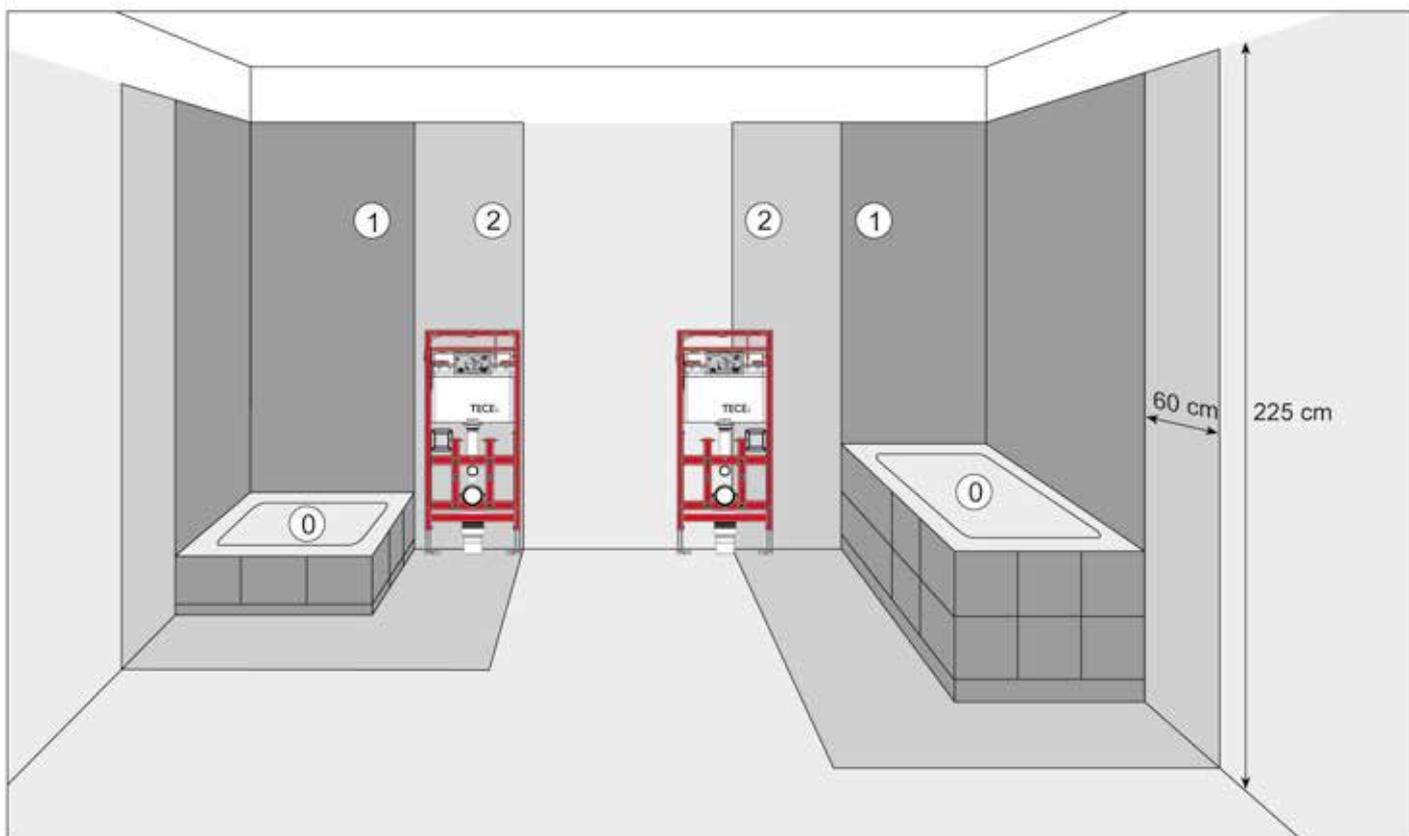
If a shower toilet is required, another socket must be installed for the power supply to the toilet.

The dimensions for positioning the socket(s) are shown in the following diagram:

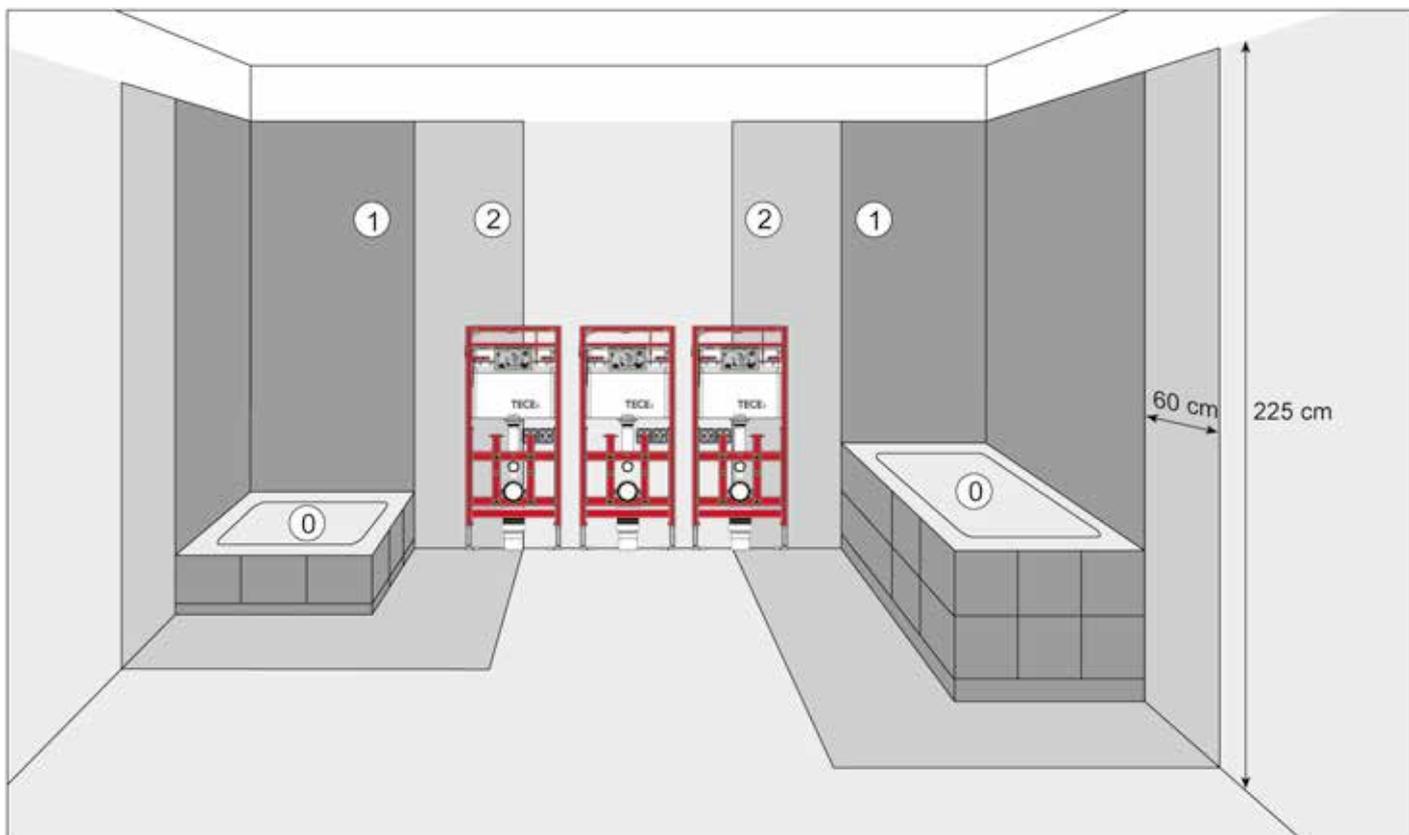


Positioning the socket(s) on the TECElux module

TECElux – Shell installation



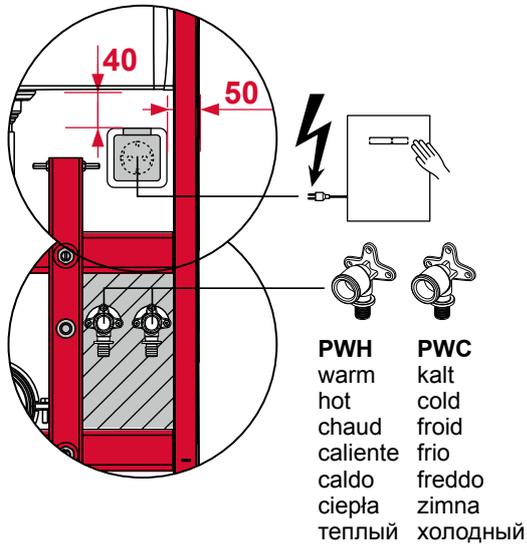
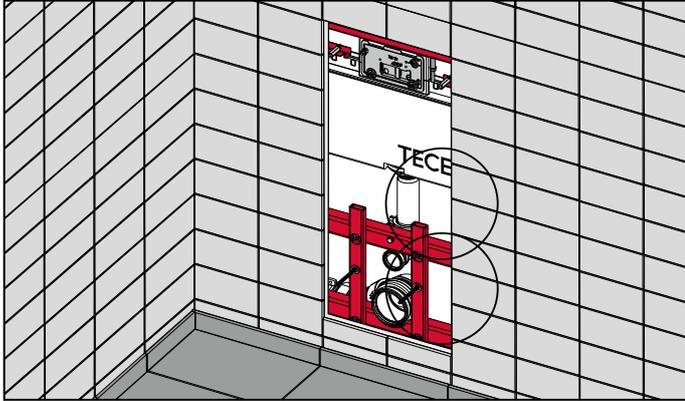
Installing a TECElux module in safety zone 2 (with connection set)



Installing a TECElux module outside the safety zone (with surface-mounted sockets)

Power and water connection with TECEone

When using a TECEone with a TECElux module, a power supply is only necessary if a “sen-Touch” flush plate is used.



Position of socket and corner valve with TECEone

For the corner valves, we recommend the position shown at the top as, in this way, accessibility can be provided by lifting off the upper flush plate. The length of the two reinforced hoses included with the lower glass facing for TECEone, is adapted to this mounting situation.

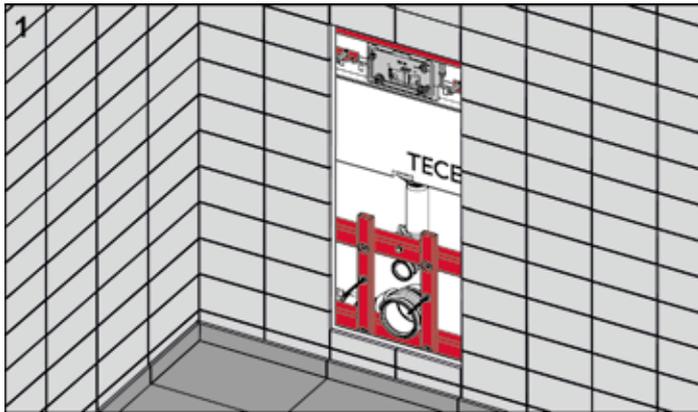
TECElux – Fine installation

Fine installation

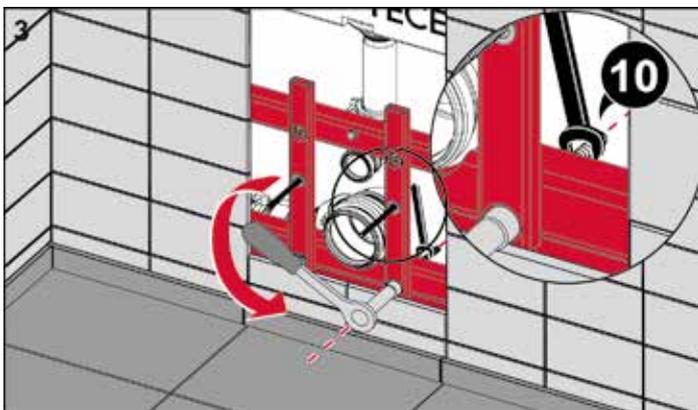
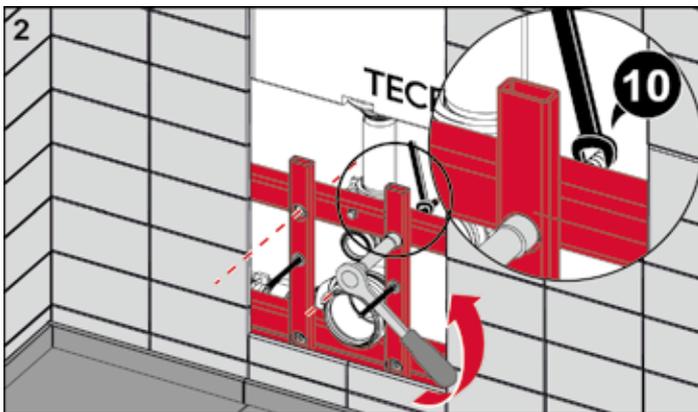
The order of the detailed installation for the TECElux terminal is as follows:

- lower glass attachment facing
- height adjustment, if applicable
- upper glass facing with actuation unit

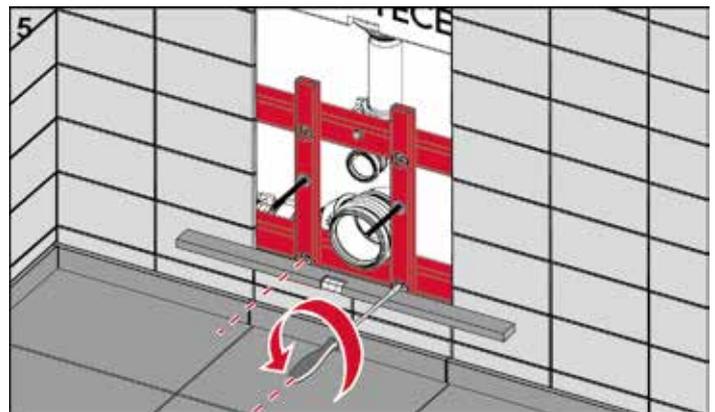
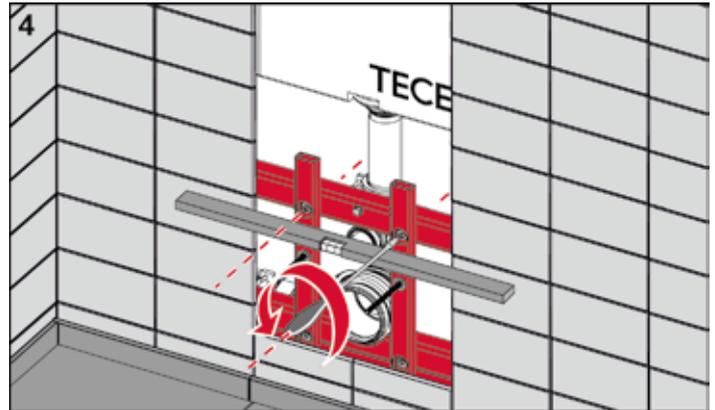
Lower glass attachment facing for standard toilet



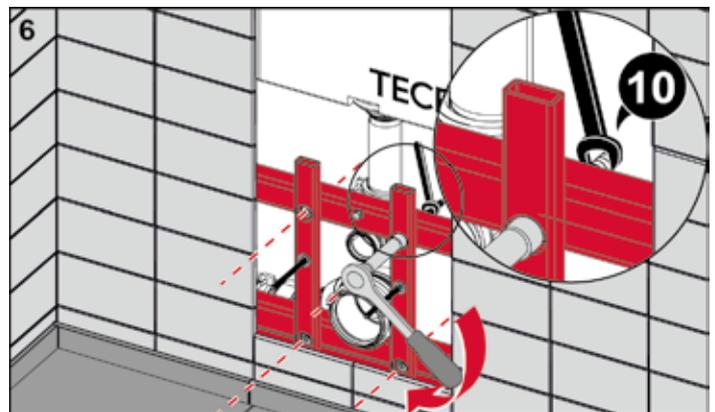
Remove the bare-wall protection.



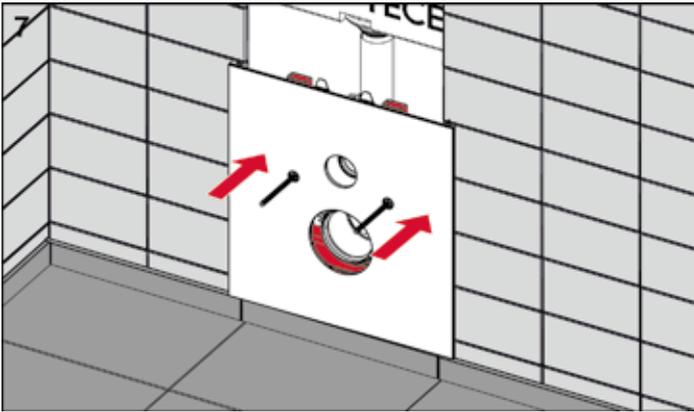
Remove the attachment nuts (x 4) on the depth adjustment, securing the threaded rods at the back in the process.



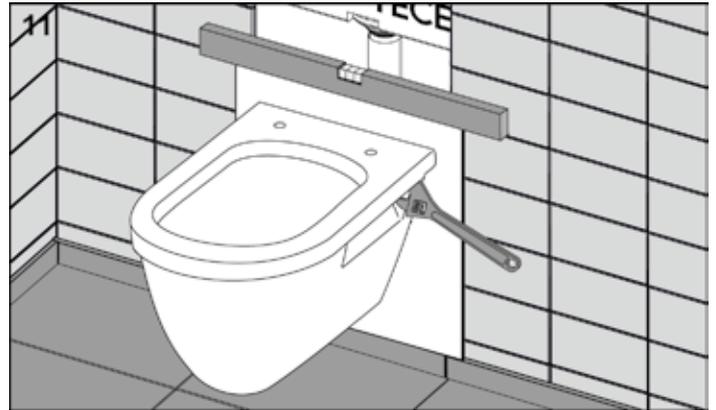
Adjust the lower glass facing at the top and bottom so that it fits flush against the wall, and tighten or loosen the four threaded rods with a flat-head screwdriver.



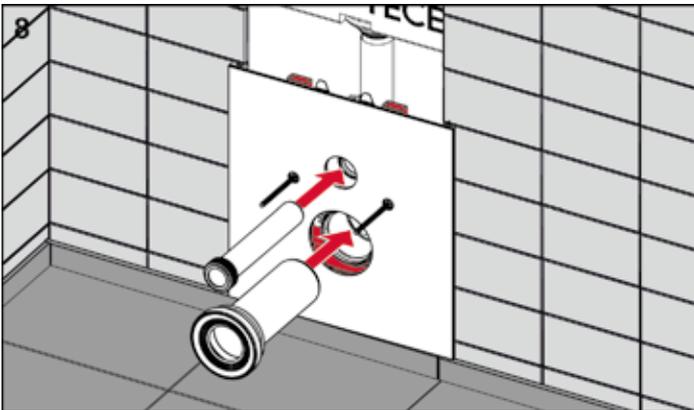
Then secure the threaded rods at the back and tighten the locking nuts.



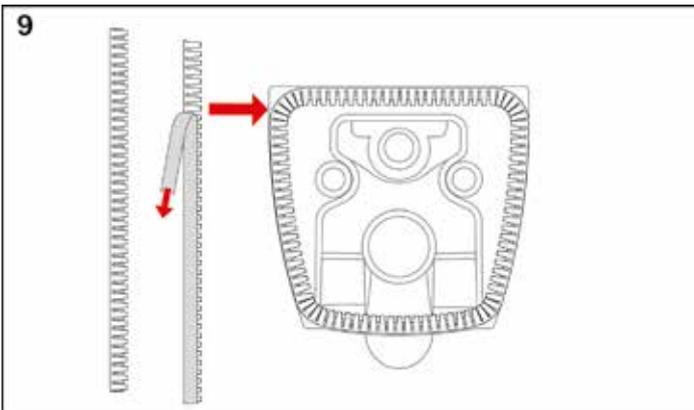
Mount the lower glass facing with actuation unit and — if not already carried out at the factory — insert both glass protection caps.



Align the glass facing and mount the toilet ceramic.



Cut the toilet connection set to a suitable length and insert.

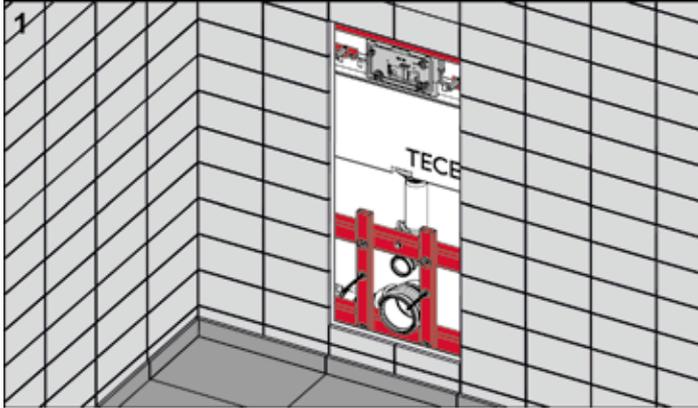


Mount the sound insulation strips on the ceramic.

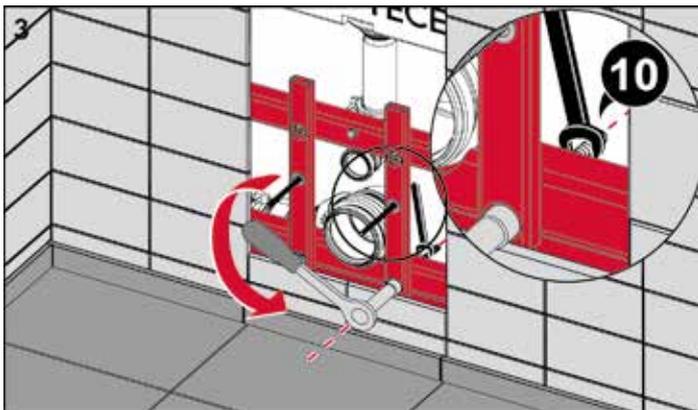
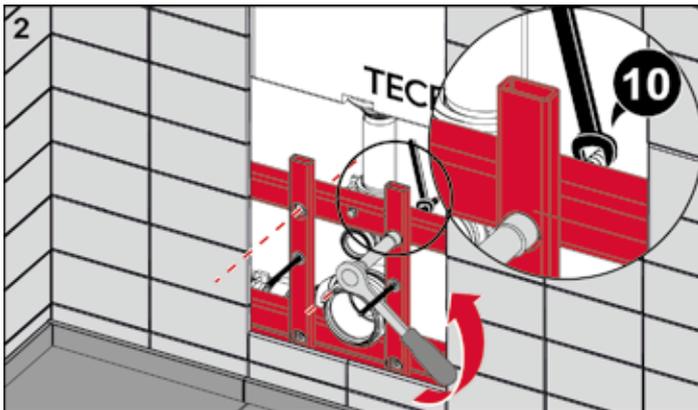
TECElux – Fine installation

Lower glass attachment facing for shower toilet and seats

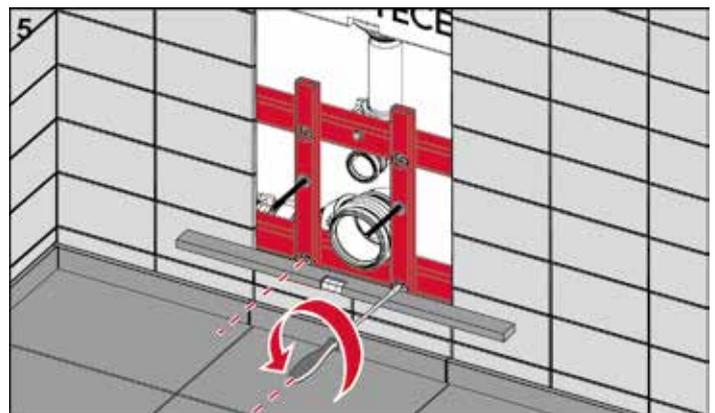
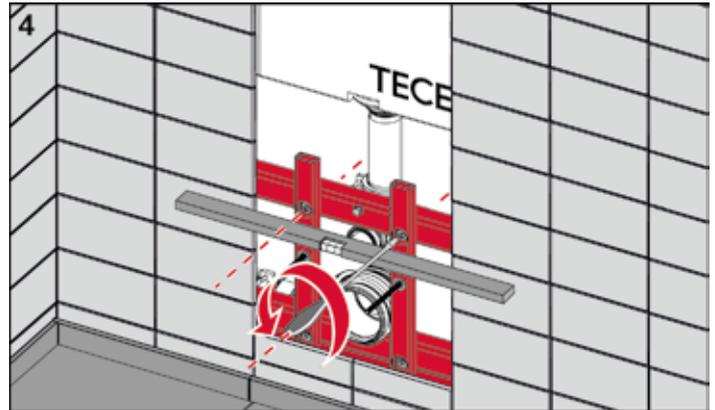
TECE supplies attachment facings for different shower toilets and seats. The first 14 assembly steps are the same for all facings:



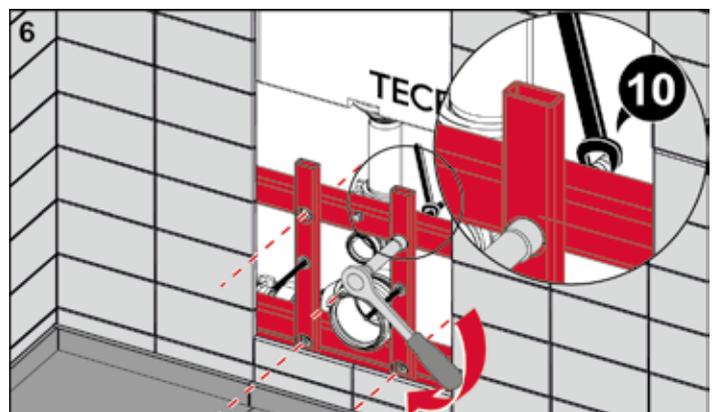
Remove the bare-wall protection.



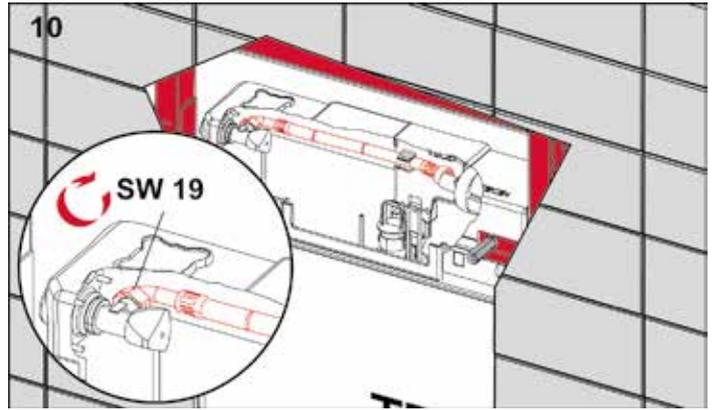
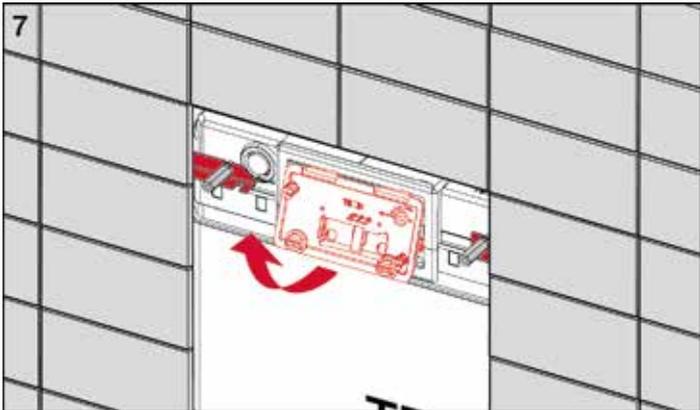
Remove the attachment nuts (x 4) on the depth adjustment, securing the threaded rods at the back in the process.



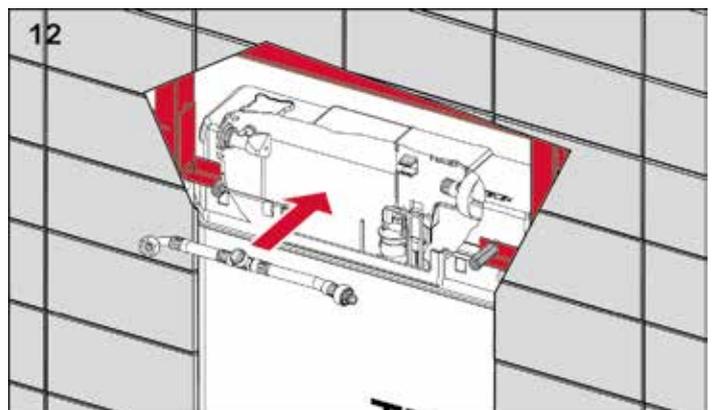
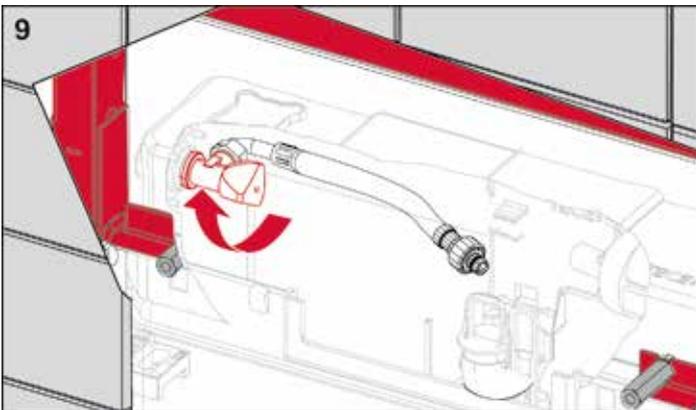
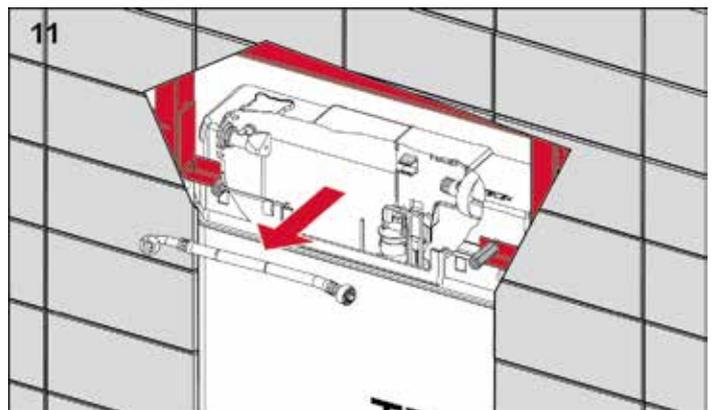
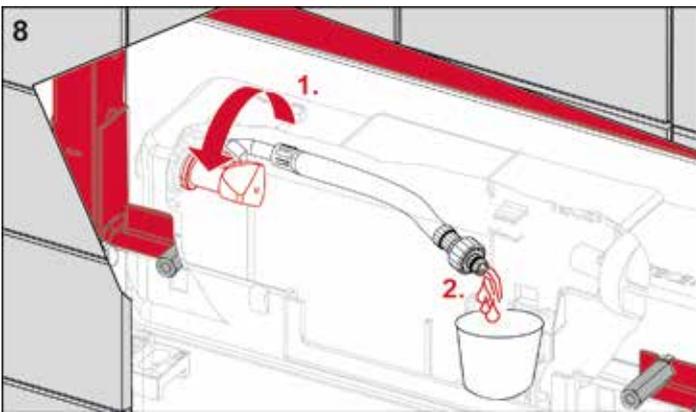
Adjust the lower glass facing at the top and bottom so that it fits flush against the wall, and tighten or loosen the four threaded rods with a flat-head screwdriver.



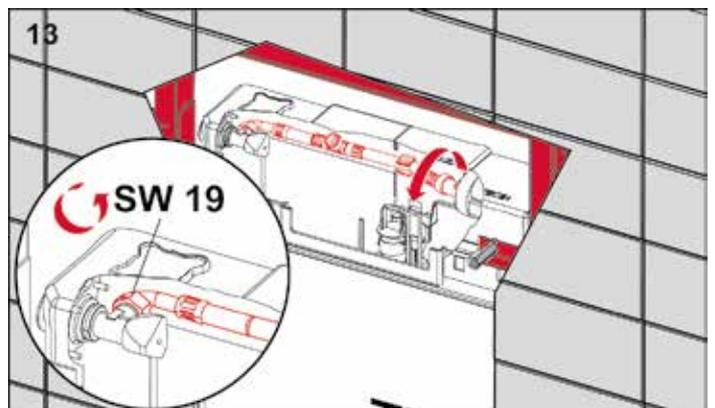
Then secure the threaded rods at the back and tighten the locking nuts.



Open the cistern.

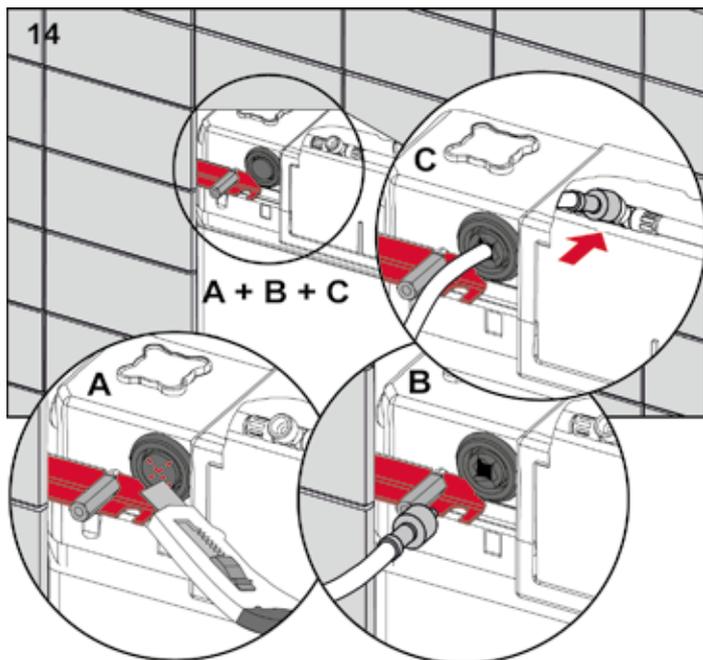


Sufficiently flush out the connecting pipe.



Remove the reinforced hose and replace it with the replacement reinforced hose with the water connection for the shower toilet or shower toilet seats.

TECElux – Fine installation



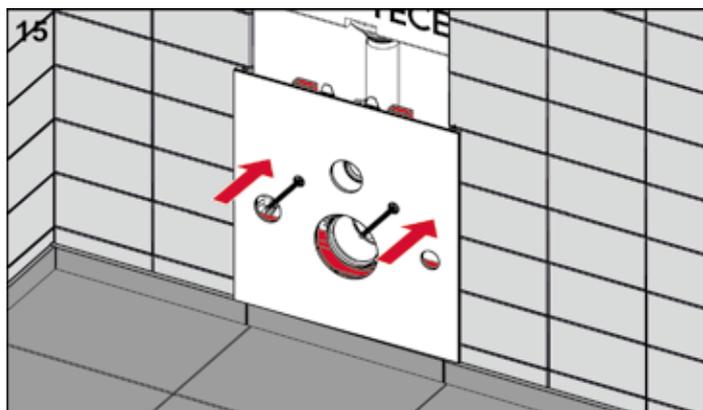
Cut the insertion opening with a cutter knife, insert the reinforced hose into the cistern and connect.

Caution:

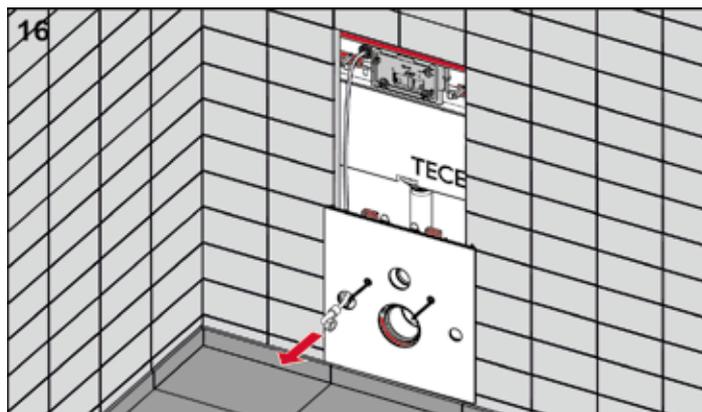
On the TOTO Neorest and Washlet, use the long reinforced hose (order number 9660001)!

Lower glass attachment facing for TOTO Neorest and Geberit AquaClean 8000, 8000 plus (order number 9650101/...106)

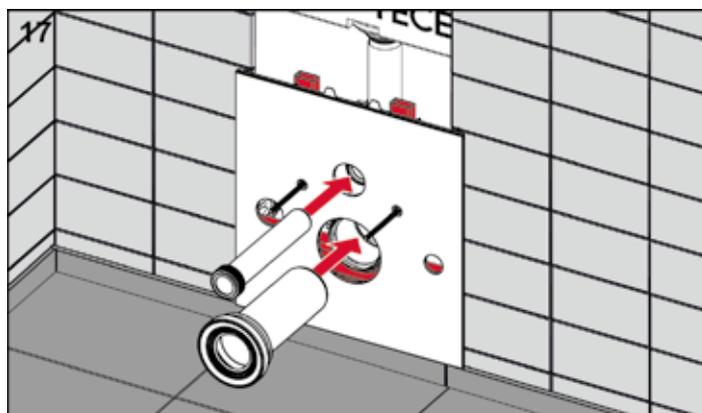
After the preparation phase — see assembly steps 1 to 14 at the start of this section — the glass facing can actually be installed:



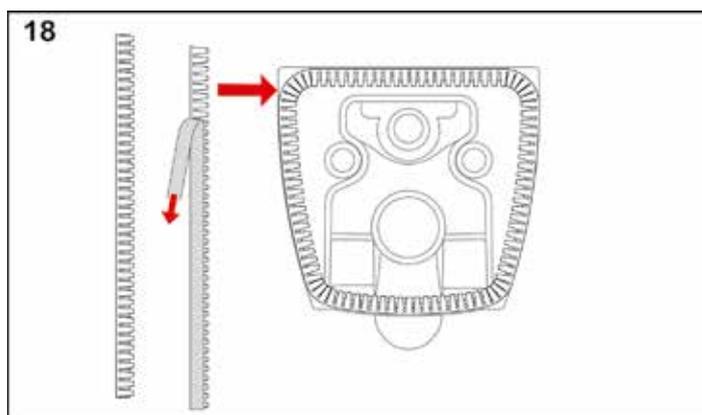
Mount the lower glass attachment facing.



Guide the reinforced hose through the hole provided for the purpose in the glass facing.



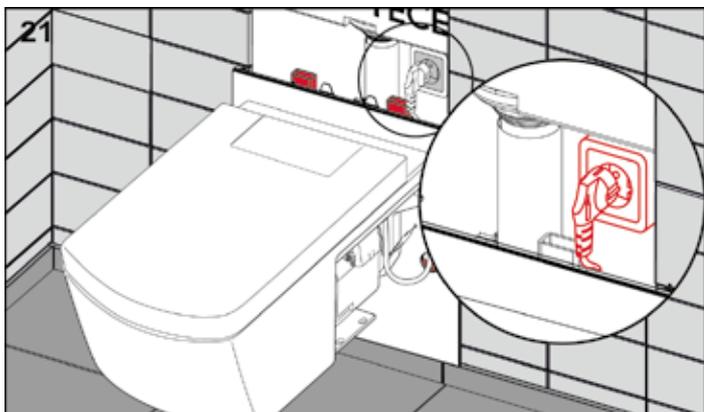
Cut the toilet connection set to a suitable length and insert.



Mount the sound insulation strips on the ceramic.



Mount and align the shower toilet.



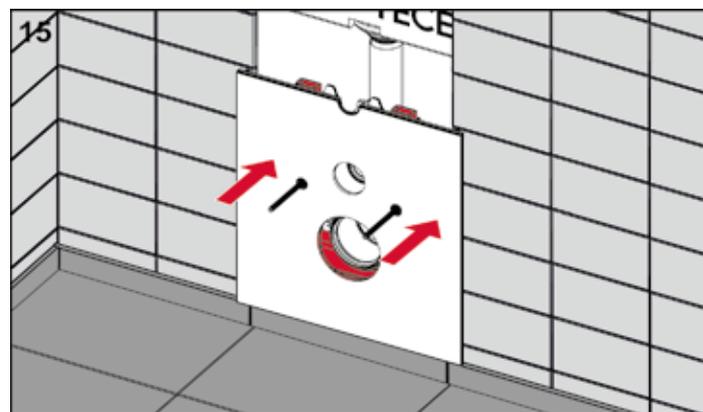
Connect the power supply: insert the plug into the socket.



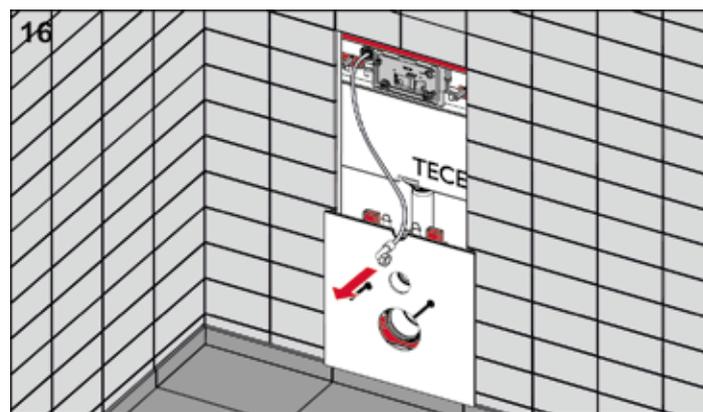
Connect the reinforced hose to the shower toilet.

Lower glass attachment facing for TOTO Washlet and Geberit AquaClean 5000, 5000 plus (order number 9650102)

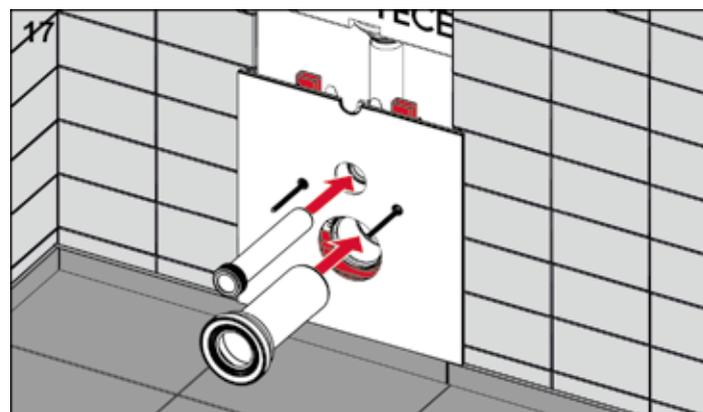
After the preparation phase — see assembly steps 1 to 14 at the start of this section — the glass facing can actually be installed:



Mount the lower glass attachment facing.

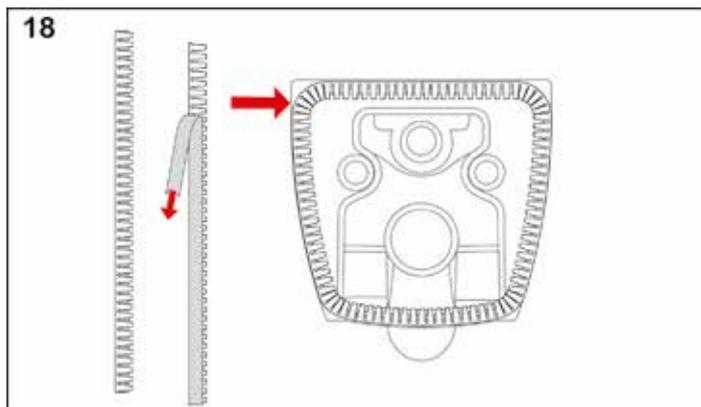


Guide the reinforced hose through the top cut-out in the glass facing.



Cut the toilet connection set to a suitable length and insert.

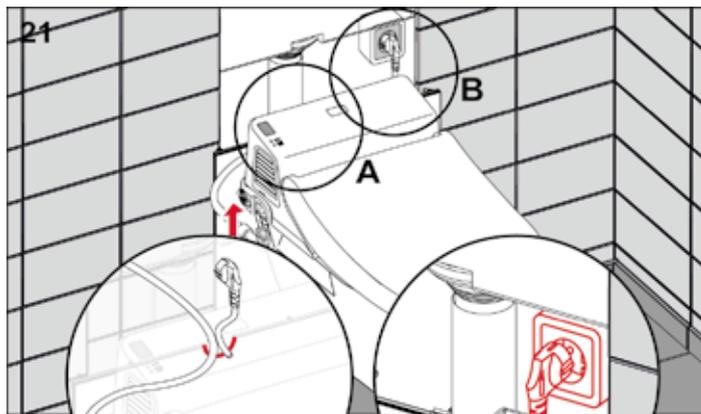
TECElux – Fine installation



Mount the sound insulation strips on the ceramic.



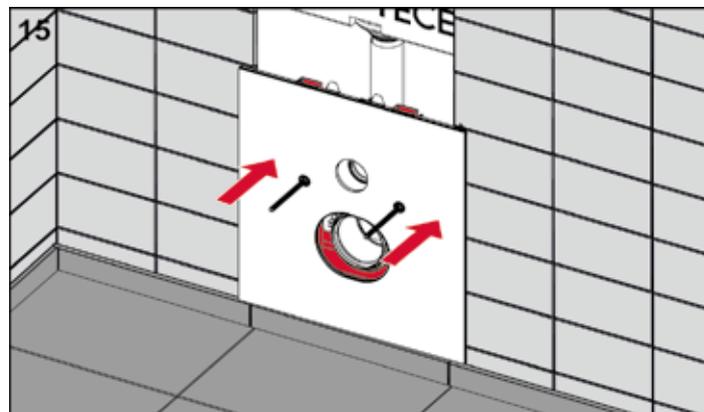
Mount and align the toilet ceramic.



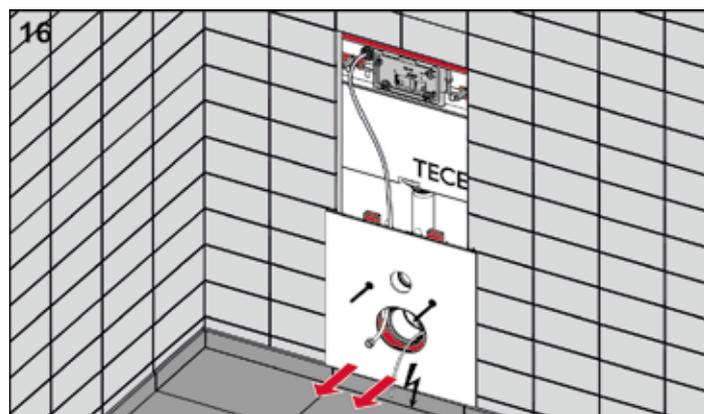
Connect the reinforced hose to the shower toilet seat (A) and connect the power supply: Insert the plug into the socket (B).

Lower glass attachment facing for Duravit SensoWash Starck C (order number 9650103/...107).

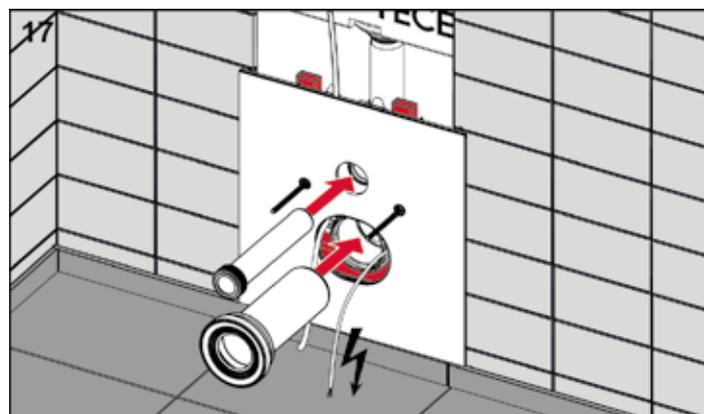
After the preparation phase — see assembly steps 1 to 14 at the start of this section — the glass facing can actually be installed:



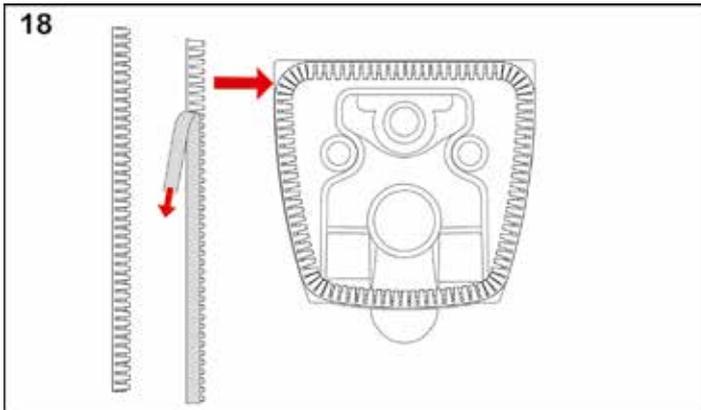
Mount the lower glass attachment facing and — if not already carried out at the factory — insert both glass protection caps.



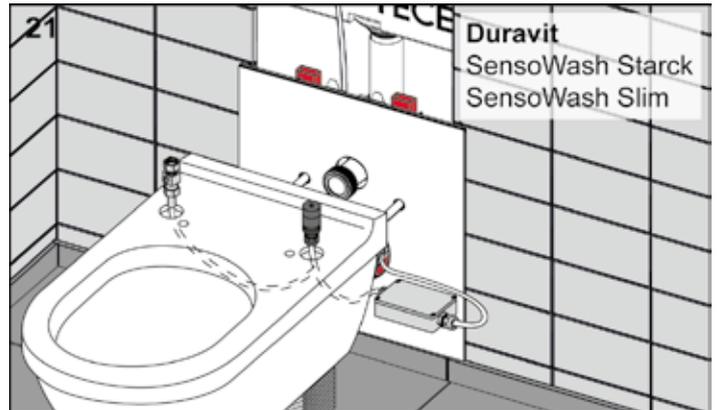
Guide the reinforced hose and power cable through the sewage water connection opening in the glass attachment facing.



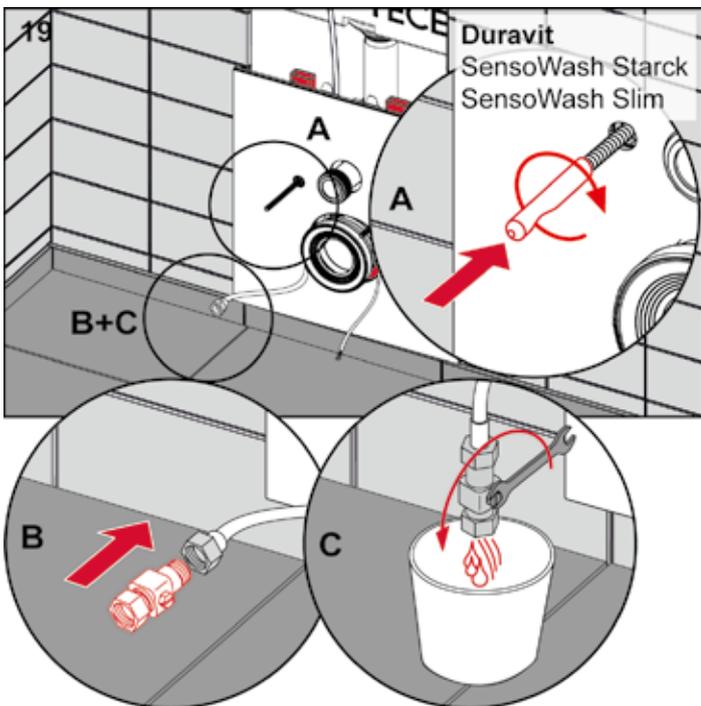
Cut the toilet connection set to a suitable length and insert.



Mount the sound insulation strips on the ceramic.



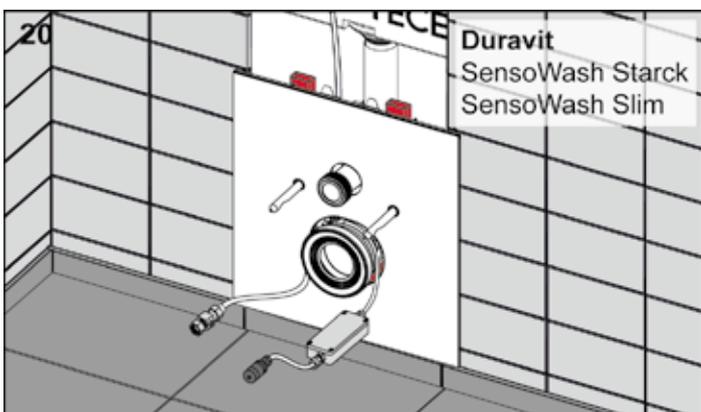
Guide the power and water connections through the ceramic according to the Duravit or V & B installation instructions.



According to Duravit or V & B assembly instructions:
 (A) Install the Duravit (Durafix) concealed mounting
 (B) Mount the Duravit SensoWash C water cut-off valve
 (C) Sufficiently flush out the reinforced hose



Mount the toilet seat according to Duravit or V & B assembly instructions.

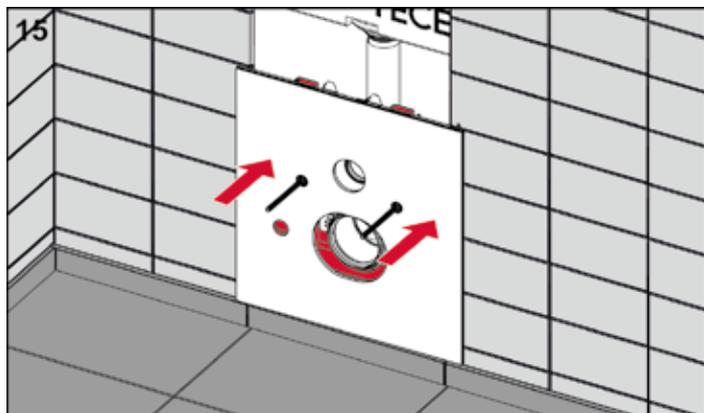


Mount the Duravit electronic connection box (following the Duravit installation instructions) or V & B connector plug (following the V & B installation instructions).

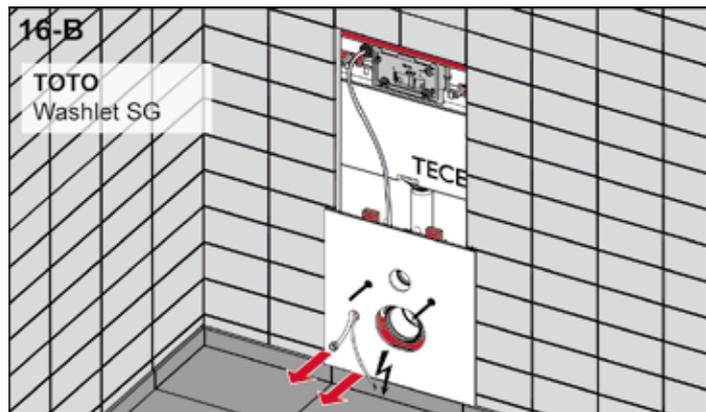
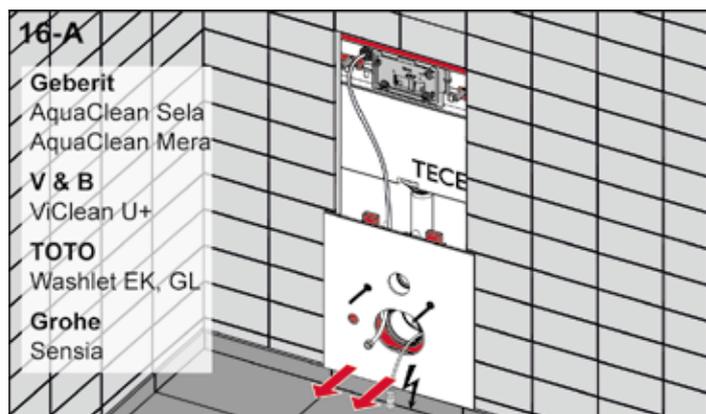
TECElux – Fine installation

Lower glass attachment facing for Geberit AquaClean Sela (order number 9650104/...108)

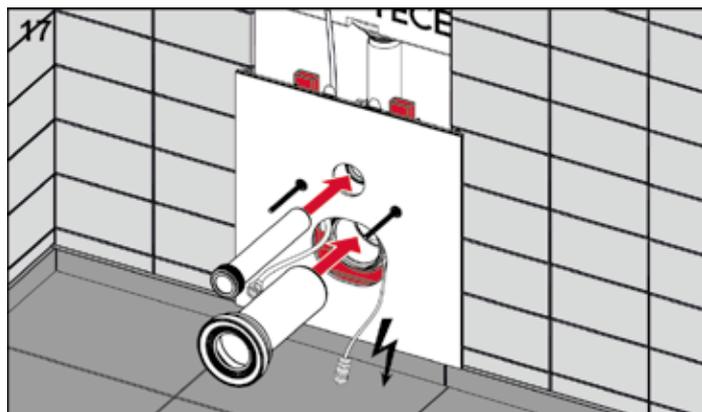
After the preparation phase — see assembly steps 1 to 14 at the start of this section — the glass facing can actually be installed:



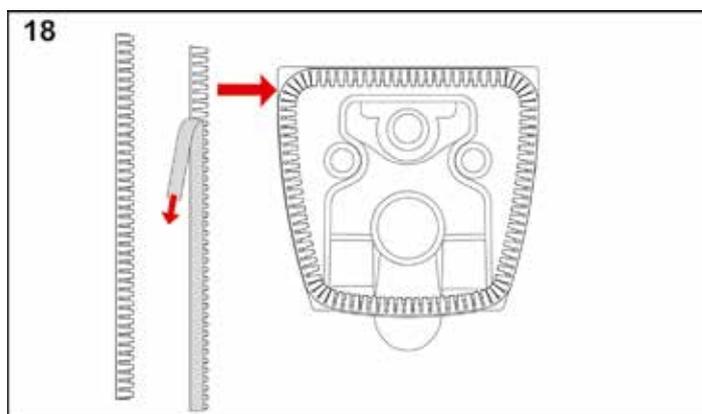
Mount the lower glass attachment facing.



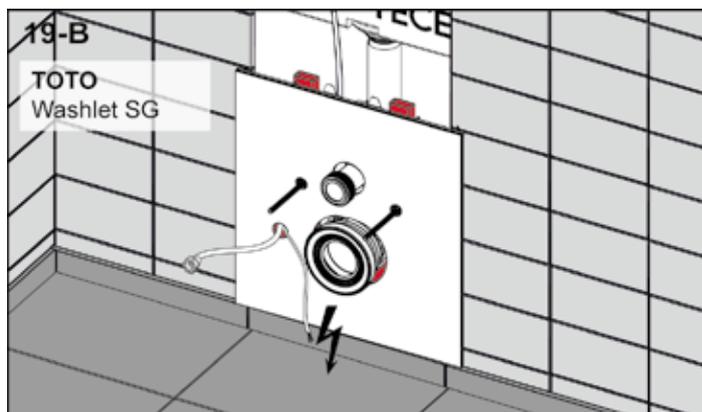
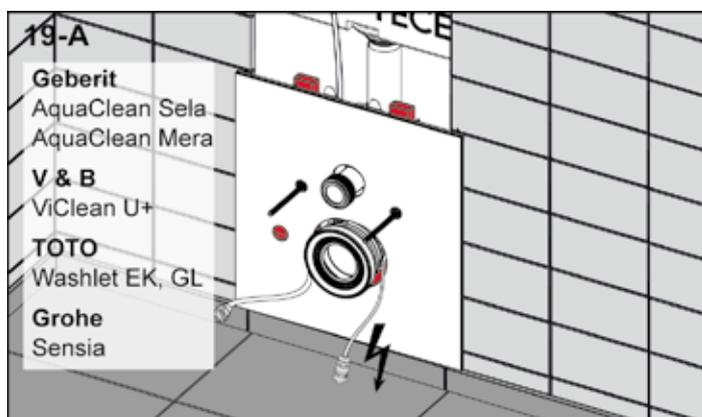
Guide the reinforced hose and power cable through the sewage water connection or side opening in the glass attachment facing.



Cut the toilet connection set to a suitable length and insert.



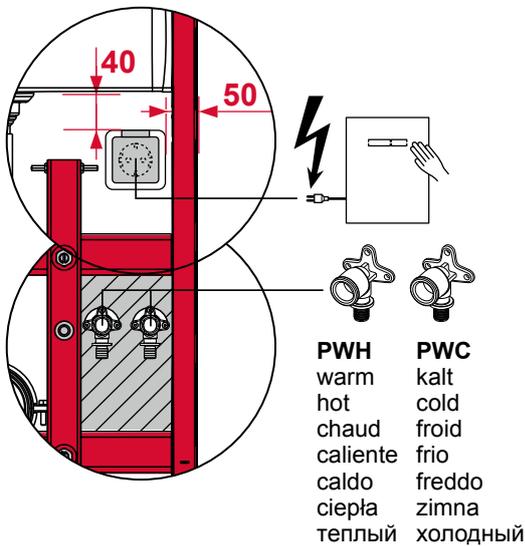
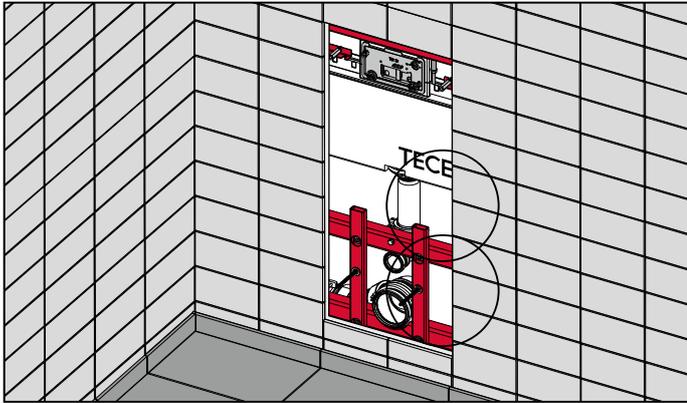
Mount the sound insulation strips on the ceramic.



All the other assembly steps are described in detail in the instructions of the respective shower toilet manufacturers.

Lower glass attachment facing for TECEone

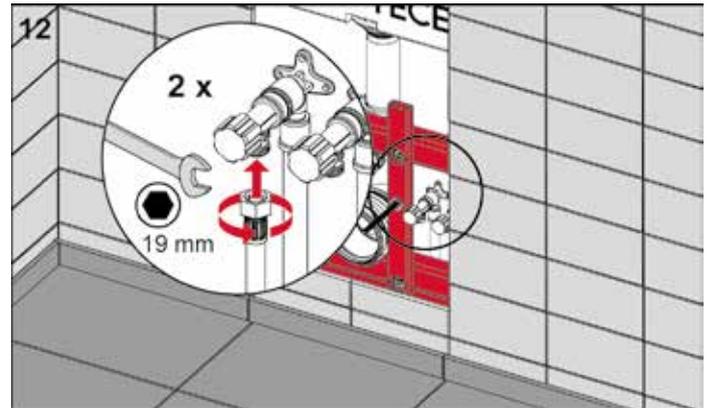
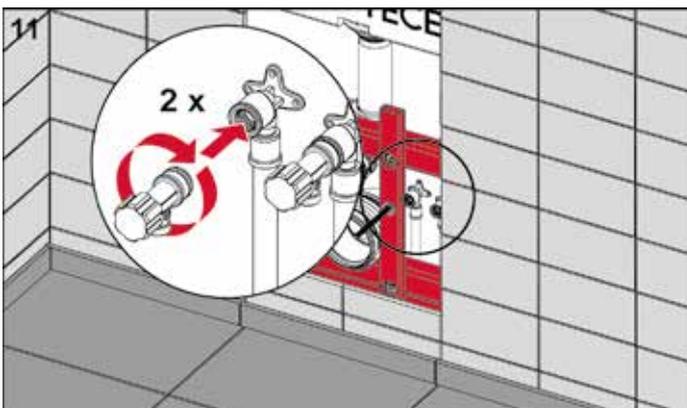
When using a TECEone with a TECElux module, a power supply is only necessary if a “sen-Touch” flush plate is used.



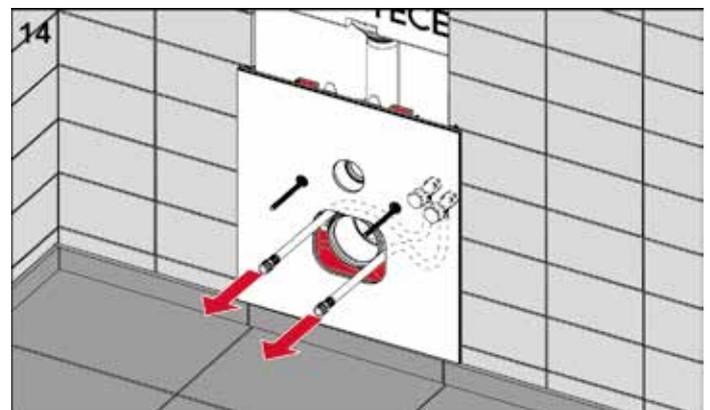
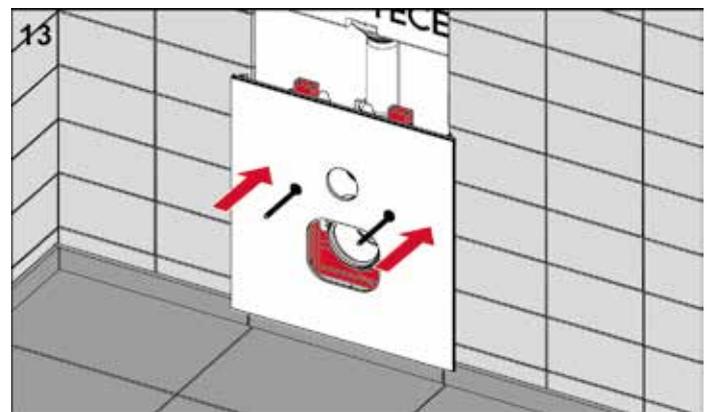
Position of socket and corner valve with TECEone

For the corner valve, we recommend the position shown at the top as, in this way, accessibility can be provided by lifting off the upper flush plate.

After the preparation phase – see assembly steps 1 to 10 at the start of this section, the glass facing can actually be installed:

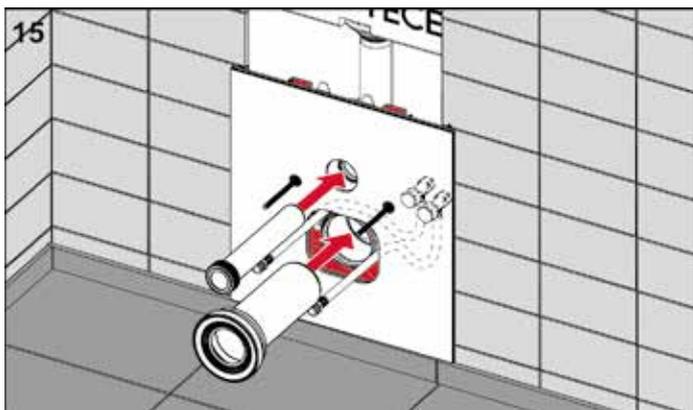


Screw in both corner valves and screw the enclosed reinforced hoses onto the corner valves.

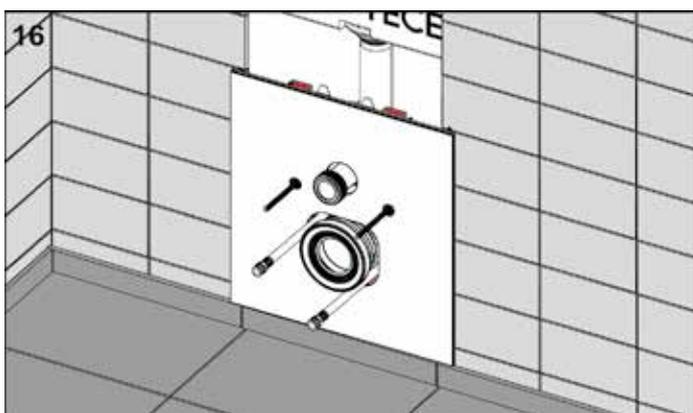


Mount the glass facing and guide the reinforced hose through the large opening on the glass facing to the front.

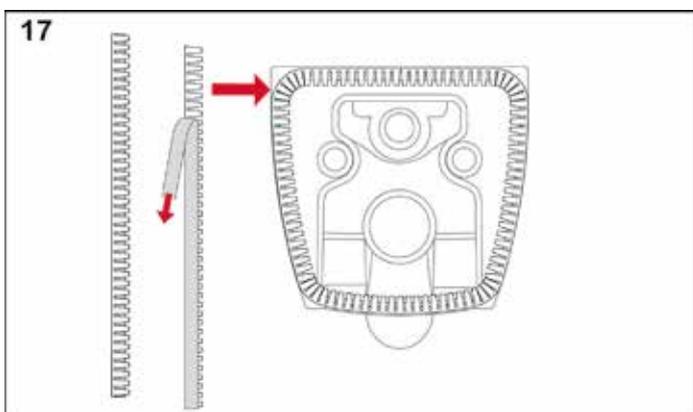
TECElux – Fine installation



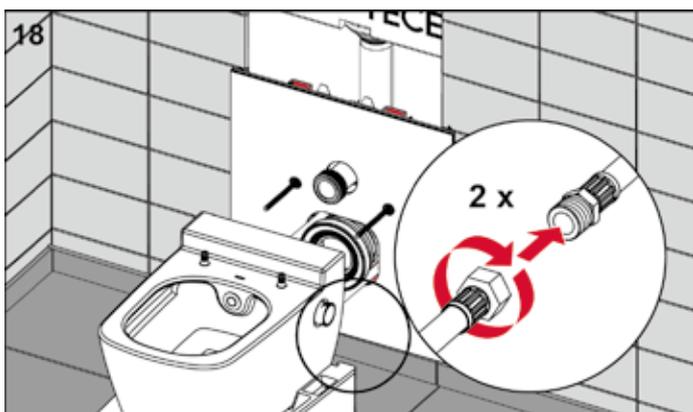
All the other assembly steps are described in detail in the instructions of the respective shower toilet manufacturers.



Cut the toilet connection set to a suitable length and insert.



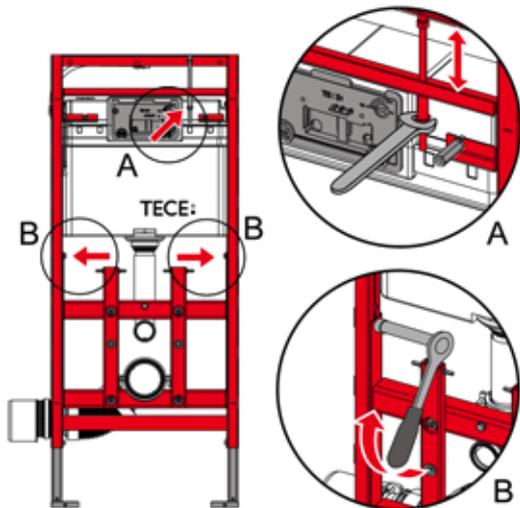
Mount the sound insulation strips on the ceramic.



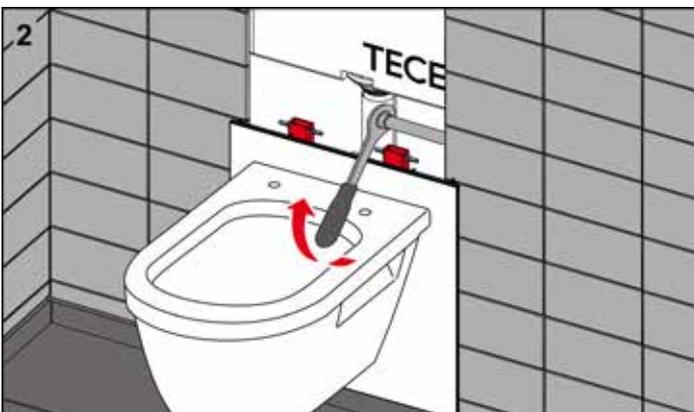
Connect the reinforced hoses to the TECEone connection hoses.

“m-Lift” height adjustment

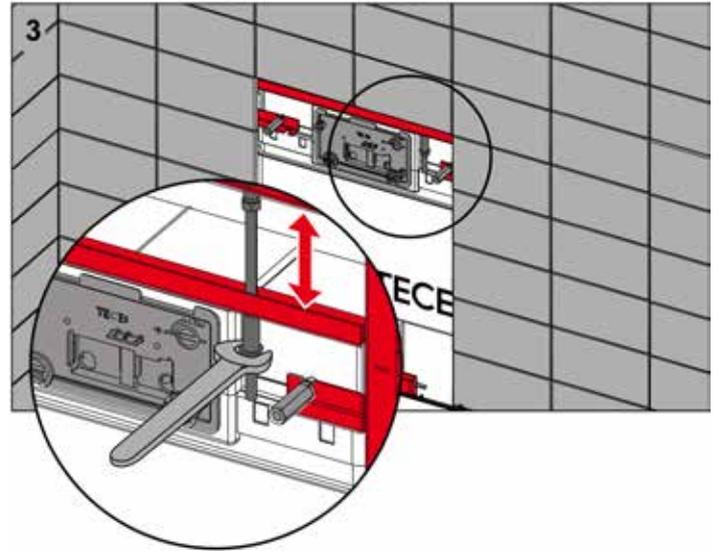
In the case of modules with manual “m-Lift” height adjustment, the adjustment is carried out by means of an easily accessible adjusting screw (A).



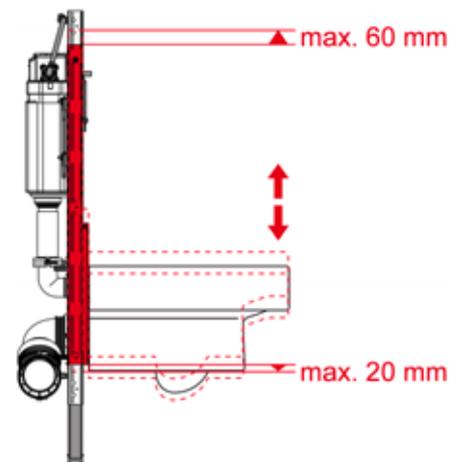
If a toilet ceramic is already mounted, slightly loosen the nuts attaching the ceramic.
The side retainers (B) must first be removed.



The height can then be adjusted via the adjusting screw. For “quick adjustment”, the ceramic can also be raised slightly. Final adjustment is then carried out using the adjusting screw.



On TECElux modules 200 and 400, it is possible to lower the height 20 mm downwards or raise it 60 mm upwards – compared with the module frame's factory settings.

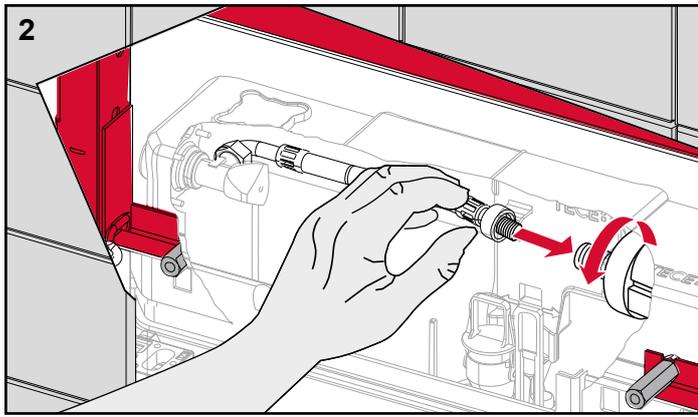
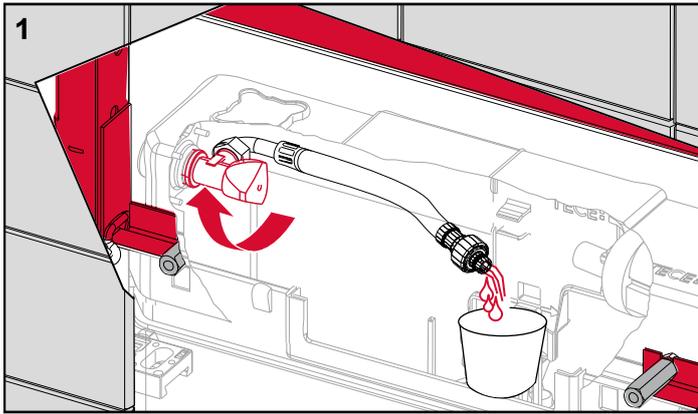


After adjusting the height, tighten the two side restraining screws back up again.

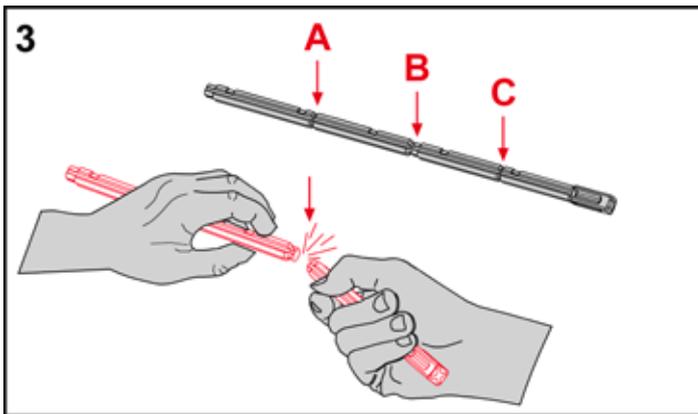


TECElux – Fine installation

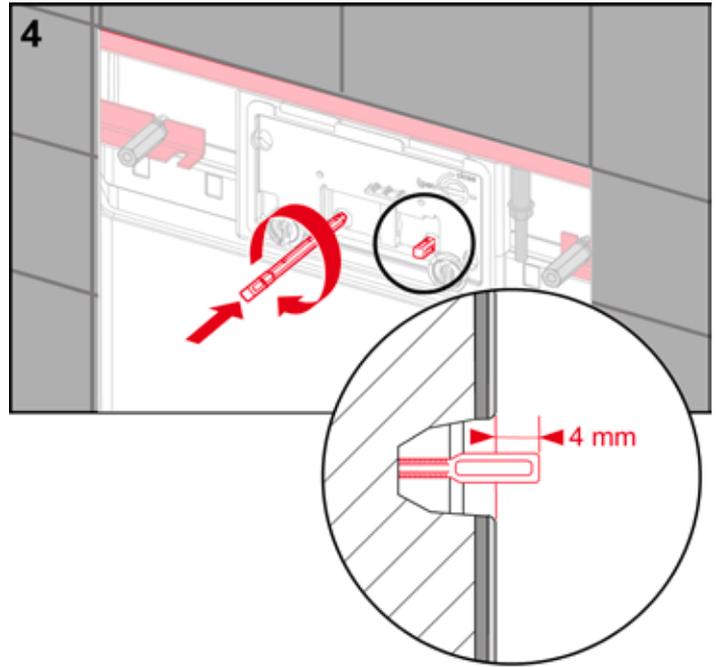
Upper glass facing with manual actuation unit



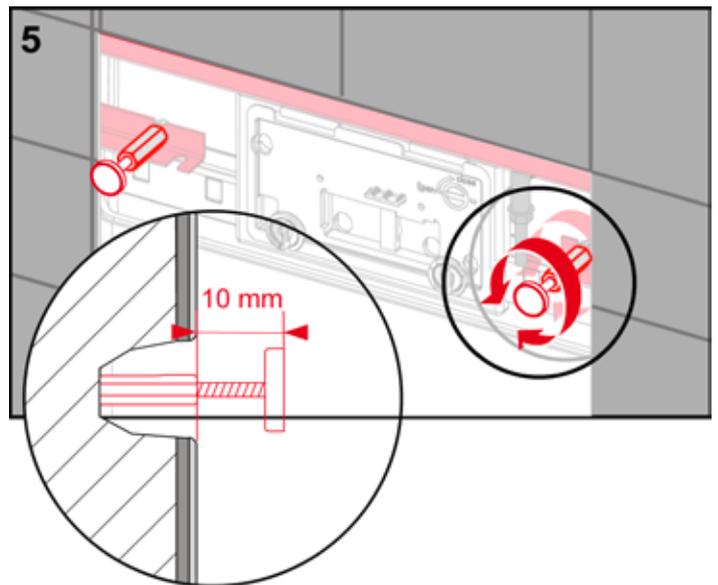
Sufficiently flush out the connecting pipe and screw on to the filler valve.



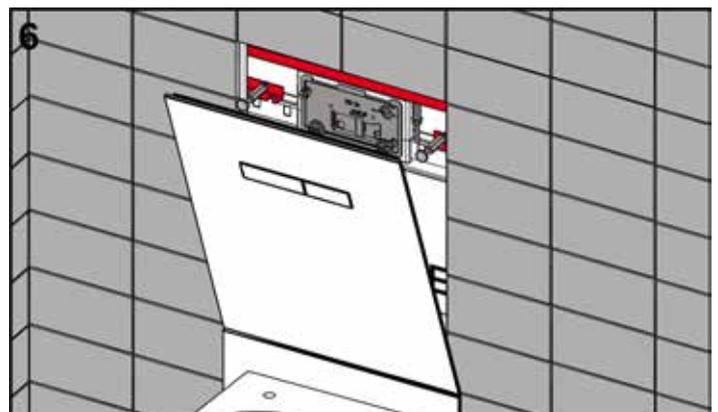
Cut the actuating rod to a suitable length.



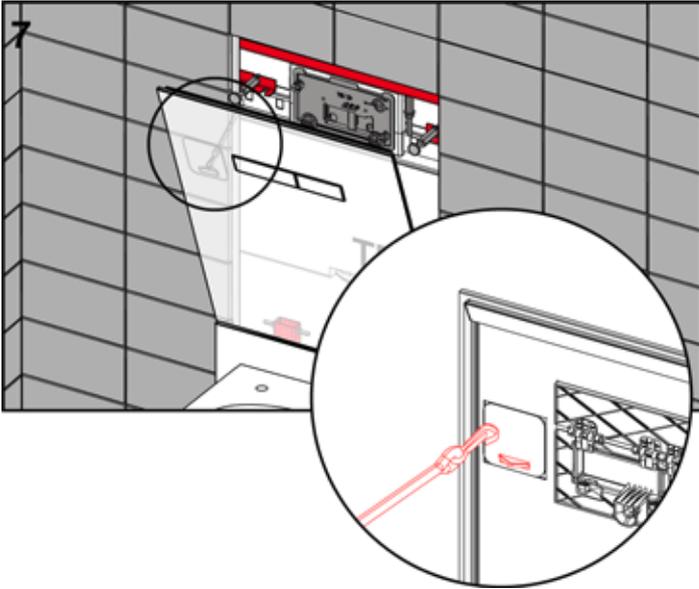
Screw in the actuating rods – 4 mm in front of the wall surface.



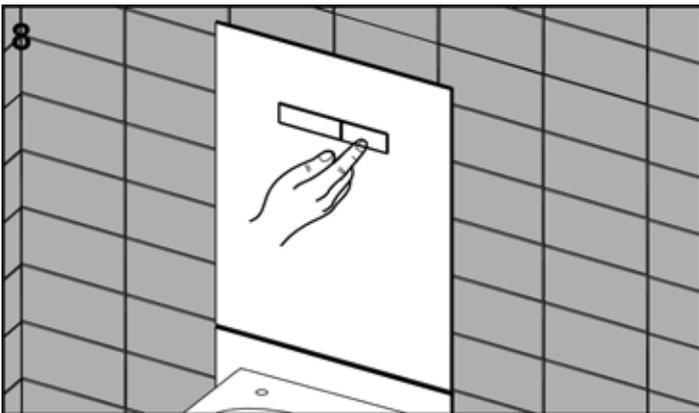
Screw in both magnetic holders – 10 mm in front of the wall surface.



Insert the upper flush plate into the supports.



Attach the glass facing with backup tape (hook the snap hook into the eyelet).

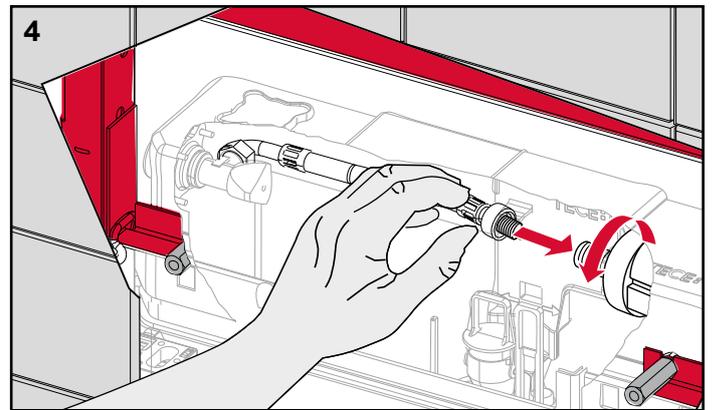
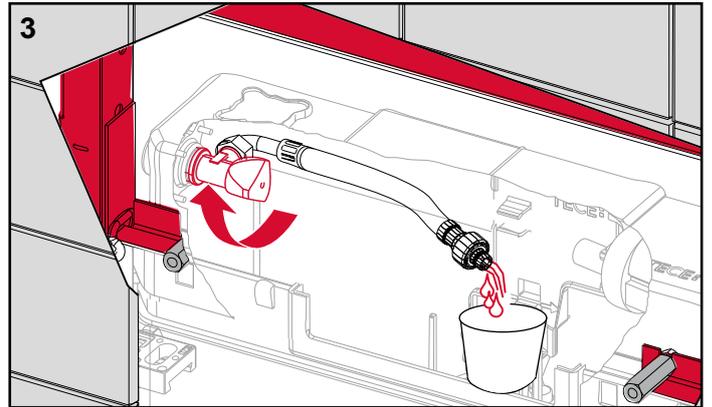


Lift up the glass facing and carry out a function test on the flushing system.

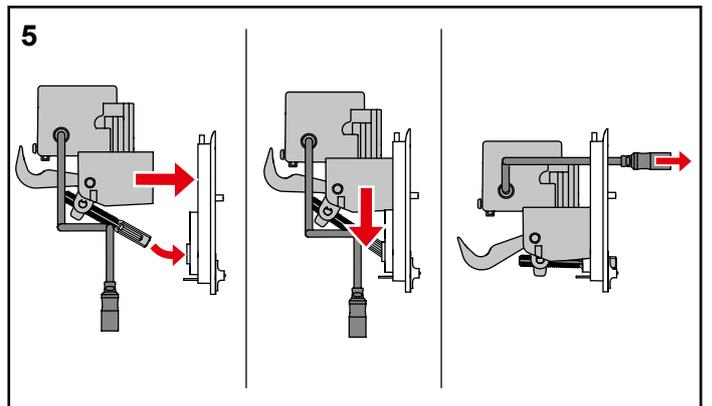


Fill the gap between the ceramic and the glass facing with permanently elastic joint sealant.

Upper glass facing with electronic actuation

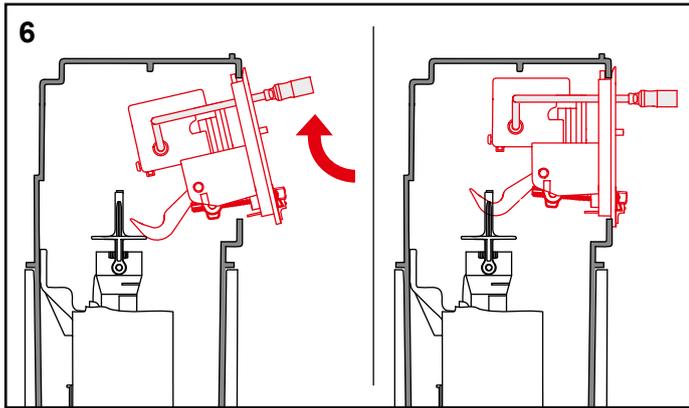


Remove the splash guard, sufficiently flush out the connecting pipe and screw onto the filler valve.

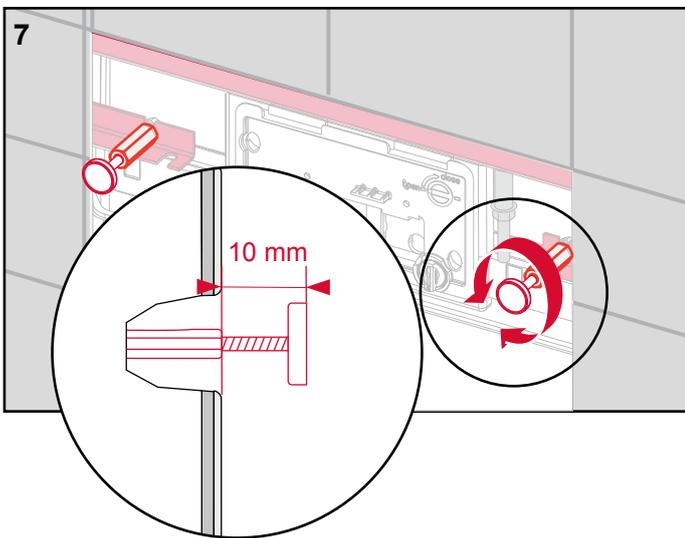


Push the actuation motor onto the splash guard.

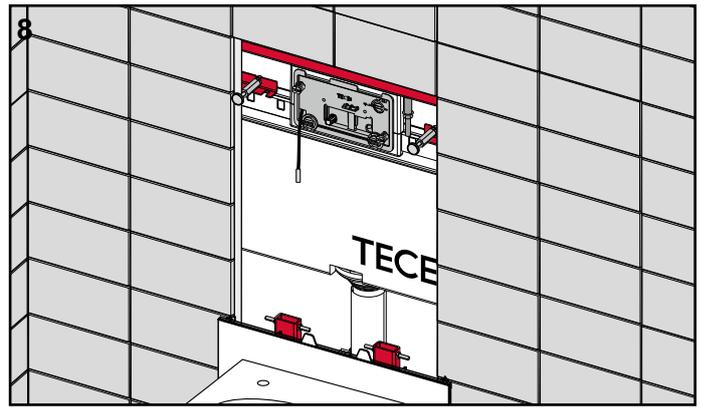
TECElux – Fine installation



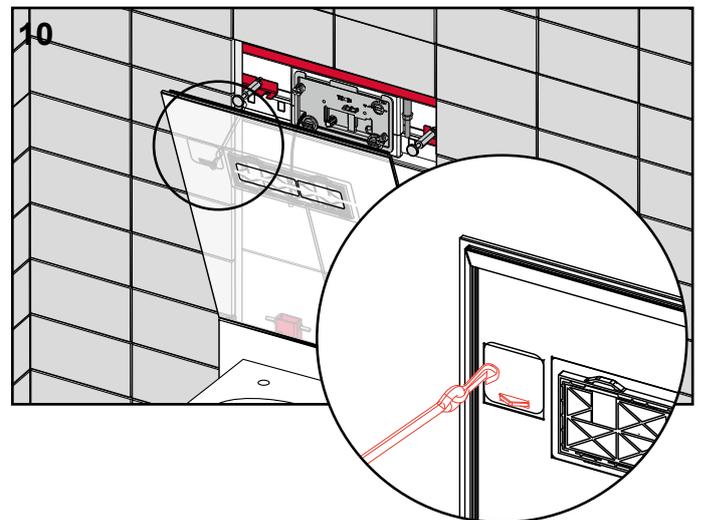
Insert the splash guard with the electrical actuation motor (included in the upper glass facing's scope of delivery of the). No conversion of drain valve required.



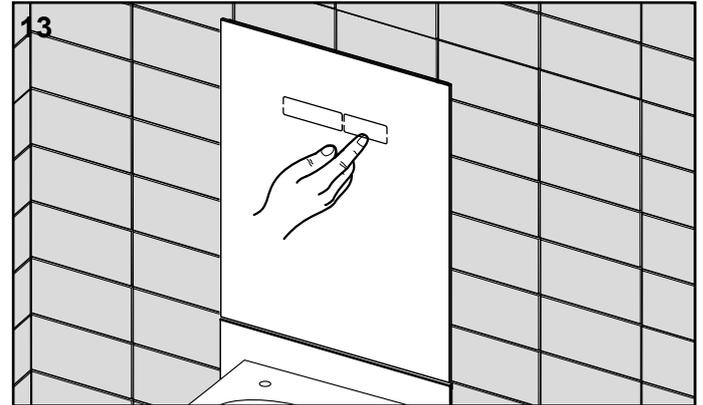
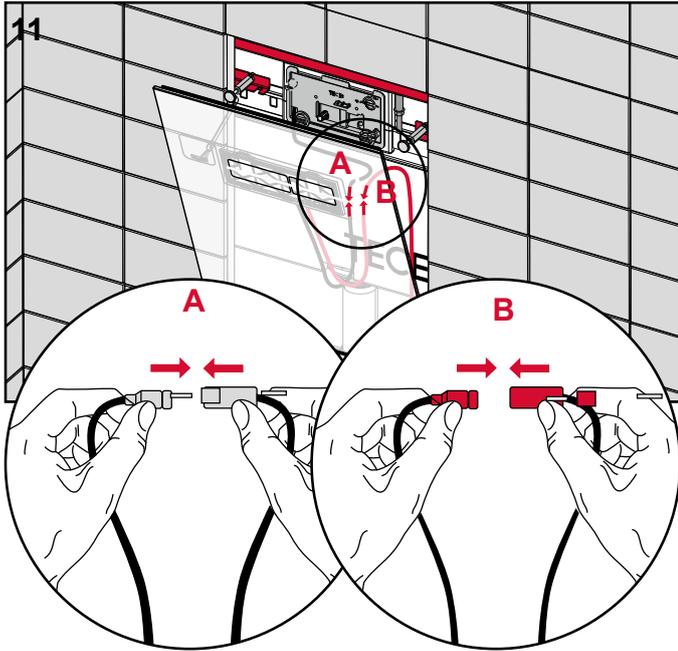
Screw in both magnetic holders – 10 mm in front of the wall surface.



Insert the upper flush plate into the supports and lift up.



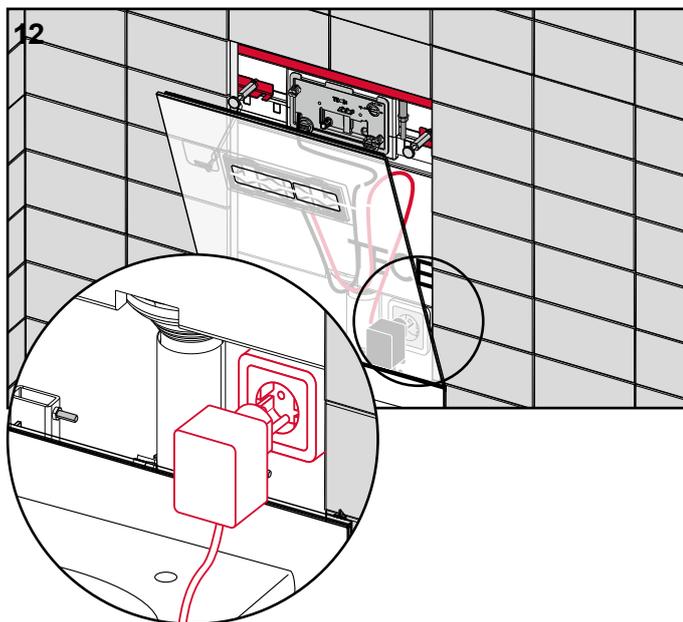
Attach the glass facing with backup tape (hook the snap hook into the eyelet).



Carry out a function test on the flushing system or program the electronics.

Connect the appropriate plug-in contacts:

- grey: actuation motor
- black: ceramic-Air odour extraction (if there is one)
- red: plug-in power pack



Plug the plug-in power pack into the socket.

TECElux – Fine installation

Programming the sen-Touch electronics

The sen-Touch electronics can be programmed within the first hour after connecting up to the power supply. In the event of a power failure, the last settings saved are retained. Each configurable function is assigned a position on one of the two touch fields.

Large touch field:



Position	Function
1	Factory setting
2	Hygiene flush off
3	Hygiene flush 24 h
4	Hygiene flush 56 h
5	Hygiene flush 84 h
6	Hygiene flush 168 h
7	Hygiene flush 336 h
8	Hygiene flush 672 h
9	Illumination level 1 very bright
10	Illumination level 2 standard
11	Illumination level 3 dimmed
12	Illumination level 4 darker
13	Automatic flush off
14	Safety flush on

 = factory setting

Small touch panel:



Position	Function
1	Identification very short-distance
2	Identification short-distance
3	Identification standard
4	Subsequent odour extraction 5 min
5	Subsequent odour extraction 2 min
6	Subsequent odour extraction 1 min
7	Subsequent odour extraction off
8	Fan setting, extra quiet
9	Fan setting, standard
10	Fan setting power
11	Cleaning function on
12	Cleaning function off
13	Activate illumination 20 sec*
14	Activate illumination 2 mins
15	Activate illumination 3 mins
16	Activate illumination 4 mins
17	Activate illumination 5 mins
18	Activate illumination permanently*

 = factory setting

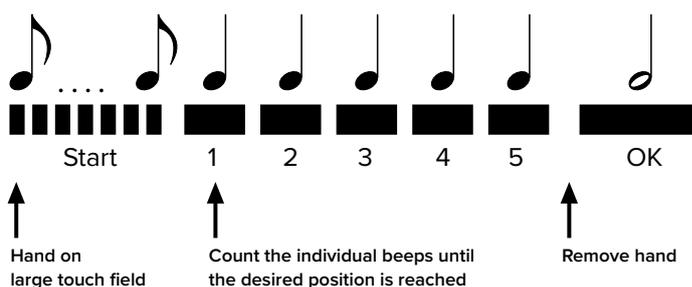
* function only for exhibitions

Procedure

This is how to program the sen-Touch electronics:

- Touch the large or small touch field with your hand. Programming mode starts after 10 seconds with a quick series of short beeps.
- After the start-up phase, a sequence of the same beeps can be heard. Count these – with your hand on the button – until you reach the required function.
- Now remove your hand; a long beep can be heard.

Example: Setting the hygiene flush to 84 hours.



Cleaning function

When the cleaning function is activated, the touch panel is deactivated for 30 seconds (prerequisite: function 11 is selected on the small touch field).

- Activating the cleaning function:
Touch both touch fields at the same time for 7 seconds. Once this time has elapsed, the previously set functions are automatically available again.

The cleaning function can only be activated in standard mode and not during the programming phase.

Safety flush

When the automatic flush function is activated, an automatic flush is carried out 2 minutes after the last time a person was detected in the recognition range.

Only use this function in public toilets with cubicles!

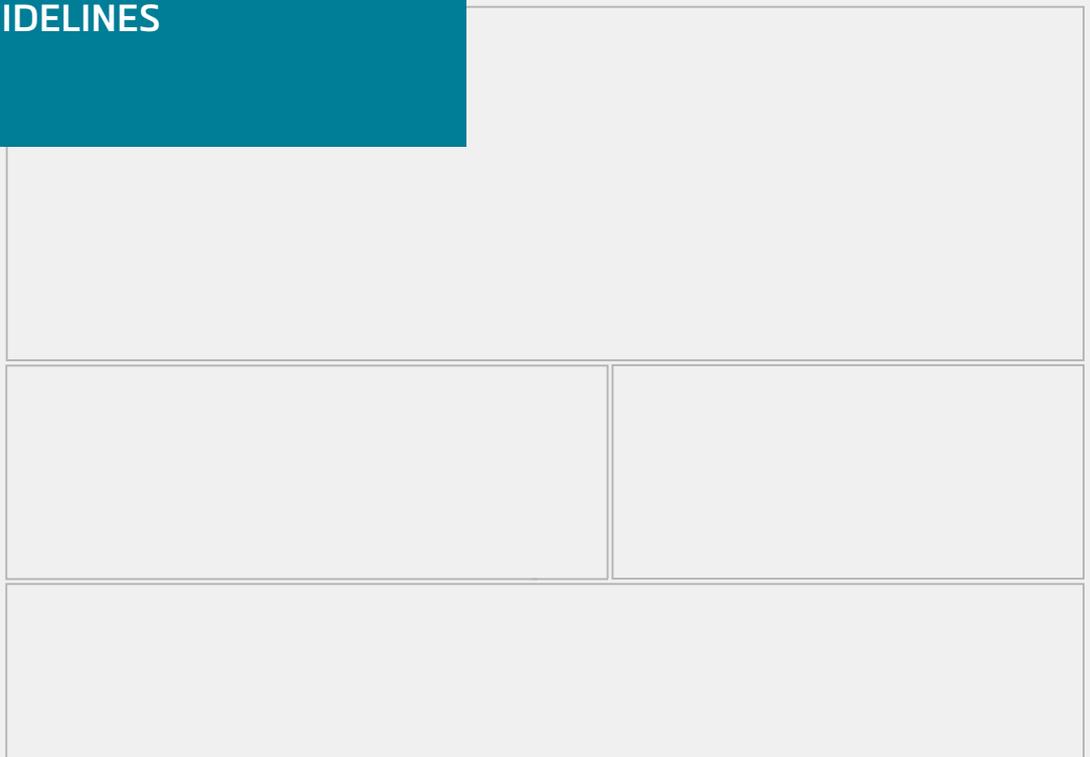
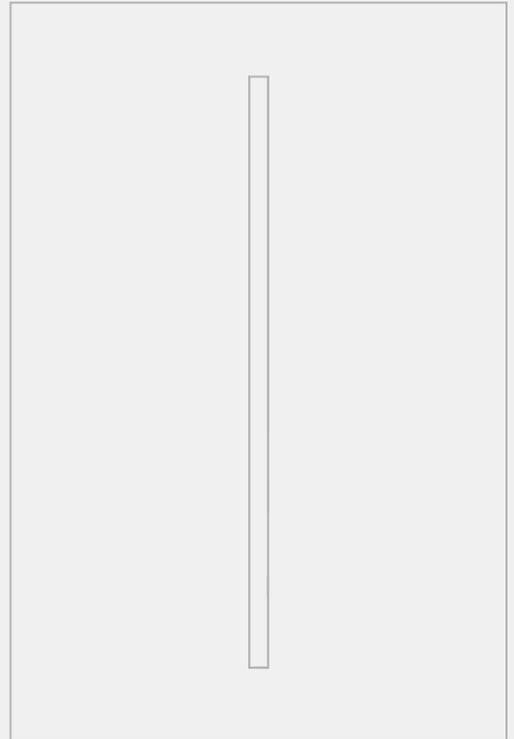
Manual flush

It is possible to flush the toilet without power — e.g. following a power failure: To do so, remove the upper glass facing from the wall and press the red actuation rod.

Sanitary systems

FLUSH PLATES

TECHNICAL GUIDELINES



Overview	2-4
Cleaning TECE flush plates	2-5
TECEantibac	2-5
Flush-mounted installation	2-6
Dry-wall – toilet flush plate	2-6
Installing the toilet flush plate in a dry-wall	2-6
Brick-wall – toilet flush plate	2-9
Installing the toilet flush plate in a brick-wall	2-9
Dry-wall – urinal flush plate	2-12
Installing the urinal flush plate in a dry-wall	2-12
TECElux Mini	2-15
Wall-mounted installation of the toilet flush plate	2-15
Flush-mounted installation of the toilet flush plate	2-18
Installing the transformer with connection cable	2-20
Programming the electronics	2-22
Installing the anti-theft device	2-23
TECEsquare	2-24
Installing the TECEsquare II metal toilet flush plate	2-25
Wall-mounted installation of the glass toilet flush plate	2-27
Flush-mounted installation of the glass toilet flush plate	2-29
Wall-mounted installation of the glass urinal flush plate	2-30
Flush-mounted installation of the glass urinal flush plate	2-32
Installing the metal urinal flush plate	2-34
TECEloop	2-35
Wall-mounted installation of the plastic toilet flush plate	2-35
TECEloop modular system	2-37
Wall-mounted installation of the glass toilet flush plate	2-37
Flush-mounted installation of the glass toilet flush plate	2-37
Wall-mounted installation of the plastic urinal flush plate	2-39
Wall-mounted installation of the glass urinal flush plate	2-40
Flush-mounted installation of the glass urinal flush plate	2-41
TECEplanus	2-42
Installing the toilet flush plate	2-42
Installing the urinal flush plate	2-43
TECEplanus infrared electronics	2-45
Toilet infrared electronics	2-45
Programming the toilet infrared electronics	2-45
Installing the toilet infrared electronics, 6 V battery	2-46
Installing the toilet infrared electronics, 12 V mains	2-48

TECEplanus urinal infrared electronics	2-49
Programming the urinal infrared electronics	2-49
Technical data	2-51
Installing urinal infrared electronics for the U 1 urinal flusher, 6 V battery	2-52
Installing the urinal infrared electronics, 12 V mains	2-54
TECEplanus electronics, remote release	2-57
TECEplanus radio switch	2-57
Toilet electronics, remote release, 6 V battery	2-59
Installing the toilet electronics, remote release, 6 V battery	2-59
Toilet electronics, remote release, 12 V mains	2-62
Installing the toilet electronics, remote release, 12 V mains	2-62
TECEplanus electronics, cable-connected remote release	2-66
Toilet electronics, cable-connected remote release, 6 V battery	2-66
Installing the toilet electronics, cable-connected remote release, 6 V battery	2-66
Toilet electronics, cable-connected remote release, 12 V mains	2-69
Installing the toilet electronics, cable-connected remote release, 12 V mains	2-69
TECEnow	2-73
Wall-mounted installation of the toilet flush plate	2-73
Flush-mounted installation of the toilet flush plate	2-74
Installing the urinal flush plate	2-76
Flush-mounted installation of the urinal flush plate	2-77
TECEambia	2-78
Installing the toilet flush plate	2-78
Installing the urinal flush plate	2-79
TECEbase	2-81
Installing the toilet flush plate	2-81
TECEfilo urinal	2-83
Bare wall – mounting and installation	2-84
Installing the wall-mounted TECEfilo urinal flush plate 230/12 V	2-84
Installing the flush-mounted TECEfilo urinal flush plate 230/12 V	2-87
Programming the urinal electronics	2-90
Toilet flush handle	2-92
Installing the rotary mechanism	2-92
Insert chute	2-95
Operating the insert chute	2-95
Installation dimensions for TECE flush plates	2-98

TECE flush plates – Overview

Overview

TECE flush plates come in a wide variety of shapes, materials and colours. The various materials meet the requirements of different application areas. These flush plates, with their robust actuation mechanism, can be installed from the front or from the top. TECE flush plates are some of the most compact models available on the market. Thanks to the cistern's special design, the mounting space inside is easily accessible, despite the flush plate's small size.

Overview of TECE flush plates



TECElux Mini



TECESquare II metal



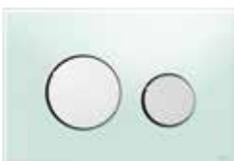
TECESquare glass



TECESquare metal



TECEloop plastic



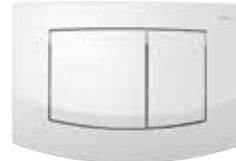
TECEloop glass



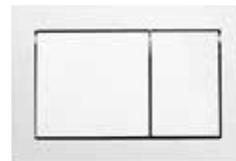
TECEplanus



TECEnow



TECEambia



TECEbase

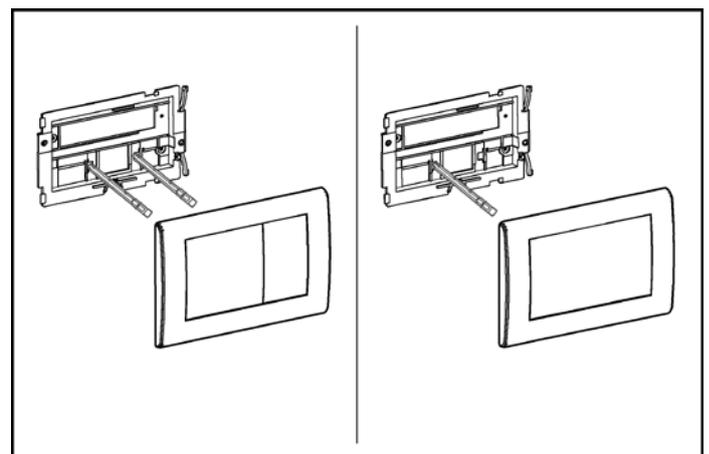


Toilet flush handle



Single and dual-flush technology

Depending on the flush plate, the TECE flush-mounted cistern offers the option of single or economic dual-flush technology. When installing a single-flush system, just one actuating rod is installed, whereas for a system with dual-flush technology, two actuating rods are installed.



Single and dual-flush technology (here, the TECEplanus model)

Cleaning TECE flush plates

To ensure that the surface of the flush plate retains its original appearance, we would ask you to pay attention to the following information:

- Always clean the flush plate with a soft cloth.
- Use warm water to clean the visible surfaces.
- To clean glass surfaces, you can also use a mild, colourless glass cleaning product.
- Do not spray the cleaning product directly onto the glass.
- Remove any dirt with a moist cloth, gently applying pressure.
- Never use frothy, aggressive cleaning agents or cleaning sponges.

TECEantibac

The “TECEantibac” versions of the TECEambia and TECE-loop (toilet and urinal) flush plates have antibacterial properties. They are only available in white. Both TECEantibac flush plates are available with single and dual-flush technology.

What is TECEantibac?

The TECEantibac flush plate is made of a new, high-tech

plastic containing microscopically small silver ions. The silver ions effectively prevent the spread of bacteria on the flush plate surface.

As the silver particles are distributed within the material, the effect continues throughout the plate's entire useful life. So it is more than just a coating. Therefore surface wear through use or cleaning does not impair the long-term effect.



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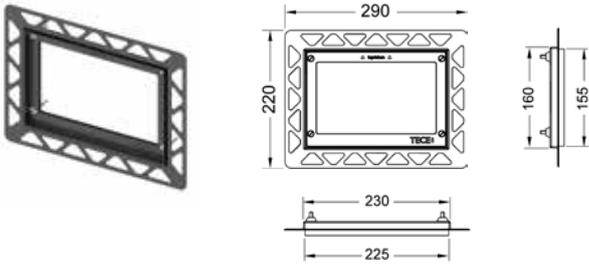
The antibacterial effect of the TECEantibac flush plates has been demonstrated in an expert report written by the Hohenstein Research Institute: “Under practical conditions, this test demonstrated that the TECEantibac product exhibits significant or strong antimicrobial activity”.

The measured reduction in germs achieved by TECEantibac was, on average, 99.7%. The test method used was the only standardised method that currently exists in accordance with the Japanese Industrial Standard JIS 2801:2000. This method is internationally acknowledged and used in Japan, the USA and Europe. The expert report can be requested from TECE.

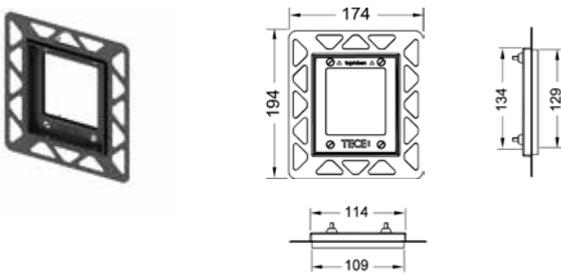
TECE flush plates – Flush-mounted installation

Flush-mounted installation

Flush-mounted installation is a distinctive characteristic of the TECElux Mini, TECEloop glass (toilet and urinal), TECESquare glass (toilet), and TECENow flush plates (installation including spacing frame). When using the installation frame, these flush plates can be flush-mounted as required both in dry-walls (toilet and urinal) and in brick-wall structures (toilet).



Flush-mounted installation frame for toilet flush plate



Flush-mounted installation frame for urinal flush plate

Dry-wall – toilet flush plate

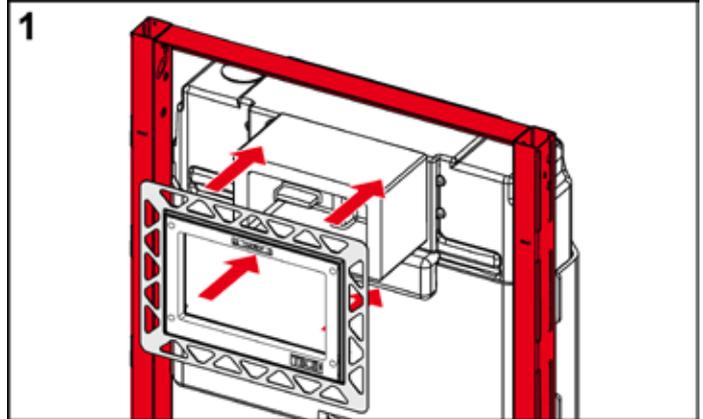
The TECEprofil dry-wall module and the toilet installation frame are required for installation in dry-wall structures. Dry-wall modules of all installation heights can be combined with the flush-mounted installation frame.

Components required:

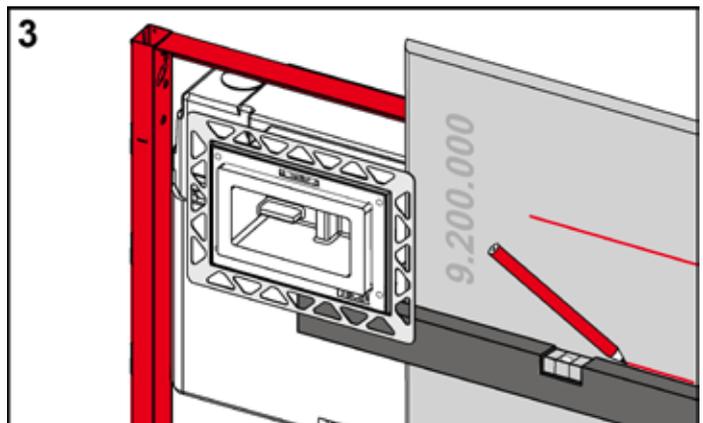
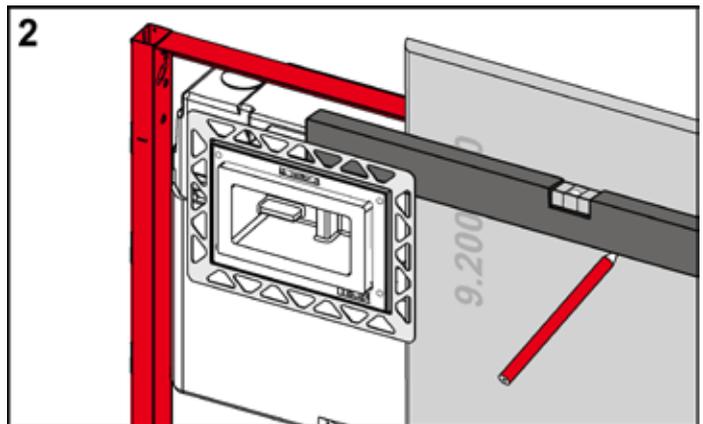


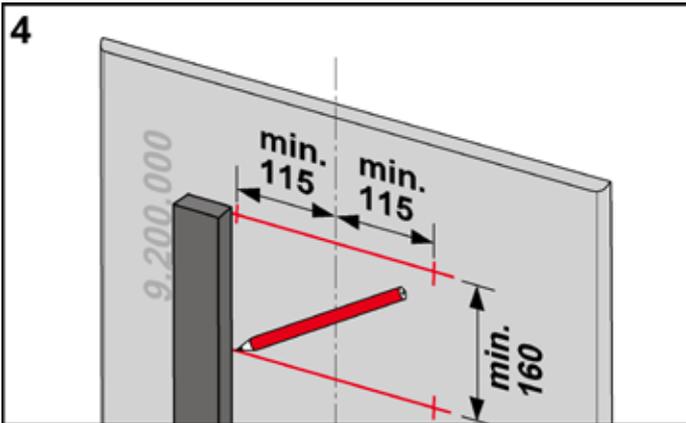
Installing the toilet flush plate in a dry-wall

To insert the flush-mounted installation frame into the plasterboard, a recess for the cistern's inspection opening must be made in the plaster board.

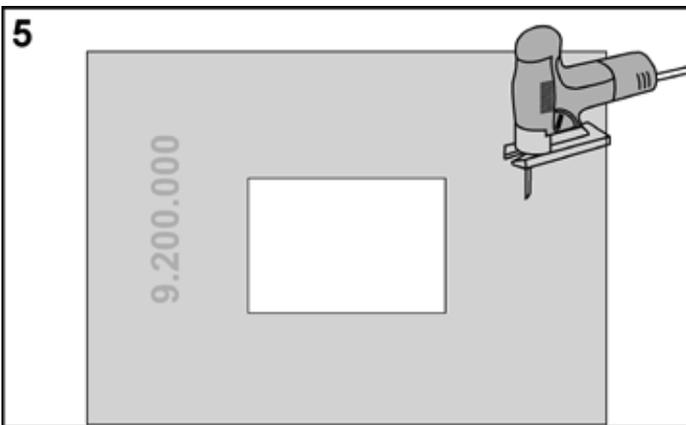


To do this, place the installation frame over the polystyrene bare-wall protection.

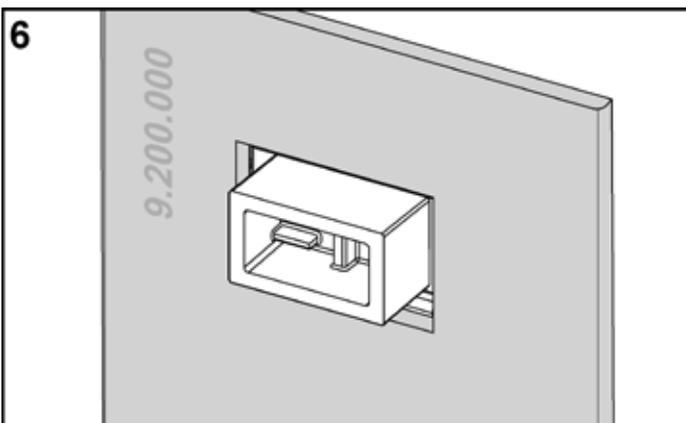




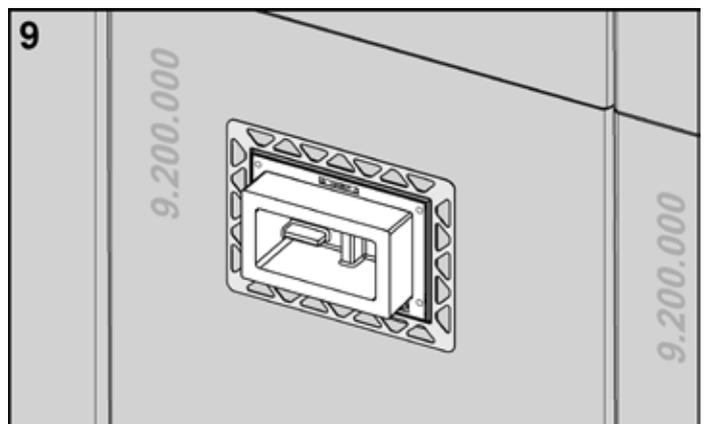
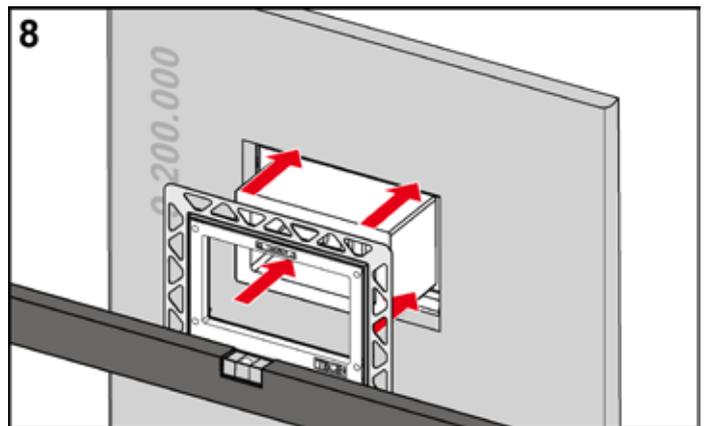
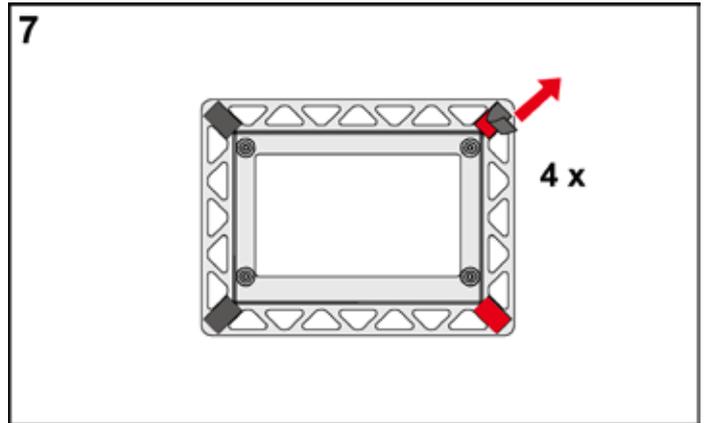
Mark the dimensions of the inside of the installation frame – width 230 mm, height 160 mm – in the centre of the plasterboard.



Saw the required opening for the installation frame in the board.

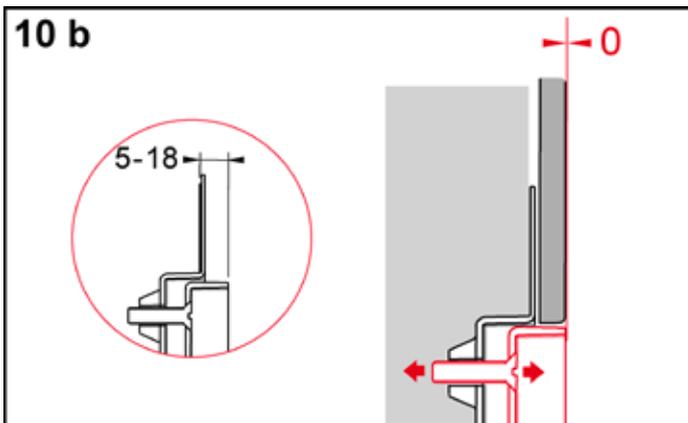
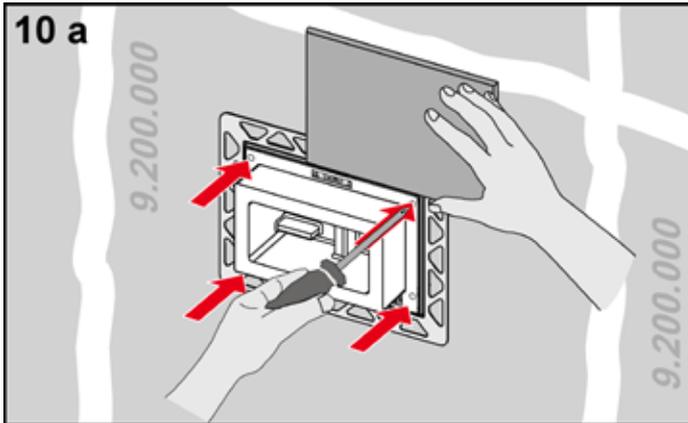


Screw the plasterboard centrally over the module.

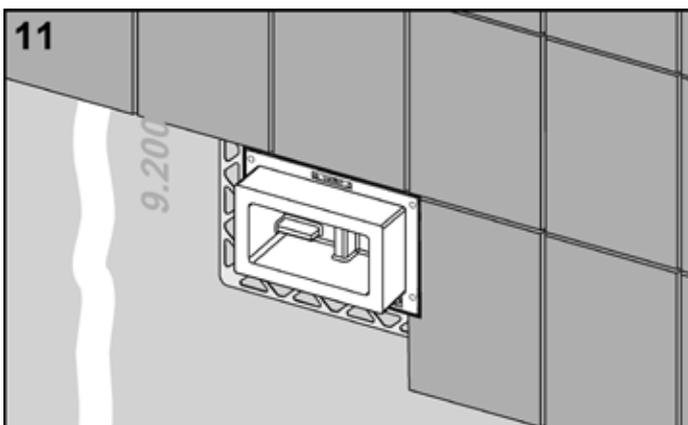


Remove the protective foils from the bonding surfaces on the installation frame, and stick them, together with those of the support frame, onto the plasterboard. Observe the correct position of the “TOP” marking, and ensure horizontal alignment.

TECE flush plates – Flush-mounted installation



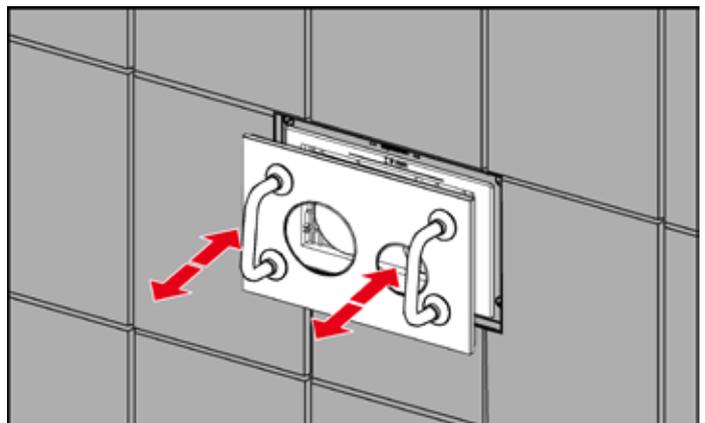
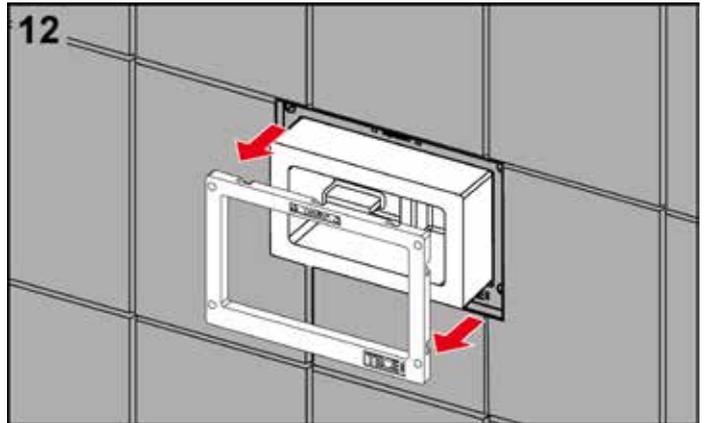
Adjust the depth of the installation frame to the tile thickness (5–18 mm). If the wall structure is thicker (up to 33 mm), as is the case for example with natural stone, you can use a suitable upgrade kit (order no. 9820181).



After adjusting the depth, you can tile right up to the installation frame.

Tip:

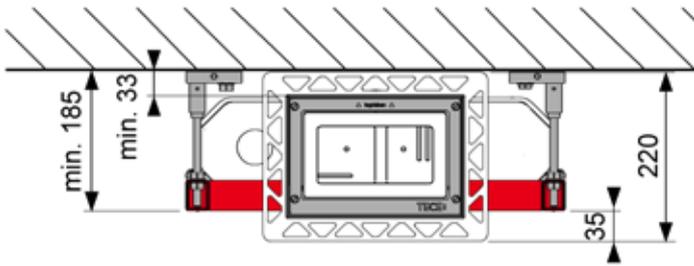
To obtain a perfect tile edge around the installation frame, TECE recommends cutting the tiles with a water jet cutter.



Remove the support frame and polystyrene bare-wall protection. Then mount the matching support frame as described in the respective installation instructions (TECE-loop or TECESquare). Finally, insert the flush plate with the aid of the bow-type handles (supplied with the installation frame) into the flush-mounted installation frame.

Installation from above

The flush-mounted installation frame can also be used for top actuation. Installation is the same as installing the flush plate from the front. The frame must be mounted in the “reading direction” (= “TOP” lettering to the wall).

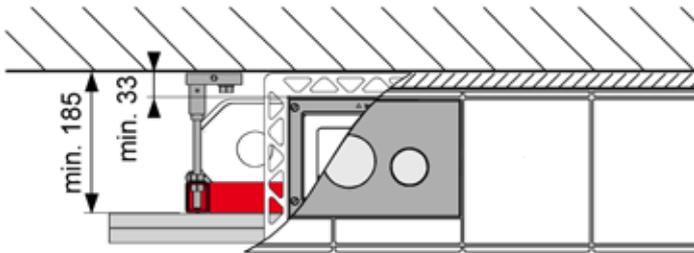


“Flush-mounted installation from above” – dimensions

However, thicker minimum panel facing is required due to the dimensions of the installation frame:

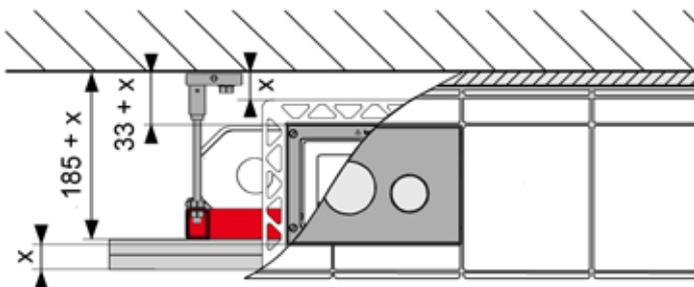
A **minimum panel facing of 35 mm** corresponds to a panel facing with

- 2 x 18 mm or
- 3 x 12.5 mm thick plaster board.



“Flush-mounted top actuation” installation – minimum wall structure

On a minimum wall structure, there is no space left between the installed flush plate and the wall (see picture above). However, for aesthetic reasons, an equal distance in front of and behind the flush plate is preferred (see picture below). This also applies to the installation of the TECESquare metal flush plate which has slightly larger dimensions.



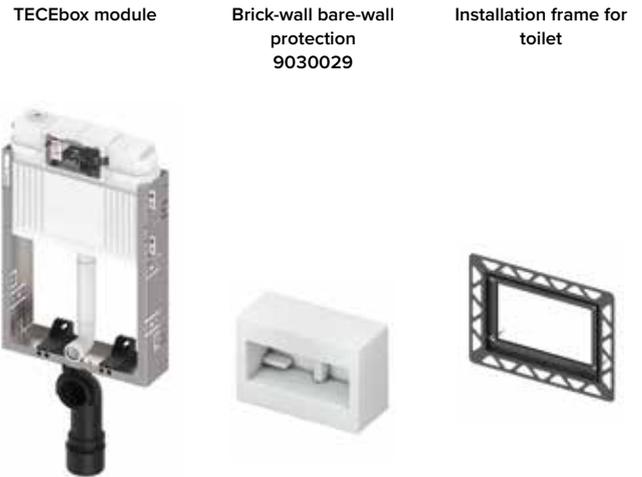
“Flush-mounted installation from above” – wall structure (suggestion)

Brick-wall – toilet flush plate

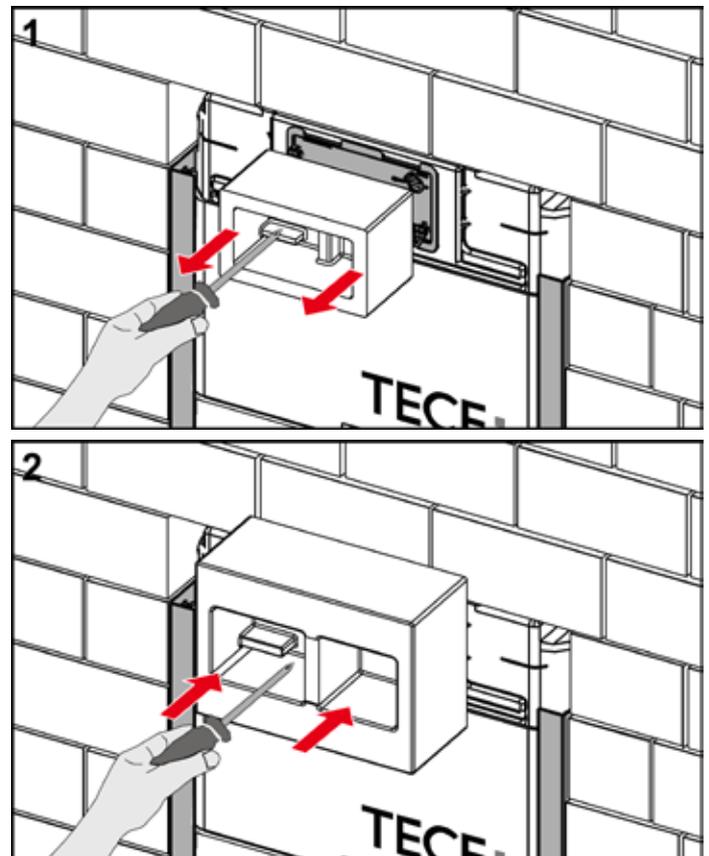
In contrast to the dry-wall, for the brick-wall, an extended bare-wall protection is required in addition to the TECEbox brick-wall mounted cistern.

However, TECE cisterns of all installation heights can also be used in brick-walls.

Components required:

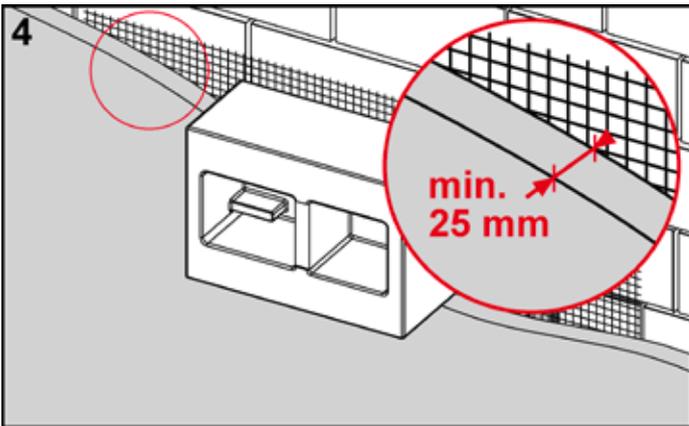
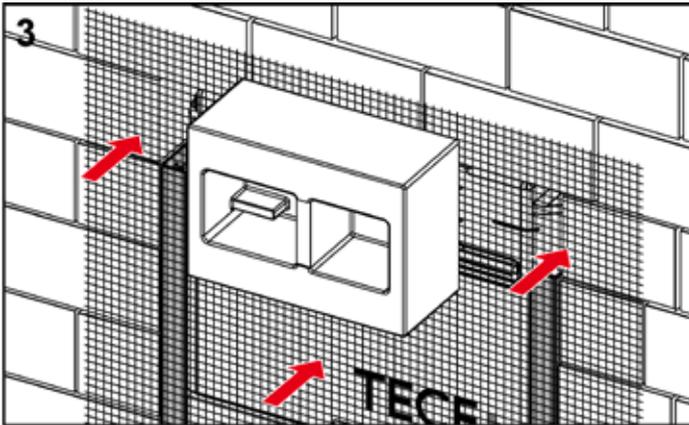


Installing the toilet flush plate in a brick-wall

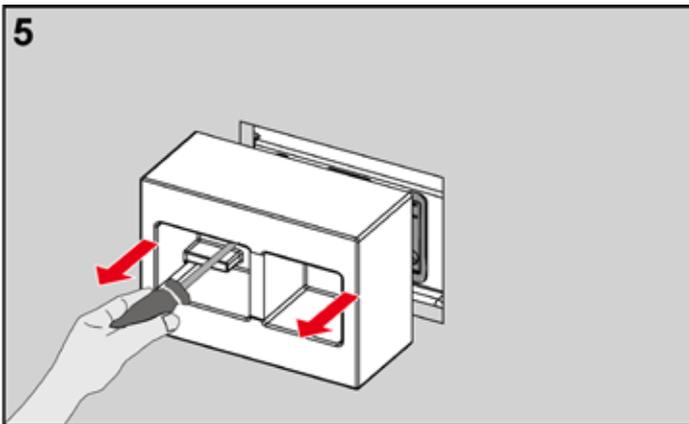


Remove the standard bare-wall protection and mount the larger brick-wall bare-wall protection for flush-mounted installations (order no. 9030029).

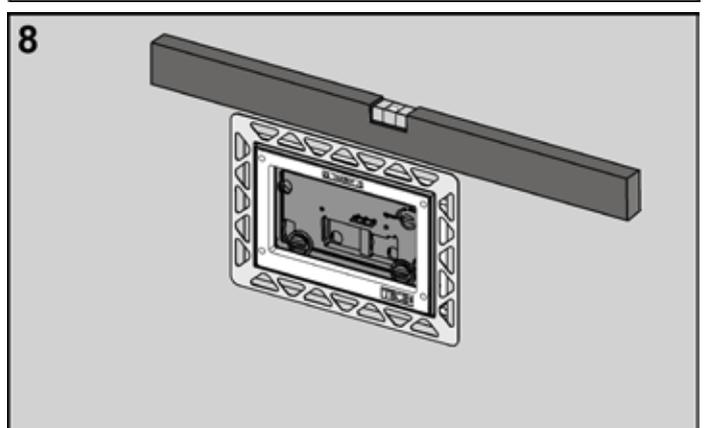
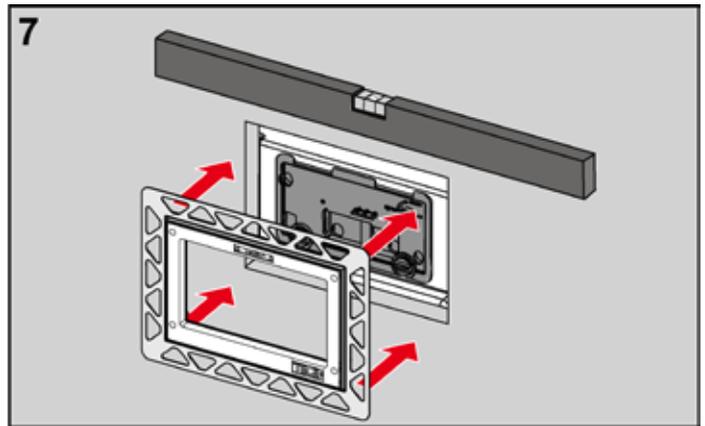
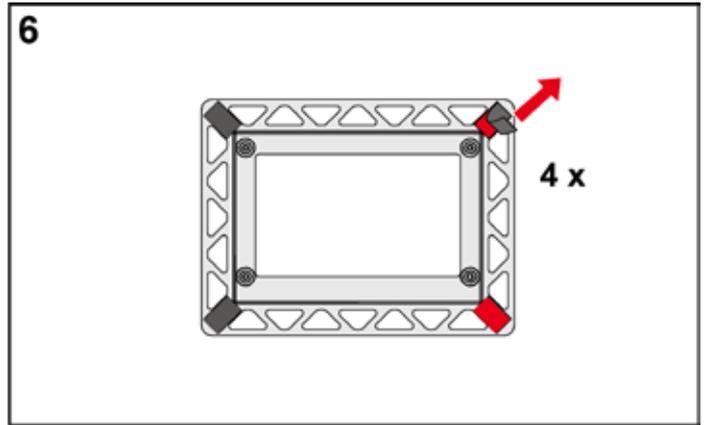
TECE flush plates – Flush-mounted installation



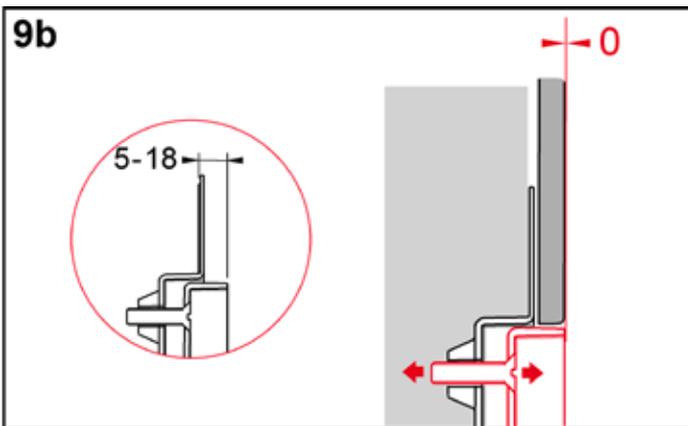
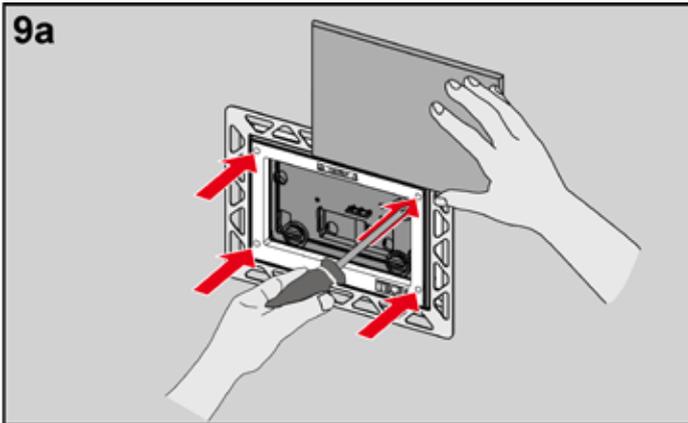
Mount the expanded metal, reinforcement fabrics or similar in the cistern area. Apply a layer of plaster of at least 25 mm thick (measured from the front edge of the splash guard) to the wall.



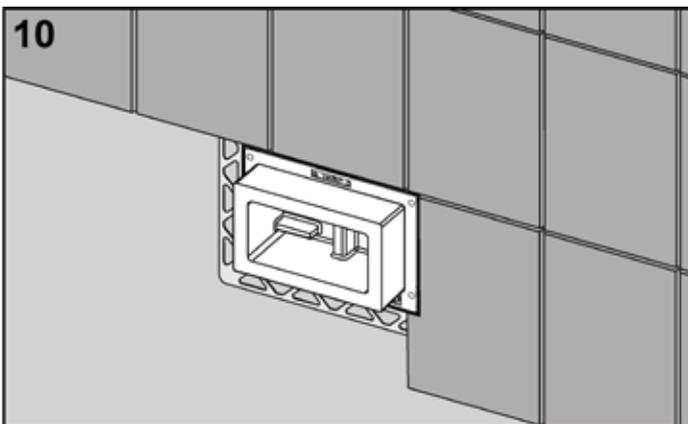
Remove the brick-wall bare-wall protection.



Remove the protective foils from the bonding surfaces on the installation frame, and stick them, together with those of the support frame onto the plastered surface. Observe the correct position of the "TOP" marking, and ensure horizontal alignment.



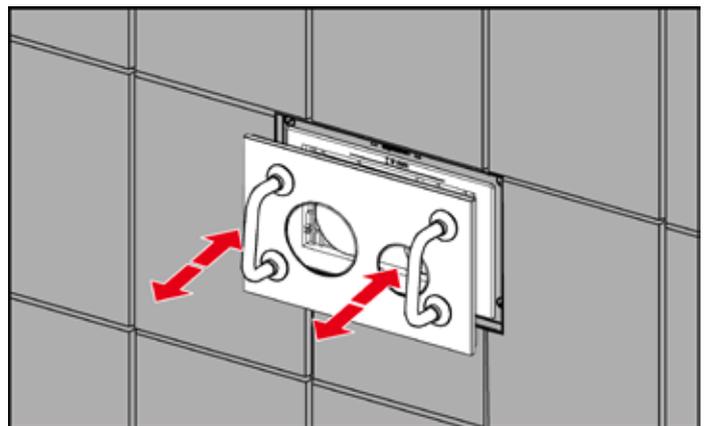
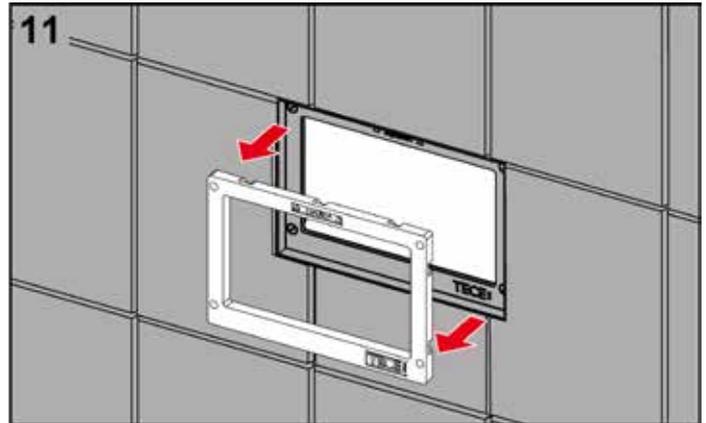
Adjust the depth of the installation frame to the tile thickness (5–18 mm). If the wall structure is thicker (up to 33 mm), as is the case for example with natural stone, you can use a suitable upgrade kit (order no. 9820181).



After adjusting the depth, you can tile right up to the installation frame.

Tip:

To obtain a perfect tile edge around the installation frame, TECE recommends cutting the tiles with a water jet cutter.

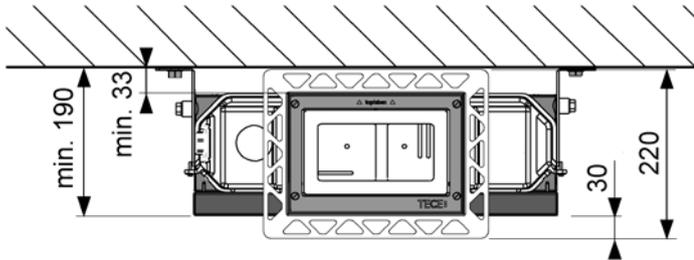


Remove the support frame and polystyrene bare-wall protection. Then mount the matching support frame as described in the respective installation instructions (TECE-loop or TECESquare). Finally, insert the flush plate into the flush-mounted installation frame with the aid of the bow-type handles. The handles are included in the installation frame's scope of supply.

TECE flush plates – Flush-mounted installation

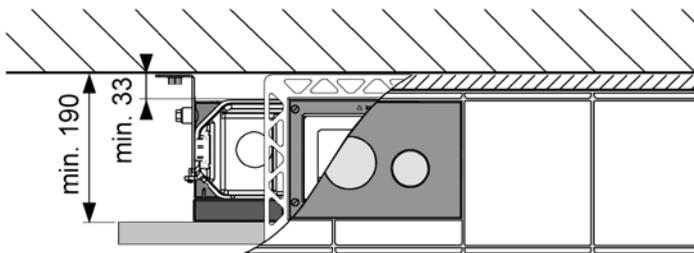
Installation from above

In a brick-wall structure too, the flush-mounted installation frame can be used to install the flush plate from the top. Installation is the same as installing the flush plate from the front. The frame must be mounted in the “reading direction” (= “TOP” lettering to the wall).



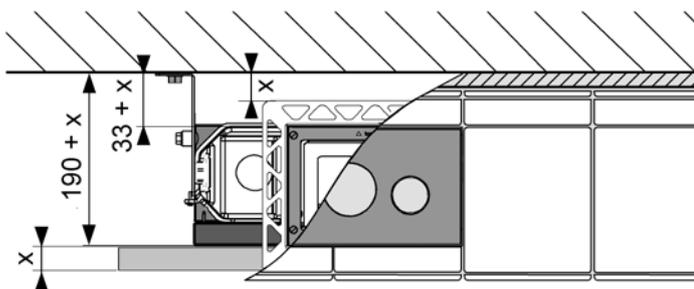
“Flush-mounted installation from above”– dimensions

Due to the installation frame's dimensions a thicker wall structure is necessary:
Minimum wall structure = 30 mm



“Flush-mounted installation from above” – minimum wall structure

On a minimum wall structure, there is no space left between the installed flush plate and the wall (see illustration above). However, for aesthetic reasons, an equal distance in front of and behind the flush plate is preferred (see illustration below). This also applies to the installation of the TECEsquare metal flush plate which has slightly larger dimensions.



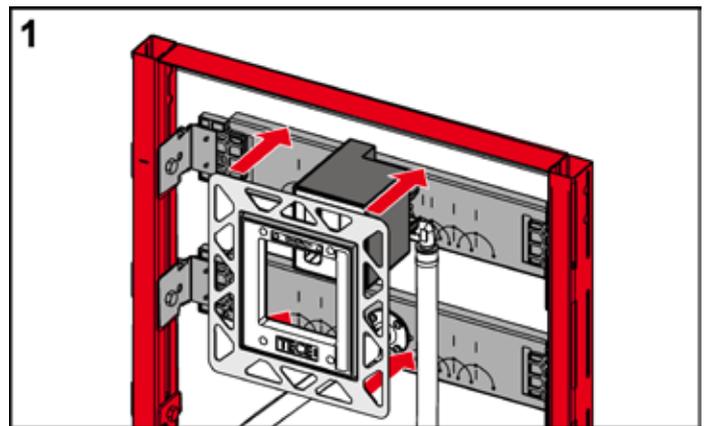
“Flush-mounted installation from above” – wall structure (suggestion)

Dry-wall – urinal flush plate

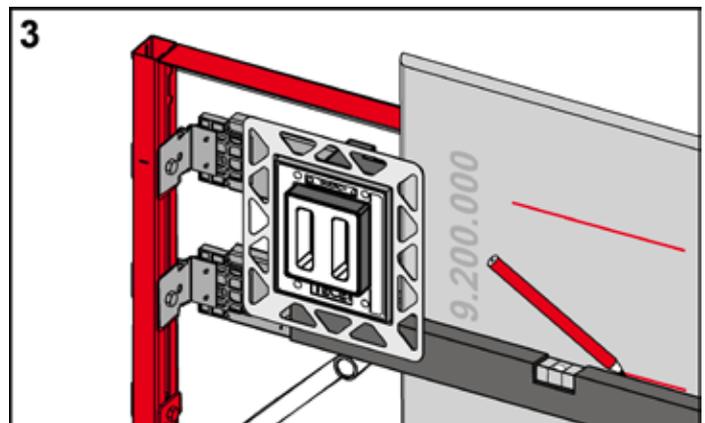
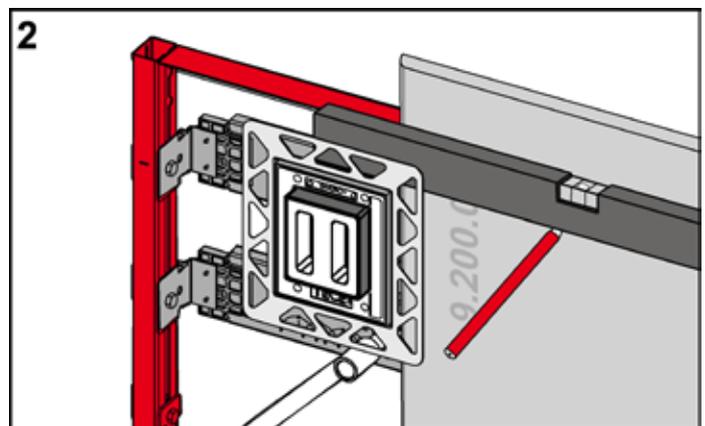
A flush-mounted installation frame also exists for urinals. The TECEloop urinal flush plate can be installed by flush-mounting this frame in dry-wall structures.

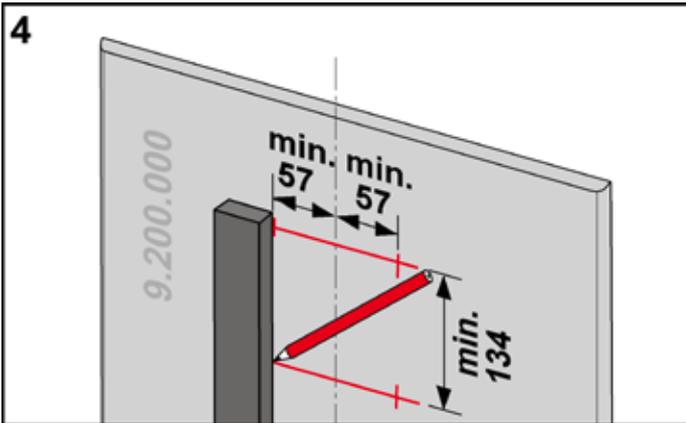
Installing the urinal flush plate in a dry-wall

To insert the flush-mounted installation frame into the plasterboard, a recess for the cistern's inspection opening must be made in the plaster board.

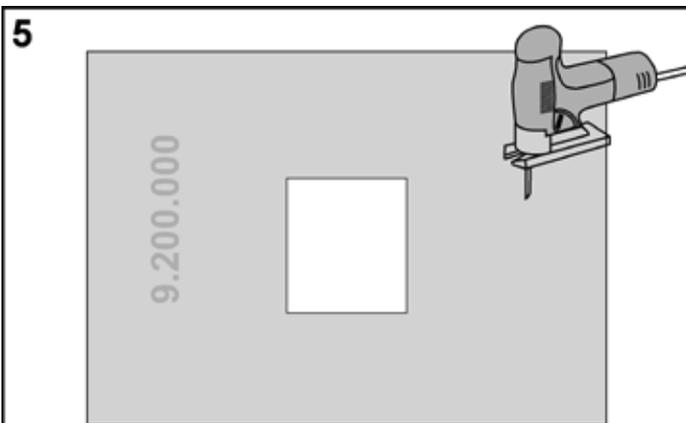


To do this, place the installation frame over the urinal bare-wall protection.

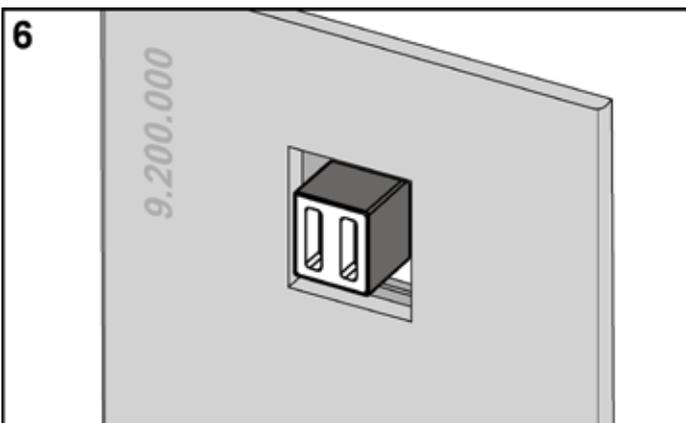




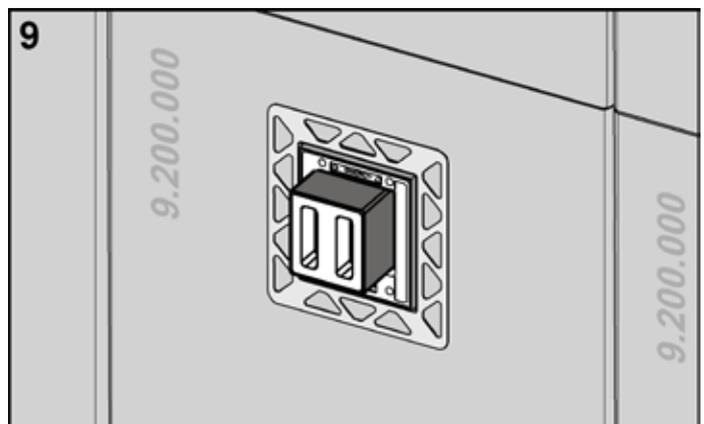
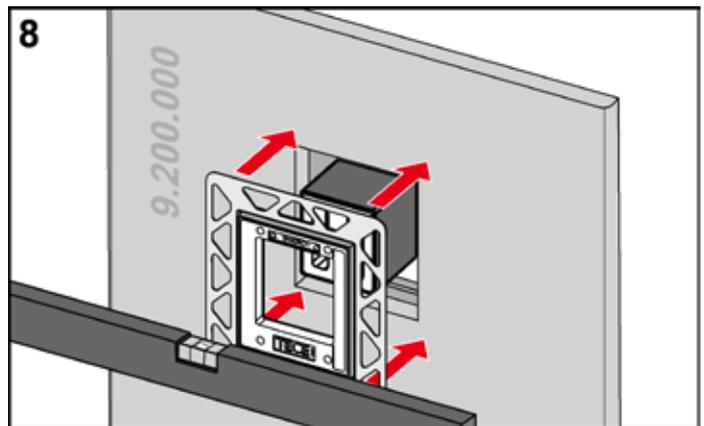
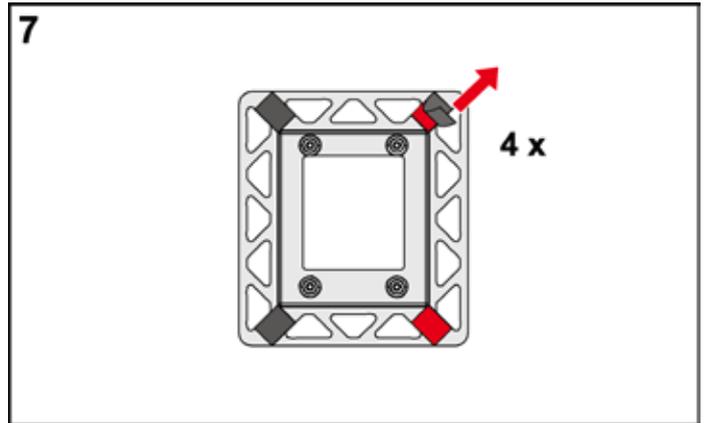
Mark the dimensions of the inside of the installation frame – width 114 mm, height 134 mm – in the centre of the plasterboard.



Saw the required opening for the installation frame in the board.

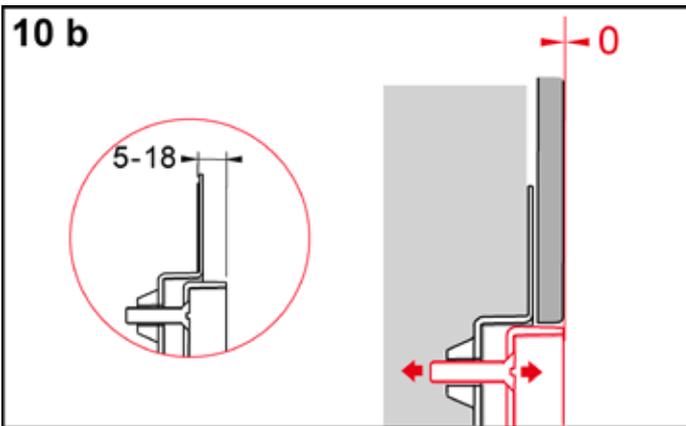
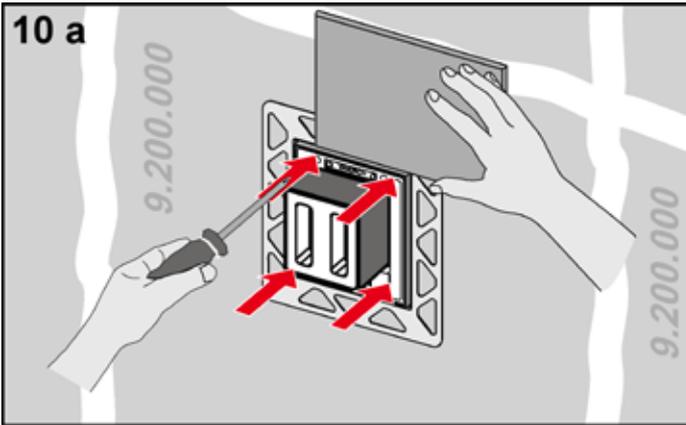


Screw the plasterboard centrally over the module.

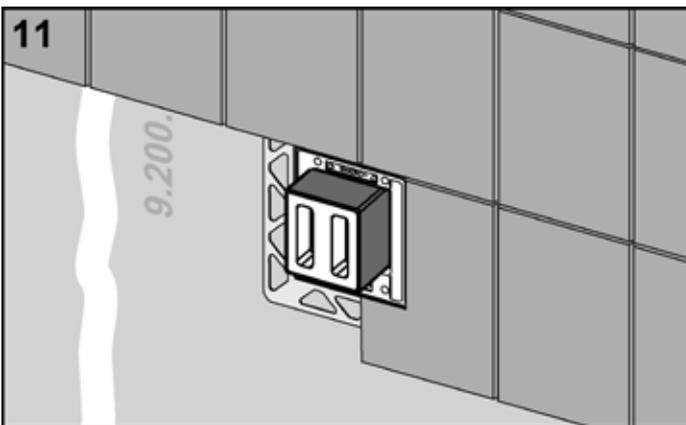


Remove the protective foils from the bonding surfaces on the installation frame, and stick them, together with those of the support frame, onto the plasterboard. Observe the correct position of the “TOP” marking, and ensure horizontal alignment.

TECE flush plates – Flush-mounted installation



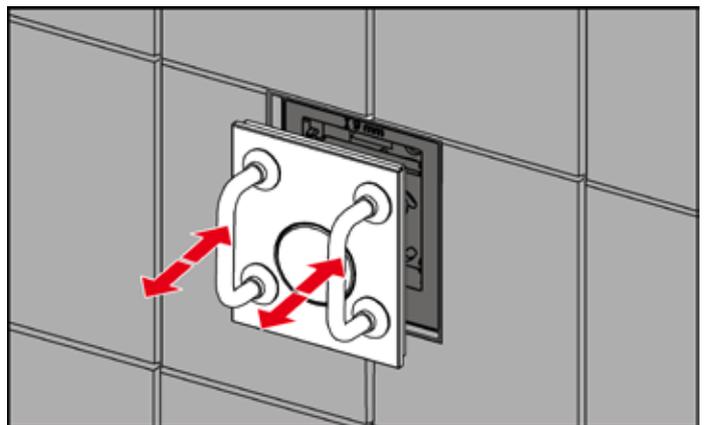
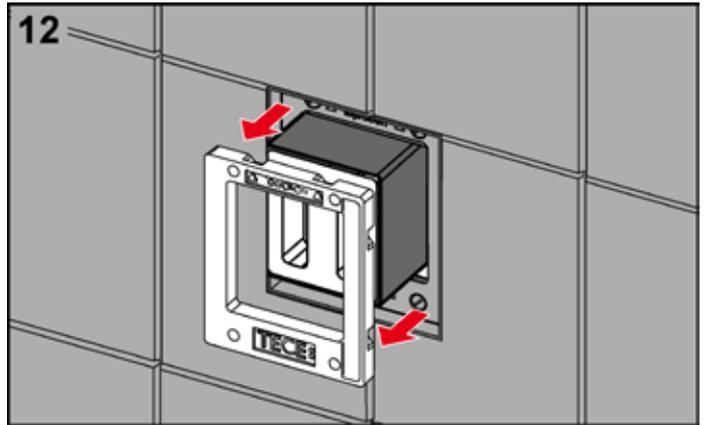
Adjust the depth of the installation frame to the tile thickness (5–18 mm). If the wall structure is thicker (up to 33 mm), as is the case for example with natural stone, you can use a suitable upgrade kit (order no. 9820181).



After adjusting the depth, you can tile right up to the installation frame.

Tip:

To obtain a perfect tile edge around the installation frame, TECE recommends cutting the tiles with a water jet cutter.



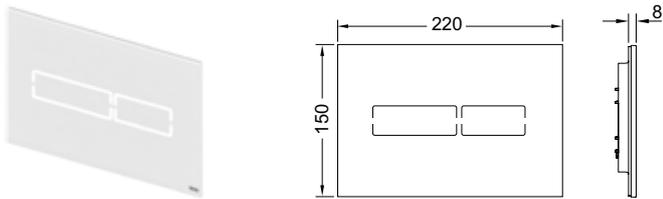
Remove the support frame and proceed as described in the installation instructions (installing the urinal cartridge, installing the support frame, etc.). Finally, insert the flush plate into the flush-mounted installation frame with the aid of the bow-type handles. The handles are included in the installation frame's scope of supply.

TECElux Mini

The TECElux Mini is a real glass flush plate with electronic flush actuation. A sensor recognizes when somebody approaches the toilet – at which point, the contours of the sensor surfaces light up through the seamlessly smooth glass facing.

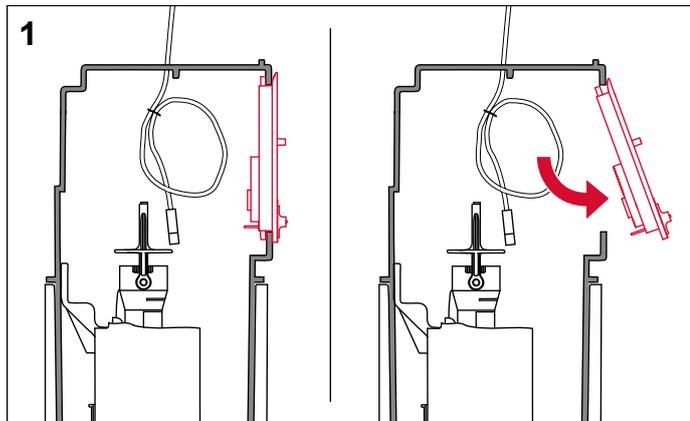
Flushing is activated without contact or by a light tap.

The safety glass plate only stands out slightly from the wall. Thanks to the installation frame, it can also be flush-mounted in the wall.

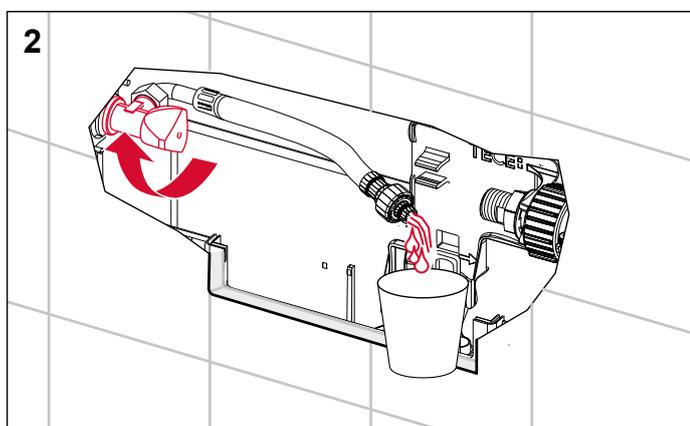


TECElux Mini toilet flush plate, dual-flush technology

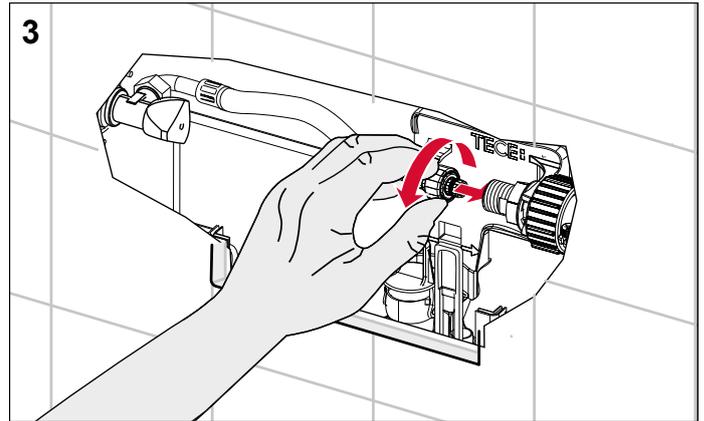
Wall-mounted installation of the toilet flush plate



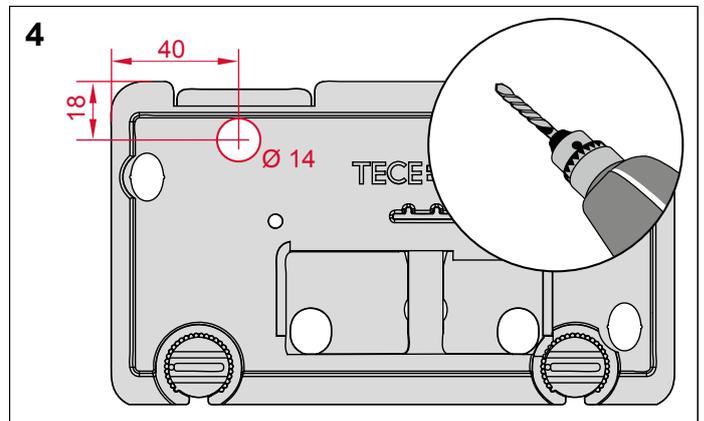
Open the splash guard.



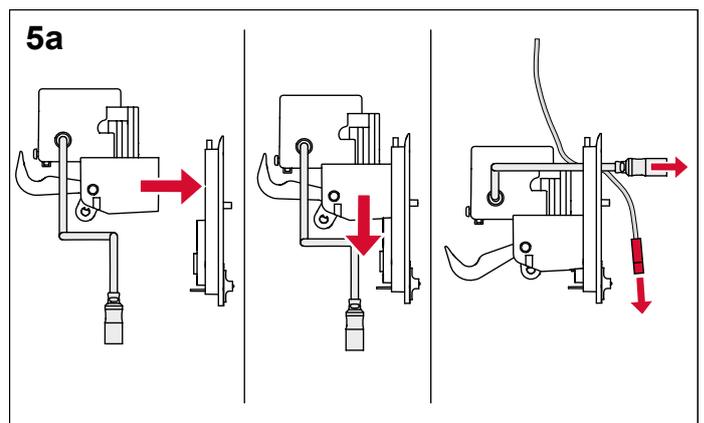
Open the corner valve and sufficiently flush out the pipe.



Turn the corner valve to close it again and connect the reinforced hose to the filling valve. If you wish to fill the cistern with water (e.g. for the initial operation), you must open the corner valve again.



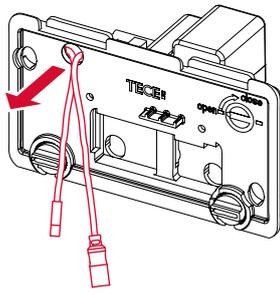
If there is no hole in the splash guard, drill a hole on the splash guard in the area shown.



Mount the actuation motor onto the splash guard.

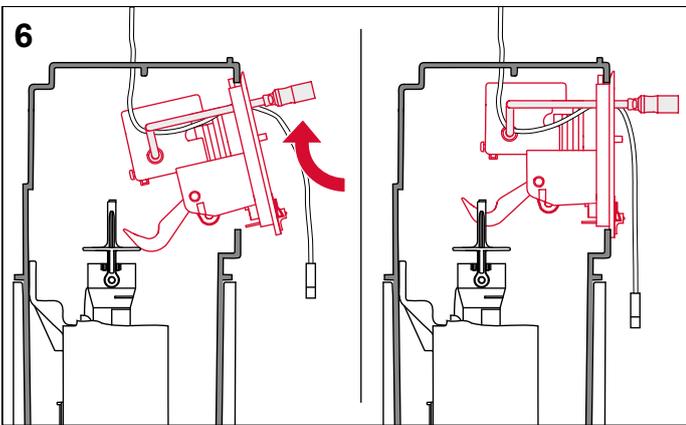
TECE flush plates – TECElux Mini

5b



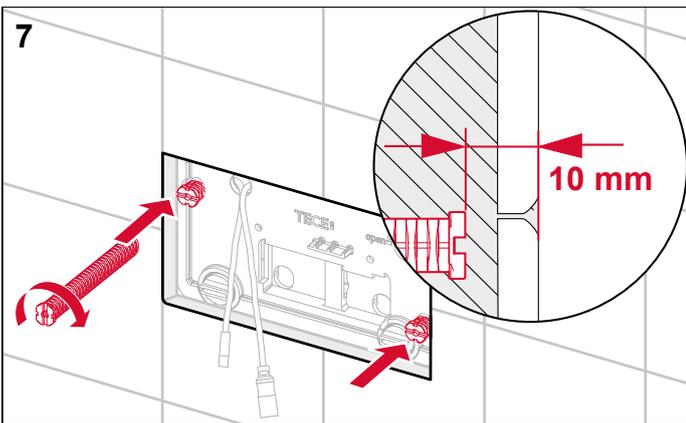
Guide the cable and plug through the splash guard.

6



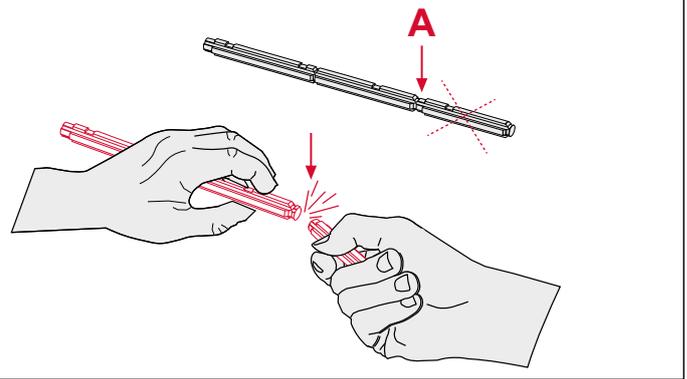
Place the splash guard and actuation motor back in the cistern.

7

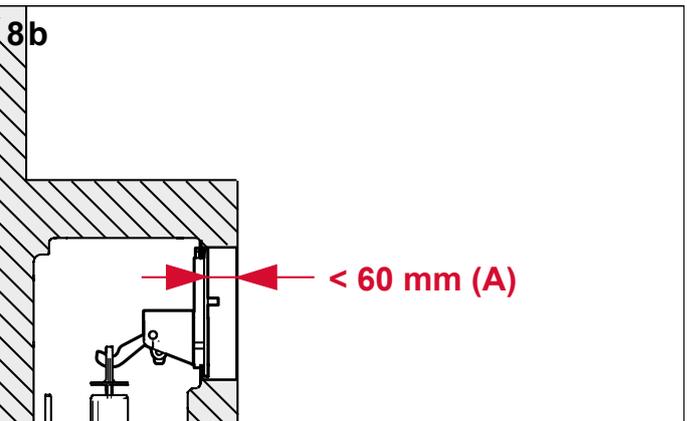


Screw in both attachment rods – distance of attachment rods to wall surface = 10 mm.

8a

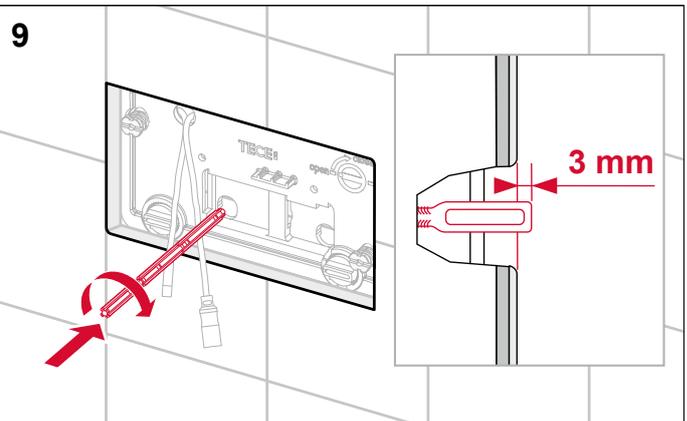


8b

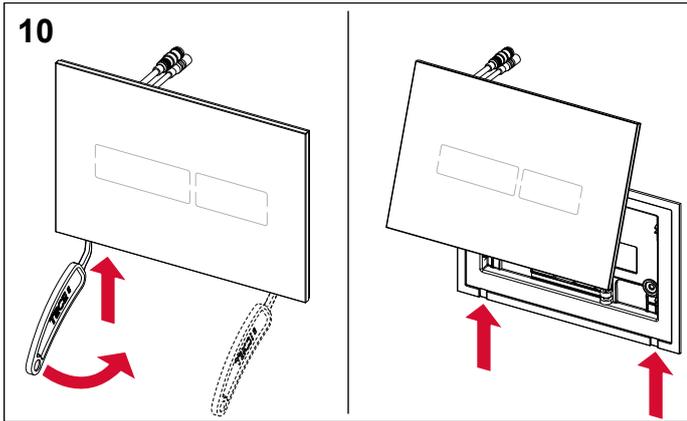


Break off the actuating rods according to the wall structure.

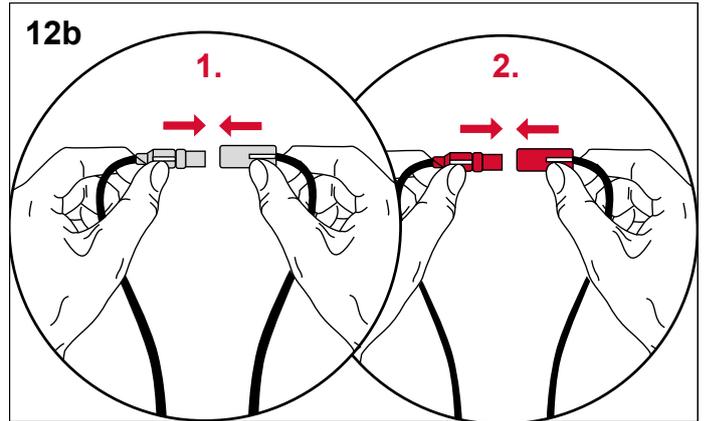
9



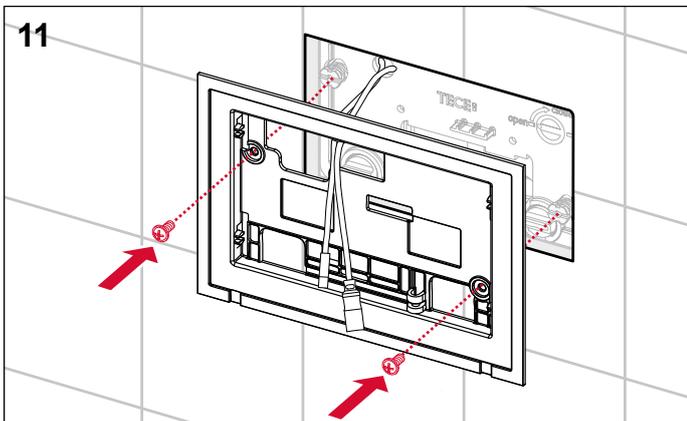
Screw in both actuating rods – distance of actuating rods to wall surface = 3 mm.



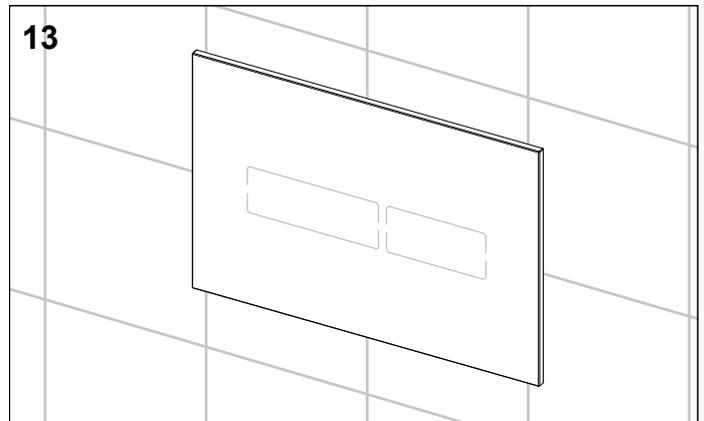
The cover can be detached from the flush plate using the disassembly tool. To do this, insert the tool into the recesses on the underside of the flush plate and carefully remove the cover.



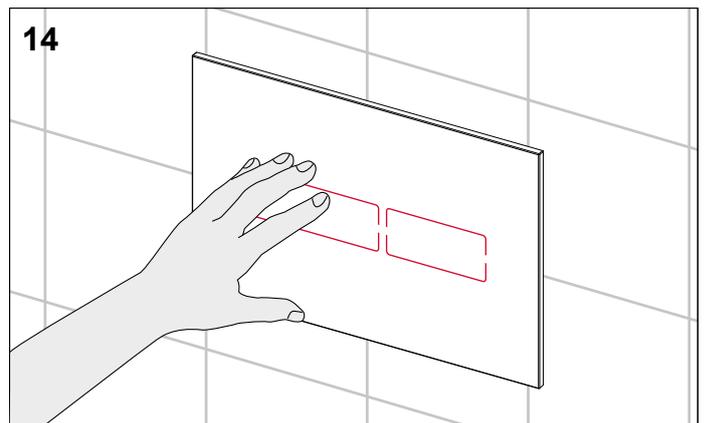
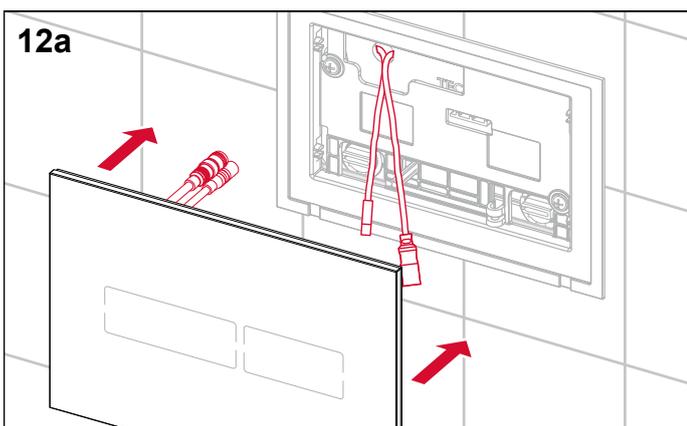
Connect the plug to the actuation motor and the transformer.



Screw the support frame onto the attachment rods.

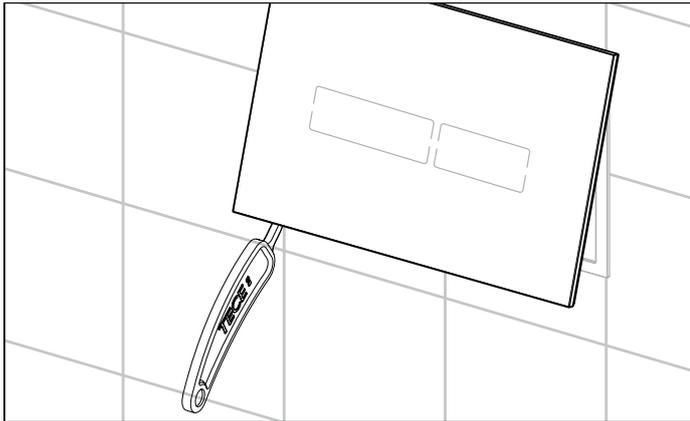


Mount the glass cover of the TECElux Mini electronics



Check whether the touch pad lights up.

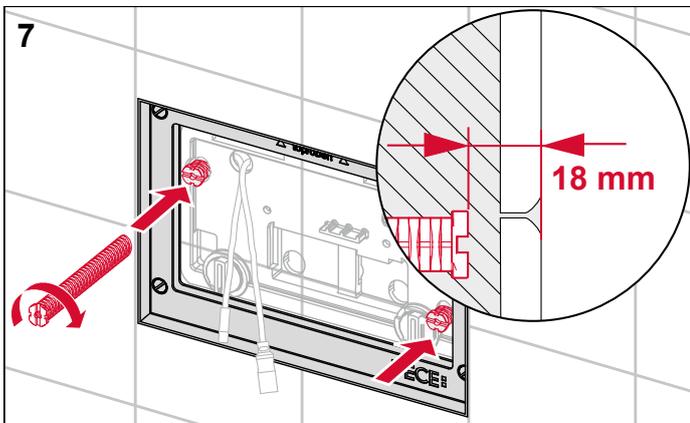
TECE flush plates- TECElux Mini



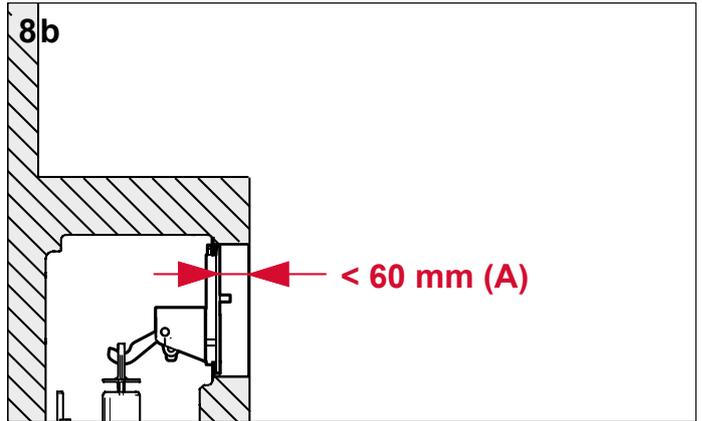
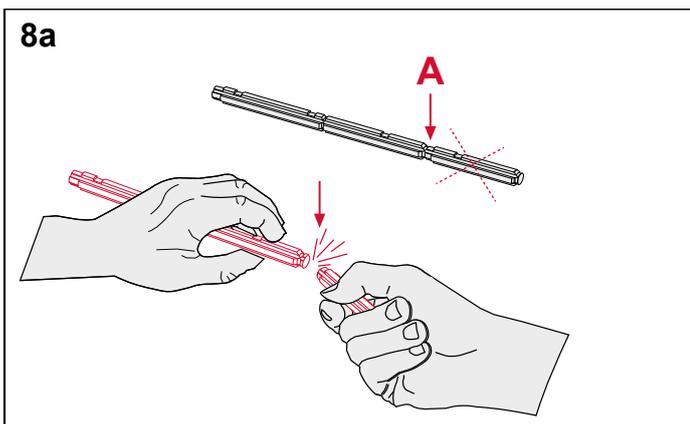
The cover can be detached from the flush plate using the disassembly tool. To do this, insert the tool into the recesses on the underside of the flush plate and carefully remove the cover.

Flush-mounted installation of the toilet flush plate

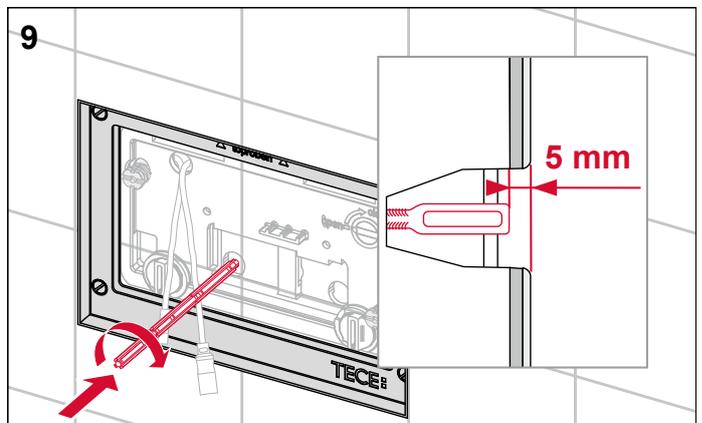
For the flush-mounted installation of the TECElux Mini flush plate, follow the same first six steps for the wall-mounted installation of the TECElux Mini.



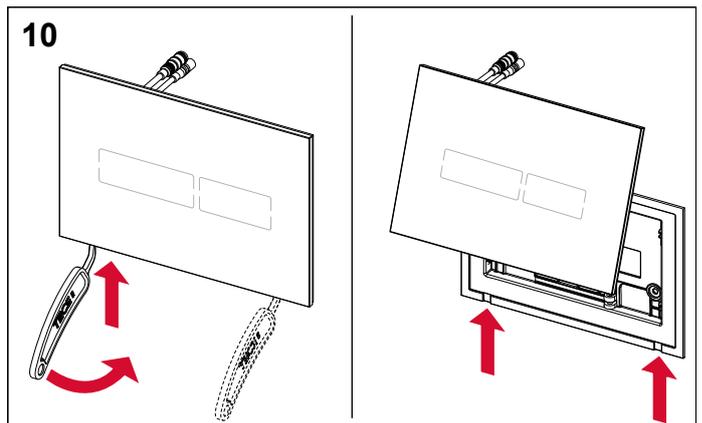
Screw in both attachment rods – distance of attachment rods to wall surface = 18 mm.



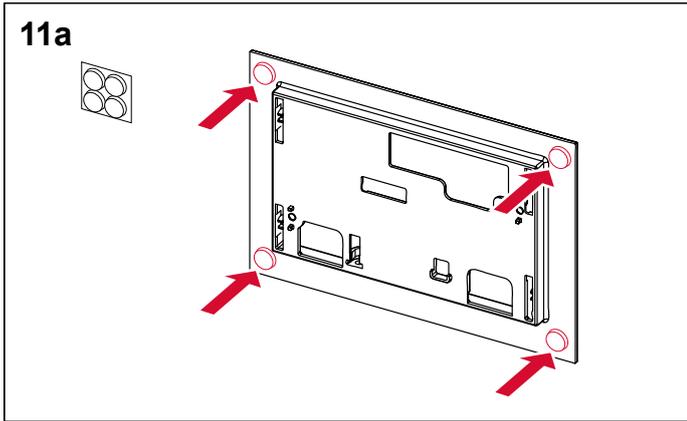
Break off the actuating rods according to the wall structure.



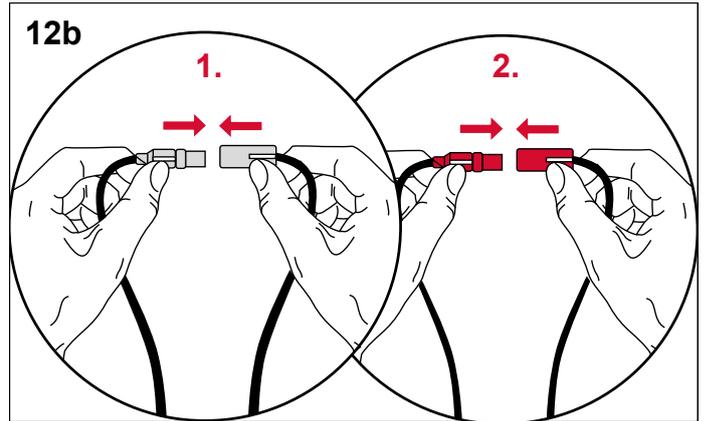
Screw in both actuating rods – distance of actuating rods to wall surface = 5 mm.



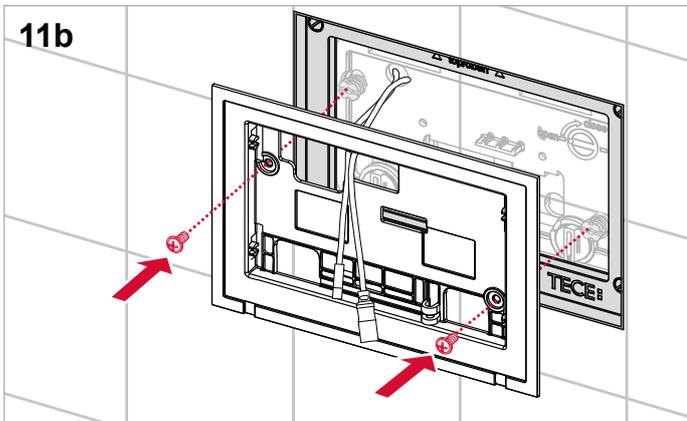
The cover can be detached from the flush plate using the disassembly tool. To do this, insert the tool into the recesses on the underside of the flush plate and carefully remove the cover.



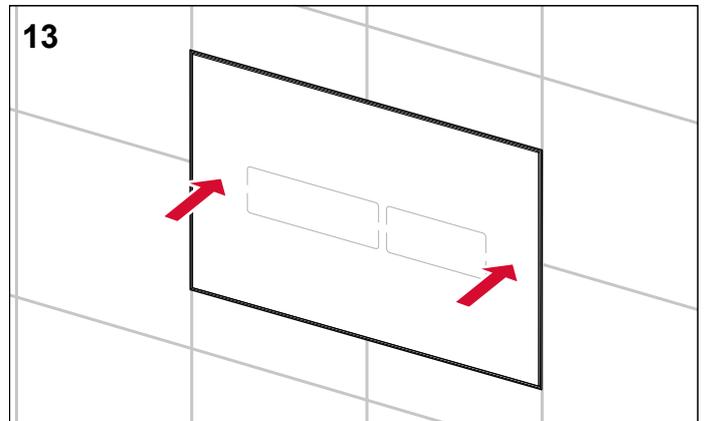
11a
Stick the spacers onto the back of the TECElux Mini's support frame.



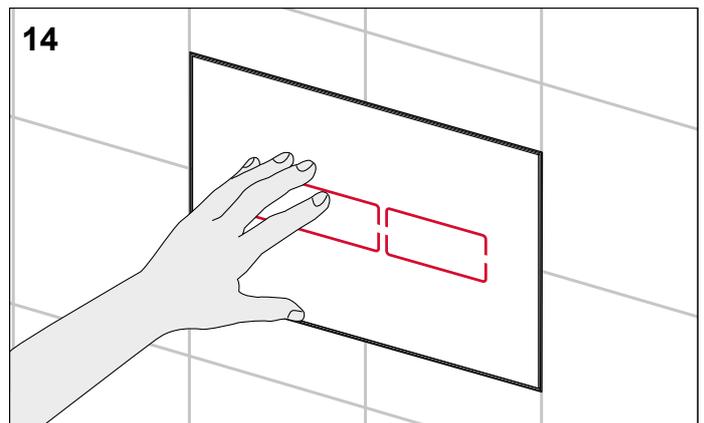
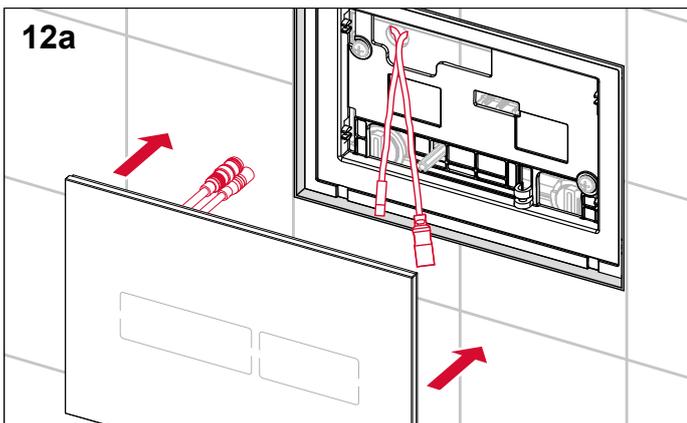
12b
Connect the plug to the actuation motor and the transformer.



11b
Screw the support frame onto the attachment rods.

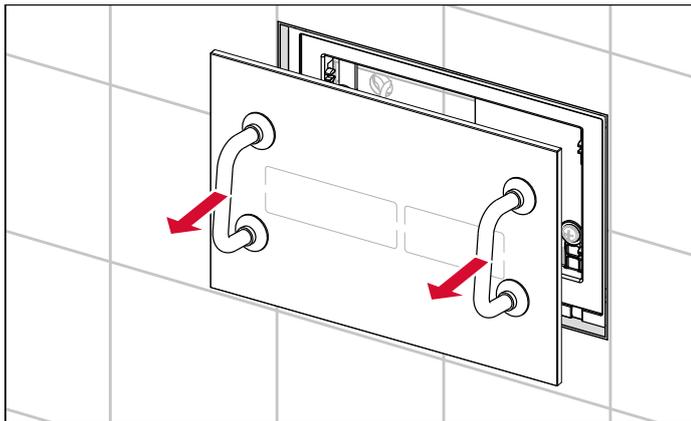


13
Mount the glass cover of the TECElux Mini electronics.



12a
14
Check whether the touch pad lights up.

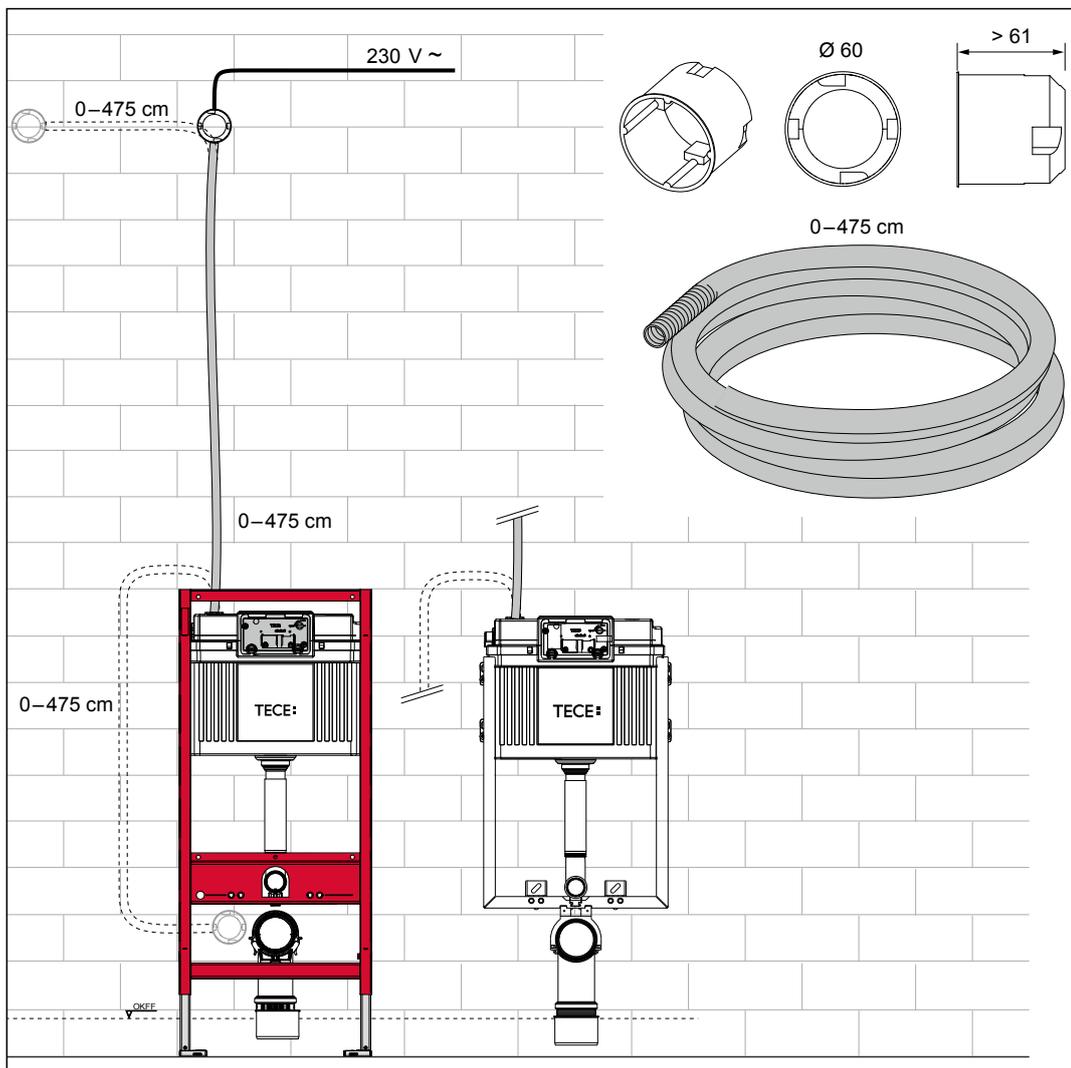
TECE flush plates – TECElux Mini



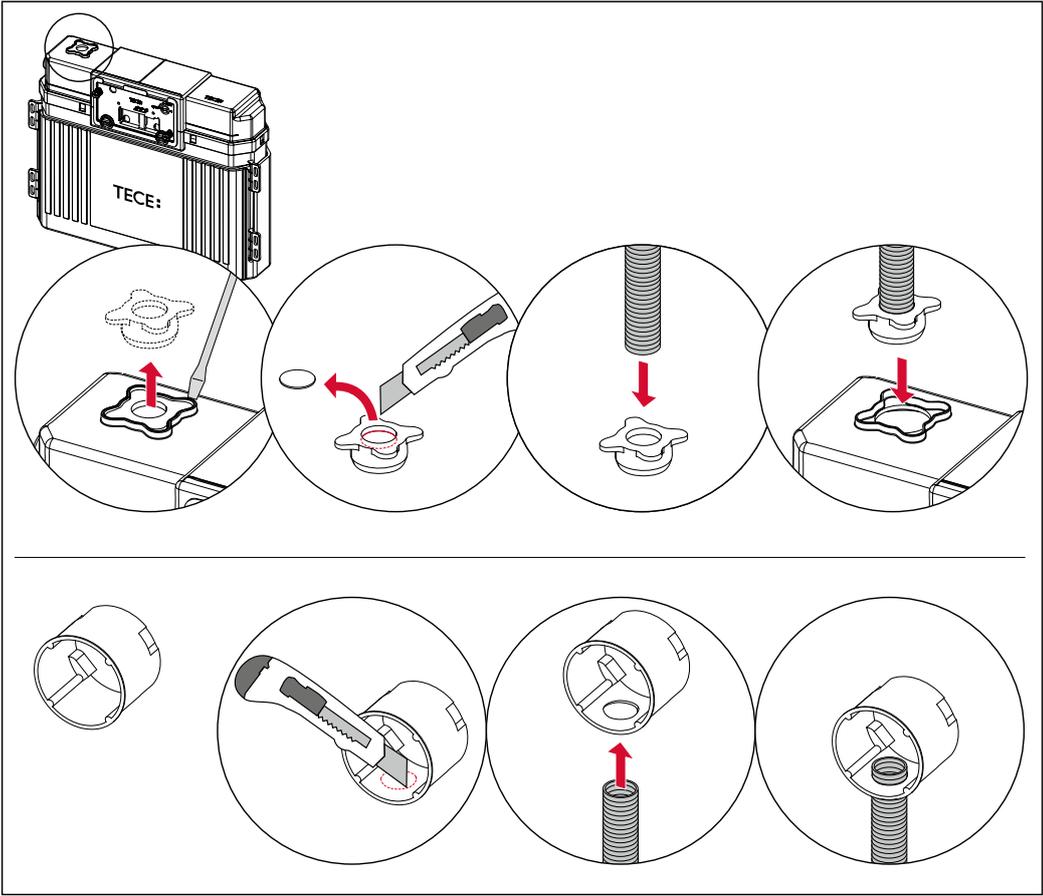
The installed cover can be removed from the flush plate using the bow-type handles included in the installation frame's scope of supply.

Installing the transformer with connection cable

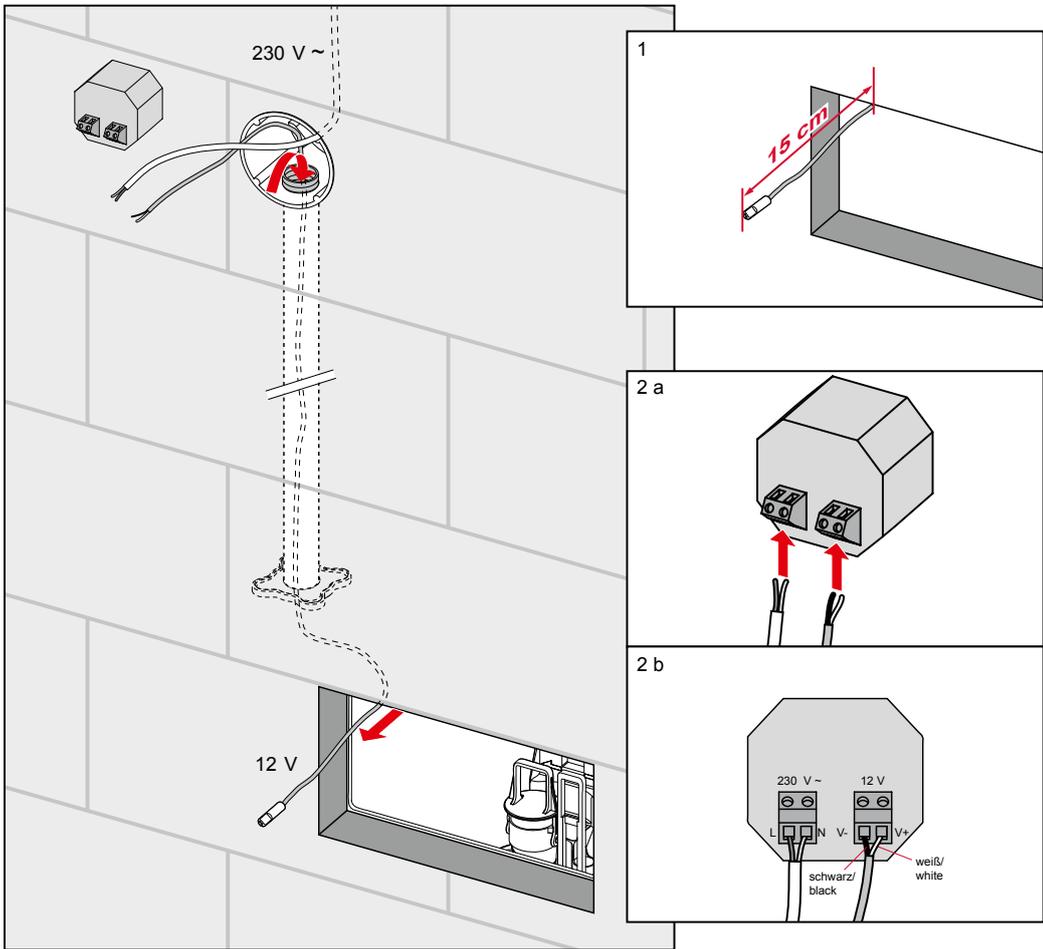
The transformer is required for the TECElux Mini's power supply. A flush-mounted socket with a diameter of min. 60 mm and a depth of 61 mm is suitable for installation in dry-wall or brick-wall structures.



Positioning the transformer: In the 0-475 cm range around the cistern (entire cable length: 5 m).

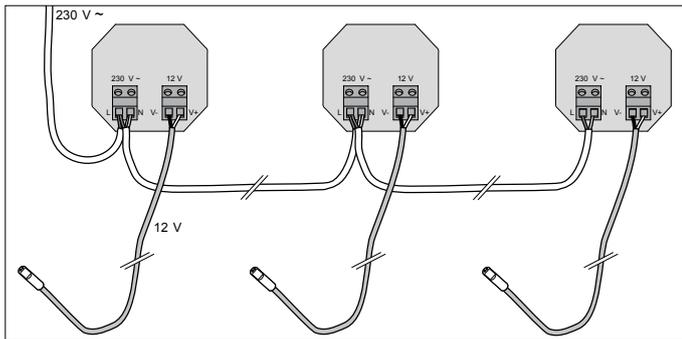


Feeding the cable into the cistern.



Connecting the transformer

TECE flush plates– TECElux Mini



Programming the electronics

A remote control (order no. 9240971) is required to program the TECElux Mini electronics. It is possible to program the electronics (at any time) after the power supply has been connected. In the event of a power failure, the last settings saved are retained. Each configurable setting is assigned a position on the remote control.

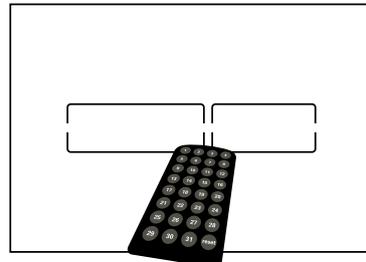
Software version 1.0	
Position	Function
1	Hygiene flush off
2	Hygiene flush 24 h
3	Hygiene flush 56 h
4	Hygiene flush 72 h
5	Hygiene flush 168 h
6	Hygiene flush 336 h
7	Illumination level 1 very bright
8	Illumination level 2 standard
9	Illumination level 3 dimmed
10	Illumination level 4 darker
11	Activate illumination 20 sec*
12	Activate illumination 2 mins
13	Activate illumination 3 mins
14	Activate illumination 4 mins
15	Activate illumination 5 mins
16	Activate illumination permanently*
17	Cleaning function off
18	Cleaning function on
19	Automatic flush off
20	Automatic flush 2 mins
21	Automatic flush 5 mins
22	Touchless operation
23	Touch operation
24	Identification long-distance
25	Identification standard
26	Identification short-distance
...	...
reset	Factory setting

 = factory setting

* function only for exhibitions

Programming the TECElux Mini electronics:

- Move closer to the electronics until the button illumination is activated.
- Point the remote control towards the middle of the button area at a distance of 5–10 cm, then press the desired button on the remote control.



- A visual signal indicates that the desired function has been successfully configured: The button illumination switches off and flashes twice.

Automatic flush:

- If the toilet flush is activated - and the toilet has not been flushed after use - an automatic flush is carried out 2 or 5 minutes after the button lighting has switched off.
- When the automatic flush is activated, the “person present” identification is automatically set to “Identification short-distance”.

Manual flush:

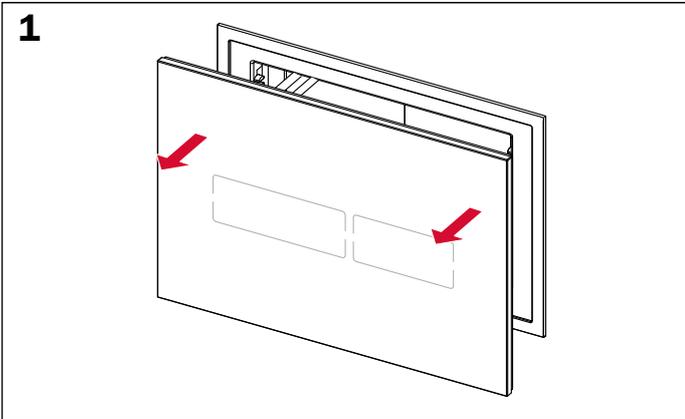
- It is possible to flush the toilet without power – e.g. following a power failure: To do so, remove the flush plate cover from the wall and press the red actuating rod.

Cleaning function:

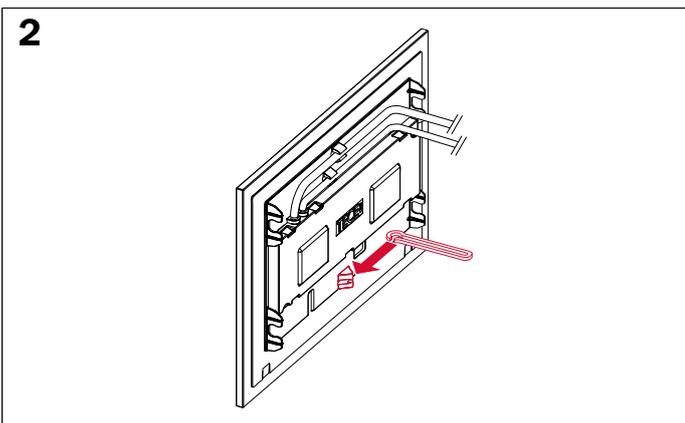
- When the cleaning function is activated, both the touch panel and the touchless operation are disabled for 30 seconds.
- Once this period has elapsed, the previously set functions are automatically available again.

Installing the anti-theft device

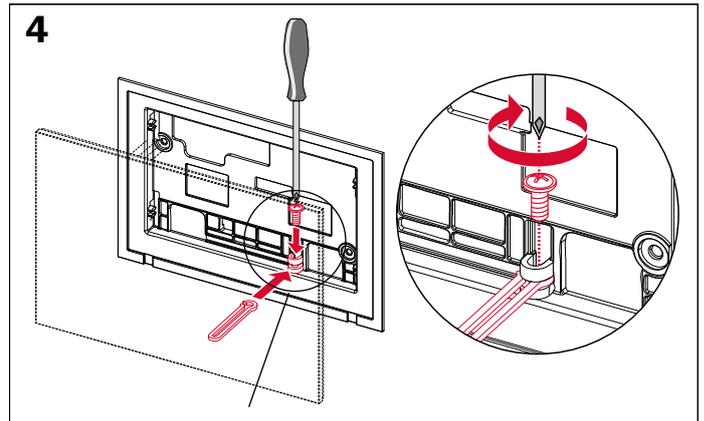
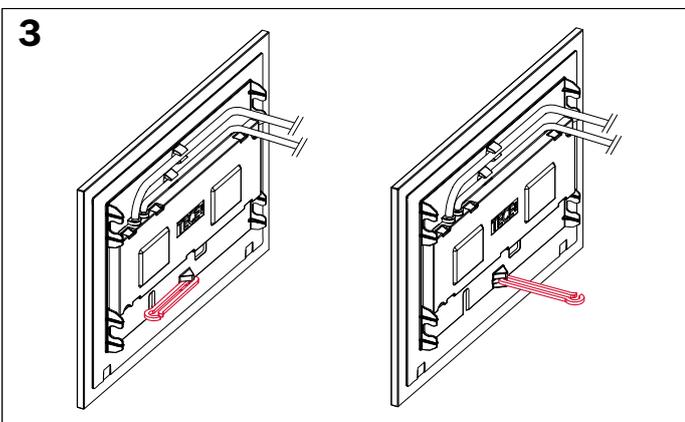
The TECElux Mini electronics can be protected by an anti-theft device. Order separately, quoting item number 9820354, and proceed as follows to mount the device:



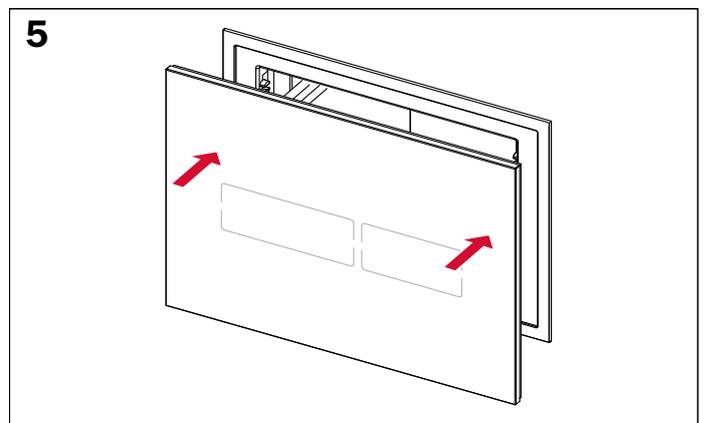
Dismount the glass cover of the TECElux Mini electronics.



Insert the anti-theft device into the glass cover mounting supports.



Attach the anti-theft device to the support frame with the screw supplied.

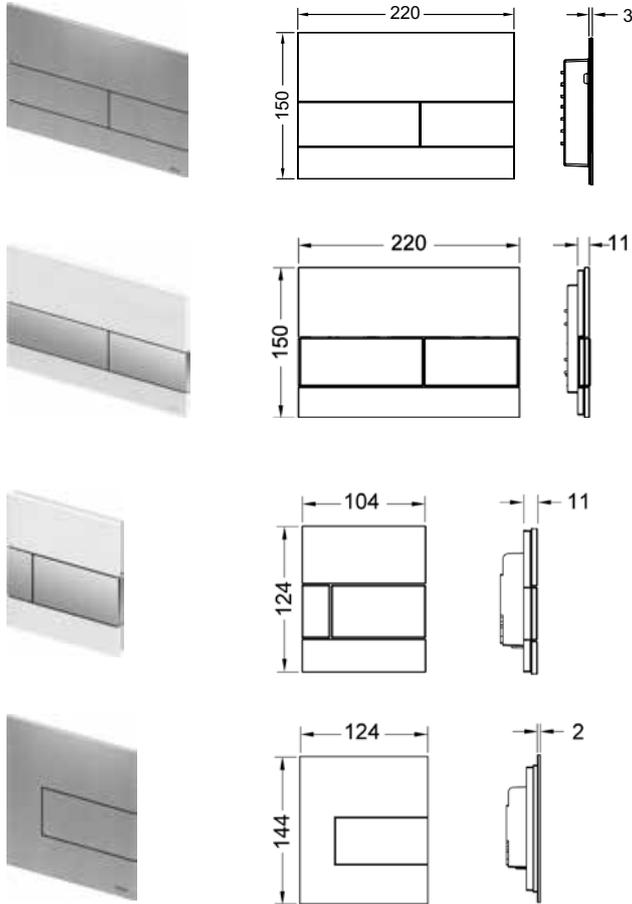


Mount the glass cover of the TECElux Mini electronics.

TECE flush plates – TECESquare

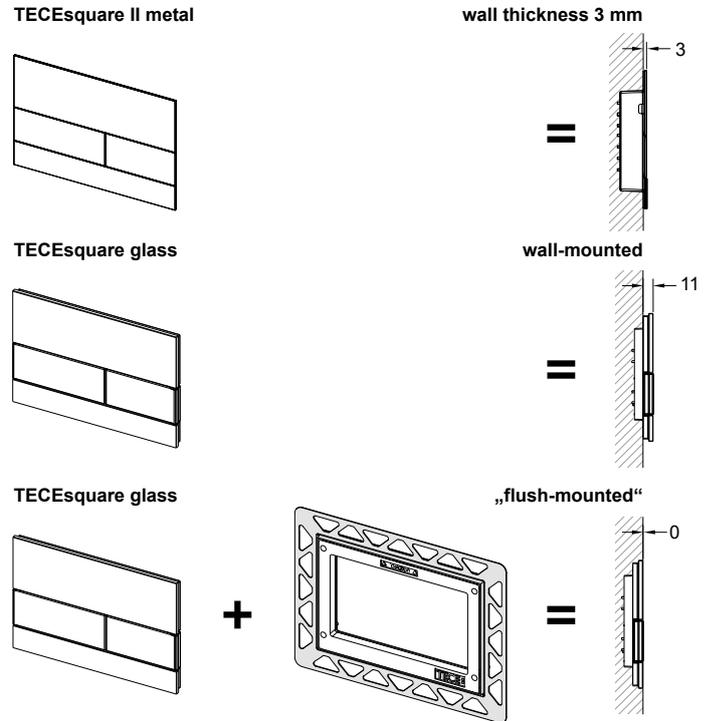
TECESquare

The TECESquare flush plate is available both for toilets and urinals with a glass or metal cover:



TECESquare II toilet flush plate, metal
 TECESquare toilet flush plate, glass
 TECESquare urinal flush plate, glass
 TECESquare urinal flush plate, metal

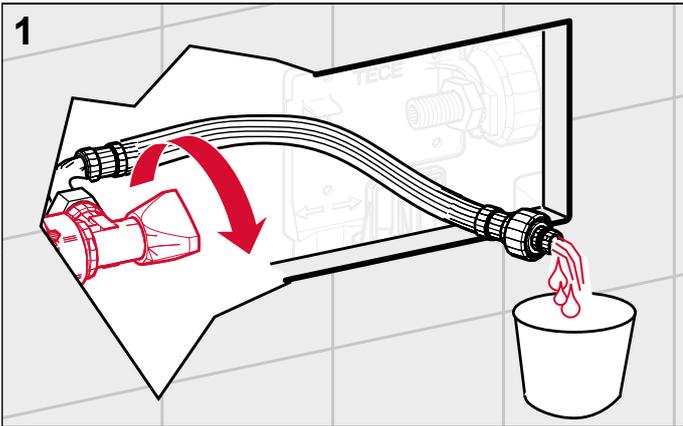
Similarly to the TECElap flush plate, the glass version can be wall-mounted in front of the tiled section or flush-mounted with the toilet installation frame.



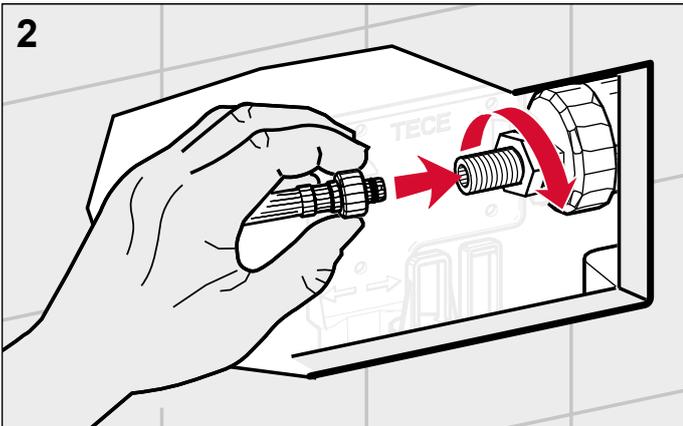
Installing the TECESquare flush plate (applies both to toilet and urinal flush plates)

Installing the TECESquare II metal toilet flush plate

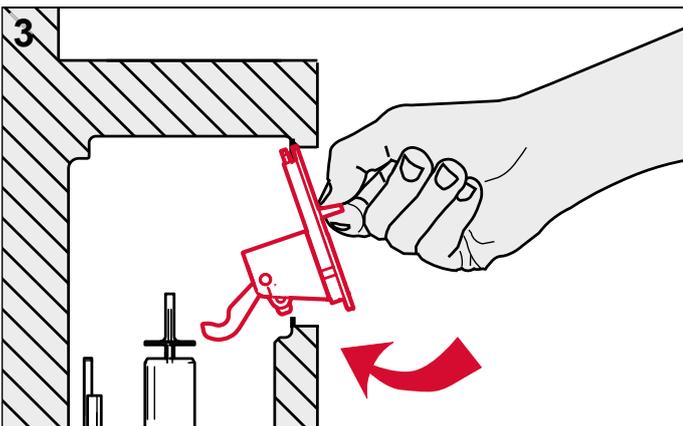
The TECESquare II is an extra-flat metal flush plate with two spring-mounted actuation rocker buttons. The product comes with the toilet installation frame already integrated. The first four steps for installing the manual toilet flush plate are the same for all TECE flush plates:



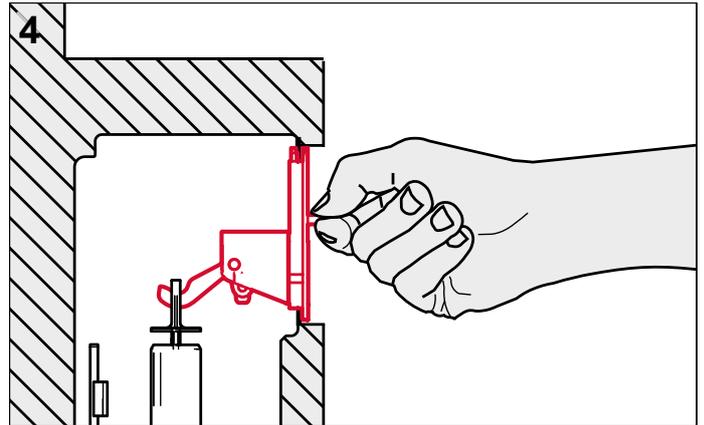
Open the corner valve and sufficiently flush out the pipe.



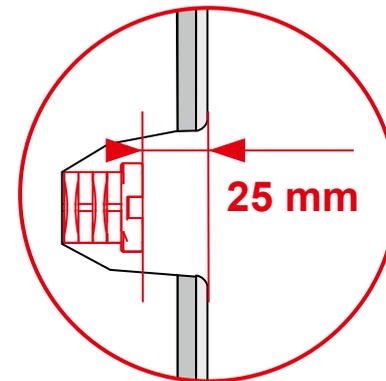
Turn the corner valve to close it again and connect the reinforced hose to the filling valve. If you wish to fill the cistern with water (e.g. for the initial operation), you must open the corner valve again.



Put the splash guard back on.

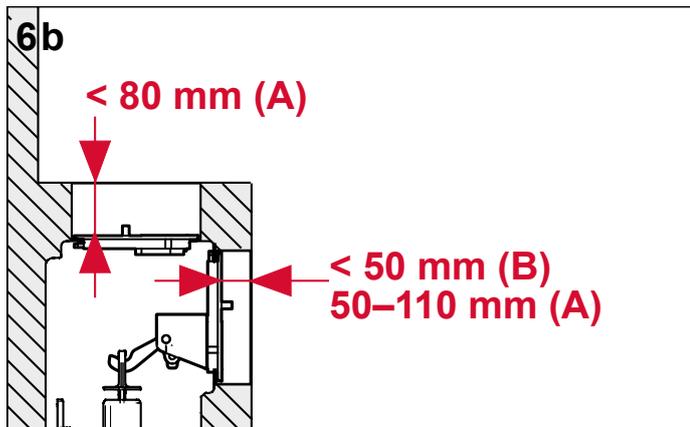
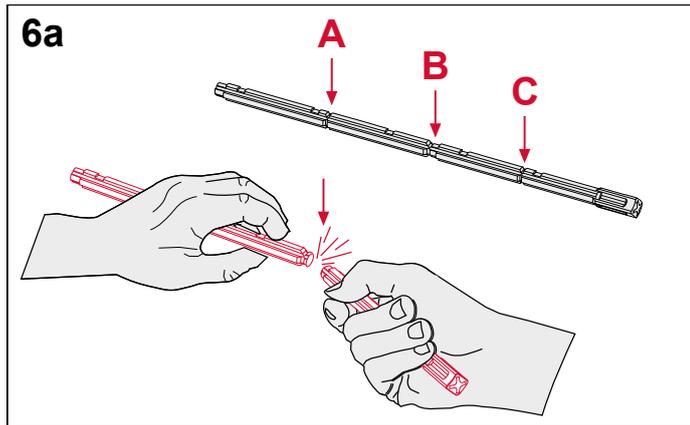


The activation hooks must fit correctly in the drain valve's drawbar eyelets. Tighten the splash guard clamping screws.

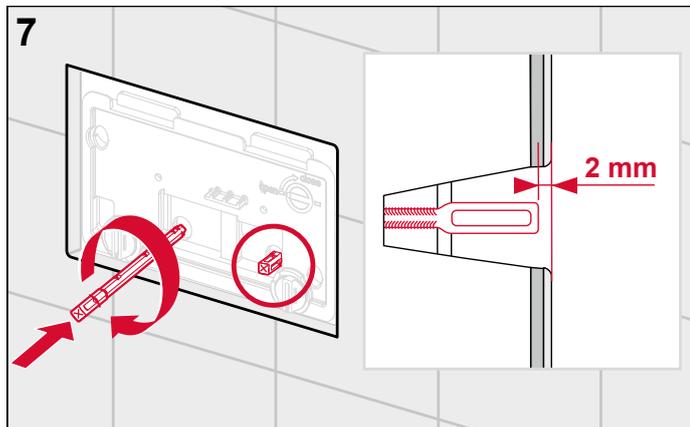


Screw in both attachment rods – distance of attachment rods to wall surface = 25 mm.

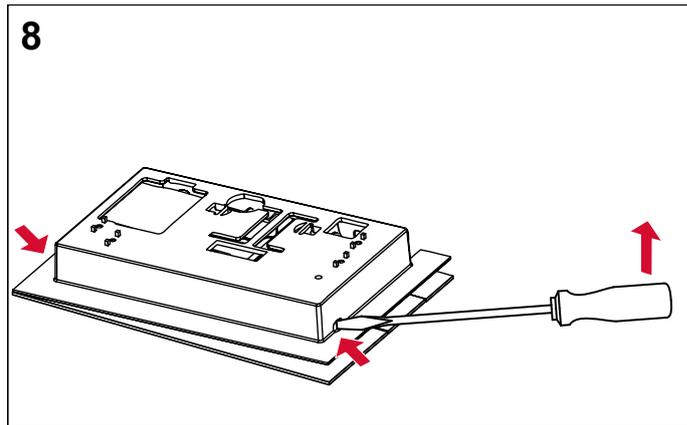
TECE flush plates – TECEsquare



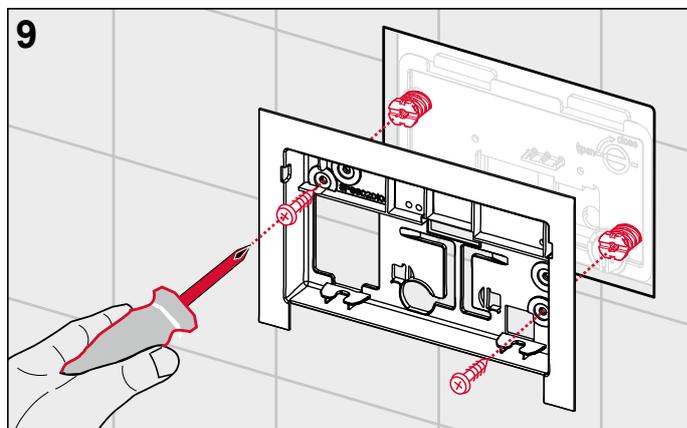
Break off the actuating rods according to the wall structure.



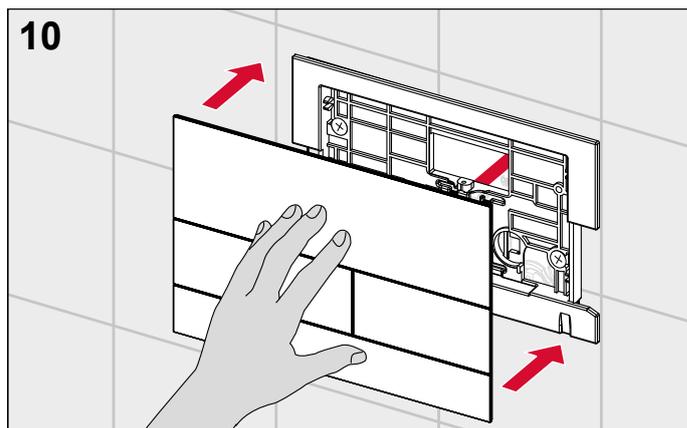
Screw in both actuating rods – distance of actuating rods to wall surface = 2 mm.



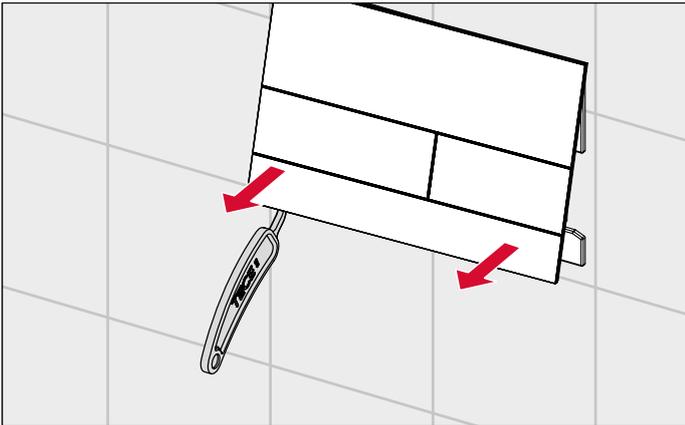
Remove the cover from the flush plate using a screwdriver. Place the screwdriver into the recesses on the underside of the flush plate and carefully remove the cover.



Screw the support frame onto the attachment rods.



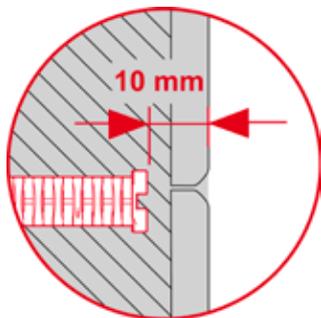
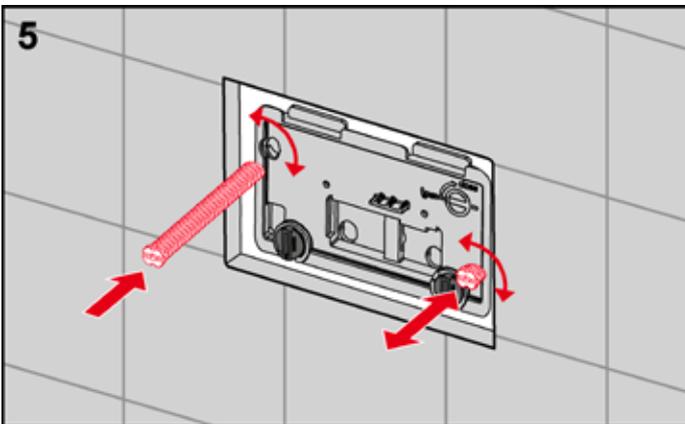
Allow the TECEsquare II flush plate cover to click into place in the support frame.



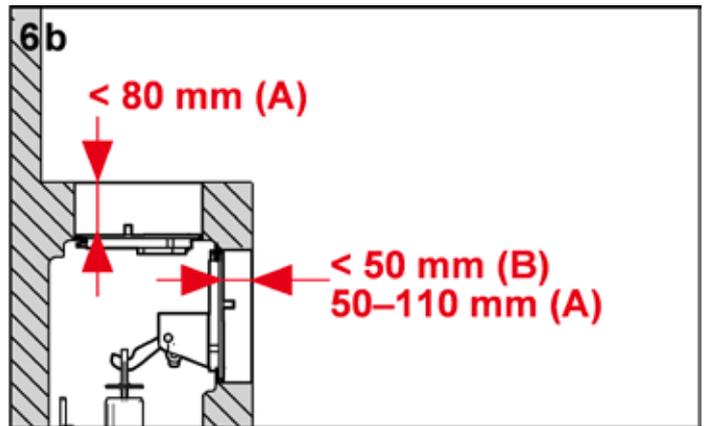
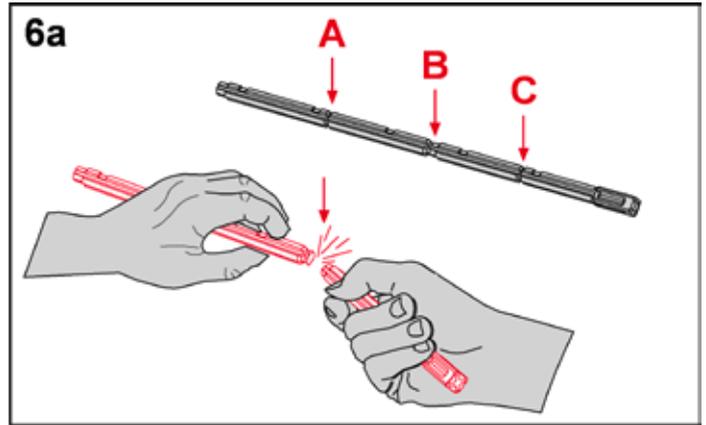
The installed cover can be detached from the flush plate using the disassembly tool. To do this, insert the tool into the recesses on the underside of the flush plate and carefully remove the cover.

Wall-mounted installation of the glass toilet flush plate

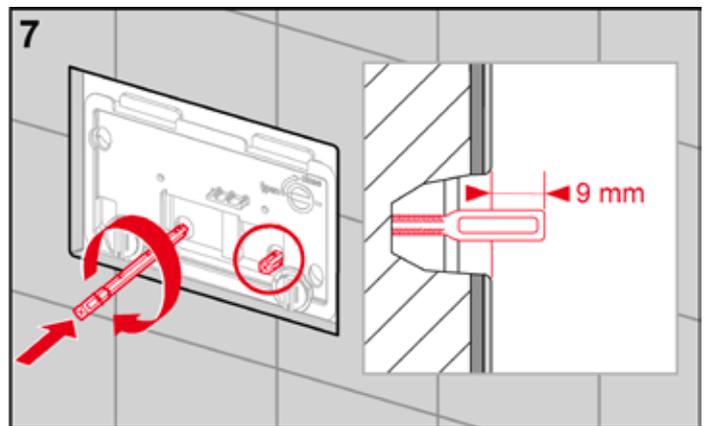
The first four steps for installing the toilet flush plate are the same for all manual TECE flush plates (see the section entitled “Installing the TECESquare II toilet flush plate” for more information).



Screw in both attachment rods – distance of the rods to wall surface = 10 mm.

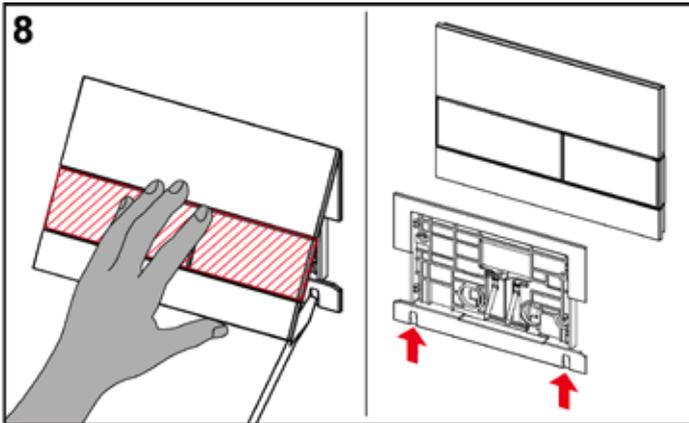


Break off the actuating rods according to the wall structure.

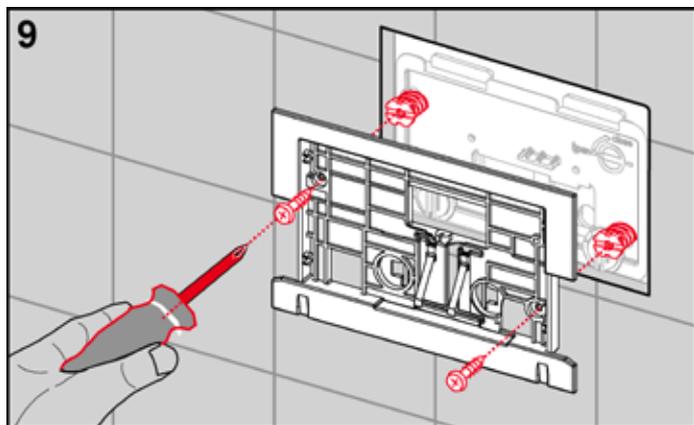
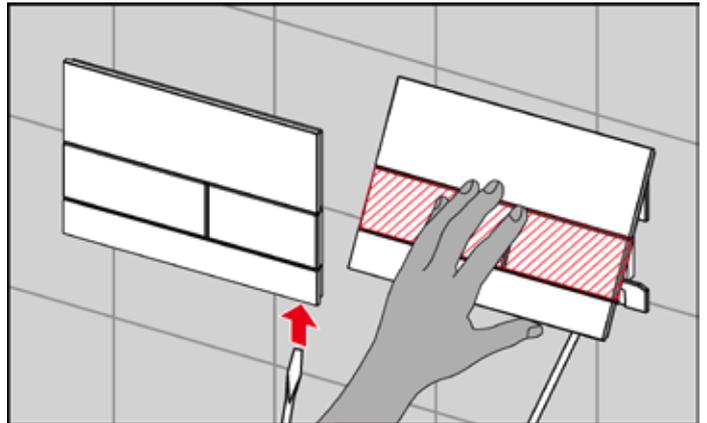


Screw in both actuating rods – distance of actuating rods to wall surface = 9 mm.

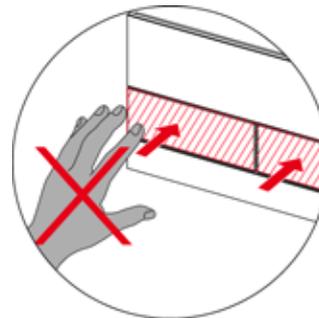
TECE flush plates – TECESquare



Remove the cover from the flush plate using a screwdriver. Place the screwdriver into the recesses on the underside of the flush plate and carefully remove the cover.



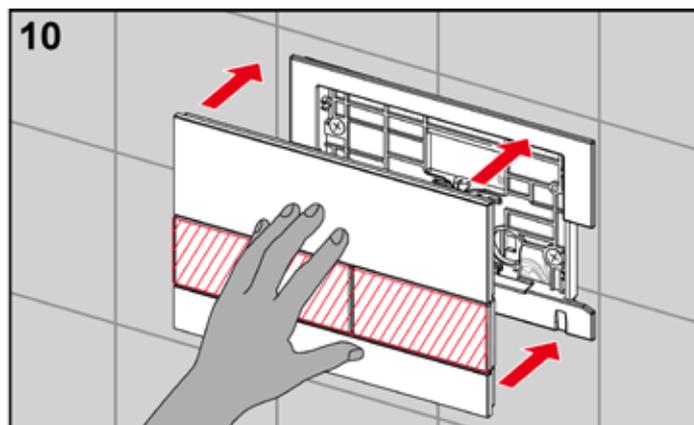
Screw the support frame onto the attachment rods.



The installed cover can be detached from the flush plate using a screwdriver. To do this, insert the tool into the recesses on the underside of the flush plate and carefully remove it.

Please note:

During installation, only apply force to the glass surface, not to the buttons.

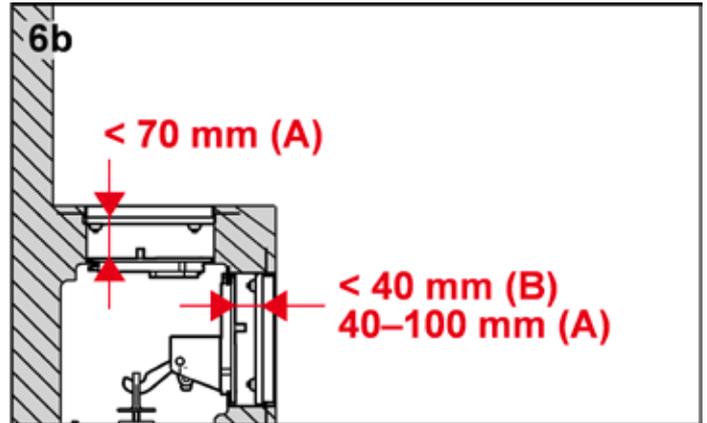


Allow the TECESquare flush plate cover to click into place in the support frame.

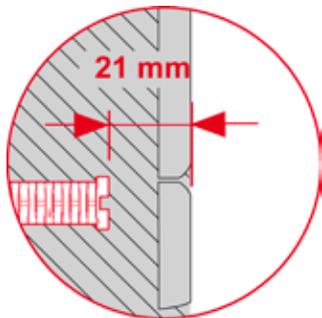
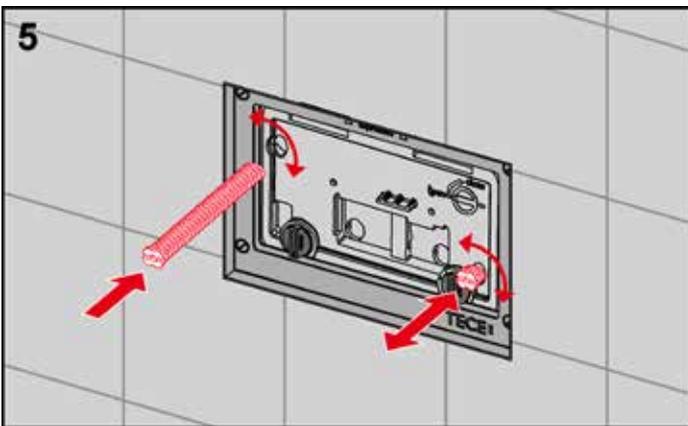
Flush-mounted installation of the glass toilet flush plate

An installation frame is necessary for the flush-mounted installation of the TECEsquare glass flush plate. The installation frame should already have been installed before carrying out the detailed installation (see the section entitled “Flush-mounted installation” for more information).

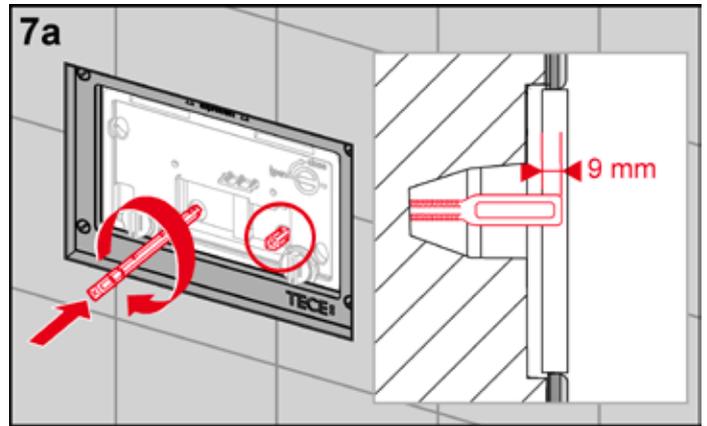
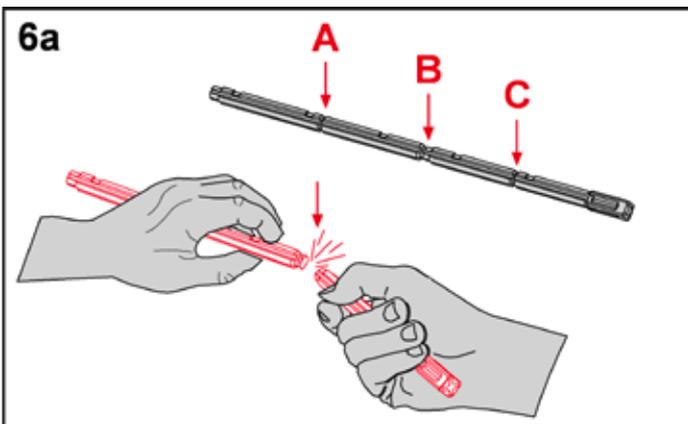
As with all manual TECE flush plates, the first four steps for installing the toilet flush plate are the same (see the section entitled “Installing the TECEsquare II metal toilet flush plate” for more information).



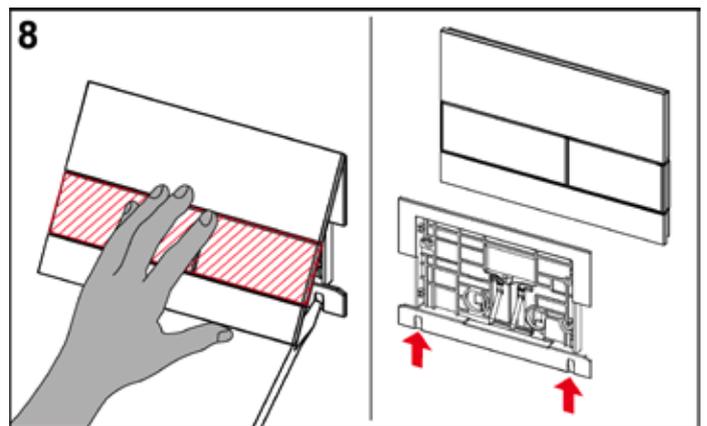
Break off the actuating rods according to the wall structure.



Screw in both attachment rods – distance of attachment rods to wall surface = 21 mm.

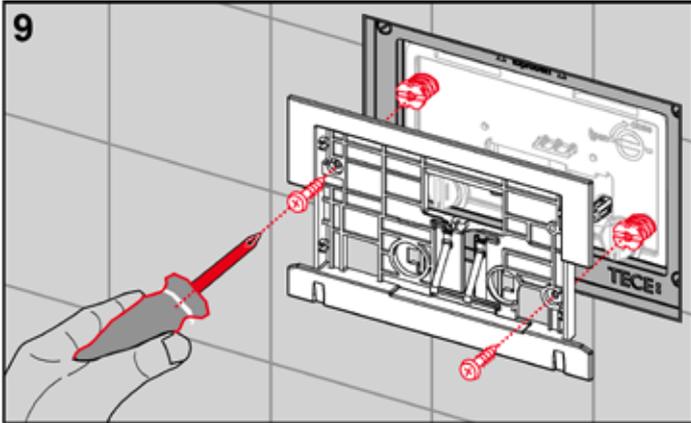


Screw in the actuating rods – distance of actuating rods to front edge of inside frame = 9 mm.

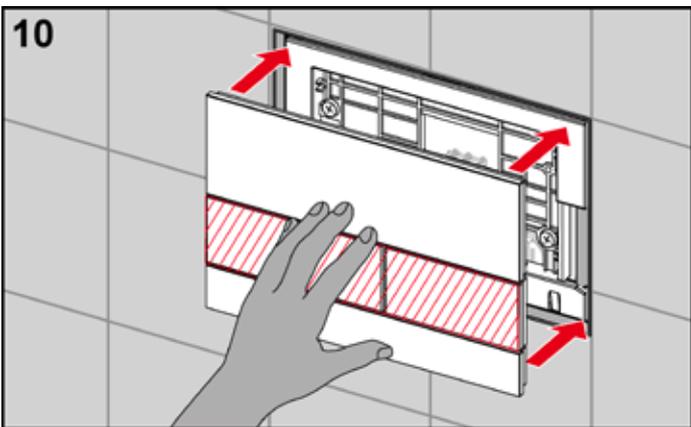


Remove the cover from the flush plate using a screwdriver. Place the screwdriver into the recesses on the underside of the flush plate and carefully remove the cover.

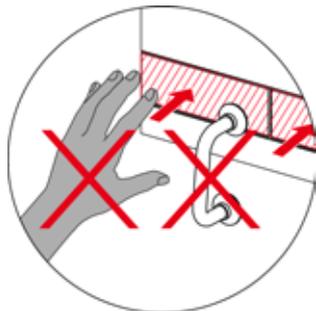
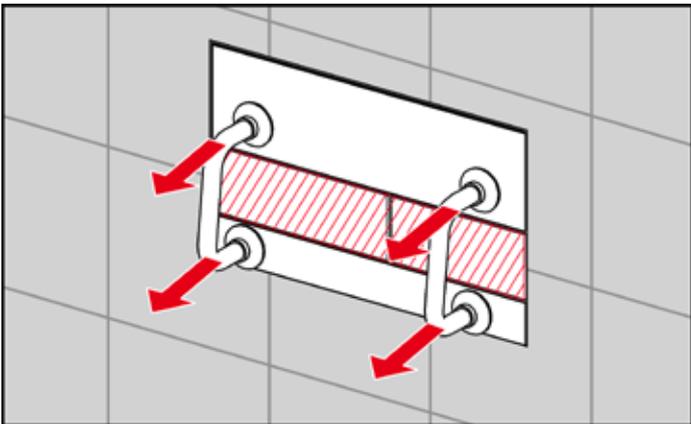
TECE flush plates – TECESquare



Screw the support frame onto the attachment rods.



Allow the TECESquare flush plate cover to click into place in the support frame.



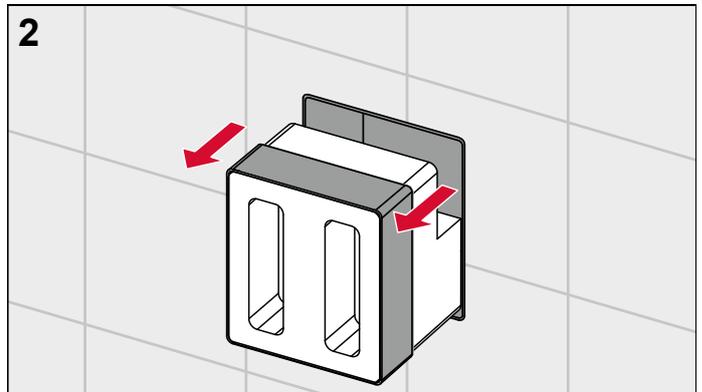
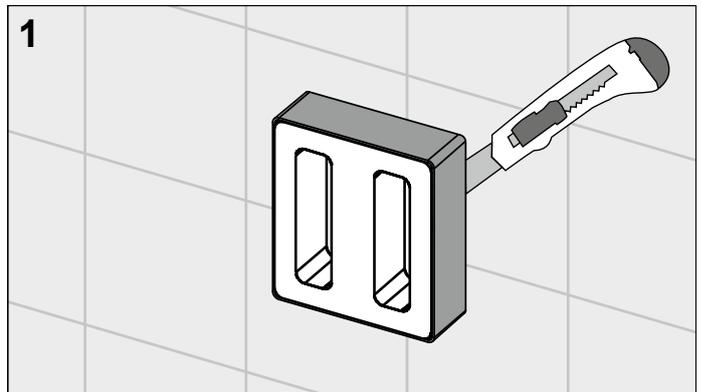
The installed cover can be removed from the flush plate using the bow-type handles included in the installation frame's scope of supply.

Please note:

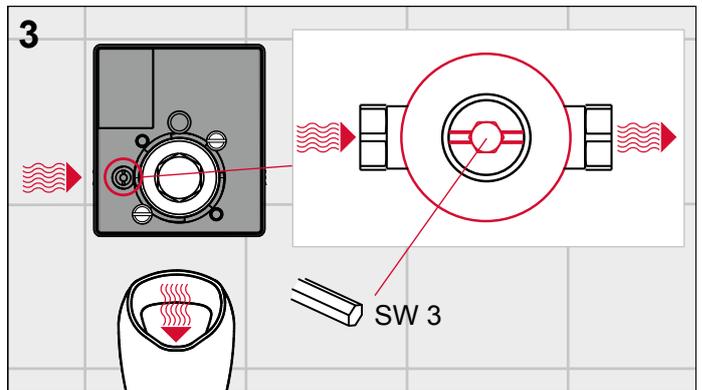
Position the suction cups on the glass surface only – not on the buttons – of the cover to be removed. During installation, only apply force to the glass surface, not to the buttons.

Wall-mounted installation of the glass urinal flush plate

The first seven steps of the procedure for installing the glass urinal flush plate for the U 1 urinal flusher are the same for all TECE (wall-mounted) urinal flush plates.



Cut the bare-wall protection flush against the wall, and remove it together with the polystyrene support.

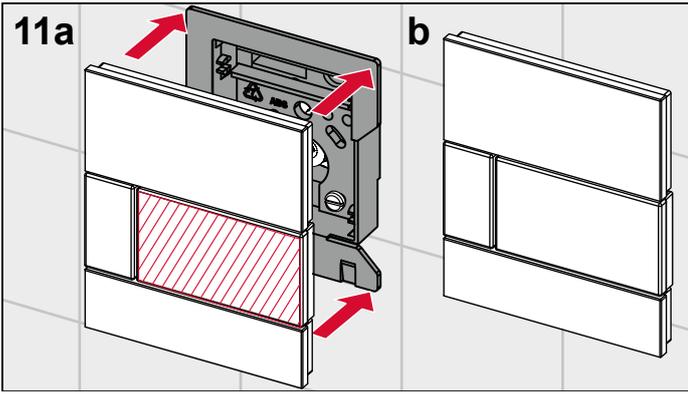


Sufficiently flush out the pipe.

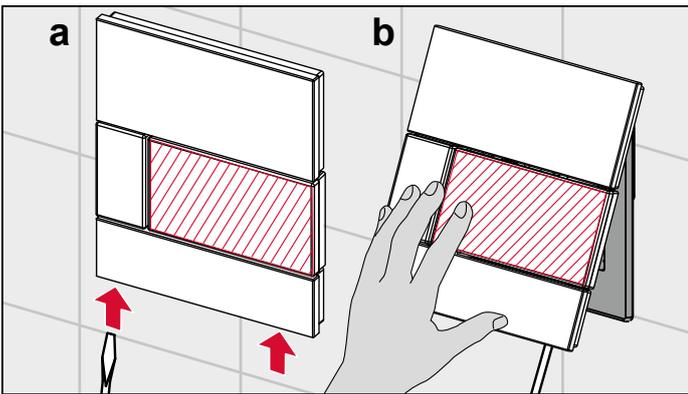
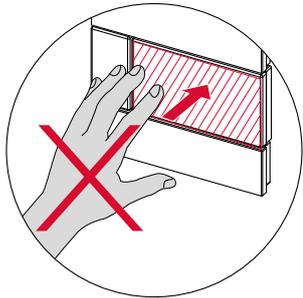
Observe the following:

When performing the pressure test, the inlet flow control of the flush valve must be set to free-flow.

TECE flush plates – TECEsquare



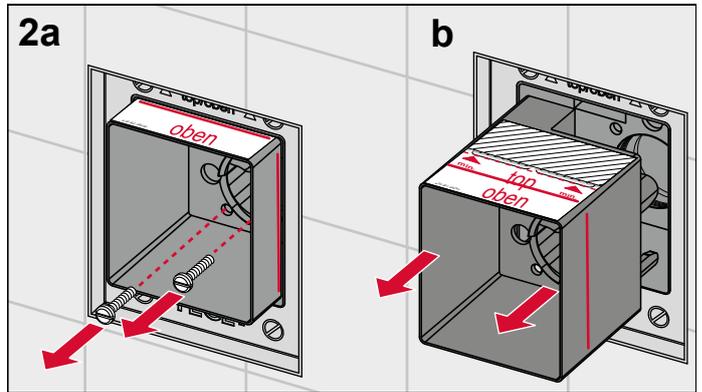
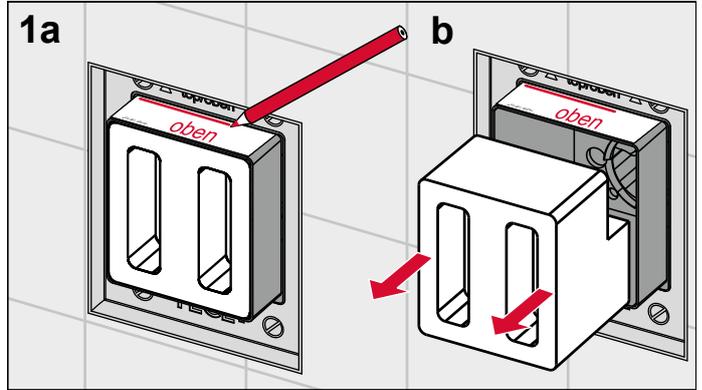
When mounting (above) or dismantling the cover (below), do not press the button:



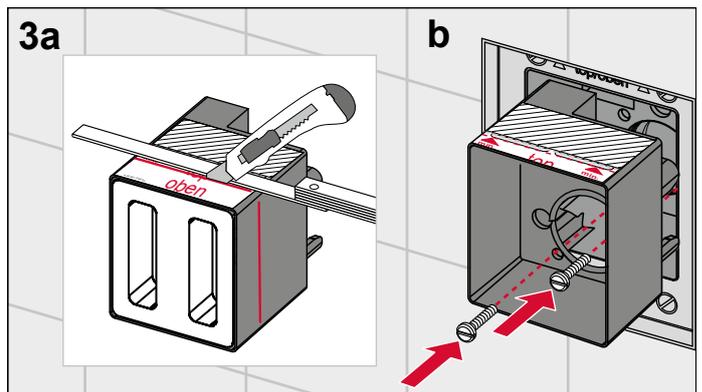
To dismantle the cover, insert a screwdriver into the notches on the underside of the flush plate.

Flush-mounted installation of the glass urinal flush plate

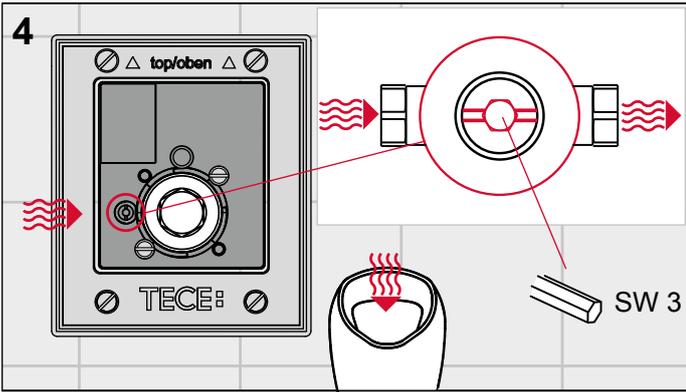
The first eight steps in the procedure for installing the urinal flush plate for the U 1 urinal flusher are the same for all (flush-mounted) TECE urinal flush plates.



First, mark the bare-wall protection protrusion, and remove the polystyrene support. Loosen the screws and remove the bare-wall protection.



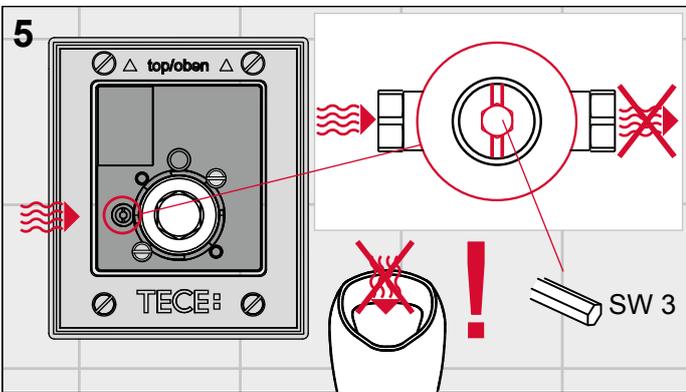
Replace the polystyrene support to provide stability, and cut the bare-wall protection along the marking. Replace the bare-wall protection and screw it onto the flush valve housing.



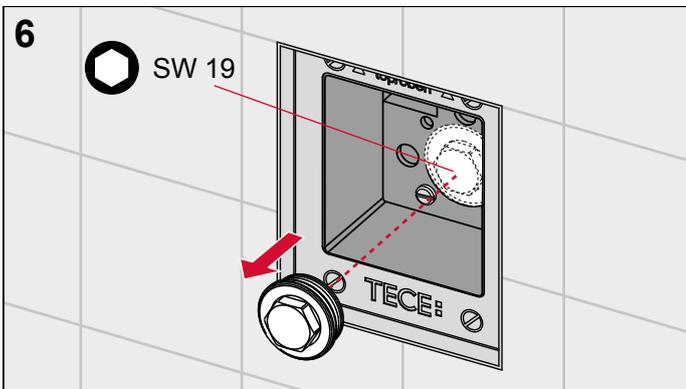
Flush out the pipe.

Observe the following:

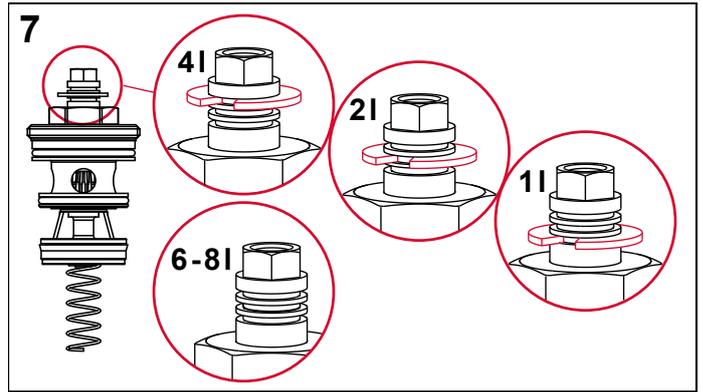
When performing the pressure test, the inlet flow control of the flush valve must be set to free-flow.



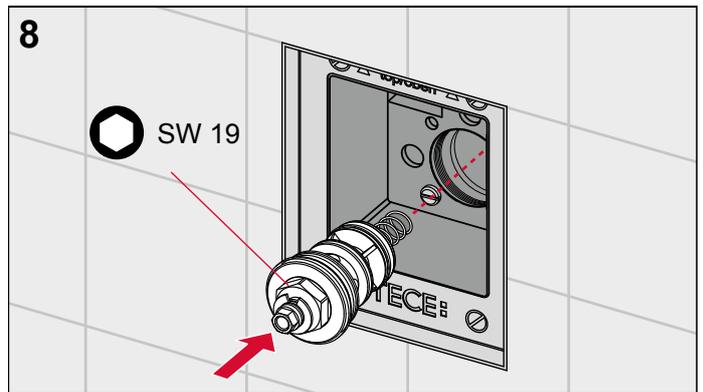
Before mounting the cartridge, ensure that the inlet flow control is closed so that no water can leak out during assembly. Close the shut-off using an Allen key. In the free-flow setting (fig. 4), the shut-off slot is parallel with the housing, and in the closed setting (fig. 5), it is at right angles to the housing.



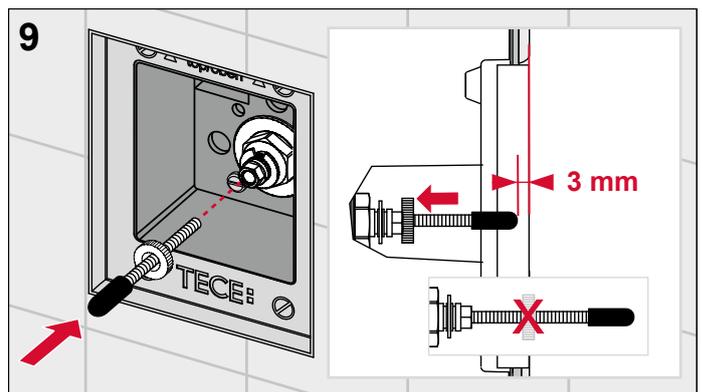
Remove the bare-wall plug.



If applicable, set the flush volume before mounting the cartridge (factory setting = 2 litres). To do this, remove the retaining ring and insert it back into the corresponding slot: the first slot corresponds to a flush volume of 1 litre, the second to 2 litres, and the third to a flush volume of 4 litres. Without a retaining ring, the flush valve will flush a volume of 6–8 litres.



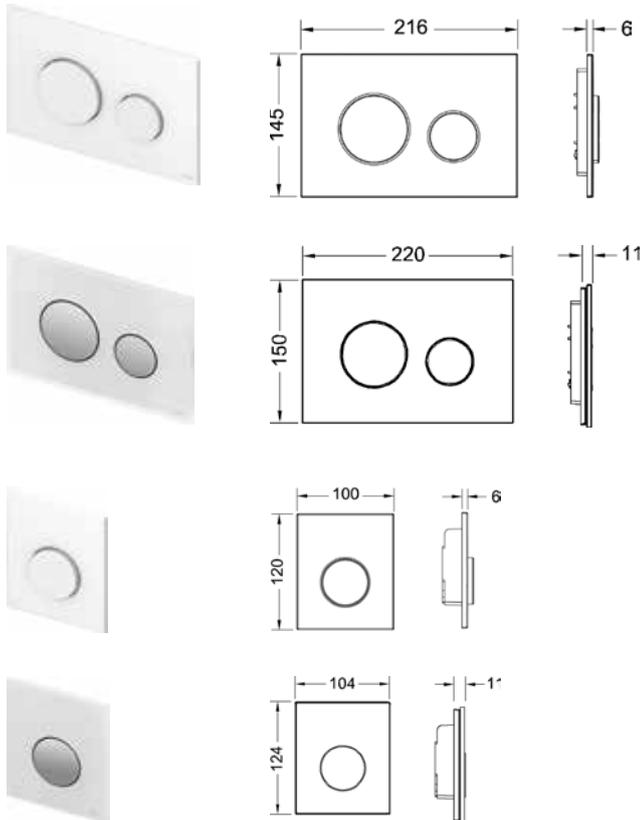
Screw in the mechanical cartridge.



Screw in the actuating rods as described above (for flush-mounted TECEsquare, distance to front edge of inside of installation frame = 3 mm), and screw on the counter nut to prevent them from turning.

TECEloop

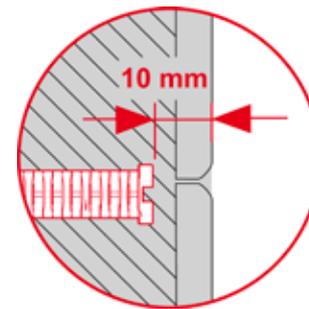
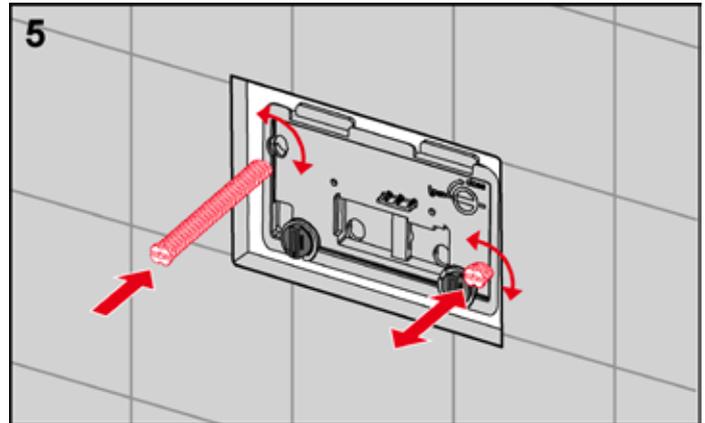
TECEloop flush plates are available in plastic or with a glass surface. The flush-mounted installation option is an outstanding feature of the TECEloop glass flush plate. The TECEloop flush plate is also available for urinals.



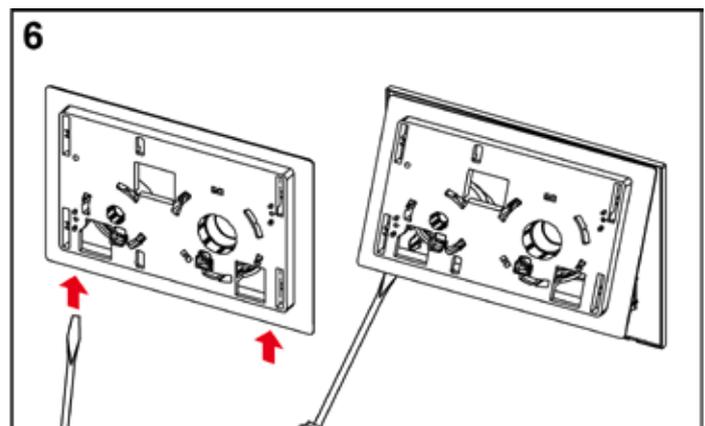
TECEloop toilet flush plate, plastic
 TECEloop toilet flush plate, glass
 TECEloop urinal flush plate, plastic
 TECEloop urinal flush plate, glass

Wall-mounted installation of the plastic toilet flush plate

As with all TECE flush plates, the first four steps for installing the toilet flush plate are the same (for more information, see the section entitled “TECESquare, Installing the TECESquare II metal toilet flush plate”).

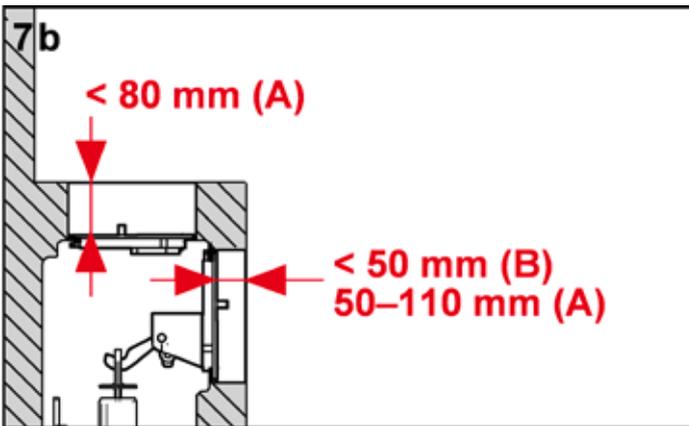
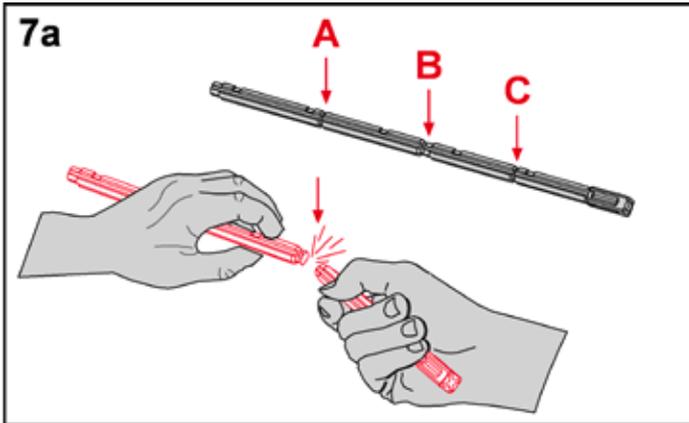


Screw in both attachment rods – distance of attachment rods to wall surface = 10 mm.

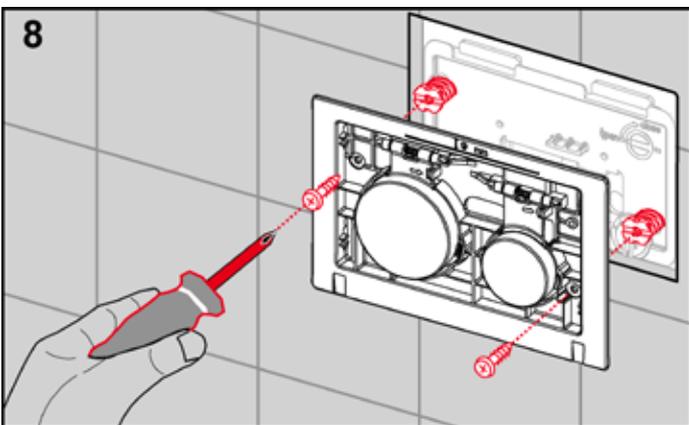


The cover and flush unit are supplied ready-mounted, and must be separated for the installation. Remove the cover from the flush plate using a screwdriver. Place the screwdriver into the recesses on the underside of the flush plate and carefully remove the cover.

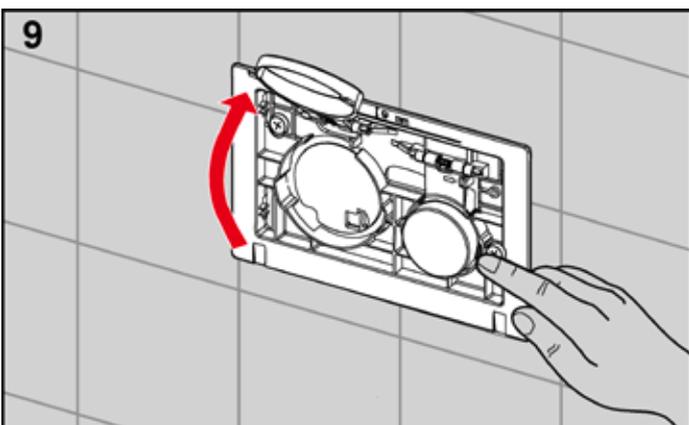
TECE flush plates – TECEloop



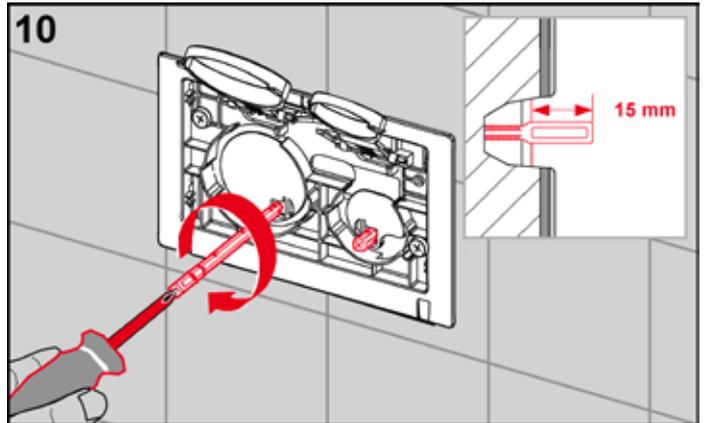
Break off the actuating rods according to the depth of the wall structure.



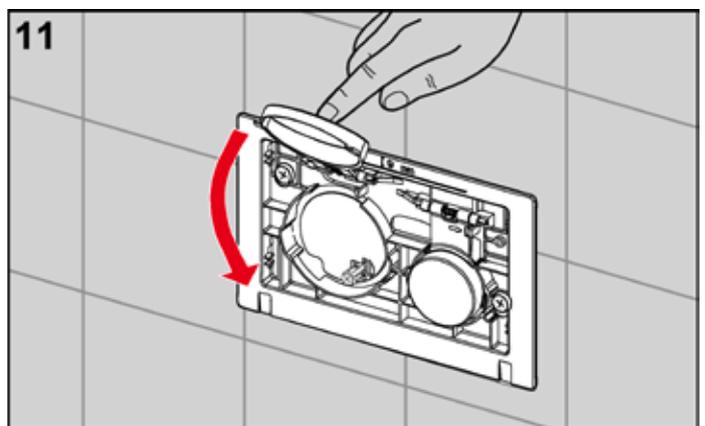
Screw the support frame onto the attachment rods.



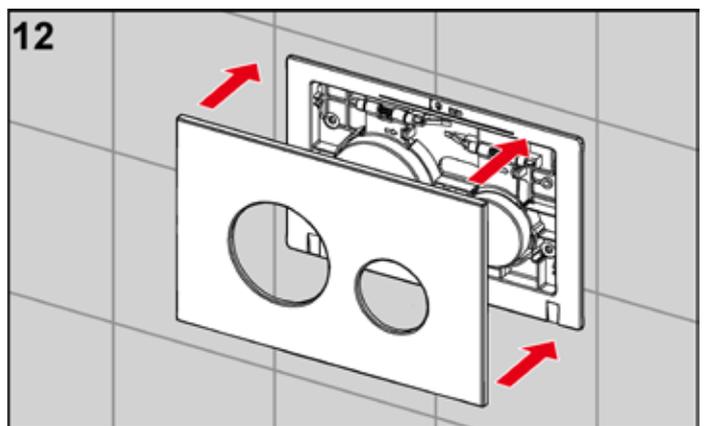
Unlock both buttons from the right and lift up.



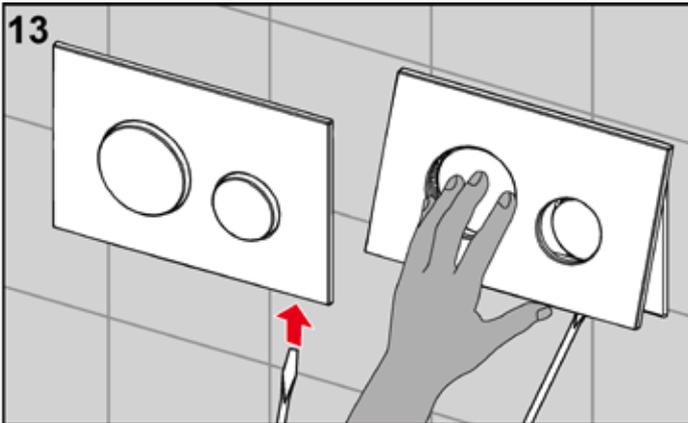
Screw in the actuating rods through the corner supports – distance to front edge of support frame = 15 mm.



Fold down and lock both buttons.



Allow the TECEloop flush plate cover to click into place in the support frame.



The installed cover can be detached from the flush plate using a screwdriver. To do this, insert the tool into the recesses on the underside of the flush plate and carefully remove it.

TECEloop modular system

The modular system is available for the TECEloop toilet flush plate with glass cover. The glass cover and flush plate must be ordered separately. This ensures a wide range of colour combinations (total of 104 possibilities).

Buttons + cover = toilet flush plate



The concept behind the TECEloop modular system is to enable the flush plate to match the bathroom's existing colour scheme as far as possible. For this reason, some of the glass covers are colour-coordinated with products from Alape, EMCO or Burgbad.

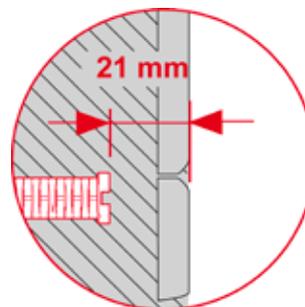
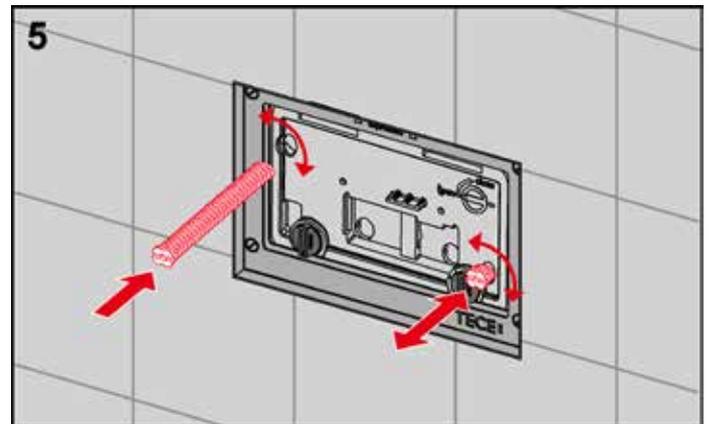
Wall-mounted installation of the glass toilet flush plate

The wall-mounted installation of the TECEloop flush plate with a plastic or glass cover is virtually the same (see section on "TECESquare, Installing the TECESquare II metal toilet flush plate"). The only difference is that the cover does not need to be dismounted as it is already separated on delivery.

Flush-mounted installation of the glass toilet flush plate

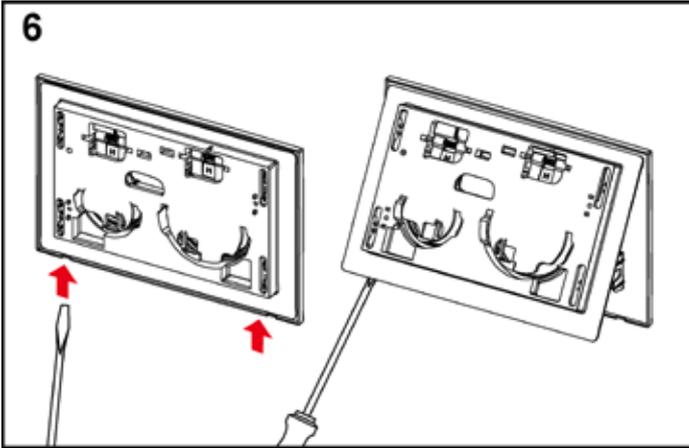
An installation frame is necessary for the flush-mounted installation of the TECEloop glass flush plate. The installation frame should already have been installed before carrying out the detailed installation (see the section entitled "Flush-mounted installation" for more information).

As with all TECE flush plates, the first four steps for installing the toilet flush plate are the same (for more information, see the section entitled "TECESquare, Installing the TECESquare II metal toilet flush plate").

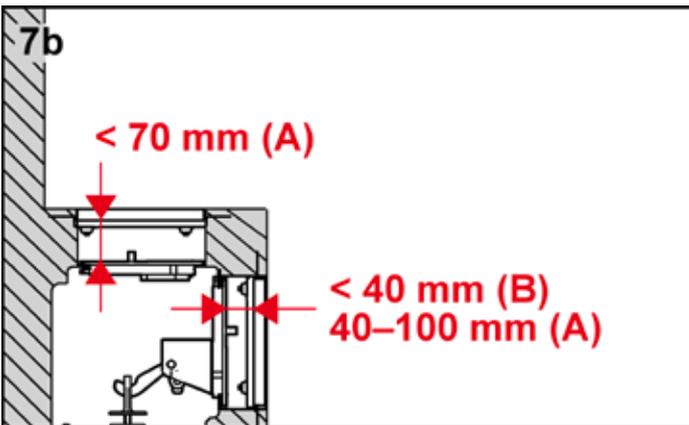
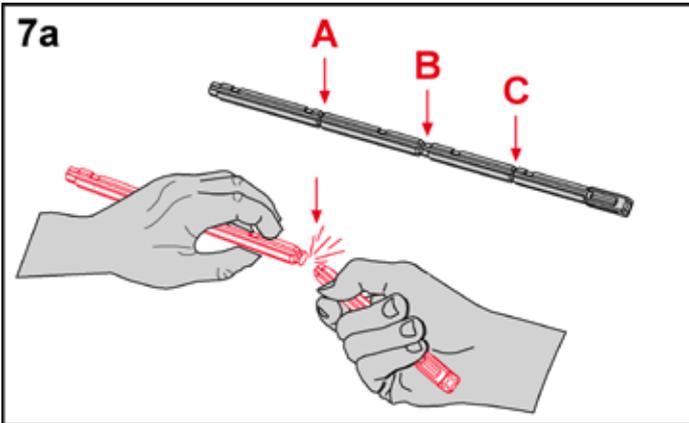


Screw in both attachment rods – distance of attachment rods to wall surface = 21 mm.

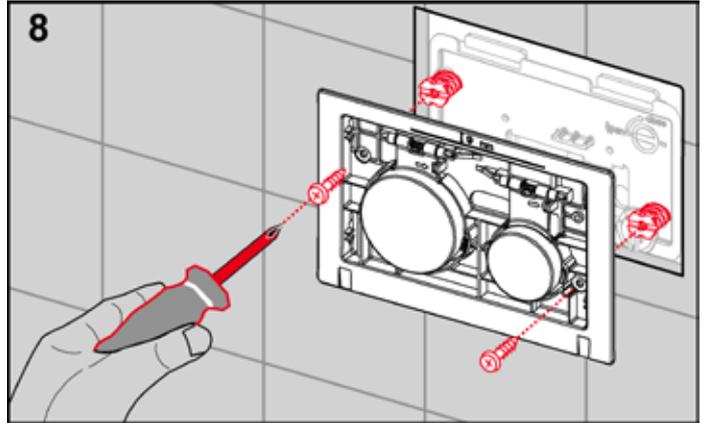
TECE flush plates – TECEloop



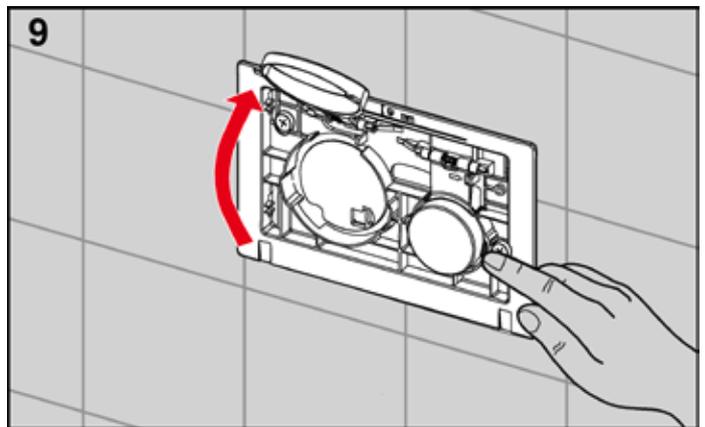
The cover and flush unit are supplied ready-mounted, and must be separated for the installation. Remove the cover from the flush plate using a screwdriver. Place the screwdriver into the recesses on the underside of the flush plate and carefully remove the cover.



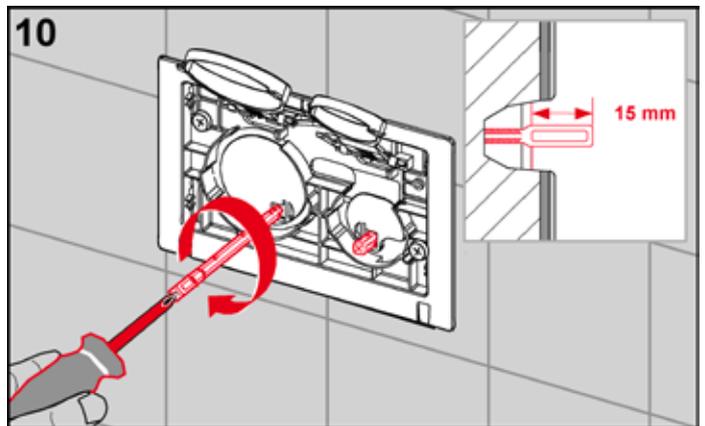
Break off the actuating rods according to the wall structure.



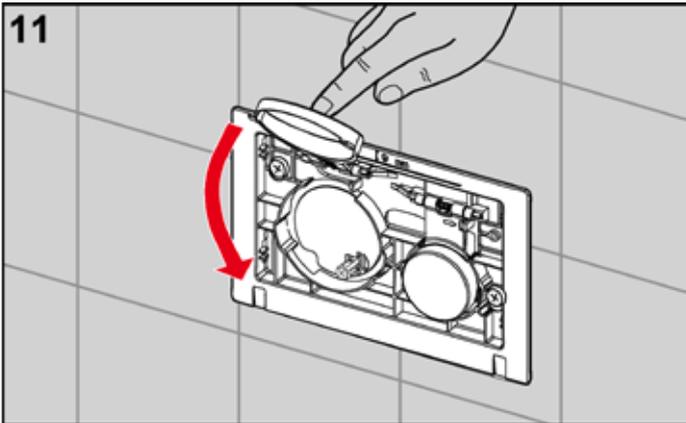
Screw the support frame onto the attachment rods.



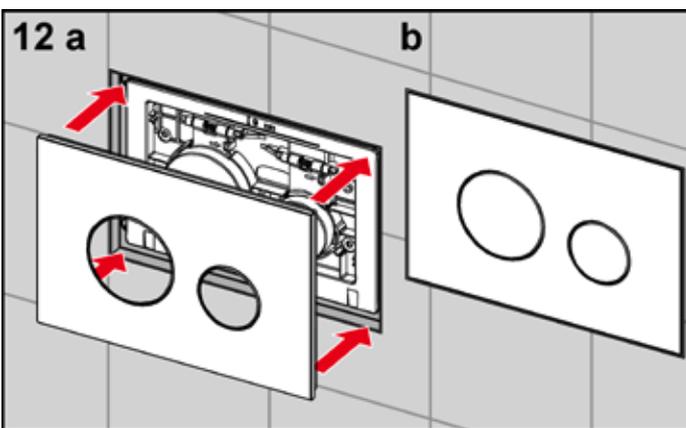
Unlock both buttons from the right and lift up.



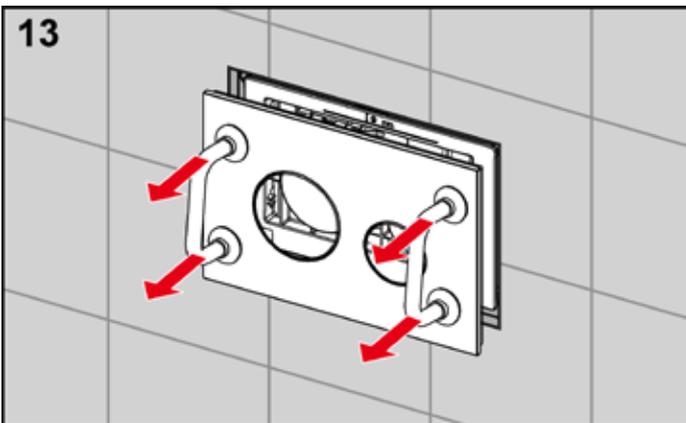
Screw in the actuating rods through the corner supports – distance to front edge of support frame = 15 mm.



11
Fold down and lock both buttons.



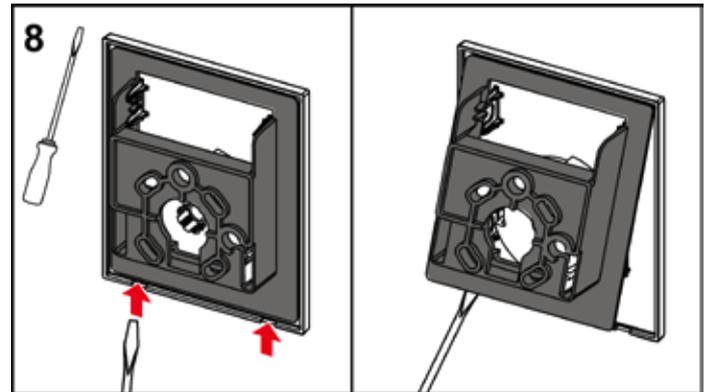
12 a b
Allow the TECEloop flush plate cover to click into place in the support frame.



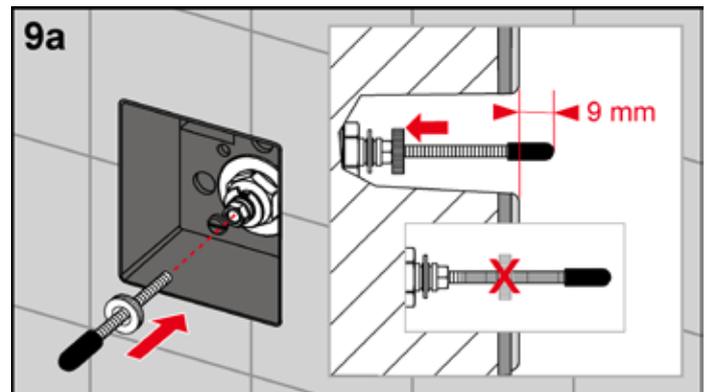
13
The installed cover can be removed from the flush plate using the bow-type handles included in the installation frame's scope of supply. Only position the suction cups on the cover to be removed.

Wall-mounted installation of the plastic urinal flush plate

The first seven steps of the procedure for installing the urinal flush plate for the U 1 urinal flusher are the same for all (wall-mounted) TECE flush plates – see “TECESquare – Wall-mounted installation of the glass urinal flush plate” for more information.

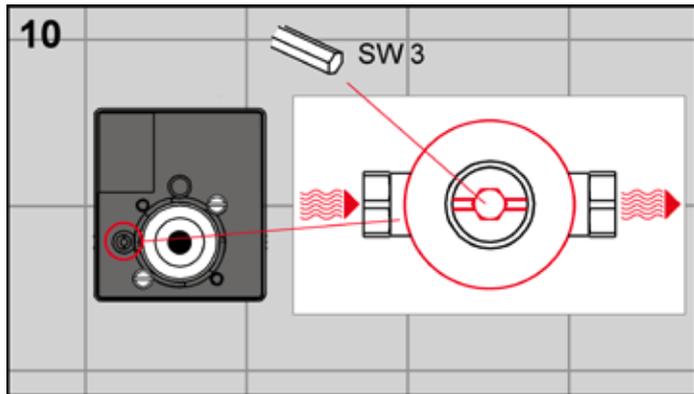


8
Loosen the support frame from the cover by inserting a screwdriver into the notches on the underside.

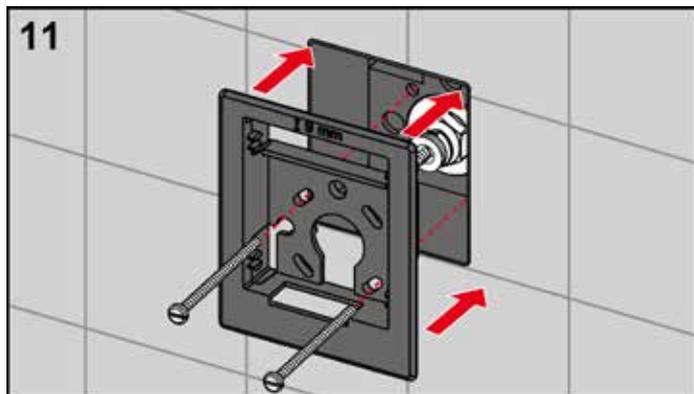
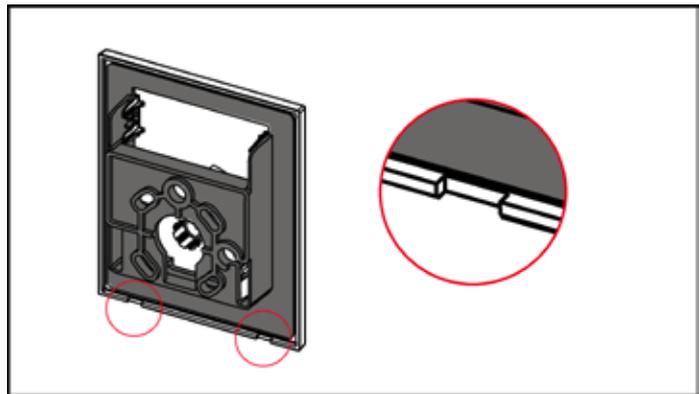


9a 9b
Screw in the actuating rods as described above (for the wall-mounted TECEloop, distance to wall surface = 9 mm) and screw on the counter nut to prevent them from turning. The setting length for the actuating rods is indicated on the top of the support frame. This enables you to set the rods quickly and easily.

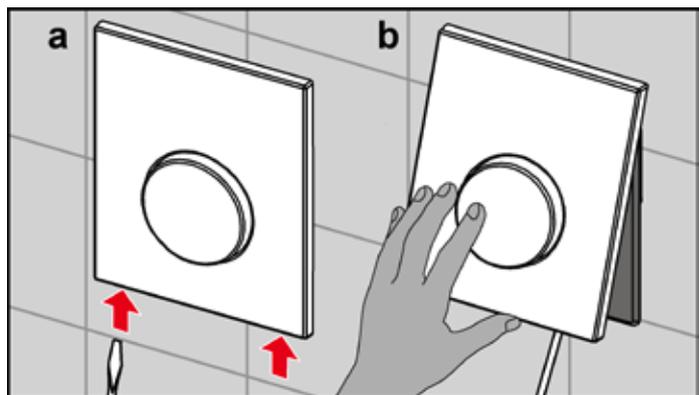
TECE flush plates – TECEloop



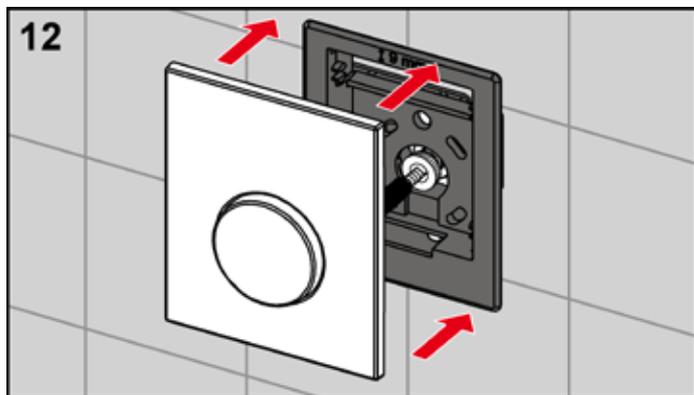
Open the inlet flow control.



Screw the support frame onto the urinal flush valve housing.



To dismantle the cover, insert a screwdriver into the notches on the underside of the flush plate.



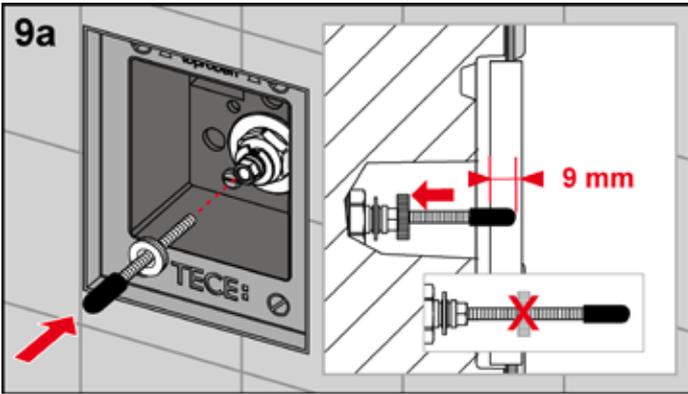
Finally, mount the flush plate cover.

Wall-mounted installation of the glass urinal flush plate

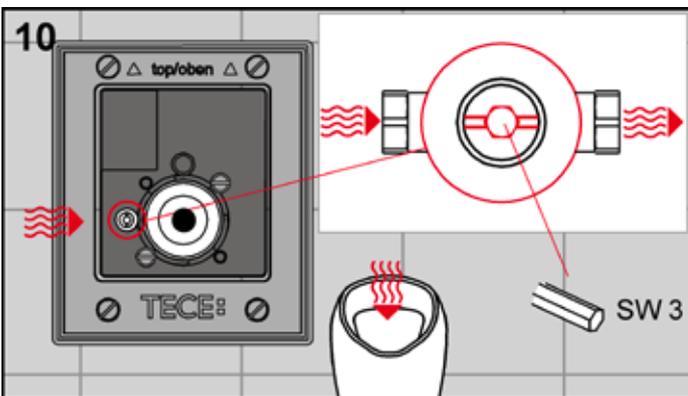
The procedure for the wall-mounted installation of the TECEloop urinal flush plate with a plastic or glass cover for the U 1 urinal flusher is virtually the same (see the section entitled “TECEsquare – Wall-mounted installation of the glass urinal flush plate” for more information).

Flush-mounted installation of the glass urinal flush plate

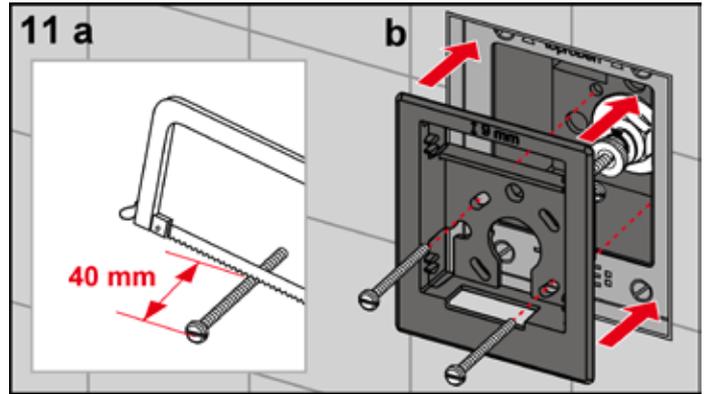
The first eight steps of the procedure for installing the urinal flush plate for the U 1 urinal flusher are the same for all (flush-mounted) TECE flush plates – see “TECEsquare – Flush-mounted installation of the glass urinal flush plate”.



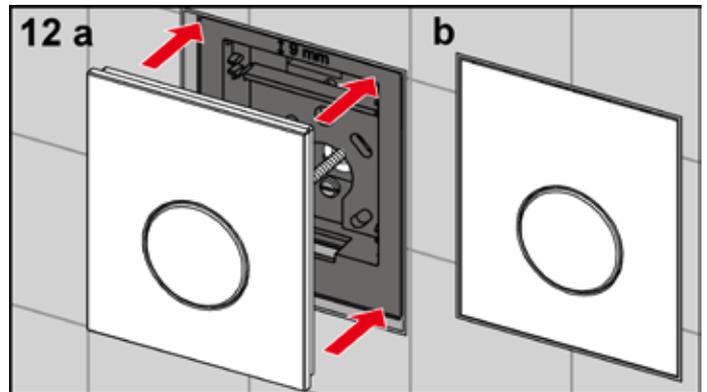
Screw in the actuating rods as described above (for flush-mounted TECEloop, distance to front edge of inside of installation frame = 9 mm), and screw on the counter nut to prevent them from turning.



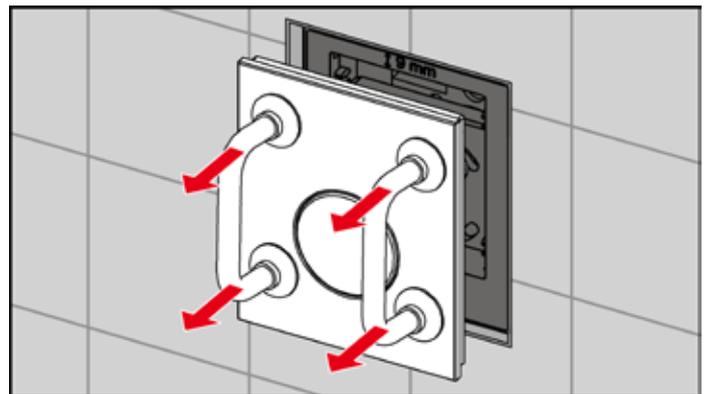
Open the inlet flow control.



Screw the support frame onto the urinal flush valve housing. If necessary, shorten the two screws so that they do not knock against the mounting cross beam (minimum length on minimum wall structure = 40 mm).



Allow the TECEloop flush plate cover to click into place in the support frame.

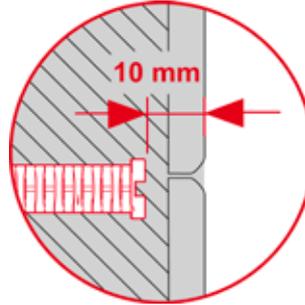


The installed cover can be removed from the flush plate using the bow-type handles included in the installation frame's scope of supply. Only position the suction cups on the cover to be removed.

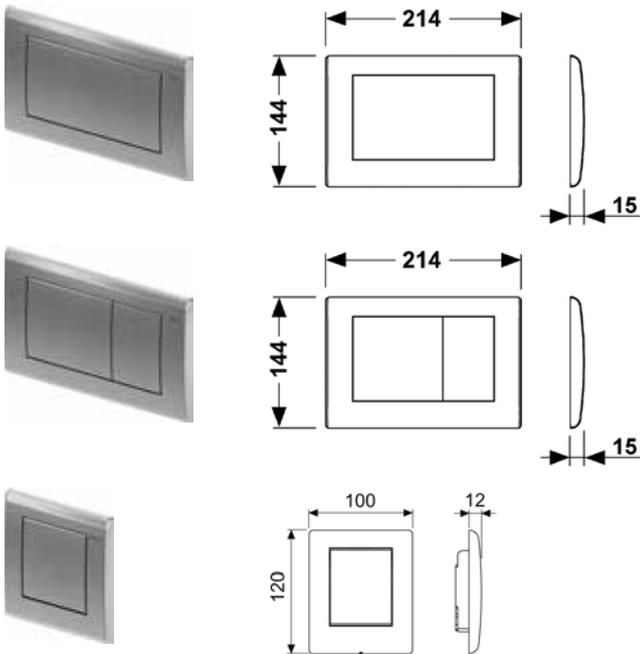
TECE flush plates – TECEplanus

TECEplanus

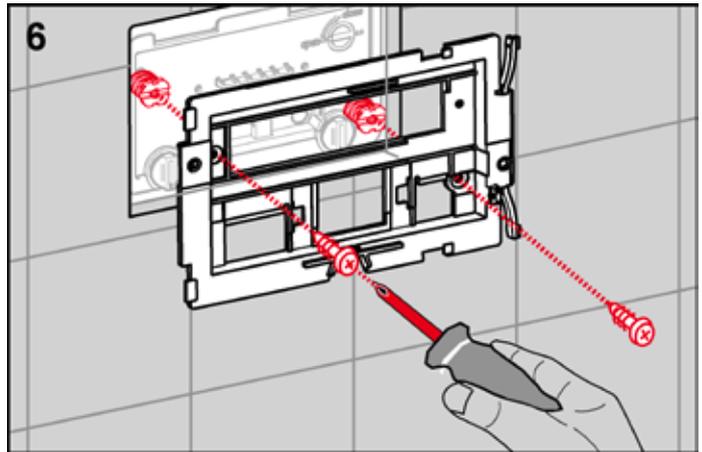
TECEplanus stainless steel flush plates are robust and can be used with single and dual-flush technology. These flush plates are vandal-proof thanks to a concealed screw. This makes them particularly suitable for public sanitary areas, restaurants and hotels. TECEplanus flush plates are available with a harmonised design, including for urinals.



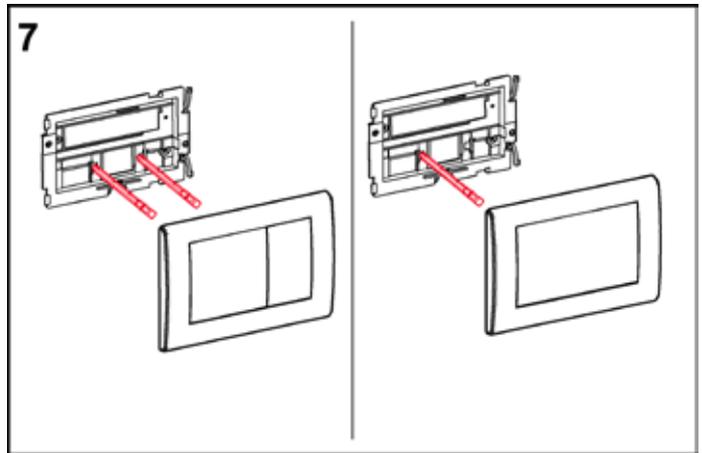
Screw in both attachment rods – distance of attachment rods to wall surface = 10 mm.



TECEplanus toilet flush plate, single-flush technology
 TECEplanus toilet flush plate, dual-flush technology
 TECEplanus urinal flush plate



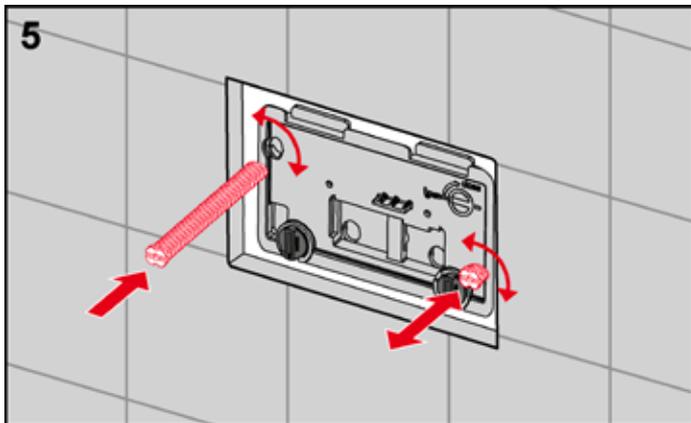
Mount the support frame to the attachment rods.

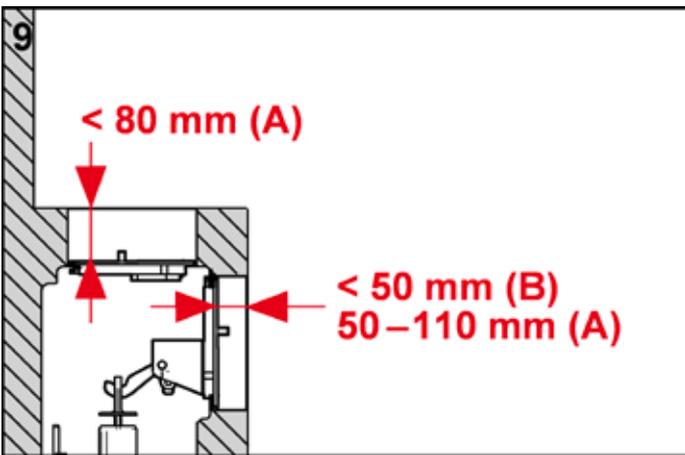
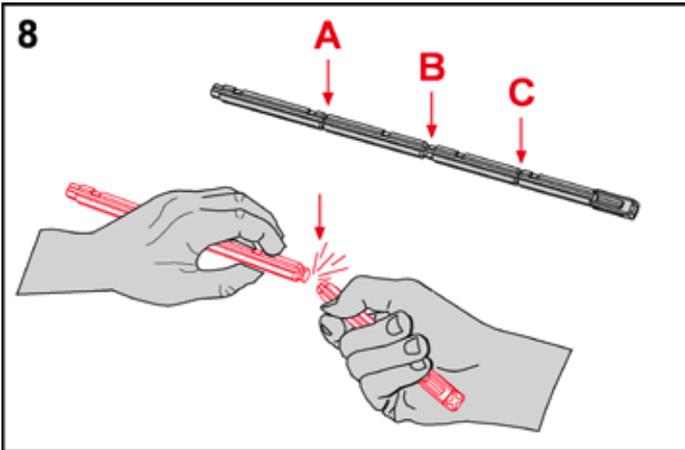


For dual-flush technology, two actuating rods (red and grey) are installed, whereas just one (grey) is required for single-flush technology.

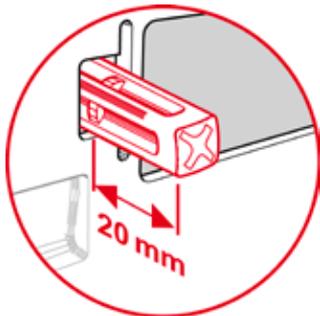
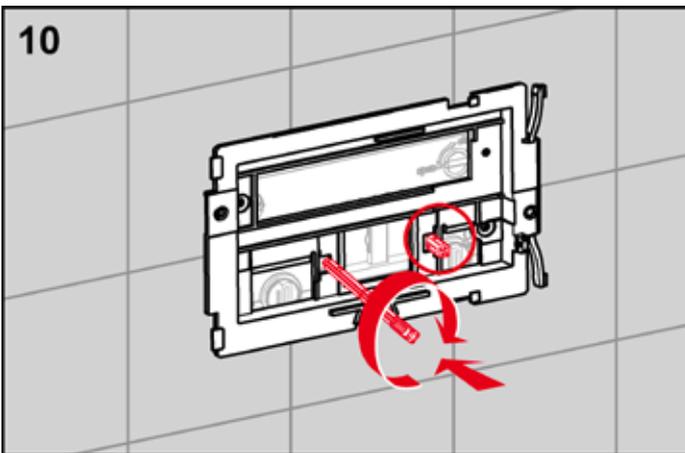
Installing the toilet flush plate

As with all TECE flush plates, the first four steps for installing the toilet flush plate are the same (for more information, see the section entitled “TECESquare, Installing the TECESquare II metal toilet flush plate”).

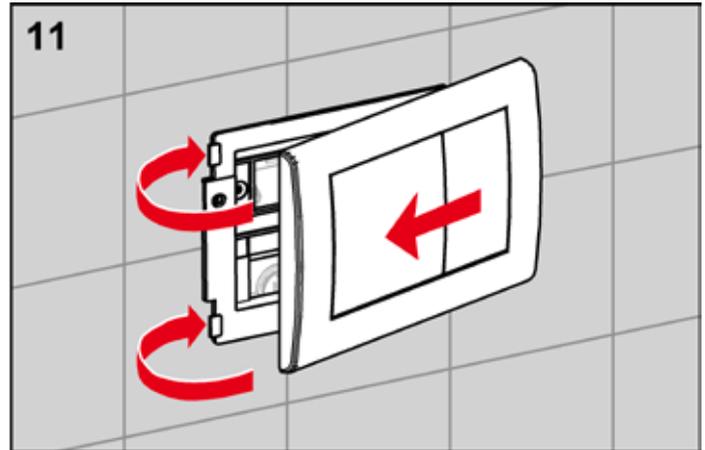




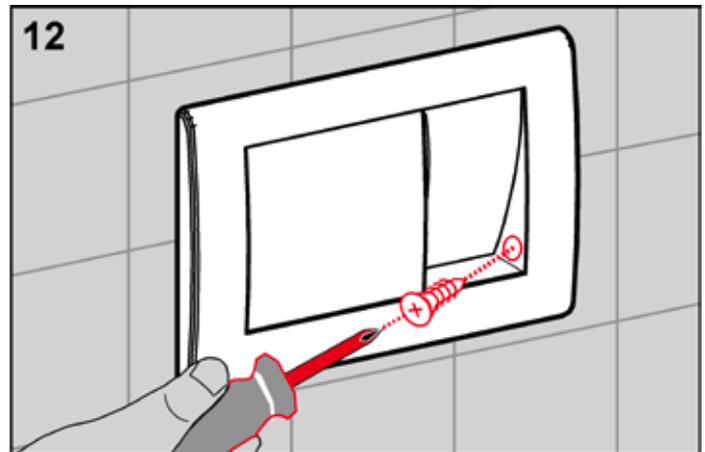
Break off the attachment rods according to the wall structure.



Screw in both actuating rods – distance to front edge of support frame = 20 mm.



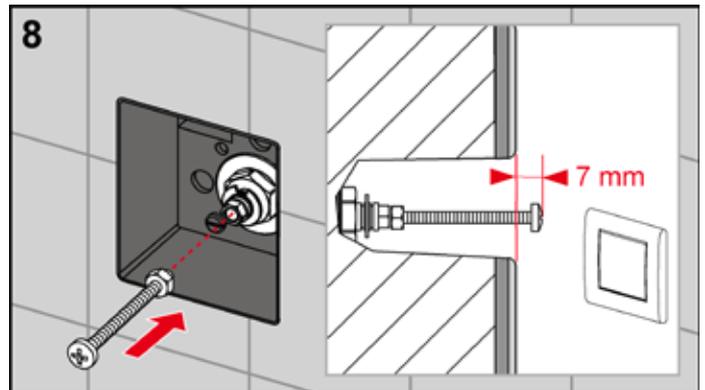
Hook the cover of the TECEambia flush plate into the right-hand side, and fit it onto the support frame by means of the snap lock.



Then screw the vandal-resistant screw into the inside of the flush plate (caution: be careful not to damage the surface).

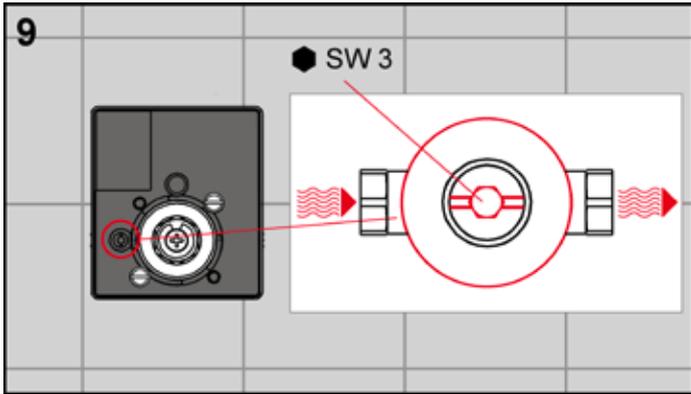
Installing the urinal flush plate

The first seven steps of the procedure for installing the urinal flush plate for the U 1 urinal flusher are the same for all (wall-mounted) TECE urinal flush plates – see “TECESquare – Wall-mounted installation of the urinal actuation” for more information.

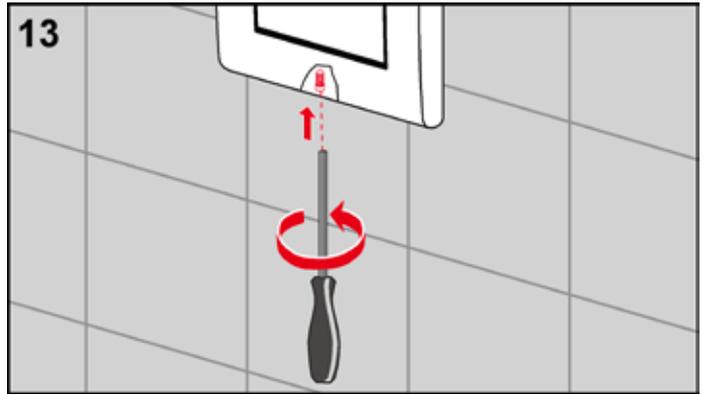


Screw in the actuating rods as described above (for the wall-mounted TECEplanus, distance to wall surface = 7 mm) and screw on the counter nut to prevent them from turning.

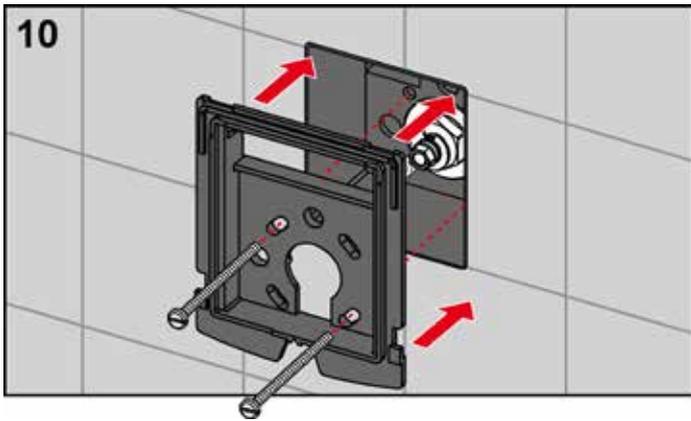
TECE flush plates – TECEplanus



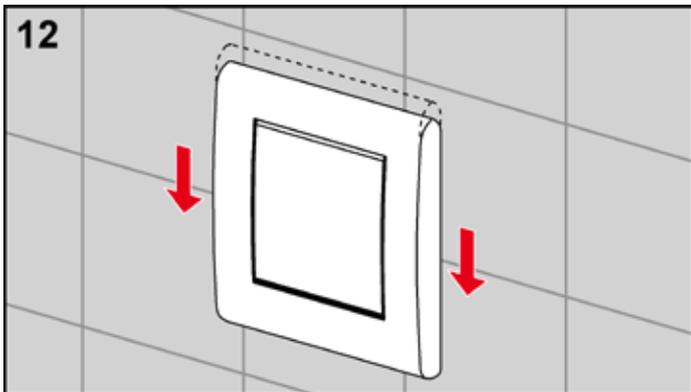
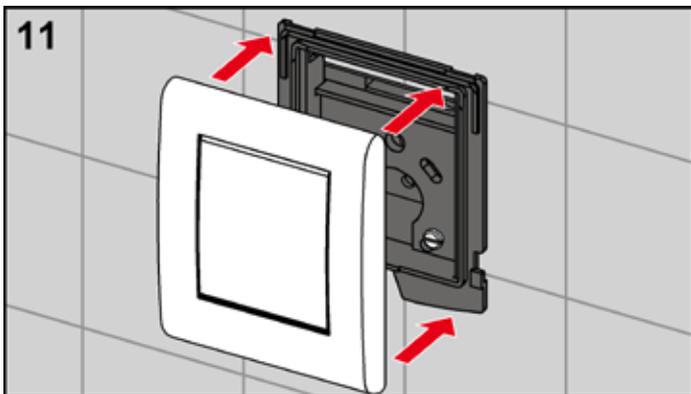
9 Open the inlet flow control.



13 If necessary, you can mount the vandal-resistant screw supplied.

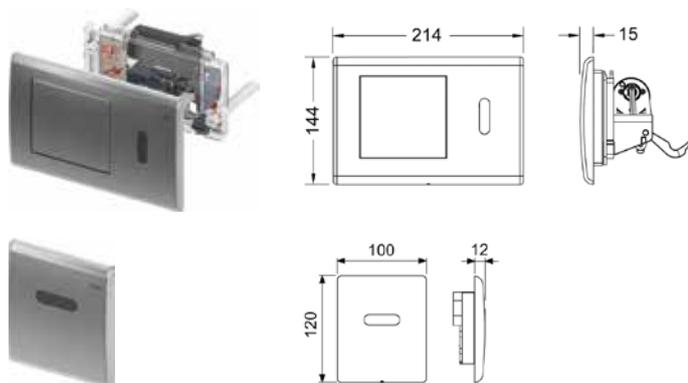


10 Screw the support frame onto the urinal flush valve housing.



12 Finally, mount the flush plate cover.

TECEplanus infrared electronics



TECEplanus toilet infrared electronics
TECEplanus urinal infrared electronics

TECEplanus infrared electronics are available for toilets and urinals.

Thanks to the autofocus infrared sensor, these electronics reliably detect use, and flush automatically. These electronics can either be powered by a 6 V battery or by the 12 V mains variant.

Observe the following:

A transformer must be used for the 12 V mains variant. A suitable place for this (flush-mounted socket or other) must be provided for the purpose as it must not be positioned next to the flush plate under any circumstances.

The connection cable between the transformer and the electronics must be max. 10 metres in length.

The TECEplanus infrared electronics are protected from theft by a vandal-resistant screw. On the toilet electronics, an additional single-flush can also be activated by hand.

Toilet infrared electronics

The toilet infrared electronics activate the flush if someone enters the detection range and leaves again – after a specified minimum period of time. The following parameters must be observed in the process:

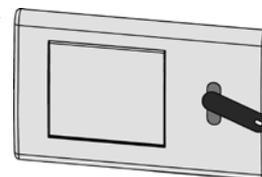
- The detection range is between 50 and 80 cm.
- The detection of people is not completed until a period of at least 16 seconds has passed, during which time the user must remain within the detection range.
- Actuation does not begin until the user has left the detection range: after 5 seconds, a short beep can be heard, after a further 2 seconds, flushing is activated.

If, within the last 7 seconds (5 + 2) the user enters the detection field, the flush actuation stops and only starts again after the user has left the range again, and after another 7 seconds have elapsed.

Cleaning function

Activating the cleaning function stops the toilet from flushing for ten minutes. After this time, a cleaning flush is automatically activated and the system returns to standard operating mode.

- Activating the cleaning function:
Hold the programming key briefly in front of the sensor window until an acknowledgement beep sounds.
- Disabling the cleaning function:
Hold the programming key briefly in front of the sensor window. Three consecutive acknowledgement beeps can be heard – the toilet electronics return to standard operating mode.



The cleaning function can only be activated in standard mode, not during the programming phase.

Programming the toilet infrared electronics

The toilet infrared electronics can be programmed within the first 30 minutes after power connection. Each configurable function is assigned a position.

Position	Function
1	Hygiene flush off
2	Hygiene flush 56 h
3	Hygiene flush 84 h
4	Hygiene flush 168 h
5	Hygiene flush 336 h
6	Hygiene flush 672 h

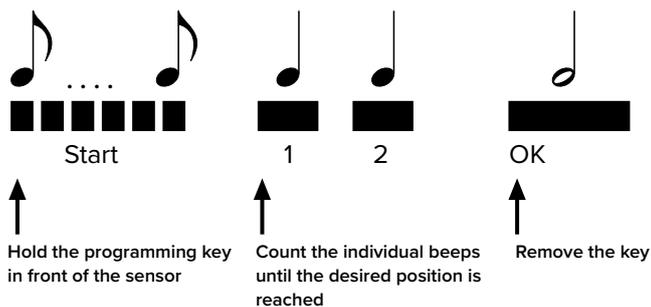
 = factory setting

TECE flush plates – TECEplanus infrared electronics

This is how to program the toilet infrared electronics:

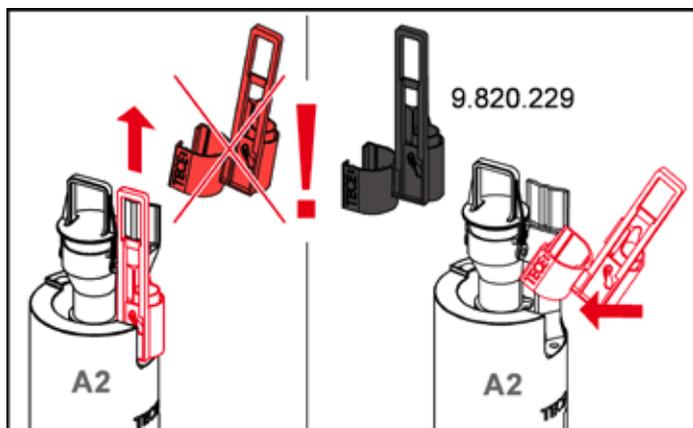
- Hold the programming key in front of the sensor window (see figure). The programming mode starts with a quick series of short beeps.
- After the start-up phase, a sequence of the same beeps can be heard. Count the beeps until you reach your desired function.
- Now remove the programming key. A long beep indicates that the programming key has been removed.

Example: Setting the hygiene flush to 56 hours:



Adapting the cistern

When installing toilet electronics, the cistern's drain valve must be adapted:



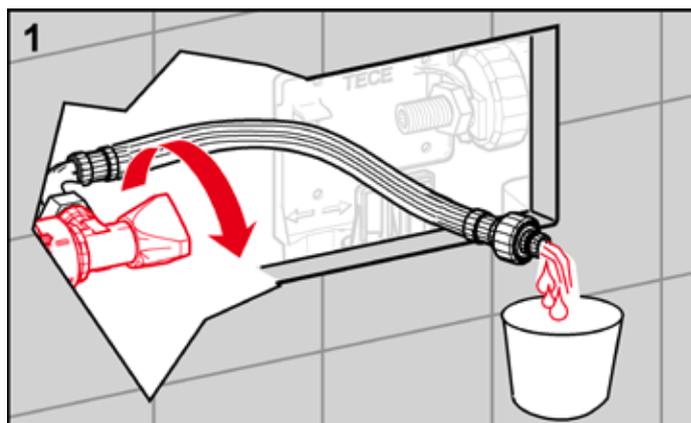
On cisterns installed after mid/end of 2009 and which contain the drain valve (A2) shown, the valve's red pull rod must be replaced by a black one. This is supplied with the toilet electronics motor or is available as a replacement part (order no. 9820229).

Toilet infrared electronics power options

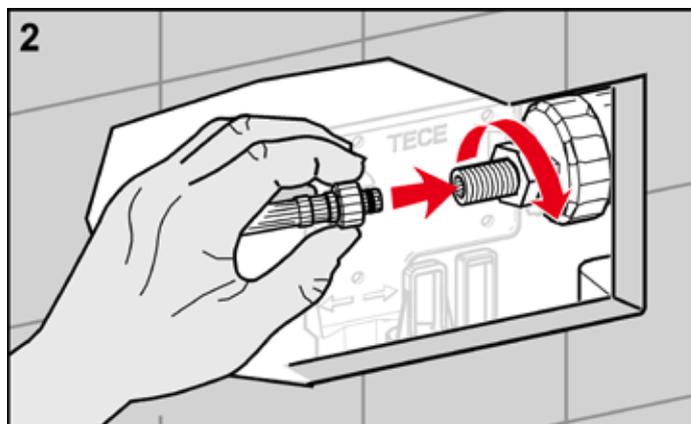
- Mains variant:
The TECE transformer (order no. 9810003, order separately) transforms 230 V AC to 12 V DC.
- Battery operation:
1 x Lithium 2CR5 – 6 V
Based on a service life of two years, the battery lasts for
 - 15,000 flushes or
 - approx. 20 flushes/day.
 Alternatively, the battery can also be operated by 4 mono cells (LR20). This increases durability to 110,000 flushes or 150 flushes/day. For this, in addition to batteries, you also require another battery housing (order no. 9820202).

Installing the toilet infrared electronics, 6 V battery

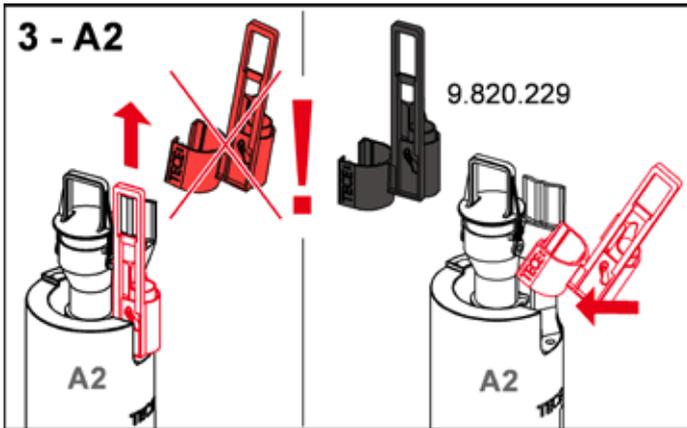
To install the battery version of the toilet electronics, proceed as follows:



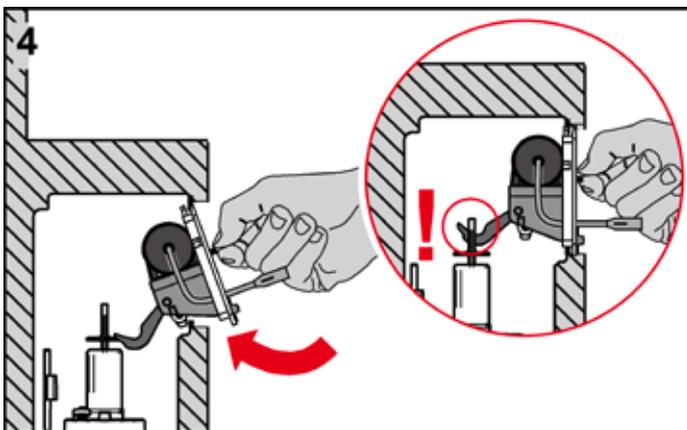
First remove the splash guard with the flush plate – this will no longer be required. Open the corner valve and sufficiently flush out the pipe.



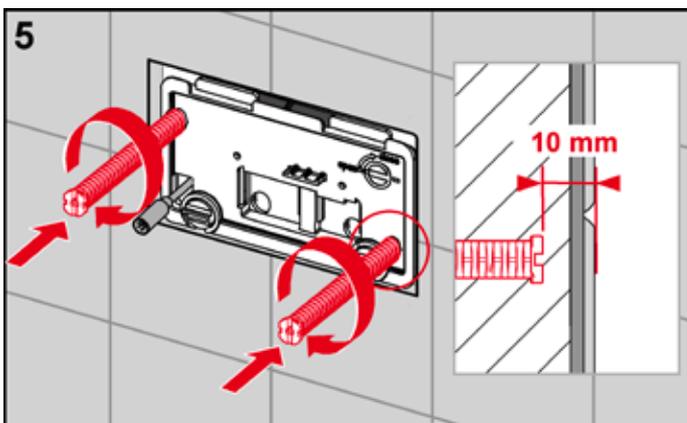
Turn the corner valve to close it again and connect the reinforced hose to the filling valve. If you wish to fill the cistern with water (e.g. for the initial operation), you must open the corner valve again.



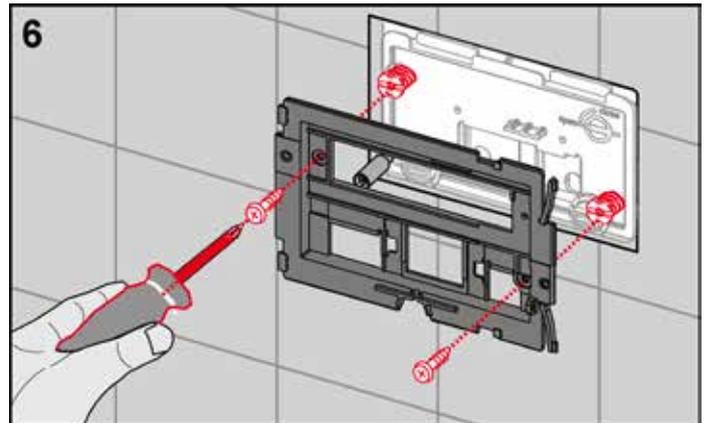
Then adjust the drain valve to the toilet electronics:
on newer cisterns installed after mid/end of 2009, the red pull rod of the valve (A2) must be replaced by a black one (see figure above).



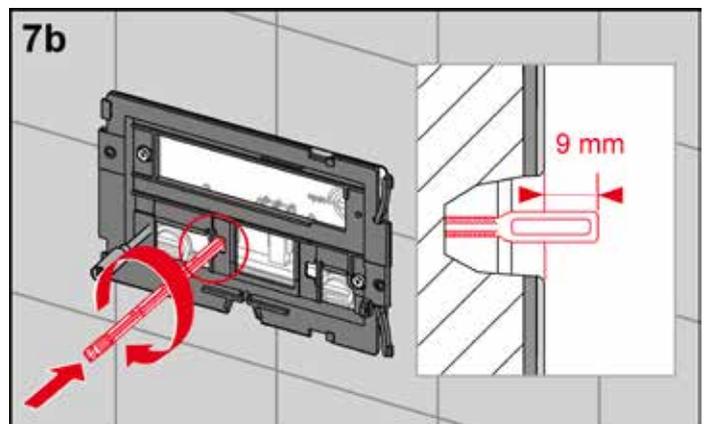
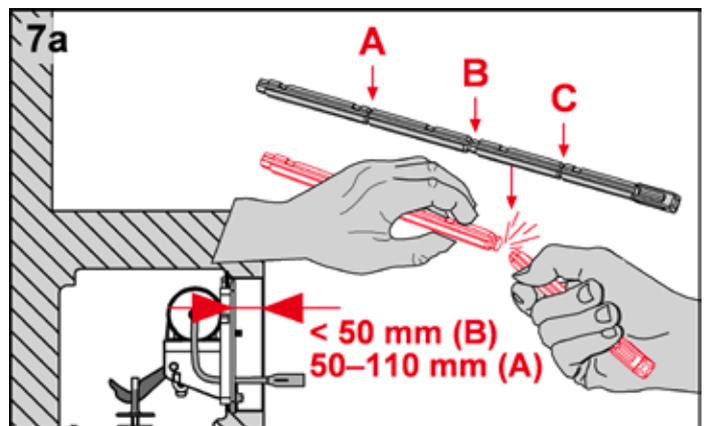
Insert the (new) splash guard for the electronics with the actuation motor. The activation hooks must fit correctly in the drain valve's drawbar eyelets. Tighten the splash guard clamping screws.



Mount the two attachment rods – distance to wall surface = 10 mm.

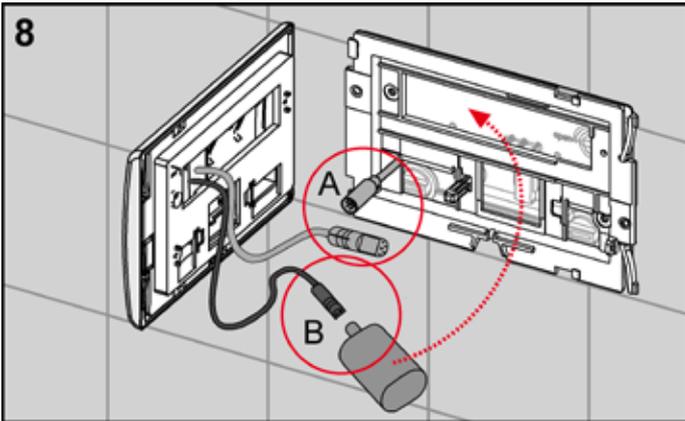


Mount the support frame.



Break off the actuating rods according to the thickness of the wall structure. Screw in both actuating rods – distance to front edge of support frame = 9 mm.

TECE flush plates – TECEplanus infrared electronics

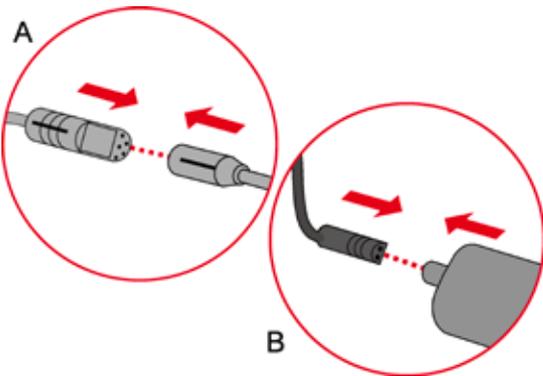


Hook the cover of the TECEplanus flush plate into the right-hand side and fit it onto the support frame by means of the snap lock. Then screw the vandal-resistant screw from underneath into the flush plate (caution: be careful not to damage the surface).

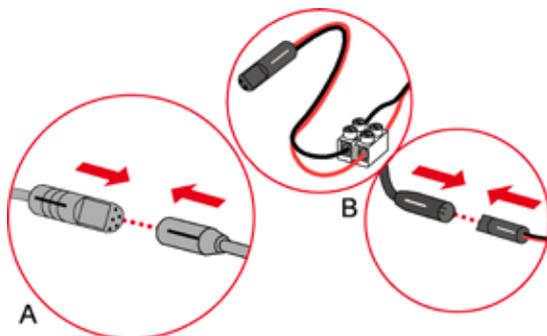
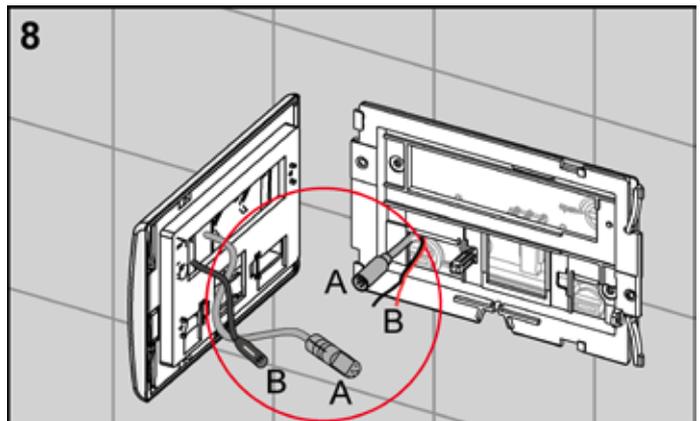
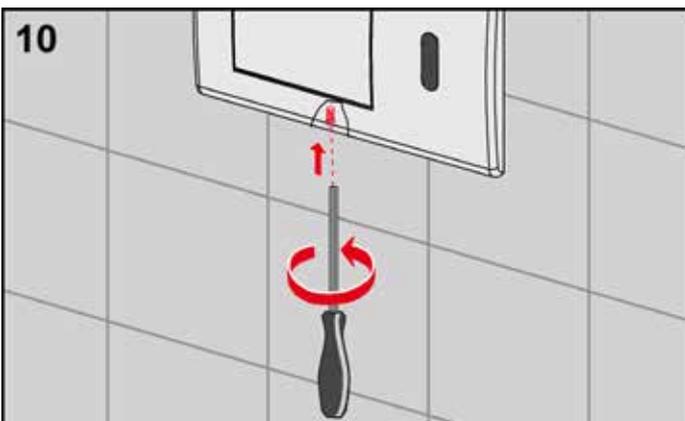
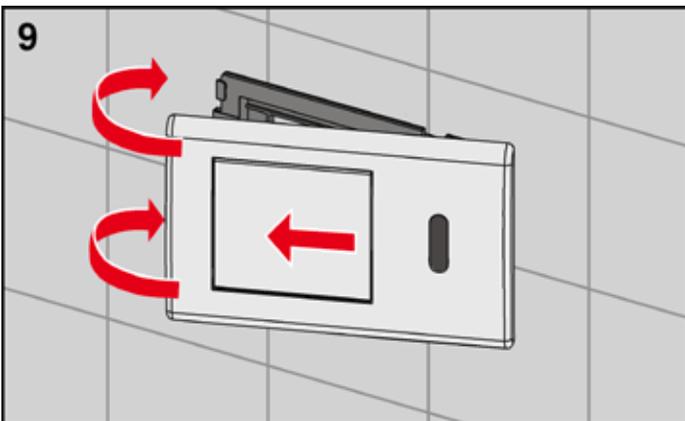
Installing the toilet infrared electronics, 12 V mains

To connect the 12 V mains version, for each toilet flush plate, you need a TECE transformer (order no. 9810003, order separately) and a connection cable (order no. 9810004, order separately).

The steps for installing the toilet infrared electronics are virtually the same (see the section entitled “TECEplanus, Installing the toilet infrared electronics, 6 V battery” for more information) apart from the connection to the electronics or power supply:



Connect the electronics to the actuation motor and the battery via the plug. If installed correctly, directly after connecting all plugs and the power supply, the electronics will automatically activate the motor once.



Connect the electronics to the actuation motor and the 12 V mains via the plug or terminal strip. If installed correctly, directly after connecting all plugs and the power supply, the electronics will automatically activate the motor once.

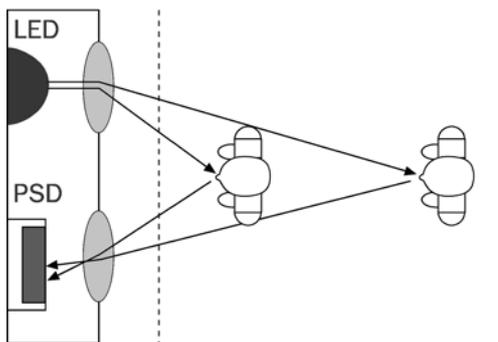
TECEplanus urinal infrared electronics

As well as the distance that a person retreats, the autofocus sensor of the urinal infrared technology also measures the angle of incidence of light that a person reflects. The sensor also detects whether this person is approaching or moving away.

Consequently, the flush is essentially activated independently of the colour of the user's clothing. It is possible to precisely determine the detection range completely separately from the background. This significantly reduces the likelihood of incorrect activation.

The TECE autofocus sensor has many advantages:

- Intelligent PSD (Unique Position Sensitive Detection) technology
- Precise activation behaviour
- Good black detection
- Insensitive to changing light conditions
- Minimum energy consumption with maximum battery life



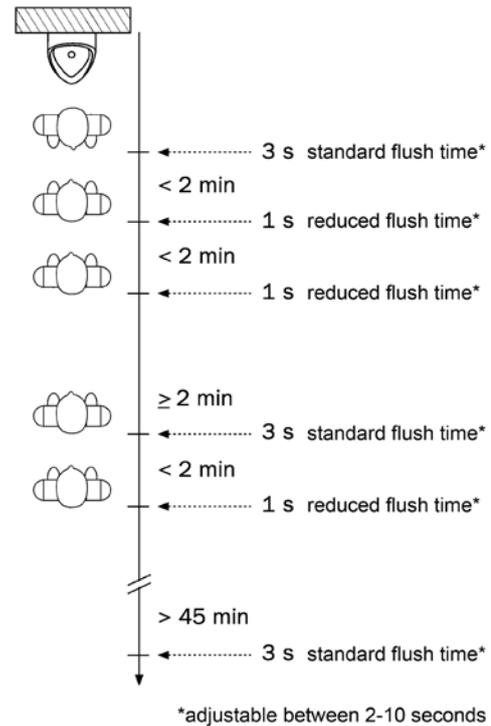
Function of the IR sensor with PSD technology

The toilet electronics activate the flush if someone enters the detection range and leaves again – after a specified minimum period of time. The following parameters must be observed in the process:

- The detection range is between 5 and 45 cm.
- The detection of people is not completed until a period of at least 6 seconds has passed, during which time the user must remain within the detection range.
- Actuation does not begin until the user has left the detection range.

Pause function

When the pause function is activated, the flush time is automatically reduced to one second following repeated flushes in short succession (less than every two minutes). 45 minutes after the last economy flush, a standard flush is activated.



Pause function

Cleaning function

Activating the cleaning function stops the urinal from flushing for ten minutes. After this time, a cleaning flush is automatically activated and the system returns to standard operating mode.

- Activating the cleaning function:
Hold the programming key briefly in front of the sensor window until an acknowledgement beep sounds.
- Disabling the cleaning function:
Hold the programming key briefly in front of the sensor window. Three consecutive acknowledgement beeps can be heard – the urinal returns to standard operating mode.

The cleaning function can only be activated in standard mode, not during the programming phase.

Programming the urinal infrared electronics

After installing the electrical supply, the electronics can be programmed within one hour using the magnetic key supplied. If you wish to change the program, you must interrupt the power supply. Thanks to a memory chip, the last program set always remains active even after a power cut.

TECE flush plates – TECEplanus infrared electronics

Position	Function
1	Pause function "off"
2	Pause function "on"
3	Flush time 2 s
4	Flush time 2.5 s
5	Flush time 3 s
6	Flush time 3.5 s
7	Flush time 4 s
8	Flush time 5 s
9	Flush time 6 s
10	Flush time 8 s
11	Flush time 10 s
12	Pre-rinsing "off"
13	Pre-rinsing 0.5 s
14	Pre-rinsing 1 s
15	Pre-rinsing 2 s
16	Hygiene flush off
17	Hygiene flush 24 h
18	Hygiene flush 255 h
19	Sensor sensitivity "low"
...	...
23	Distance "standard"
24	Distance "short"
25	Distance "long"
...	...
28	Factory setting
29	Urinal covers "off"
30	Urinal covers "on"

= factory setting

Approximately five seconds after being connected to the power supply, TECE electronics can be programmed in the first 30 minutes. Each configurable function is assigned a position.

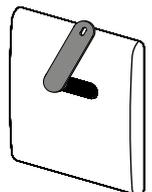
In programming mode, the electronics can be set with the magnetic key. In standard mode, only the cleaning function can be activated with this key.

- **Cleaning function:**
When cleaning the urinal, automatic flushing is generally not required as the cleaning agent needs time to take effect. For this reason, flushing can be delayed by 10 minutes.
- **Pre-flush (optional):**
(Duration 0–2 seconds) Briefly humidifies the ceramic before use, preventing adhesion of urine. Desired side effect: The pre-flush stimulates the urge to urinate.
- **Pause function (optional):**
The volume of water is automatically reduced if the urinal is flushed at intervals of less than two minutes. A cleaning flush takes place 45 minutes after the last water-saving flush.

- **Variable flush time:**
(Duration 2–10 seconds) The flush volume can be adapted to requirements throughout the flush time.
- **Distance:**
The modern autofocus sensor optical system operates reliably in varying construction situations. Nevertheless, the optical system's detection range can be changed on extremely small or large urinal systems.
- **Hygiene flush (optional):**
If this function is activated, a regular clean flush prevents the siphon from drying out and emitting unpleasant smells, and also prevents residues from being deposited (choice of 24 or 255 hours after the last flush).
- **Siphon refill (optional):**
Modern urinals generally suck the siphon contents completely away and then refill enough water to fill the siphon back up again. If this does not work, the refill function of the TECE electronics can be activated, and a short flush impulse fills the siphon up.

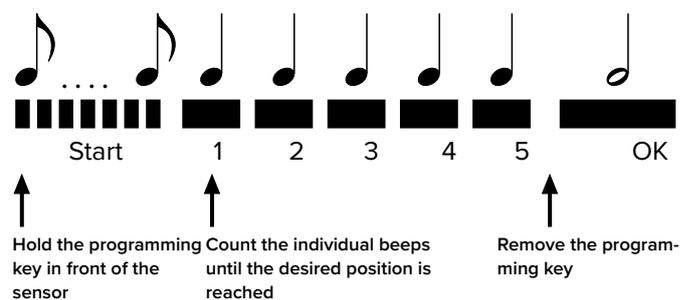
This is how to program the TECE electronics:

- Hold the programming key briefly in front of the sensor window. The programming mode starts with a quick series of short beeps.



- After the start-up phase, a sequence of the same beeps can be heard. Count the beeps until you reach your desired function.
- Now remove the programming key. A long beep indicates that the programming key has been removed.

Example: Setting the flush time to three seconds



Power options for urinal electronics with remote release

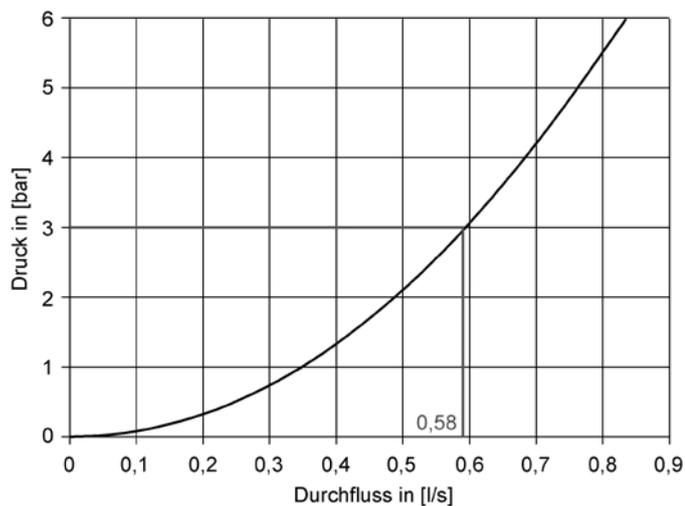
- Mains variant:
The TECE transformer (order no. 9810003, order separately) transforms 230 V AC to 12 V DC.
- Battery operation:
1 x 2 CR 5 Lithium – 6 V

Based on a service life of two years, the battery lasts for

- 220,000 flushes or
- approx. 300 flushes/day.

Technical data

Using the following flow diagram, you can calculate the flush volume for the urinal pressure flushing system depending on mains pressure and flush time.



Urinal flow diagram

Example:

Mains pressure 3 bar: flushing flow = 0.58 l/s
Flush time e.g. 3.5 s: flush volume approx: 2 litres

Urinal infrared electronics, 6 V battery

Minimum flow pressure	0.5 bar
Max. operating pressure	12 bar
Flow rate at 3 bar	0.58 l/s
Operating voltage	6 V DC
Power input	1 W
Max. power input	5 W
Battery type	Lithium 6 V, 2 CR 5
Battery service life	approx. 3 years
Protection class	III Safety extra low voltage (SELV)

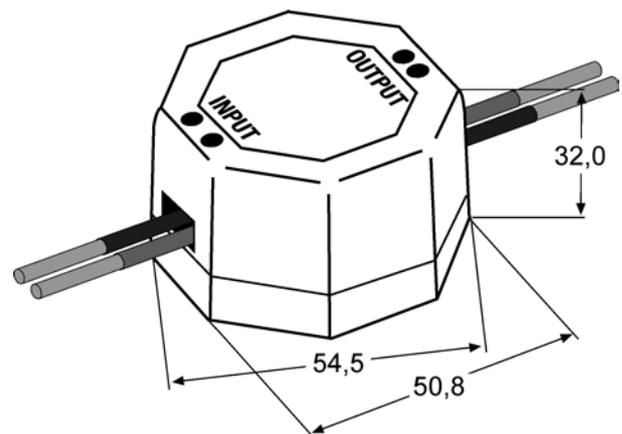
Flush time, factory setting	3 s
Flush time, setting range	2-10 s
Pre-flush, factory setting	off
Pre-flush, setting range	0.5-2 s
Pause function, factory setting	off
Hygiene flush, factory setting	off

Urinal infrared electronics 12 V mains

Minimum flow pressure	0.5 bar
Max. operating pressure	12 bar
Flow rate at 3 bar	0.58 l/s
Mains voltage	230 V
Operating voltage	12 V (± 20 %)
Power input	1 W
Max. power input	5 W
Protection class	III Safety extra low voltage (SELV)

Flush time, factory setting	3 s
Flush time, setting range	2-10 s
Pre-flush, factory setting	off
Pre-flush, setting range	0.5-2 s
Pause function, factory setting	off
Hygiene flush, factory setting	off
Hygiene flush, setting range	off, 24 hours, 255 hours

Transformer 230 V/12 V mains



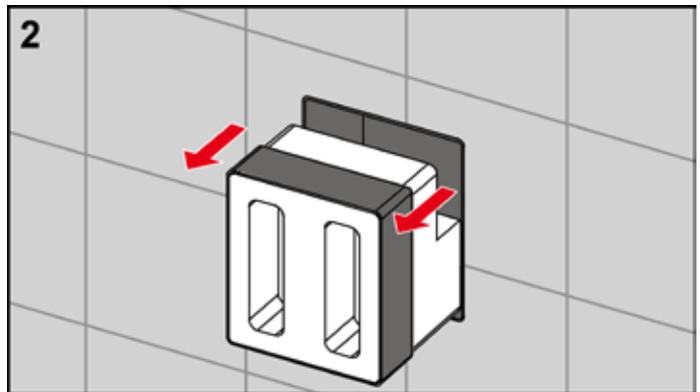
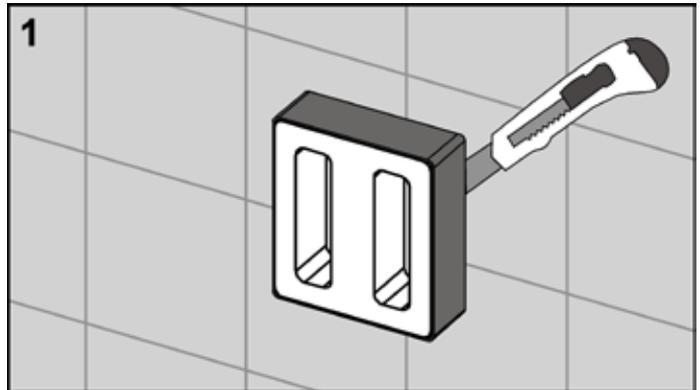
Input voltage	230 V AC (± 20 %)
Frequency	48–63 Hz
Rated output voltage	12 V DC (± 20 %)
Output voltage tolerance	± 3%
Residual ripple	< 50 mVpp
Rated output current	1.0 A
Nominal power	6 W
Minimum load	0
Energy efficiency	75%

TECE flush plates – TECEplanus infrared electronics

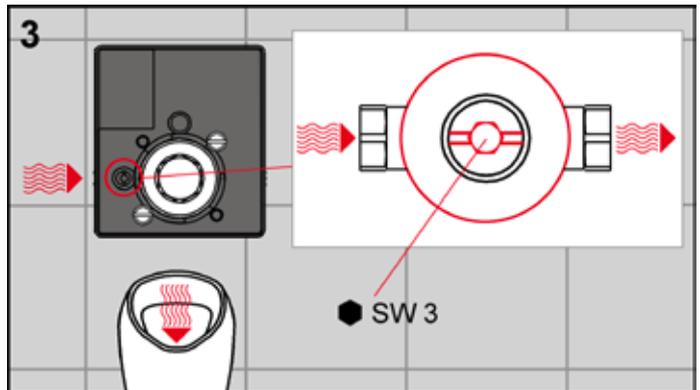
Flush plates

Overload protection	electronic
Short circuit protection	electronic
Type of protection	IP 2
Protection class	II
	CE low voltage power supply
Operating temperature	– 20 °C to + 40 °C
Safety standard	EN 61 558 / EN 60 950
EMV standard	EN 55 022/B
Technology	Switching
Switch frequency	100 KHz
Dielectric resistance	3 750 V/1 min
MTBF (MIL HDBK217)	120, 000 h

Installing urinal infrared electronics for the U 1 urinal flusher, 6 V battery



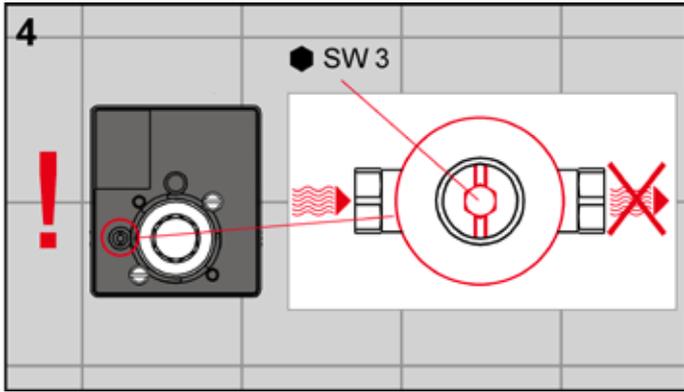
Cut the bare-wall protection flush against the wall, and remove it together with the polystyrene support.



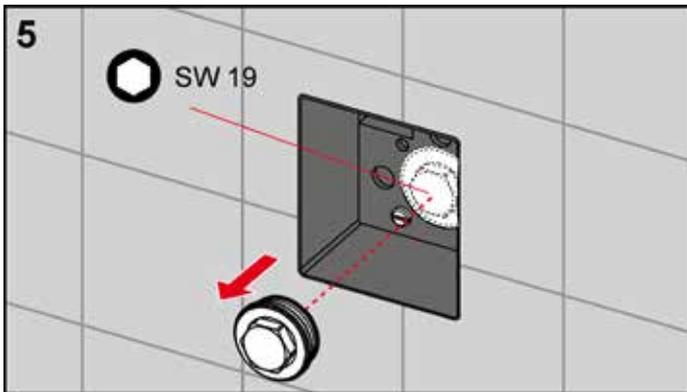
Sufficiently flush out the pipe.

Observe the following:

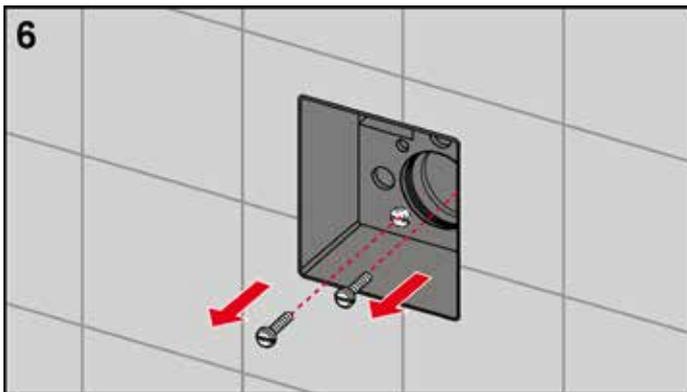
When performing the pressure test, the inlet flow control of the flush valve must be set to free-flow.



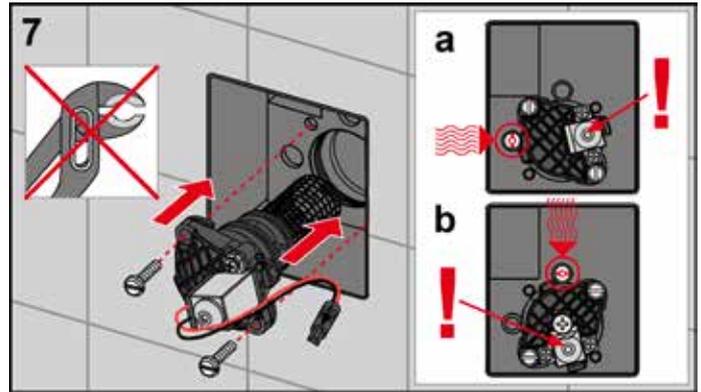
Before mounting the cartridge, ensure that the inlet flow control is closed so that no water can leak out during assembly. Close the shut-off using an Allen key. In the free-flow setting (fig. 3), the shut-off slot is parallel with the flush valve housing and in the closed setting (fig. 4), it is at right angles to the housing.



Remove the bare-wall plug.



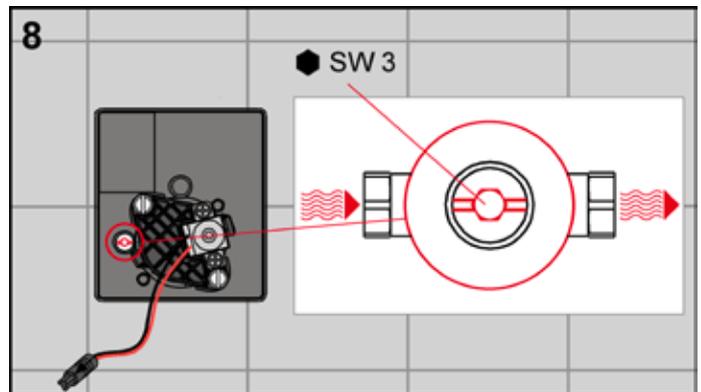
Unscrew the fastening screws on the bare-wall protection.



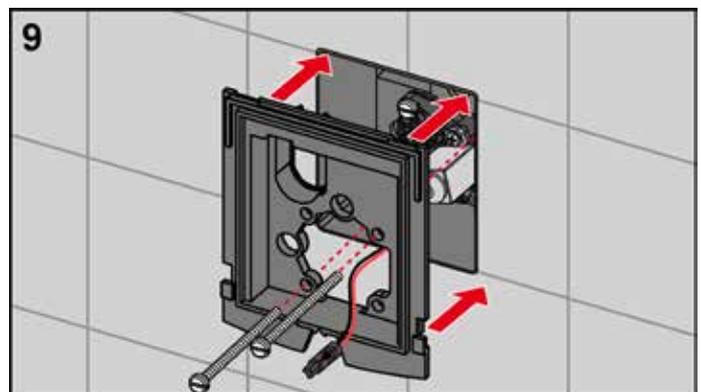
Install the electric cartridge (do not let the tool come into contact with it) and tighten the screws by hand.

Please note:

It is particularly important, when installing the electronic cartridge, to place it in the correct position. As can be seen on the right of the above illustration, the position also depends on the installation situation of the flush valve housing: Horizontal housing = shut-off on the left, electronics on the right (fig. 7a); vertical housing = shut-off at the top, electronics at the bottom (fig. 7b). If the cartridge is installed incorrectly, the function may operate to start with, however, malfunctions will occur after a while.

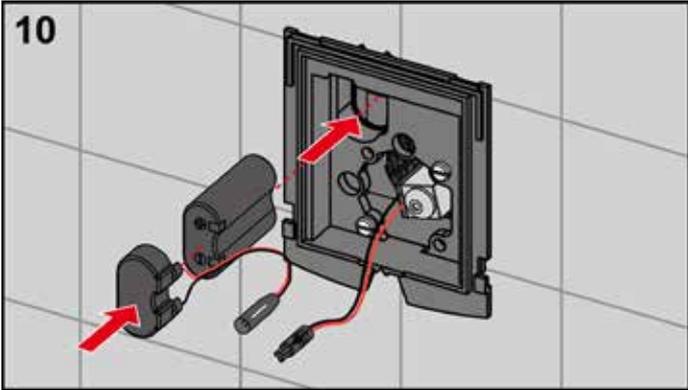


Open the inlet flow control.

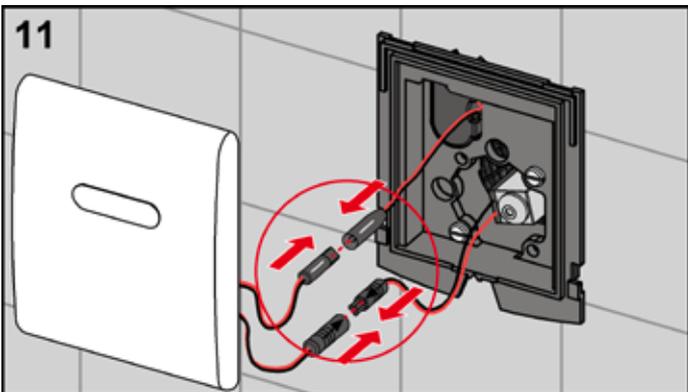


Screw the support frame onto the urinal flush valve housing.

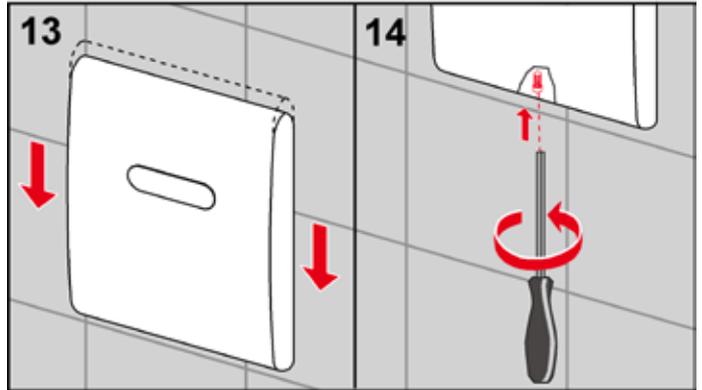
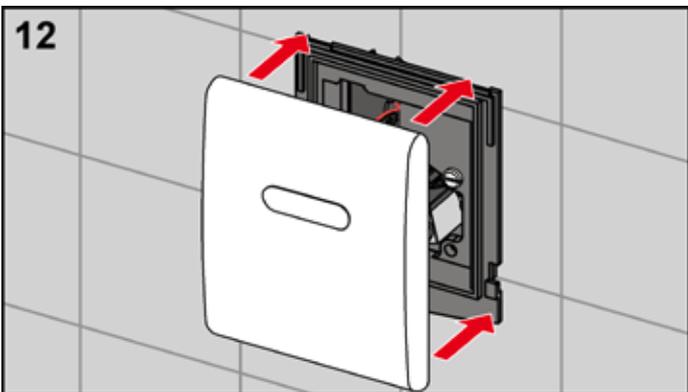
TECE flush plates – TECEplanus infrared electronics



Place the connector adapter on the battery and position it in the opening provided for the purpose.



Connect the battery and cartridge to the electronics.



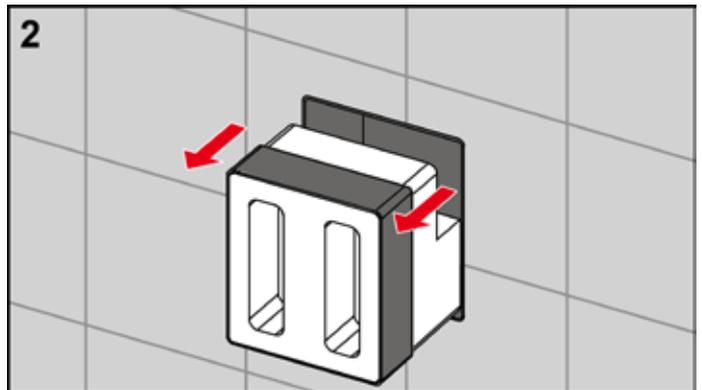
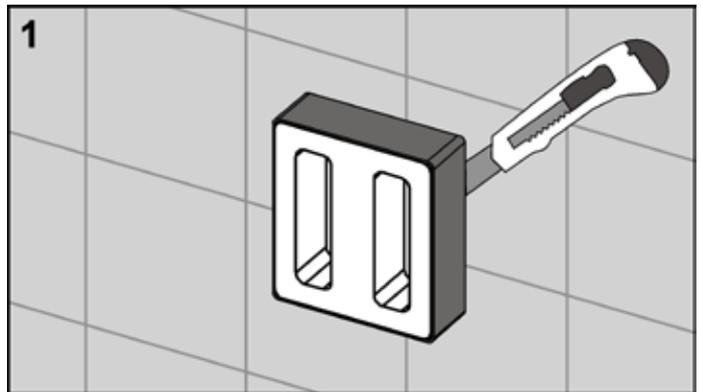
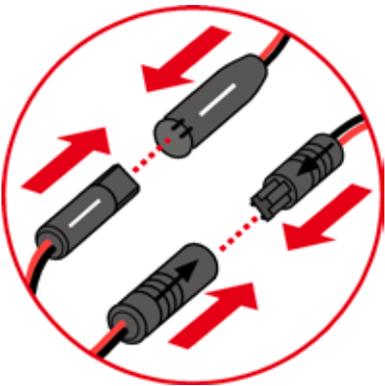
Finally, install the flush plate cover and mount the vandal-resistant screw supplied.

Installing the urinal infrared electronics, 12 V mains

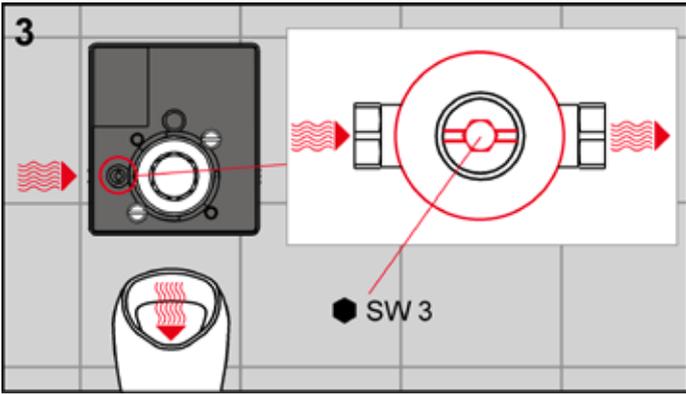
Caution:

When installing a 12 V variant, the following details must be observed:

- A maximum of 5 electronics may be connected to one transformer at the same time.
- The 12 V mains electronics must be connected in parallel in a series installation.
- The connection cable between the connection on the transformer and the most remote electronics must be max. 10 metres in length.



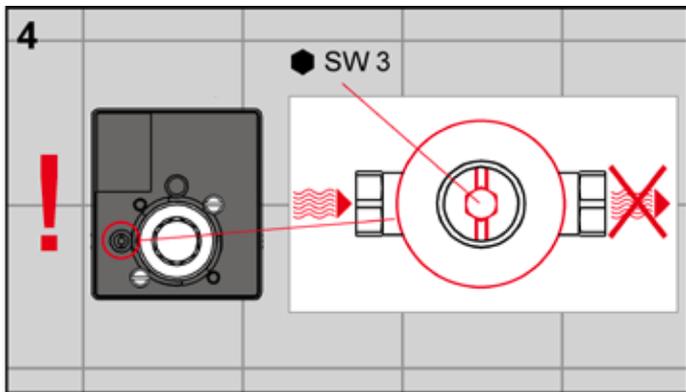
Cut the bare-wall protection flush against the wall, and remove it together with the polystyrene support.



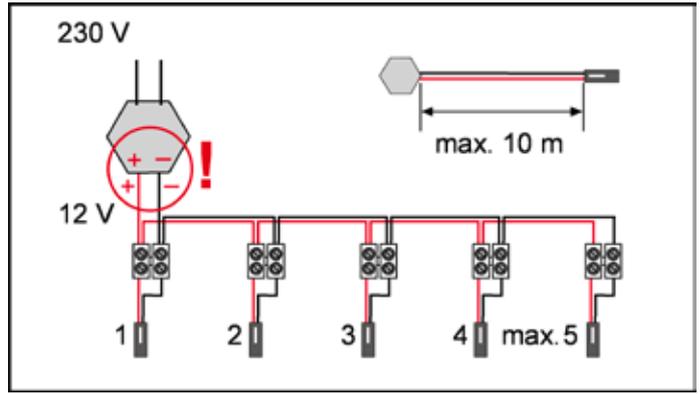
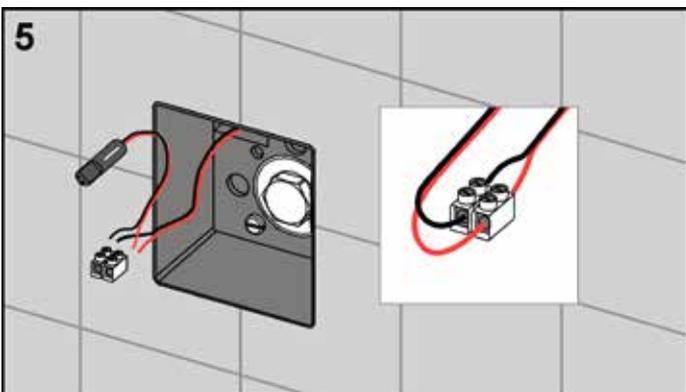
Sufficiently flush out the pipe.

Observe the following:

When performing the pressure test, the inlet flow control of the flush valve must be set to free-flow.

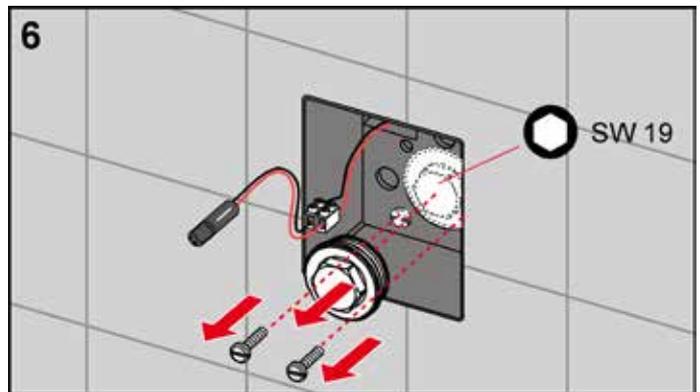


Before mounting the cartridge, ensure that the inlet flow control is closed so that no water can leak out during assembly. Close the shut-off using an Allen key. In the free-flow setting (fig. 3), the shut-off slot is parallel with the flush valve housing and in the closed setting (fig. 4), it is at right angles to the housing.

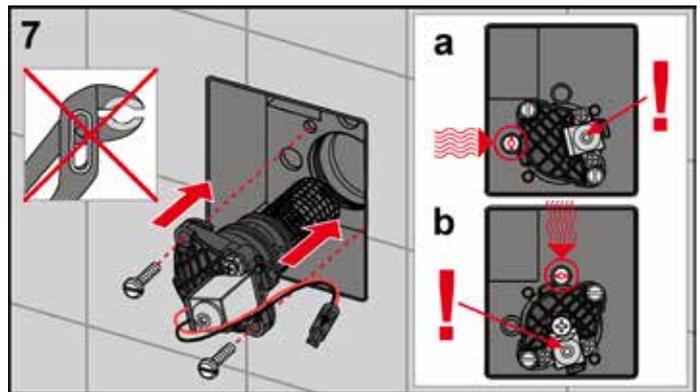


Connect the transformer cable to the mains connection adapter. Ensure correct polarity when making the connections.

Note the maximum number of connected electronics (= 5) and the maximum length of the connection cable (= 10 m).



Remove the bare-wall plug and unscrew the fastening screws on the bare-wall protection.

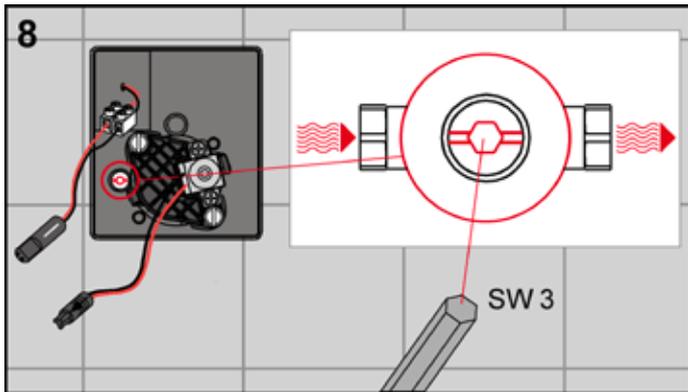


Install the electric cartridge (do not let the tool come into contact with it) and tighten the screws by hand.

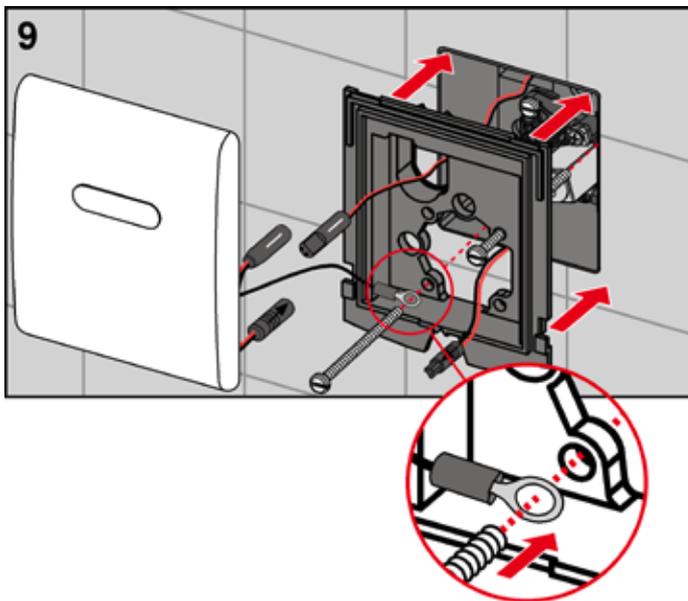
TECE flush plates – TECEplanus infrared electronics

Please note:

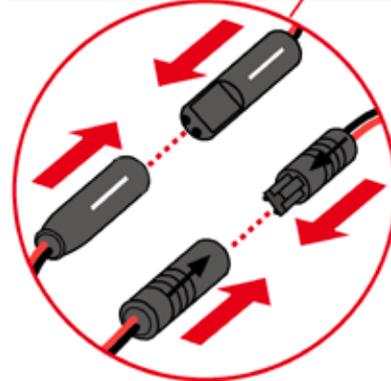
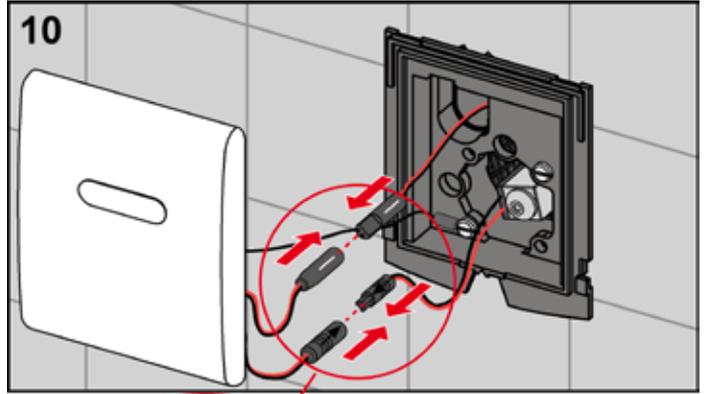
The right position is particularly important when installing the electronic cartridge. As can be seen on the right of the above illustration, the position also depends on the installation situation of the flush valve housing: Horizontal housing = shut-off on the left, electronics on the right (fig. 7a); Vertical housing = shut-off at the top, electronics at the bottom (fig. 7b). If the cartridge is installed incorrectly, the function may operate to start with, however, malfunctions will occur after a while.



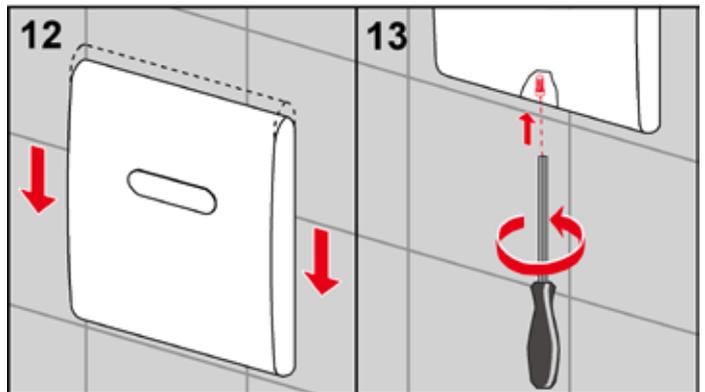
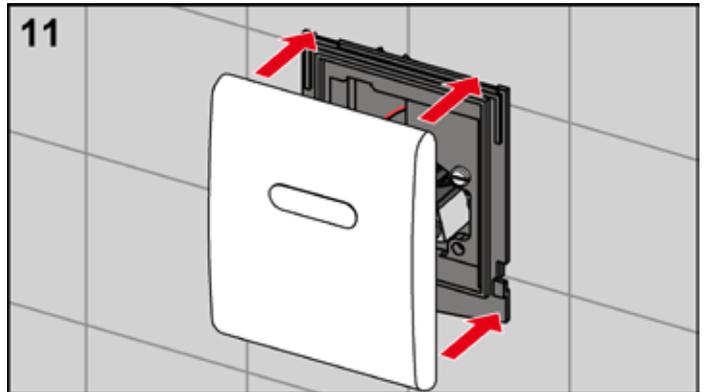
Open the inlet flow control.



Earth the electronics via the fastening screw on the flush valve housing (see details) and screw the support frame onto the urinal flush valve housing.



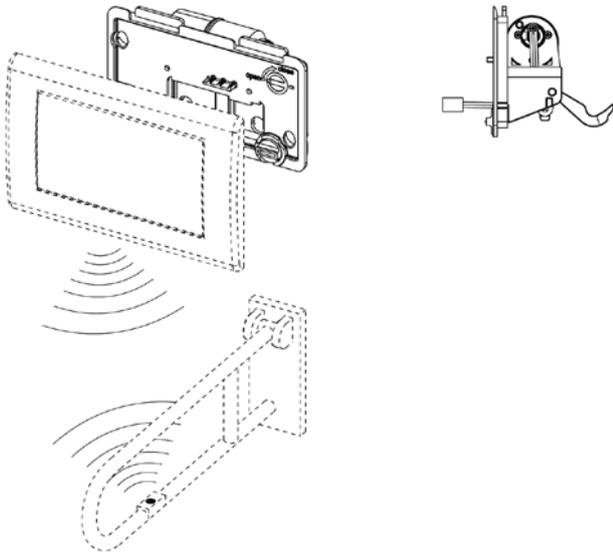
Connect the battery and cartridge to the electronics.



Finally, install the flush plate cover and mount the vandal-resistant screw supplied.

TECEplanus electronics, remote release

Electronic flush systems are also available when using safety arm supports. It is possible to install a radio switch for electrical actuation on the safety arm support. It is also possible to use several radio switches with one receiver.



Power options for toilet electronics with remote release

- Mains variant:
The TECE transformer (order no. 9810003, order separately) transforms 230 V AC to 12 V DC.
- Battery operation:
4 x LR20 mono cells – 6 V

Based on a service life of two years, the battery lasts for

- 190,000 flushes or
- approx. 260 flushes/day.

Observe the following:

A transformer must be used for the 12 V mains variant. A suitable place for this (flush-mounted socket or other) must be provided for the purpose as it must not be positioned next to the flush plate under any circumstances.

A flush plate is not included in the scope of supply. Any single-flush system can be used with the remote release, and all two-flush systems are possible too (e.g. TECE-loop, TECESquare). However, the largest flush volume will only ever be activated, even if both actuating rods were installed during installation.

TECEplanus radio switch

The TECEplanus radio switch (order no. 9240360) can be retrofitted for most safety arm supports, and is coordinated with the TECEplanus toilet remote release.

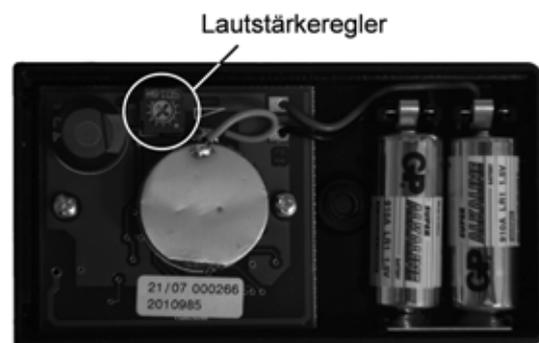


TECEplanus radio switch

Initial operation

Before installing the radio transmitter on the safety arm support, the supplied batteries must be installed:

- Unscrew the screw on the back of the housing and open the cover. Insert both batteries as indicated on the housing.
- You can only set the volume of the “beep” for the acoustic flush acknowledgement when the housing is open. We recommend the factory setting: full volume.
- To lower the volume, turn the controller to the left. Turn the controller to the right to increase the volume.



Volume controller

Now close the housing tightly again.

- Make sure that you fit the housing cover correctly: the cover features a sealing ring which prevents water from penetrating inside.
- When screwing on the housing cover, also make sure that the sealing ring fits precisely around the locking screw.

TECE flush plates – TECEplanus electronics, remote release

Assembly

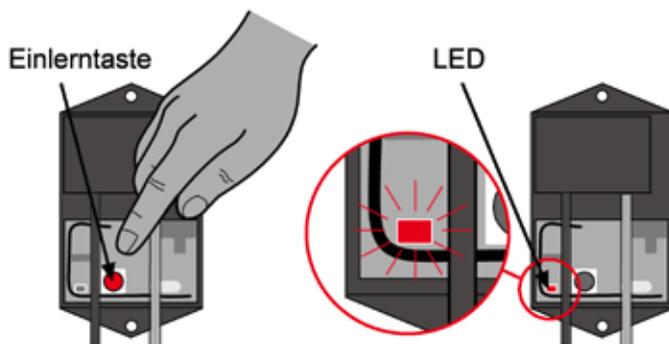
The radio transmitter is delivered with two pre-mounted fastening clips for tightening the screw on the support handles with a pipe diameter of up to 33 mm.

- Loosen the screw connections on the universal clips. Then attach the radio transmitter on the top or bottom pipe (depending on the safety arm support) using these two clips.
- Tighten up the screws after placing the radio transmitter in its final position.

Depending on the required position of the transmitter, the radio transmitter can be fitted on either safety arm support (to the left or right of the toilet).

Programming the radio transmitter

Before being used for the first time, the radio transmitter must first be assigned to the respective receiver (a component of the corresponding flush system). There is a corresponding button and LED on each receiver for this purpose.



Programming the radio switch

- To assign the radio transmitter, press the programming button on the receiver. This is visually acknowledged on the receiver by the LED flashing once.
- Now, within 30 seconds, press the flush-actuation surface on the radio transmitter (see the illustration on the right). If the LED flashes three times, this indicates that the radio transmitter has been successfully programmed.

Flush function

After successful programming, you can now flush the toilet by approaching the activation surface of the radio transmitter (approx. 3-5 mm in front of the surface) or by touching this surface. A successful flush signal is acknowledged by an audible “beep”.

Technical data

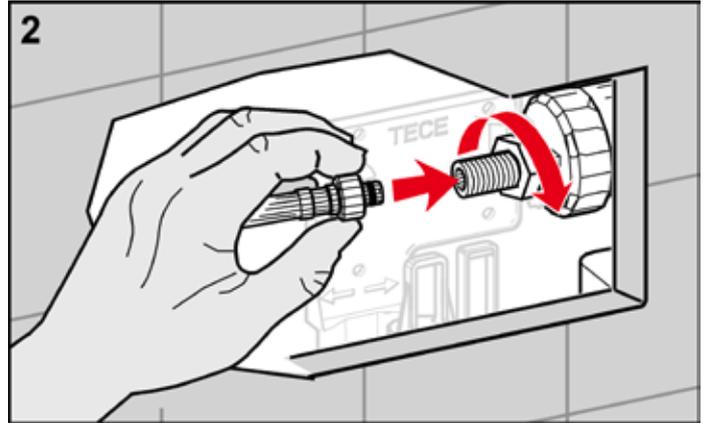
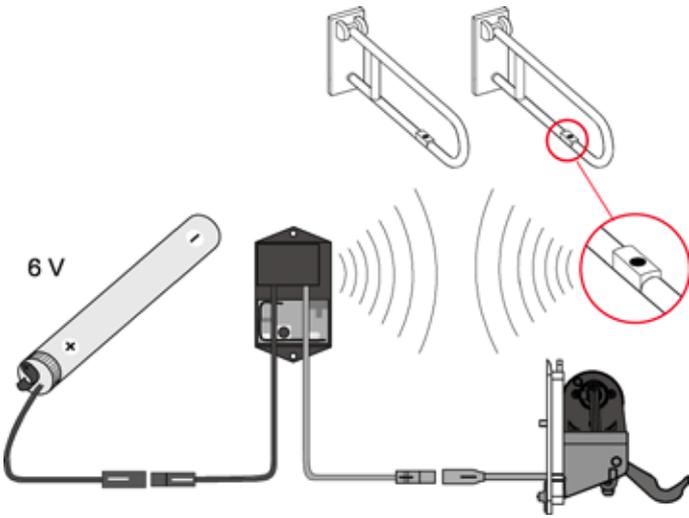
Frequency	868.4 MHz
Addressing	individual 32-bit address, programmable on the receiver
Range	max. 10 m
Functions	Flushing for compatible toilet controls
Actuation	capacitive switch, acoustic acknowledgement by button sound

Power supply	3 V DC (2 x LR-1 alkaline batteries)	
Battery life	approx. 3 years or 100,000 flushes	
Housing	ABS housing approx. 85 x 46 16 mm	
Assembly	via clips on the safety arm support	
Colour	black (RAL 9005)	
Degree of protection	IP 54	
Compatible toilet controls	TECEplanus	9240354
	TECEplanus	9240355
	Geberit	115.867
	Sanit	03.082.00.0000
	Viega	462.376

Compatible radio electronics for TECE remote release (868.4 MHz) – safety arm support and radio transmitter independent of arm support

Manufacturer	Item	Item no.
AMS	Radio release, can be mounted on AMS safety arm support	533390
DEUBAD	Radio-controlled triggering	DEU FK100
Erlau	FMI/E radio transmitter FMI/O radio transmitter	8102213 8102214
Frelu	Transmitter for wireless toilet flush actuation	OP10 radio
FSB	Radio-controlled switch	8248 0002
GEBERIT	Hytronic switch	241.568.00.1
GROHE	Radio transmitter	100620
HEWI	Toilet flush-actuation upgrade kit (radio) ..., left ..., right	802.50.060 802.50.060L 802.50.060R
KEUCO	Safety arm support with integrated remote release ... 700 mm right ... 700 mm left ... 850 mm right ... 850 mm left	34903011737 34903011738 34903171737 34903171738 34903012737 34903012738 34903172737 34903172738 34903011837 34903011838 34903171837 34903171838 34903012837 34903012838 34903172837 34903172838
Lehnen	Radio transmitter (with universal clip) Radio transmitter (white housing)	FA10-001 FA30-001
Normbau	Radio transmitter NY.WCR 435, suitable for retrofitting	0449010
PBA	Universal radio transmitter	no known
Pressalit Care	Radio transmitter, 868.4 MHz	R9341
Wagner	Universal radio transmitter	600063

Toilet electronics, remote release, 6 V battery

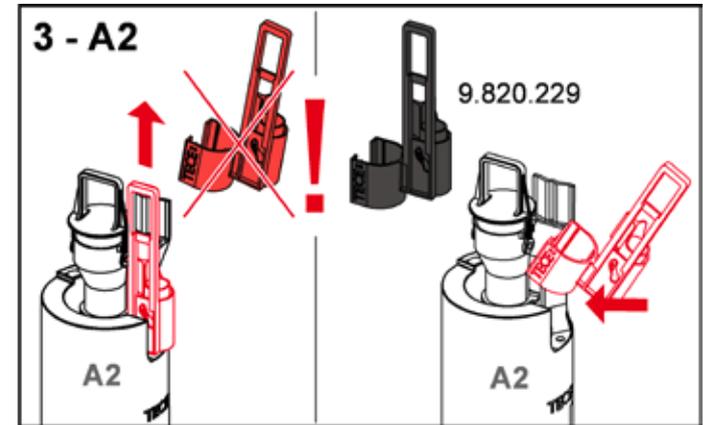


Turn the corner valve to close it again and connect the reinforced hose to the filling valve. If you wish to fill the cistern with water (e.g. for the initial operation), you must open the corner valve again.

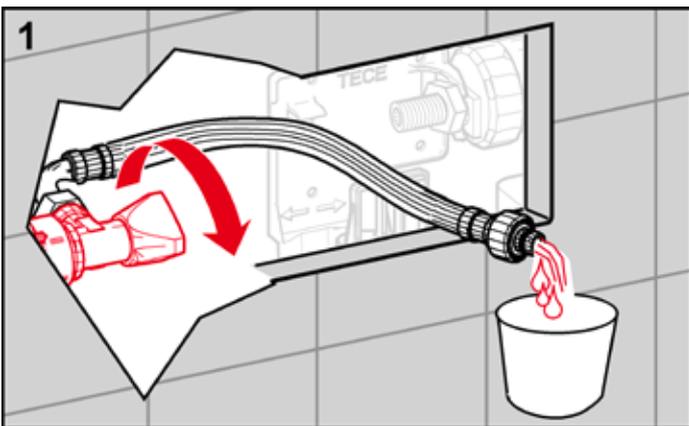
The radio signal sent when the radio switch is activated is received by a radio receiver. This receiving unit operates the power circuit to trigger the actuation motor. Power is supplied via four batteries enclosed in waterproof housing in the cistern.

Installing the toilet electronics, remote release, 6 V battery

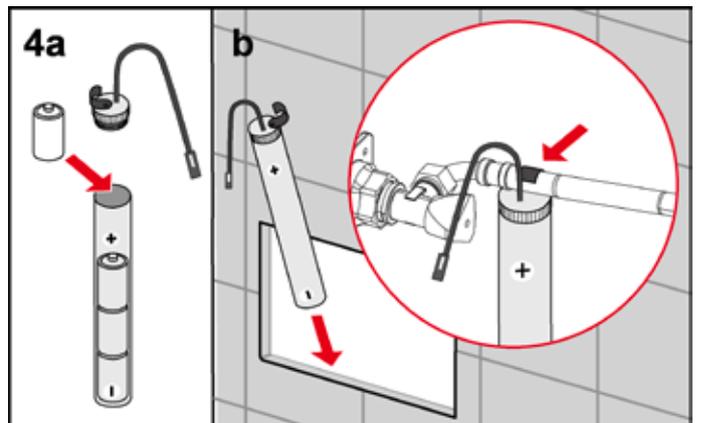
To install the battery version for the toilet electronics remote release, proceed as follows:



Then adjust the drain valve to the toilet electronics: on newer cisterns installed after mid/end of 2009, the red pull rod of the valve must be replaced by a black one (fig. 3 – A2).



First remove the splash guard with the flush plate – this will no longer be required. Open the corner valve and sufficiently flush out the pipe.

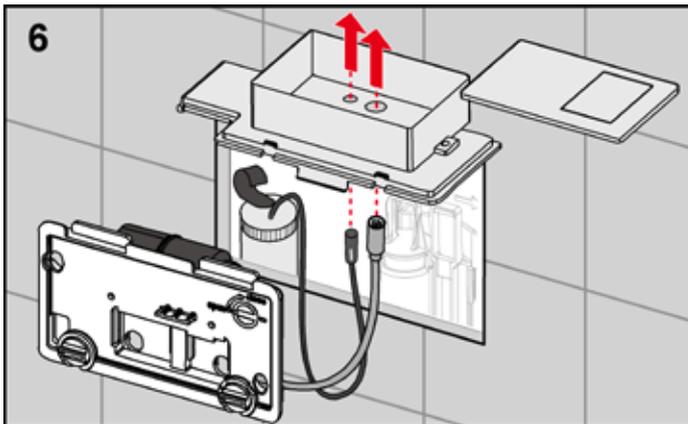
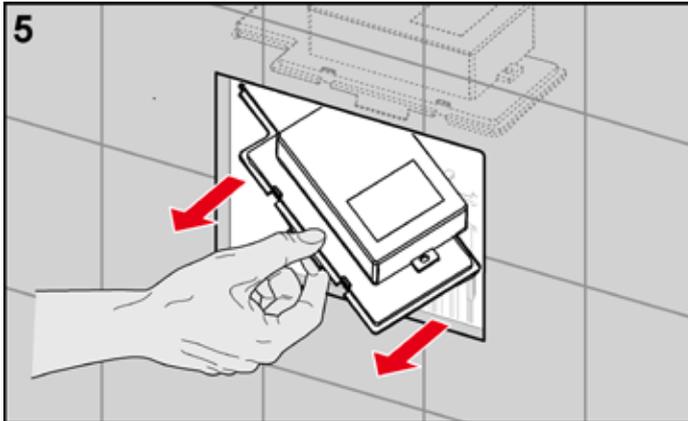


Place the four batteries in the housing and hang the waterproof battery compartment on the reinforced hose in the cistern.

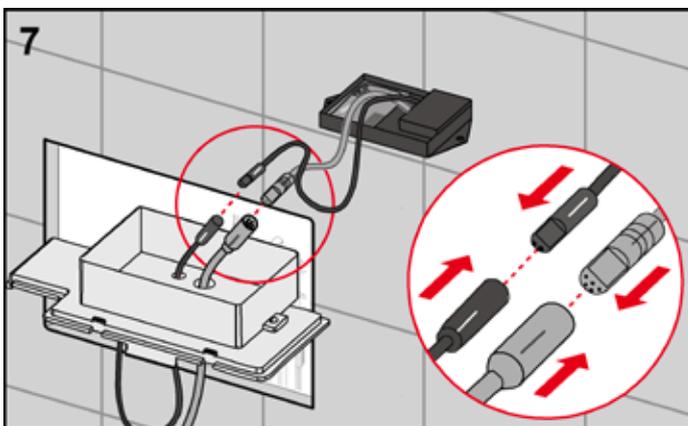
TECE flush plates – TECEplanus electronics, remote release

The subsequent work steps differ depending on the installed toilet module: Either a TECE Geronto module with conduits for cabling and an installation box for housing the electronics, or a different TECE module without conduits, will be installed.

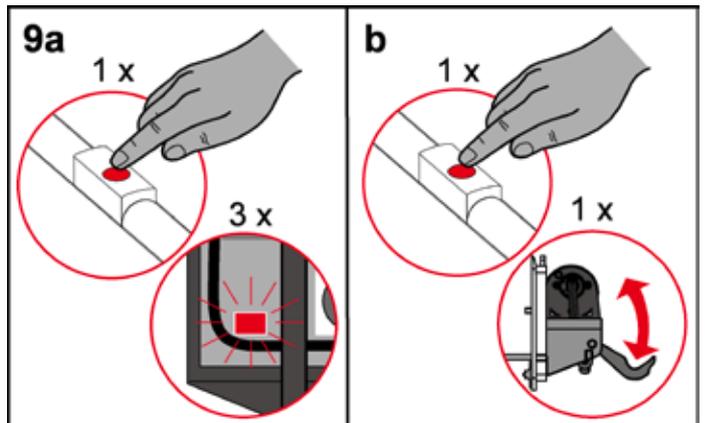
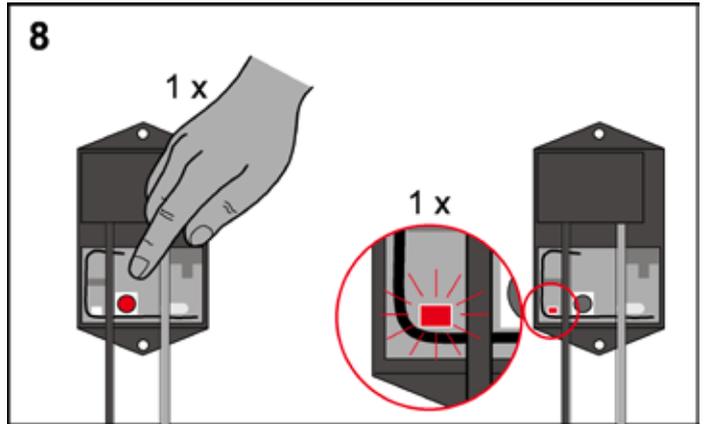
... Geronto module with conduits



Open the cistern cover and remove it with the installation box. Guide the battery connections and actuation motor from beneath through the openings in the bottom of the box.

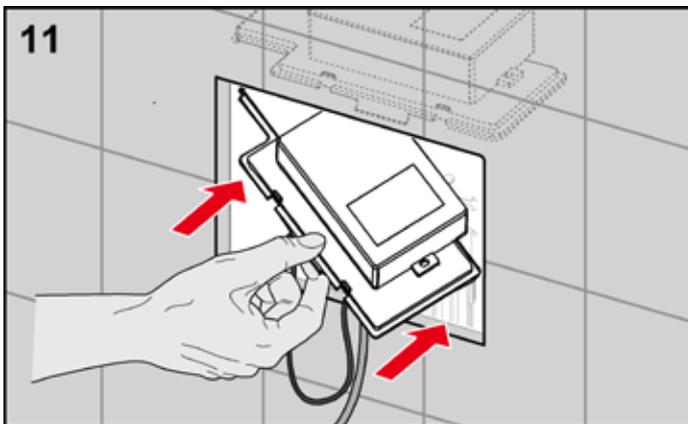
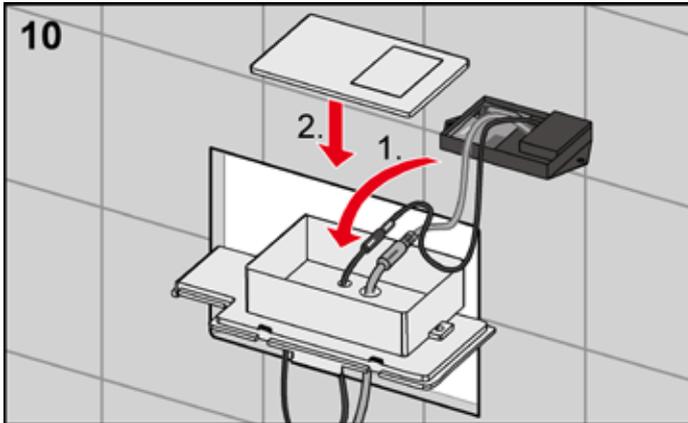


Connect the radio electronics first to the motor (black plug) and then also to the batteries (grey plug). If the installation is correct, the motor will be activated once for checking purposes.

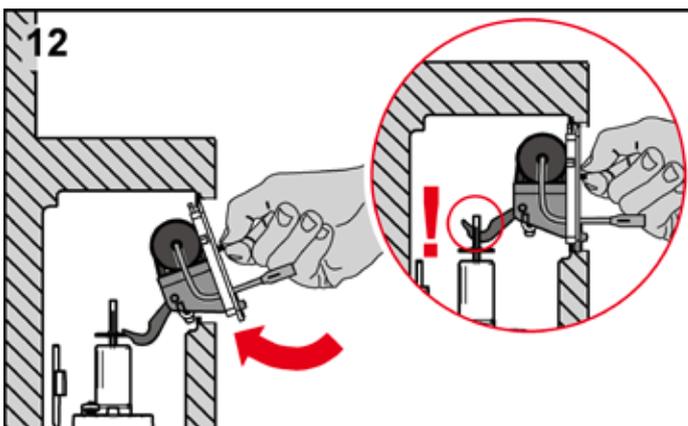


After installing the radio receiver, it must be coordinated with the signal from the switch on the safety arm support. To do this, press the blue button on the receiver electronics, the LED next to it will now briefly light up once (fig. 8). After this, the receiver is ready for reception for one minute. During this time, press the button on the safety arm support once to establish a connection with the receiver electronics. If successfully connected, after activating the switch, the control LED on the receiving unit will flash three times.

Now check that the motor is functioning correctly. To do this, press the button again to activate the motor once.



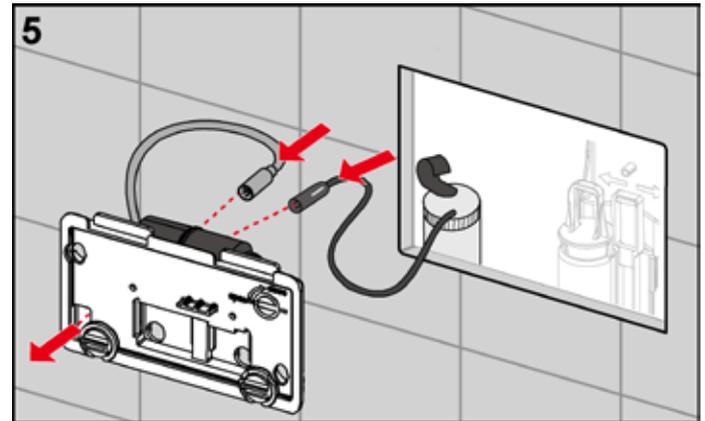
Place the electronics in the installation box, seal and place back in the cistern.



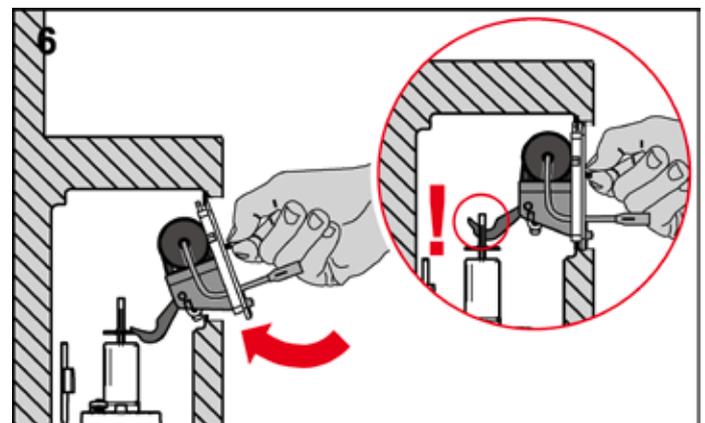
Insert the splash guard for the electronics with the actuation motor. The activation hooks must fit correctly in the drain valve's drawbar eyelets. Tighten the splash guard clamping screws.

Finally, install the flush plate.

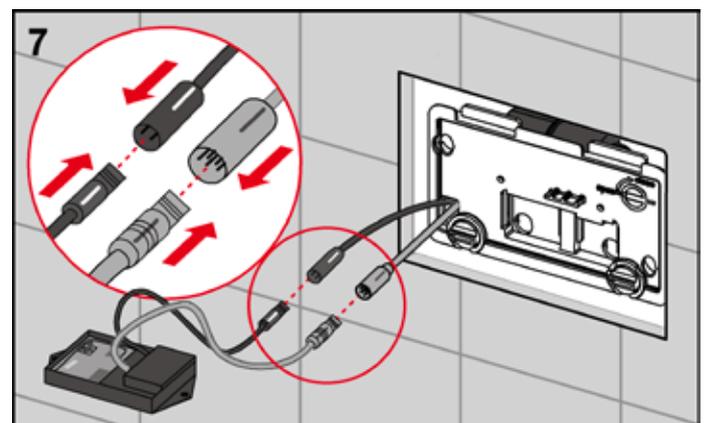
... Toilet module (dry-wall and brick-wall) without conduits



Guide the cable for the actuation motor and battery through the opening in the splash guard so that it is easier to connect in the next step.

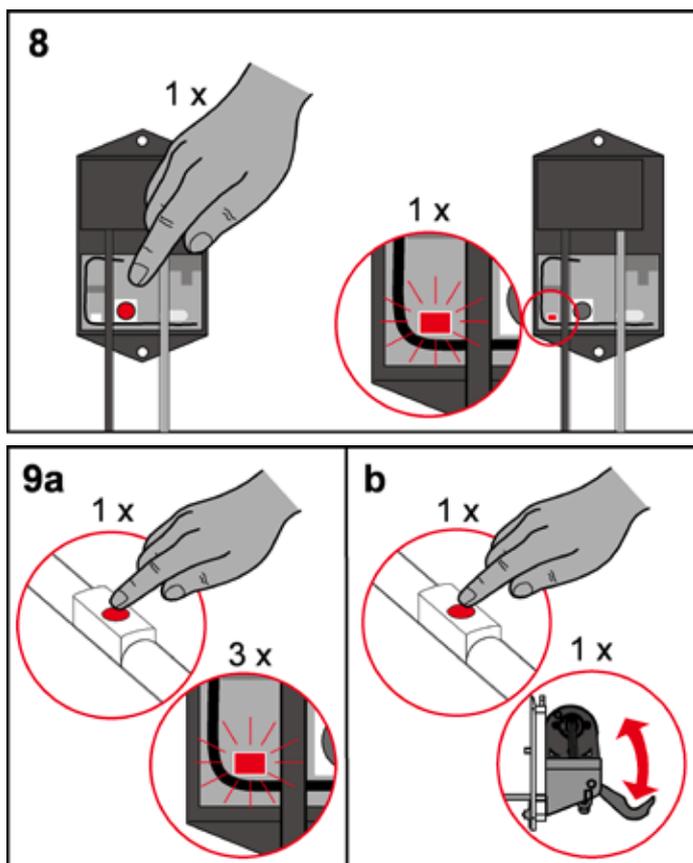


Insert the splash guard for the electronics with the actuation motor. The activation hooks must fit correctly in the drain valve's drawbar eyelets. Tighten the splash guard clamping screws.

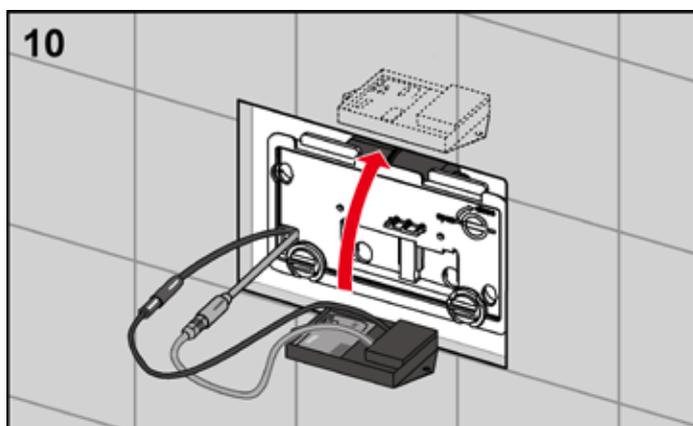


Connect the radio electronics first to the motor (grey plug) and then also to the batteries (black plug). If the installation is correct, the motor will be activated once for checking purposes.

TECE flush plates – TECEplanus electronics, remote release

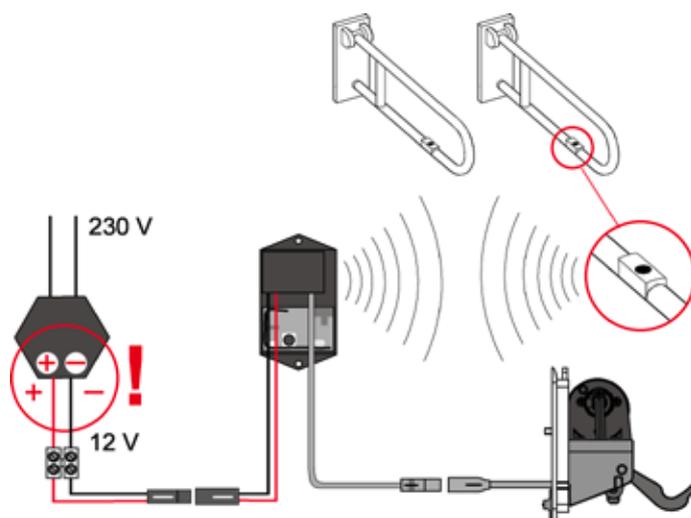


After installing the radio receiver, it must be coordinated with the signal from the button on the safety arm support. To do this, press the blue button on the receiver electronics, the LED next to it will then briefly light up once (fig. 8). After this, the receiver is ready for reception for one minute. During this time, press the button on the safety arm support once to establish a connection with the receiver electronics. If successfully connected, after activating the switch, the control LED on the receiving unit will flash three times. Now check that the motor is functioning correctly. To do this, press the button again to activate the motor once.



Install the electronics on the cistern or in another suitable location in the wall. Finally, install the flush plate.

Toilet electronics, remote release, 12 V mains



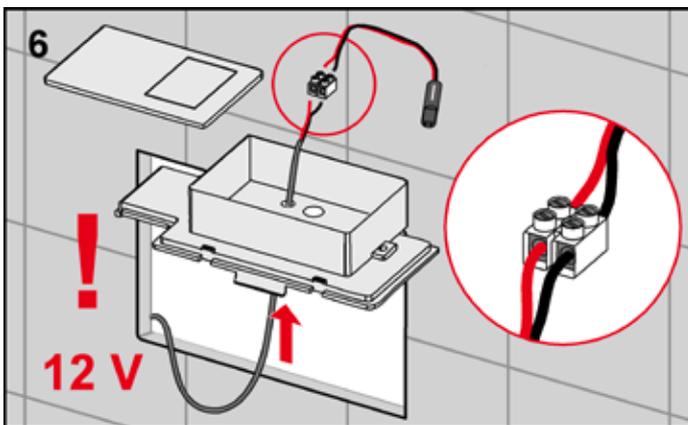
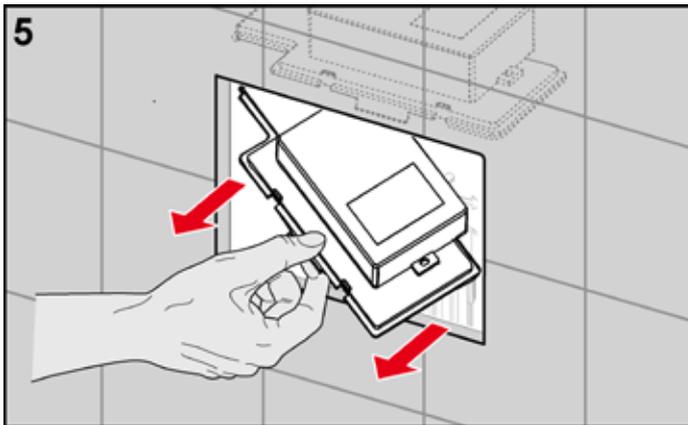
The radio signal sent when the radio switch is activated is received by a radio receiver. This receiving unit operates the power circuit to trigger the actuation motor. To connect the 12 V mains variant, the power supply must be transformed to 12 V DC by a TECE transformer (order transformer separately: order no. 9810003).

Installing the toilet electronics, remote release, 12 V mains

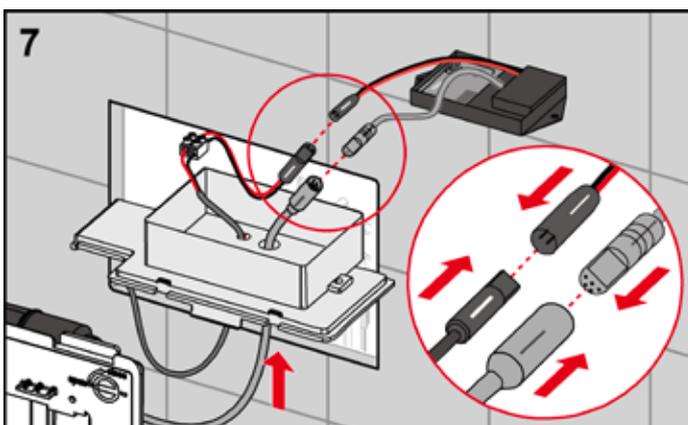
When installing the toilet electronics with remote release, proceed as for installing the battery variant: Open the splash guard, sufficiently flush out the pipe, and adjust the drain valve (see also: Installing the toilet electronics, remote release, 6 V battery).

The additional work steps also differ for this installation depending on the type of toilet module installed: Either a TECE Geronto module with conduits for cabling and an installation box for housing the electronics, or a different TECE module without conduits, will be installed.

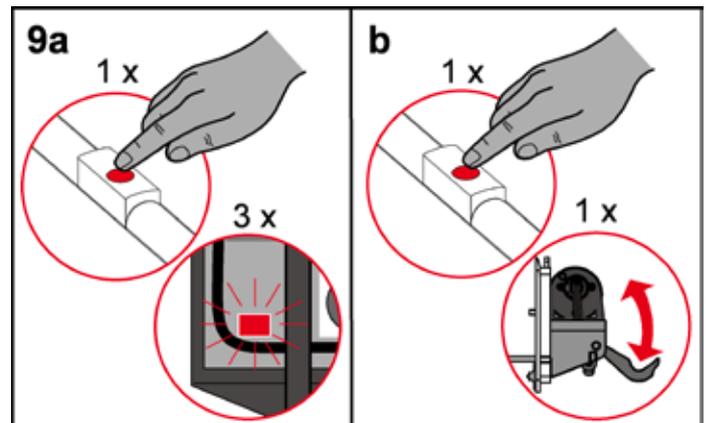
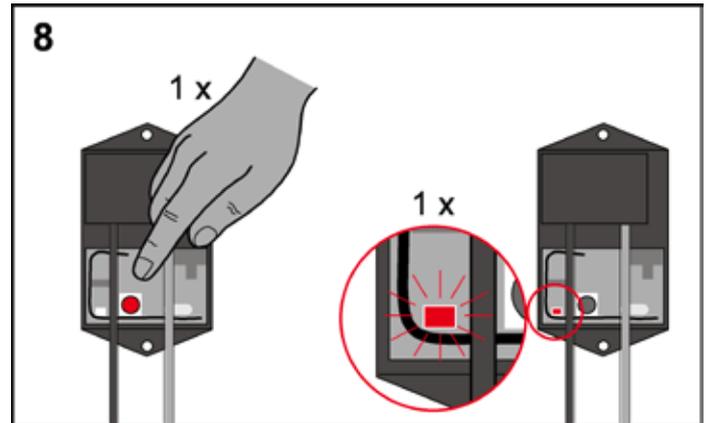
... Geronto module with conduits



Open the cistern cover and remove it with the installation box. Guide the (12 V) transformer cable from beneath through the opening in the bottom of the box and connect it to the mains connection adapter (ensure correct polarity – see details in fig. 6).



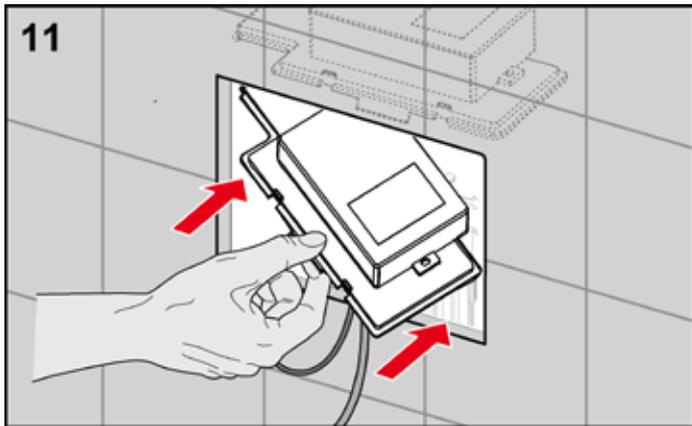
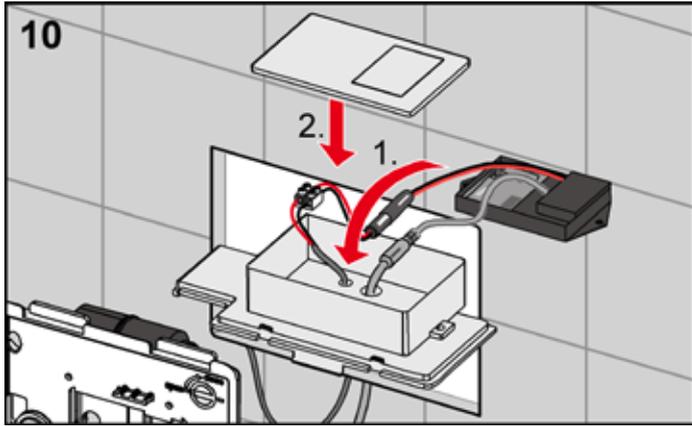
Connect the radio electronics first to the motor (grey plug) and then also to the batteries (black plug). If the installation is correct, the motor will be activated once for checking purposes.



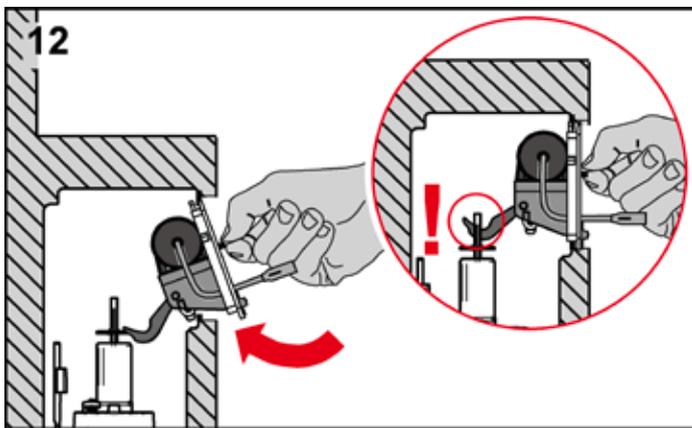
After installing the radio receiver, it must be coordinated with the signal from the button on the safety arm support. To do this, press the blue button on the receiver electronics, the LED next to it will then briefly light up once (fig. 8). After this, the receiver is ready for reception for one minute. During this time, press the button on the safety arm support once to establish a connection with the receiver electronics. If successfully connected, after activating the switch, the control LED on the receiving unit will flash three times.

Now check that the motor is functioning correctly. To do this, press the button again to activate the motor once.

TECE flush plates – TECEplanus electronics, remote release



Place the electronics in the installation box, seal and place back in the cistern.

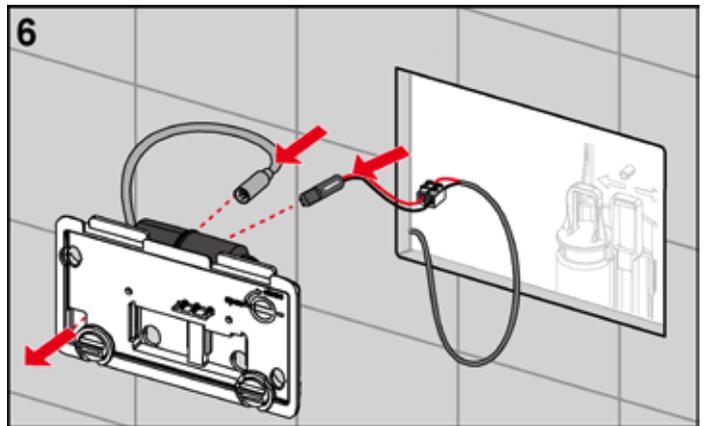


Insert the splash guard for the electronics with the actuation motor. The activation hooks must fit correctly in the drain valve's drawbar eyelets. Tighten the splash guard clamping screws. Finally, install the flush plate.

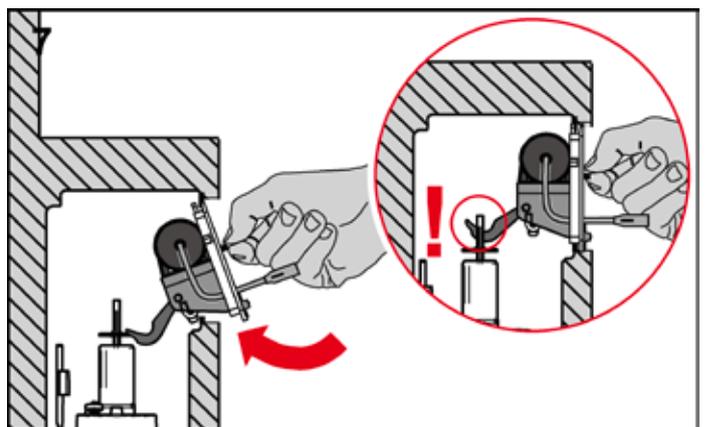
... Toilet module (dry-wall and brick-wall) without conduits



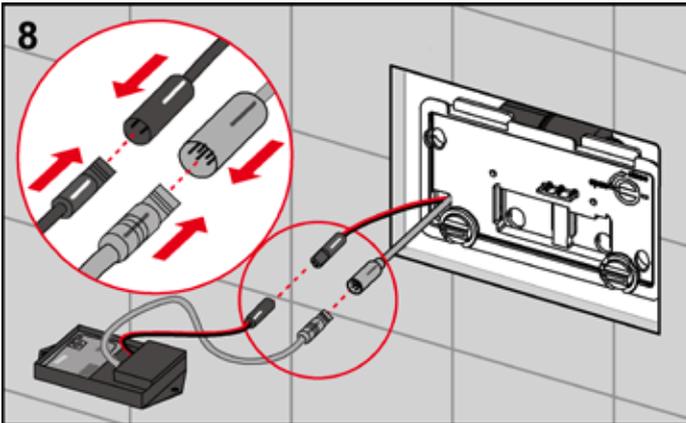
Connect the cable coming out of the transformer to the mains connection adapter (ensure correct polarity – see details in fig. 5).



Guide the cable from the actuation motor and the power supply through the opening on the bottom left of the splash guard.

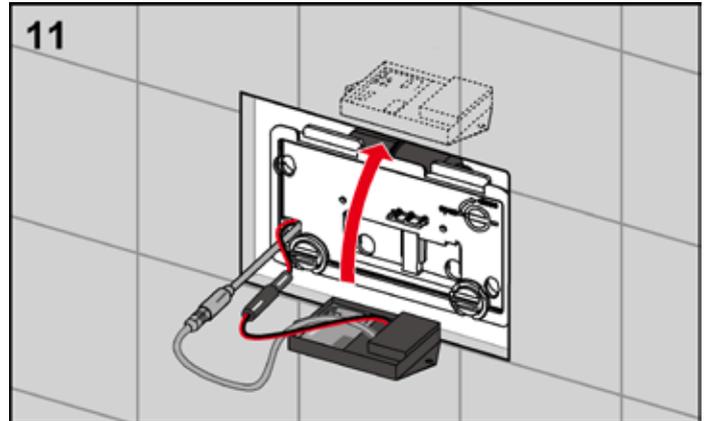


Then, insert the splash guard with the actuation motor. The activation hooks must fit correctly in the drain valve's drawbar eyelets. Tighten the splash guard clamping screws.

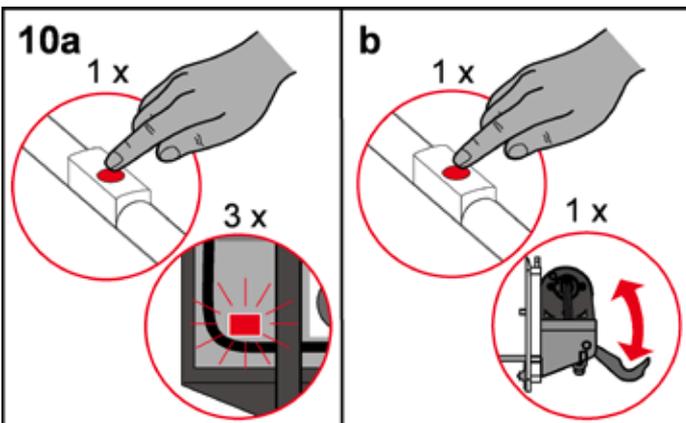
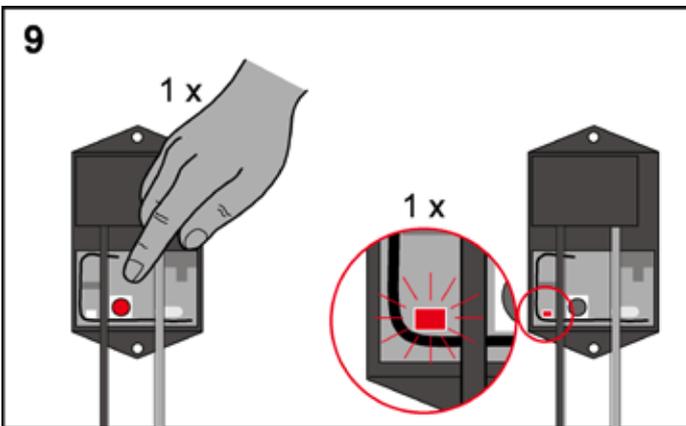


Connect the radio electronics first to the motor (grey plug) and then also to the batteries (black plug). If the installation is correct, the motor will be activated once for checking purposes.

Now check that the motor is functioning correctly. To do this, press the button again to activate the motor once.



Install the electronics on the cistern or in another suitable location in the wall. Finally, install the flush plate.

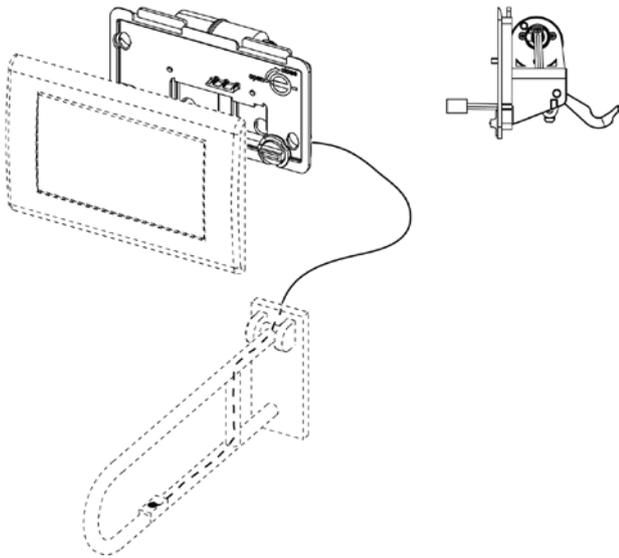


After installing the radio receiver, it must be coordinated with the signal from the button on the safety arm support. To do this, press the blue button on the receiver electronics, the LED next to it will then briefly light up once (fig. 8). After this, the receiver is ready for reception for one minute. During this time, press the button on the safety arm support once to establish a connection with the receiver electronics. If successfully connected, after activating the switch, the control LED on the receiving unit will flash three times.

TECE flush plates – TECEplanus electronics, cable-connected remote release

TECEplanus electronics, cable-connected remote release

Another solution when using safety support arms is to install a cable-connected variant whereby a cable-connected switch is mounted on the safety support arm.



Power options for toilet electronics with cable-connected remote release

- Mains variant:
The TECE transformer (order no. 9810003, order separately) transforms 230 V AC to 12 V DC.
- Battery operation:
1 x Lithium 2CR5 – 6 V (scope of supply)

Based on a service life of two years, the battery lasts for

- 20,000 flushes or
- approx. 27 flushes/day.

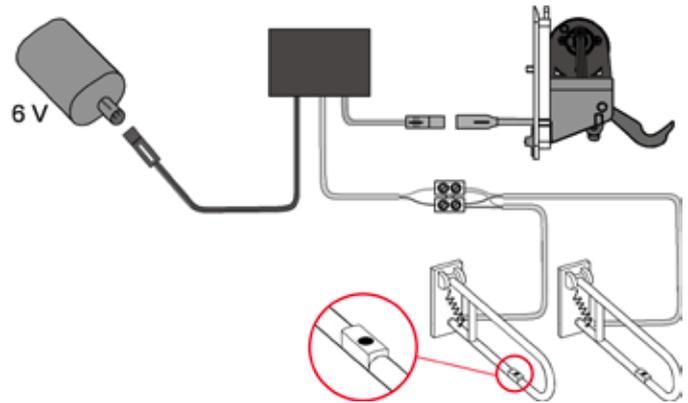
Alternatively, the battery can also be operated by 4 mono cells (LR20). This increases durability to 220,000 flushes or 300 flushes/day. For this, in addition to batteries, you also require another battery housing (order no. 9820202).

Observe the following:

A transformer must be used for the 12 V mains variant. A suitable place for this (flush-mounted socket or other) must be provided for the purpose as it must not be positioned next to the flush plate under any circumstances.

A flush plate is not included in the scope of supply. Any single-flush system can be used with the remote release, and all two-flush systems are possible too (e.g. TECE-loop, TECESquare). However, the largest flush volume will only ever be activated, even if both actuating rods were installed during installation.

Toilet electronics, cable-connected remote release, 6 V battery



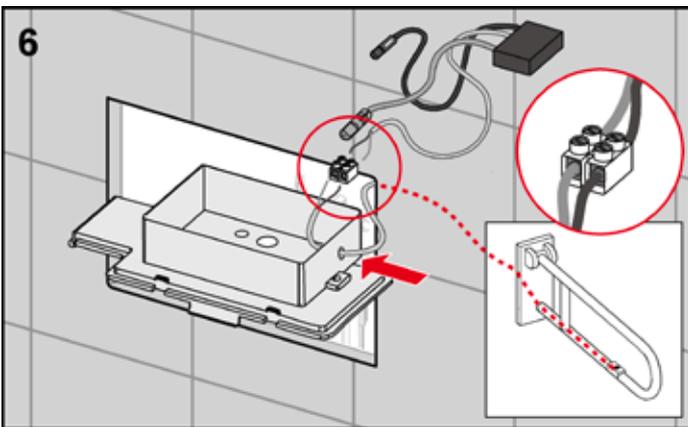
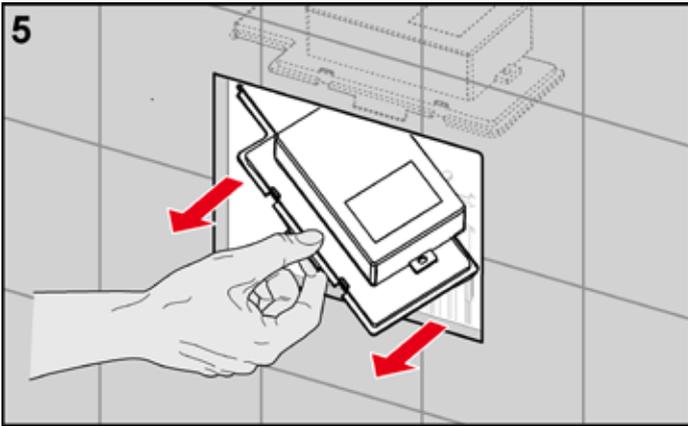
When the electric circuit to the switch on the safety support arm is closed, the flush is activated. In addition to the electrical supply, the switch on the safety support arm and the actuation motor, an additional electronic component must also be installed between the different components. Power is supplied by a 6 V battery.

Installing the toilet electronics, cable-connected remote release, 6 V battery

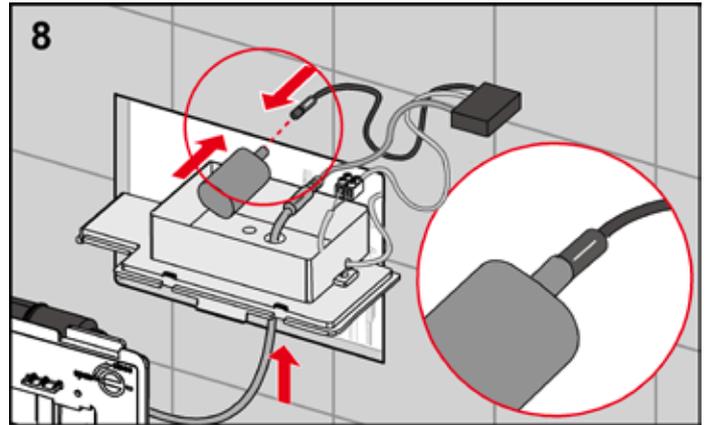
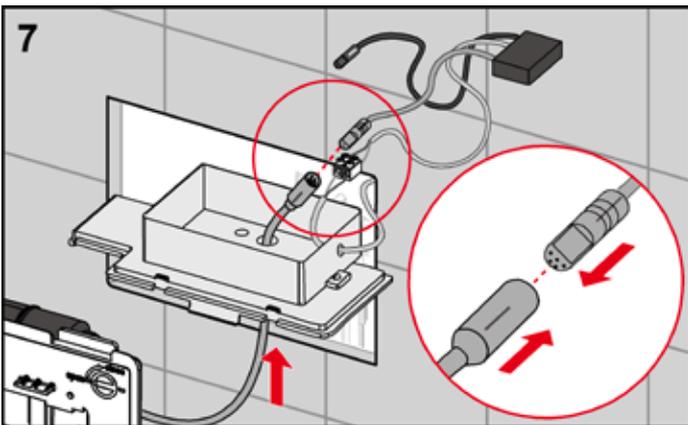
When installing the toilet electronics with cable-connected remote release, proceed as for the remote release: Open the splash guard, sufficiently flush out the pipe, and adjust the drain valve (see also: Installing the toilet electronics, remote release, 6 V battery).

The subsequent work steps differ depending on the installed toilet module: Either a TECE Geronto module with conduits for cabling and an installation box for housing the electronics, or a different TECE module without conduits, will be installed.

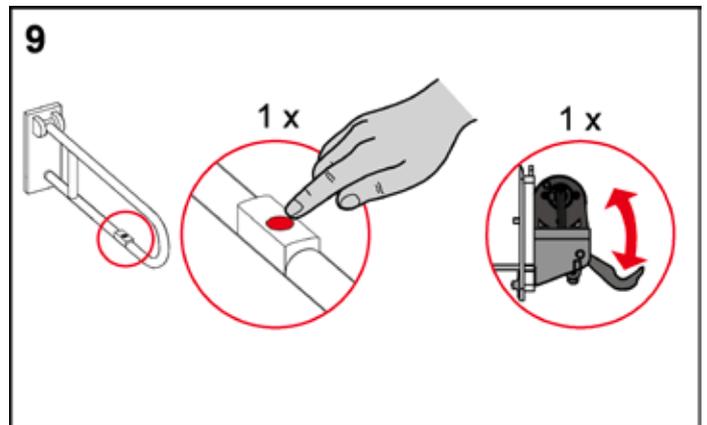
... Geronto module with conduits



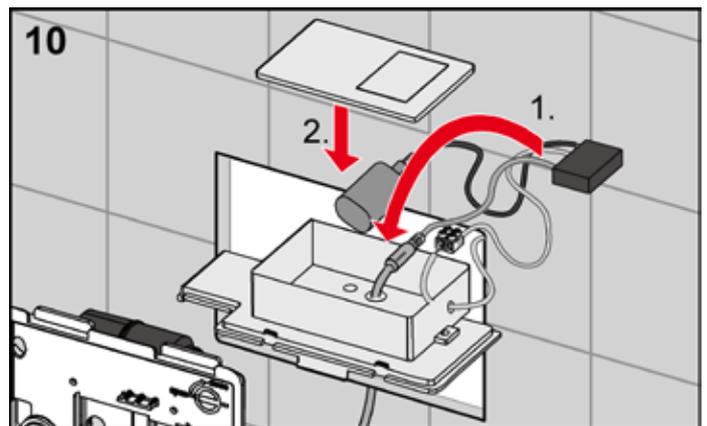
Open the cistern cover and remove it with the installation box. Guide the cable from the switch on the safety support arm from the side into the box and connect it to the electronics (terminal strip – ensure correct polarity).



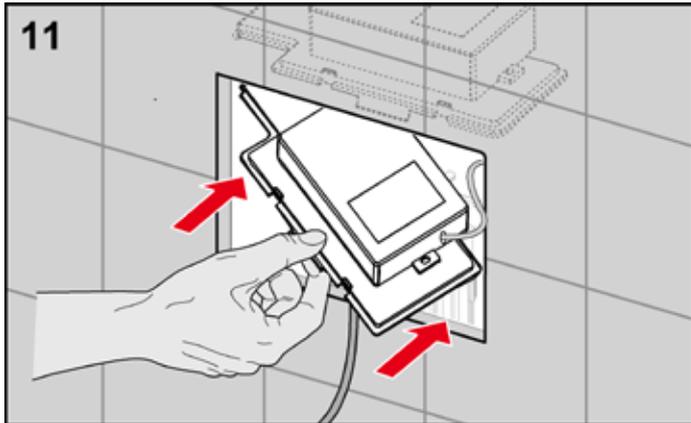
Connect the electronics first to the motor (black plug) and then to the batteries (grey plug). If the installation is correct, the motor will be activated once for checking purposes.



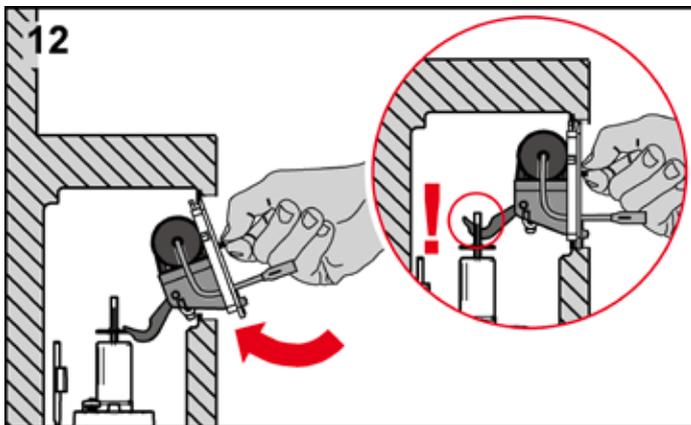
Now check that the function is working: To do this, press the button again to activate the motor (once).



TECE flush plates – TECEplanus electronics, cable-connected remote release

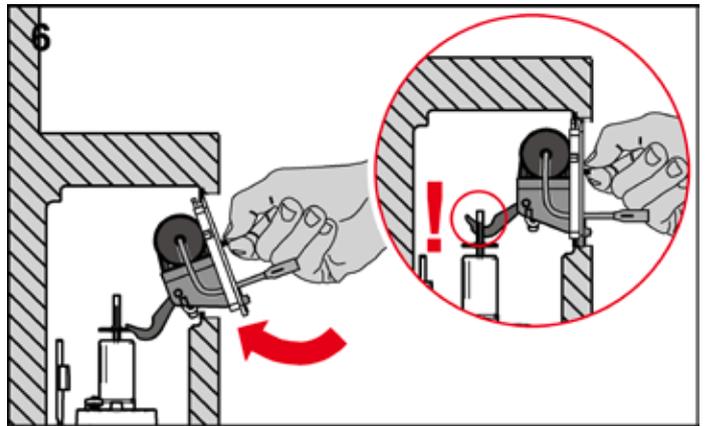
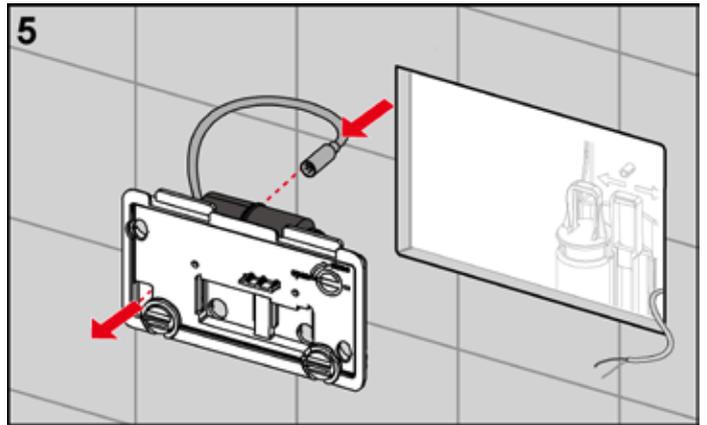


11 Place the electronics and the battery in the installation box, seal and place back in the cistern.



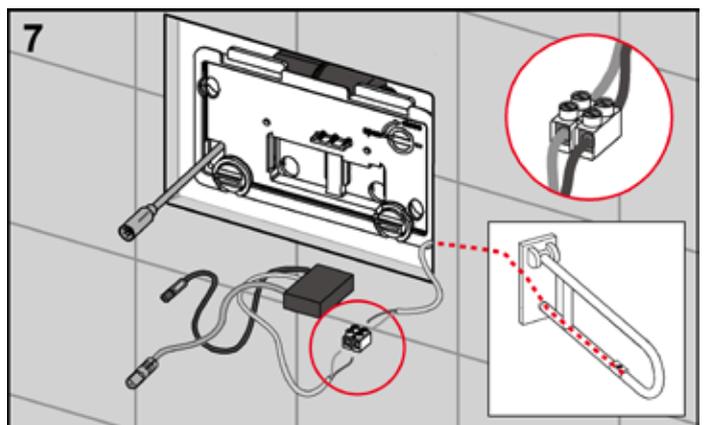
12 Insert the splash guard for the electronics with the actuation motor. The activation hooks must fit correctly in the drain valve's drawbar eyelets. Tighten the splash guard clamping screws. Finally, install the flush plate.

... Toilet module (dry-wall and brick-wall) without conduits

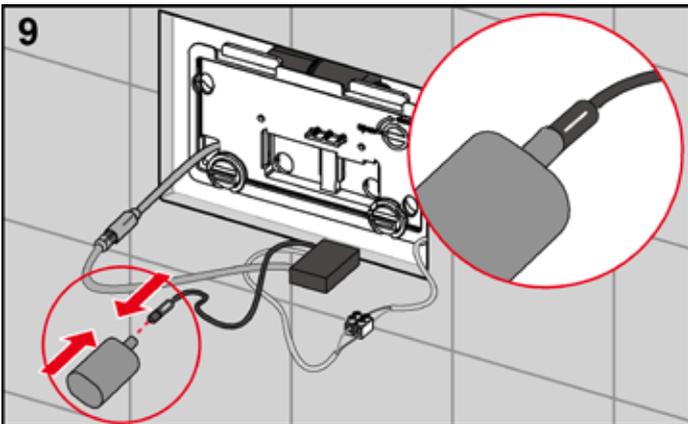
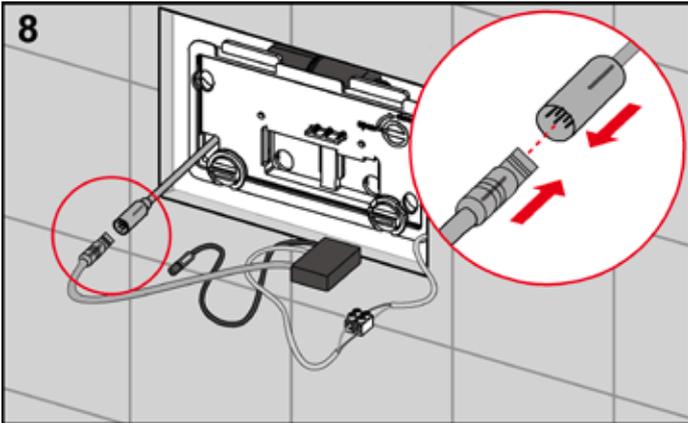


6 Guide the actuation motor cable through the opening in the splash guard.

Then, insert the splash guard for the electronics with the actuation motor. The activation hooks must fit correctly in the drain valve's drawbar eyelets. Tighten the splash guard clamping screws.

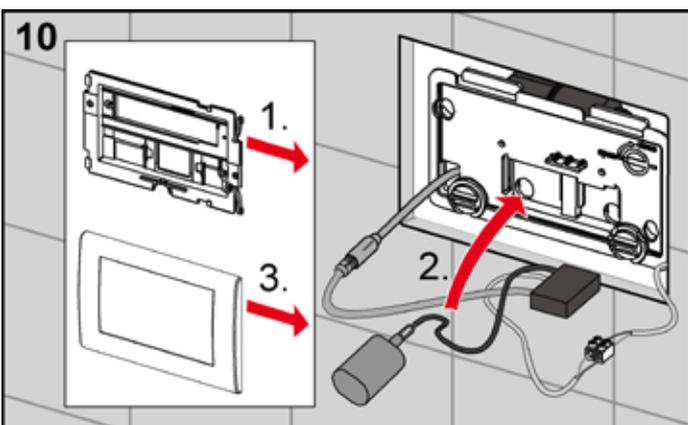


7 Connect the cable from the switch on the safety support arm to the electronics (terminal strip). Ensure correct polarity.



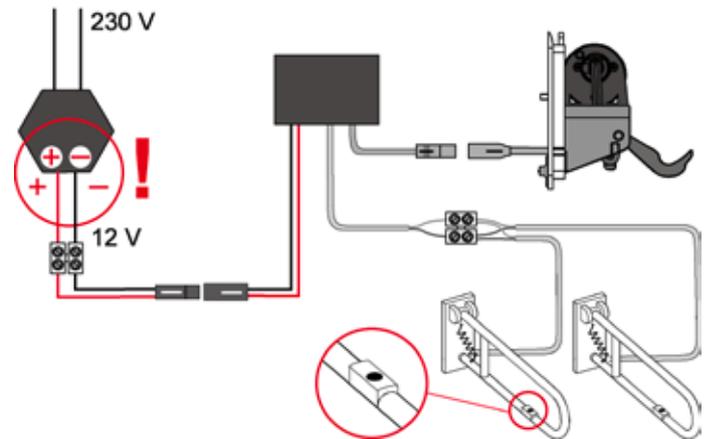
Then, connect the electronics first to the motor (grey plug) and then also to the batteries (black plug). If the installation is correct, the motor will be activated once for checking purposes.

Now check that the electronics are functioning correctly: to do this, press the button again to activate the motor (once).



Mount the flush plate support frame and install the electronics and the batteries in a suitable location (e.g. between the support frame and the flush plate). Finally, install the flush plate.

Toilet electronics, cable-connected remote release, 12 V mains



When the electric circuit to the switch on the safety support arm is closed, the flush is activated. In addition to the electrical supply, the switch on the safety support arm and the actuation motor, an additional electronic component must also be installed between the different components. To connect the 12 V mains variant, the power supply must be transformed to 12 V DC by a TECE transformer (order transformer separately: order no. 9810003).

Installing the toilet electronics, cable-connected remote release, 12 V mains

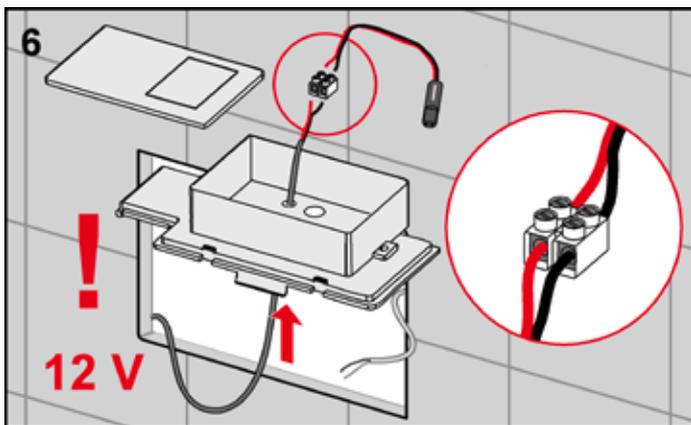
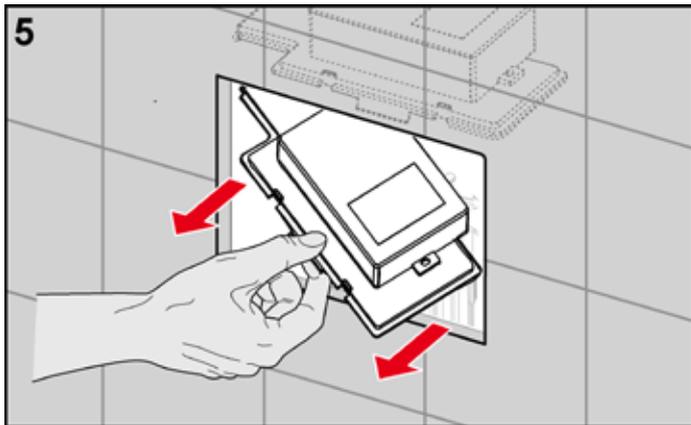
To start with, the toilet electronics with cable-connected remote release are installed in the same way as the remote release:

Open the splash guard, sufficiently flush out the pipe, and adjust the drain valve (see also: Installing the toilet electronics, remote release, 6 V battery).

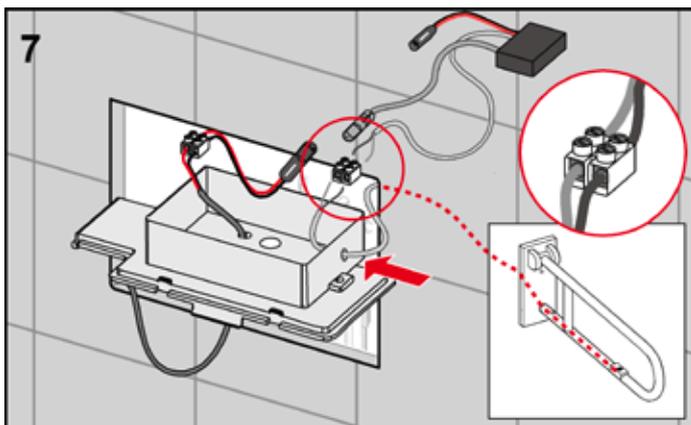
The subsequent work steps differ depending on the installed toilet module: Either a TECE Geronto module with conduits for cabling and an installation box for housing the electronics, or a different TECE module without conduits, will be installed.

TECE flush plates – TECEplanus electronics, cable-connected remote release

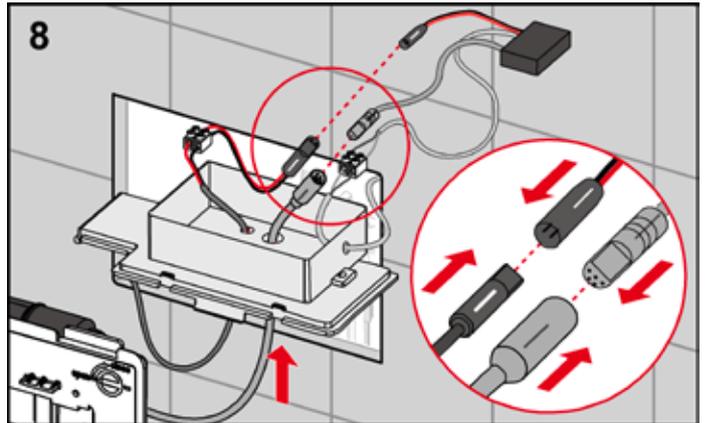
... Geronto module with conduits



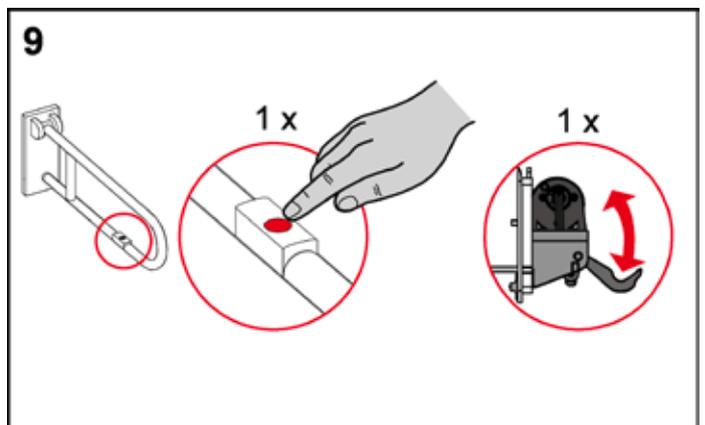
Open the cistern cover and remove it with the installation box. Guide the cable from the transformer through the bottom opening and connect it to the mains connection adapter (ensure correct polarity – see details in fig. 6).



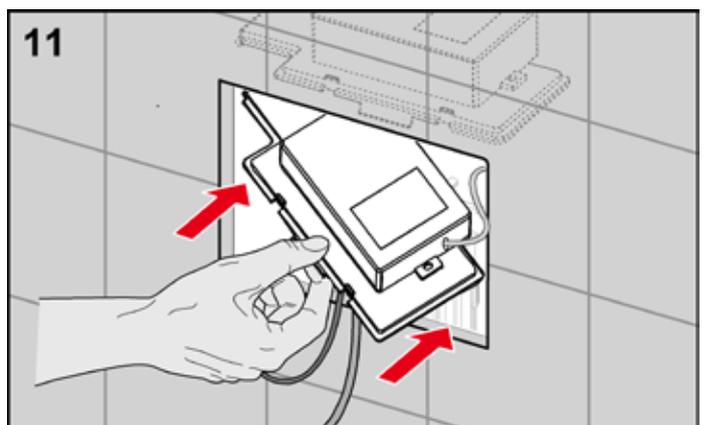
Guide the cable from the switch on the safety support arm from the side into the box and connect it to the electronics (terminal strip). Ensure correct polarity.



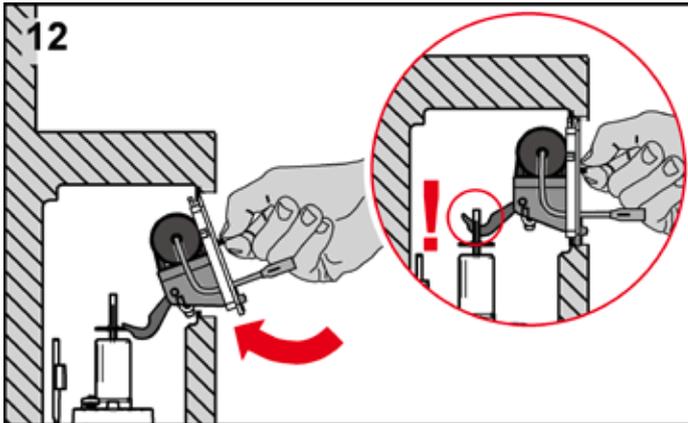
Then connect the electronics first to the motor (grey plug) and then also to the batteries (black plug). If the installation is correct, the motor will be activated once for checking purposes.



Now check that the electronics are functioning correctly: To do this, press the button again to activate the motor (once).

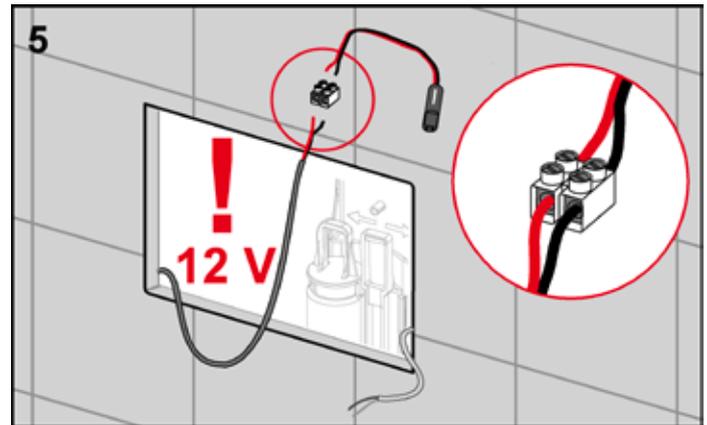


Place the electronics in the installation box, seal and place back in the cistern.

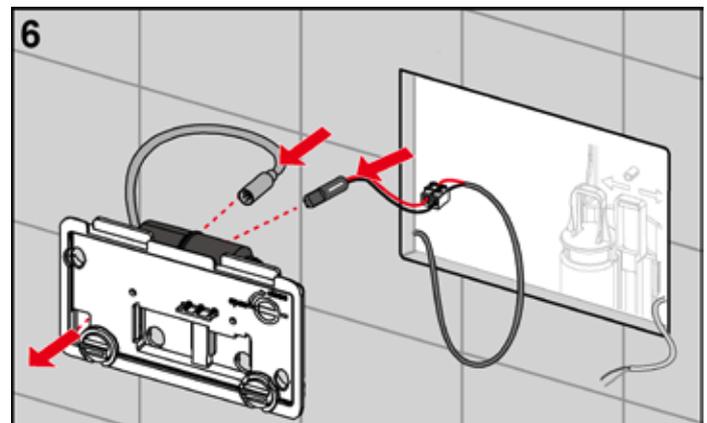


Insert the splash guard for the electronics with the actuation motor. The activation hooks must fit correctly in the drain valve's drawbar eyelets. Tighten the splash guard clamping screws. Finally, install the flush plate.

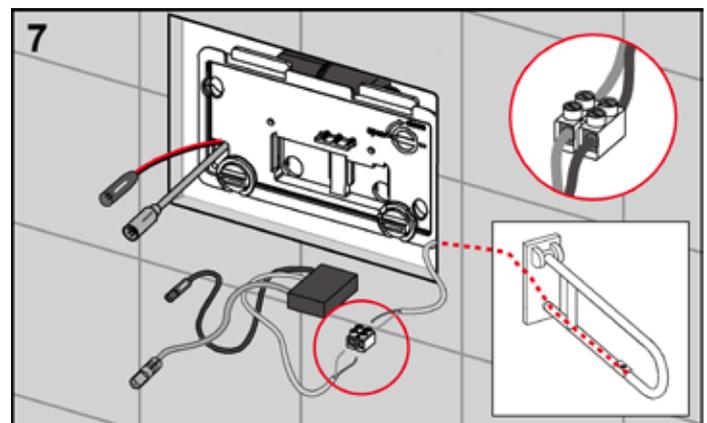
... Toilet module (dry-wall and brick-wall) without conduits



Connect the cable from the transformer to the mains connection adapter (ensure correct polarity – see details in fig. 5).

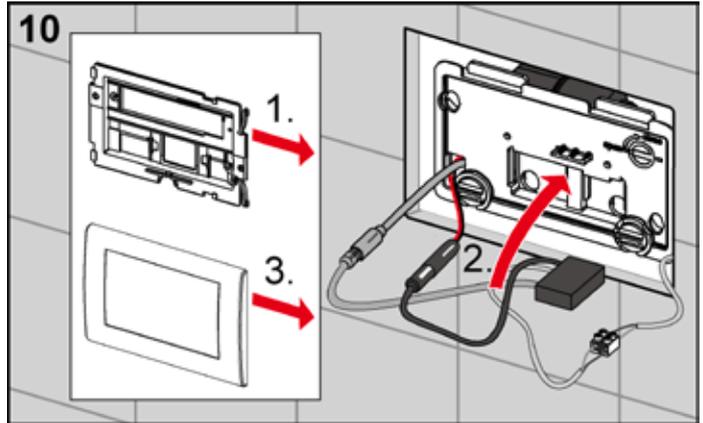
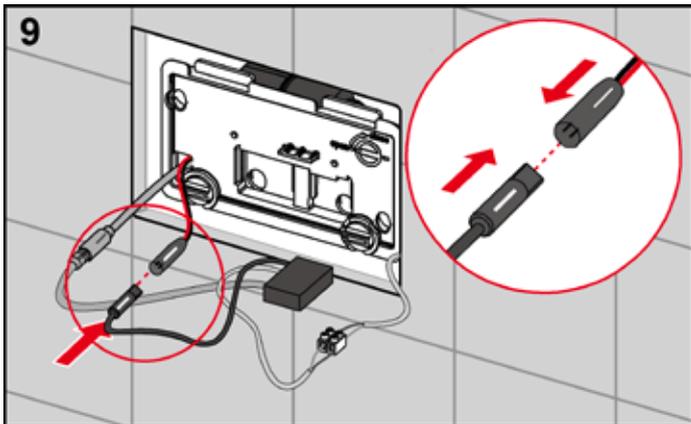
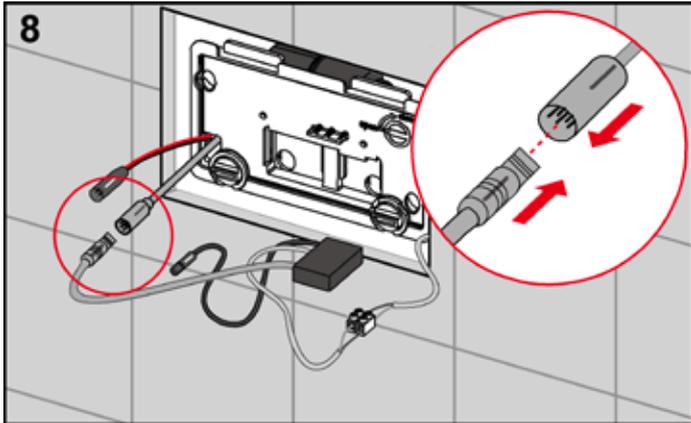


Guide the cable from the actuation motor and the power supply through the opening on the bottom left of the splash guard.



Then, insert the splash guard with the actuation motor. The activation hooks must fit correctly in the drain valve's drawbar eyelets. Tighten the splash guard clamping screws. Connect the cable from the switch on the safety support arm to the electronics (terminal strip). Ensure correct polarity.

TECE flush plates – TECEplanus electronics, cable-connected remote release



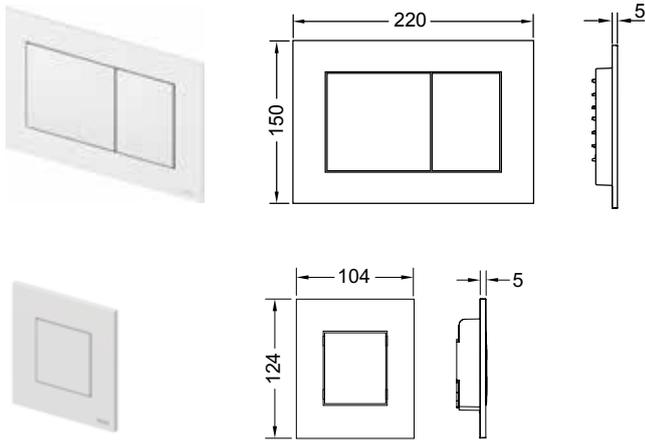
Mount the flush plate support frame and install the electronics in a suitable location (e.g. between the support frame and the flush plate). Finally, install the flush plate.

Then connect the electronics first to the motor (grey plug) and then also to the batteries (black plug). If the installation is correct, the motor will be activated once for checking purposes.

Now check that the electronics are functioning correctly: To do this, press the button again to activate the motor (once).

TECEnow

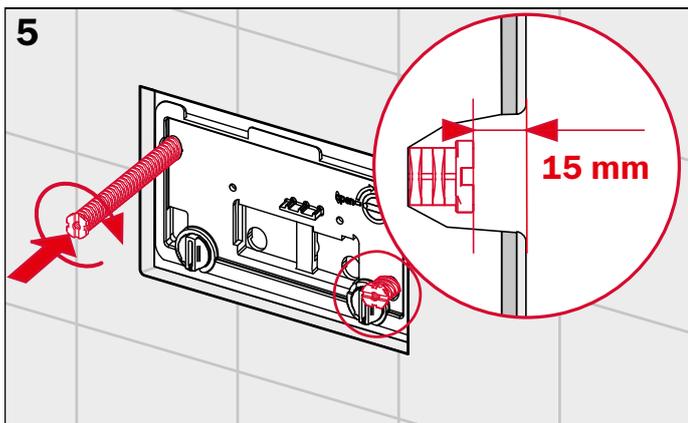
TECEnow toilet flush plates are extremely flat plastic flush plates with rubber-buffered actuation buttons. TECEnow flush plates also exist for urinals. They are suitable for flush-mounted installation in combination with the toilet installation frame and the TECEnow spacing frame.



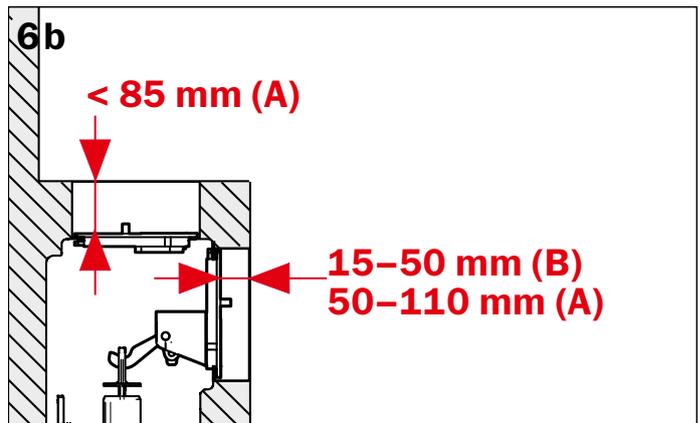
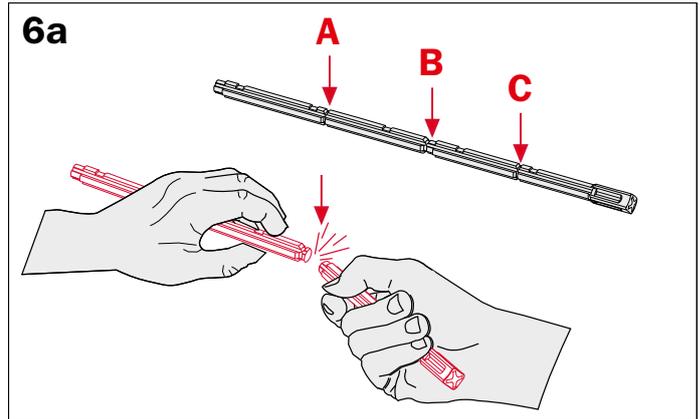
TECEnow toilet flush plate, dual-flush technology
TECEnow urinal flush plate

Wall-mounted installation of the toilet flush plate

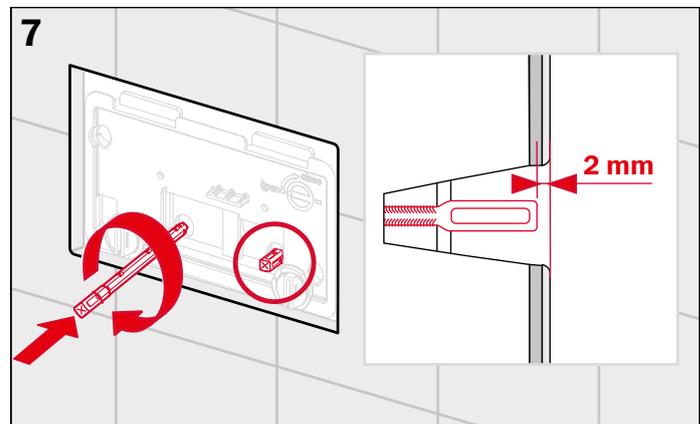
As with all TECE flush plates, the first four steps for installing the toilet flush plate are the same (for more information, see the section entitled “TECESquare, Installing the TECESquare II metal toilet flush plate”).



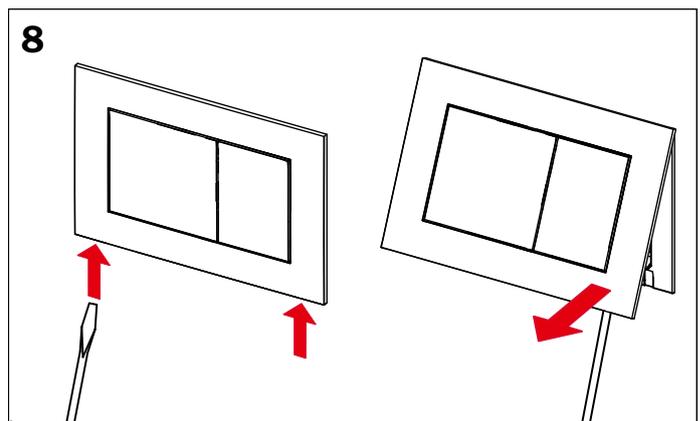
Screw in both attachment rods – distance of attachment rods to wall surface = 25 mm.



Break off the actuating rods according to the wall structure.

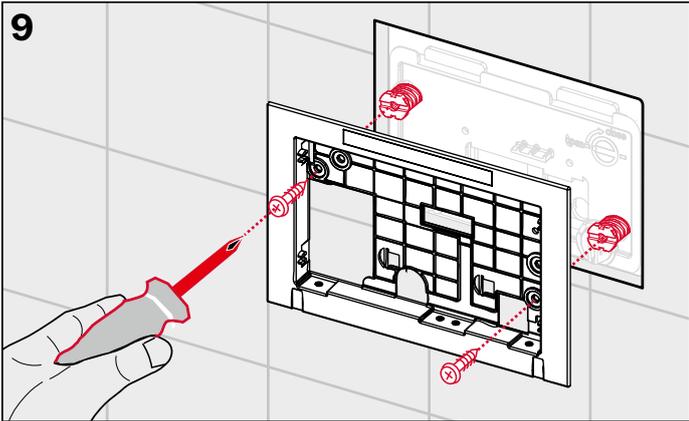


Screw in both actuating rods – distance of actuating rods to wall surface = 2 mm.

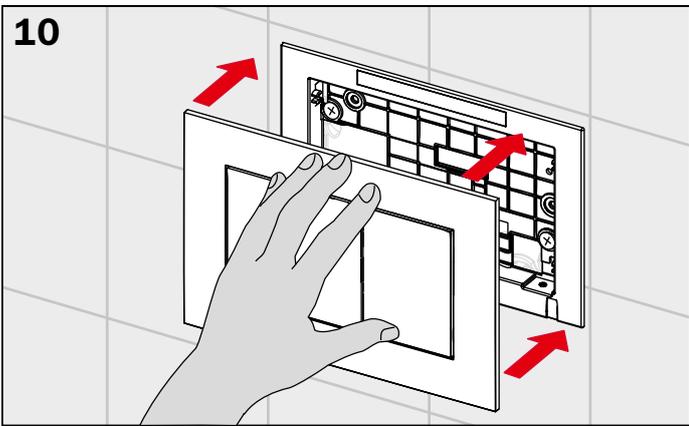


Separate the cover and the support frame.

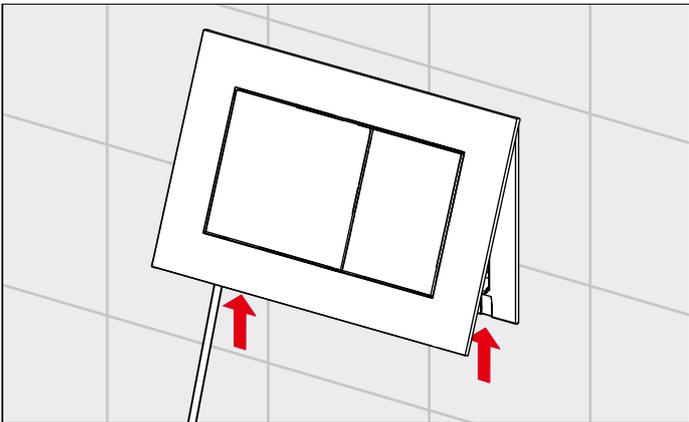
TECE flush plates – TECEnow



9
Screw the support frame onto the attachment rods.



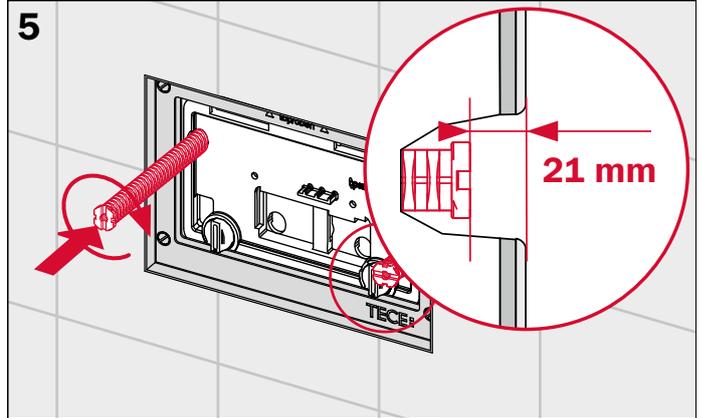
10
Allow the TECEnow flush plate to click into place in the support frame.



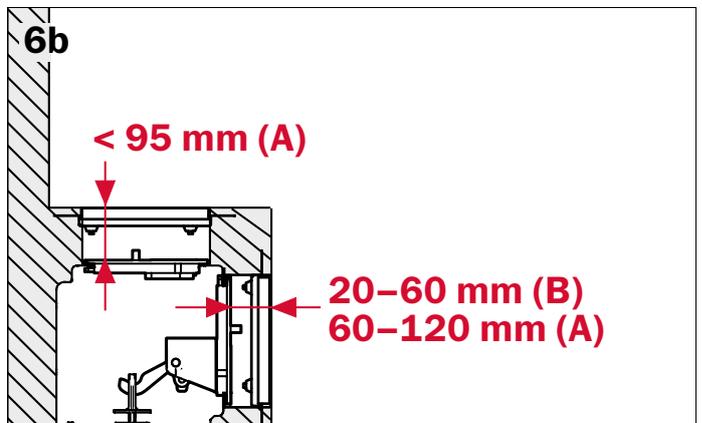
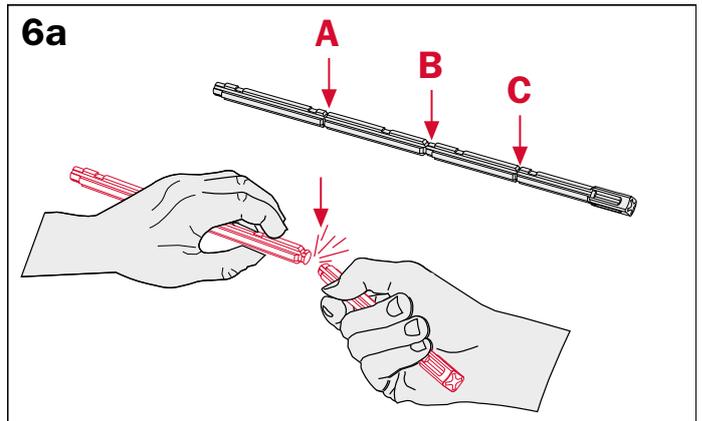
The installed cover can be detached from the flush plate using a screwdriver. To do this, insert the tool into the recesses on the underside of the flush plate and carefully remove the cover.

Flush-mounted installation of the toilet flush plate

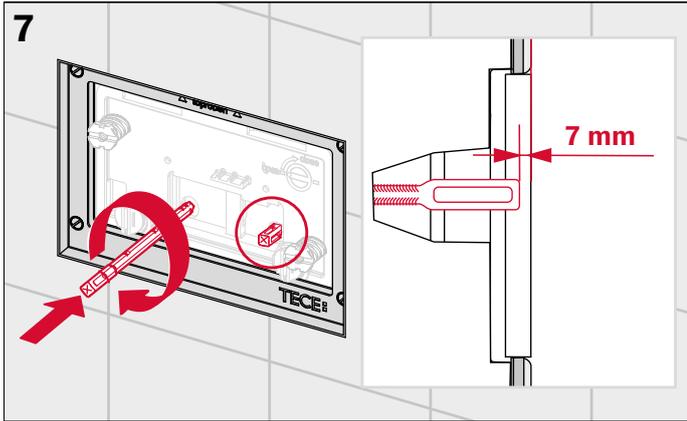
As with all TECE flush plates, the first four steps for installing the toilet flush plate are the same (for more information, see the section entitled “TECESquare, Installing the TECESquare II metal toilet flush plate”).



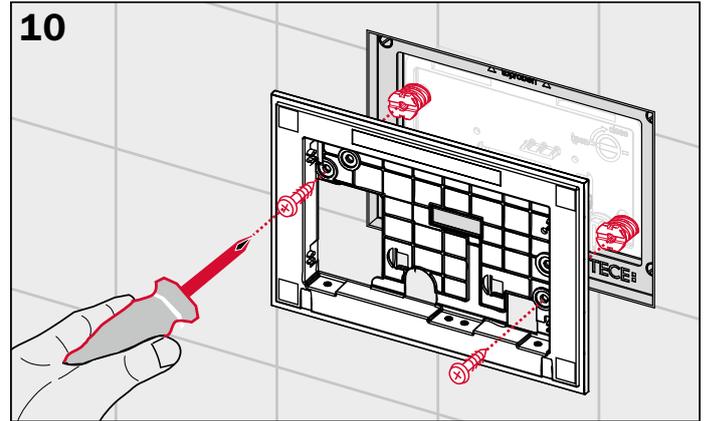
5
Screw in both attachment rods – distance of attachment rods to wall surface = 25 mm.



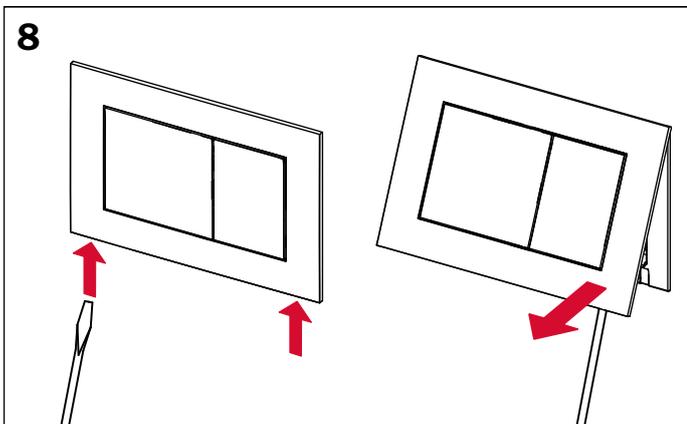
6a
6b
Break off the actuating rods according to the wall structure.



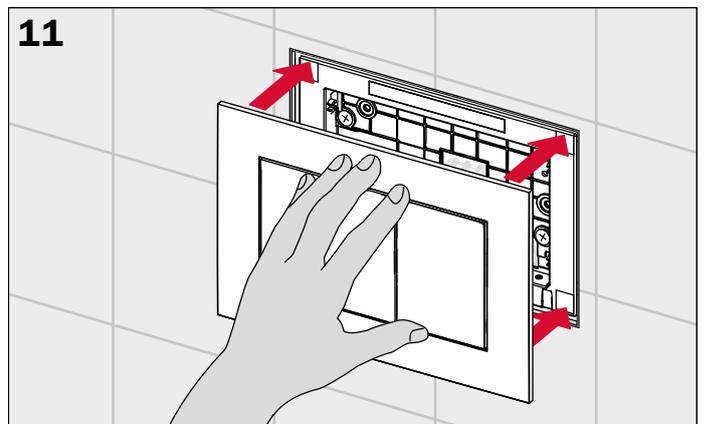
7 Screw in both actuating rods – distance of actuating rods to wall surface = 7 mm.



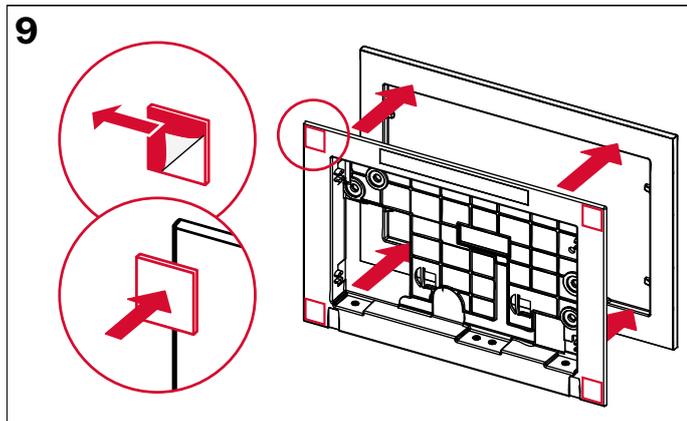
10 Screw the support frame onto the attachment rods.



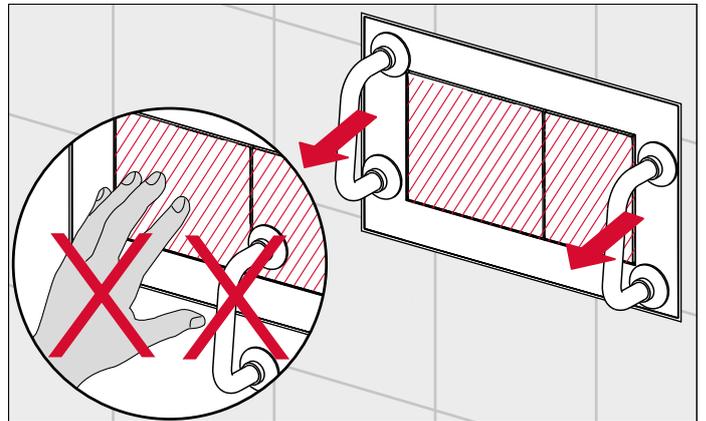
8 Separate the cover and the support frame.



11 Allow the TECEnow flush plate to click into place in the support frame.



9 Push the distance frame onto the support frame and stick the spacers onto the support frame.

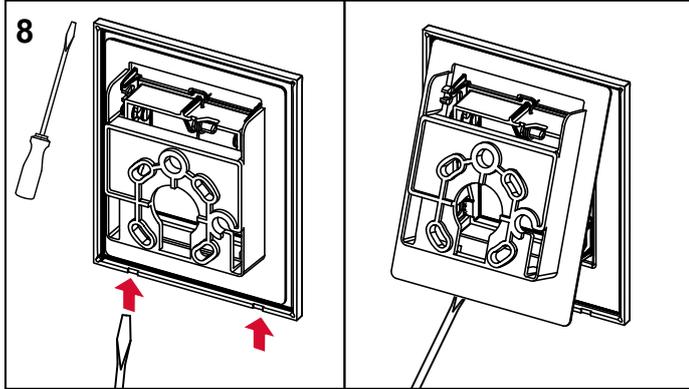


When mounting or dismantling the cover, do not press the button; the cover should only be removed using the suction handles.

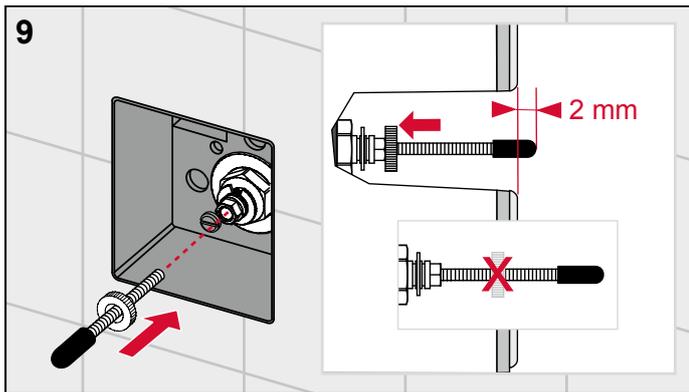
TECE flush plates – TECEnow

Installing the urinal flush plate

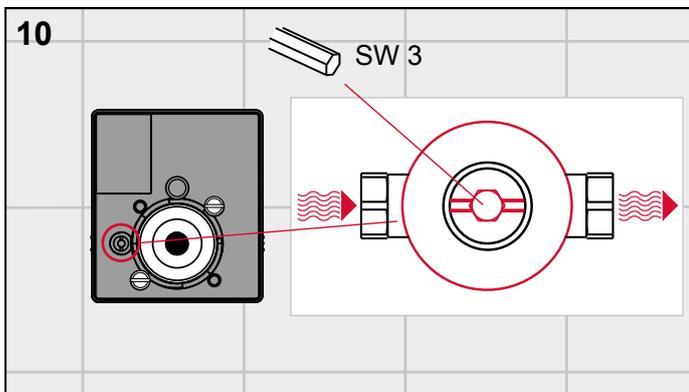
The first seven steps of the procedure for installing the urinal flush plate for the U 1 urinal flusher are the same for all (wall-mounted) TECE urinal flush plates – see “TECESquare – Wall-mounted installation of the glass urinal flush plate” for more information.



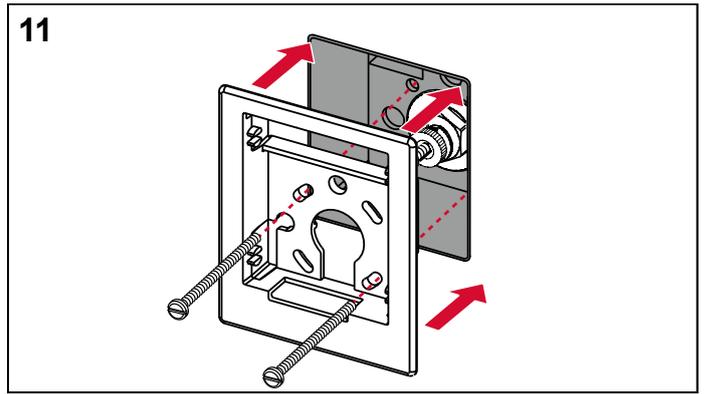
Separate the cover and the support frame.



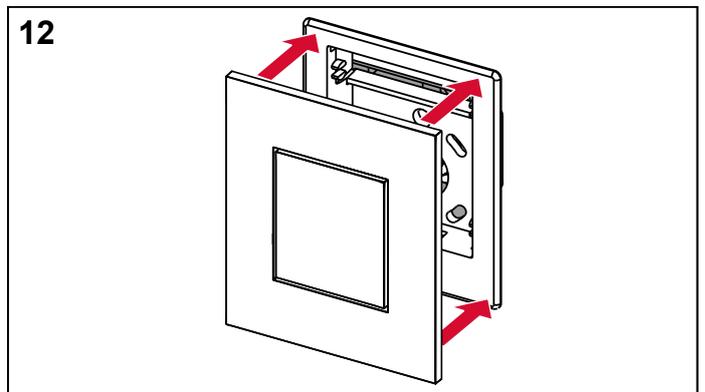
Screw in the actuating rods as described above (for the TECEnow, distance to wall surface = 2 mm) and screw on the counter nut to prevent them from turning.



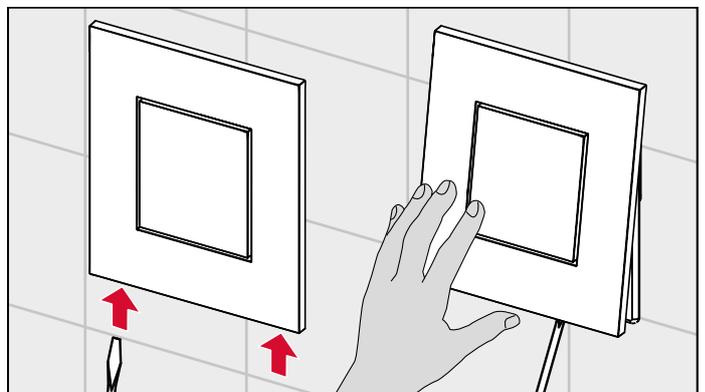
Open the inlet flow control.



Screw the support frame onto the urinal flush valve housing.



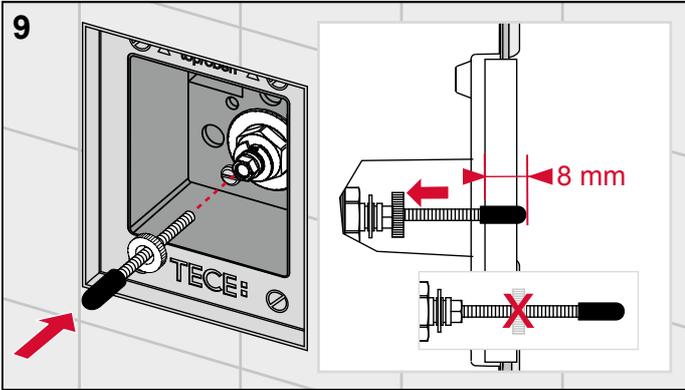
Finally, mount the flush plate cover.



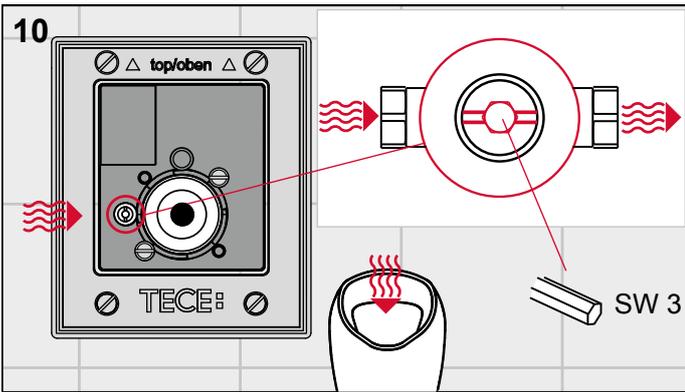
The installed cover can be detached from the flush plate using a screwdriver. To do this, insert the tool into the recesses on the underside of the flush plate and carefully remove the cover.

Flush-mounted installation of the urinal flush plate

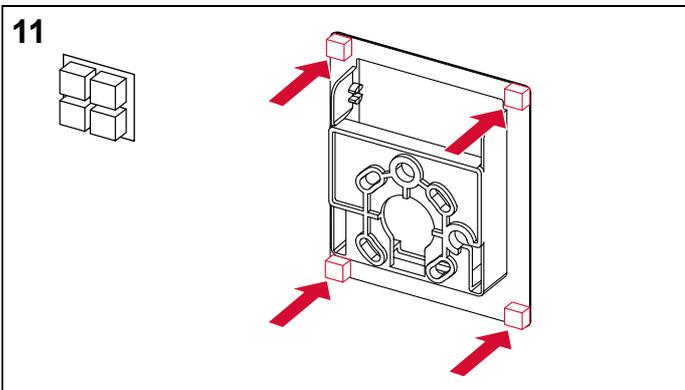
The first eight steps in the procedure for installing the urinal flush plate for the U 1 urinal flusher are the same for all (flush-mounted) TECE urinal flush plates.



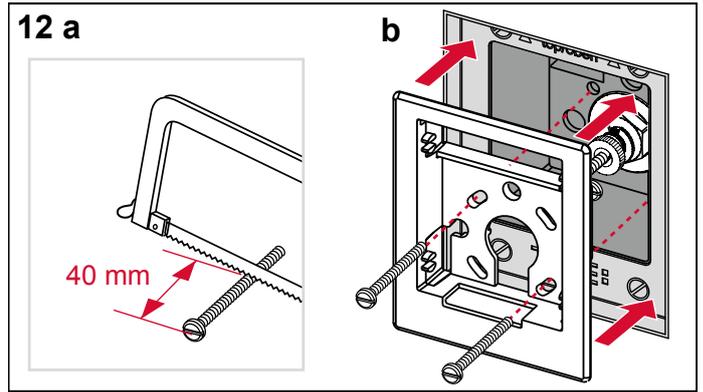
Screw in the actuating rods as described above (for flush-mounted TECEnow, distance to front edge of inside of installation frame = 8 mm), and screw on the counter nut to prevent them from turning.



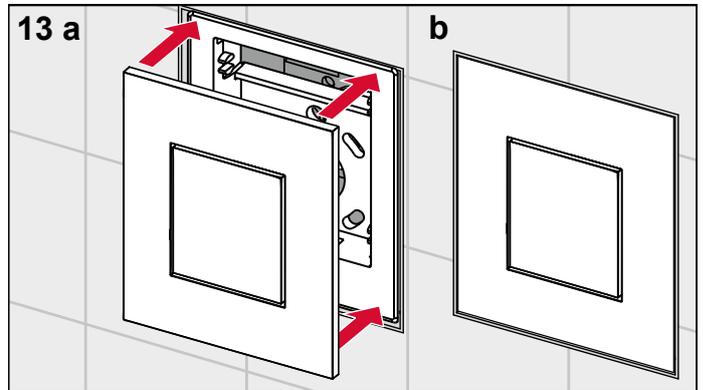
Open the inlet flow control.



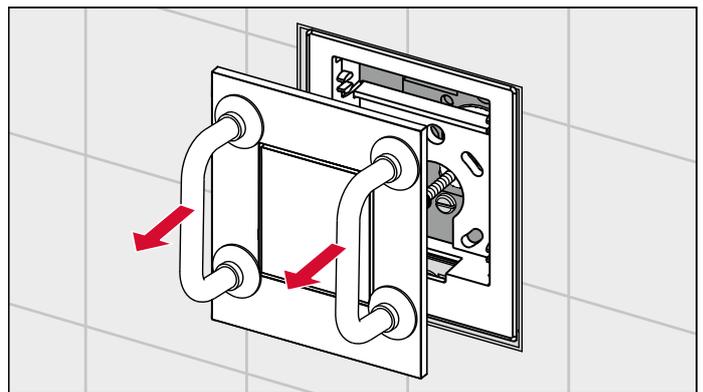
Stick the spacers onto the back of the TECEnow support frame.



Screw the support frame onto the urinal flush valve housing. If necessary, shorten the two screws so that they do not knock against the mounting cross beam (minimum length on minimum wall structure = 40 mm).



Allow the cover of the TECEnow flush plate to click into place in the support frame.

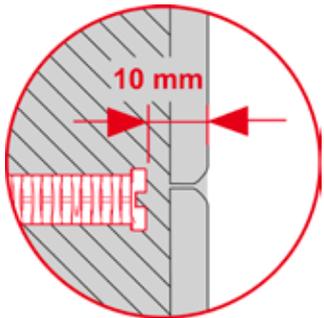


When mounting or dismantling the cover, do not press the button. The installed cover can be removed from the flush plate using the bow-type handles included in the installation frame's scope of supply. Only position the suction cups on the cover to be removed.

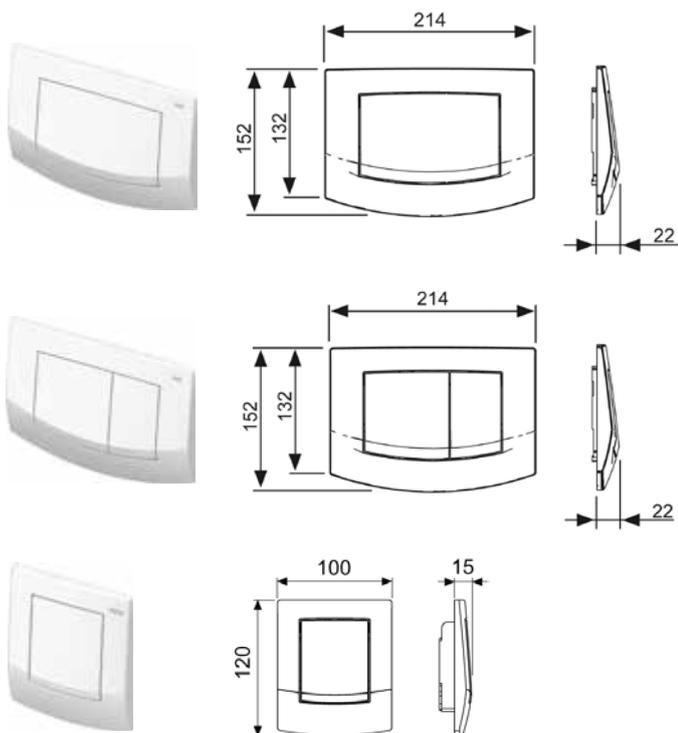
TECE flush plates – TECEambia

TECEambia

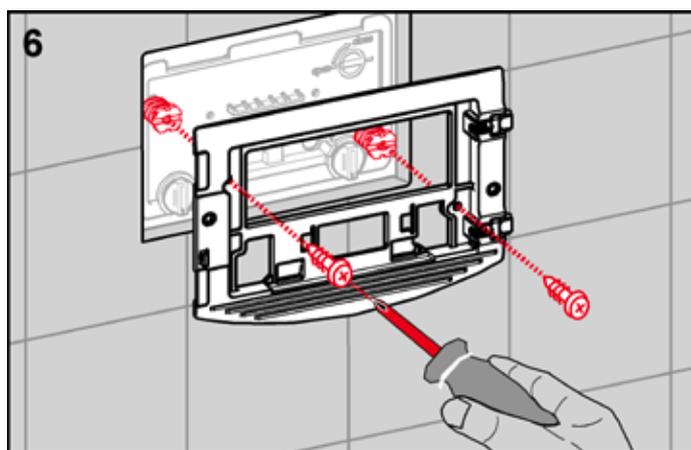
TECEambia toilet flush plates are available with single or dual-flush technology. TECEambia flush plates also exist for urinals. The double-sided rubber buffers prevent rattling noises. The flush plate is made of plastic.



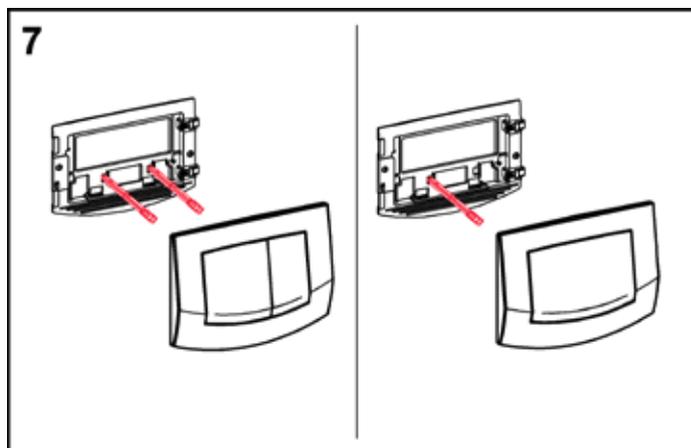
Screw in both attachment rods – distance of attachment rods to wall surface = 10 mm.



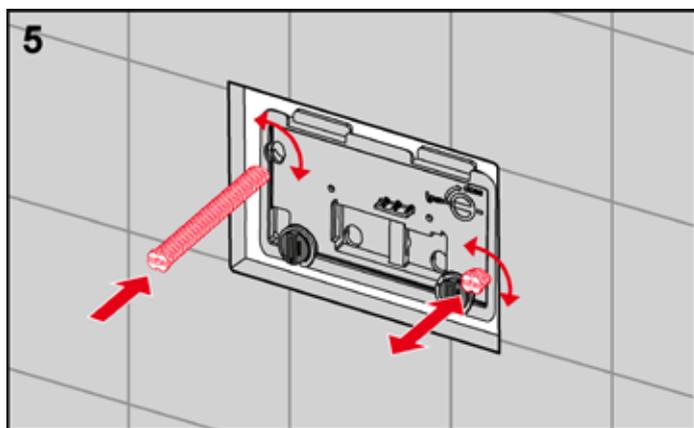
TECEambia toilet flush plate, single-flush technology
TECEambia toilet flush plate, dual-flush technology
TECEambia urinal flush plate



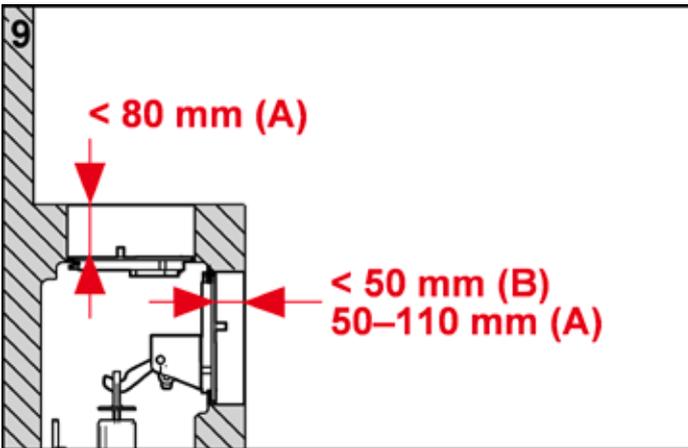
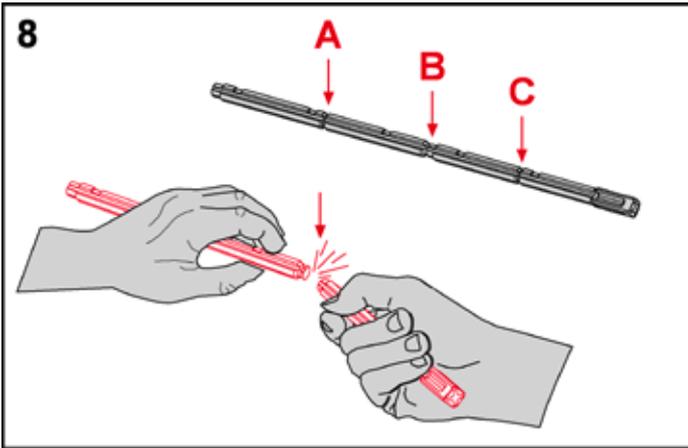
Screw the support frame onto the attachment rods.



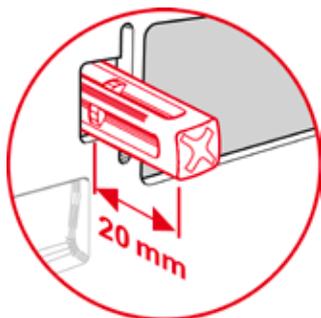
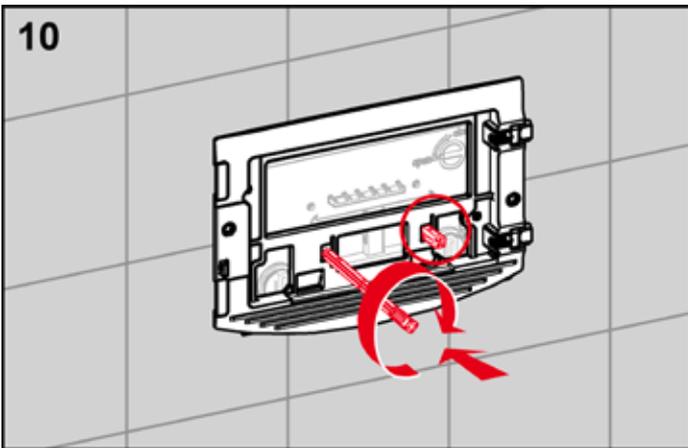
For dual-flush technology, two actuating rods (red and grey) are installed, whereas just one (grey) is required for single-flush technology.



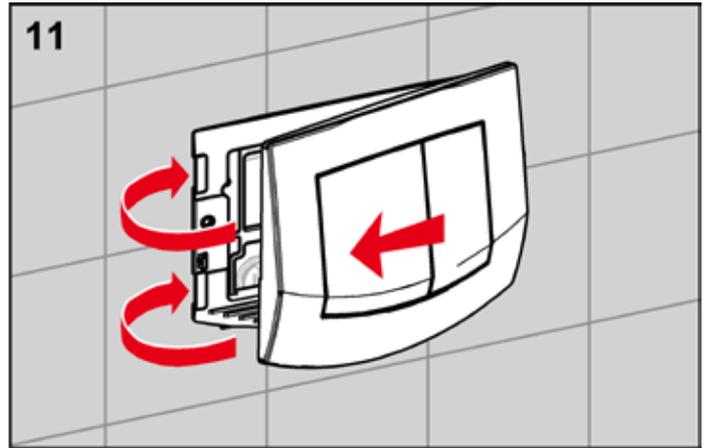
Screw the support frame onto the attachment rods.



Break off the actuating rods according to the wall structure.



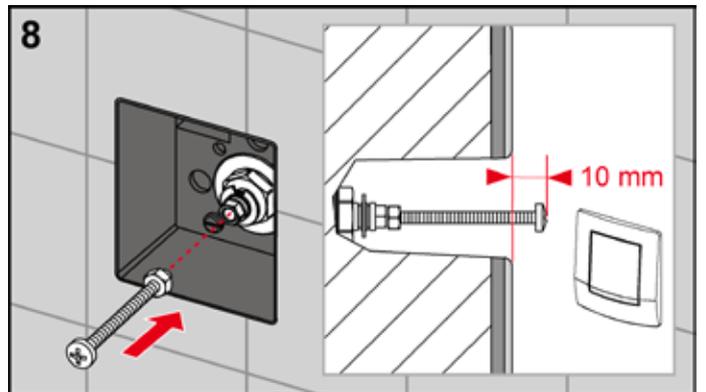
Screw in the actuating rods – distance to front edge of support frame = 20 mm.



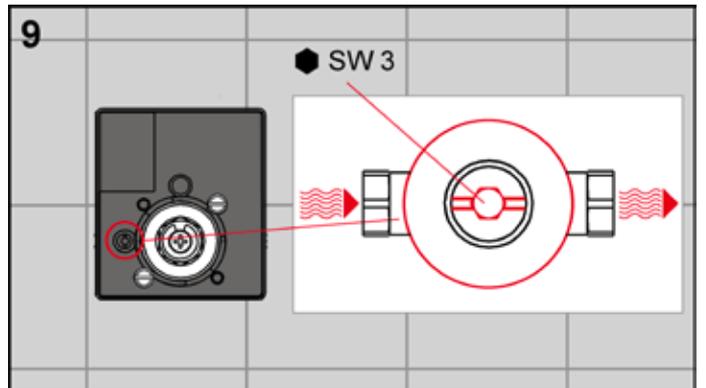
Hook the cover of the TECEambia flush plate into the right-hand side, and fit it onto the support frame by means of the snap lock.

Installing the urinal flush plate

The first seven steps of the procedure for installing the urinal flush plate for the U 1 urinal flusher are the same for all (wall-mounted) TECE urinal flush plates – see “TECESquare – Wall-mounted installation of the urinal actuation” for more information.

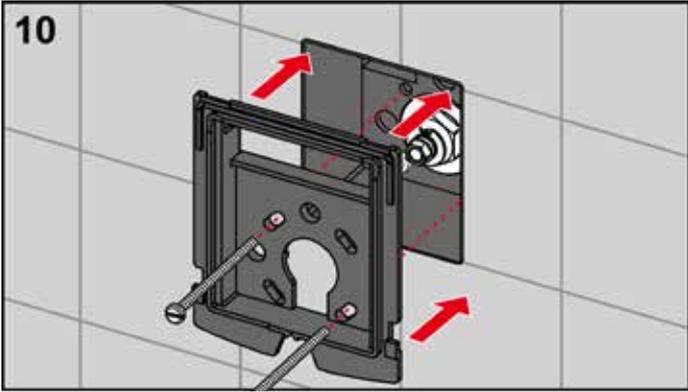


Screw in the actuating rods as described above (for the TECEambia, distance to wall surface = 10 mm) and screw on the counter nut to prevent them from turning.

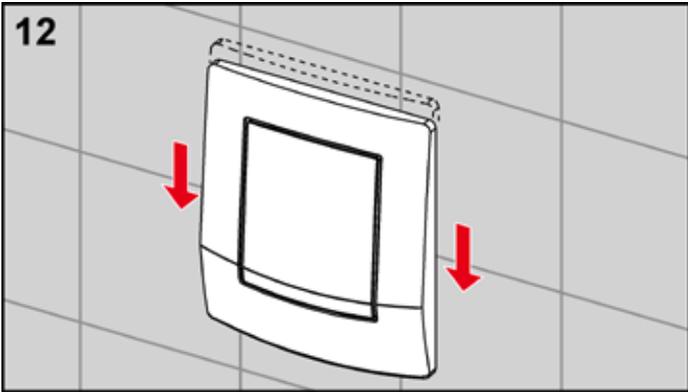
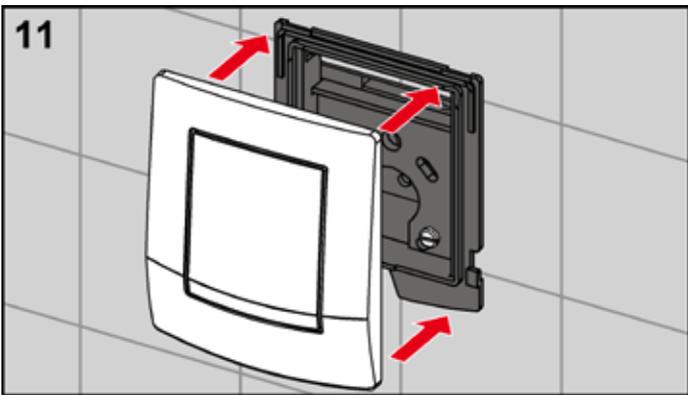


Open the inlet flow control.

TECE flush plates – TECEambia



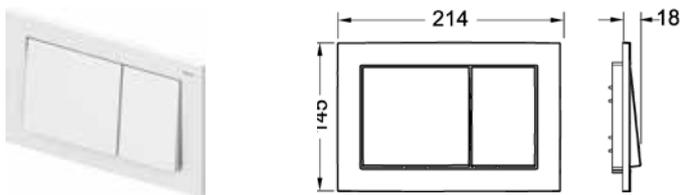
Screw the support frame onto the urinal flush valve housing.



Finally, mount the flush plate cover.

TECEbase

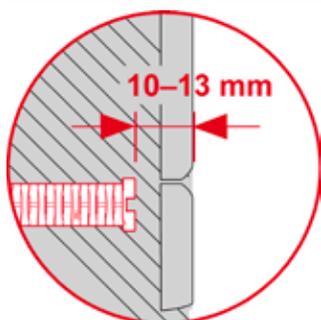
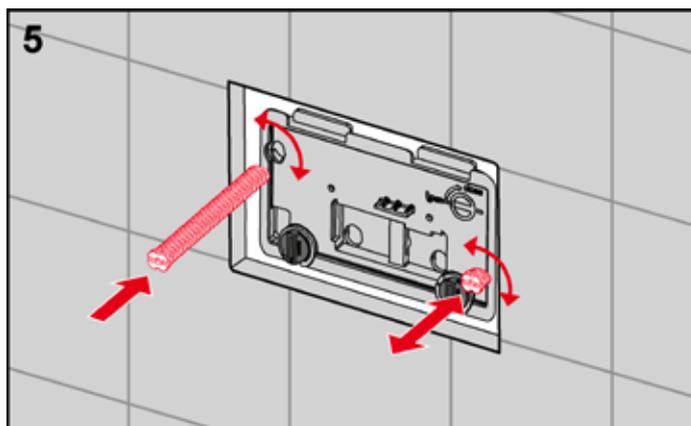
TECEbase is a simple toilet flush plate made of plastic for dual-flush technology. It is operated by two buttons with switch technology.



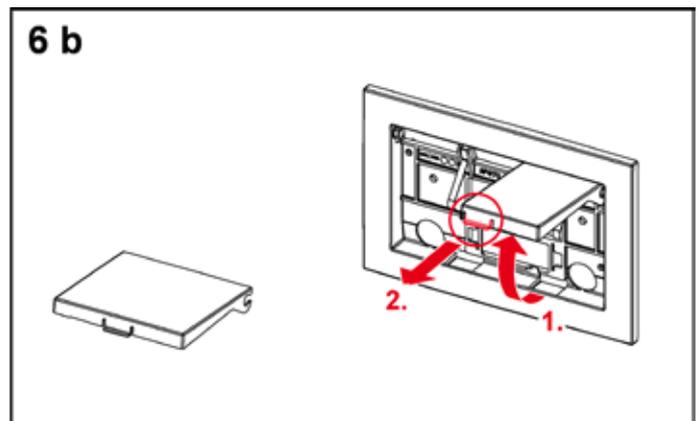
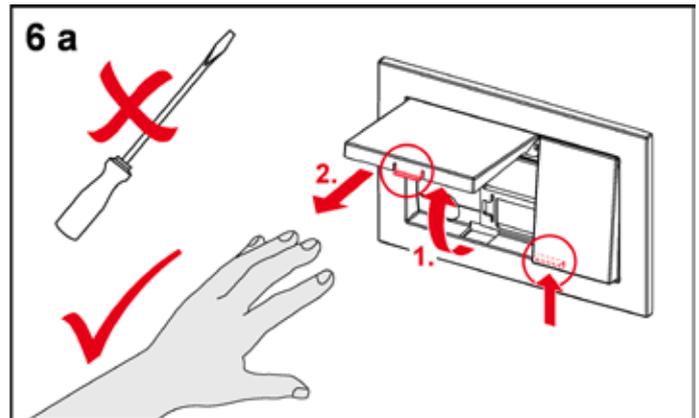
TECEbase toilet flush plate, dual-flush technology

Installing the toilet flush plate

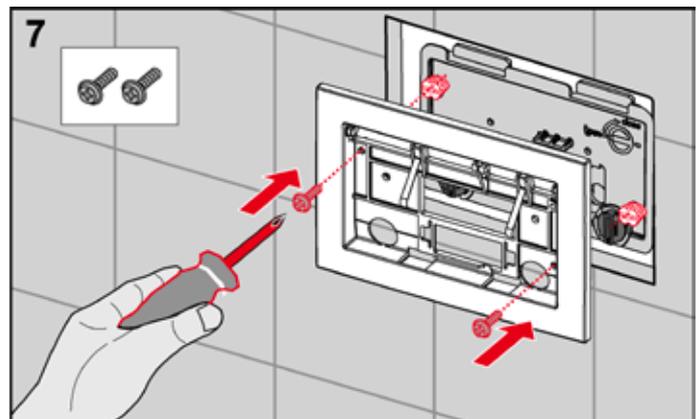
The first four steps for installing the toilet flush plate are the same for all TECE flush plates (see the section entitled “TECEsquare, Installing the TECEsquare II metal toilet flush plate” for more information).



Screw in both attachment rods – distance of attachment rod to wall surface: 10 - 13 mm.

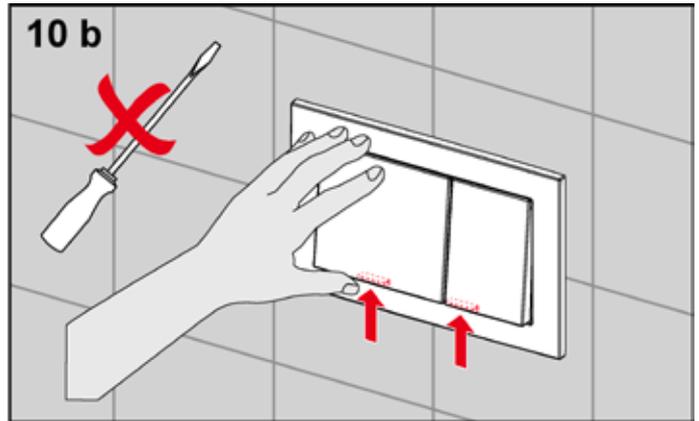
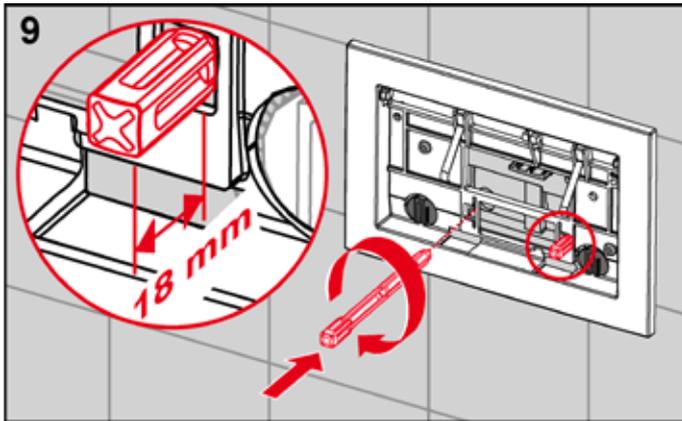
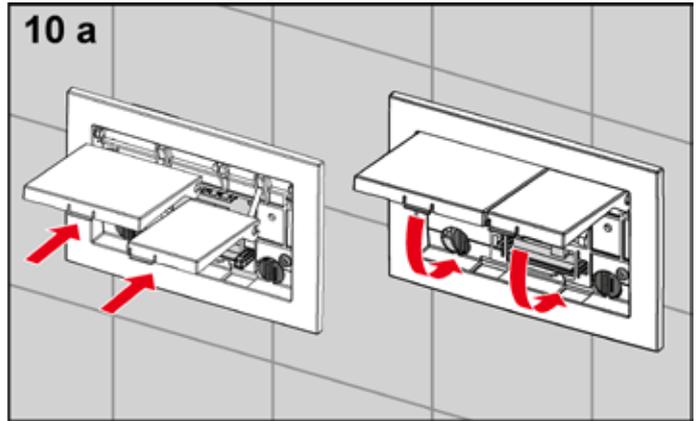
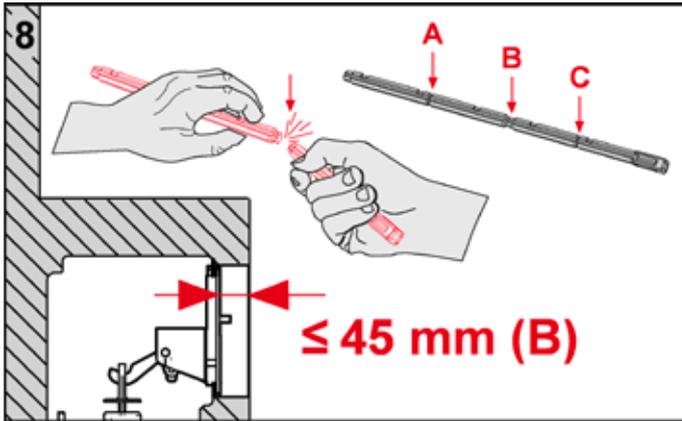


Manually dismantle both buttons from the flush plate by bending up the snap-in hooks towards the button. To avoid damaging the buttons, do not use a screwdriver or similar tool.



Screw the support frame onto the attachment rods.

TECE flush plates – TECEbase

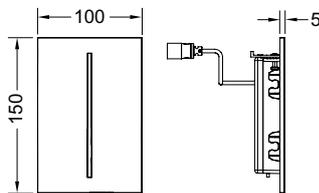
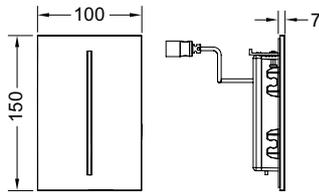
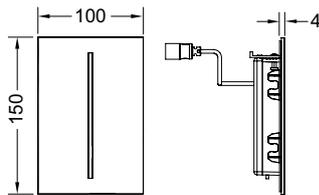


Break off the actuating rods according to the wall structure and screw them in – distance from front edge of support frame = 18 mm.

Finally, replace the buttons manually.

TECEfilo urinal

The new TECEfilo urinal electronics are available with a metal, glass or plastic surface. Their appearance therefore harmonises perfectly with various TECE flush plates such as with the TECESquare metal, TECESquare glass toilet flush plates or with the TECEnow toilet flush plate. The TECEfilo urinal electronics with glass or plastic surface can also be mounted flush to the surface with the TECEfilo installation frame.



TECEfilo, metal
TECEfilo, glass
TECEfilo, plastic

Based on a service life of two years, the battery lasts for

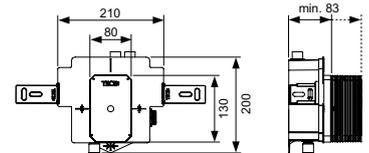
- 220,000 flushes or
- approx. 300 flushes/day.

The TECE urinal flusher U 2 is suitable for installation in dry and brick-wall constructions. For dry-wall structures, installation is performed together with the TECE urinal module. The transformer is already integrated into the two shell elements which means that it is suitable for direct 230 V connection.

TECEbox U 2 urinal flush valve housing for brick-wall structure (9370040)



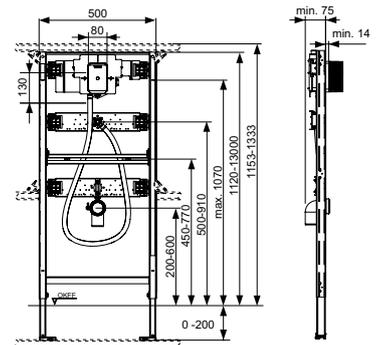
Compatible with the 230 V mains and the 7.2 V battery variants. The transformer for 230 V mains operation is already integrated.



TECEprofil urinal module with U 2 flush valve housing (9320013)



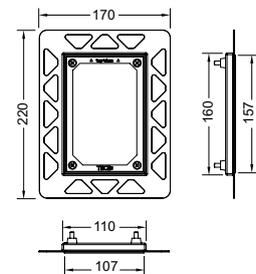
Compatible with the 230 V mains and the 7.2 V battery variants. The transformer for 230 V mains operation is already integrated.



TECEfilo installation frame for flush-mounted installation, for dry-wall constructions only (9242040/41/42)

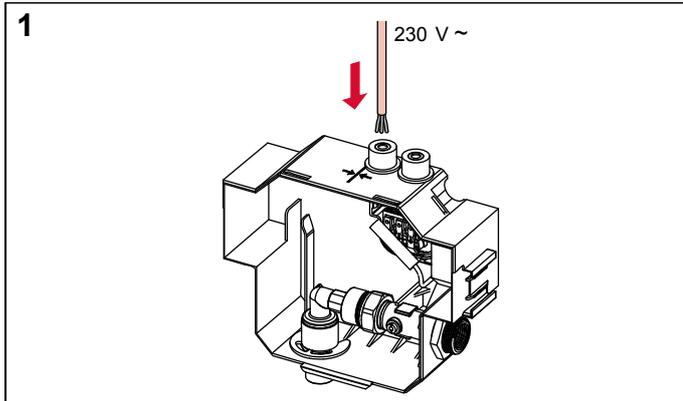


The TECEfilo plastic electronics, like the glass ones, can be mounted with the TECEfilo installation frame for flush-mounted installation in dry-wall structures.

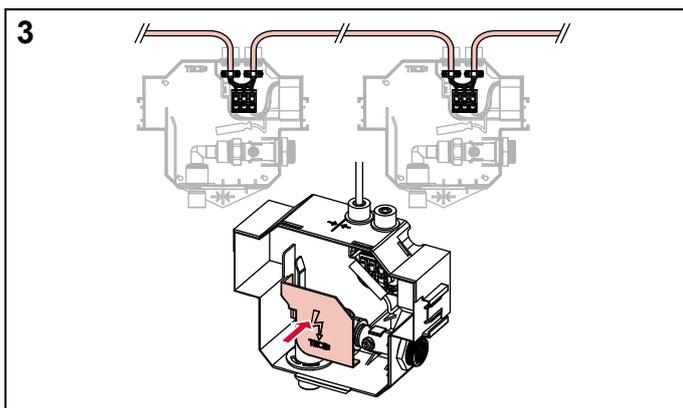
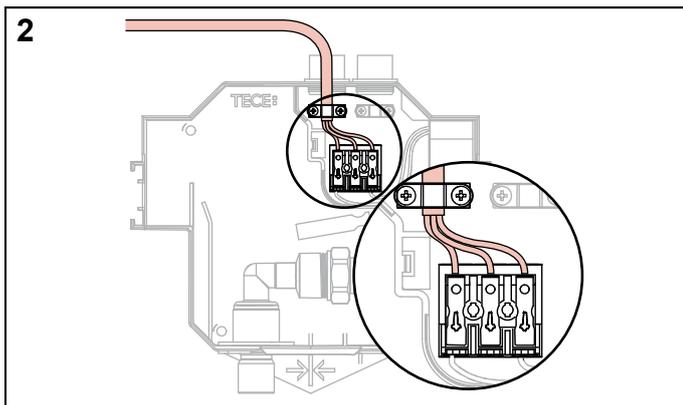


TECE flush plates – TECEfilo Urinal

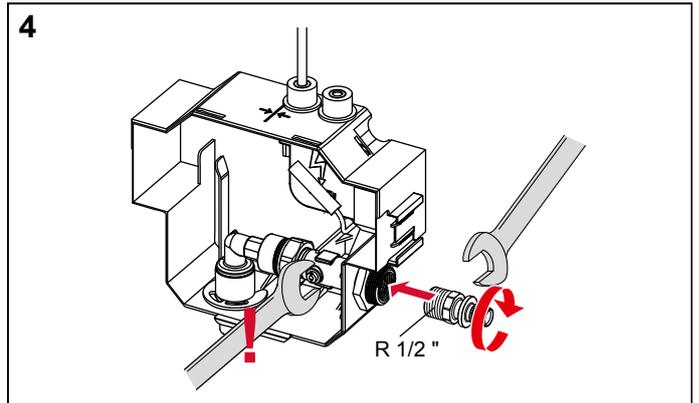
Bare wall – mounting and installation



The U 2 flush valve housing can be installed in dry-walls and brick-walls. The transformer is already integrated into the flush valve housing to facilitate coordination of the different trades carrying out the assembly work. Therefore, the transformer can be directly connected with a 230 V cable.

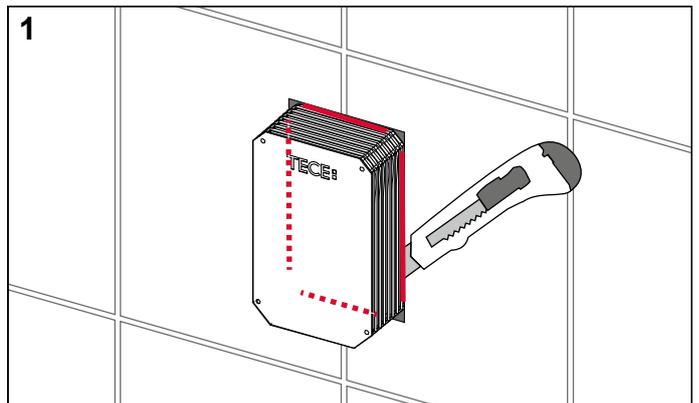


It is also possible to loop the connection through (fig. 3).

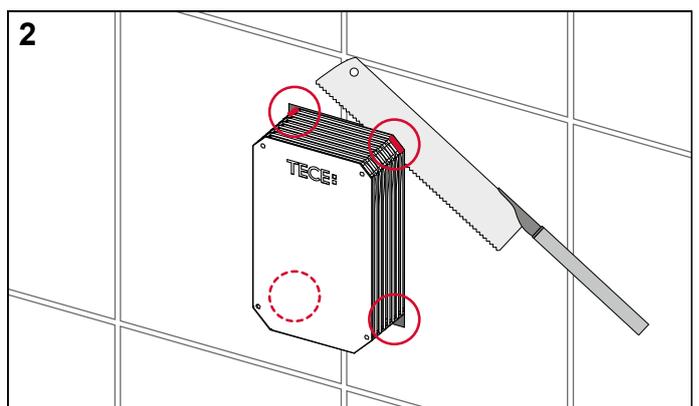


To connect the pipe, hold the connection housing as shown in fig. 4.

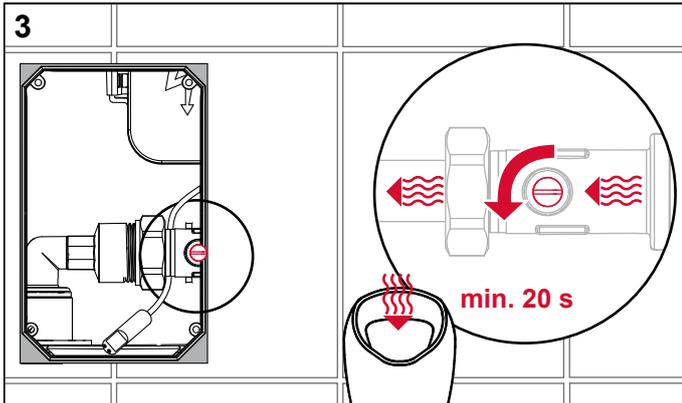
Installing the wall-mounted TECEfilo urinal flush plate 230/12 V



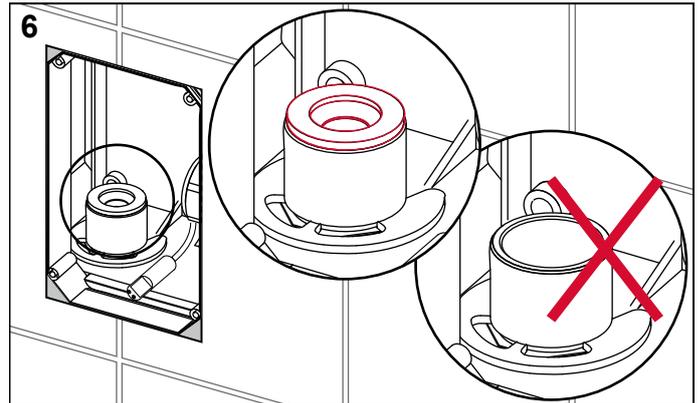
Cut the thin surface of the bare-wall protection with a cutter knife.



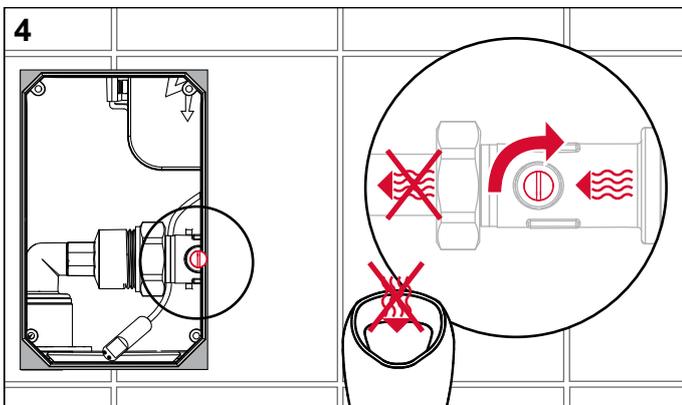
Use a saw to cut the corner areas, where the wall is thicker, flush to the wall.



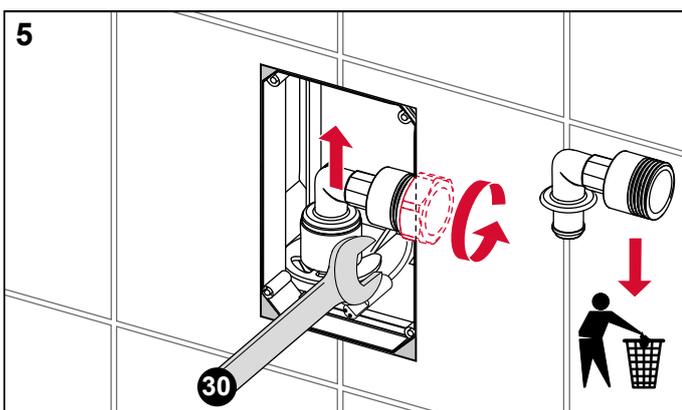
To flush out the connection pipe, open the inlet flow control and sufficiently flush out the pipe.



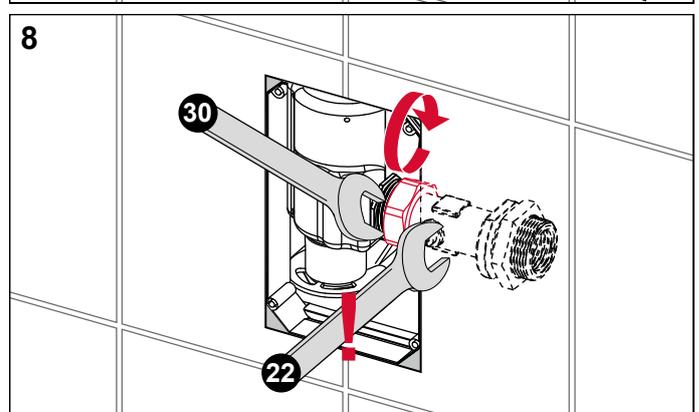
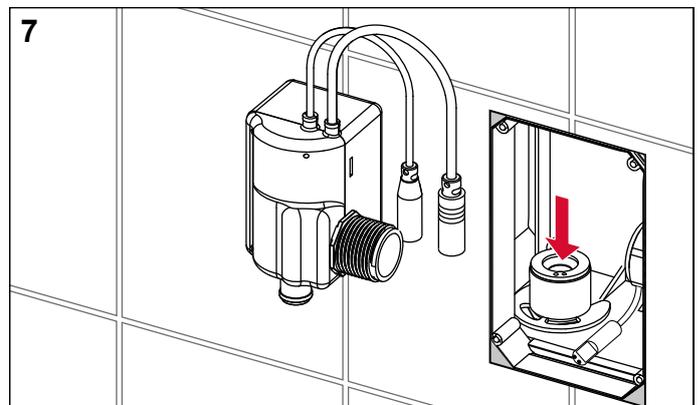
Make sure that the connection piece is fitted with a seal. This seal can be greased if necessary.



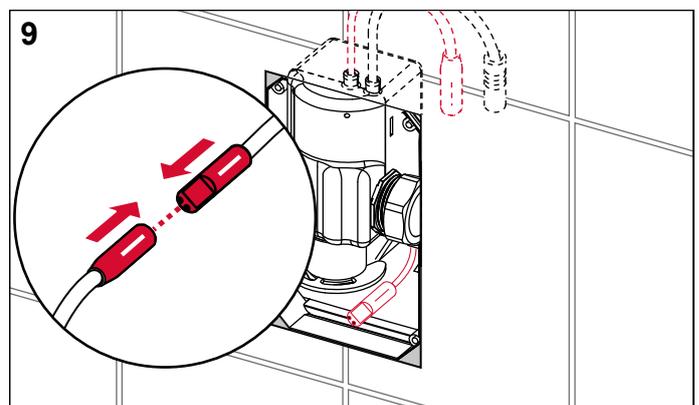
Before mounting the flusher, make sure that the inlet flow control is closed so that no water can leak out during assembly. Close the shut-off using a flat-head screwdriver. In the free-flow setting (fig. 3), the shut-off slot is parallel with the housing, and in the closed setting (fig. 4), it is at right angles to the housing.



Loosen and remove the flush pipe elbow.



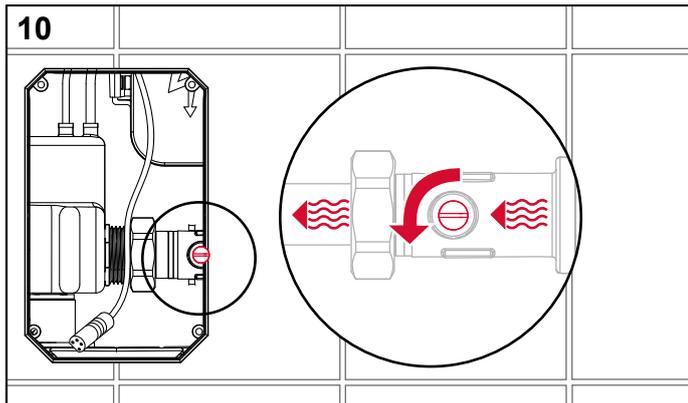
Insert the flusher and close it with the union nut.



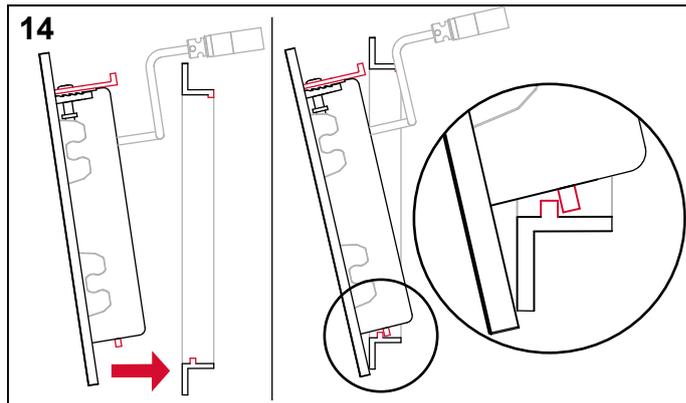
Connect the transformer's plug-in connection.

TECE flush plates – TECEfilo Urinal

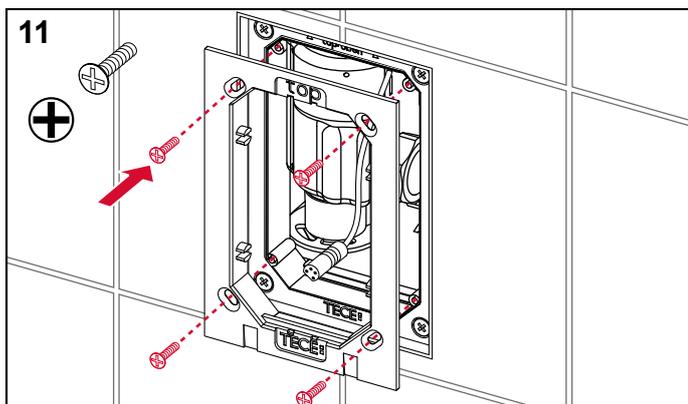
Flush plates



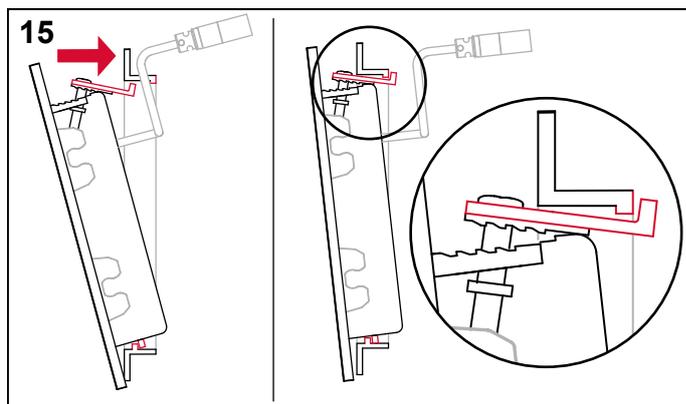
Open the inlet flow control.



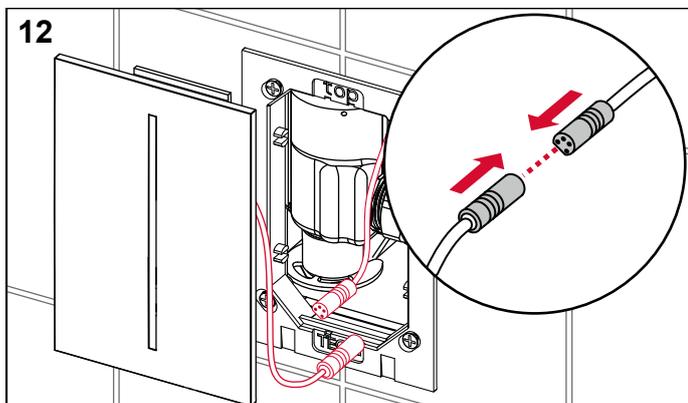
Hook in the bottom of the cover panel.



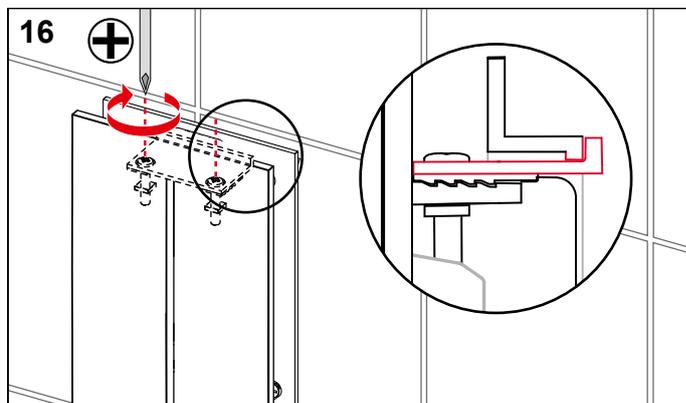
Screw the support frame onto the urinal flush valve housing.



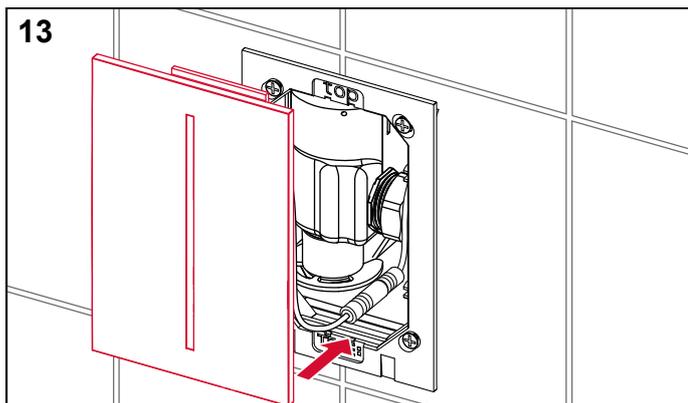
The top of the anti-theft device must be detached for the installation.



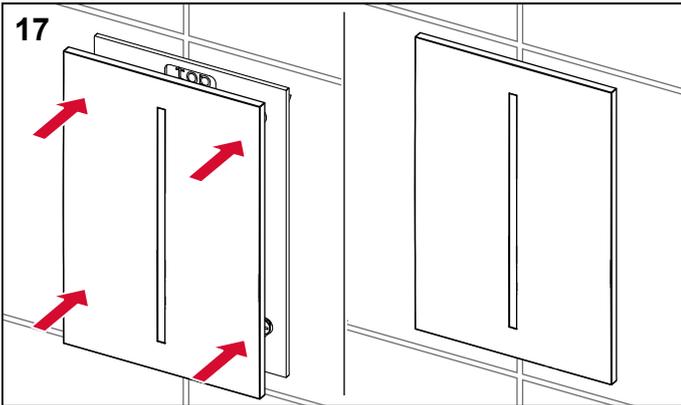
Connect the plug-in connection for the infrared sensor on the cover plate.



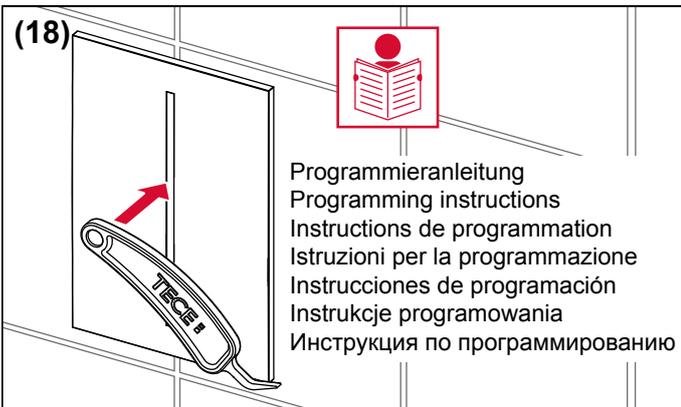
Mount the anti-theft device from the top of the cover using a Philips screwdriver.



Mount the cover.



Then click the cover into place.



Programmieranleitung
 Programming instructions
 Instructions de programmation
 Istruzioni per la programmazione
 Instrucciones de programación
 Instrukcje programowania
 Инструкция по программированию

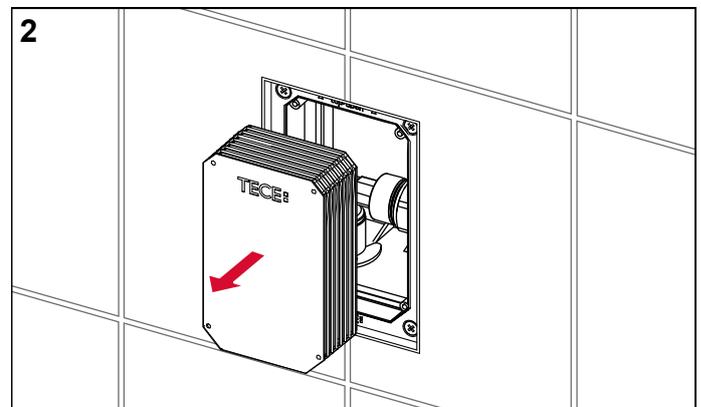
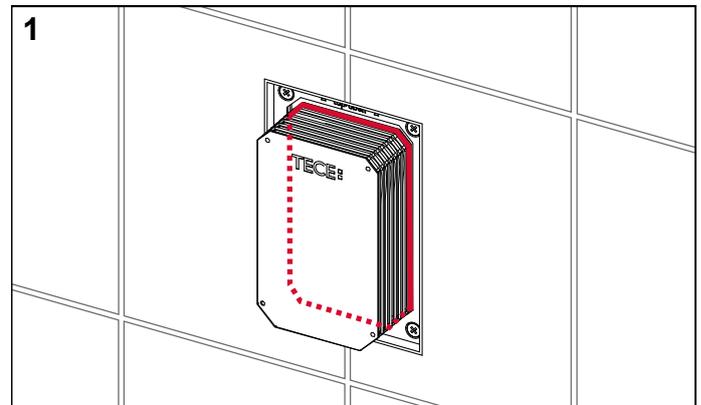
If necessary, the urinal electronics can be programmed. See the following programming instructions for more information.



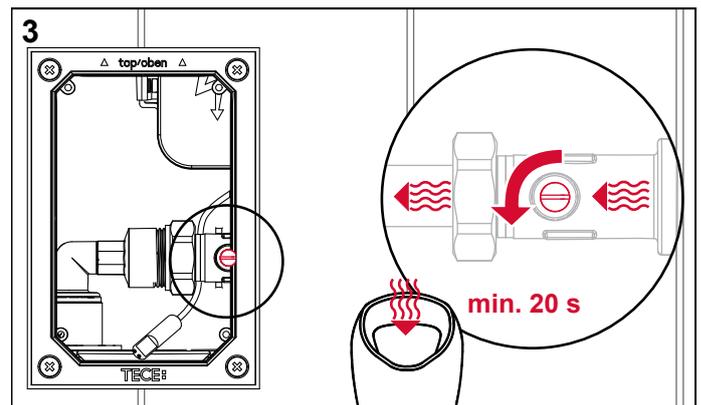
To dismount the cover, insert the programming key into the notches on the underside of the flush plate.

The steps for installing the TECEfilo urinal electronics with the 7.2 V battery variant are virtually the same.

Installing the flush-mounted TECEfilo urinal flush plate 230/12 V

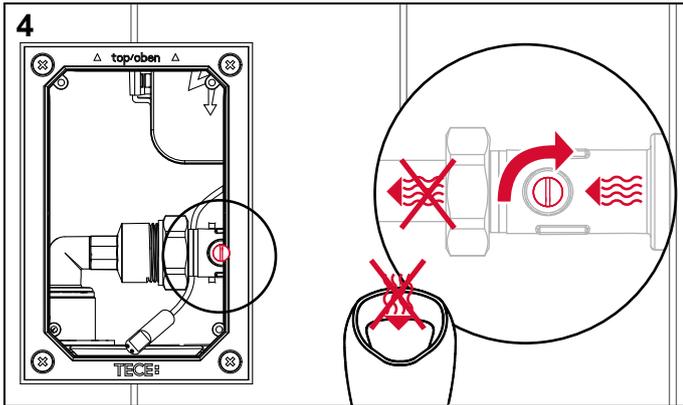


To facilitate installation, we recommend shortening the bare-wall protection to the correct size already when mounting the flush-mounted installation frame. If this has not already been done, shorten the bare-wall protection.

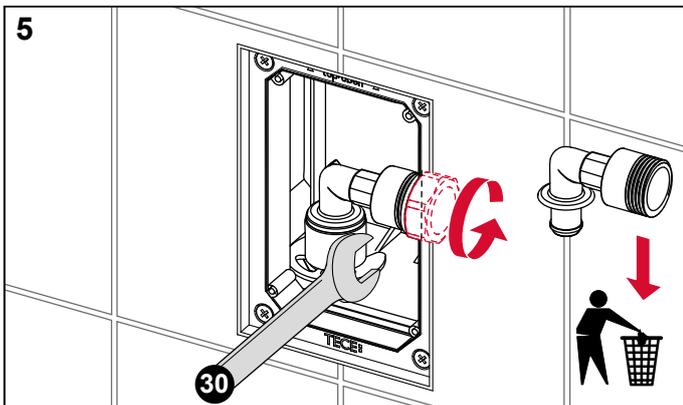


To flush out the connection pipe, open the inlet flow control and sufficiently flush out the pipe.

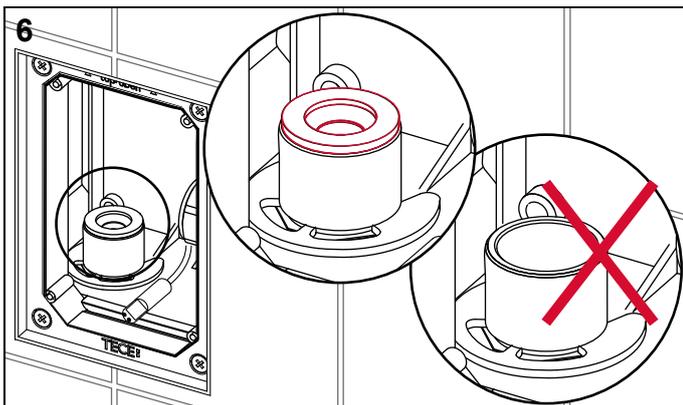
TECE flush plates – TECEfilo Urinal



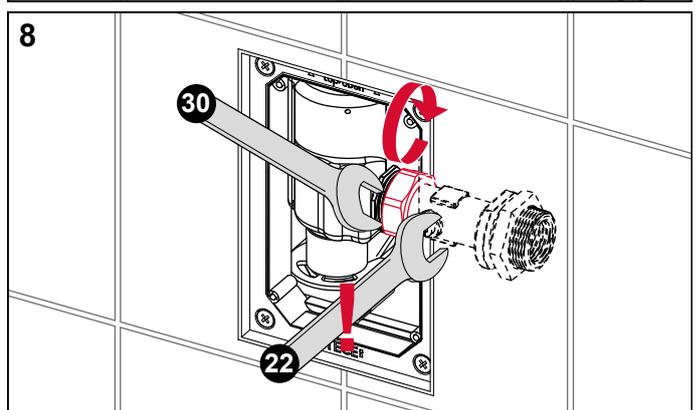
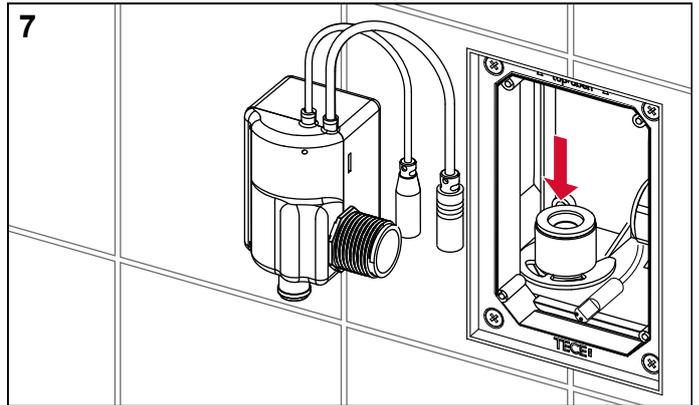
Before mounting the flusher, make sure that the inlet flow control is closed so that no water can leak out during assembly. Close the shut-off using a flat-head screwdriver. In the free-flow setting (fig. 3), the shut-off slot is parallel with the housing, and in the closed setting (fig. 4), it is at right angles to the housing.



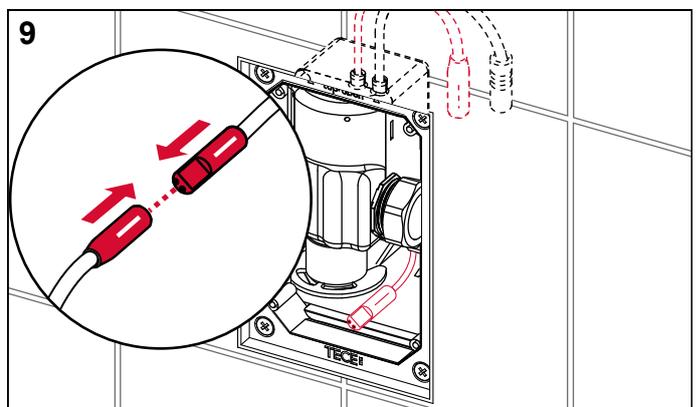
Loosen and remove the flush pipe elbow.



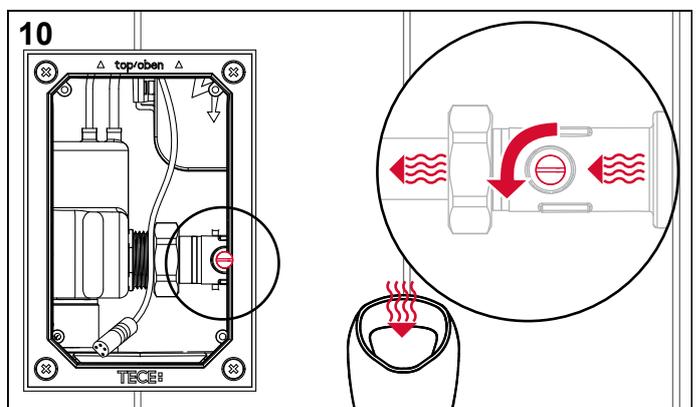
Make sure that the connection piece is fitted with a seal. This seal can be greased if necessary.



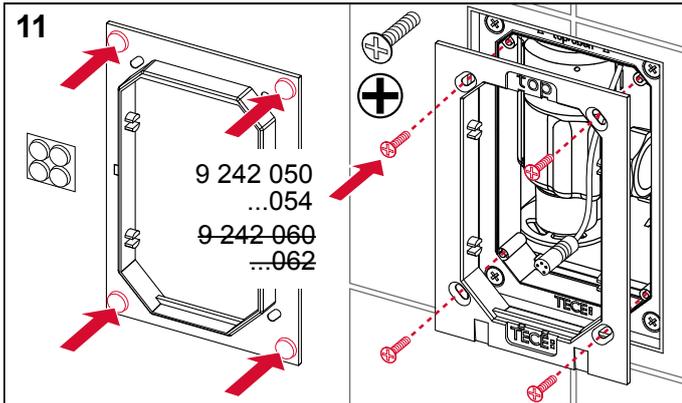
Insert the flusher and close it with the union nut.



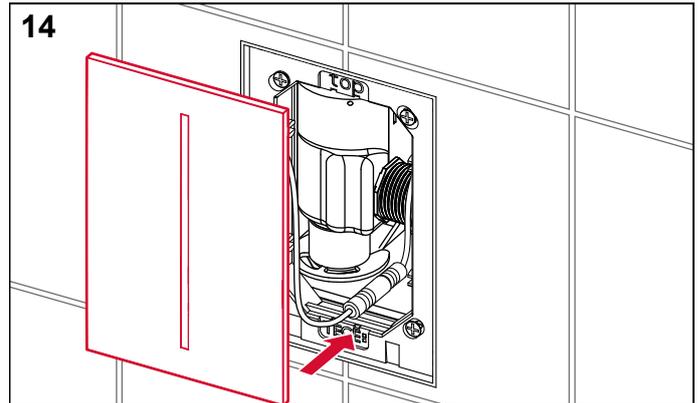
Connect the transformer's plug-in connection.



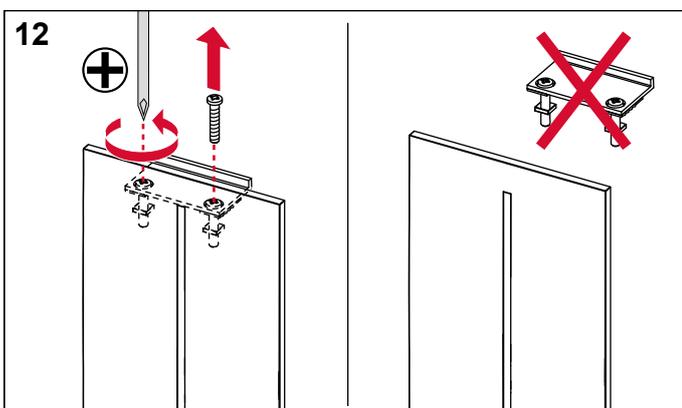
Open the inlet flow control.



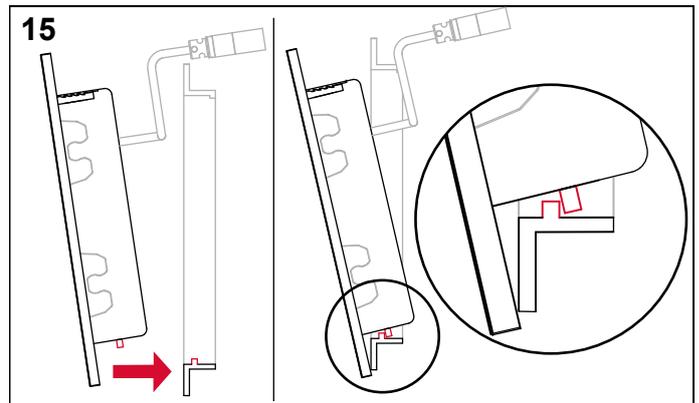
Stick the spacers to the back of the support frame and screw the frame onto the urinal flush valve housing.



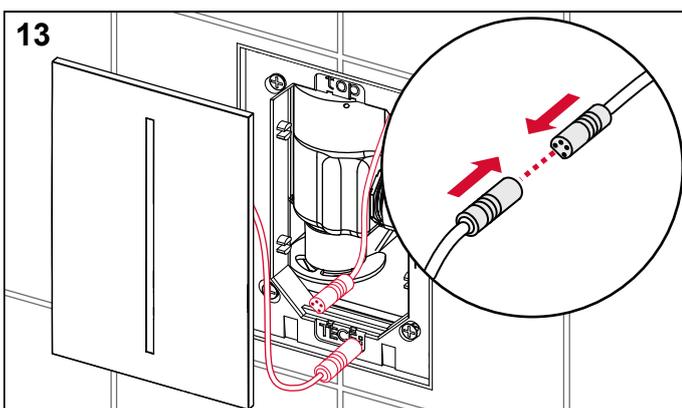
Mount the cover.



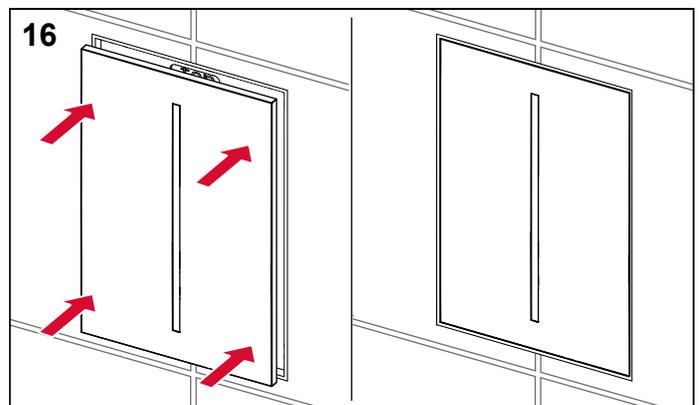
For the flush-mounted installation, leave out the anti-theft device. For the flush-mounted installation, the cover should always be removed using the bow-type handles.



Hook in the bottom of the cover panel.

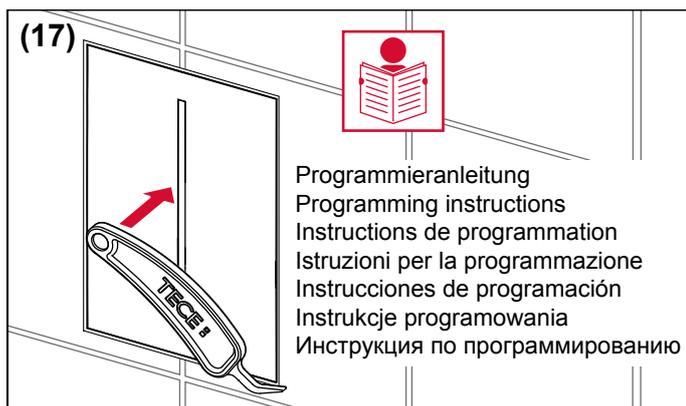


Connect the plug-in connection for the infrared sensor on the cover plate.

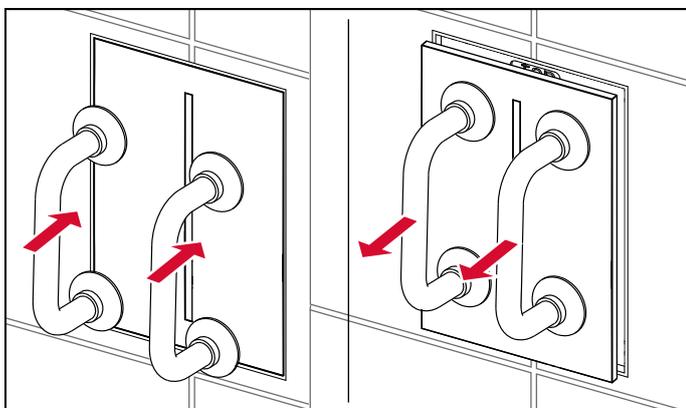


Press the cover into the mounting support.

TECE flush plates – TECEfilo Urinal



If necessary, the urinal electronics can be programmed. See the following programming instructions for more information.



The installed cover can be removed from the flush plate using the bow-type handles included in the installation frame's scope of supply. Only position the suction cups on the cover to be removed.

The steps for installing the TECEfilo urinal electronics with the 7.2 V battery variant are virtually the same.

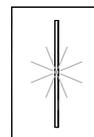
Programming the urinal electronics

To program the TECEfilo urinal electronics, the programming key provided in the scope of supply is required. The TECE electronics can be programmed during the first 30 minutes after connection to the power supply. In the event of a power failure, the last settings saved are retained. Each configurable setting is assigned a position on the remote control.

Position	Function
1	Pause function "off"
2	Pause function "on"
3	Flush time 1 s
4	Flush time 2 s
5	Flush time 3 s
6	Flush time 4 s
7	Flush time 5 s
8	Flush time 6 s
9	Flush time 7 s
10	Flush time 8 s
11	Flush time 9 s
12	Flush time 10 s
13	Pre-rinsing "off"
14	Pre-rinsing 0.5 s
15	Pre-rinsing 1 s
16	Pre-rinsing 2 s
17	Hygiene/interval flush "off"
18	Hygiene/interval flush 24 hrs
19	Hygiene/interval flush 72 hrs
20	Hygiene/interval flush 168 hrs
21	Refill "off"
22	Refill "on" (refill for 2 s after flushing for 2 s)
23	Sensor sensitivity "sensitive"
24	Sensor sensitivity "standard"
25	Hygiene flush volume small (5 s)
26	Hygiene flush volume medium (15 s)
27	Hygiene flush volume big (30 s)
28	Reset to factory settings
29	Urinal covers "off"
30	Urinal covers "on"

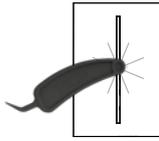
 = factory setting

During the programming phase, a red diode flashes in the centre of the sensor field as soon as a person enters the area. This diode acknowledges that the programming mode is activated. In addition, it indicates the exact position of the programming key.

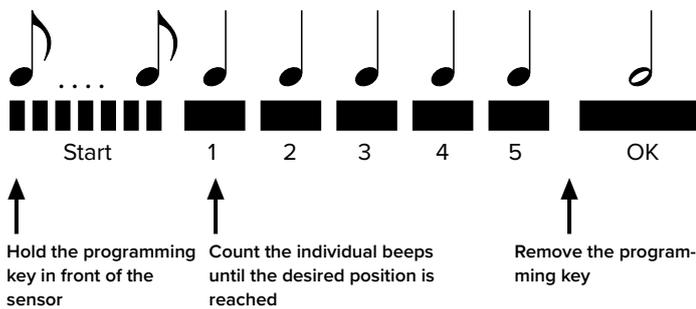


How to program TECE electronics:

- Hold the programming key in front of the red diode (see figure). The programming mode starts with a quick series of short beeps.
- After the start-up phase you will hear a sequence of the same distinct beep. Count the beeps until you reach your desired function.
- Now remove the programming key. A long beep indicates that the programming key has been removed.

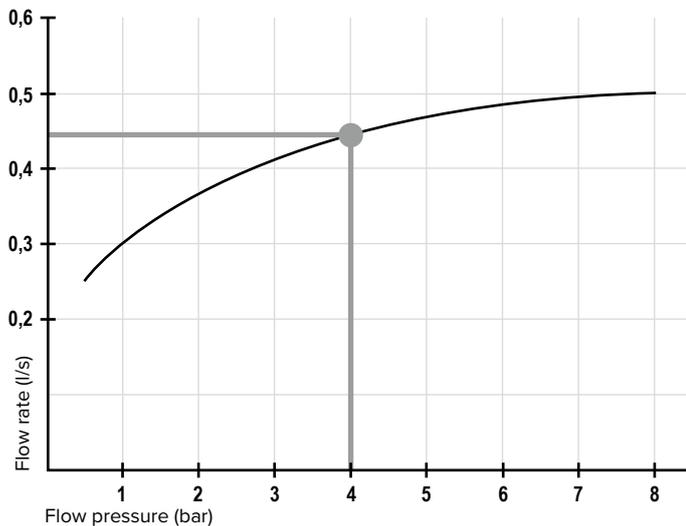


Example: Setting the flush time to three seconds



Flow characteristic curve:

Using the flow characteristic curve, the TECEfilo flush volume flow rate can be read and set depending on the flow pressure as well as the flushing time:



● Example:

Mains pressure 4 bar → Flow rate 0.44 l/s → with 5 s flushing time ≈ 2.2 l

Adjustable functions:

Pause function/stadium function

When the pause function is activated, the flushing time is automatically reduced to one second following repeated flushes in short succession (= less than two minutes). 45 minutes after the last economy flush, a standard flush is activated.

Cleaning function

Activating the cleaning function stops the urinal from flushing for ten minutes. After this time, a cleaning flush is automatically triggered and it returns to the standard operating mode.

Activating the cleaning function:

Hold the programming key briefly in front of the sensor until an acknowledgement beep sounds.

The cleaning function can only be activated in standard mode, not during the programming phase.

Hygiene/interval flush

Automatic flush actuation, choose between 24, 72 or 168 hours after the last flush. The hygiene flush volume can be set to small (5 s), medium (15 s) or large (30 s).

TECE flush plates – toilet flush handle

Toilet flush handle

The toilet flush handle is a completely different toilet actuation system and can only be mounted on TECE concealed cisterns. It sets new standards in terms of operation and design. The toilet flush handle technology activates a large or small flush volume via a rotary motion.

Toilet flush handles are supplied by different bathroom fitting manufacturers. They generally tend to be a component in a range of fittings or series of accessories, or else can be used with any series. The shape, which is harmonised with the fittings, allows for a consistent design without any disturbing influences. The toilet flush handles are high-quality products made of metal.

A toilet flush handle can be replaced by a TECE flush plate at any time. So, the customer is also free to opt for a toilet flush handle at a later stage.

Your contact partner for toilet flush handles is not TECE but rather the respective fittings manufacturer who also markets the toilet flush plate:

DORNBRACHT

Dornbracht GmbH & Co. KG
Köbbingser Mühle 6
D-58640 Iserlohn
www.dornbracht.de
info@dornbracht.de

JADO

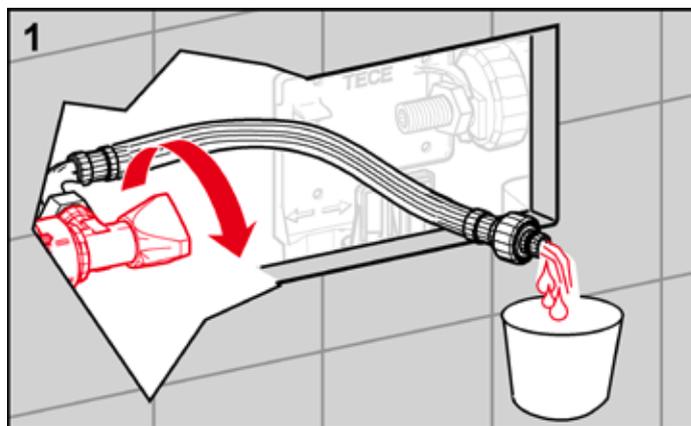
Jado AG Germany
Euskirchener Straße 80
D-53121 Bonn
Tel. +49 (0) 2 28 521-0
Fax +49 (0) 2 28 521-241
www.jado.de
jado.info@idealstandard.de

oras

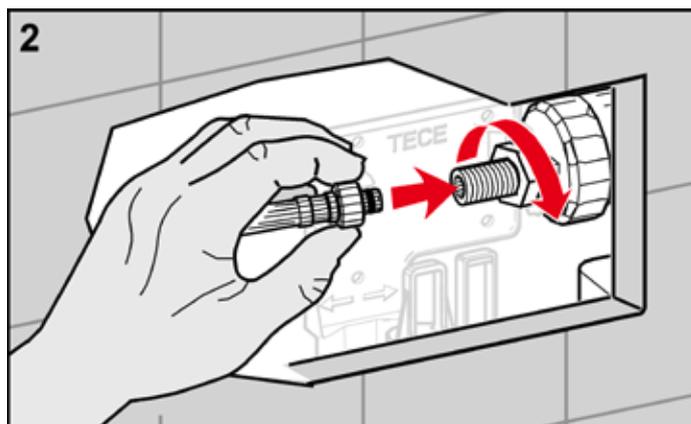
Oras GmbH & Co. KG
Armaturen
Grünlandweg 10
D-58640 Iserlohn
Tel. +49 (0) 23 71 94 80-0
Fax +49 (0) 23 71 94 80-23
www.oras.com
info.germany@oras.com

Installing the rotary mechanism

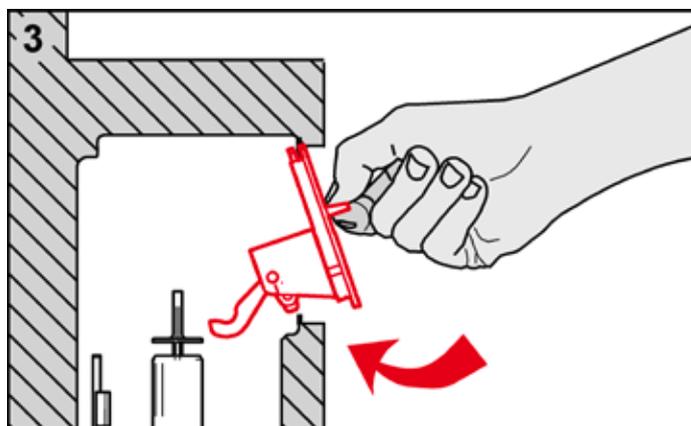
Installing the cover of a toilet flush handle differs according to manufacturer and series, and is described in the respective installation manuals. The basis of each toilet flush handle (i.e. the rotary mechanism) is installed as follows:



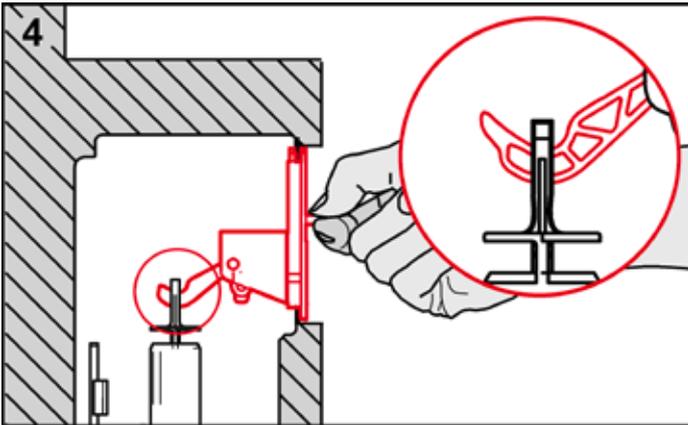
Open the corner valve and sufficiently flush out the pipe.



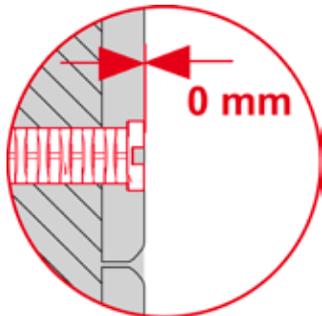
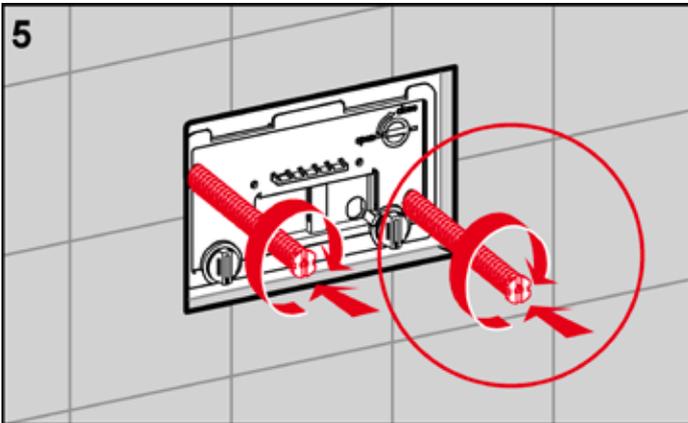
Turn the corner valve to close it again and connect the reinforced hose to the filling valve. If necessary, you can open the corner valve again.



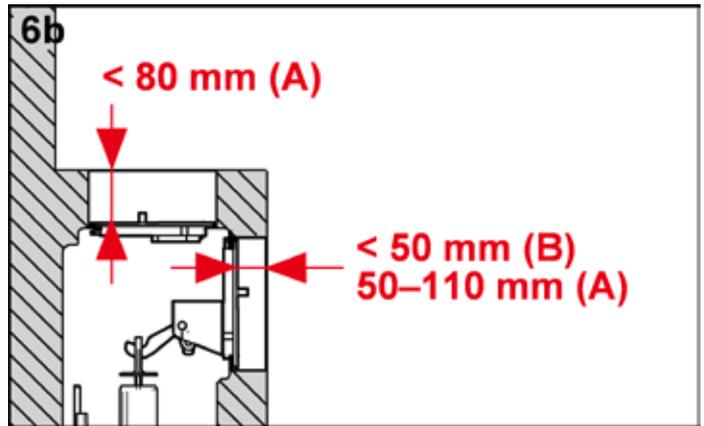
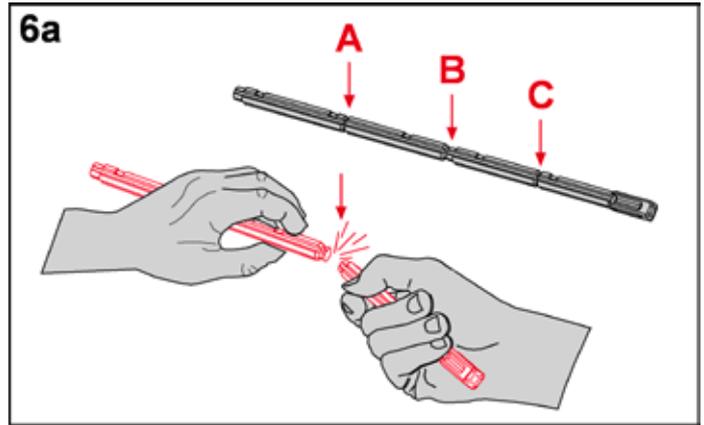
Put the splash guard back on.



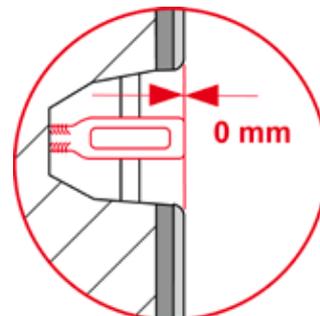
The activation hooks must fit correctly in the drain valve's drawbar eyelets. Tighten the splash guard clamping screws.



Turn both attaching rods until they are in contact with the surface of the wall.

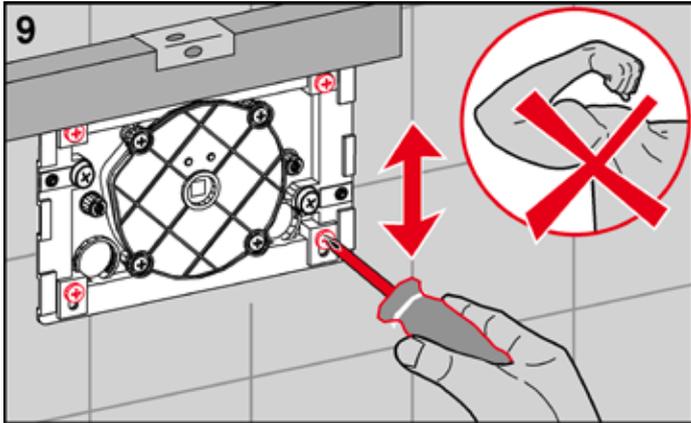
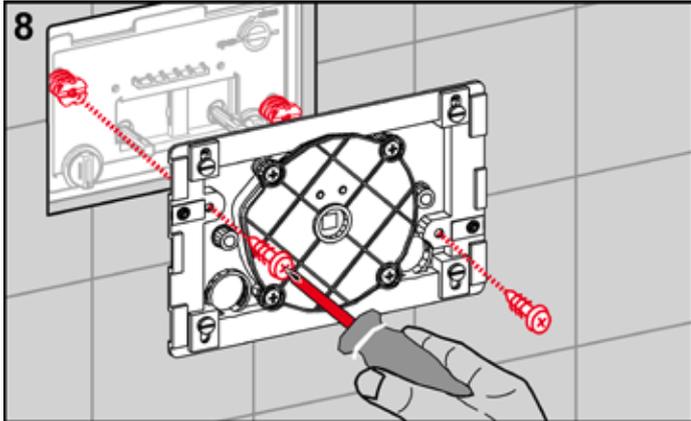


Break off the actuating rods according to the thickness of the wall structure.



Turn both actuating rods until they are in contact with the surface of the wall.

TECE flush plates – toilet flush handle



Screw the rotary mechanism onto the attaching rods and align them horizontally.

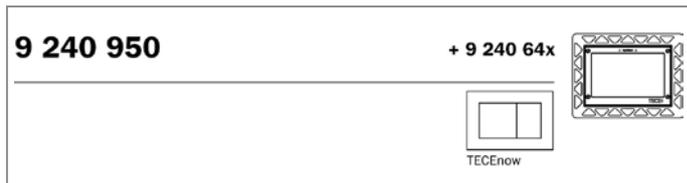
Mount the cover according to the fittings manufacturer's instructions.

Insert chute

The TECE insert chute for cleaning tablets is characterised by its high degree of universality, and can be combined with all flush plates. Flush-mounted installation is also possible.

In brick-wall structures, a wall structure of over 16 mm is required. In dry-wall structures, the maximum wall structure is 60 mm and in brick-wall structures, 75 mm.

To ensure this property, different installation steps must be followed to combine the insert chute with TECE flush plates. For this reason, different installation instructions are provided with the insert chute. The application to which the instructions refer is indicated in the top right-hand corner on the first page of the respective instructions.



Flush-mounted TECEnow instructions

Operating the insert chute

The metal spacing frame and guide rods are required for installing the following flush plates:



TECElux



TECEsquare glass



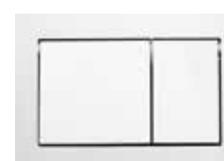
TECEloop



TECEplanus



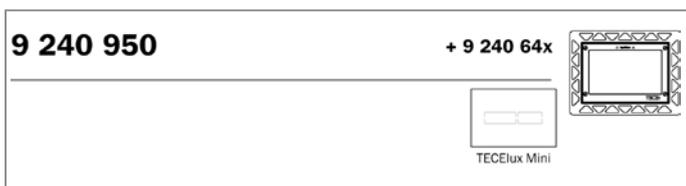
TECEambia



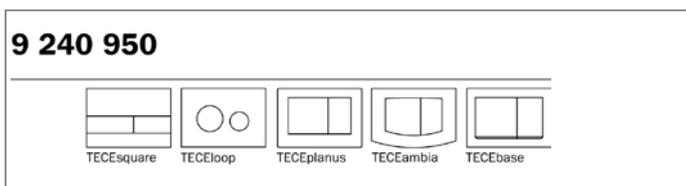
TECEbase



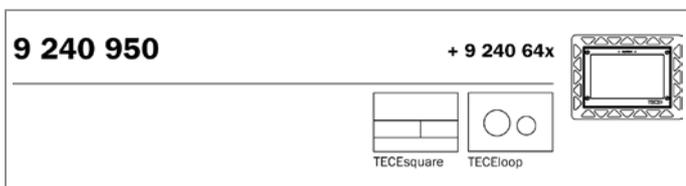
TECElux Mini instructions



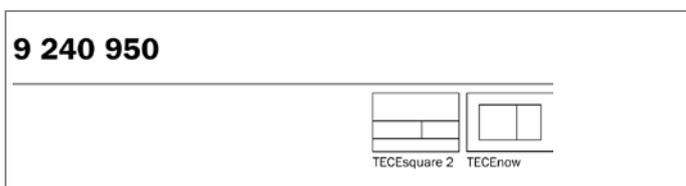
Flush-mounted TECElux Mini instructions



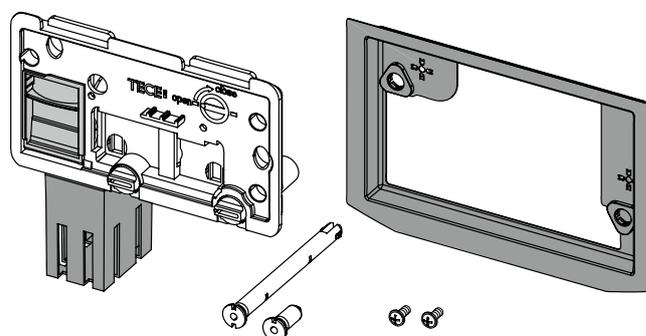
TECEsquare, TECEloop, TECEplanus, TECEambia, TECEbase instructions



TECEsquare glass and flush-mounted TECEloop instructions

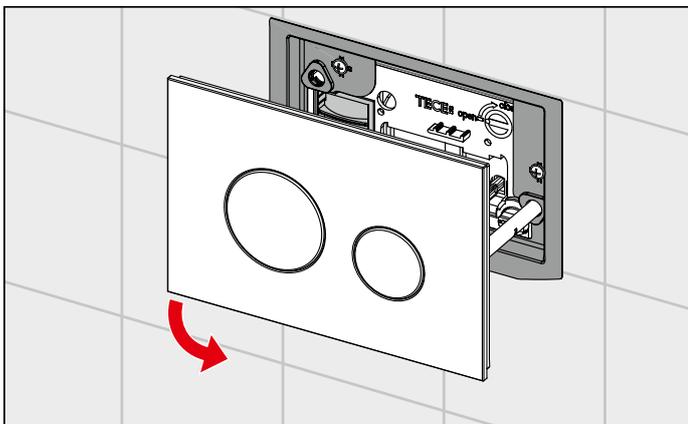
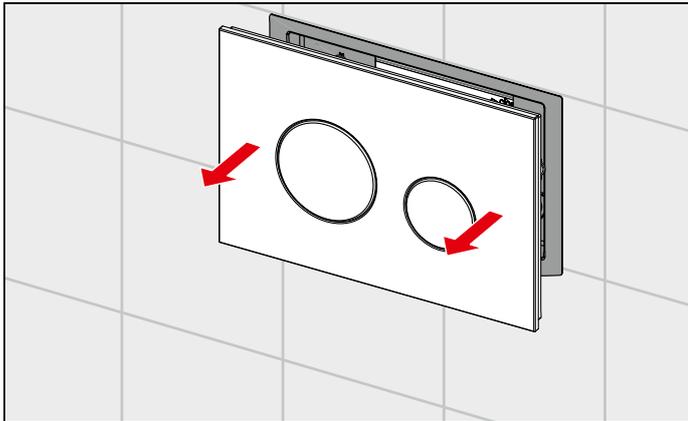


TECEsquare II metal and TECEnow instructions

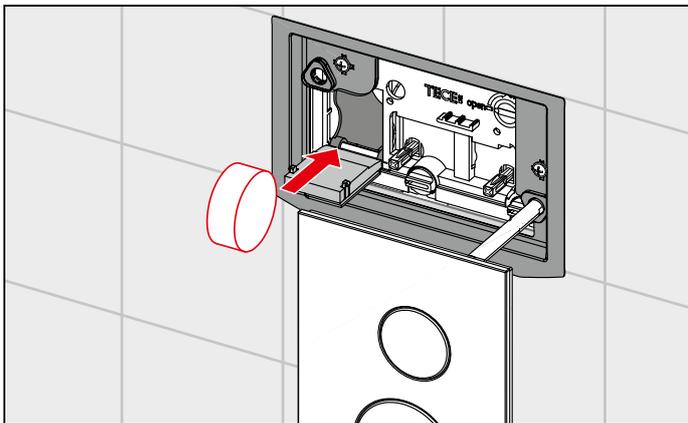


TECE flush plates – insert chute

The insert chute is easy to use in just a few simple steps:

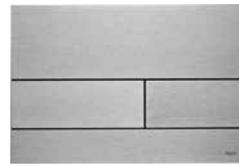


To remove the flush plate, simply take hold of the back of the plate and swivel it downwards.

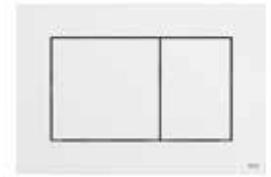


The tablet can now be placed in the insert chute through the red flap. The tablet falls into the collector basket from where it releases its active ingredients into the water.

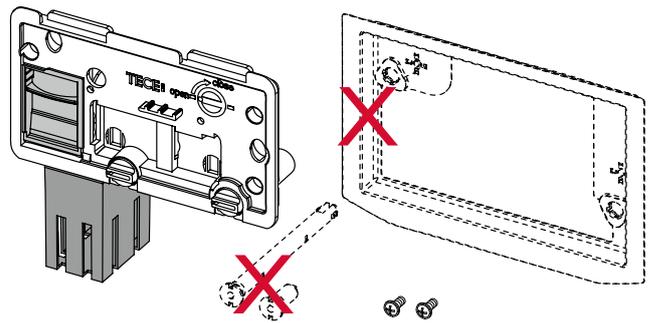
The metal spacing frame and guide rods are **not** required for the following flush plates:



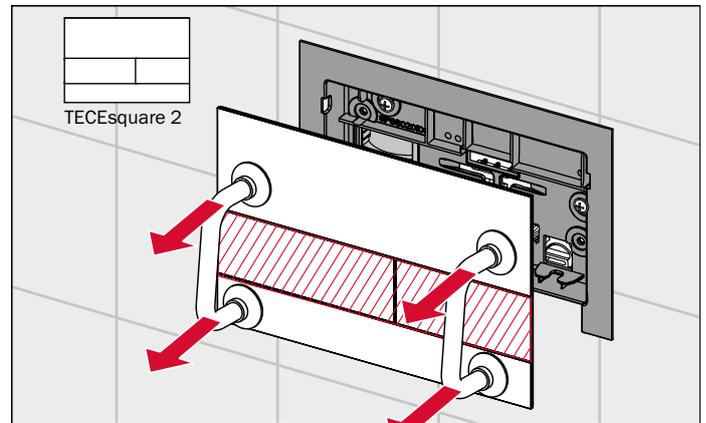
TECEsquare II metal



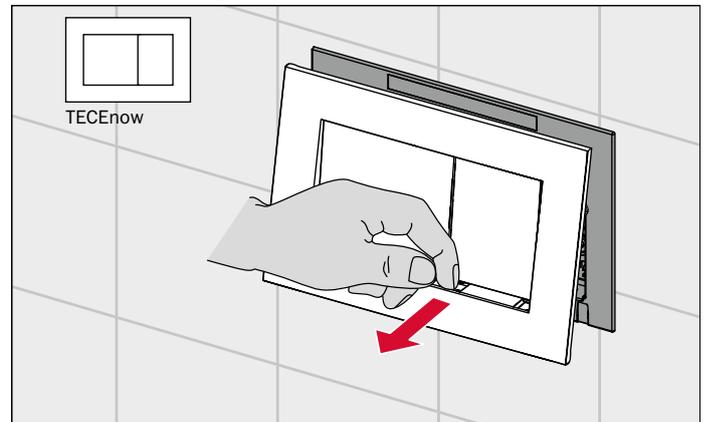
TECEnow



The insert chute is easy to use in just a few simple steps:

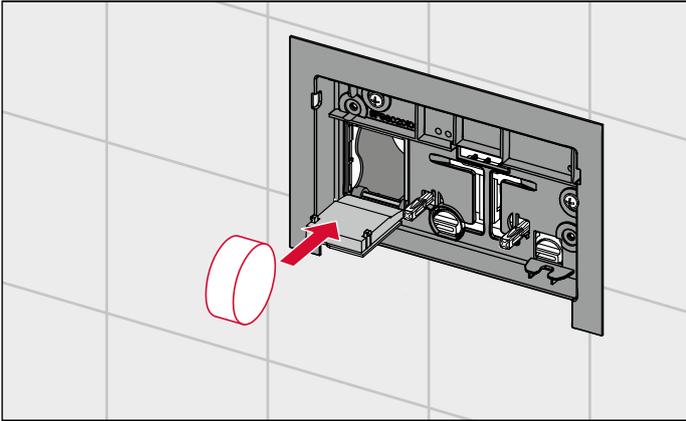


TECEsquare 2



TECEnow

The flush plate cover for the TECEnow can be removed by hand. For the TECEsquare II, use the bow-handles.



The tablet can now be placed in the insert chute through the red flap. The tablet falls into the collector basket from where it releases its active ingredients into the water.

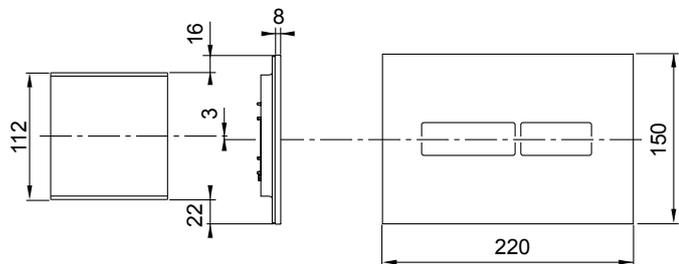
Note:

The cleaning tablets used must not contain chlorine or any other oxidizing substances.

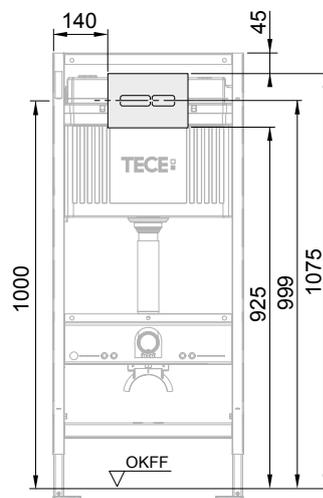
TECE flush plates – installation dimensions

Installation dimensions for TECE flush plates

TECElux Mini

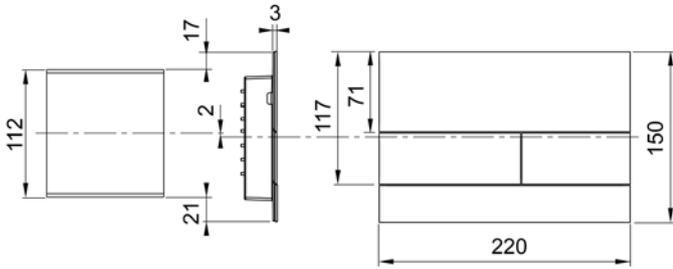


Dimensions of toilet flush plate and bare-wall protection for vertical slot alignment

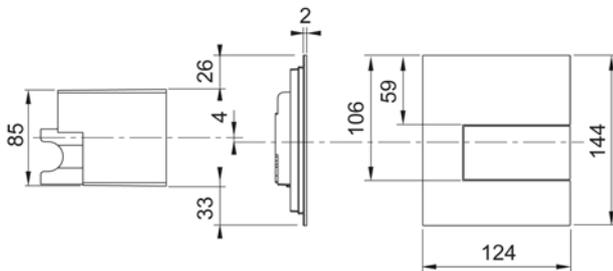


Toilet flush plate with 1120 mm module

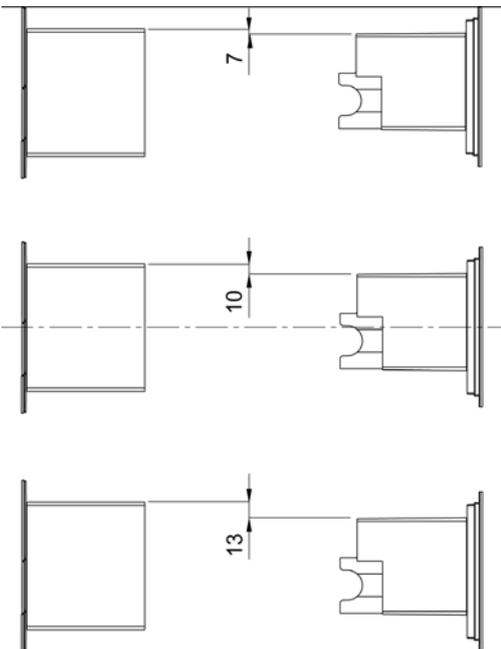
TECESquare II metal



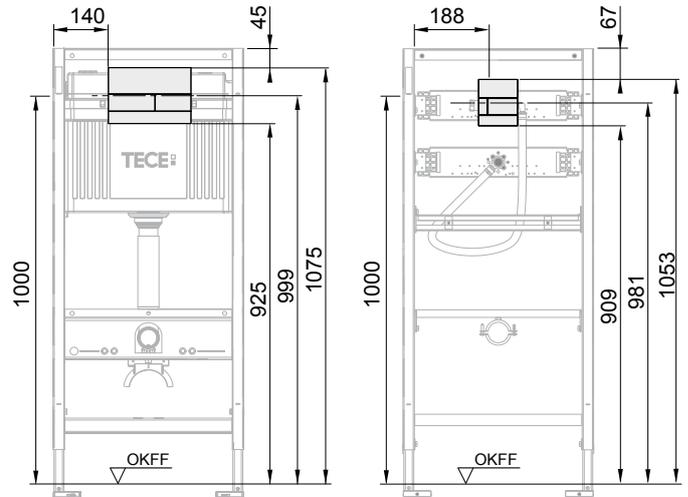
Dimensions of toilet flush plate and bare-wall protection for vertical slot alignment



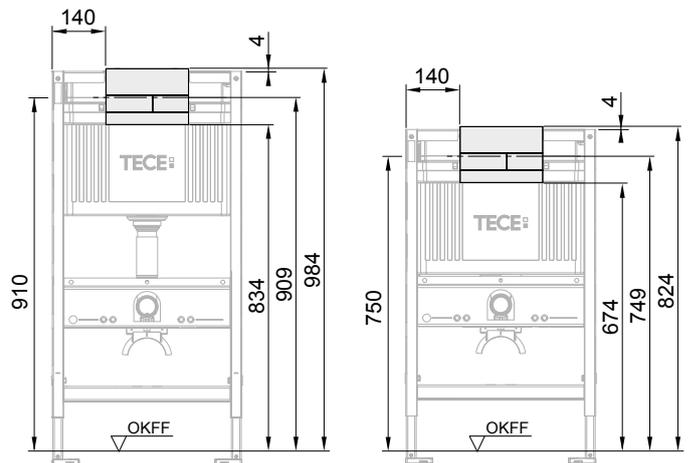
Urinal flush plate and bare-wall protection for vertical slot alignment



Toilet flush plate (left) and urinal flush plate (right):
 - Installation flush at the top (top illustration)
 - Centred installation (centre illustration)
 - Installation flush at the bottom (bottom illustration)



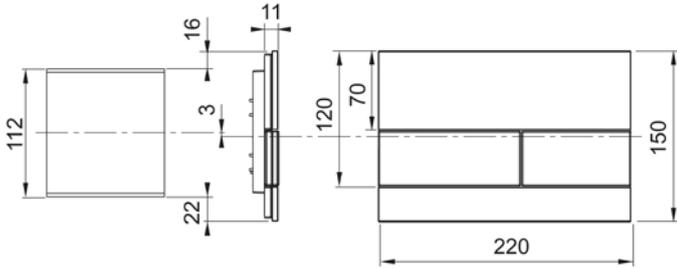
Toilet flush plate (left) and urinal flush plate (right) with 1120 mm module



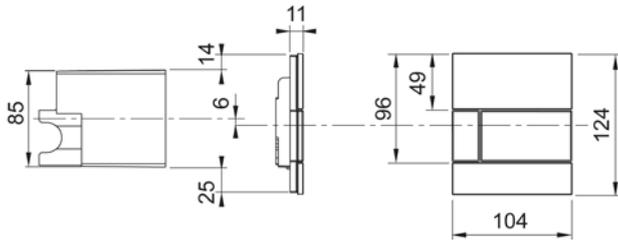
Toilet flush plate with 980 mm module (left) and 820 mm module (right)

TECE flush plates – installation dimensions

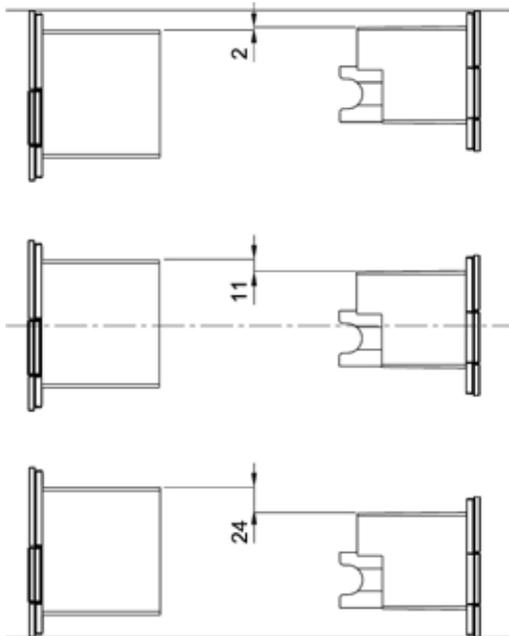
TECEsquare glass



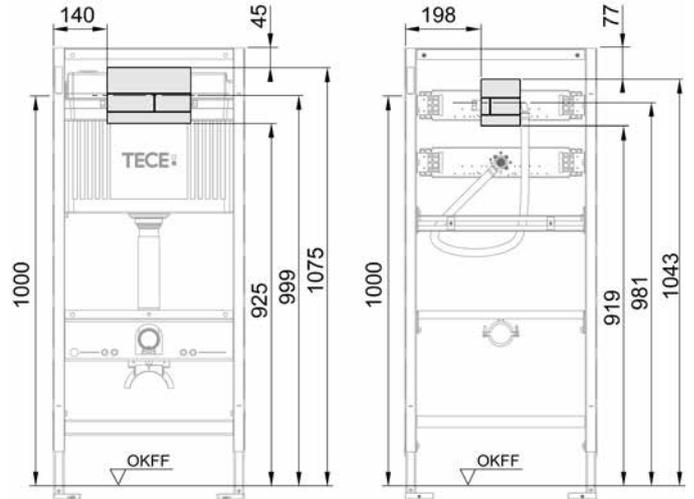
Dimensions of toilet flush plate and bare-wall protection for vertical slot alignment



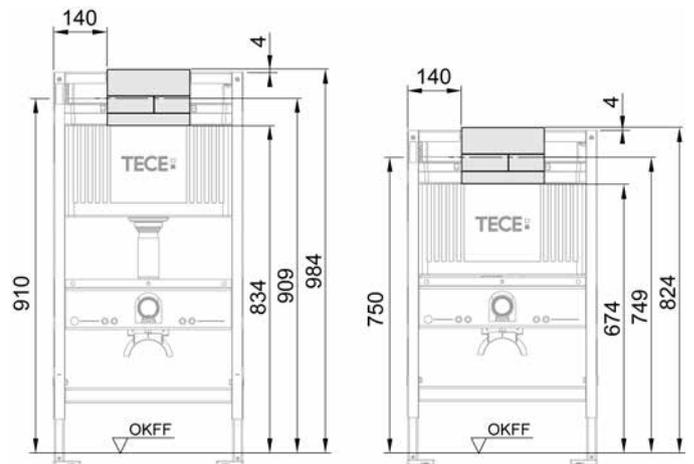
Urinal flush plate and bare-wall protection for vertical slot alignment



Toilet flush plate (left) and urinal flush plate (right):
 - Installation flush at the top (top illustration)
 - Centred installation (centre illustration)
 - Installation flush at the bottom (bottom illustration)

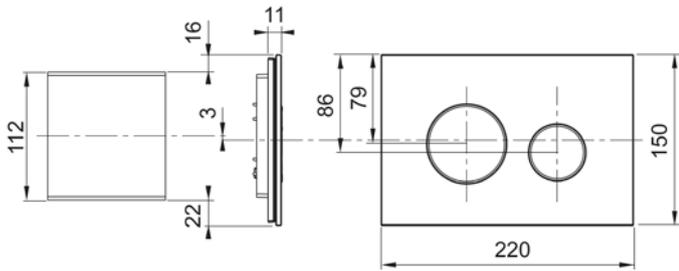


Toilet flush plate (left) and urinal flush plate (right) with 1120 mm module

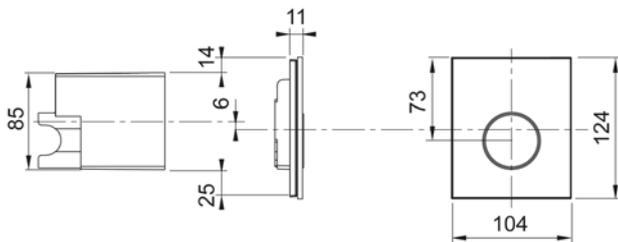


Toilet flush plate with 980 mm module (left) and 820 mm module (right)

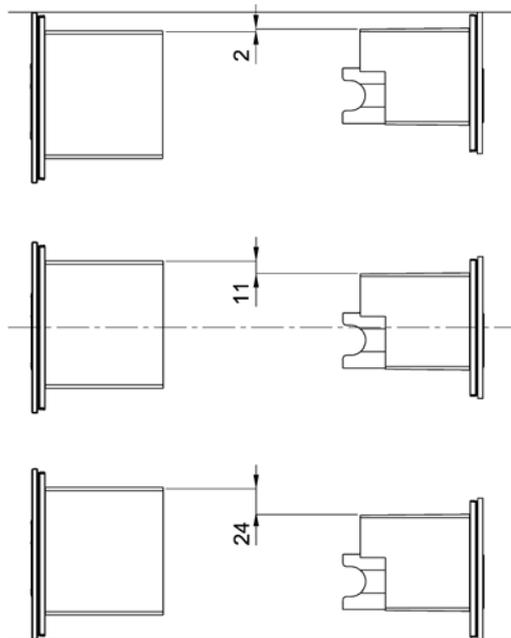
TECEloop glass



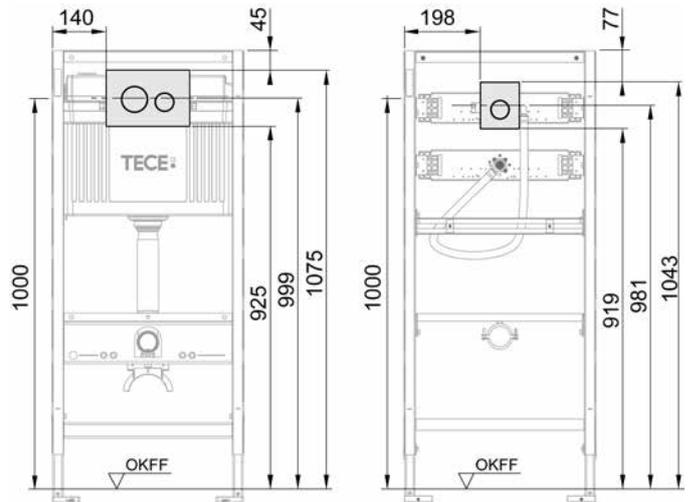
Dimensions of toilet flush plate and bare-wall protection for vertical slot alignment



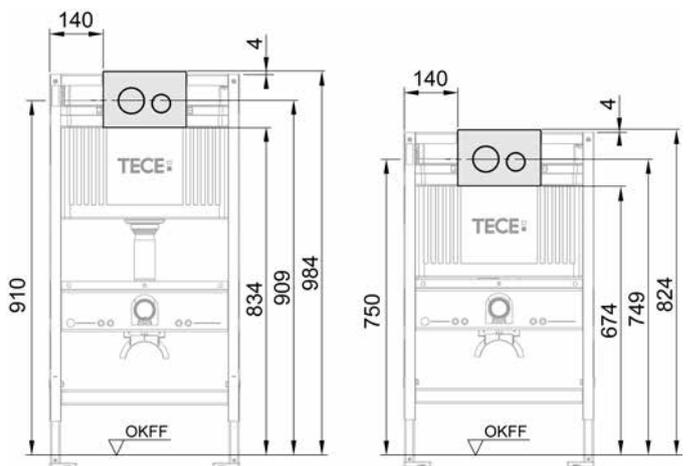
Urinal flush plate and bare-wall protection for vertical slot alignment



Toilet flush plate (left) and urinal flush plate (right):
 - Installation flush at the top (top illustration)
 - Centred installation (centre illustration)
 - Installation flush at the bottom (bottom illustration)



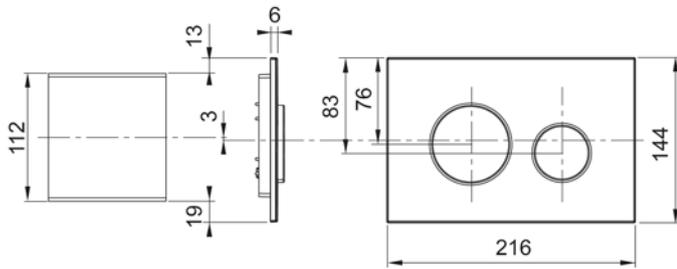
Toilet flush plate (left) and urinal flush plate (right) with 1120 mm module



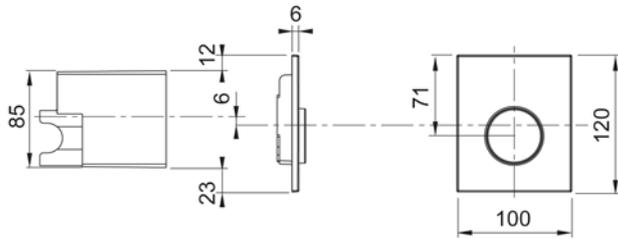
Toilet flush plate with 980 mm module (left) and 820 mm module (right)

TECE flush plates – installation dimensions

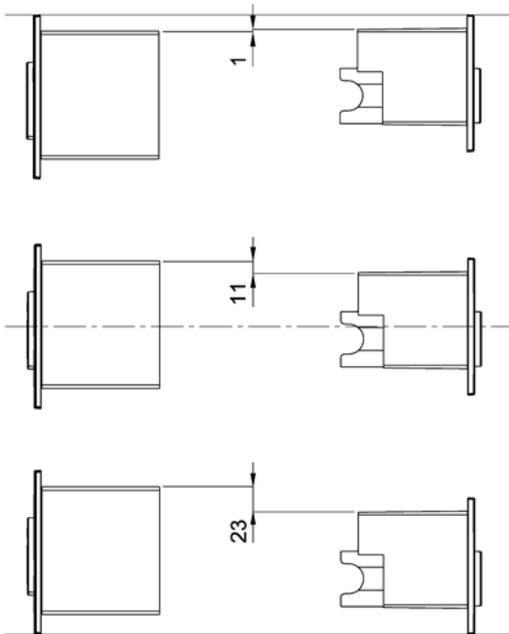
TECEloop plastic



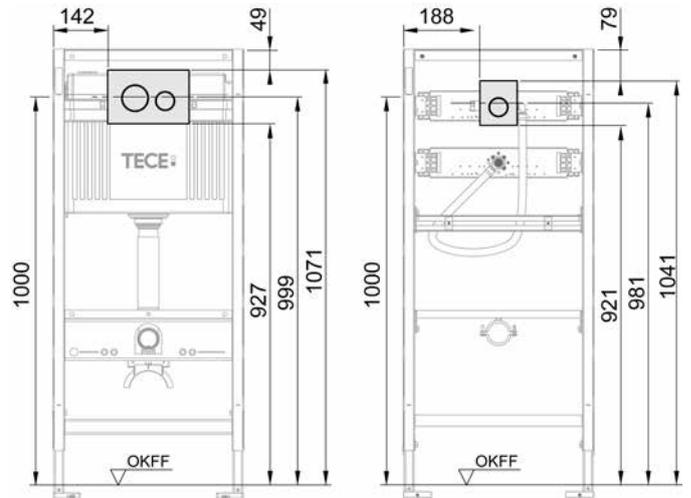
Dimensions of toilet flush plate and bare-wall protection for vertical slot alignment



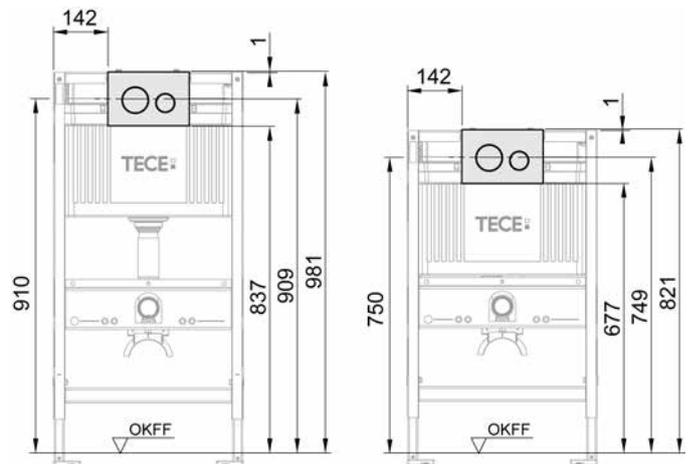
Urinal flush plate and bare-wall protection for vertical slot alignment



Toilet flush plate (left) and urinal flush plate (right):
 - Installation flush at the top (top illustration)
 - Centred installation (centre illustration)
 - Installation flush at the bottom (bottom illustration)

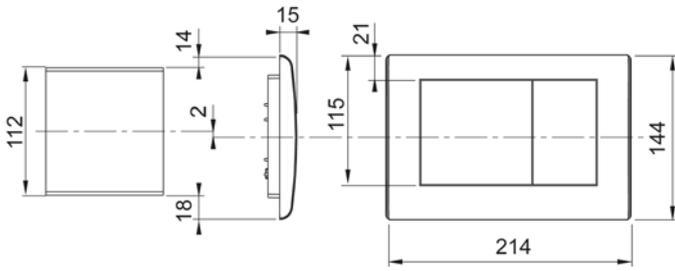


Toilet flush plate (left) and urinal flush plate (right) with 1120 mm module

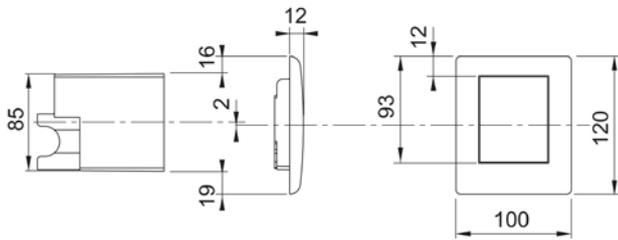


Toilet flush plate with 980 mm module (left) and 820 mm module (right)

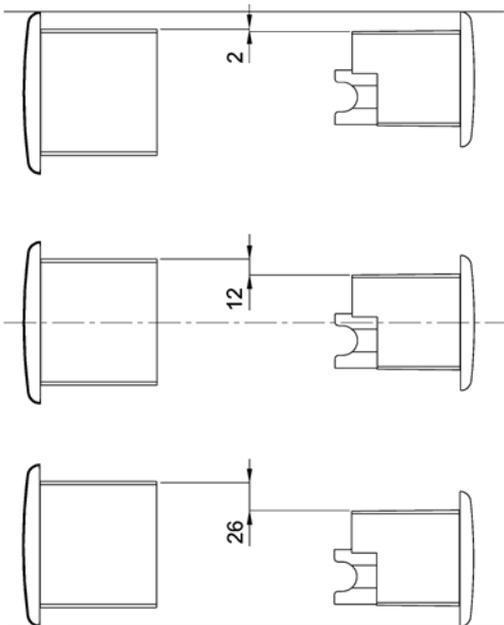
TECEplanus



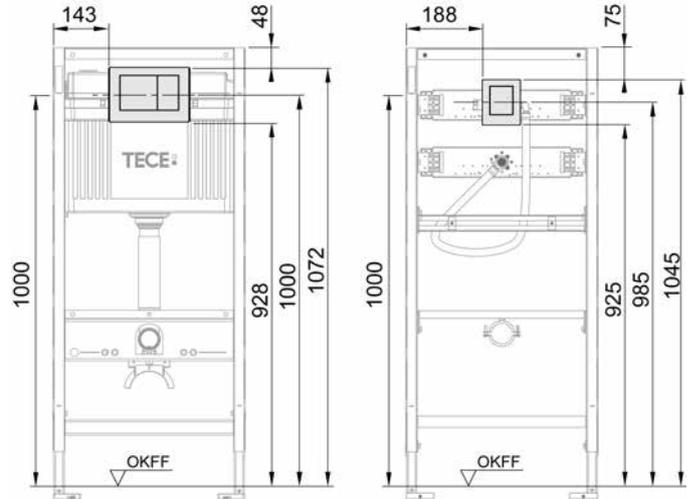
Dimensions of toilet flush plate and bare-wall protection for vertical slot alignment



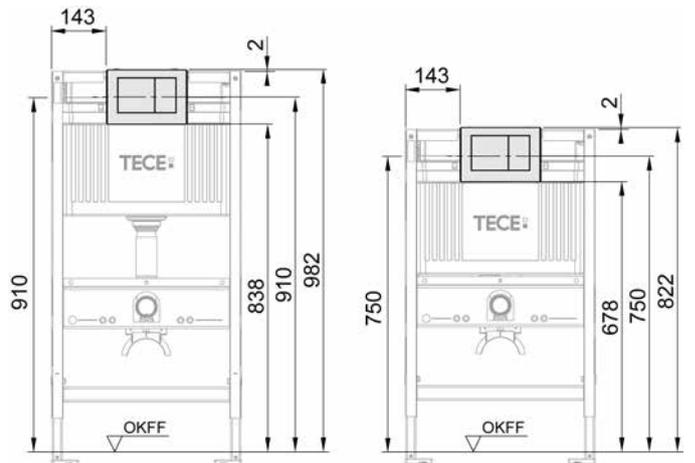
Urinal flush plate and bare-wall protection for vertical slot alignment



Toilet flush plate (left) and urinal flush plate (right):
 - Installation flush at the top (top illustration)
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 - Installation flush at the bottom (bottom illustration)



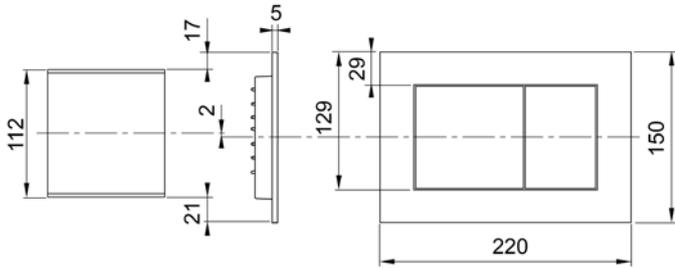
Toilet flush plate (left) and urinal flush plate (right) with 1120 mm module



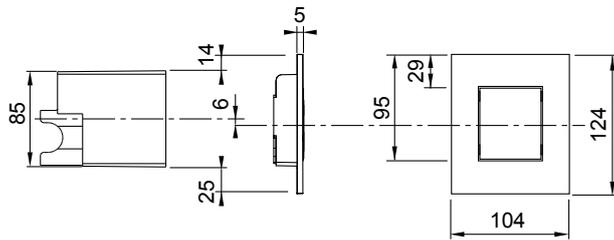
Toilet flush plate with 980 mm module (left) and 820 mm module (right)

TECE flush plates – installation dimensions

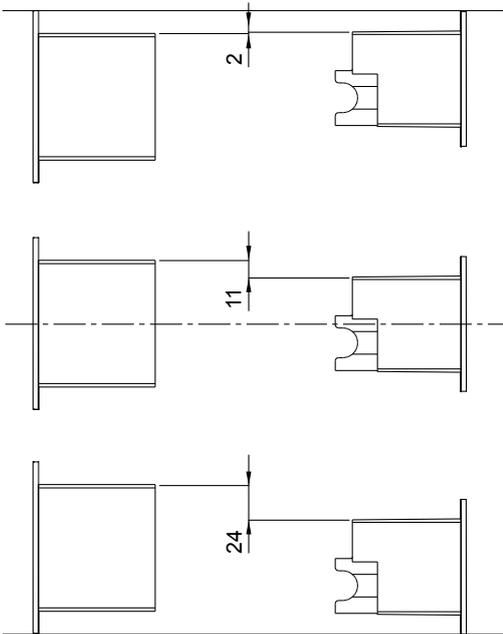
TECEnow



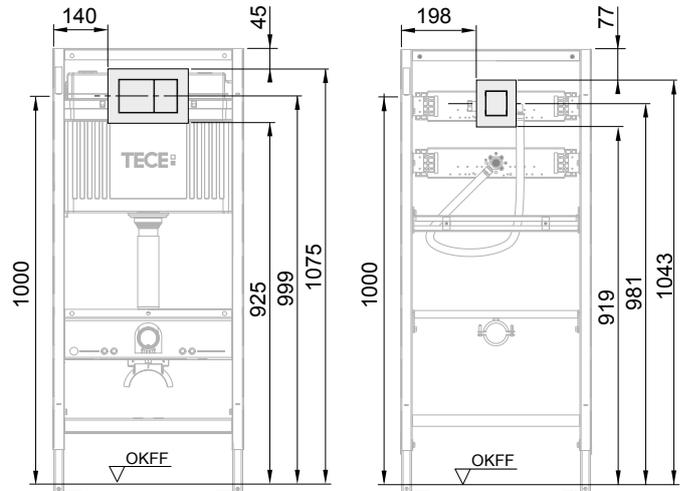
Dimensions of toilet flush plate and bare-wall protection for vertical slot alignment



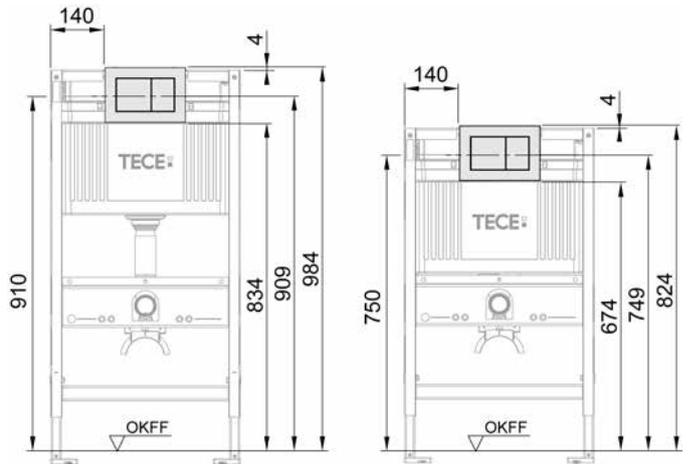
Urinal flush plate and bare-wall protection for vertical slot alignment



Toilet flush plate (left) and urinal flush plate (right):
 - Installation flush at the top (top illustration)
 - Centred installation (centre illustration)
 - Installation flush at the bottom (bottom illustration)

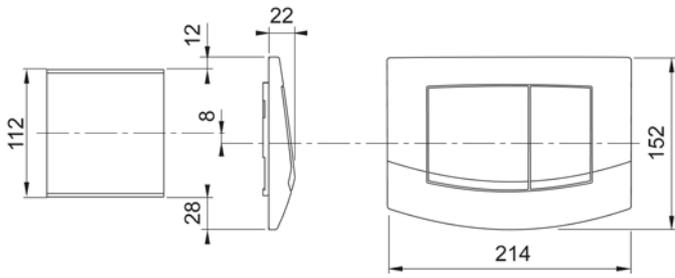


Toilet flush plate (left) and urinal flush plate (right) with 1120 mm module

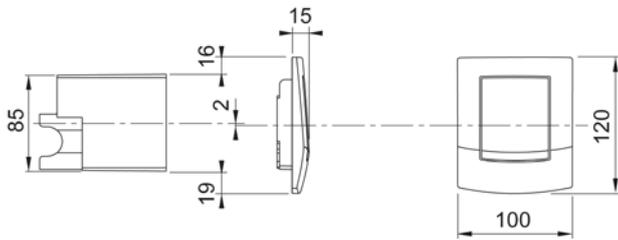


Toilet flush plate with 980 mm module (left) and 820 mm module (right)

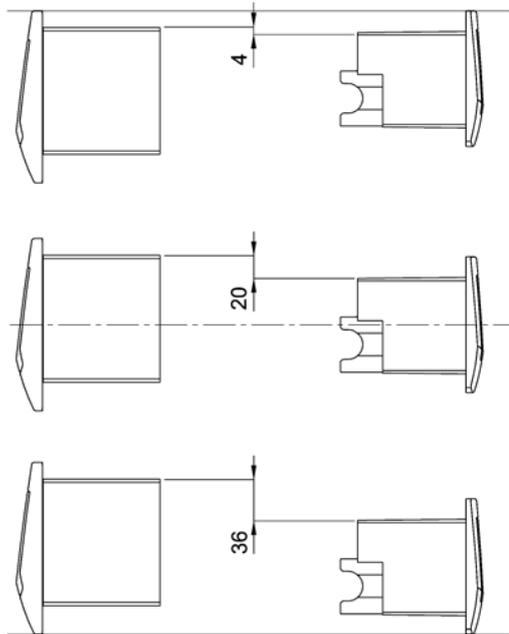
TECEambia



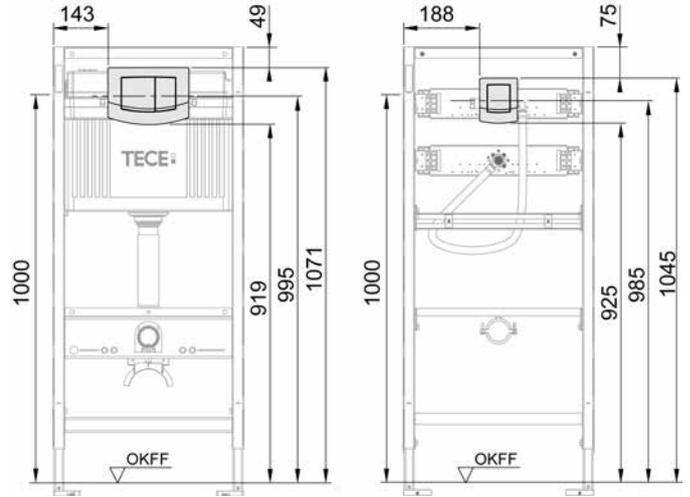
Dimensions of toilet flush plate and bare-wall protection for vertical slot alignment



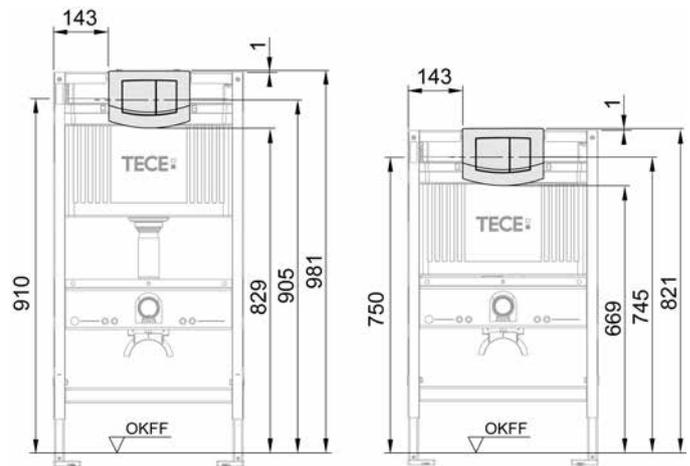
Urinal flush plate and bare-wall protection for vertical slot alignment



Toilet flush plate (left) and urinal flush plate (right):
 - Installation flush at the top (top illustration)
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 - Installation flush at the bottom (bottom illustration)



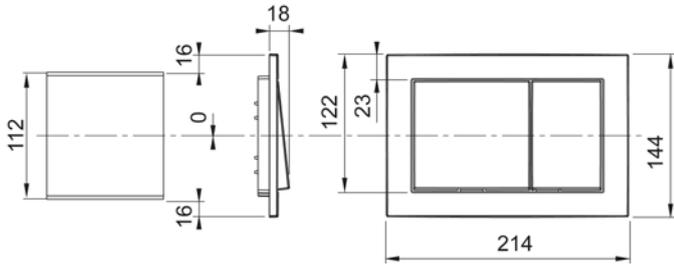
Toilet flush plate (left) and urinal flush plate (right) with 1120 mm module



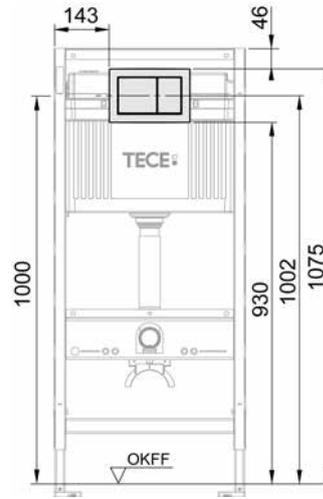
Toilet flush plate with 980 mm module (left) and 820 mm module (right)

TECE flush plates – installation dimensions

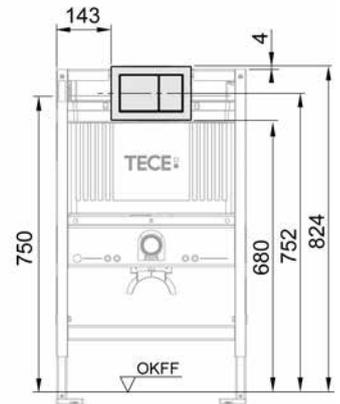
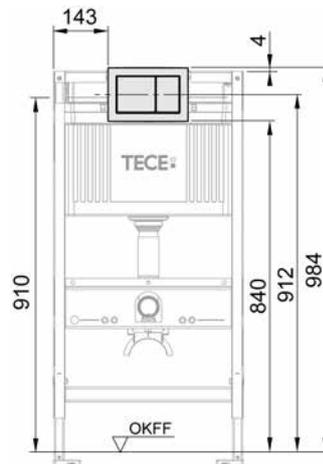
TECEbase



Dimensions of toilet flush plate and bare-wall protection for vertical slot alignment

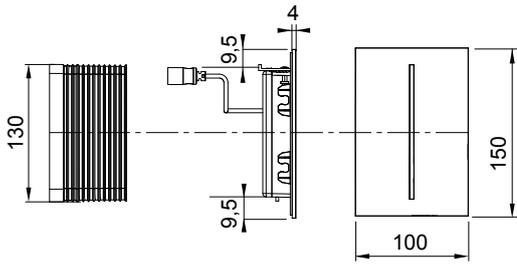


Toilet flush plate with 1120 mm module

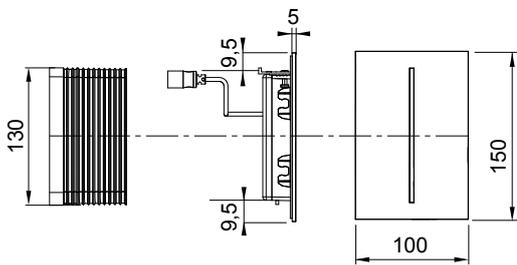


Toilet flush plate with 980 mm module (left) and 820 mm module (right)

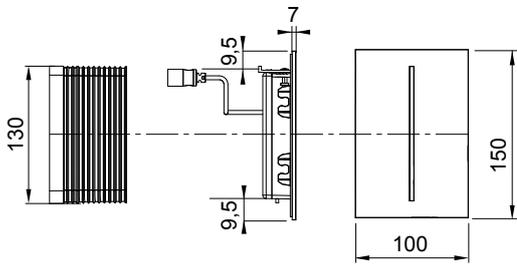
TECEfilo



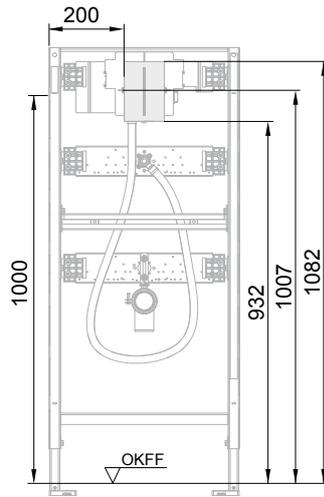
Dimensions of metal urinal electronics and bare-wall protection for vertical slot alignment



Dimensions of plastic urinal electronics and bare-wall protection for vertical slot alignment



Dimensions of glass urinal electronics and bare-wall protection for vertical slot alignment



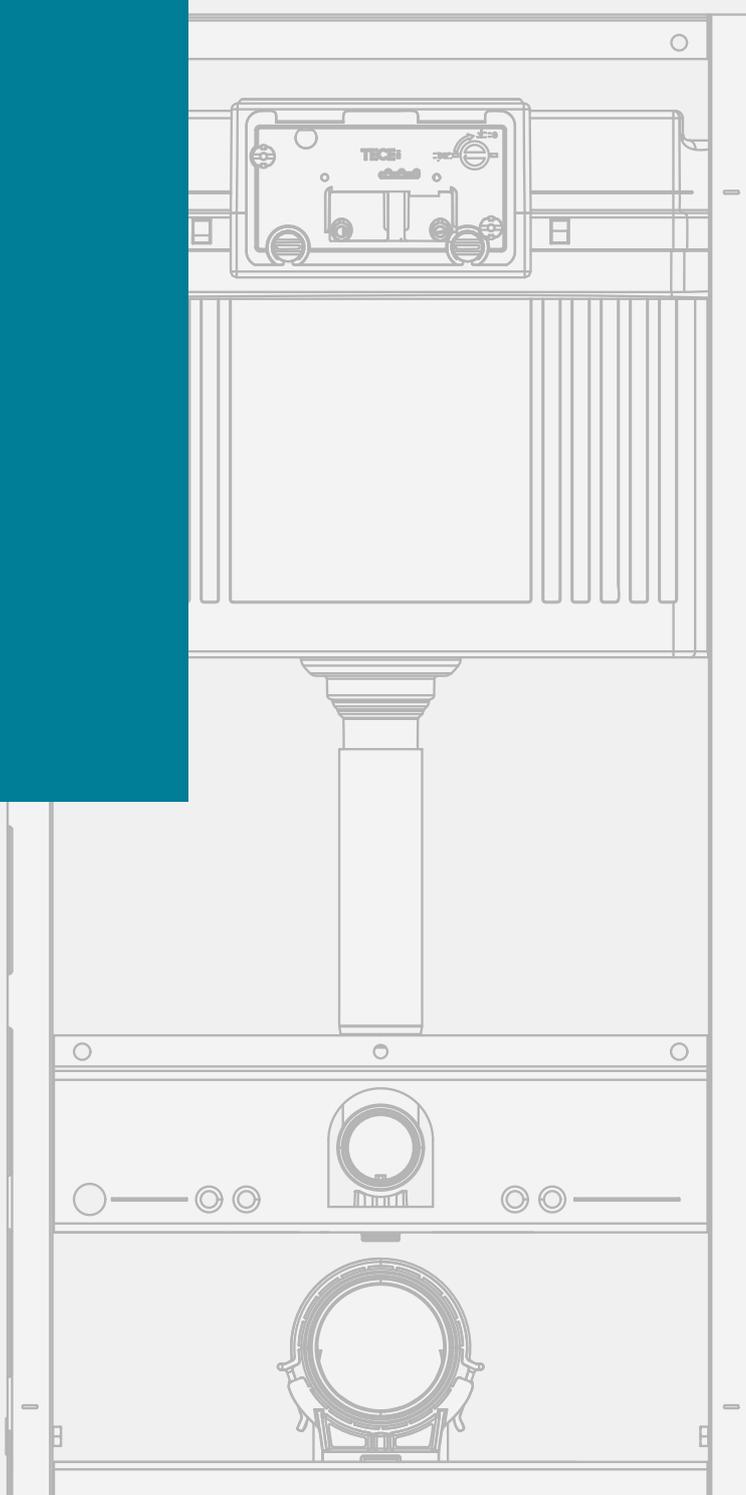
TECEfilo urinal electronics with module (U 2 flush valve housing) 1120 mm



Sanitary systems

TECEprofil

TECHNICAL GUIDELINES



TECEprofil dry-wall construction system	3-4
System description	3-5
Fields of application	3-6
System installation/instructions	3-7
Standard heights of installation walls	3-7
Standard applications	3-7
Building a supporting frame with module installation	3-12
Covering the facing with plasterboard	3-13
Filling of plasterboard panels	3-15
Facing for highly wet areas	3-16
Possible pre-wall heights and depths	3-18
Limits	3-19
Protection against moisture	3-19
Floor fixing	3-19
Equipotential bonding	3-19
Console loads	3-20
TECEprofil universal module	3-21
Installation in a TECEprofil pre-wall	3-21
Installation in front of a solid wall	3-22
Installation in a floor-to-ceiling C-profile metal stud wall	3-25
Installation in floor-to-ceiling metal stud wall with UA-profiles	3-26
Installation in a wooden stud wall	3-27
Attaching individual modules to the floor	3-27
Toilet module with connection for odour extraction	3-28
Individual or modular construction	3-30
Installing the vertical strut in the toilet module	3-30

TECEprofil bath construction	3-31
Shower toilet solutions	3-34
Toilet module for shower toilets with power connection	3-34
Fine installation kit for shower toilet module	3-34
Setting up the TECEone shower toilet on the toilet module	3-37
TOTO Neorest shower toilet module	3-38
Shower toilet attachments	3-38
TECEprofil toilet module for baby/children's standing toilet	3-39
Barrier-free construction with TECEprofil	3-40
Planning guidelines	3-40
Barrier-free toilet system in a TECEprofil wall	3-41
Barrier-free toilet system in an individual modular construction	3-42
TECEprofil Geronto module	3-42
Sound insulation	3-45
Relevant standards	3-45
TECEprofil sound insulation verification	3-47
TECEprofil dry-wall construction system – sound insulation according to DIN 4109-1:2016-07	3-52
TECEbox brick-wall structure system – sound insulation according to DIN 4109-1:2016-07	3-56
Fire protection	3-58
TECEprofil dividing walls with fire protection requirements	3-58
Construction of a dividing wall (EI 30–EI 120)	3-58

TECEprofil – dry-wall construction system

TECEprofil dry-wall construction system

TECEprofil is a pre-wall system that has proven its value over many years, and can be used to create bathroom walls quickly and effectively. The fitter not only produces the sanitary and heating installations but with TECEprofil, he is also able to provide complete bathrooms with surfaces ready for tiling, all from a single source.

TECEprofil is a dry-wall construction system which is particularly suitable for the renovation of old buildings due to its flexibility. Thanks to the time and cost savings compared with bricked-in pre-walls, the TECEprofil system is also of interest for new builds. The design freedom offered by the TECEprofil allows the fitter to realise unconventional bathrooms, and offers generous scope for creative ideas.

TECEprofil



Bathroom walls with TECEprofil – before



Bathroom walls with TECEprofil – after

The TECEprofil system offers universal modules for popular applications. These modules not only simplify installation in a TECEprofil wall, but can also be used for conventional dry-wall constructions and as individual modules.

The TECEprofil system basically consists of the supporting frame, the universal modules and the TECEprofil system facing. The supporting frame is based on a section tube which is connected with corner joints. The complete supporting frame is mounted to the structural shell using double joints or angle brackets.



The three basic components of the TECEprofil system:

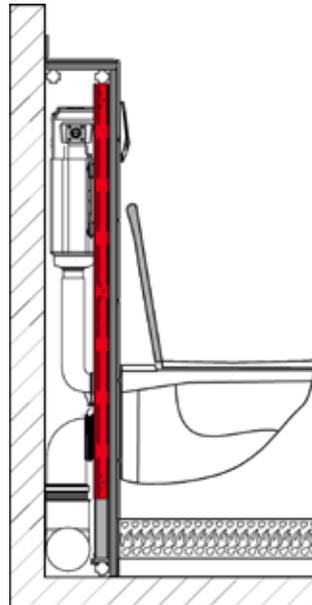
- section tube
- angle bracket
- corner joint

Special features of the TECEprofil system:

- Clearly structured range with only three basic components
- Generous dimensional tolerance when cutting the section tube to length
- Stable and safe fixing technology
- Clean and fast installation
- Highly versatile TECEprofil universal modules
- Installation without special tools
- Price advantages when considering the overall cost

System description

The TECEprofil system is equally suitable for new builds and for the renovation of older buildings. Thanks to its universality, the TECEprofil system is ideal for difficult building situations such as sloping ceilings or wall recesses. The TECEprofil supporting frame is variable and extremely stable.



One of many advantages:
a pre-wall is part of the living space

A particular advantage is that a pre-wall structure is added to the net floor space of the room. According to section 2.3 of DIN 277, free-standing installations and other shelf surfaces also belong to the net floor space. According to the "Second Calculation Regulation (II. BV), wall structures do not need to be subtracted when rooms are measured (II. BV, § 43, section. 2). So a pre-wall is therefore a living space! Therefore, it can be fully taken into account in living space calculations.

TECEprofil – dry-wall construction system

Fields of application

Pre-wall installation

Pre-walls are becoming increasingly popular in bathrooms. They offer additional shelf space and make installation of the sanitary items far easier.

Free-standing installation wall

Free-standing installation walls can be erected anywhere in the room. They can be implemented at partial height or at floor-to-ceiling height. Free-standing walls must be firmly attached to the unfinished floor. Assembly on finished floors is not possible. Walls which project freely into the room must be additionally secured with a “support foot for free-standing walls”.

Dividing walls

The TECEprofil system enables the creation of floor-to-ceiling dividing walls. For example, an existing room can be divided into separate toilets for men and women. The dividing wall can be directly equipped with toilet modules or washstands. The construction is performed according to DIN 4103.

Structural certification for TECEprofil dividing walls was provided by the Braunschweig Materials Testing Institute (MPA).

Duct covering

The TECEprofil system allows all types of duct to be covered. Combinations of installation walls and ducts are also possible.

Shelf heights

Practically all shelf heights are possible. The standard universal modules permit a minimum supporting frame height of 1,150 mm. The toilet universal modules for low construction heights have a minimum supporting frame height of 980 or 820 mm. For the universal modules, the TECEprofil range offers the possibility of creating an upwardly variable, infinitely adjustable supporting frame height using telescopic attachments (order no. 9380001), or a height-adjustable module attachment (order no. 9380002).

System installation/instructions

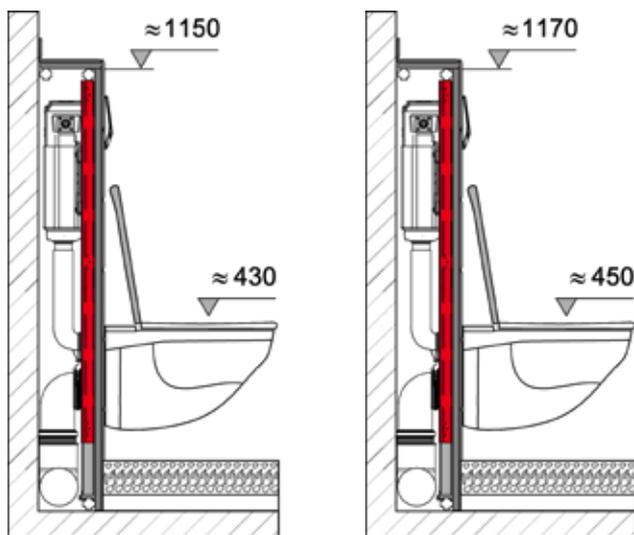
When installing a TECEprofil bathroom wall, minimum distances for struts and fixings must be adhered to. In the following sections, the guidelines for installing the system will be explained.

Standard heights of installation walls

The standard supporting frame height of a TECEprofil pre-wall is 1,150 mm. This produces a toilet seat height of 430 mm.

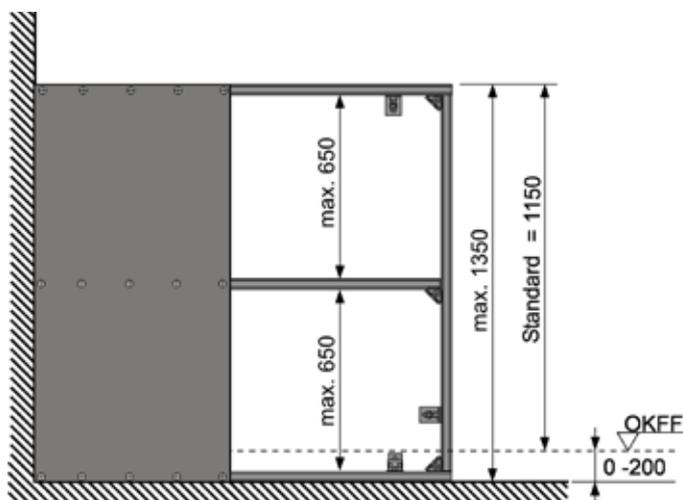
Tip:

For reasons of comfort, we recommend a seat height of 450 mm. The height of the supporting frame in this case is 1,170 mm. To guarantee secure fixing of the facing, a horizontal TECEprofil strut must be integrated at least every 650 mm.



Toilet seat height: Standard (left) and comfort

The dimensions of the TECE facing are 625 x 1,350 x 18 mm. The maximum floor construction is 200 mm.

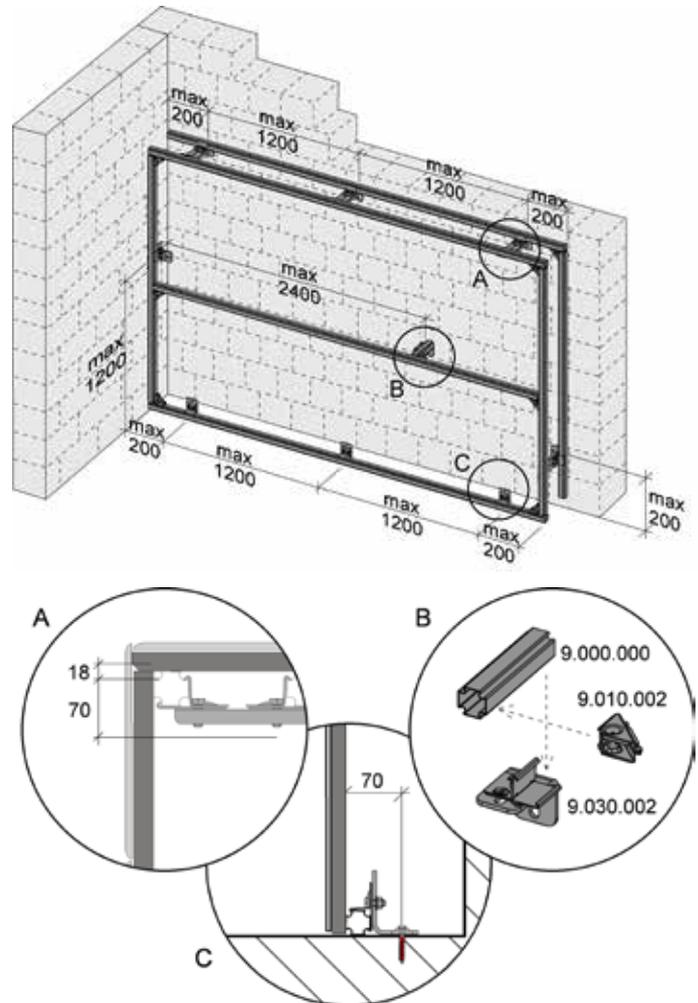


Facing dimensions

For easier installation, all universal modules have a meter line stamped on them.

Standard applications

In front of a solid wall

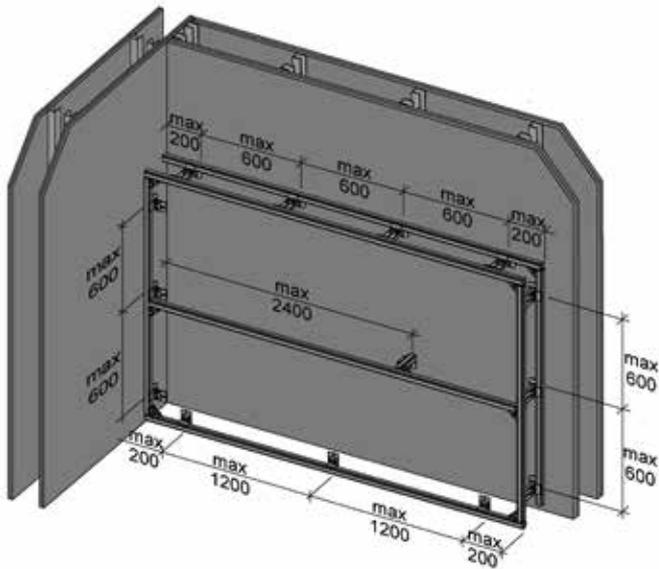


Profile wall in front of a solid wall

The distance between the attachments on the structural shell must be maximum 1.2 m. The first wall, floor or ceiling attachment must be maximum 20 cm from the edge of the pre-wall.

TECEprofil – system installation/instructions

Dry stud partition



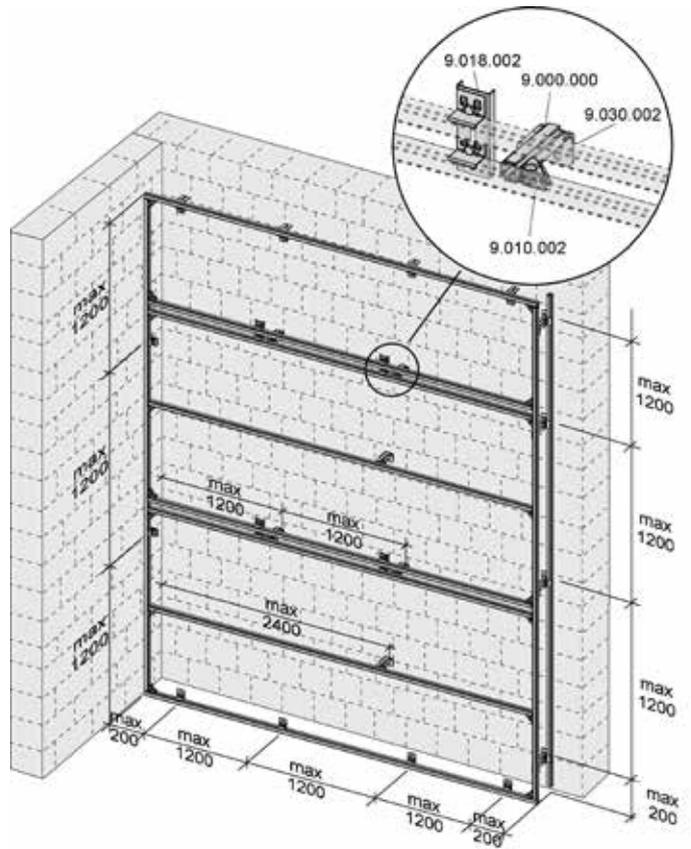
Dry stud partition

TECEprofil installation walls can be set up in front of dry stud partitions. The stud partition must have been erected in accordance with DIN 18430.

The metal stud partition substructure must have been constructed out of sheet steel profiles according to DIN 18 182/T1. The minimum profile size is CW 75 x 50 x 0.6 mm for simple stud partitions, and CW 50 x 50 x 0.6 mm for supported double stud partitions.

The metal stud partitions must be panelled with 12.5 mm-thick facing panels on both sides. The minimum attachment spacing is 60 cm.

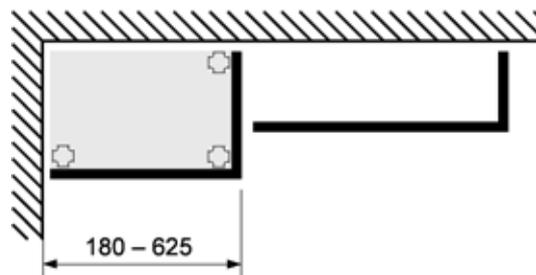
Floor-to-ceiling installation wall



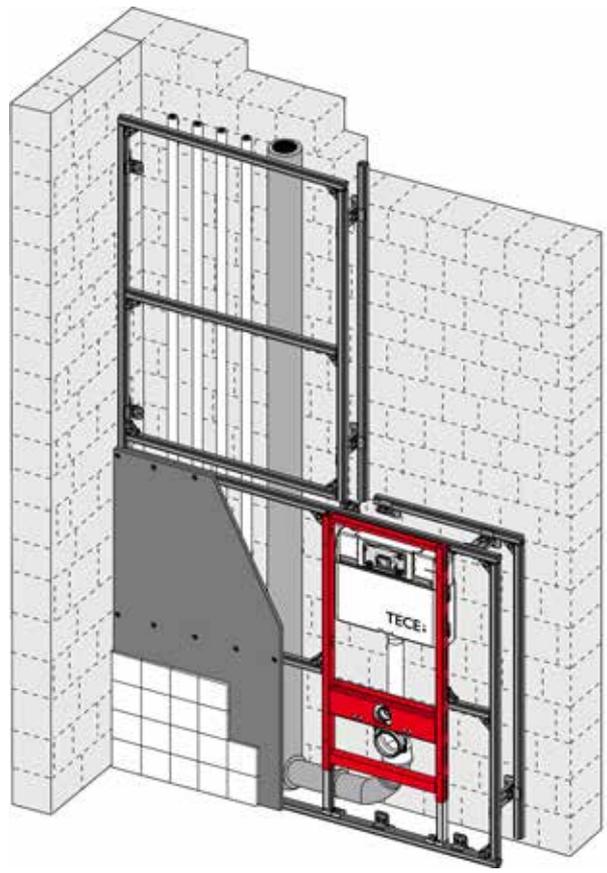
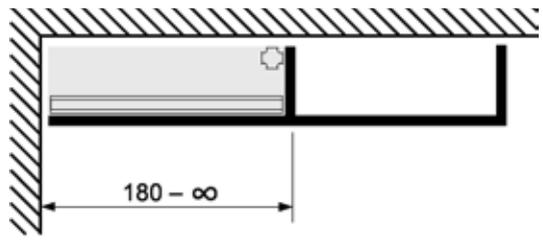
Installation wall, floor-to-ceiling

Double struts are required for the facing. They must be fixed together at least every 1.2 m. They should also be additionally supported by the wall behind.

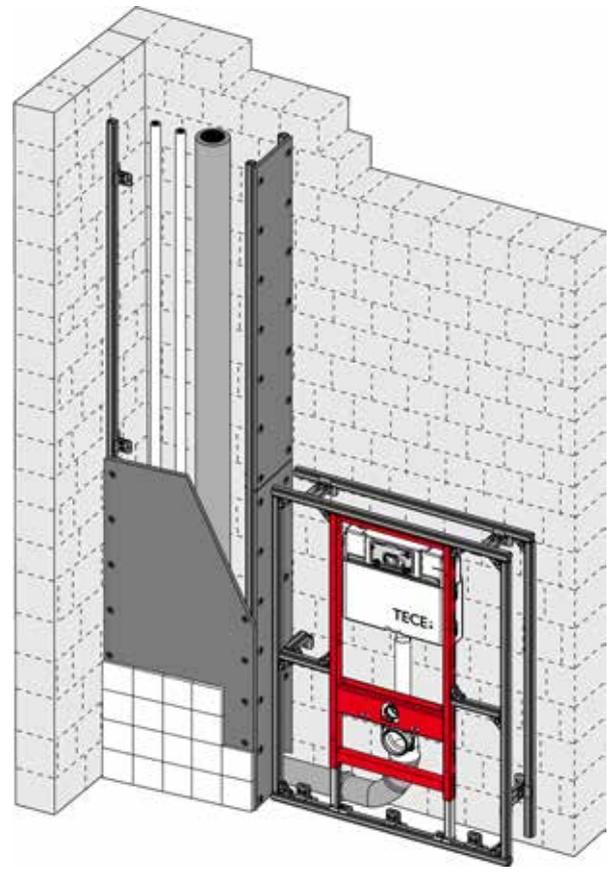
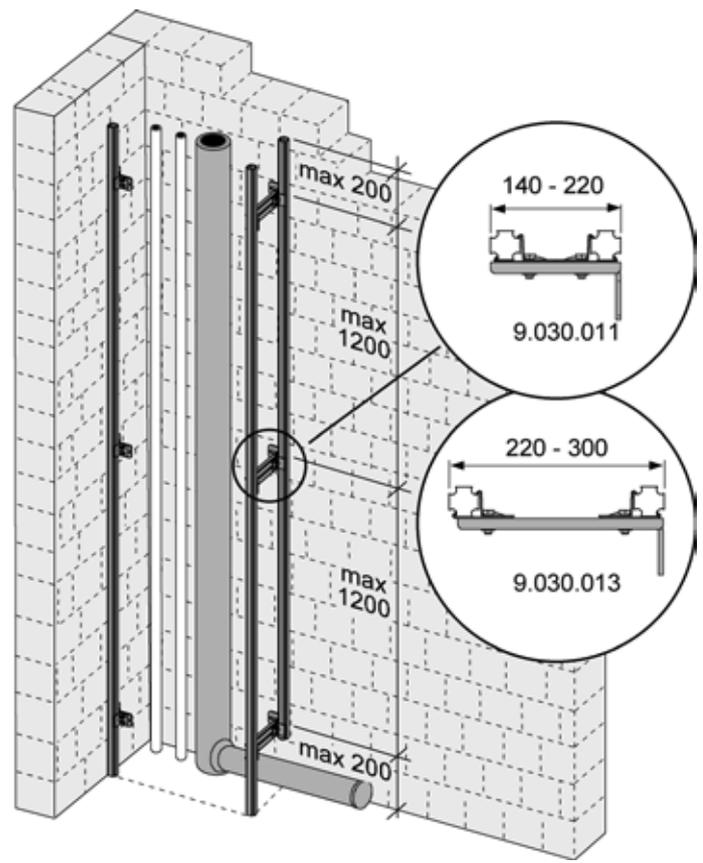
Adjacent duct/pipe covering



Fitted duct



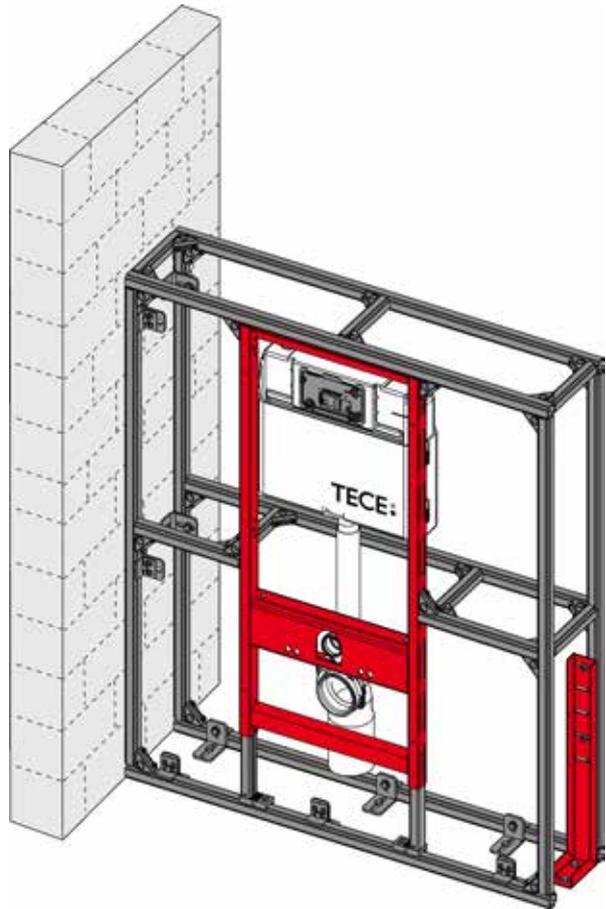
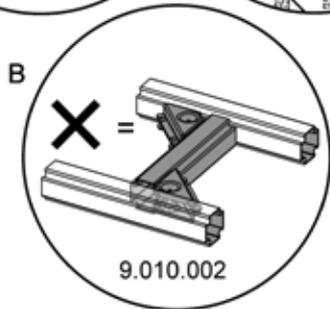
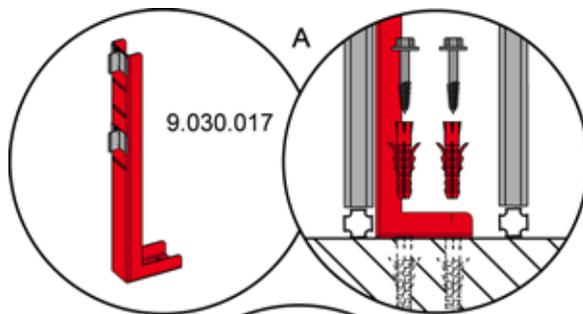
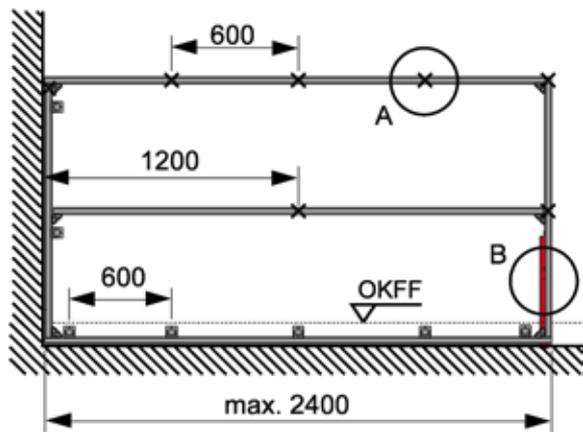
Fitted duct



Adjacent duct, pipe covering

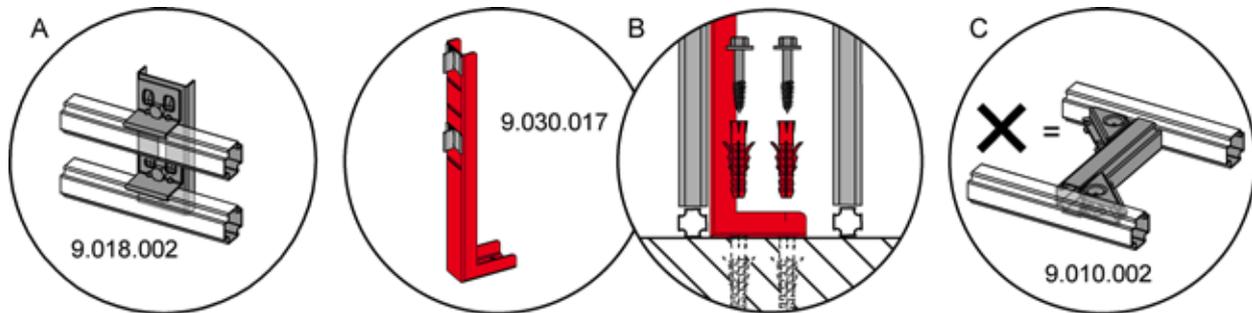
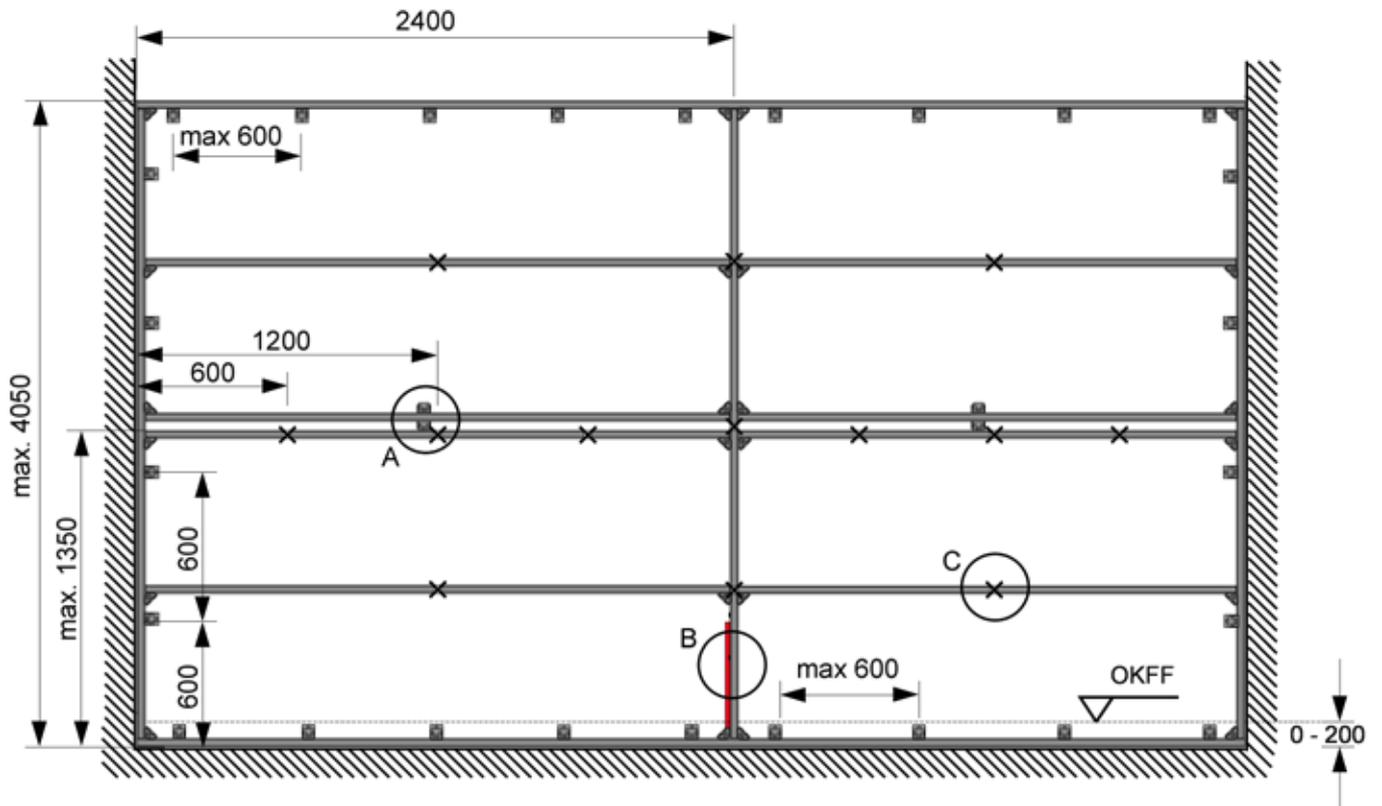
TECEprofil – system installation/instructions

Free-standing wall, abutted on one side



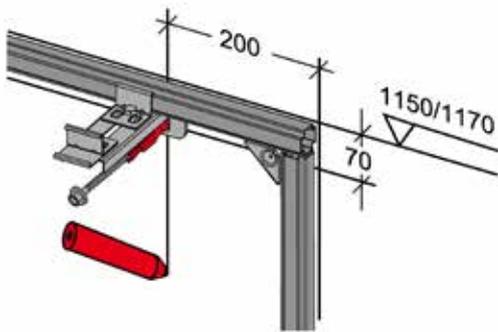
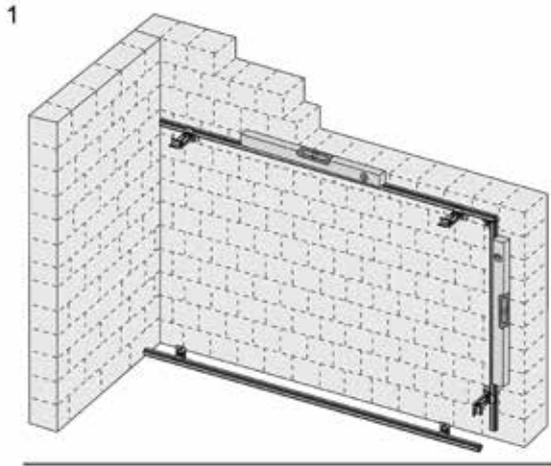
Free-standing wall, abutted on one side

Free-standing wall, abutted on both sides

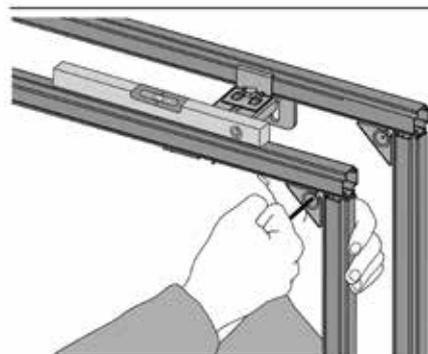
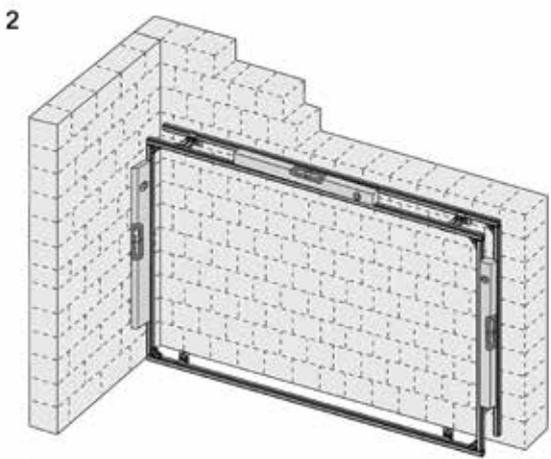


Free-standing wall, abutted on both sides

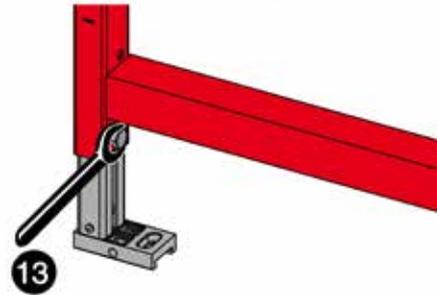
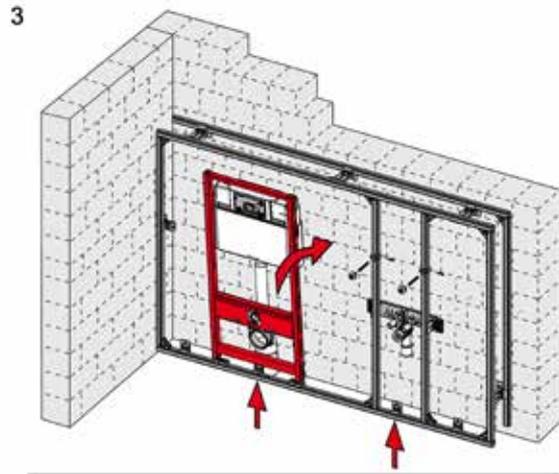
Building a supporting frame with module installation



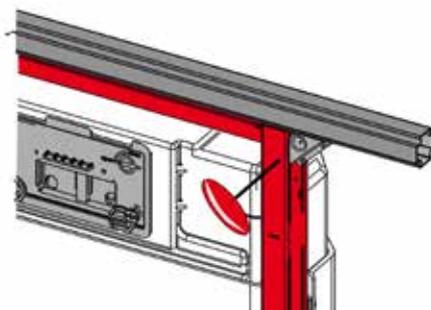
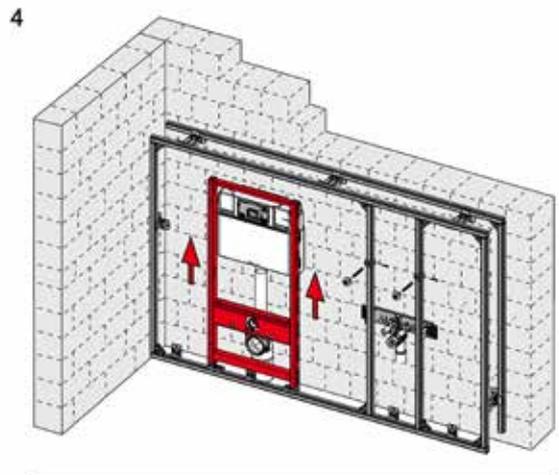
Secure the section tube to the wall with double joints, and to the floor with angle brackets



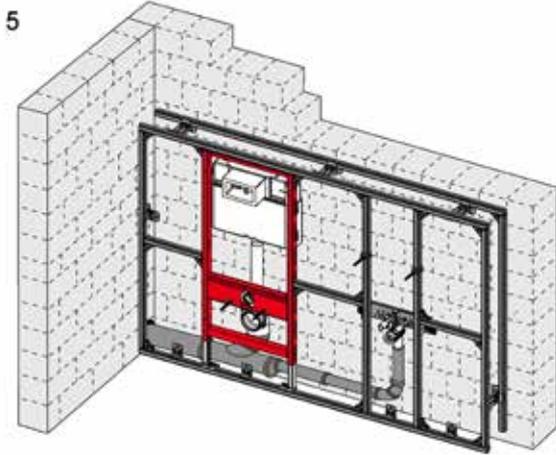
Use a spirit level to align the section tube and connect using corner joints



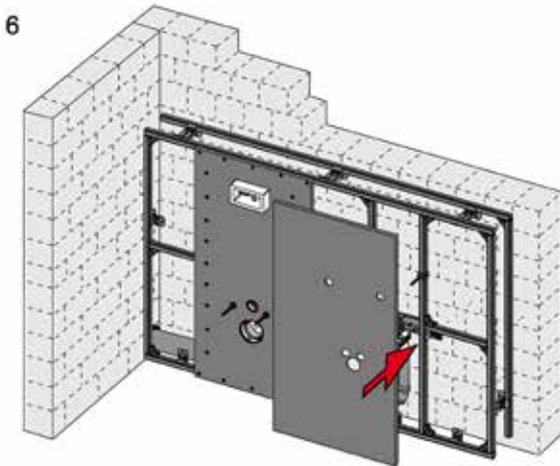
Place the angle bracket centred on the module or crossbeam, place the module feet onto the section tube, and release the foot brake



Pull out the module, secure it to the top section tube with corner joints, apply the foot brake and close the clip on the module foot



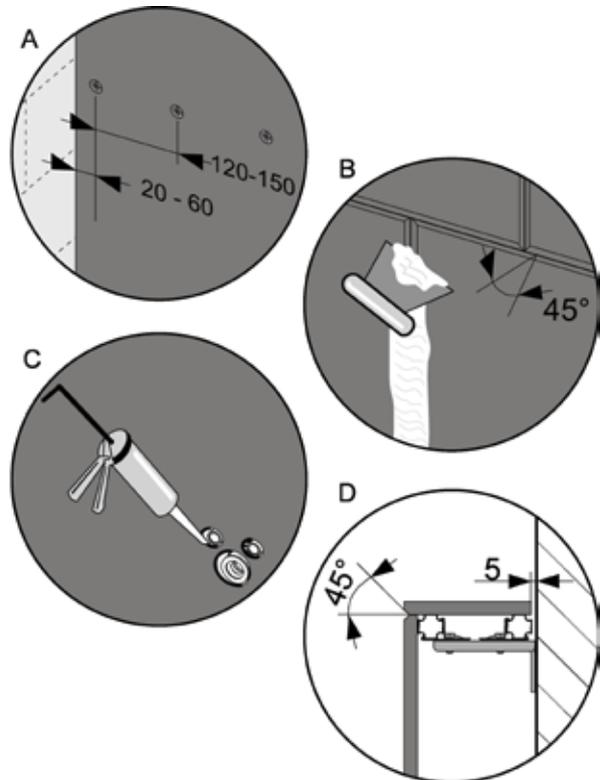
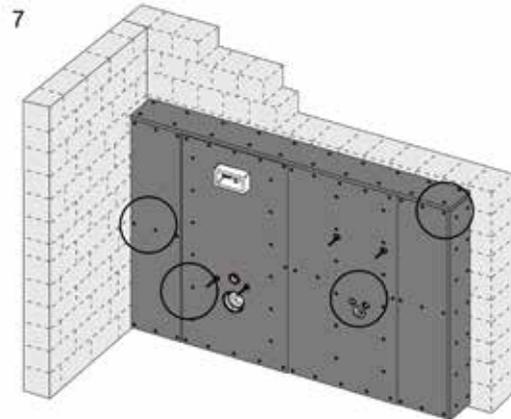
Install the horizontal middle struts



Make the cut-outs in the panel plates, put the facing in place

Covering the facing with plasterboard

The walls are covered with 18 mm-thick single-layer plasterboard. Alternatively, 2 x 12.5 mm plasterboard or an equivalent facing can be used. "Equivalent" means, for example, a combination of plywood panels and plasterboard or facing made of gypsum boards. The facing panels must be screwed together both with the vertical module struts and with the adjacent, vertical supporting frame. The facing on the supporting frame should start at the toilet module as that is where the largest number of cut-outs is required.

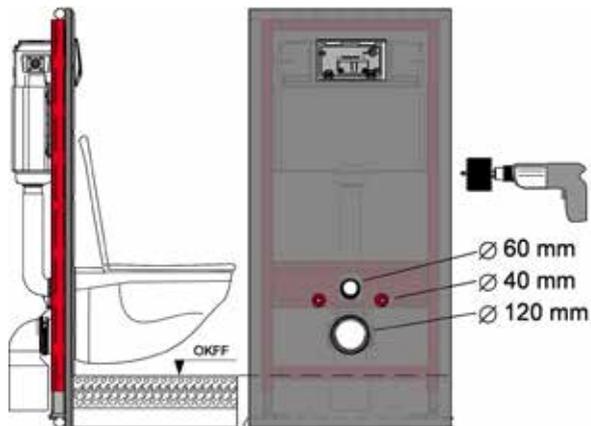


Covering the TECEprofil supporting frame with facing, and filling

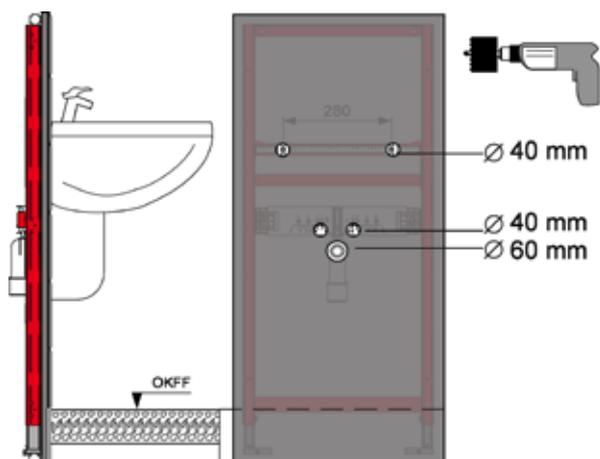
TECEprofil – system installation/instructions

Practical tip:

The required cut-outs can be easily marked out using the marking plugs supplied. To do so, press the panelling against the marking plugs. The centre points of the cut-outs are now clearly marked.



Size of cut-outs for the toilet module

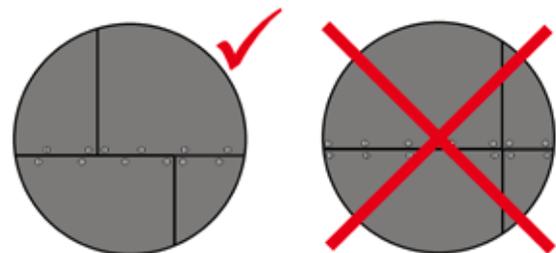
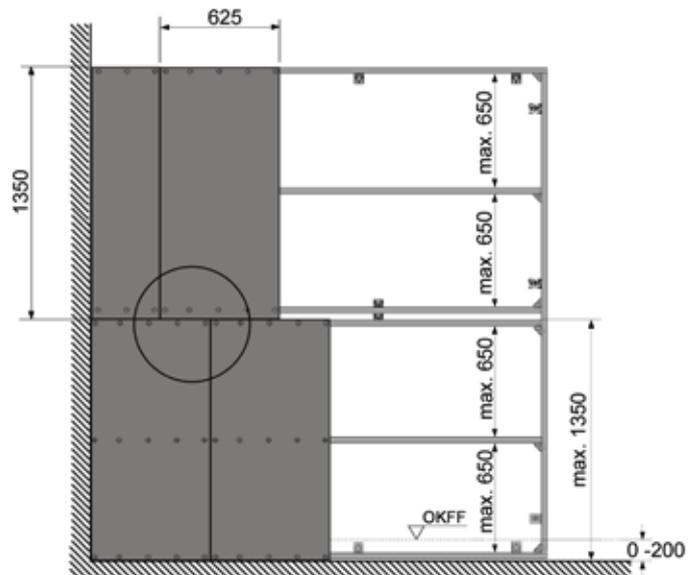


Size of cut-outs for the washstand module

Note:

The marking plugs are not suitable for a pressure test.

When applying panel facing, the general guidelines for dry-wall constructions must be taken into account. The joints in the covering must be filled with TECEprofil knifing filler. On non-ceramic surfaces, additional fibreglass joint ceiling strips must be used. The 5 mm gap between the structural shell and the facing must be filled and sealed with a permanently flexible compound. Cross joints (panels butted vertically and horizontally) must be avoided; the joints should be offset by at least 15 cm.



Joint patterns on the facing

Important: all abutting edges on the plasterboard must be chamfered to 45°.

Filling of plasterboard panels

When plasterboard panels are filled, a distinction must be made between four different levels of quality. Unless tender documents specify otherwise, quality level 1 generally applies.

Quality level 1 covers the following requirements for filling:

- filling of butted joints of plasterboard panels and
- coating of the visible parts of the fastening elements

Any excess material must be removed. Markings, scratches and burrs caused by tools are permitted.

Further information about filler surface quality can be read in data sheet no. 2 of the German Gypsum Industry Association.

TECEprofil knifing filler

TECEprofil knifing filler is a white powder to mix with water and is based on gypsum and PVA with methyl cellulose and cellulose reinforced fibre. It offers all the advantages of a quick plaster, has a very high adhesion and does not sink. TECEprofil knifing filler can be applied as thickly as required in one step, and hardens in the process without strain or cracks.

Application (indoor area)

- Filling, plastering and smoothing of rough masonry, plaster, concrete, filigree ceilings, aerated concrete and foamed concrete, sand-lime brick, plasterboard, fibre-reinforced panels, light construction panels, and insulation panels.
- Filling the joints in plasterboard and gypsum fibreboard without fabric reinforcement. Take DIN 18181 + DIN 18183 and the processing guidelines of the board manufacturer into account. The site must be dry. On surfaces which are particularly subject to stress, e.g. in the area of installation openings, insert reinforcing strips if necessary.
- As an adhesive binder for securing plasterboard or gypsum fibreboard, expanded polystyrene and fibreboard panels to masonry in indoor areas. Absorbent substrates such as aerated concrete and sand-lime blocks must be primed first with penetrating primer/sealer.
- As a gypsum adhesive for non-load bearing gypsum partition wall panels.

Substrate

The substrate must be clean, solid and offer maximum grip. Dirt, dust, wallpaper, old paint and plaster which is not adhering reliably must be removed. Pre-treat smooth, concrete surfaces with a thinned plaster base; other smooth substrates such as gloss or emulsion paint must be pre-treated with a pigmented primer.

Mixing

Pour clean water into a container and sprinkle in the powder (1 part water to approx. 2.25 parts powder). Stir vigorously until a very fine, smooth, paste-like compound is formed. To achieve the optimum working properties, wait for about 1–2 minutes and stir vigorously again.

Application tips

Apply TECEprofil knifing filler evenly onto the substrate with a smoothing trowel.

- can be worked for about 30 minutes without difficulty,
- only use at temperatures above 8°C.

Post-treatment

It is not generally necessary to post-treat the smoothed surfaces. However, if emulsion or gloss paint is applied, we recommend applying a coat of penetrating primer/sealer beforehand.

Facing for highly wet areas

The TECEprofil panel for highly wet areas is a 12.5 mm-thick, cement-bound light concrete panel with a sandwich structure, reinforced with a top layer of alkali-resistant fibreglass webbing on both sides.

In areas where the walls are subject to a very high degree of moisture stress – such as in public shower facilities, swimming pools, fitness areas etc. – special facing panels must be used.

For these areas, we recommended the use of especially durable and resistant water-repellent panelling material. The 12.5 mm-thick, cement-bound TECE facing panel for highly moisture-stressed areas fully meets these requirements.

The design of dry-wall constructions in these areas is only partly covered by standards and directives:

- For use in areas not regulated by the building authorities, the fundamental standard is the new information sheet “Bathrooms and wet rooms in wooden and dry-wall constructions” issued by the main associations and institutions for dry-wall constructions.
- For areas which are governed by the building authorities, the information sheet from the Central Association of the German Construction Industry (ZDB) applies.

Storage guidelines

Panel storage and transport:

The panels are packed lying flat and delivered on pallets. They should always be stored lying flat on a smooth base. Storing them upright could distort the panels and damage the edges. If the panels are to be used to cover ceilings, the load-bearing capacity of the ceiling must be respected. Storage in the open air is possible because of the resistance to frost and water. However, because of their later surface handling, the panels should be provided with a water-repellent covering and protected from soiling by building work.

Construction site conditions:

As with all materials used in construction, fibreglass light concrete panels are subject to expansion and contraction due to the influence of temperature and moisture. The following installation conditions must be adhered to in order to perform dry-wall work correctly:

- Only install fibreglass light concrete panels when the air humidity is less than 80%.
- Soaked panels must never be handled until they have completely dried out. Do not install damaged materials.
- Due to the technical process, bonding of fibreglass light concrete panels must be performed with air relative humidity < 80% and at a room and material temperature of at least + 5°C.
- In the process the temperature of the adhesive must be > 10°C. The panels must have acclimatised to the conditions in the room because they must not change appreciably in the 12 hours following bonding.
- Low temperatures and high relative humidity prolong the hardening times. Heating using a gas torch can cause damage due to the risk of condensation being formed. This especially applies to indoor areas with poor ventilation. Sudden rapid heating should be avoided.

Cutting:

Cement-bound lightweight concrete panels can be cut using a standard rail-guided portable circular saw with extraction, preferably as a plunge saw. To cut panels as exactly to size as possible and with sharp edges, we recommend using a saw blade with a smaller number of teeth. Cut-outs and curves can be cut conveniently using a jigsaw.

Panel facing:

For the facing, TECEprofil walls can be covered with extremely robust fibreglass light concrete panels in a single layer construction. They should be installed with the noticeably smoother face to the front. Direct tiling is possible, depending on the application in question. With multi-layer facing, only the joints of the outer layer of facing panels need to be bonded together. Cross joints are not permitted. The offset of the joints between the panels must be at least 200 mm. For the purposes of good bonding, the panels must be cut absolutely straight and with sharp edges.

Fixing:

The fibreglass light concrete panels are secured to the TECE supporting frame using the same types of screw and with the same screw spacing as for the plasterboard panels. Pre-drilling is not necessary.

Joint technique:

Differently to plasterboard, fibreglass light concrete panels are bonded to each other bluntly. Only Fermacell joint adhesive (order no. 9200014) is permitted for this purpose. About 20 ml of adhesive is required per metre. A 310 ml-cartridge will therefore bond about 15.5 m of panel joints. Apply the bead of adhesive to the edge of the panel. It is important that the adhesive completely fills the joint when the two panels are pressed together (the adhesive should be visible on the joint). The maximum width of the joint must not exceed 1 mm. To prevent disturbance to the film of adhesive during subsequent fixing and hardening, the joint should not be pressed down "into nothing". Depending on room temperature and humidity, the adhesive is set after about 12–36 hours. Afterwards the excess adhesive is completely removed. This can be done using a putty knife or a scraper.

Job steps for moisture stress class A (high degree of wetness)

In moisture stress class A areas, the whole surface of the facing panels must be sealed with a sealing system (including the flexible adhesive).

For sealing systems in the remaining moisture stress classes, please refer directly to the manufacturers of building chemical products.

Work steps required:

1. Bond the abutting edges
2. Remove excess joint adhesive after it has set
3. Fill the visible fastening material using fine filler or skim coating
4. Apply a sealing system (penetrating primer, liquid membrane, sealing tape, possibly a wall sealing collar) (see figs. 1 and 2)
5. To seal the pipe penetrations, bed the sealing collar into the still-wet liquid membrane and immediately brush the sealing system over it again (see fig. 3)
6. Apply the flexible adhesive



Fig. 1: Applying the lower sealing coating



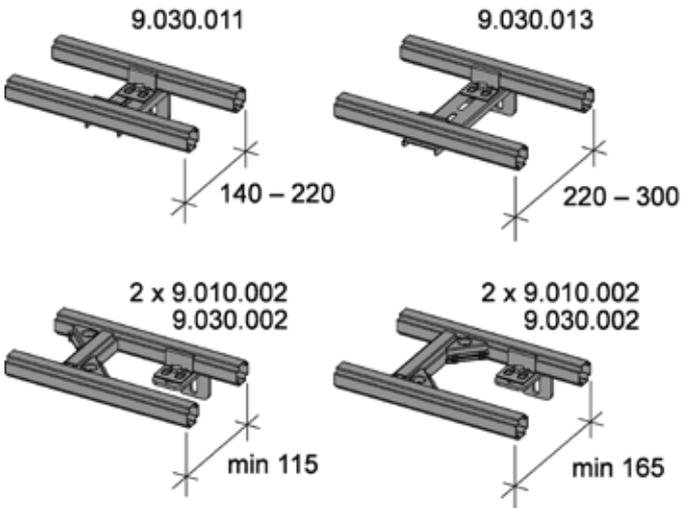
Fig. 2: Bedding the sealing collar into the still-wet sealing coating



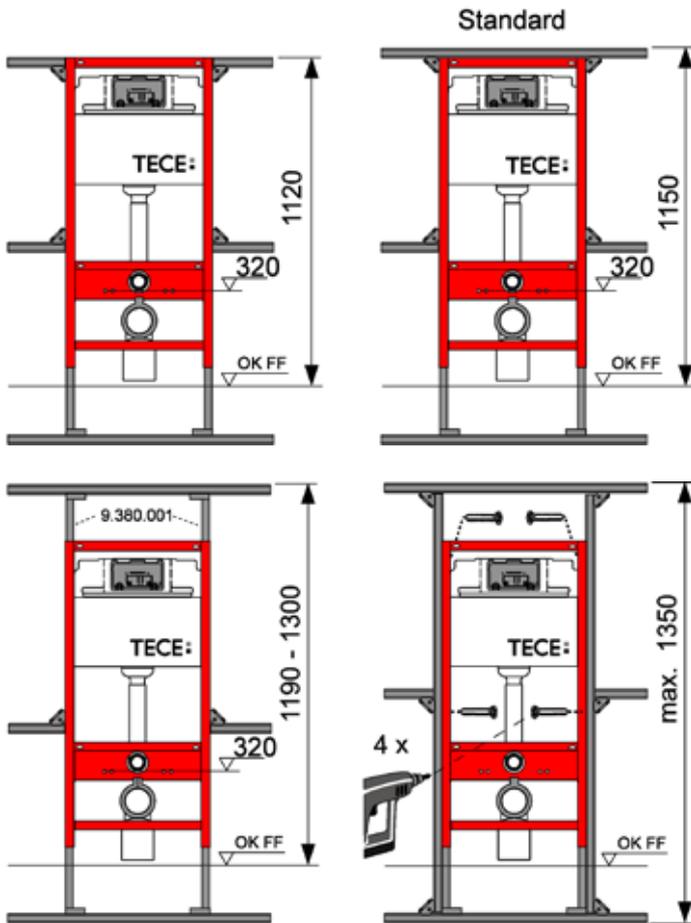
Fig. 3: Applying the upper sealing coating

TECEprofil – system installation/instructions

Possible pre-wall heights and depths



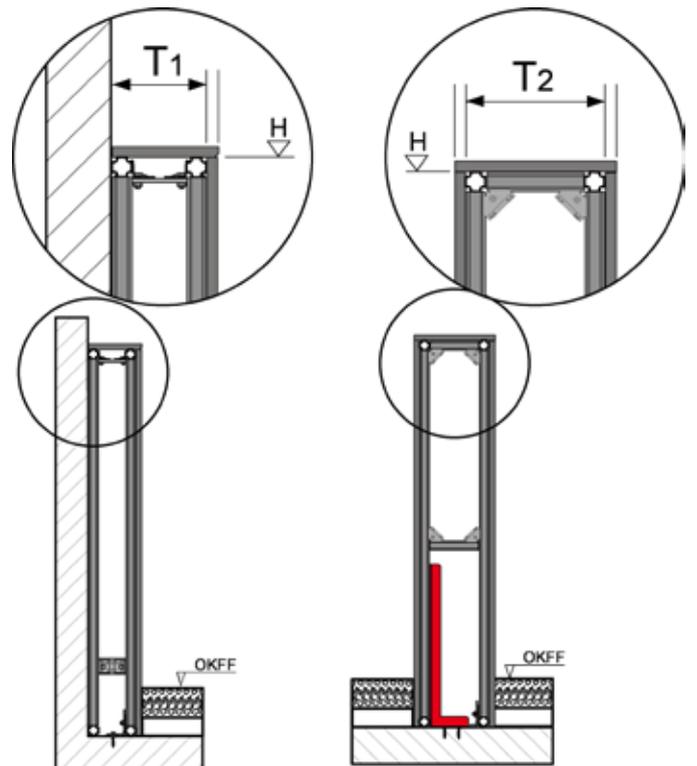
Possible pre-wall depths with TECEprofil supporting frame



Possible pre-wall heights with TECEprofil supporting frame – 1

	Order no.	Standard height	T1 min.	T2 min.
	9300000 9300003 9300007 9300011 9300033 9300044	1,150 (1,120–1,350)	160	210
	9300022	980–1,080	160	210
	9300001	820-920	160	210
	9041006	970-1,350	160	210
	9310000 9310004	1,150 (1,120–1,350)	140 (115)	210
	9020033 9020018 9020034	820–1,350	140 (115)	210
	9320002 9320000 9320001 9020017	1,150 (1,120–1,350)	140 (115)	170
	9330000	1,150 (1,120–1,350)	140 (115)	210

Possible pre-wall heights with TECEprofil supporting frame – 2



Limits

Designation	Type	Height	Depth	Width	Symbol
Standard wall	Standard wall, partial height and floor-to-ceiling height, with or without side attachment	Standard 1,150 mm, max. 4,500 mm	-	-	
Free-standing wall	partial height, without side attachment	Standard 1,150 mm, max. 1,500 mm	min. 210 mm	max. 2,400 mm	
	partial height, attachment on one side	Standard 1,150 mm, max. 1,500 mm	min. 210 mm	max. 2,400 mm	
	Privacy screen, partial height, attachment on one side (only approved for fitting installations)	max. 2,000 mm	min. 170 mm	max. 1,200 mm	
	floor-to-ceiling height, attachment on one side	max. 4,500 mm	min. 210 mm	max. 2,400 mm	
	Floor-to-ceiling dividing wall, attachment on two sides	max. 4,500 mm	min. 170 mm	a vertical strut is required every 2,400 mm on all sides of the wall.	
Special wall	Partial height and room height corner construction 45° in front of a structural corner	max. 4,500 mm	min. 350 mm	min. leg length 495 mm	

The maximum wall heights given always include the floor construction. All dimensions refer to the supporting frame without facing. The standard shelf height of 1,150 mm (supporting frame height above top edge of finished floor) can be changed easily.

Protection against moisture

TECEprofil can be used in damp rooms (bathrooms, guest toilets, cellars). Use in wet rooms (swimming pools) is not possible. The implementation of “Sealing against non-pressing water” is described in DIN 18195/T5 “Water-proofing of buildings”.

Penetrations at washstands, urinals, bidets, etc. must be sealed with permanently elastic material. All unfilled cut edges of panelling must be treated with penetrating primer/sealer before tiling. The edge between the floor and the TECEprofil panelling must be sealed with standard sealing tape.

Additional seals against moisture, such as in the shower area must be formed by the tile layer. The tile laying trade organisation has created a special information sheet about this.

(ZDB information sheet: Instructions for processing sealants together with coverings and claddings made of tiles and panels for indoor and outdoor areas)

Floor fixing

The TECEprofil pre-wall can be mounted both on the unfinished floor and on the finished floor. In the process, the entire length of the dowels must be anchored in the screed. The screed strength must be at least 5 N/mm². Free-standing walls must be firmly attached to the unfinished floor. If mounting on a wooden floor, reliable fastening to the floor structure must be ensured.

Equipotential bonding

The TECEprofil system manages without equipotential bonding. Electrical equipment must be installed in accordance with the VDE regulations. Sanitary items made of metal, such as shower trays or stainless steel washstands as well as all metal pipework must be connected with equipotential bonding.

For more information, see: VDE 0100.

Console loads

When items are attached to a TECEprofil light construction wall, console loads are introduced into the wall. A distinction is made here between light, medium and heavy console loads. Heavy console loads are generally absorbed by a module or by a special connection unit. Medium console loads must be connected to the supporting frame. Light console loads can be directly secured to the panel facing at any desired position.

Suitable dowels must be used for fixing. Usually the fastening materials supplied with hand towel holders or mirror cabinets are also suitable for fixing to plasterboard. Dowel manufacturers offer a large selection of suitable fixing dowels made of plastic or metal.

Light console loads

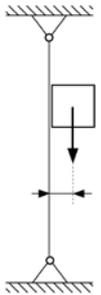
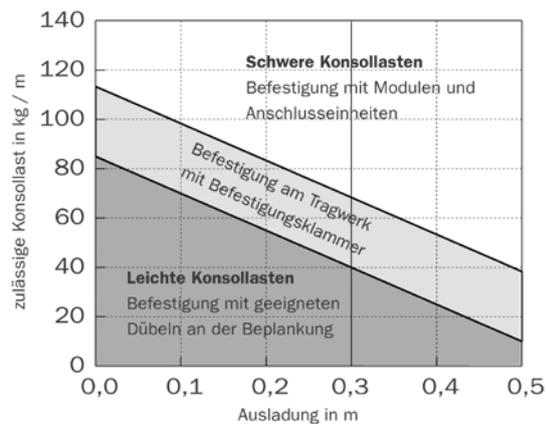
The permitted console load is given as load per metre of wall. The values given depend on the overhang of the load. Loads up to 40 kg/m of wall length with an overhang of 30 cm can be placed at any point on the supporting frame, directly onto the panel facing. For other values, please refer to the following diagram.

Medium console loads

Medium console loads up to 70 kg/m of wall length with an overhang of 30 cm may be secured to the struts of the supporting frame. The fixing is made using an M 8 or M 10 anchoring clip (order no. 9040004/9040001).

Heavy console loads

Console loads in excess of 70 kg/m of wall length require a special attachment to modules or connection units, e.g. to a toilet module or a mounting plate for handrail and support systems.



Console loads

The following maximum loads can be assumed for the usual items of equipment

(reference values):

- Pictures and mirrors approx. 15 kg
- Bathroom and mirror cabinets approx. 40 kg
- Toilet paper roll approx. 2.5 kg
- Hand towel holder approx. 8 kg
- Grab rail approx. 80 kg
- Rail for bath towel approx. 25 kg

Depending on the overhang, these items can normally be screwed directly to the facing using the supplied fastening material.

TECEprofil universal module

The TECEprofil universal module is an all-rounder. Only one module is required for all current dry-wall constructions. This saves storage space and makes calculation and logistics easier.

Example

The TECEprofil universal module with TECE concealed cistern:



Toilet universal module, assembly height 1120 mm

- Clearly visible: installation mark.
- Robust, self-supporting mounting frame. All toilet modules are statically self-supporting and can withstand a max. load of 400 kg. Holes in the crossbeam enable shower toilet connections to be upgraded.
- Pilot holes for mounting in UA-profile walls and wooden stud walls.
- Strong crossbeam with four threaded holes for ceramics with a mounting distance of 180 or 230 mm. The crossbeam ensures that the ceramic is safely secured even under high loads.
- Optional retainers for additional supports for ceramics with a reduced supporting surface.
- Integrated foot brake facilitates height adjustment.
- Adjustable foot supports for floor construction of 0 to 200 mm. For attaching to the floor or on a TECEprofil rail.
- Two-part DN 90/100 toilet drain bend. This allows DN 90 and DN 100 wastewater pipes to be connected easily. The DN 90/100 adapter can also be individually installed as a horizontal outflow in the module. Downpipes behind the module are then easy to connect directly.

- Many upgrade options such as wooden panels for holding safety support arms, shower toilet solutions, corner installations, and many more.

Using universal module technology increases the possible areas of installation:

- in a TECEprofil pre-wall
- in front of a solid wall
- in a C-profile wall
- in a UA-profile wall
- in a wooden stud wall

Installation in a TECEprofil pre-wall



Installation in a TECEprofil pre-wall

The simple mounting technology enables you to work swiftly and reliably. The universal modules can be integrated quickly and safely into a TECEprofil wall in a few simple steps:

- Release the foot brake
- Place the module foot on the lower continuous profile brace
- Pull the module out: the foot break is tight enough to hold the weight of the module and prevent it from slipping back
- Attach the module to the top profile brace with corner joints
- Apply the foot brake again
- Close the clip on the module feet
- Mount the centre profile braces

In addition to installation in a pre-wall, the module can also be mounted in a free-standing wall made up of TECEprofil system parts:

TECEprofil – universal module

TECEprofil



Installation in a free-standing TECEprofil wall

Installation in front of a solid wall

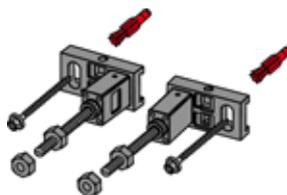
TECEprofil universal modules are also suitable for individual installation. Compatible attachments are available for various installation situations. The universal module is statically designed so that, in standard cases, it only has to be attached to the load-bearing structural shell at four points. Additional attachments such as elbow brackets are only necessary where high loads are involved (e.g. barrier-free toilet facilities). The mounting material supplied with the attachment units is suitable for mounting on solid walls. Use suitable cavity plugs when mounting in front of lightweight partition walls. The partition wall should also be reinforced at the mounting points. The procedure should be followed in line with the dry-wall construction. Take into account the installation instructions for the dry-wall system used.

Individual module installation with depth-adjustable universal attachment (order number 9380000):

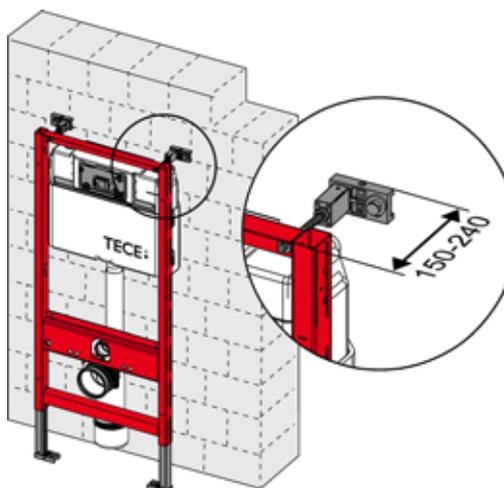


Individual mounting with depth-adjustable universal attachments

The universal module is placed directly against the wall. The pre-wall depth can be adjusted using the universal attachments. The module's height can be adjusted by means of the extractable module feet. The foot brake prevents the module from sinking down. In this way, the module can be accurately positioned before the module feet and universal attachments are attached to the structure.



Universal attachment 9380000



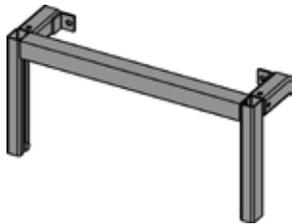
Adjustment range of universal attachment 150 – 240 mm

Individual module installation with height-adjustable universal attachment (order number 9380002):

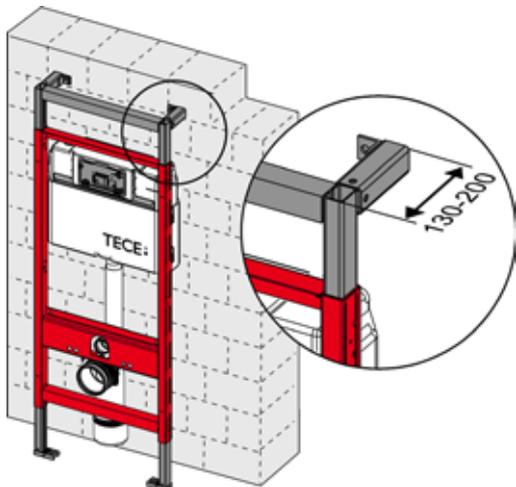


Individual assembly with height-adjustable module attachment

With the height- and depth-adjustable module attachment, variable supporting structure heights of 1,160 mm to 1,300 mm can be achieved. In this way, for instance, the height of the module can be adjusted to suit a given tile pattern.



Universal attachment 9380002



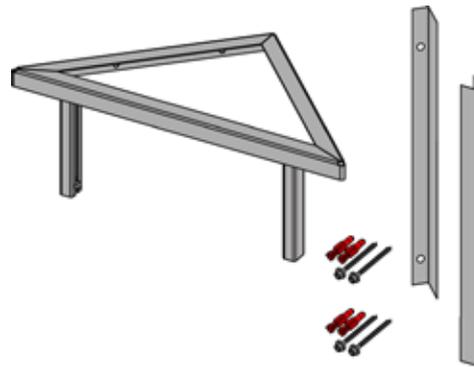
Adjustment range of the height-adjustable module attachment 130 – 200 mm

Installation with module attachment for wall corner installation (order number 9380004)



Individual module installation with module attachment for wall corner installation

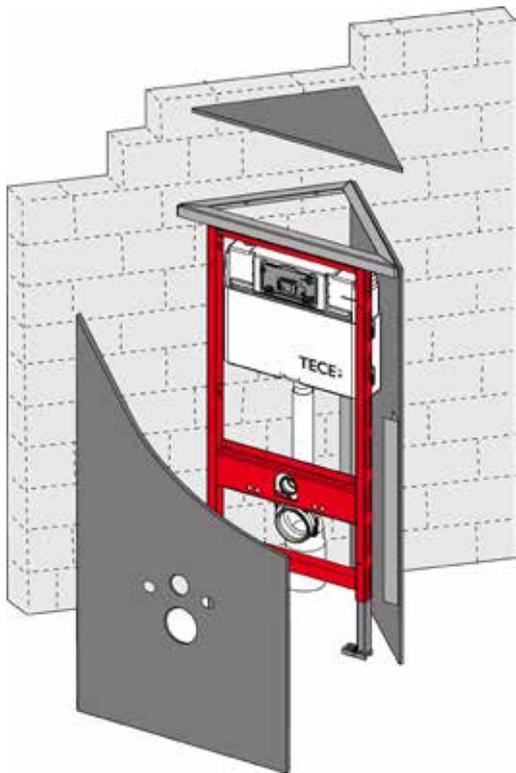
With the module attachment for wall corner installation, TECEprofil universal modules can be attached to a solid structural wall at an angle of 45°. In the process, only one side is screwed into the structure. Two angle brackets are included for mounting the panel facing. Thanks to the small side length of the attachment, structures with a base area of just 0.14 m² are possible.



Module attachment for wall corner installation 9380004

TECEprofil – universal module

TECEprofil



Mounting the module attachment for wall corner installation

Installation with module attachment for variable wall corner installation (order number 9380003)

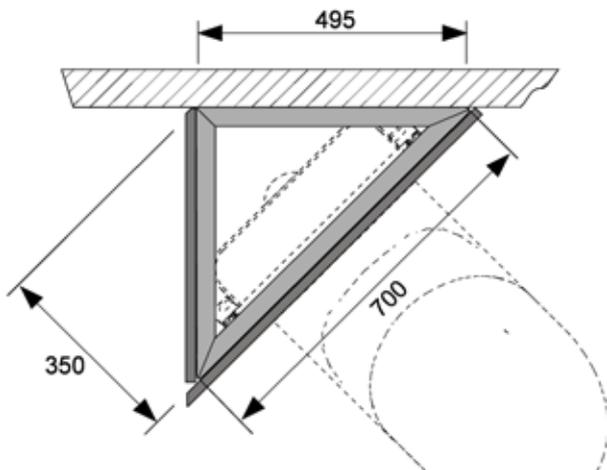


Module attachment for variable corner installation 9380003

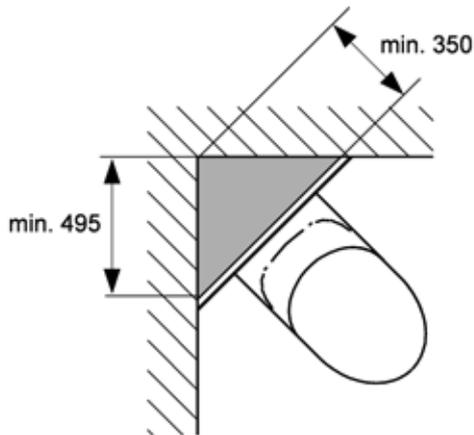


Installation of module attachment for variable corner installation

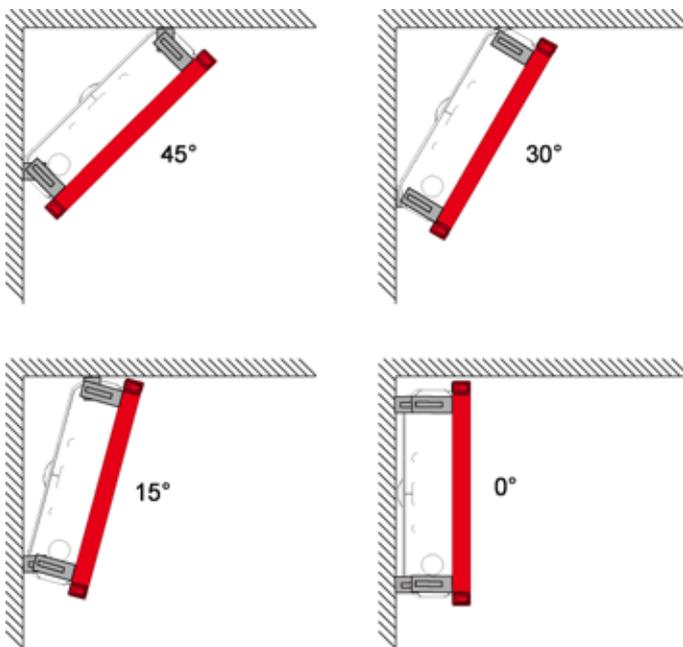
The universal module can be directly attached to the structure with the corner attachment. The corner attachment enables a TECEprofil brace to be mounted in parallel. A storage surface can be created with two TECEprofil panels, an angle bracket and a corner attachment. The corner installation requires very little space. The mounting set has a side length of just 49.5 cm. The depth from the front edge of the module up to the corner is only 35 cm. Despite the small installation depth, it is possible to install a DN 100 drainage pipe behind a toilet module.



Dimensions of module attachment for wall corner installation



Dimensions of module attachment for variable corner installation



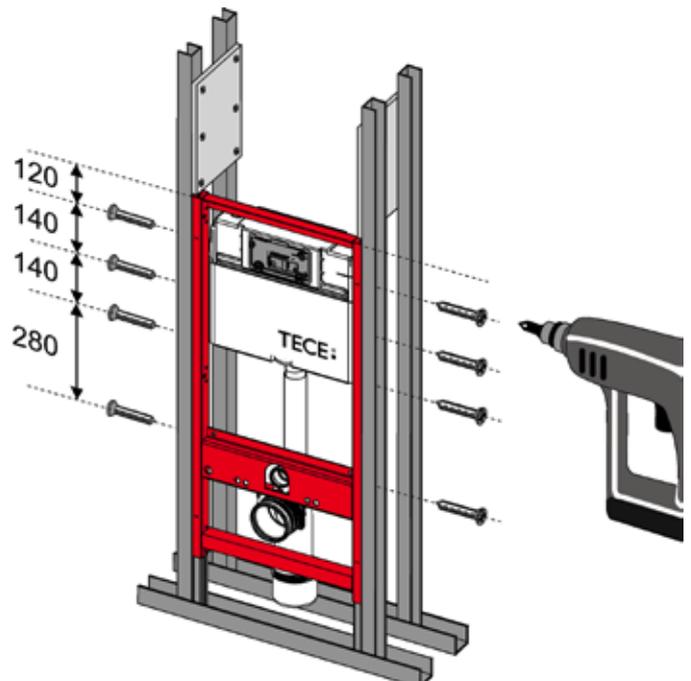
Installation examples with module attachments for variable corner installations

Installation in a floor-to-ceiling C-profile metal stud wall



Installation in a floor-to-ceiling C-profile metal stud wall

In double-stud walls, the individual stud rows must be tightly connected to each other in accordance with DIN 18183. To achieve this, 30 cm-long brackets are screwed between the C-profiles. Two reinforcement brackets must be attached directly above the universal module. Using the supplied self-tapping screws, the module is screwed to each of the four points with the wall profiles. The module feet are at the front under the horizontal C-profile and can be dowelled to the floor.



Module attachment with installation in a floor-to-ceiling C-profile metal stud wall

Follow the installation instructions for the dry-wall system used.

TECEprofil – universal module

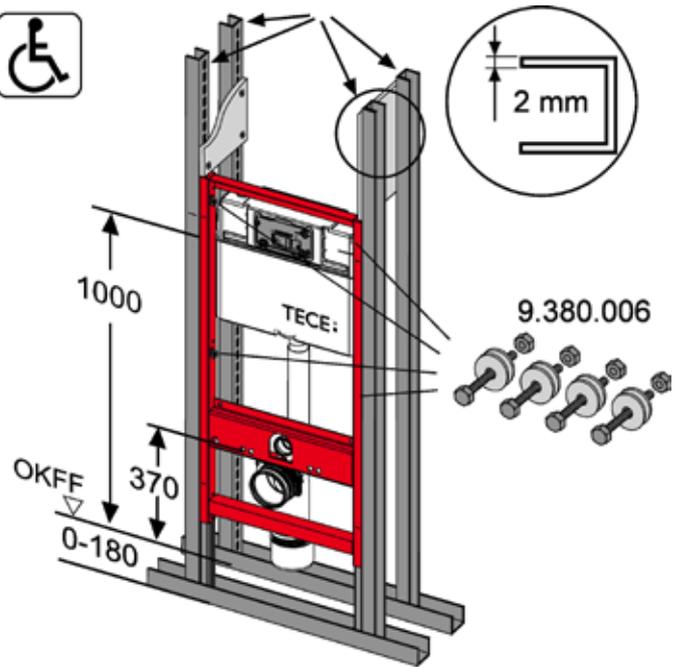
Installation in floor-to-ceiling metal stud wall with UA-profiles



Installation in a floor-to-ceiling UA-profile metal stud wall

If particularly wide or high walls have a higher rigidity, UA-profiles (DIN 18182 part 1) can be used instead of C-profiles. This measure is only relevant for toilet and bidet modules.

For a disabled toilet facility only UA-profiles may be used for the front and rear struts for strength reasons. The installation of toilet facilities in public places for disabled and elderly people must be carried out in accordance with DIN 18040-1.



Module attachment with installation in a floor-to-ceiling UA-profile metal stud wall

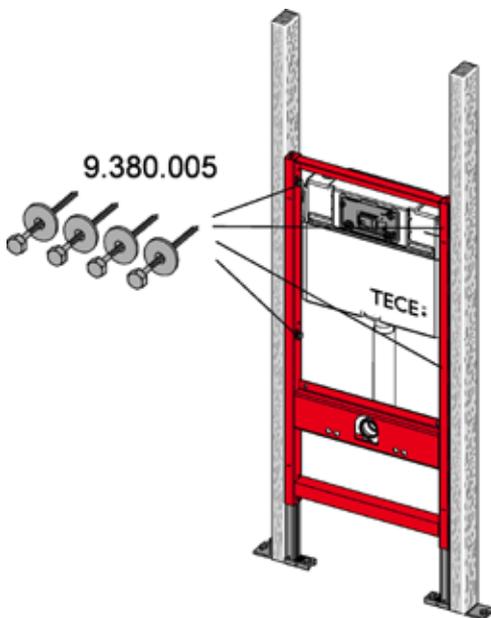
Due to the prescribed seat height of 48 cm, the universal module must be mounted 5 cm higher than the standard installation height. TECEprofil universal modules have pre-drilled holes in the side struts for attaching universal modules to the UA50 profiles. The holes are arranged so that there are at least two possible mounting options per strut.

Installation in a wooden stud wall



Installation in a wooden stud wall

In addition to metal stud walls, the module can also be installed in wooden stud walls in accordance with DIN 4103-1. For this purpose, the frame can be mounted using special wood screws (order number 9380005) on the vertical struts.



Module attachment during installation in a wooden stud wall

In addition, the pre-drilled holes in the side struts should be used to mount the universal module on the wooden struts. The holes are arranged so that there are at least two possible mounting options per strut.

Attaching individual modules to the floor

The universal module's feet are attached to the unfinished floor using the screws and dowels supplied. In the process, the entire length of the dowels must be anchored in the screed. The screed strength must be at least 5 N/mm². If mounting on a wooden floor, reliable fastening to the floor structure must be ensured.

TECEprofil – universal module

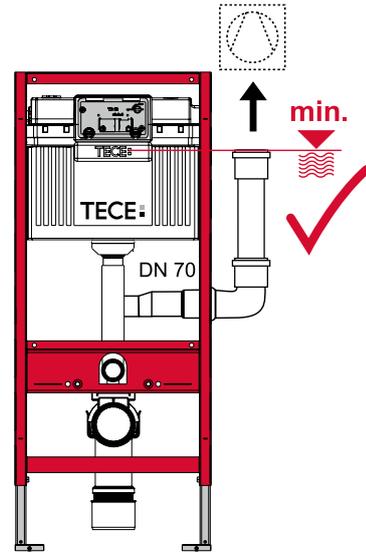
Toilet module with connection for odour extraction

For applications including odour extraction, TECE offers a toilet module with a DN 70 outlet in the flush pipe. The DN 70 connection offers the advantage that no additional nominal width changes usually need to be made. The DN 70 fitting is universal and therefore allows any commercially available fans (e.g. Maico ER 60 or ER 100 with Maico ER-UP fan housing and ER-AS extraction sleeve) to be connected. Odours are extracted directly via the toilet ceramics through the flush pipe. Intensive testing confirms that the flush performance is not adversely affected by the side connection for the odour extraction. To prevent any draught effects, the extraction flow volume should not exceed 18 m³/h.

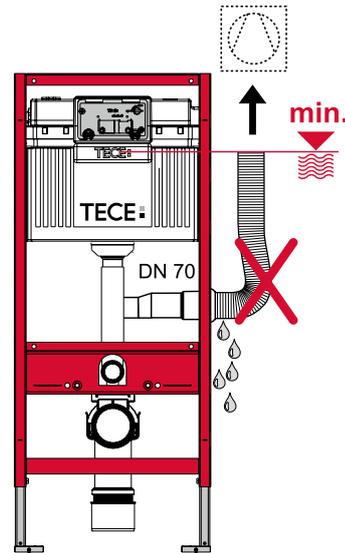


Note:

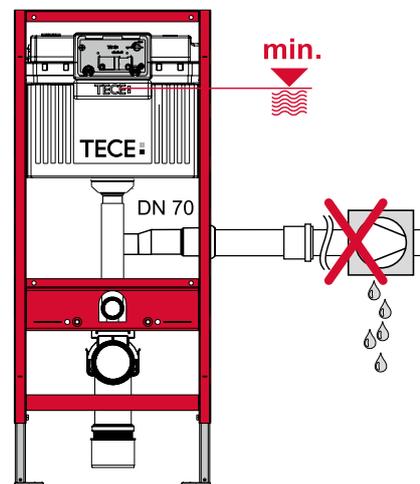
Because some of the flushing water also reaches the vent pipe (principle of communicating pipes), the connected vent pipe must always be installed watertight to above the cistern's water column. Direct connection to a corrugated pipe at the flush pipe connection is not suitable for this.



Watertight installation up to the cistern's water column



When connecting, a corrugated pipe is not used



The fan must not be connected directly below the cistern's water column.

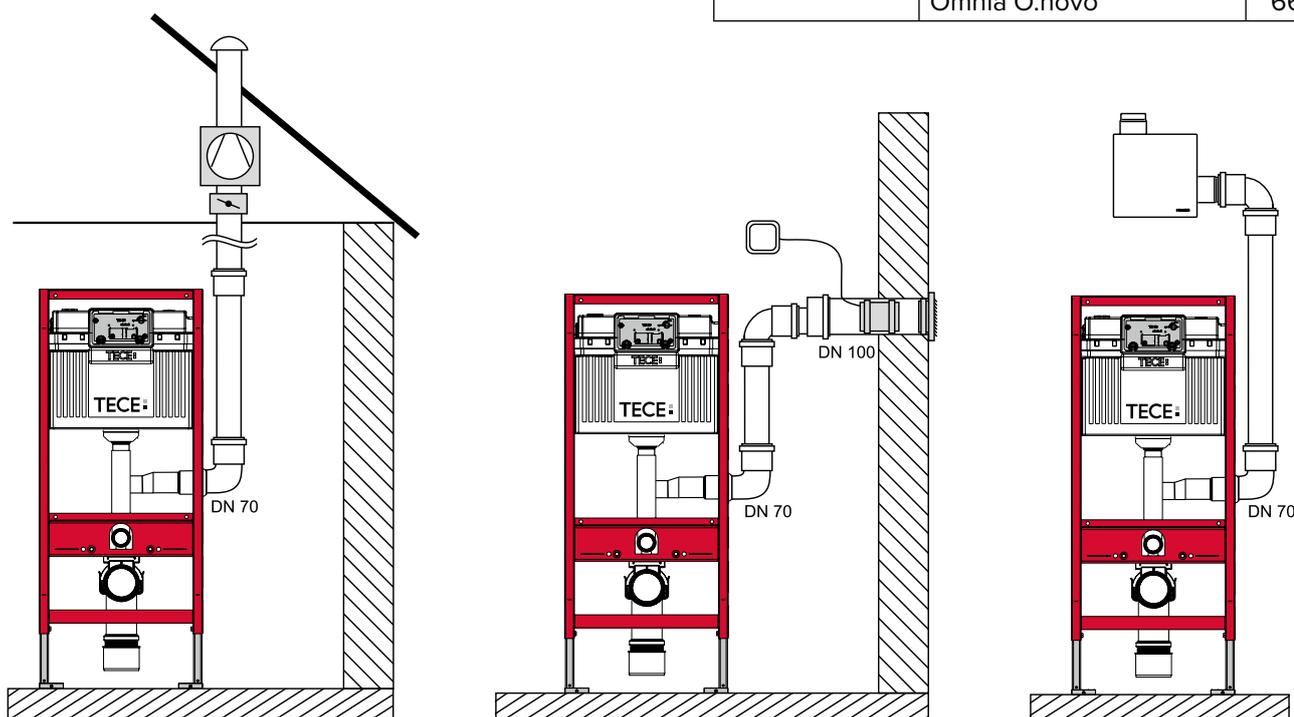
Multi-storey dwelling:

In toilet areas without an outside wall in multi-storey dwellings, the toilet element can be easily connected to the room fan. This is achieved using the existing DN 70 connection sleeve, which permits connection to the concealed housing with a second room connection via plastic pipes. The large cross-section of 70 mm ensures a low air velocity and permits effective, draught-free odour extraction. The moisture in the extracted air condenses on the inner wall of the air extraction pipe before it reaches the fan.

Detached house:

The toilet element with odour extraction can also be used in a detached house. If the bathroom has an outside wall, the extraction pipe from the toilet element is connected to an in-duct fan. Odour extraction can therefore be easily implemented, without adverse effects such as a temperature drop caused by opening a window, which in turn leads to higher heating costs.

Installation examples:



Note:

Odour extraction is possible for all conventional toilet ceramics. However, in some ceramics which have a higher seat position or higher flushing rim, the flushing water remains standing in the flush pipe, resulting in the bowl becoming partially or completely full.

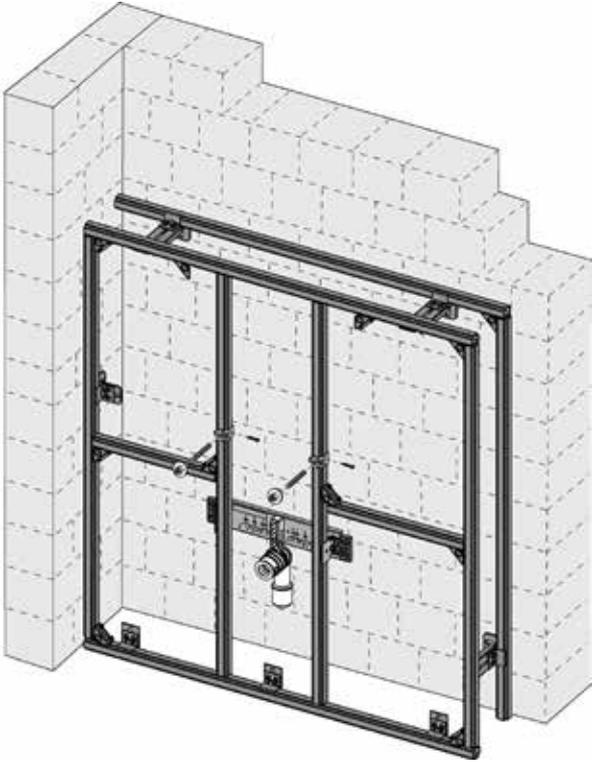
The following table lists the ceramics for which the use of the odour extraction is not possible:

Manufacturer	Product	Item no.
Catalano	Zero	1VSxxN00
Duravit	Strength 1	021009
	Strength 3	221509
	Architec (Duraplus)	254609
Ideal Standard	Mia/SimplyU	J4521xx
	SoftMood	T3226xx
	Ventuno standing toilet	T3161xx
Keramag	4U RimFree	203460
	500 by Citterio - tief	202100
	CASSINI - tief	203200
	EMANI by Citterio - tief	207800
	ERA - tief	208800
	It! RimFree	201950
	Plus 4	202010
	Silk - flach	203670
Visit	2063xx	
Laufen	LP3	20681
Villeroy & Boch	Omnia classic	66 65 10
	Omnia O.novo	66 95 10

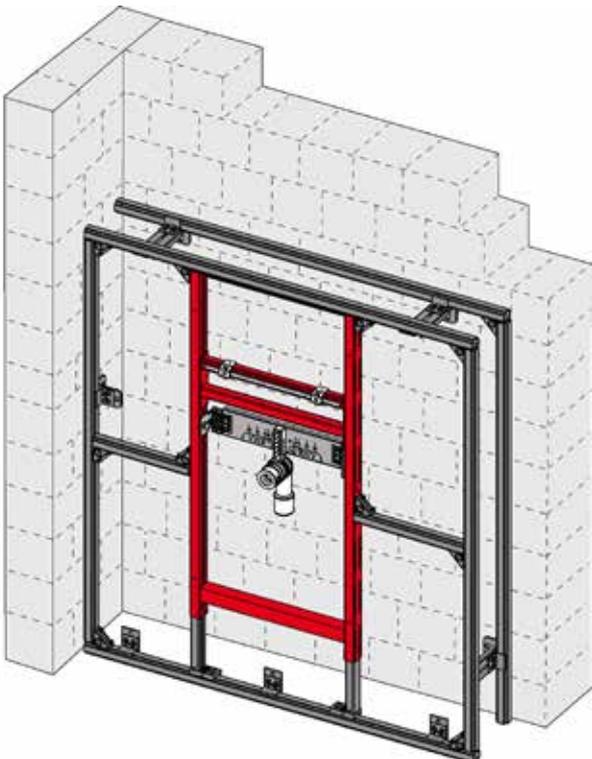
TECEprofil – individual or modular construction

Individual or modular construction

The supporting frame is built using the four basic components – section tube, corner joints, double joints and angle brackets. When installing sanitary items, the fitter has the choice between individually-installed connection units and the TECEprofil universal modules.



Individual construction with connection unit for washstand



Module construction with universal module for washstand

Alternatively, the same installation can be performed with a

TECEprofil universal module. It is not just in TECEprofil supporting frames that TECEprofil universal modules can be integrated, they can also be installed in metal or wooden stud walls.

Installing the vertical strut in the toilet module

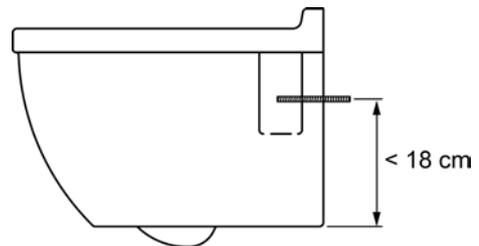
Vertical struts (order number 9041029) can be installed as an option in the lower build space of virtually all TECEprofil toilet modules. These struts are only necessary on toilet ceramics with a reduced supporting surface. (e.g. made by Villeroy & Boch: Memento, Sentique, Subway 2.0 or all Flaminia ceramics).



Installing the vertical strut in the toilet module

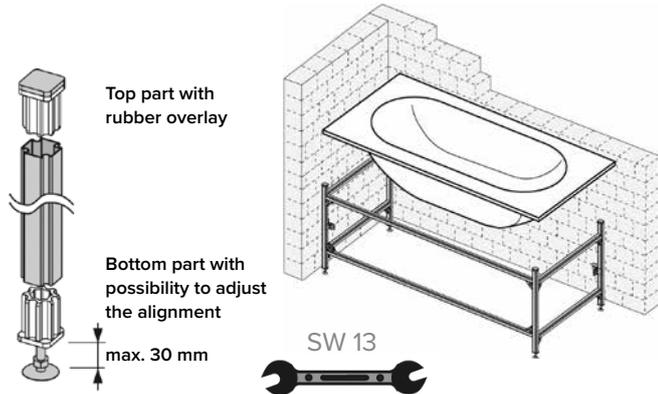
Important:

The use of vertical struts is absolutely necessary for supporting surfaces of < 18 cm. Otherwise there is a risk that the dry wall installation will collapse behind the ceramic.



TECEprofil bath construction

A framework base is created using TECEprofil. Plug-in feet (order no. 9140000) are inserted into the four side braces. With an adjustment range of 30 mm, these feet allow height adjustment and alignment. Steel bathtubs can be installed without the need for additional supporting feet under the bathtub.



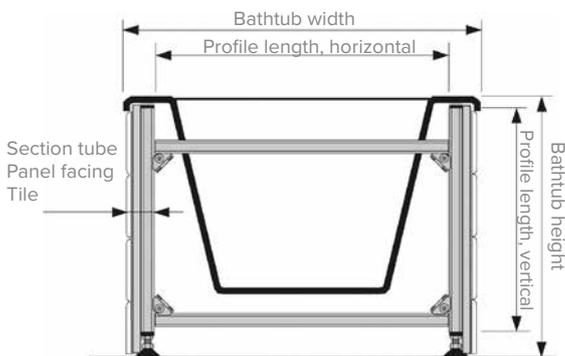
Installation of a steel bathtub in a TECEprofil supporting frame

TECEprofil profile braces

When cutting the horizontal profile braces, the thickness of the vertical profile braces, the panel facing and the thickness of the tiles must be taken into account.

You can calculate the exact profile length using this formula:

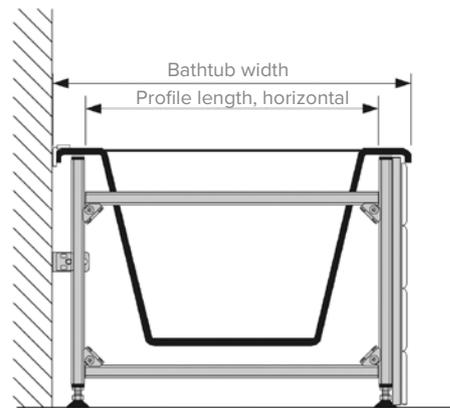
- Bathtub length/width
- 2 x thickness of vertical profile brace
- + panel facing
- + tile thickness
- = length of horizontal profile brace



Exact calculation of the bathtub length/width for free-standing bathtubs

For the horizontal braces, the following rule of thumb formula applies in most cases:

- Bathtub length/width
- 12 cm
- = length of horizontal profile brace



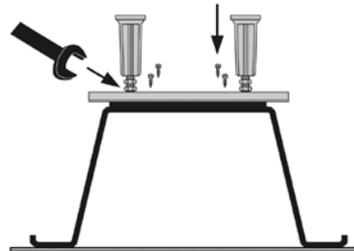
Exact calculation of the bathtub length/width for free-standing bathtubs

When being installed onto the unfinished floor, the floor construction must be taken into account during the calculation of the length of the vertical braces. The length of the profiles is as a result:

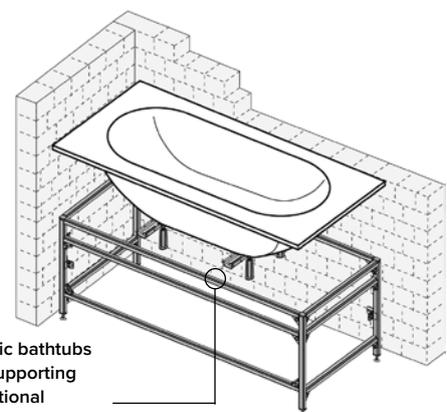
- Bathtub height
- + floor construction
- plug-in foot (4.5 cm)
- = length of vertical profile brace

Special features of acrylic bathtubs

To safely install an acrylic bathtub, the base plate must be supported by an acrylic bathtub foot. This is screwed to the laminated base board. The required fastening material is usually supplied with the bathtub foot.



Installing acrylic bathtub feet



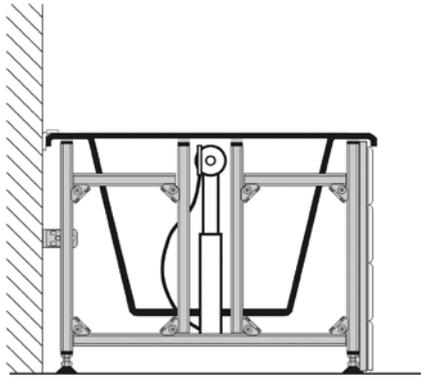
In the case of acrylic bathtubs with a thin edge, supporting the edge with additional horizontal profile braces may be necessary.

Installing a steel bathtub in a TECEprofil supporting frame

TECEprofil – bathtub construction

Particularities when installing the overflow fittings

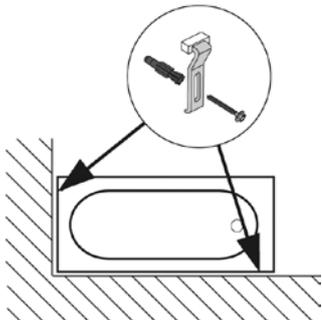
On some bathtubs, the outlet and overflow fittings are very close to the outer edge. In this case, it may be necessary to interrupt the upper horizontal brace. This can be done at any point using the universal TECEprofil tube and the corner joints.



TECEprofil supporting frame when installing an overflow fitting

Securing the bathtub

To secure it in place, the edge of the bathtub is clamped to a wall of the structural shell using bathtub anchors.



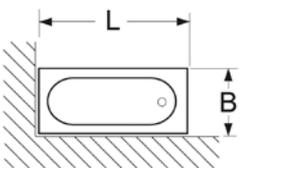
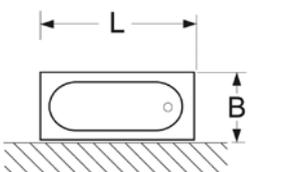
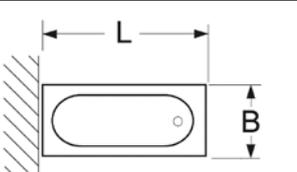
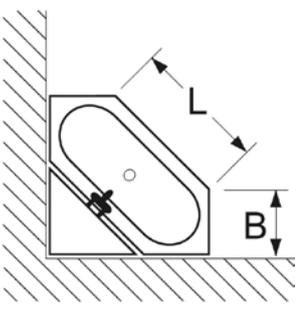
Securing the bathtub using bathtub anchors

Bathtub insulation tape with tear-off edge

In order to prevent an acoustic bridge between the edge of the bathtub and the structural shell, bathtub insulation tape is fixed to the side of the bathtub edge. With the tear-off edge, the upper half of the tape can be cleanly removed during completion work. A silicone bead is then placed between the edge of the tiles and the bathtub.



Sealing with bathtub insulation tape and a silicone bead

	Bathtub length L	Bathtub width B	Section tube 9000000	Corner joint 9 010 002	Angle bracket 9030002	double joint 9030011	Universal attachment 9018002	Fitting connection crossbeam 9020035	Plug-in foot 9140000	Bathtub anchor	Bathtub insulation tape	Facing area 9200000
	m	m	m	Unit	Unit	Unit	Unit	Unit	Unit	Unit	m	m ²
	1.60	0.70	7.4	12	2	-	-	-	4	2	2.3	1.3
	1.70	0.75	7.8	12	2	-	-	-	4	2	2.5	1.4
	1.80	0.80	8.2	12	2	-	-	-	4	2	2.6	1.5
	1.60	0.70	7.4	12	2	-	-	-	4	2	1.6	1.7
	1.70	0.75	7.8	12	2	-	-	-	4	2	1.7	1.9
	1.80	0.80	8.2	12	2	-	-	-	4	2	1.8	2.0
	1.60	0.70	9.2	12	2	-	-	-	4	2	0.7	2.3
	1.70	0.75	9.7	12	2	-	-	-	4	2	0.8	2.4
	1.80	0.80	10.2	12	2	-	-	-	4	2	0.8	2.6
	1.10	0.57	13.8	25	5	2	4	1	6	2	2.2	2.0
	1.10	0.62	14.2	25	5	2	4	1	6	2	2.3	2.0
	1.30	0.64	15.4	25	5	2	4	1	6	2	2.6	2.4

Material requirements for a typical TECEprofil bathtub construction

Shower toilet solutions

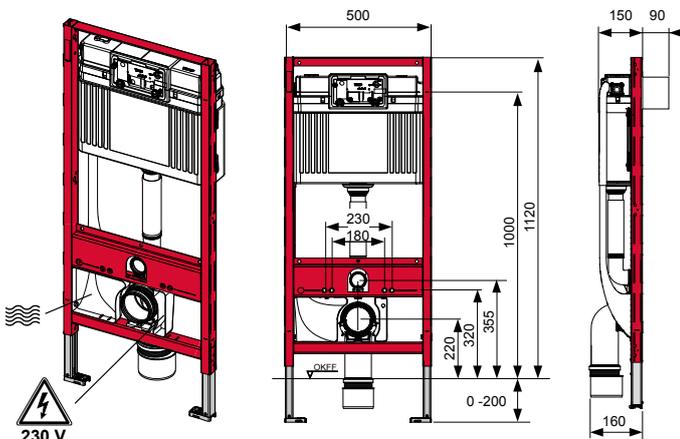
Shower toilet solutions are becoming increasingly popular. Modern shower toilets combine toilet and bidet technology. Thanks to universal module technology and the upgrade set for modules, TECE makes it possible to install the most modern shower toilet solutions on the market.

Toilet module for shower toilets with power connection

The number of electrical shower toilets with concealed connections is continually increasing. It is not always easy to find the right connection position. With the shower toilet modules, connecting up shower toilets to the mains is significantly easier. The shower toilet module is available with installation heights 1,120 mm, 980 mm and 820 mm.

Note:

Due to the ever-increasing number of shower toilets, 100% compatibility of the toilet module cannot always be guaranteed. If in doubt, always test the connection position beforehand.



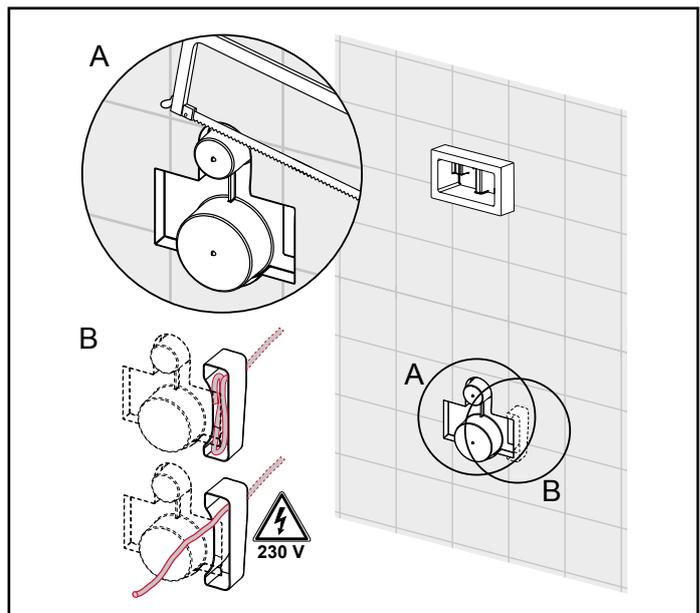
Shower toilet module 9300079

Beneath the main crossbeam, on the left-hand side, a large connection funnel which is connected via a connecting pipe to the cistern, supplies the cold water. The cable box on the right-hand side is intended for receiving a power cable. The connection funnel's and cable boxes large design means that the widest variety of water and electricity supply connection positions of many shower toilets made by other manufacturers can be covered.



This enables a high degree of universality when connecting shower toilets with concealed water and electricity connections.

The decision as to whether to install a shower toilet, or which one to install can be made at any time. The connection box must simply contain an NYM 3 x 1.5 mm² power connection cable. It must be ensured that this is not under tension if there is no shower toilet connected.

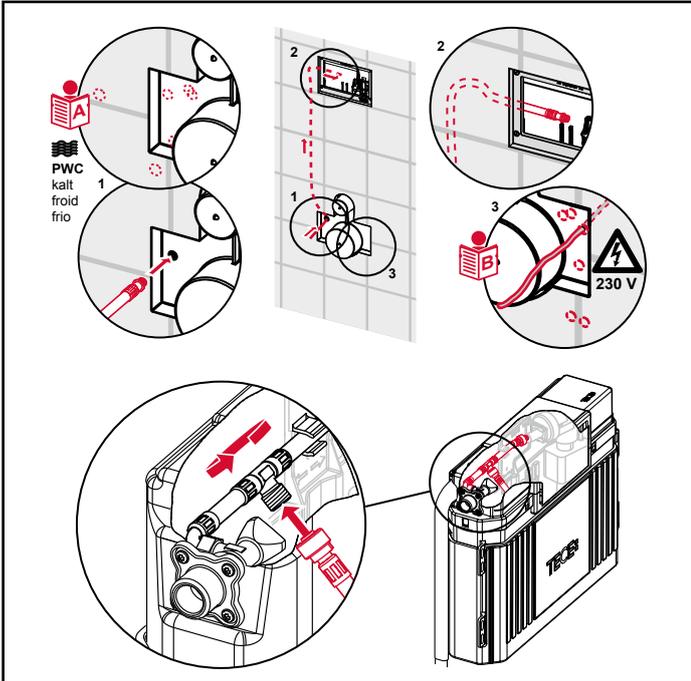


Fine installation kit for shower toilet module

The fine installation kit is only needed to install a shower toilet in combination with the universal shower toilet module. In addition to the replacement reinforced hose with a tee, it also contains a long supply hose for connection to the shower toilet. There are three versions of this depending on the module's respective installation height. These differ in the length of the reinforced hose for the cold water supply.

When installing a shower toilet, the round plugs for the flush and wastewater pipe must be sawn off flush with the wall (A). The bare-wall protection can remain permanently in the wall. The toilet can be connected via the connection fittings. To connect water and electricity to a shower toilet, the bare-wall plug must be cut in at the height of the funnel opening and power box. Afterwards, both reinforced hoses from the fine installation kit can be mounted. The long reinforced hose is pushed through the funnel opening into the cistern. The short reinforced hose including tee must be replaced by the standard built reinforced hose in the cistern, and connected to the long reinforced hose on the tee.

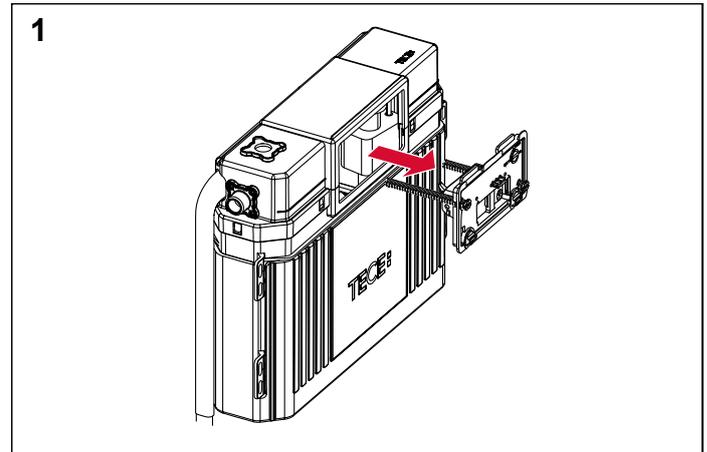
In doing so, it must be ensured that the reinforced hoses do not break off, or come into contact with the lever mechanism. Once the water connection has been made, the electric cable can be pulled out of the power box to connect the shower toilet in front of the wall.



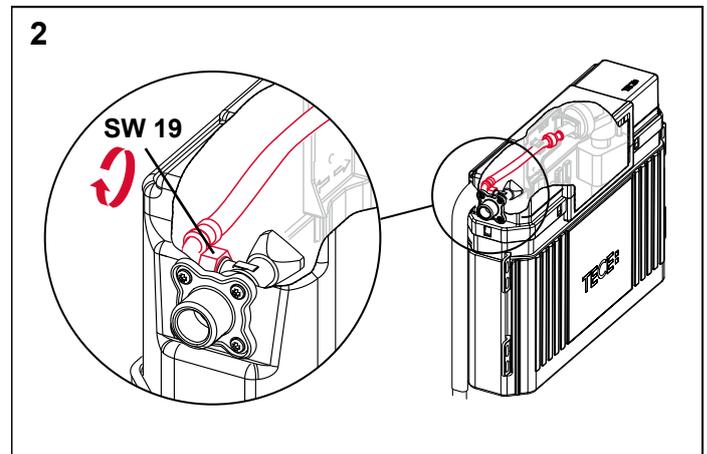
The reinforced hose and the electrical cable which are located in the lower part of the module, can be used at any time to connect the shower toilet. In the assembled state, the ceramic covers the water and power connections.

If ceramics with a reduced supporting surface are to be used, vertical struts must be inserted into the lower build space to prevent the wall from collapsing.

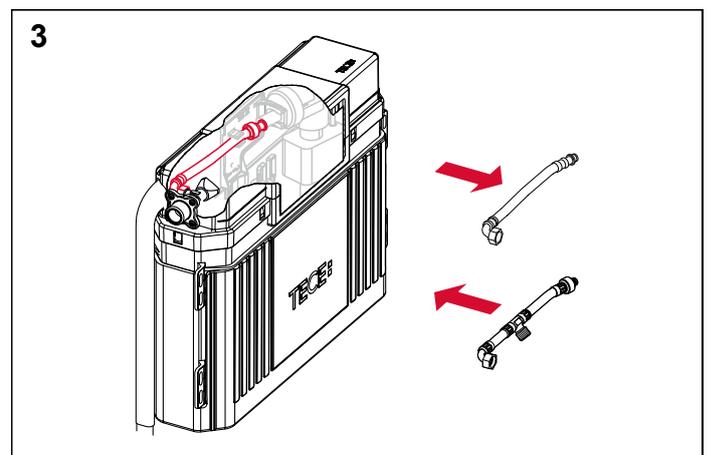
Mounting the fine assembly set when installing a shower toilet



Disassemble the splash guard including the flush unit.

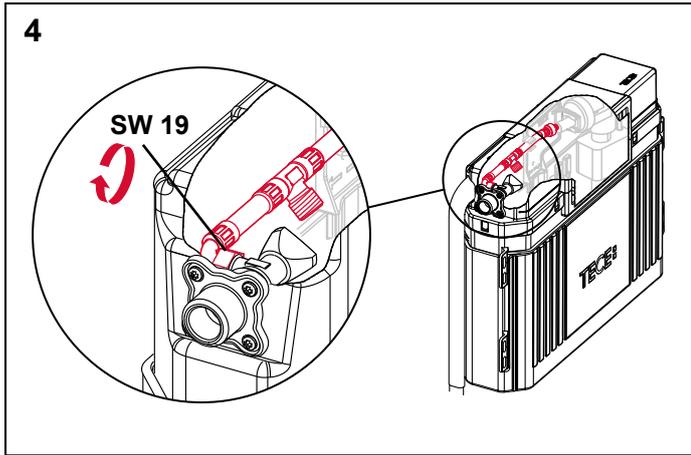


Close the corner valve in the cistern and loosen the reinforced hose including the thread connection on the filling valve.

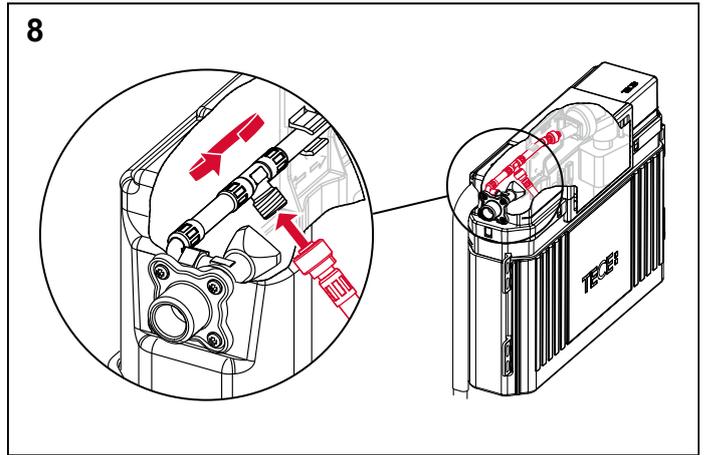


Remove the reinforced hose and mount the replacement reinforced hose in reverse order.

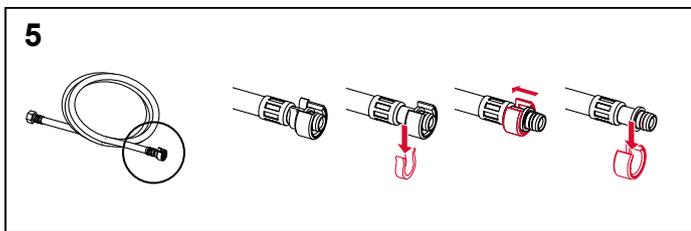
TECEprofil – shower toilet solutions



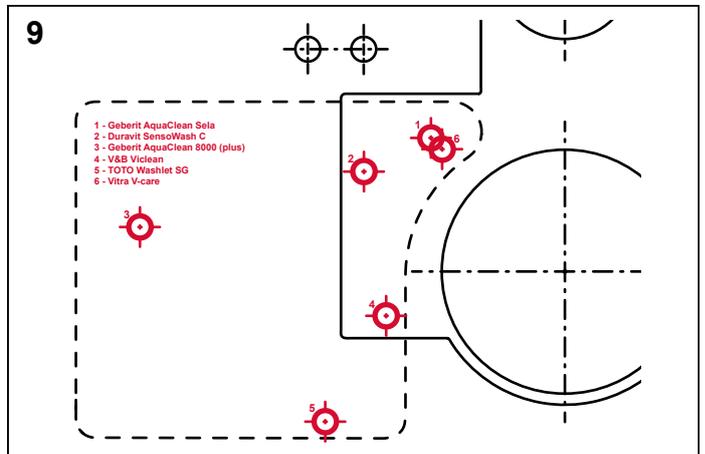
Mount the replacement reinforced hose.



Connect the reinforced hose from the shower toilet to the tee of the replacement reinforced hose.



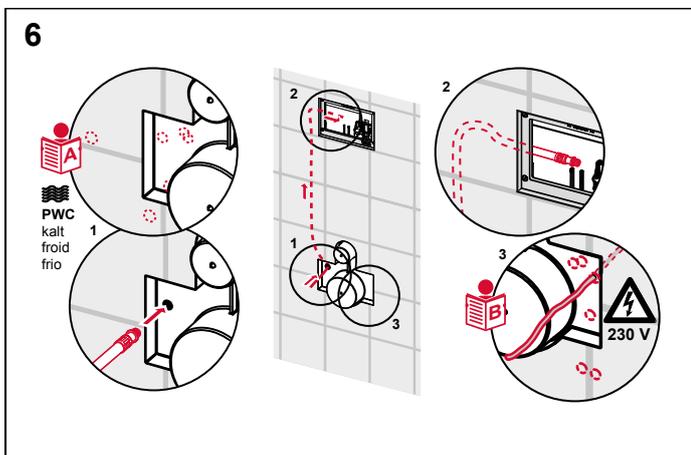
Before the hose can be pushed in, the union nut must be removed. To do so, remove the safety pins, push the union nut back and then pull it down. Do not lose the safety pins or nut!



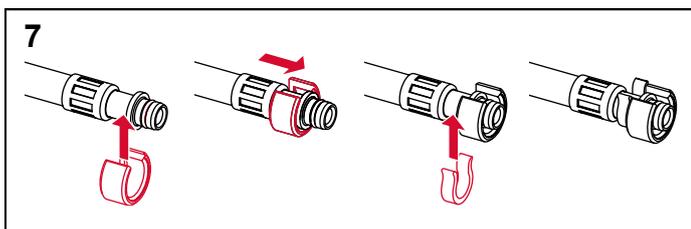
At present, the following shower toilets fit:

- Geberit AquaClean 8000 (plus)
- Geberit AquaClean Sela
- Duravit SensoWash C
- V & B ViClean
- TOTO Washlet EK/GL
- Vitra V-care

Other shower toilets possible. Please test the connection position beforehand!



Depending on the shower toilet to be connected (see fig. 9), the hose is pushed through the space provided in the bare-wall protection, and the funnel is pushed into the cistern.

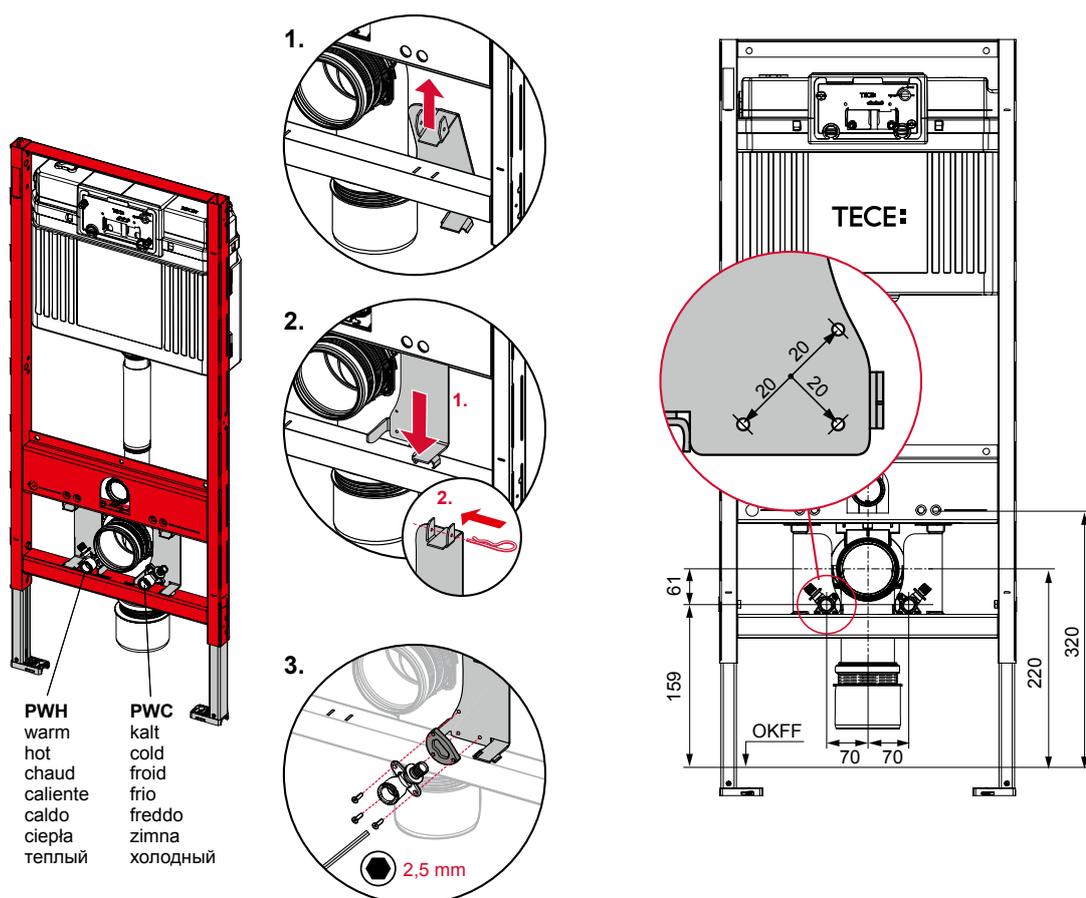
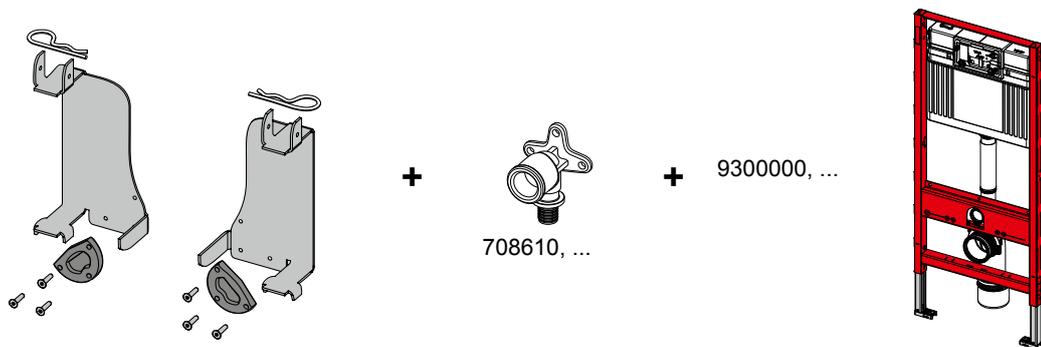


Attach the safety pin behind the union nut.

Setting up the TECEone shower toilet on the toilet module

The TECEone shower toilet operates without power. For this reason, only the hot and cold water connections are positioned in the appropriate locations in the lower build space of the toilet module. The upgrade set helps to ensure that the hot and cold water connections are positioned accurately. With the upgrade set, two prefabricated steel plates for supporting the wall disks are inserted into the pre-punched slots beneath the main crossbeam, and secured with a cotter pin. The upgrade set is supplied with screws and sound insulators for assembling the wall disks.

TECEone upgrade set for dry-wall (order no. 9880046)



A short stub line from the circulating hot water pipe to the module is recommended for the TECEone's hot water connection. This ensures that, when the water is circulating, hot water will come out of the shower rod immediately after the water supply has been opened. With a longer hot water stub line, by slightly opening the water inlet, cooled water will flow into the ceramic.

TECEprofil – shower toilet solutions

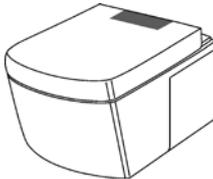
TOTO Neorest shower toilet module

This toilet module has been specially developed for installing a TOTO Neorest shower toilet. All the components required for installation in the bare wall are included.



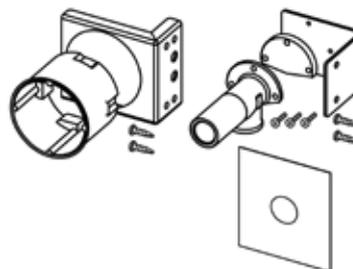
Toilet module for TOTO Neorest AC/EW shower toilet (order no. 9300044)

The module is fully equipped with a wall disk for the later water connection, a hollow-wall box for the power connection and a conduit plus control cable. The control cable is used to control the motor unit for the TOTO's electronic flush actuation. Everything required for the bare wall is supplied by TECE. The material for the fine installation (e.g. motor unit, Neorest shower toilet, etc.) is supplied by TOTO.

Shower toilet manufacturer	TECE item
<p>TOTO Neorest AC/EW, wall-hung</p> 	<p>Toilet module for TOTO Neorest, installation height 1120 mm 9300044</p> 

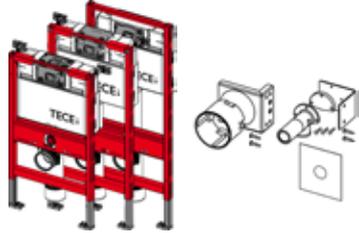
Shower toilet attachments

e.g. TOTO Washlet GL



Upgrade set for wall-hung shower toilet attachments (order no. 9880037)

The upgrade set is required in the bare wall. It enables the later installation of a TOTO Washlet GL shower toilet attachment, for example. The upgrade set can be installed on any dry-wall module. For this purpose, the upgrade set, consisting of a hollow-wall box, water connection and retaining plates is screwed to the side at the module and connected.

Shower toilet manufacturer	TECE item
<p>Shower toilet attachment, e.g. TOTO Washlet GL</p> 	<p>Dry-wall modules, all heights + upgrade set for shower toilet attachments e.g. 9300000 + 9880037</p> 

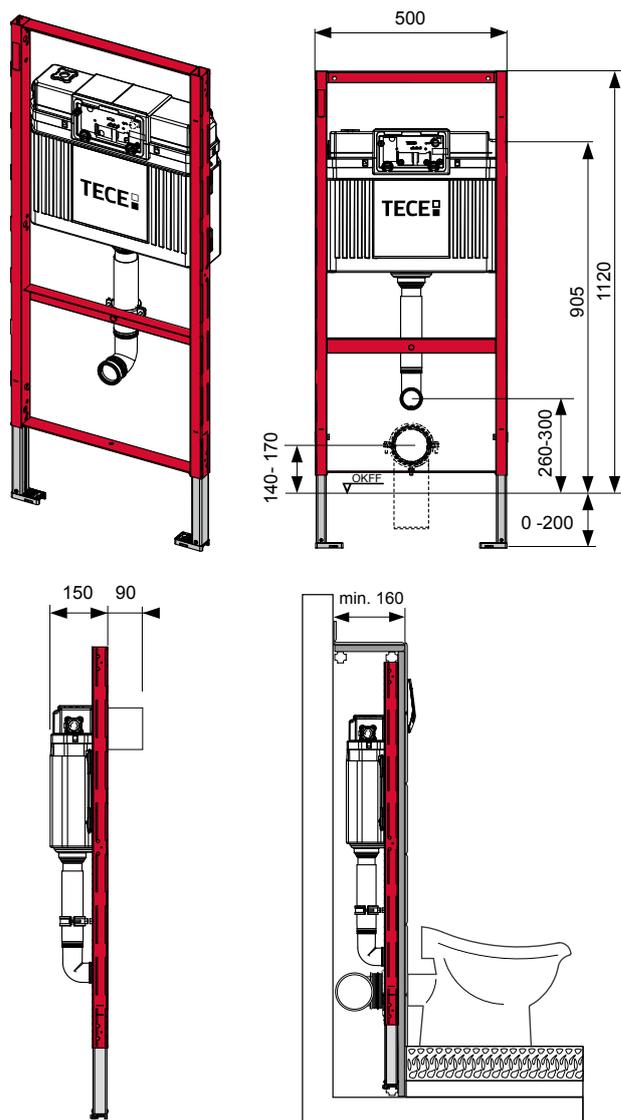
TECEprofil toilet module for baby/ children's standing toilet

This toilet module has been specially developed for using a floor-standing baby/children's standing toilet. Baby/ children's standing toilets have a clearly lower seat height compared to normal toilet ceramics, and different connection dimensions. The actuation height is also lowered in a way which is appropriate for children.

Both types of ceramics can be connected with the special baby/children toilet module. The flush pipe for connecting a baby toilet is pre-set in the as-delivered state. To achieve the slightly higher connection dimensions of a children's toilet, either the flush pipe can be shortened, or the cistern can be positioned slightly higher. By boring a drill hole in the lower brace, an optional drain bend can be attached if necessary via a pipe clip.

When using a baby toilet, the standard flush volume of 6/3 litres can be changed to 4.5/3 litres at any time.

The universal module technology enables the toilet module to be installed in a TECEprofil wall, in metal or wooden stud walls or as an individual module. The toilet module is only suitable for baby/children's standing toilets. It is not possible to mount wall-hung toilet ceramics.



Toilet module for baby/children's standing toilet (order no. 9300088)

Barrier-free construction with TECEprofil

Planning guidelines

- DIN 18 040 – Part 1 Planning fundamentals “Barrier-free building” in public-access buildings and workplaces.
- DIN 18 040 – Part 2 “Barrier-free building” (describes the requirements for sanitary rooms for wheelchair users in dwellings, etc.)

Barrier-free toilet system according to DIN 18 040 – part 1 in public buildings:

DIN 18 040 part 1 is the authoritative version for the creation of a public barrier-free toilet system. Because of the highest assumed disability of a person in the public area, the requirements are considerably higher than those for private areas.



Barrier-free toilet system

Seat height	46–48 cm including seat
Toilet depth	Overhang at least 70 cm
Back rest	55 cm behind the front edge of the toilet
Movement area to the sides	90 cm left and right
Movement area in front of toilet	150 x 150 cm
Safety support arms	Left and right; upper edge of safety support arm 28 cm above seat height; safety support arm protruding at least 15 cm beyond toilet; distance between support arms 65–70 cm
Toilet roll holder	Can be reached from the seat
Loading capacity of safety support arm	Concentrated load of 1 kN at front end of arm
Toilet flush	Can be reached by hand or arm from the sitting position
Emergency call system	Mounted near the toilet bowl, can be reached from the toilet bowl sitting or lying, designed to be visually contrasting, can be found and recognised by touch

Requirements for a barrier-free toilet system

Installation height top edge of washstand	Height of front edge max. 80 cm
Movement area in front of washstand	150 x 150 cm
Possibility to move underneath	Possibility to move underneath for at least 55 cm, knee freedom 67 cm, measured up to 30 cm behind the front edge, can move underneath across a width of 90 cm
Ability to move underneath washstand	Ability to move underneath for at least 45 cm
Fittings	One-lever mixer or touch-free fitting only in combination with temperature limitation, water temperature at outlet max. 45°C, distance between fitting and front edge of washstand max. 40 cm
Mirror	At least 100 cm high, access must be possible sitting and standing, positioned immediately above washstand.
Operating elements	Single-handed soap dispenser, paper towel dispenser, waste bin, hand drier, must be positioned in the area of the washstand.
Hooks	At least two different heights for sitting and standing persons

Requirements for a barrier-free washstand system

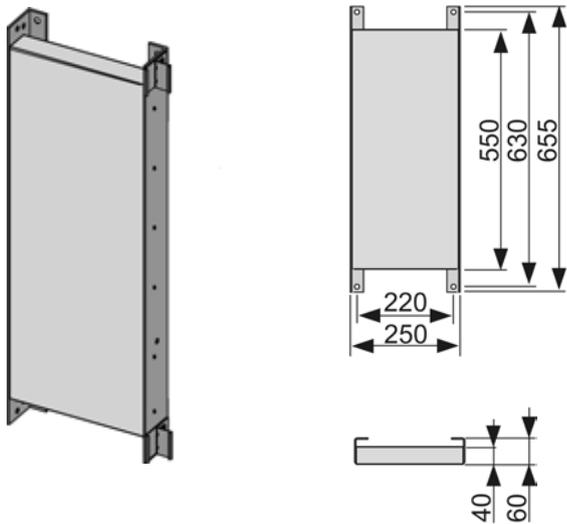


Washstand module with flush-mounted trap, and mounting plates for safety support arms

A senior-citizen and disabled toilet system places particular structural demands on the installation system. In order to resist the increased torque of the handles or safety support arms required, as well as from the extended toilet, it must be secured in a special way. The TECEprofil modules are constructed so solidly that it is possible to secure handles or safety support arms as well as a longer toilet with just two additional fixings.

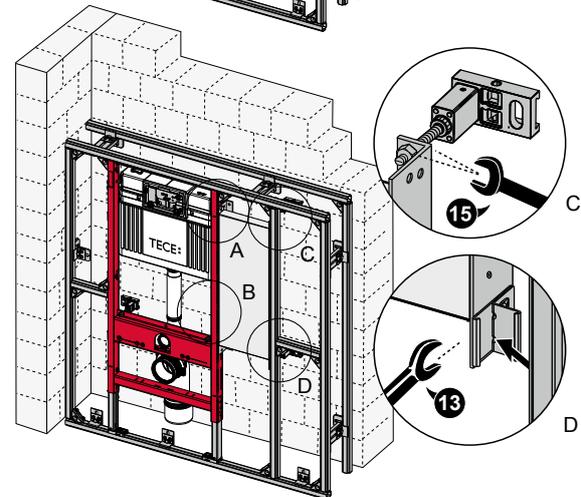
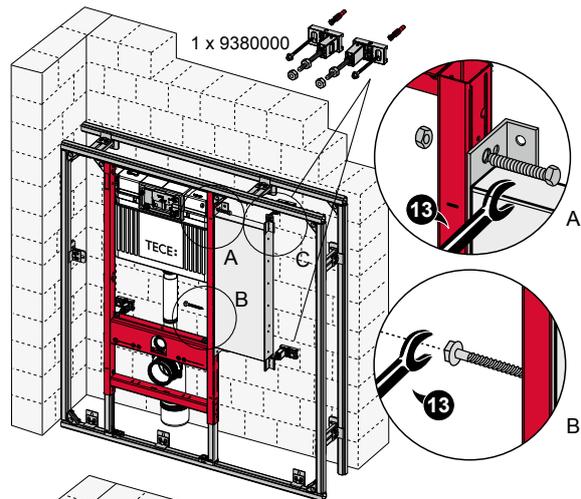
Barrier-free toilet system in a TECEprofil wall

Just one TECEprofil mounting plate is required per support to secure the safety support arms or handrails in a TECEprofil wall.

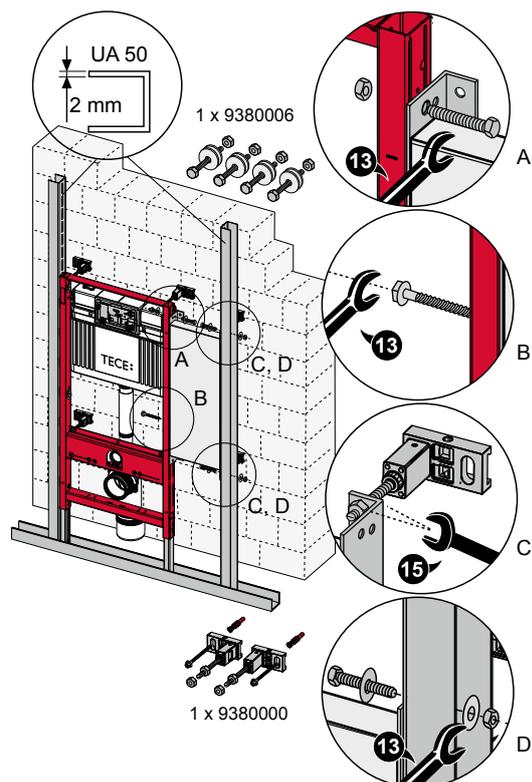


Mounting plate for safety support arms and support systems (order no. 9042003)

The mounting plate can be bolted directly to the universal module, and is equipped with multi-clips for securing to section tubes. The mounting plate must be secured to the solid wall with the TECEprofil modular attachments. The mounting plate is provided with the appropriate holes for this purpose. Furthermore, additional TECEprofil modular attachments (order no. 9380000) are required in the TECEprofil universal module's bowl area.



Installation of mounting plates for safety support arms with wall fixing (above) or multi-clips and section tube (below)



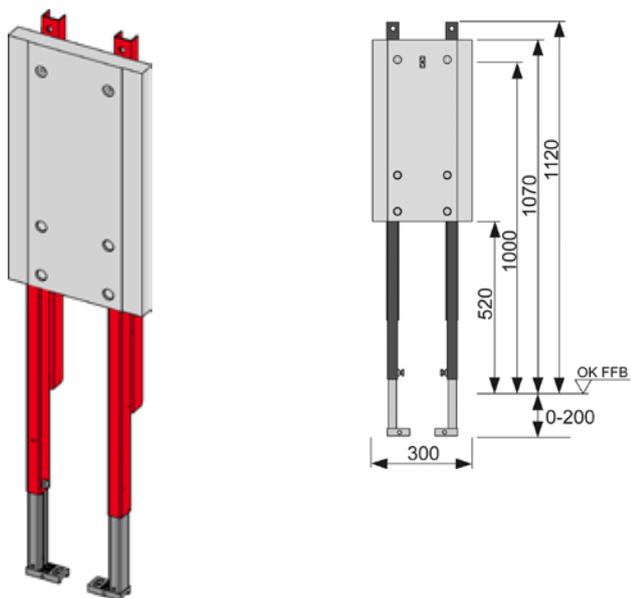
Installation in a metal stud wall

TECEprofil – barrier-free construction

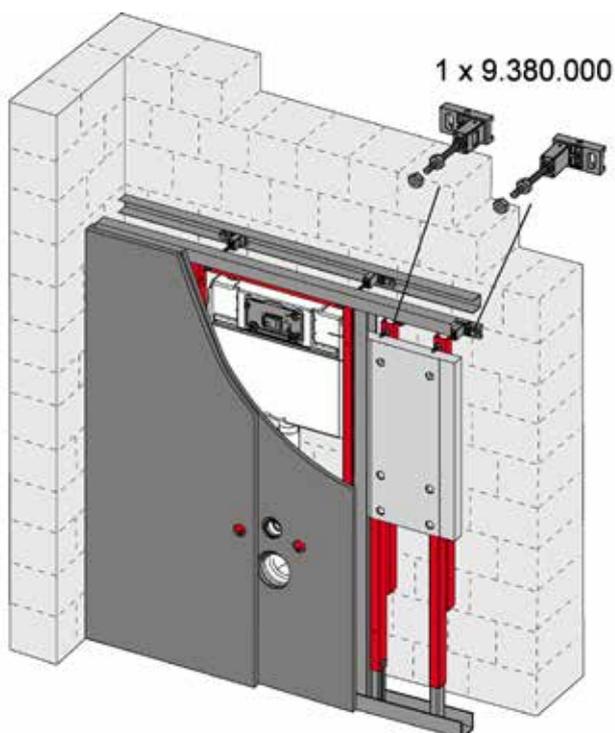
Barrier-free toilet system in an individual modular construction

To mount the safety support arms, one TECEprofil universal module for safety support arms and support systems is used. Furthermore, an additional TECEprofil modular mounting set (order no. 9380000) is required in the TECEprofil universal module's bowl area. This will be sufficient to satisfy the increased structural demands imposed by a barrier-free toilet system.

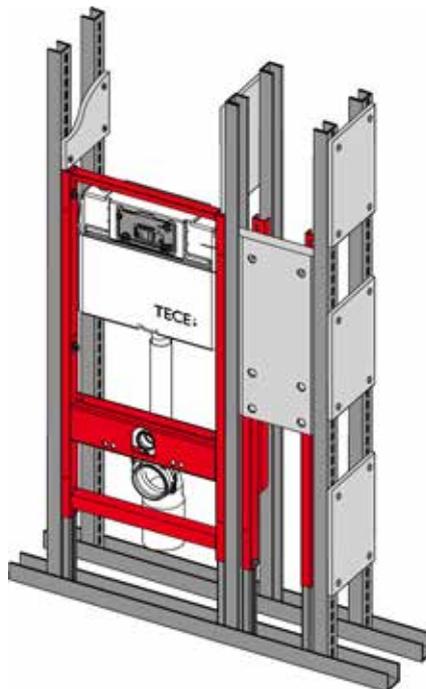
The toilet module and support arm module are prepared for installation on flush-mounted profiles (50 size).



Module for safety support arms and support systems (order no. 9360000)



Installing the module for the safety support arms and support systems with a flush-mounted profile in front of a solid wall

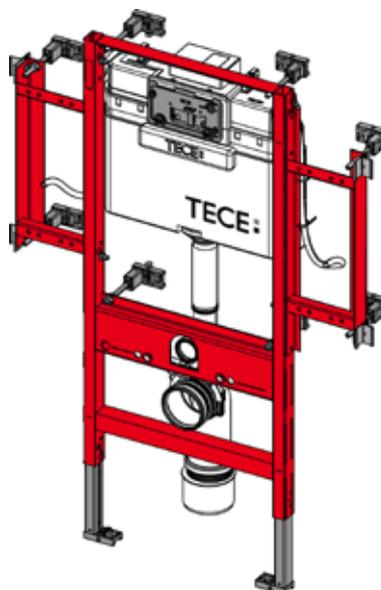


Installing the module for safety support arms and support systems in a free-standing wall with a flush-mounted profile

TECEprofil Geronto module

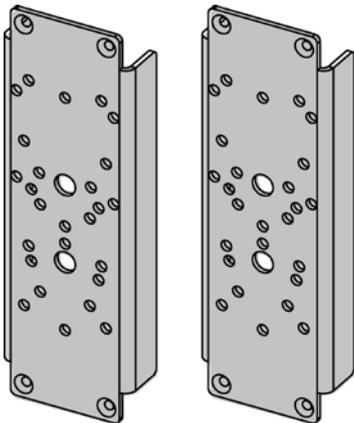
The Geronto module is based on the TECE toilet universal module. It has been specially developed for installation in barrier-free toilet systems.

All the required heights and widths from DIN 18 040-1 for creating a barrier-free toilet system in public buildings can be found again in this module. The crossbeam for fixing the toilet is 5 cm higher than in the standard module. The standard overall height of the pre-wall therefore remains unchanged.



TECE Geronto module (order no. 9300009)

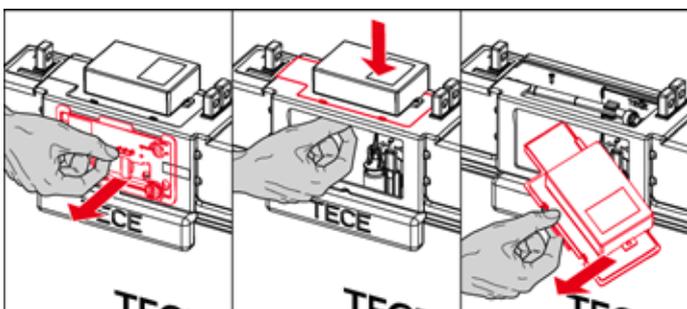
The steel side plates for mounting the safety support arms correspond exactly to the height and width requirements specified in DIN standard 18 040-1 for installing safety support arms. The steel side plates are easy to install. They are bolted to the basic frame using only four mounting bolts. Regardless which support arm manufacturer's equipment is installed, the dimensions will always fit.



Steel plate set, suitable for safety support arms made by most manufacturers

The steel side plates for mounting the safety support arms come in various sets for the different manufacturers' equipment and must be ordered separately. The modular system allows safety support arms from practically all manufacturers to be installed. The system retains its flexibility due to the fact that the toilet module and steel plates are separate.

Installing the cabling for the electronic flush actuation is child's play thanks to the conduit which is provided as standard. The conduit finishes at the top face of the tank and can be reached at any time via an inside opening tank cover. An electric socket screwed to the tank cover also makes it easy to wire up the electronics neatly. If servicing is required, the cables and electronics are accessible at all times.



Electric socket for wiring up on the tank top, can be taken out from inside

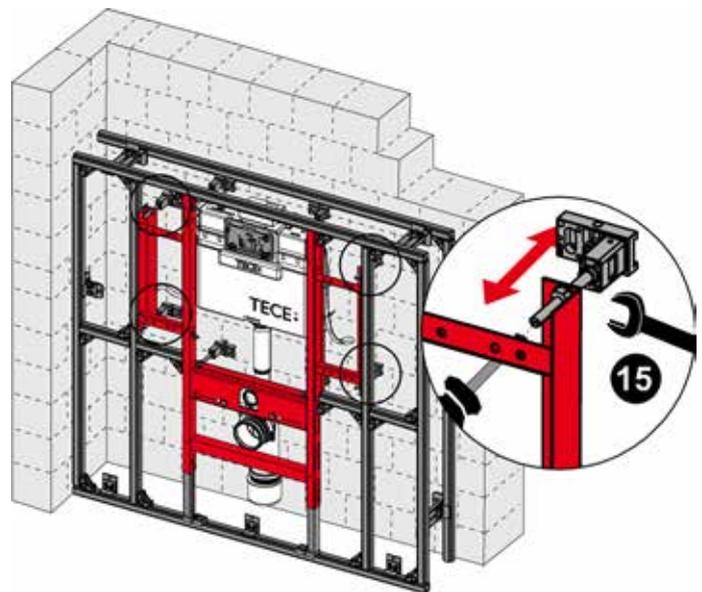
With the TECEplanus toilet electronics, TECE offers three flush actuation options to match the cistern: cable, wireless or infrared actuation. All three versions are available with battery or mains operation.

The electronic actuation unit works with a servo-motor that is operated with any commercially available 6 V lithium batteries or a 12 V power supply. The flush is actuated either by a button in the safety support arm or on the wall.

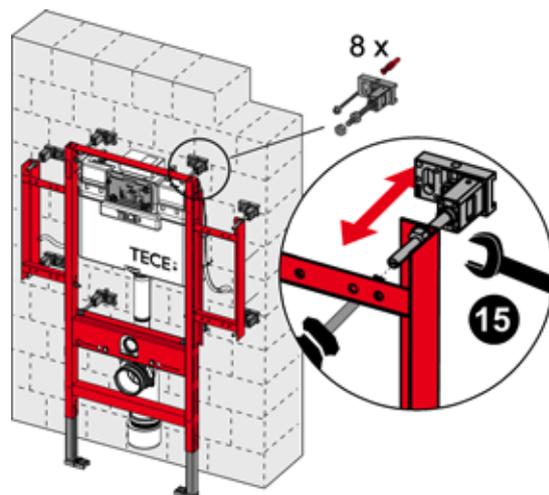
Installation options for the Geronto module

The Geronto module is variably adjustable:

- Installation in a TECEprofil pre-wall
- Installation as an individual module in front of a solid wall
- Installation in a metal stud wall

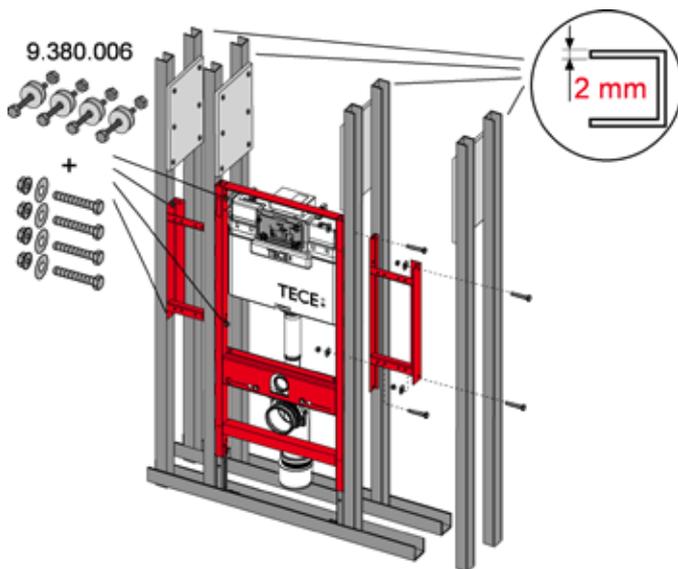


Installation in a TECEprofil pre-wall



Installation as an individual module in front of a solid wall

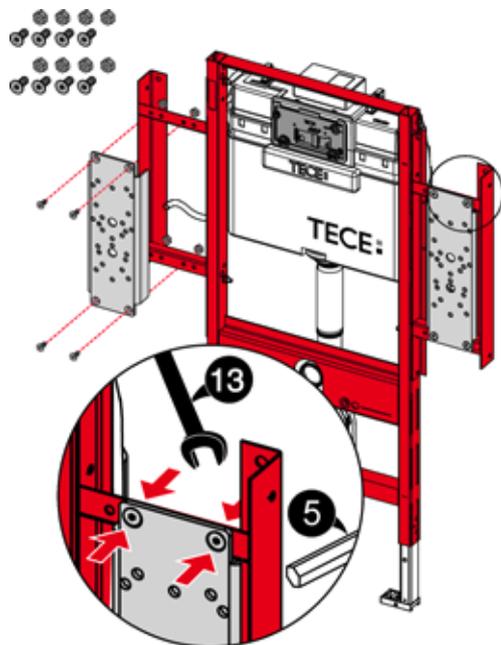
TECEprofil – barrier-free construction



Installation in a metal stud wall

Installing the steel plate set 90420xx on the Geronto module 9300009

The steel plate set belongs to the modular system of the toilet Geronto module 9300009. This set must be ordered to suit the safety support arms to be installed.



Installing the steel side plates on the Geronto module

On the installed toilet Geronto module, there are steel supporting frames at the sides for mounting the steel plate set. The steel plate set is bolted to the steel frame using four mounting bolts. Threaded plugs must be screwed into the appropriate threads, depending on the mounting points of the safety support arm. The exact position of the supported safety support arms is specified in the installation instructions. Later drilling of mounting points during the detailed installation phase is not necessary.

The conduit for a cable-connected release must be connected to the steel plate and the supplied screw fittings. This ensures secure retention of the conduit throughout the whole construction phase. The mounting plates must always be supported on a structural shell which is able to take the load, using the supplied wall attachments.

Sound insulation

Insulation against installation noise is becoming increasingly important in sanitary and heating technology. Particular attention has been given to sound insulation requirements in the development of TECEprofil pre-wall elements. TECE products also enable the increased demands for structural sound insulation to be met.

Not only the properties of the product, but planning tasks such as floor plan layout and the weights of walls are also very important for ensuring good sound insulation.

Relevant standards

Table 9 from DIN 4109-1:2016-07 describes the values for permissible sound pressure levels in rooms which require sound insulation. The values listed here are acknowledged as generally accepted engineering standards and always apply if no other agreement on sound insulation has been reached.

Table 9 from DIN 4109-1:2016-07

Column	1	2	3	4
Line	Sources of noise		Max. permissible A-rated sound pressure level in dB(A)	
			Living and sleeping spaces	Classrooms and work spaces
1	Plumbing technology/water installations (water supply and wastewater systems together)		LAF,max,n ≤ 30 a) b) c)	LAF,max,n ≤ 35 a) b) c)
2	Other permanently installed sources of noise in the building produced by technical equipment, supply and waste disposal systems or garage facilities		LAF,max,n ≤ 30 c)	LAF,max,n ≤ 35 c)
3	Restaurants including kitchens, sales outlets, companies, etc.	during the day from 6 a.m. to 10 p.m.	Lr ≤ 35 LAF,max ≤ 45	Lr ≤ 35 LAF,max ≤ 45
4		at night according to the German noise pollution prevention regulation (TA Lärm)	Lr ≤ 25 LAF,max ≤ 35	Lr ≤ 35 LAF,max ≤ 45

- a) Single short peaks which occur when operating the fittings and devices according to table 11 (opening, closing, changing over, interrupting, etc.) are not to be considered at the present time.
- b) Conditions for meeting the permitted sound pressure level:

the final planning documents must take into account the sound insulation requirements, i.e. the components must have the appropriate sound insulation certification;

In addition, the responsible construction management must be named and called in to take part in closing or cladding the installation.

- c) Notwithstanding DIN EN ISO 10052:2010-10, 6.3.3, measuring the loudest corner of a room is omitted (see also DIN 4109-4

Source: DIN 4109/table 9: The maximum available A-rated sound pressure level in another person's areas requiring sound insulation, generated by technical systems in buildings and services structurally connected to the building.

The main features of table 9 of DIN 4109-1:2016-07 are:

- Governs the requirements for structural sound insulation
- Sound insulation does not mean that noise must be completely prevented
- Requirements are different depending on building use and room use
- Individual short-term noise peaks during activation of fittings and devices (opening, closing, resetting, interrupting, etc.) are not taken into consideration.
- However, the building authorities do have requirements for minimum sound insulation in private living areas

The noise level requirements according to DIN 4109-1:2016-07 refer to “spaces requiring sound insulation” in another person's living area.

Rooms requiring sound insulation include:

- Living spaces including hall-cum-living rooms and eat-in kitchens
- Bedrooms including hotels and accommodation facilities
- Bedrooms in hospitals and nursing homes
- Classrooms in schools, high schools and similar institutions
- Office spaces
- Consulting rooms, meeting rooms and similar work-spaces

Rooms which do not require sound insulation within the meaning of DIN 4109 (only for installation noise) include for instance:

- One's own living area
- The room in which the sanitary fixture causing the noise is located
- “Loud” rooms in other people's living areas (e.g. bathroom, kitchen)
- Rooms in which persons do not regularly stay (e.g. cellars, storage spaces)
- Open-plan offices

Increased sound insulation

At least the requirement for increased sound insulation should always be agreed under the specifications of the standards and the actual noise levels required.

Because of the different requirements in the standards in information sheet 2 of DIN 4109:1989-11 and VDI 4100:2012-10, the sole indication “increased sound insulation” is unclear. To meet the requirements for increased sound protection levels actually at the building site, the greatest care must be taken during the planning and implementation phase. In case of doubt, we advise contacting a building acoustics specialist.

TECEprofil – sound insulation

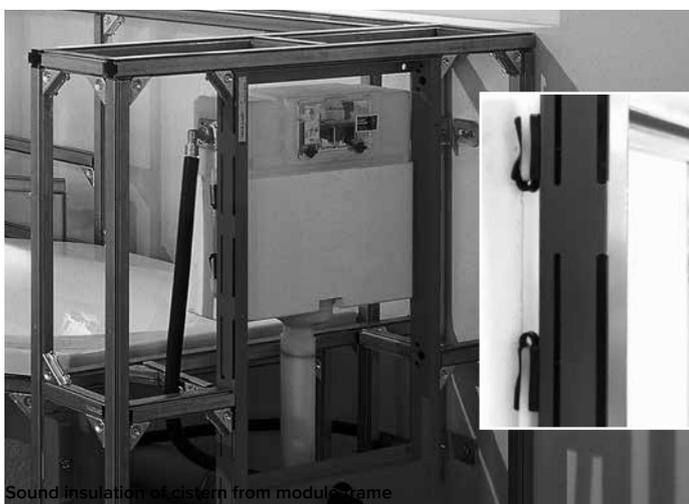
Overview of acoustic standards (sources of noise: plumbing technology, water installations)

Acoustic standard	Protected areas		Max. permitted installation noise level			
			Standard	Increased sound insulation ¹⁾		
				Sound insulation level I	Sound insulation level II	Sound insulation level III
DIN 4109 complies with the generally accepted engineering standard (recommendation: generally agreed under a works and services contract)	space requiring sound insulation, lying diagonally below in another person's living area		LAF,max,n ≤ 30 dB(A)	-	-	-
	neighbouring space requiring sound insulation in one's own area		no requirement	-	-	-
Supplement 2 to DIN 4109 ¹⁾ (contract for works and services required)	space requiring sound insulation, lying diagonally below in another person's living area		-	LAF,max,n ≤ 25 ²⁾ dB(A)	-	-
	neighbouring space requiring sound insulation in one's own area		-	no requirement	-	-
VDI 4100 ¹⁾ (contract for works and services required)	space requiring sound insulation, lying diagonally below in another person's living area		-	LAF,max,nT ≤ 30 dB(A)	LAF,max,nT ≤ 27 dB(A)	LAF,max,nT ≤ 24 dB(A)
	neighbouring space requiring sound insulation in one's own area		-	LAF,max,nT ≤ 30 ³⁾ dB(A)	LAF,max,nT ≤ 25 ³⁾ dB(A)	LAF,max,nT ≤ 22 ³⁾ dB(A)

- 1) If increased sound insulation is required, the standard and the exact numeric value of the increased sound insulation must be explicitly agreed in the works and services contract.
- 2) Sound pressure level values of 5 dB(A) or more under the values specified in DIN 4109/11.89, table 4 can be regarded as an effective reduction. In this case, additional measures for airborne and impact sound insulation are required.
- 3) Caution: According to VDI guideline 4100, increased sound insulation in one's own area is automatically understood as agreed in a works and services contract.

TECEprofil system sound-proofing measures

Particular attention has been paid to sound insulation requirements in the development of TECEprofil. For example, special decoupling components specifically reduce the transfer of acoustic waves. Different structures have been tested in collaboration with various well-known institutes. The acoustic properties according to DIN 4109 have been confirmed by expert assessments.



Sound insulation of cistern from module frame



Sound insulation of crossbeam from module frame

Should you have any questions about structural sound insulation, including in relation to a project, we would be pleased to help. Expert reports and statements available on request.



Fraunhofer Institut Bauphysik

MPA NRW Materialprüfungsamt Nordrhein-Westfalen

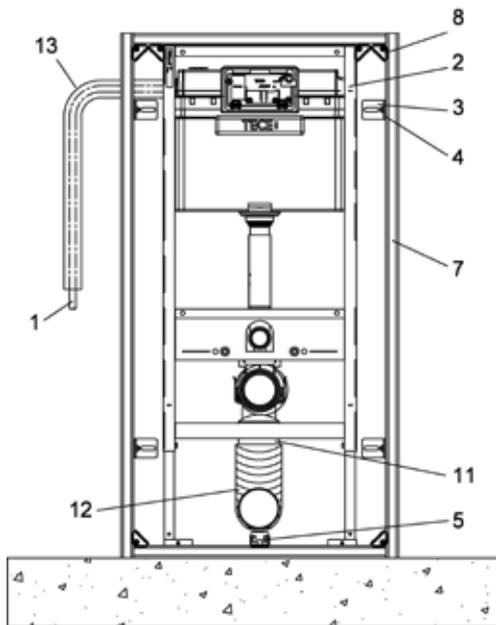
KÖTTER CONSULTING ENGINEERS

TECEprofil sound insulation verification

Installation sound level LAF,max,n (Lin)

Example:

For the experimental construction, a TECEprofil pre-wall was installed in front of a structural shell wall according to DIN 4109. The installation sound was measured in a room lying diagonally below the installation room.



Experimental construction with TECEprofil pre-wall and toilet module

A standard high temperature pipe was used for the insulated wastewater pipe (12). The condensation-protected fresh water pipe (13) was created using TECEflex (1). TECEprofil sound insulation set (order no. 9200010) was installed to sound-proof the toilet ceramics. All angle brackets (3) of the TECEprofil pre-wall were provided with a sound insulation set (4) (order no. 9021019). The TECEprofil universal module (order no. 9300000) was equipped with the TECE cistern (2). The standard volume of 6 litres was flushed. The filling time was 90 seconds.

Installation sound level LAF,max,n (Lin) according to DIN 52 219 and DIN 4109 in dB(A)	
Excitation	Measuring room rear lower floor (diagonally below the installation room)
TECEprofil universal module with TECE cistern (without wastewater pipes)	19 dB(A)

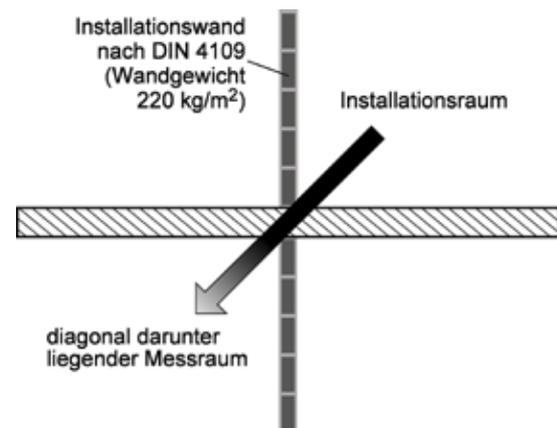
The acoustic data is based on measurements taken by the Fraunhofer Institute for Building Physics in Stuttgart (Germany). The measurements were taken on the basis of German standards and guidelines under real-life conditions.

Item	Item name	Item number
Shell construction installation		
1	TECEflex composite pipe 16 mm	732016
2	TECEprofil toilet module	9300000
3	TECEprofil double joint	9030011
4	TECEprofil sound insulation set for angle bracket	9021019
5	TECEprofil angle bracket	9030002
6	TECEprofil panel, 18 mm	9200000
7	TECEprofil section tube	9000000
8	TECEprofil corner joint	9010002
9	TECEprofil knifing filler	9200002
10	TECEprofil panel screw	9200001
11	DN 100 HT wastewater pipe	-
12	Adhesive felt bandage	-
Detailed installation		
13	TOTO deep flush toilet ceramic	
14	TECE sound insulation set for toilet	9200010
15	TECEambia toilet flush plate	9240200

TECEprofil list of components

All data relates to the structural relationships and the installation conditions shown which are found in the installation test rig at the Fraunhofer Institute for Building Physics. The test rig represents a section from a typical residential building and can be used as a direct verification of building authority sound insulation requirements. Other structural data may lead to different results.

Influence of wall mass on the installation noise level

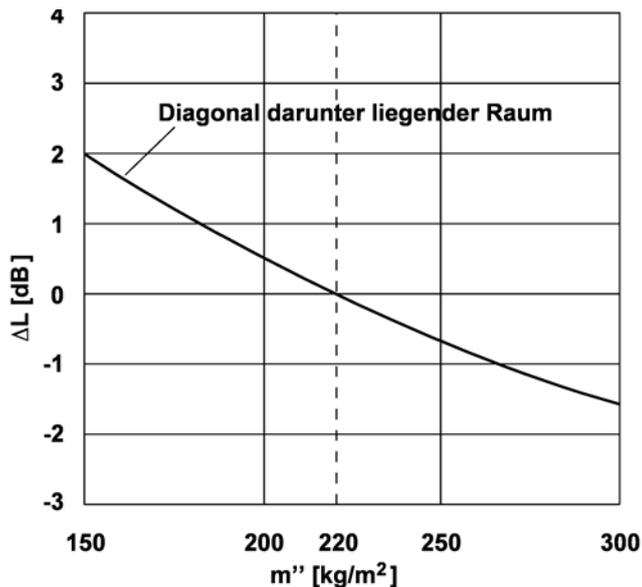


Location of installation and measuring rooms

The graph shows the change in installation noise in the room lying diagonally below the installation room (rear lower floor) as a function of the mass per unit area of the installation wall for the same noise excitation. The plot shown is the noise level difference compared with an installation wall with a mass per unit area of $m'' = 220 \text{ kg/m}^2$.

TECEprofil – sound insulation

TECEprofil



Change in the installation noise level – calculated results

(calculated by the Fraunhofer Institute for Building Physics, Stuttgart)

The calculated results shown refer to the relationships in the installation test rig at the Fraunhofer Institute for Building Physics and cannot be directly applied to other building situations. To simplify the calculations, it was assumed that the thickness, inner damping and module of elasticity of the installation wall do not change.

Rated sound reduction index $R'w$

According to DIN 4109, general requirements for sound insulation apply to dividing walls in other people's living and working areas. Here, this concerns the value known as "rated sound reduction index" $R'w$. The rated sound reduction index $R'w$ characterises the airborne sound reduction by components.

Extract from DIN 4109-1:2016-07

Requirements in multi-storey dwellings, offices and mixed-use buildings

The requirements for airborne sound reduction $R'w$ and impact noise insulation $L'n,w$ between other people's

functional units, e.g. between other people's flats and/or between flats and other people's work areas (offices, doctor's practices and businesses) are listed in table 2.

Extract from table 2:

Line	Components	Requirements		Comments
		$R'w$ dB	$L'n,w$ dB	
13	Walls dividing flats and walls between other people's work areas	≥ 53	–	Walls dividing flats are components which separate flats from each other or from other people's work areas.
14	Staircase walls and walls adjacent to hallways	≥ 53	–	For walls with doors, the requirement $R'w$ (wall) = $R'w$ (door) + 15 dB applies where, $R'w$ (door) means the required sound proofing for the door according to line 18 or line 19. wall widths ≤ 30 cm are not taken into account in the process.
15	Walls adjacent to passageways and communal garages including driveways	≥ 55	–	
16	Walls of games rooms or common rooms	≥ 55	–	
17	Shaft walls of lift systems adjacent to residential rooms	≥ 57	–	

Requirements between detached houses, terraced houses and between semi-detached houses

Table 3 contains requirements for airborne noise insulation R'_w and impact noise insulation L'_{n,w} between detached houses/terraced houses and between semi-detached houses.

Extract from table 3

Line		Components	Requirements		Comments
			R' _w dB	L' _{n,w} dB	
4	Walls	Separating walls between residential areas located on the lowest floor (in contact with the ground or not) of a building	≥ 59	–	
5		Separating walls between residential areas beneath which there is at least 1 of the building's floors (in contact with the ground or not)	≥ 62	–	

Hotels and accommodation facilities

The airborne noise insulation R'_w and impact noise insulation L'_{n,w} in hotels and accommodation facilities are listed in table 4.

Extract from table 4

Line		Components	Requirements		Comments
			R' _w dB	L' _{n,w} dB	
5	Walls	Walls between accommodation facilities and walls between hallways and accommodation facilities	≥ 47	–	In the case of dividing walls between other people's accommodation facilities with doors, the resulting sound insulation of the wall/door combination R' _{w,res} ≥ must be 49 dB.

Hospitals and nursing homes

The airborne noise insulation R'_w and impact noise insulation L'_{n,w} in wards in hospitals and nursing homes are listed in table 5.

Extract from table 5:

Line		Components	Requirements		Comments
			R' _w dB	L' _{n,w} dB	
5	Walls	Walls between: - hospitals - halls and wards - examination or consultation rooms - halls and examination or consultation rooms - wards and workspaces and care rooms	≥ 47	–	
6		Walls between rooms which must remain quiet and particularly confidential (discretion)	≥ 52	–	
7		Walls between: - operating theatres or treatment rooms - hallways and operating theatres or treatment rooms	≥ 42	–	
8		Walls between: - intensive care rooms - hallways and intensive care rooms	≥ 37	–	

TECEprofil – sound insulation

Schools and similar institutions (e.g. training centres)

The airborne noise insulation R'_{w} and impact noise insulation $L'_{n,w}$ between rooms in schools and similar facilities are listed in table 6.

Extract from table 6:

Line		Components	Requirements		Comments
			R'_{w} dB	$L'_{n,w}$ dB	
4	Walls	Walls between classrooms or between similar rooms and hallways	≥ 47	–	Similar rooms also include rooms which must remain quiet e.g. dormitories.
5		Walls between classrooms or similar rooms and stairwells	≥ 52	–	
6		Walls between classrooms or similar rooms and “loud” rooms (e.g. dining rooms, cafeterias, music rooms, games rooms, technical centres)	≥ 55	–	
7		Walls between classrooms or similar rooms and sports halls and work areas, for instance	≥ 60	–	

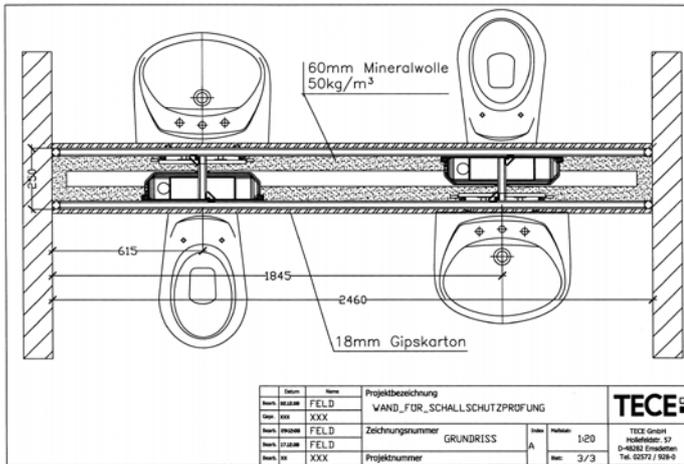
Extract from supplement 2 to DIN 4109

One's own living or work area

Sound insulation of dividing walls within one's own living or work space, rated sound reduction index R'_{w} between 2 rooms; suggestions according to DIN 4109 supplement 2 for normal and increased sound insulation:

Line	Description	Rated sound reduction index R'_{w} according to DIN 4109 supplement 2	
		Normal requirements	Increased requirements
4	Residential building - Walls without doors between “loud” and “quiet” rooms with various uses	≥ 40 dB	≥ 47 dB
5	Offices and administration rooms - Walls between rooms with usual office activities - Walls between these and hallways - Walls of rooms for concentrated intellectual activity	≥ 37 dB ≥ 37 dB ≥ 45 dB	≥ 42 dB ≥ 42 dB ≥ 52 dB

Test rig measurement “rated sound reduction index R'_w ” according to DIN 4109

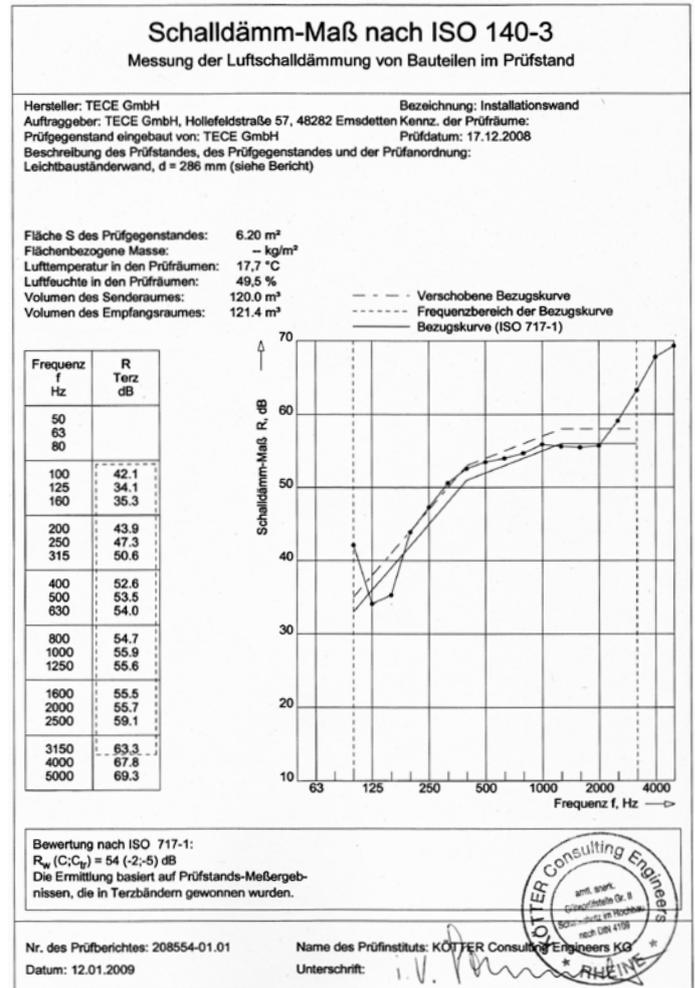


Construction of the tested TECEprofil dividing wall

An acoustics report has demonstrated that dividing walls using the TECEprofil system meet sound insulation requirements. The tested floor-to-ceiling TECEprofil dividing wall was allocated a cistern and a washstand on both sides. The thickness of the unpanelled dividing wall was 250 mm. The inside cavity of the dividing wall was filled with 60 mm-thick mineral wool (50 kg/m^3) on both sides. The dividing wall was covered with 18 mm-thick plasterboard panels and the joints between them were filled.

The rated sound reduction index $R'_{w,R}$ which was determined gave a test value of 52 dB(A). As a consequence, dividing walls made of TECEprofil including sanitary fixtures, for instance in hotels, schoolrooms or hospitals etc. are permitted.

Dividing walls between dwellings may not be created with the TECEprofil system.



Extract from the test report

TECEprofil – sound insulation

TECEprofil dry-wall construction system – sound insulation according to DIN 4109-1:2016-07

TECEprofil pre-wall installation in front of a solid dividing wall made of sand-lime blocks or gypsum wall panels



Installation sound level (with wastewater pipes)		Sand-lime block 220 kg/m ²		Multigips gypsum wall panels 140 kg/m ²		Multigips gypsum wall panels 120 kg/m ²		Multigips gypsum wall panels 112 kg/m ²	
		LAF,max,n 23 dB(A)	LAF,max,nT 20 dB(A)	LAF,max,n 22 dB(A)	LAF,max,nT 21 dB(A)	LAF,max,n 30 dB(A)	LAF,max,nT 29 dB(A)	LAF,max,n 19 dB(A)	LAF,max,nT 18 dB(A)
DIN 4109-1:2016-07		✓		✓		✓		✓	
DIN 4109 supplement 2		✓		✓				✓	
VDI 4100:	SSt I		✓		✓		✓		✓
	SSt II		✓		✓				✓
2012-10	SSt II		✓		✓				✓

TECEprofil as a space-enclosing dividing wall



Sound reduction index

$$R_{w,R} = 52 \text{ dB(A)}$$

TECEprofil – sound insulation

TECEprofil pre-wall installation in front of a dry-wall construction dividing wall (Knauf & Co., W112)

TECEprofil



Installation sound level* (without wastewater pipes)	Standard requirements DIN 4109/1	Increased requirements DIN 4109/supplement 2
LAF,max,n = 19 dB(A)	✓	✓

*expert opinion of the Fraunhofer Institute in Stuttgart

TECEprofil in a space-enclosing dry-wall construction (Knauf, W116)



Installation sound level* (without wastewater pipes)	Standard requirements DIN 4109/1	Increased requirements DIN 4109/supplement 2
LAF,max,n = 19 dB(A)	✓	✓

*expert opinion of the Fraunhofer Institute in Stuttgart

TECEprofil – sound insulation

TECEbox brick-wall structure system – sound insulation according to DIN 4109-1:2016-07

TECEbox 9370000/9375000 in front of a solid dividing wall made of sand-lime blocks with a weight per square metre of 220 kg/m²



Installation sound level (without wastewater pipes)	Standard requirements DIN 4109/1	Increased requirements DIN 4109/supplement 2
LAF,max,n = 29 dB(A)	✓	--

TECEbox plus 9371000 including building area cover 9200012



Installation sound level (without wastewater pipes)	Standard requirements DIN 4109/1	Increased requirements DIN 4109/supplement 2
LAF,max,n = 28 dB(A)*	✓	--

*The cavity below the cistern and the cavity in the drain area must be filled with mineral wool for this purpose.

Fire protection

TECEprofil dividing walls with fire protection requirements

With the TECEprofil system, non-load-bearing, room-enclosing dividing walls with EI 30–EI 120 fire protection specifications can be created, which basically consist of a metal stud frame (TECEprofil), a two-sided plasterboard facing panel, sanitary fixtures and insulation material. The dividing walls may be implemented with any wall width and a maximum wall height of 4.5 metres. The structural proof for these wall constructions was produced at the Braunschweig Materials Testing Institute (MPA).

No special components are needed for the TECEprofil supporting frame. All standard components from the TECEprofil system can be used. The single-layer 18 mm-thick TECE system panel facing or alternatively 2 x 12.5 mm thick plasterboard can be used for the panel facing.

Depending on the required fire resistance class, the walls must be built according to the specifications and packed with mineral wool. For specifications EI 90 and above, the dividing walls must always be fully packed with mineral wool over the whole area (melting point > 1000°C). The thickness of the walls must be taken into account.

Construction of a dividing wall (EI 30–EI 120)

The dividing wall must be divided into vertical box sections according to the width of the wall. One box section must not be wider than 1 metre. The maximum permitted height of a box section is limited to 4.5 metres. The vertical profiled tubes of neighbouring box sections are drilled and secured together using threaded bolts. This type of mounting considerably simplifies the prefabrication and on-site installation. Single box sections can easily be put together to form a dividing wall. The wall must be secured all-round to a solid wall. The distance between fixings into the wall, ceiling and floor must not exceed 0.6 metres. If there are any deviations from the tested construction, the TECE Service Department must always be consulted. Minor changes during construction are possible, however they must be approved by TECE.

Quick overview of the EI 30–EI 120 construction variants

The required fire specification greatly influences the construction thickness and its fixtures. The following table provides a simplified overview of the differences between the fixtures.

Resistance time	EI 30	EI 30	EI 60	EI 90	EI 120
Min. wall thickness incl. panel facing in mm	286	386	286	386	386
max. height in m	4.5	4.5	4.5	4.5	4.5
max. width	unlim.*	unlim.*	unlim.*	unlim.*	unlim.*
Filling only in the area of the installed elements	no	yes	no	no	no
Full filling of the wall required	yes	no	yes	yes	yes
Standard flush-mounted E-socket	yes	yes	no	yes	yes
water meter	yes	yes	no	yes	no
fan installation	yes	yes	yes	yes	yes
cooling lines	yes	yes	yes	yes	yes
plasterboard 1 x 18 mm or 2 x 12.5 mm	yes	yes	yes	yes	yes
shower channel	yes	yes	yes	yes	yes
wooden panels	yes	yes	yes	yes	yes
One-sided allocation	yes	yes	yes	yes	yes
Double-sided allocation	yes	yes	yes	yes	yes
KF pipe, max. DN 125	yes	yes	yes	yes	yes
SML pipe, max. DN 125	yes	yes	yes	yes	yes

* unlimited

Mineral wool:

TECEprofil dividing walls for which fire protection specifications are stipulated, must be packed with mineral wool (melting point > 1000 °C) depending on the fire resistance class required. Only the following mineral wool types are permitted for packing TECEprofil dividing walls with fire protection specifications:

- Rockwool: Termarock 50 and Rockwool RL loose wool
- Isover: Protect BSP 50 and Isover loose wool SL
- TECE: TECEprofil fire protection panel set (9200017)

Only cavities which are not filled by the fire protection panels may be filled with the same type of loose fire-retardant wool.

Packing the walls:

For the EI 30 requirements, there are two possible ways in which a room dividing wall with fire protection specifications can be suitably packed.

1) Minimum distances between the insulation for EI 30 requirements

Sanitary fixtures	Minimum distance above/below in mm	Minimum distance left/right in mm
Ventilation boxes	≥ 171	≥ 192
Fittings crossbeam (shower)	≥ 176 header top edge	≥ 243.5
shower channel	≥ 154 header top edge	≥ 265 ≥ 412
washstand crossbeam	≥ 308 ≥ 417	≥ 223
Socket/flush-mounted box	≥ 166	≥ 166
water meter	≥ 240.5	≥ 322
Toilet module	≥ 196.5 ≥ 555	≥ 217

2) Simplified rule for packing EI 30 room dividing walls

To make packing of the fixtures on an EI 30 room dividing wall easier and more practical, the following rules can be applied:

- The wall must be fully and consistently packed 0.5 m above the unfinished floor. Horizontal outlet pipes must only be laid in the insulated area of the wall.
- All fixtures within a circumference of 30 cm from the outside of the wall opening must be insulated.
- A fire protection set must be installed in the area near each toilet module. The cavities on the toilet module must be packed across the entire area.
- Insulation dimensions on fixtures installed back-to-back should be taken into account.



TECEprofil – fire protection

Packing for EI 90/EI 120 – requirements

For fire protection specifications EI 90 and above, the dividing wall must always be fully packed, tightly and without cavities. For toilet fixtures, a fire protection panel set must always be installed for each toilet. Only the listed mineral wools/packing wools from the manufacturers named above may be used to pack the dividing wall.

Example constructions:



EI 90 from 386 mm wall thickness



EI 90 from 286 mm wall thickness

Panel facing

The panel facing can be made with the 18 mm-thick TECEprofil system facing or alternatively with 2 x 12.5 mm-thick plasterboard (GKBi type). With double panelling, both panel faces must be completed with a panel offset of < 400 mm. Joints opposite each other must be avoided when building the wall. The size of the panels must be limited to < 1,350 mm x < 625 mm. To secure the panelling, 3.5 mm x 35 mm screws must be used, at a distance of a < 150 mm apart. The joints must be filled with TECEprofil knifing filler.

Fixtures

Taking into consideration each technical regulation (e.g. building regulations) and fire resistance periods, the following fixtures may be used:

- a) fan housing with F 90 fire protection housing and maximum outside dimensions of 249 x 249 mm, distance between backs $a \geq 160$ (wall $d \geq 386$ mm) or $a \geq 46$ mm (wall $d \geq 286$ mm)
- b) installation boxes for water fittings (e.g. Hans Grohe i-box)
- c) shower channels, e.g. TECEdrainline
- d) connection units and modules e.g. for washstand, bidet, urinal etc.
- e) Toilet module with TECE cistern, with back-to-back installation, minimum distance apart $a \geq 56$ mm
- f) mounting plates made of building plywood, e.g. for mounting safety support arms, max. dimensions (w x h x d) = 215 mm x 550 mm x 40 mm
- g) insulated water meter units with shut-offs, max. dimensions w x h = 290 mm x 290 mm, depth d = 70 mm, distance apart for back-to-back installation of the housing $a \geq 210$ mm (wall $d \geq 386$ mm)
- h) flush-mounted electric socket without fire protection approval

Pipework

In TECEprofil dividing walls with fire protection specifications, the most varied pipe materials may be used. No special manufacturers are specified here. The following pipe materials have been tested and authorised:

Ventilation pipes:

- DN 125 folded spiral seam pipe \leq with DN 80 steel braided pipes

Foul water and rain water pipes:

- Sound insulated plastic pipe up to DN 125
- SML cast iron pipe up to DN 125

Fresh water, heating and cooling pipes:

- Plastic pipes up to 63 mm (outside diameter)
- Multi-layer composite pipes up to 63 mm (outside diameter)
- Metal pipes made of copper or stainless steel up to 63 mm (outside diameter)

Pipes may be insulated with foam insulation (e.g. rubber-based), aluminium-clad mineral wool (e.g. Rockwool RS 800) or corrugated tubes.

Electric cables

Individual cables may pass through the classified space-enclosing wall structures, provided that the remaining hole cross-section is completely closed with plaster.

Implementation of bundled electric cables requires partitioning, the fire resistance class of which must be proven according to DIN 4102-9: 1990-05. Further evidence of suitability is necessary, e.g. within the scope of the issue of a general technical approval.

For the horizontal implementation of bundled electric cables, installation channels, cable ducts or ventilation lines, partitioning is required, the fire resistance class of which must be proven according to DIN 4102-11: 1985-12, DIN 4102-12: 1988-11 or DIN 4102-6: 1977-09. Further evidence of suitability is necessary, e.g. within the scope of the issue of a general technical approval or a general appraisal certificate.

Electrical sockets

Depending on the application, standard wall-mounted electrical sockets may be used, combined with packing at the rear with mineral wool.

Only exception: EI 90 with a wall thickness of ≤ 386 mm
In this case, a flush-mounted electrical socket with EI 90 approval must be used.

Fan fixtures

Fan boxes may be arranged in the dividing walls directly opposite each other or offset. Care must be taken to ensure that for all the required fire classes, only fan boxes with a EI 90 approval may be used. The connection ducts to the fan and the riser ducts must always be made of steel.

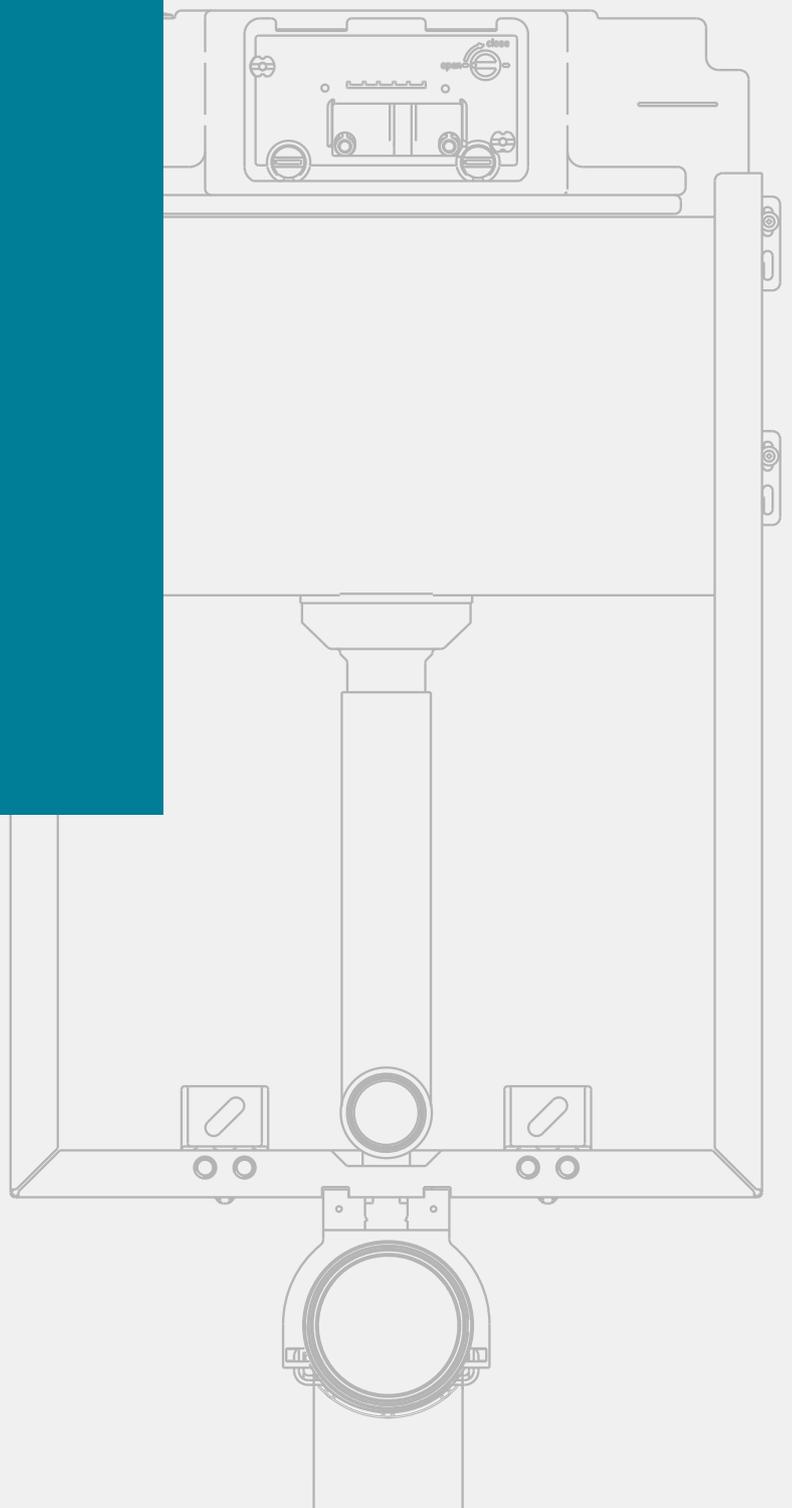
If shut-off units providing protection against the transmission of fire are to be built into fan ducts with certain fire resistance classes, the suitability of these fixtures in combination with the wall construction must be proven according to DIN 4102-5: 1977-09, DIN 4102-6: 1977-09 or DIN 4102-13: 1990-05. Further evidence of suitability is necessary, e.g. within the scope of the issue of a general technical approval.



Sanitary systems

TECEbox

TECHNICAL GUIDELINES



System description	4-4
TECEbox	4-4
Installing the TECEbox	4-5
Mounting the TECEbox – low installation height	4-6
TECEbox plus	4-8
Installing the TECEbox plus	4-8
TECEone upgrade set for brick-wall construction	4-10
TECEbox washstand	4-11
Installing the TECEbox washstand	4-11
TECEbox U 1 urinal flush valve housing	4-12
Installing the TECEbox U 1 urinal flush valve housing	4-12
TECEbox U 2 urinal flush valve housing	4-14
Installing the TECEbox U 2 urinal flush valve housing	4-14
Sound insulation	4-16
Sound insulation expert opinions for toilet modules of the TECEbox series	4-16

TECEbox – System description

System description

TECE offers modules from the TECEbox series especially for brick-wall construction. In brick-wall constructions, TECEbox modules are bricked in with mortar or concrete. The modules are first installed and connected in front of a solid wall. The fact that sound insulation is not neglected here is demonstrated by sound insulation expert reports carried out at the Fraunhofer Institute in Stuttgart. All brick-wall toilet modules meet DIN 4109 standard sound insulation requirements. As the modules are not self-supporting, they are not suitable for use in dry-wall structures.

TECEbox

Standard versions of the TECEbox series are available for standard or low installation height, e.g. for installations beneath windows.



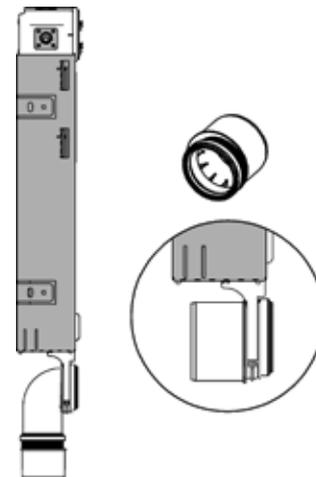
TECEbox brick-wall module, standard height (order number 9370000)



TECEbox brick-wall module, low height (order number 9375000)

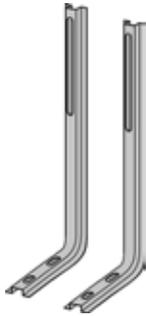
The low installation height enables flush actuation from the top and from the front. The key component of the toilet brick-wall modules is, as always, the TECE cistern. This is characterised, among other things, by its full compatibility with all TECE flush plates.

The surrounding steel frame ensures secure mounting in front of a solid wall. The two-part drain bend enables connection of DN 90 or DN 100 wastewater pipes. The adapter can also be used as a horizontal outlet.



Two-part drain bend – also for horizontal connection

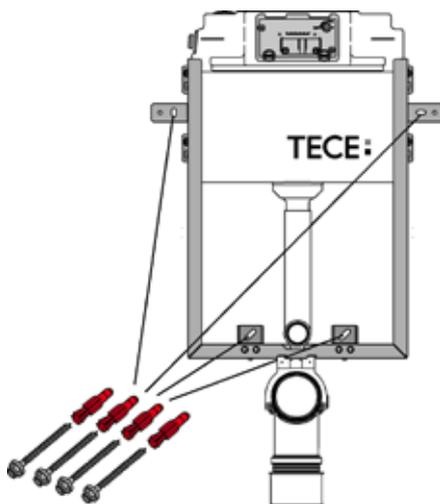
For the TECEbox standard installation height, optional assembly feet are available as a mounting accessory (order no. 9030024).



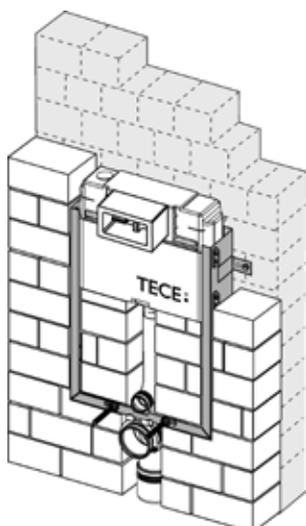
TECEbox assembly feet (order no. 9030024)

Installing the TECEbox

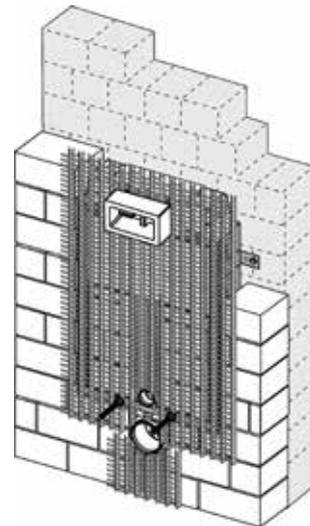
Align the TECEbox in front of the solid wall and screw it onto the brackets (above) or elbow brackets (below) provided for the purpose.



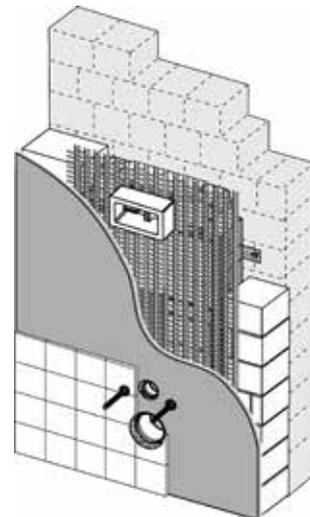
The module must be completely bricked into the wall and all remaining hollow spaces must be filled in. Install the bare-wall protection and the threaded rods.



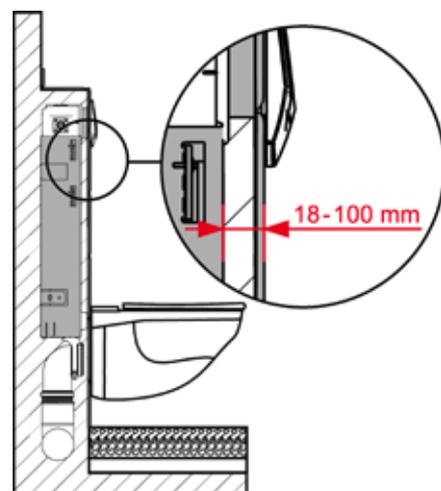
Then attach the expanded metal – see diagram.



You can then apply the plaster and tile the surface.



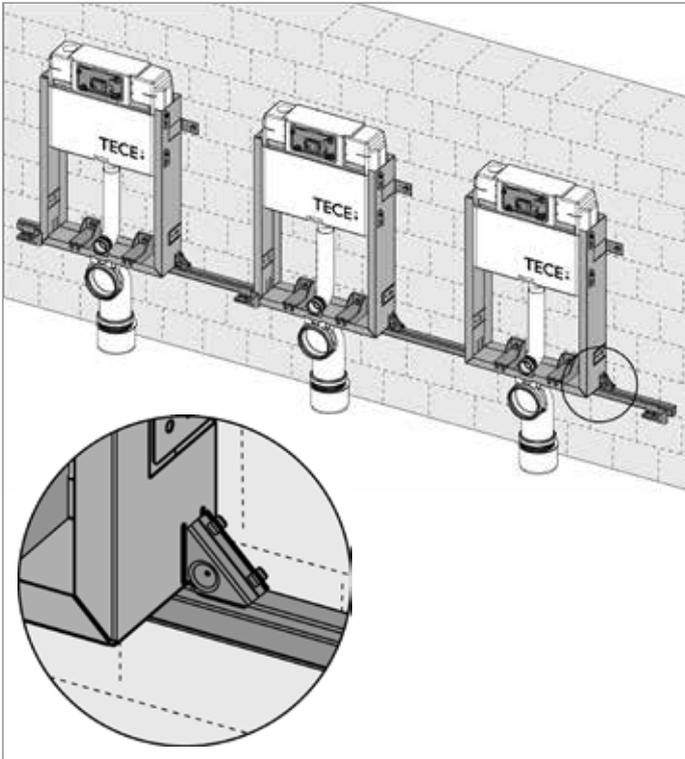
The thickness of the wall must be at least 18 mm but no more than 100 mm. See the section on flush plates for information about the wall structure required for the respective flush plate.



TECEbox – TECEbox

TIP:

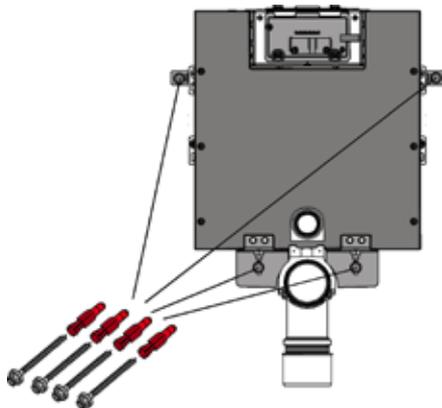
Series installation with the TECEbox is facilitated by means of the TECEprofil tube and corner joints. The brick-wall construction frames can be easily positioned on the TECEprofil tube through the side slot in the steel frame, and fixed using the corner joints. This makes alignment easier. In this case, the modules then only have to be screwed to the wall by means of the two top fastening clips.



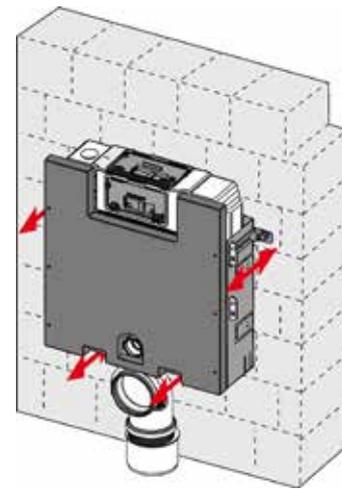
TECEbox series installation – with TECEprofil tube and corner joints

Mounting the TECEbox – low installation height

The TECEbox for a low installation height must be aligned in front of the solid wall and screwed onto the clips (top) and angle brackets (bottom).

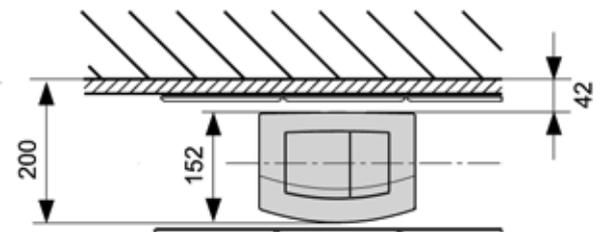
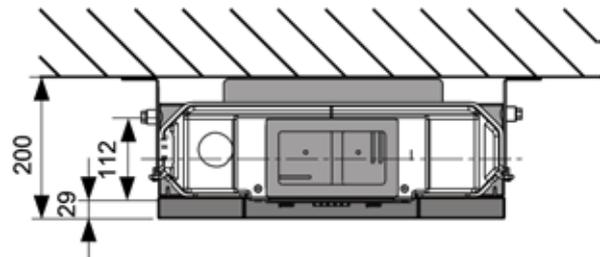


Set the required distance to the wall at the four depth-adjustable positions.



Top actuation:

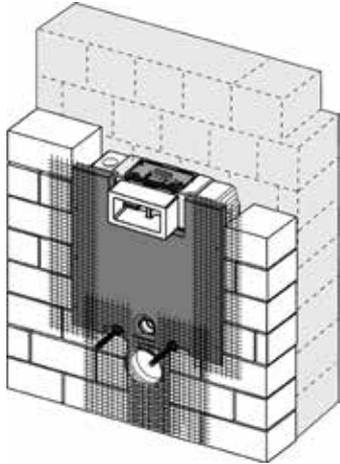
For top actuation, a minimum distance of 200 mm from the wall to the top edge of the module must be ensured. The front structural board serves as the minimum projection and must not be removed, as it prevents the flush plate from protruding at a later stage.



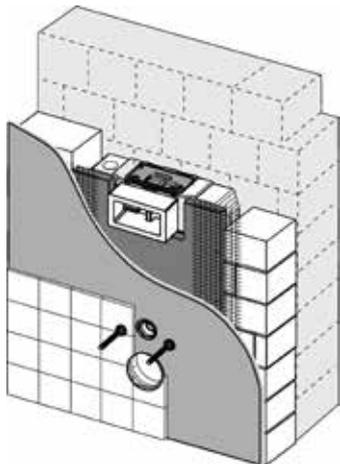
Front actuation:

For front actuation, the minimum installation depth of the toilet module is 160 mm.

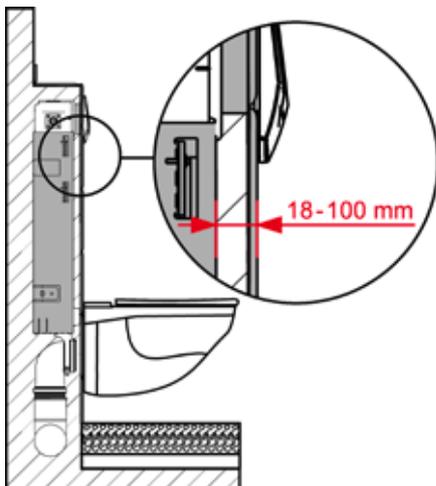
The module must be completely bricked into the wall and all remaining hollow spaces must be filled in. Install the bare-wall protection and the threaded rods. Then attach the expanded metal – see diagram.



You can then apply the plaster and tile the surface.

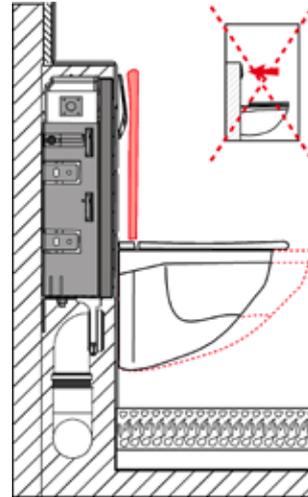


The thickness of the wall must be at least 18 mm but no more than 100 mm. See the section on flush plates for information about the wall structure required for the respective flush plate.



Note:

In the case of cisterns with a low installation height, if the flush plate is fitted in front and a compact ceramic system is used, the toilet lid may occasionally drop down unintentionally. Consequently, when a compact ceramic system is used, actuation should only be from the top.



TECEbox plus



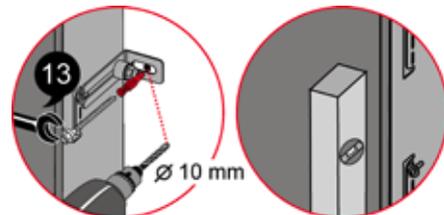
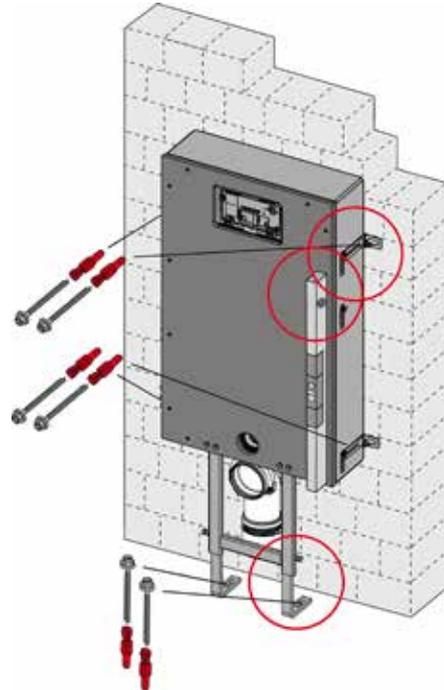
TECEbox plus brick-wall module (order number 9371000)

TECEbox plus is a brick-wall module installed in front of a solid wall. It is characterised by an enclosed surface, which eliminates the need for time-consuming bricking-in of the cistern. With the assembly area cover available as an accessory, the front is covered by a continuous surface of fibreglass lightweight concrete which can be directly tiled.

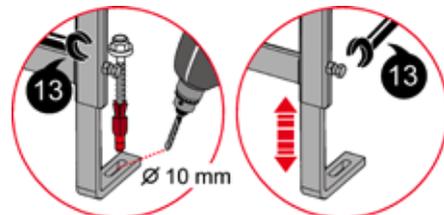
Installing the TECEbox plus

Thanks to the pre-mounted steel feet, TECEbox plus can be easily set in front of the wall and adjusted to the required height.

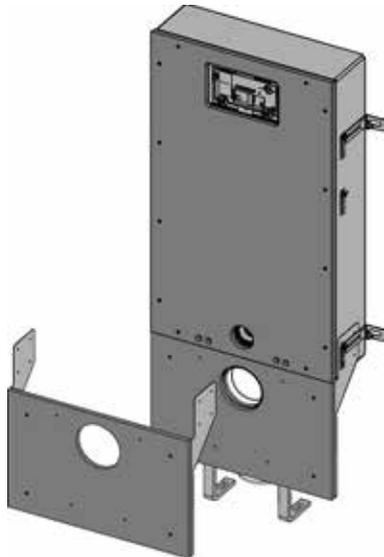
TECEbox plus can be easily aligned and attached with the depth-adjustable wall attachments.



The feet are screwed to the floor.



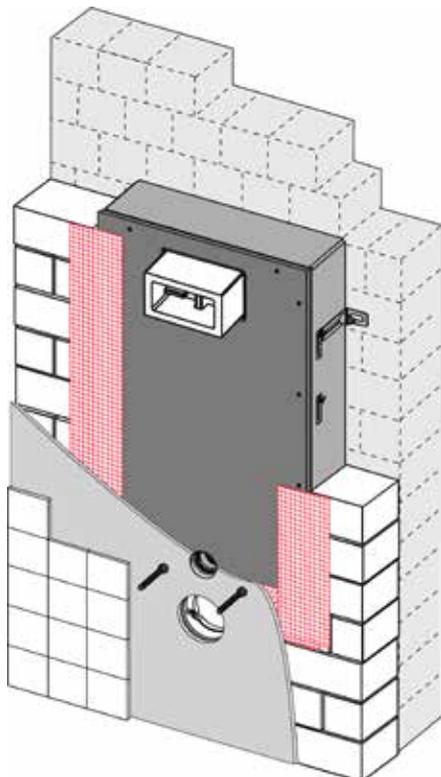
If the optionally available assembly area cover is used, the lower assembly area must not be filled in with bricks. Installation of the lower assembly area cover (order number 9200012) is simple, and a continuous, tileable surface is also immediately produced.



Note:

If DIN 4109 sound insulation requirements must be met, the hollow space below the cistern and the drainage area must be filled with mineral wool at the construction site.

Reinforcing tape must be attached to the transition points from the fibreglass lightweight concrete slab to the masonry, to avoid possible tile cracks. The surface can then be tiled.

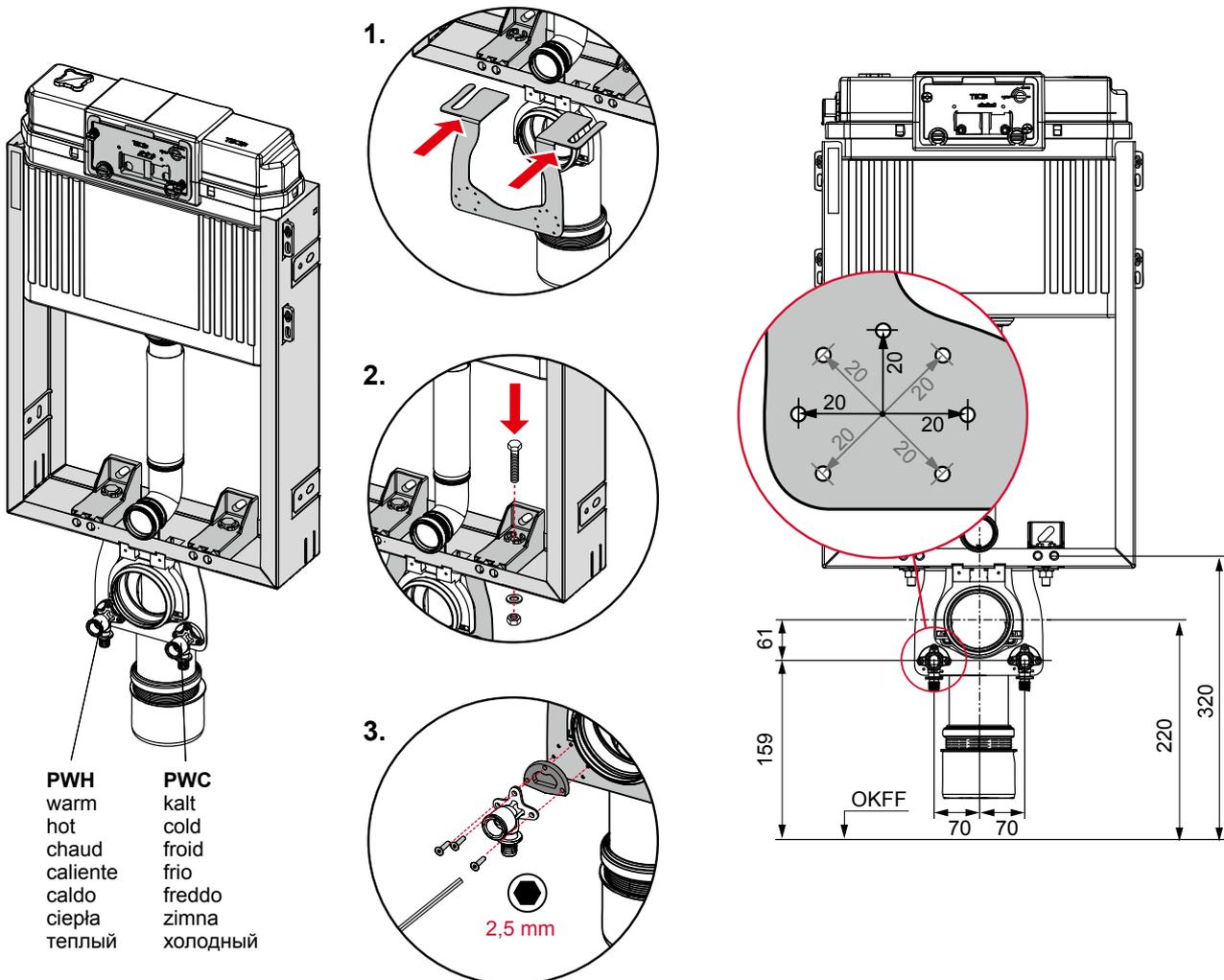
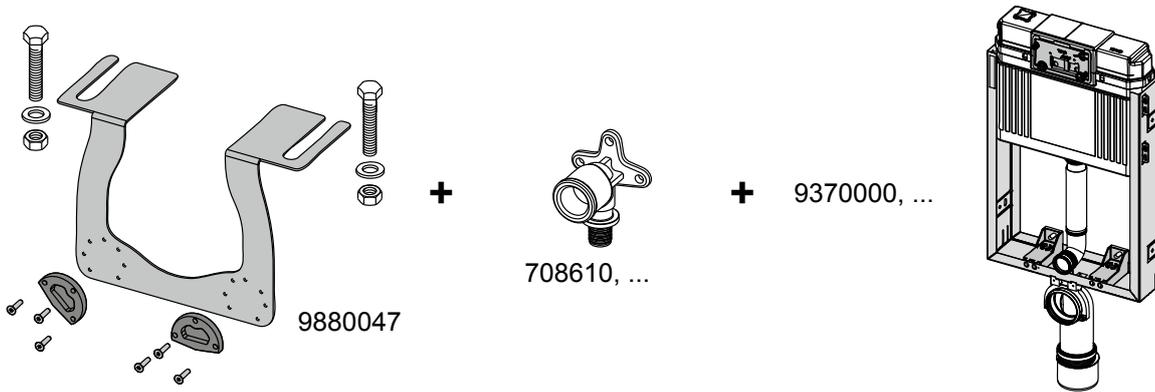


TECEbox – TECEone upgrade set

TECEone upgrade set for brick-wall construction

As with dry-wall construction, an upgrade set is also used in brick-wall constructions to connect the TECEone. The upgrade set is attached to the support frame of the TECEbox brick-wall module via two screws. Sound isolators and attachment screws are included in the scope of delivery and are used to attach the wall disks for the hot and cold water connection. Mounting the upgrade set ensures that the wall disks are automatically located in the correct position for connecting a TECEone.

TECEbox



TECEbox washstand

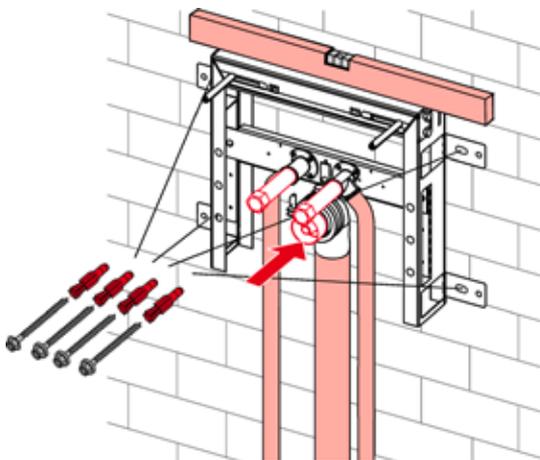


TECEbox washstand (order no. 9370033)

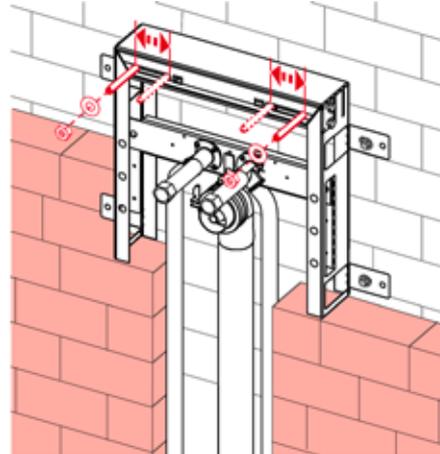
The connections for washstands in a brick-wall construction can be easily installed with the washstand frame. The surrounding 8 cm-deep steel frame with four depth-adjustable wall attachments is simply attached to each solid wall. All connection dimensions must be defined prior to brick-ing-in, and the elements fixed accordingly. A subsequent change to the installation dimensions is not possible.

Installing the TECEbox washstand

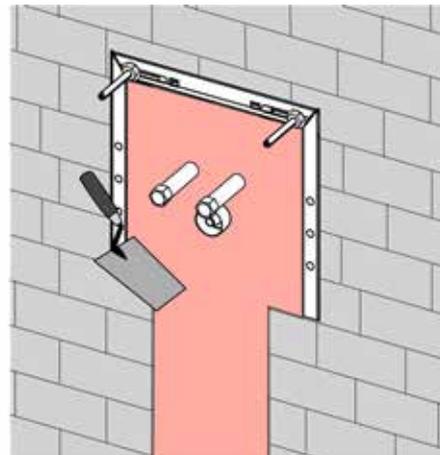
During the first step, the module is attached to the solid wall and aligned horizontally. The appropriate depth is set via the four wall attachments. The height-adjustable drain bend holder and depth-adjustable drain bend can be used for practically every application case. The DN 50 drain bend can also be shortened to a dimension of DN 40.



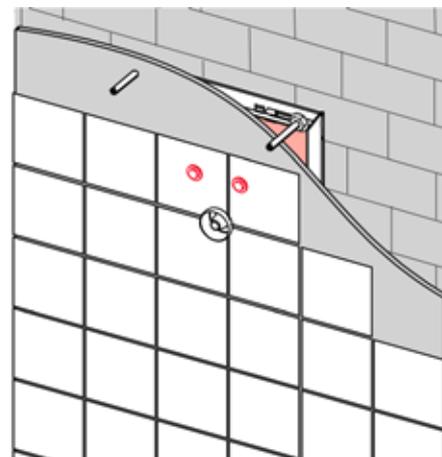
The distance from the threaded rods to the washstand ceramic retainer can range between 170 and 280 mm.



After installation and connection of all connection pipes, the module is bricked in.

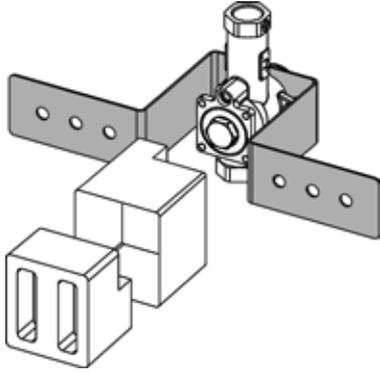


The plaster is then applied and the surface can be tiled.



TECEbox – U 1 urinal flush valve housing

TECEbox U 1 urinal flush valve housing



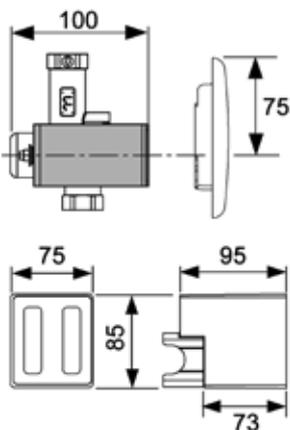
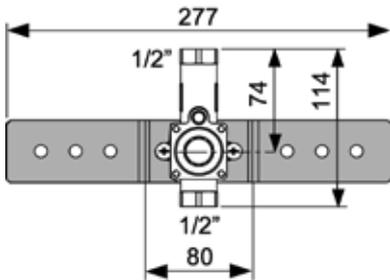
The TECE U 1 flush valve housing is pre-mounted on a retaining plate and therefore can be easily placed in a wall recess.

Note:

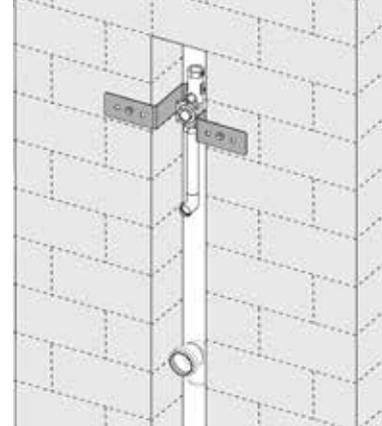
Prior to installation, you must know which urinal ceramic you are going to use. Refer to the latest connection dimensions from the ceramic manufacturer.

Installing the TECEbox U 1 urinal flush valve housing

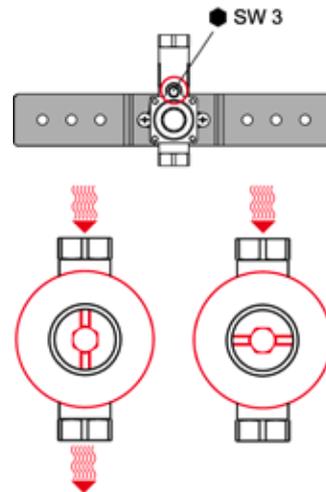
During installation of the urinal flush valve, you must pay attention to the installation depths and heights of the retaining plate, housing and bare-wall protection.



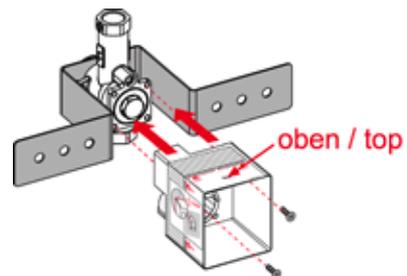
The flush valve housing is placed in a wall recess and attached using the retaining plate. Any approved pipe systems can be used for the water connection and inflow for the urinal ceramic.



In the as-delivered state, the urinal flush valve is locked, so that the required pressure test can be carried out. The inlet flow control is located above the plug. It must not be removed until the fine installation phase.

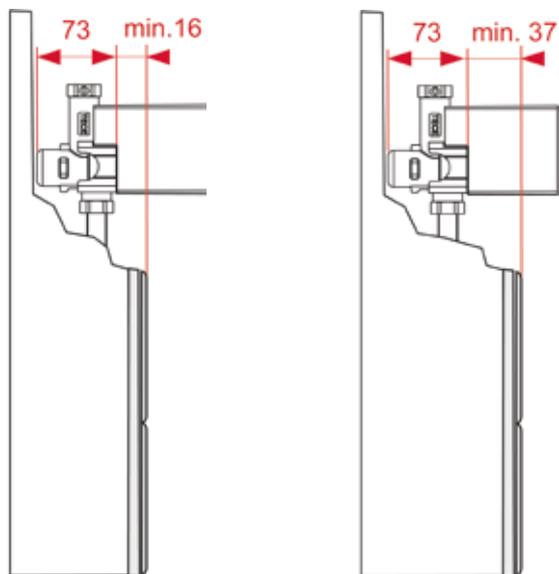


Fit the bare-wall protection and make sure that it is aligned correctly.



The bare-wall protection housing is cut off flush to the wall after tiling.

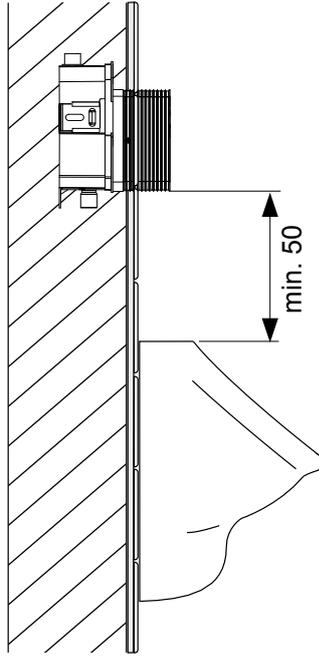
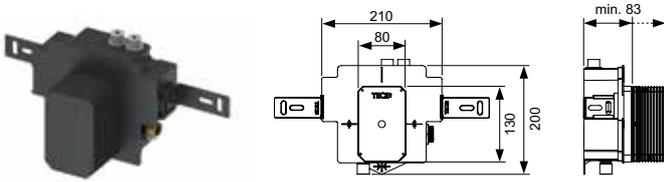
Note the required dimensions of the wall thickness for the respective urinal push plate (see section on flush plates).



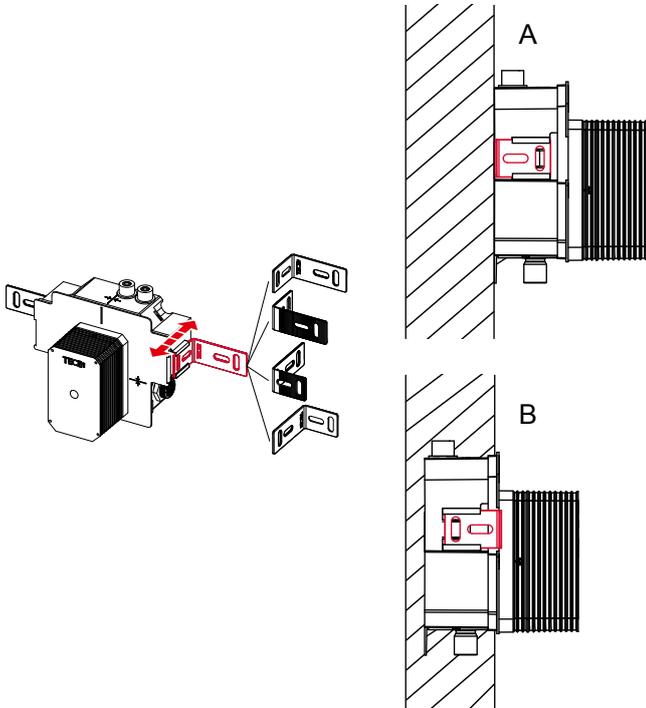
TECEbox – U 2 urinal flush valve housing

TECEbox U 2 urinal flush valve housing

The TECE U2 urinal flush valve housing is intended for use in bricked-in brick walls (order no. 9370040).



The U 2 urinal flush valve housing for brick-wall applications can be mounted in front of (A) or in the wall (B) with the mounting elbows supplied.

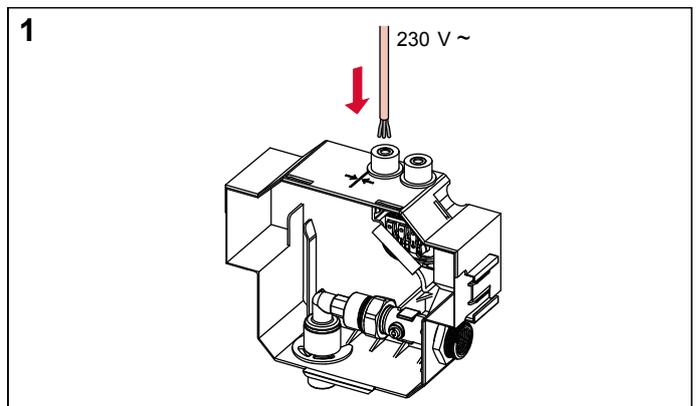


When positioning the cistern, observe the distance to the urinal ceramic. For aesthetic reasons, we recommend that the distance to the cistern is no less than 50 mm.

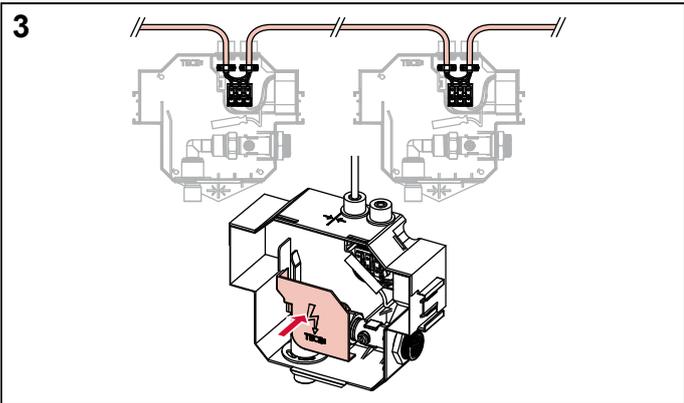
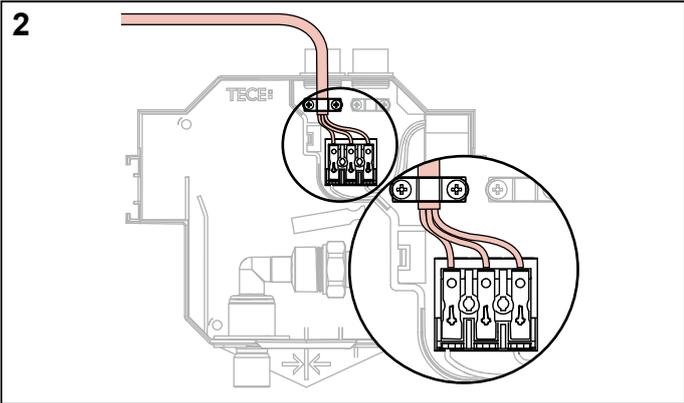
Note:

Prior to installation, you must know which urinal ceramic you are going to use. Refer to the latest connection dimensions from the ceramic manufacturer.

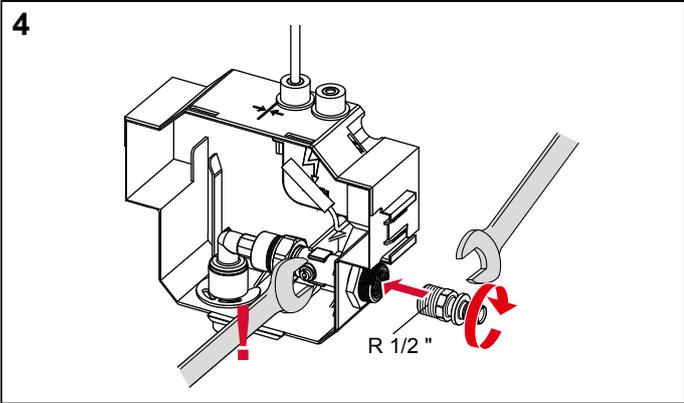
Installing the TECEbox U 2 urinal flush valve housing



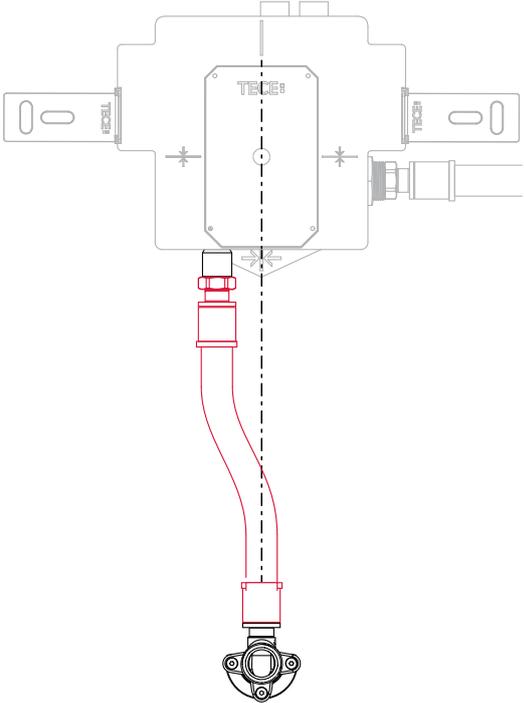
The transformer is already integrated into the flush valve housing to facilitate coordination of the different trades carrying out the assembly work. Therefore, the transformer can be directly connected with a 230 V cable.



It is also possible to loop the connection through (fig. 3).



To connect the pipe, hold the connection housing as shown in fig. 4.



Any approved pipe systems can be used for the water connection and inflow for the urinal ceramic. Make sure that the inflow for the urinal ceramic is positioned centrally beneath the urinal flush valve housing.

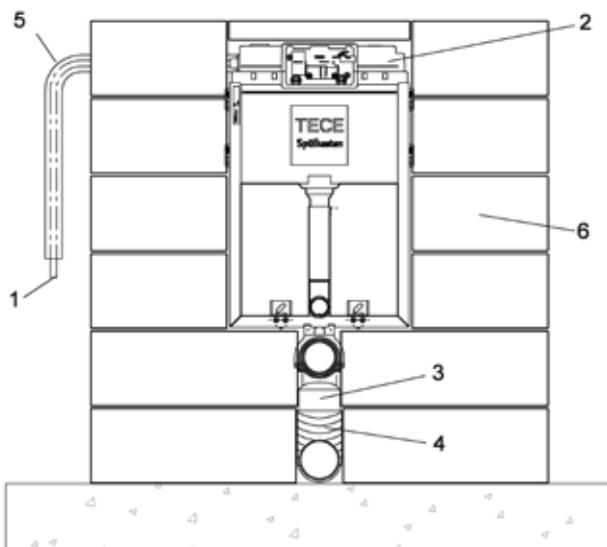
Sound insulation

Sound insulation expert opinions for toilet modules of the TECEbox series

The sound measurements of the installation sound level L_{in} taken by the Fraunhofer Institute in Stuttgart prove that TECE also meets DIN 4109 standard sound insulation requirements – installation sound level L_{in} 30 dB(A). The installation sound level L_{in} was measured in a room lying diagonally below the installation room. Measurements were taken in front of a solid installation wall with a mass relating to the area of $m = 220 \text{ kg/m}^2$. For all measurements, washdown ceramics from TOTO were used along with a sound insulation set for toilet ceramics.

Extract from the TECEbox test report:

Installation sound level L_{in} according to DIN 52 219 and DIN 4109 in dB(A)	
Excitation	Measuring room rear lower floor (diagonally below the installation room)
TECEbox with TECE cistern order no. 9370000	29 dB(A)



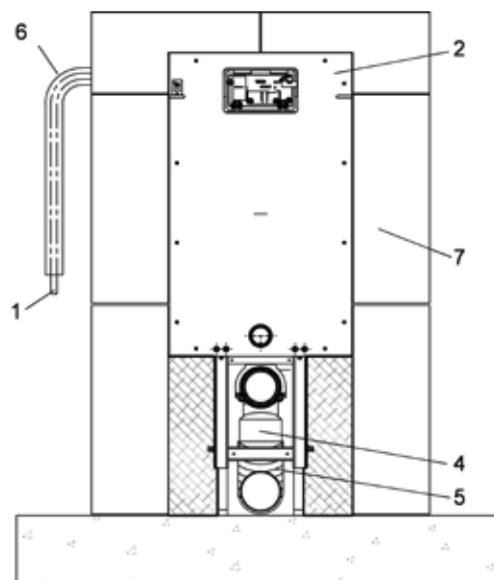
Item	Item name	Item number
Bare-wall installation		
1	TECEflex composite pipe, dim. 16	732016
2	TECEbox brick-wall-mounted cistern	9370000
3	DN 100 HT wastewater pipe	
4	Adhesive felt binding	
5	Pipe insulation	
6	Aerated cement blocks	
Detailed installation		
7	TOTO washdown toilet ceramic	
8	TECE sound insulation set for toilet	9200010
9	TECEambia toilet flush plate	9240200

TECEbox list of components

Extract from the TECEbox plus test report:

Installation sound level L_{in} according to DIN 52 219 and DIN 4109 in dB(A)	
Excitation	Measuring room rear lower floor (diagonally below the installation room)
TECEbox plus incl. assembly area cover Order no. 9371000 Order no. 9200012	28 dB(A)*

* Hollow spaces below the cistern must be filled with commercially available mineral wool at the construction site



Pos.	Item name	Item number
Brick-wall installation		
1	TECEflex composite pipe, dim. 16	732016
2	TECEbox plus brick-wall-mounted cistern	9370000
3	TECEbox plus assembly area cover	9200012
4	DN 100 HT wastewater pipe	
5	Adhesive felt binding	
6	Pipe insulation	
7	Aerated cement blocks	
Detailed installation		
8	TOTO washdown toilet ceramic	
9	TECE sound insulation set for toilet	9200010
10	TECEambia toilet flush plate	9240200

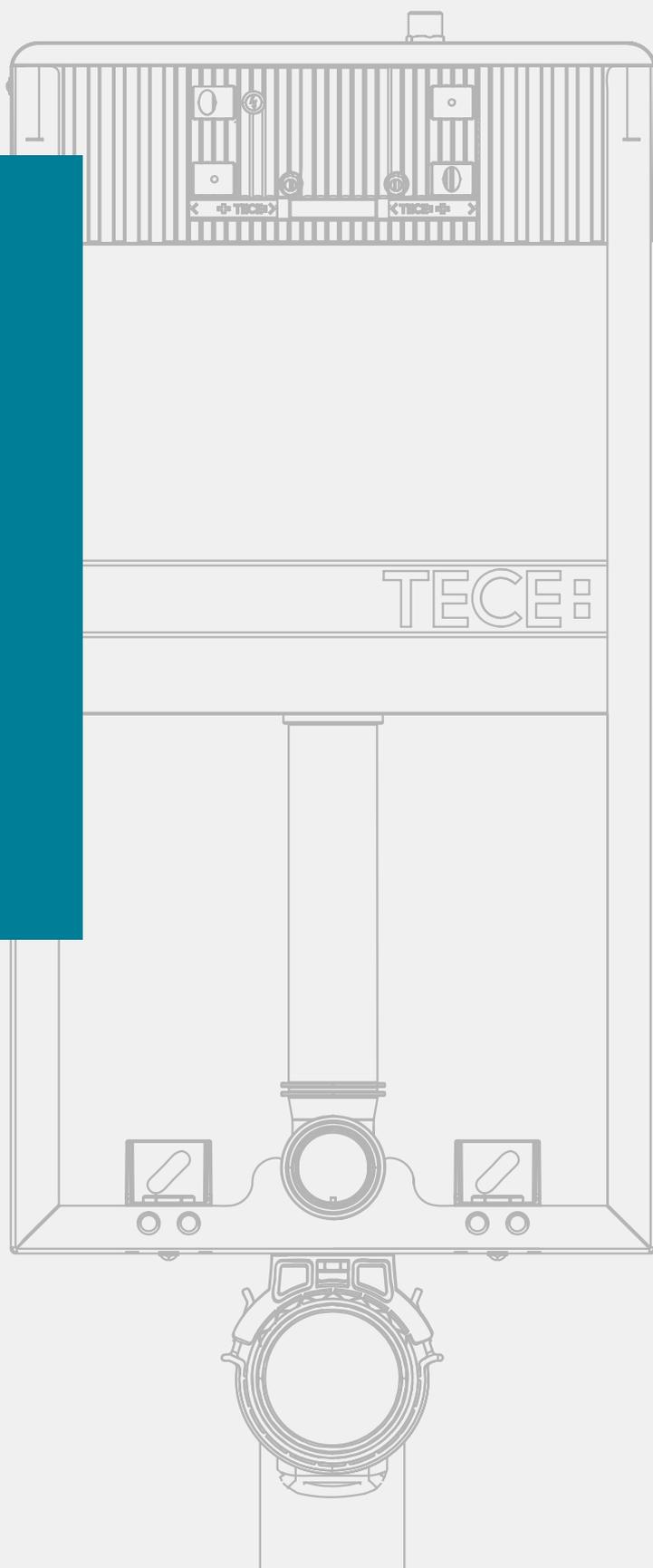
TECEbox plus list of components



Sanitary systems

TECEbox 8 cm

TECHNICAL GUIDELINES



System description	5-3
Toilet module product range	5-3
Cistern 8 cm	5-4
Filling valve F 1	5-4
Drain valve A 3	5-5
Setting the flush volumes	5-5
Throttle set	5-6
Upgrade sets for TECEone	5-7
Initial operation of the cistern	5-8
TECEbox basic	5-9
Assembly in the wall	5-9
TECEbox toilet module	5-10
Assembly in the wall	5-10
Assembly in front of a solid wall	5-11
TECEbox plus toilet module	5-12
Assembly in the wall	5-12
Assembly in front of a solid wall	5-13
TECEbox toilet module	5-15
Assembly in front of a wall	5-15
Assembly with a frame	5-15
Repairing the cistern	5-16
TECEbox washstand and bidet	5-17
Assembly for washstand and bidet modules	5-18
TECEbox urinal flush valve housing	5-19
Assembly of TECEbox urinal flush valve housing	5-19
Toilet flush plates	5-21

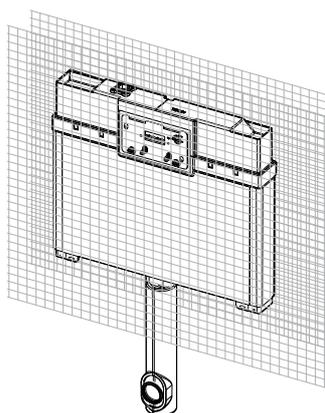
System description

TECE offers modules for the TECEbox range with an installation depth of 8 cm that are particularly suitable for a market dominated by thin partition walls. The system comprises toilet modules with cisterns for floor-standing or wall-hanging toilets as well as modules for bidets, wash-stands and urinals. The TECEbox 8 cm toilet modules with cisterns can be combined both with the installation systems for brick-wall construction (TECEbox basic, TECEbox and TECEbox plus) as well for dry-wall construction (TECEbox module).

The TECE cisterns can be used with all manual TECE flush plates as well as single and dual-flush systems.

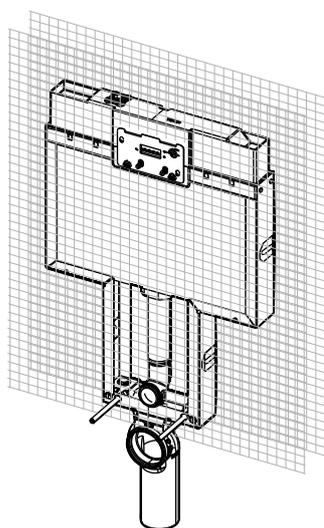
Toilet module product range

The TECEbox basic brick-wall-mounted cistern for floor-standing toilets is the starting point for solutions utilising wall-hanging toilets.



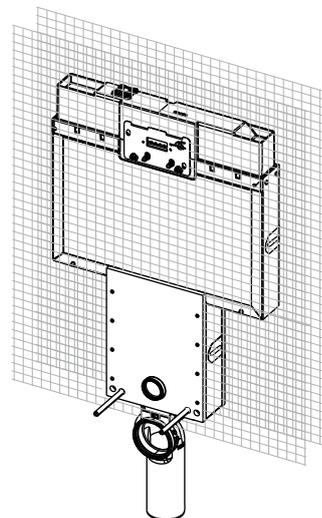
TECEbox basic brick-wall-mounted cistern, depth 8 cm (order no. 9370007)

The TECEbox brick-wall-mounted cistern for wall-hanging toilets comes with an external aluminium frame that guarantees secure wall attachment and ensures that the toilet is anchored securely.



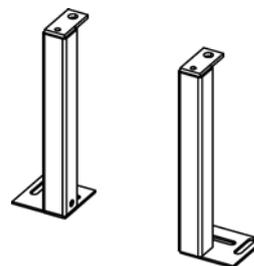
TECEbox brick-wall-mounted cistern, depth 8 cm (order no. 9370008)

The TECEbox plus brick-wall-mounted cistern has the same properties as the TECEbox cistern, however the first section of the drain is insulated against noise with rock wool and fibre-cement plates on both sides.



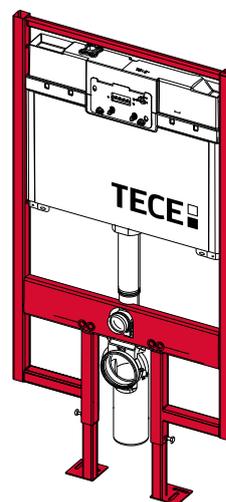
TECEbox plus brick-wall-mounted cistern, depth 8 cm (order no. 9370009)

The set with assembly feet (optional) makes installation easy and allows the TECEbox and TECEbox plus modules for wall-hanging toilets to be adjusted in height.



TECEbox assembly feet set (order no. 9030026)

The TECEbox module can be installed in lightweight partition walls with a metal or wooden frame or as an independent module in front of a brick wall.



TECEbox toilet module with 8 cm cistern (order number 9300040)

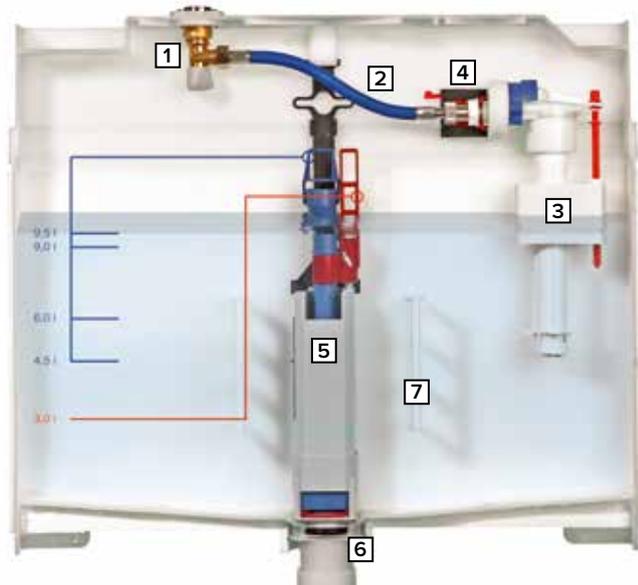
TECEbox 8 cm – Cistern

Cistern 8 cm

The concealed cistern from TECE is a universally adaptable 8 cm cistern. By using different frames, the cistern can be installed in dry or brick-wall constructions. The TECE cistern is always equipped with the same internal technology inside and is therefore compatible with toilet fittings and all manual TECE flush plates. Due to the cistern's universal nature, there is a clearly organised range and storage and the supply of spare parts is straightforward.

Properties of the cistern:

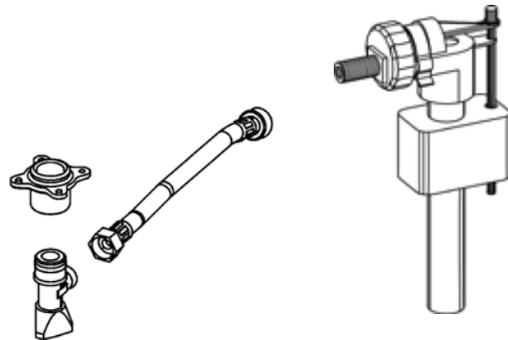
- Pre-assembled and sealed
- Can be combined with all manual TECE flush plates
- Single or dual-flush technology available
- Robust lever mechanism
- 9.5-litre safety tank: enough water when needed
- Compatible with standard market spare parts
- Cistern connection with 1/2" internal thread
- 6-litre pre-set standard flush volume
- 4.5 / 6 and 9-litre flush volume can be set as an option at any time,
- 3-litre part-flush with dual-flush system,
- Cistern tank made of impact-resistant plastic and insulated against condensation water
- Easy to install
- Self-explanatory technology



- TECE cistern with:
1. Corner valve
 2. Reinforced hose
 3. Filling valve F 1 with standard connection 3/8"
 4. Filling valve holder
 5. Drain valve A 3
 6. Valve seat of drain valve
 7. Reinforcements

Filling valve F 1

Thanks to the high technical quality standard of the filling system (valve, hose and F1 valve) the TECE cistern is characterised by the lowest sound level on the market - Lap ≤ 17 dB(A).

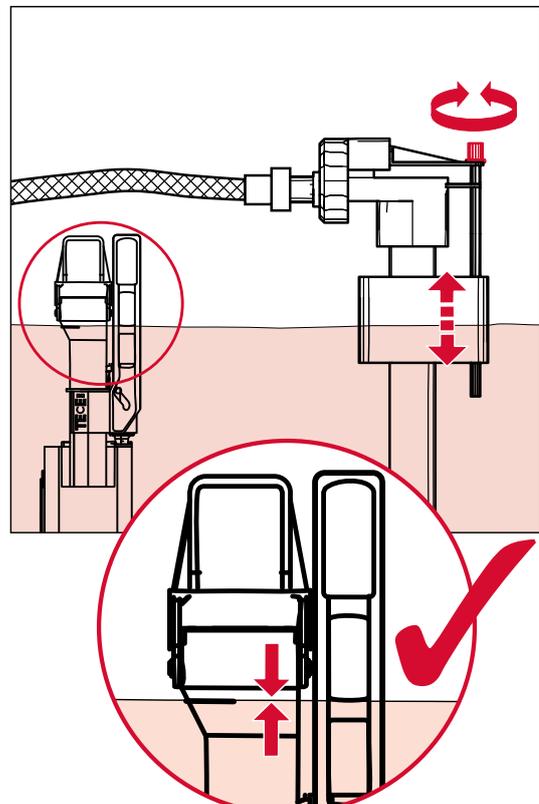


Intake and filling valve F 1

Setting the fill level

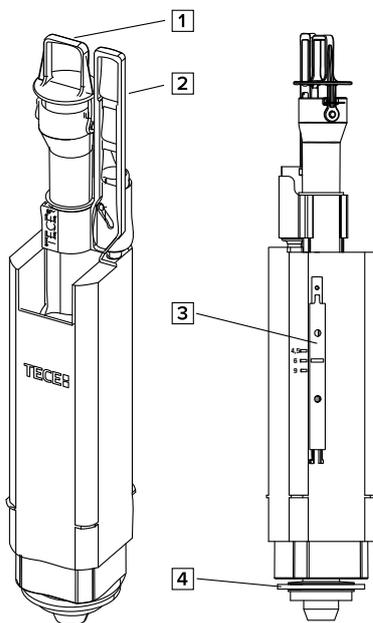
The fill level in the cistern can be set by turning the adjustment spindle on the filling valve.

The height should be set so that the water reaches the upper mark on the overflow and the mark on the actuation block (see figure).



Drain valve A 3

The drain valve A 3 is installed exclusively in the 8 cm cistern.



Drain valve A 3 (order number 9820224) with

1. Connecting rod large
2. Connecting rod small
3. Sliding lever for flush volume
4. Gasket

Dual-flush technology

During everyday use, a considerable amount of drinking water is used to flush toilets. The intelligent solution from TECE goes a long way towards saving water. With dual-flush technology the small flush volume is set to 3 litres and the large flush volume can be set to 4.5 / 6 or 9 litres. The default setting for the dual-volume flush is 6 litres for the large flush volume and 3 litres for the small flush volume

Single-flush technology

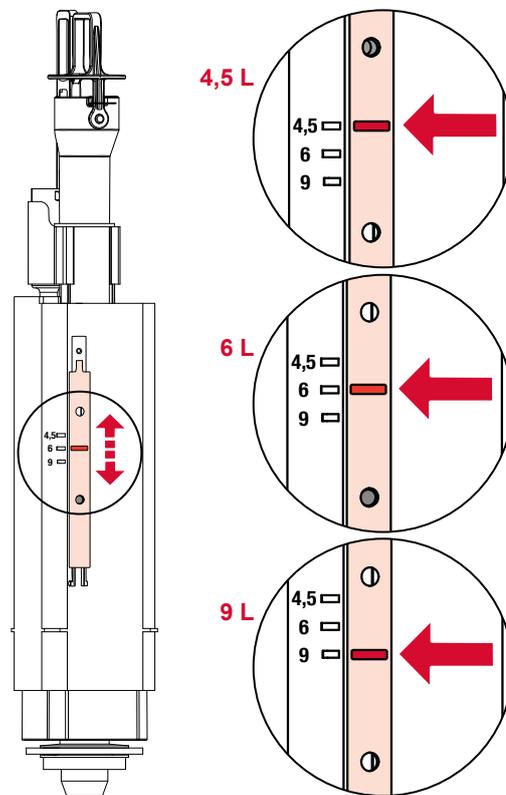
Single-flush technology is also possible with the cistern and TECE drain valve. However, with this flush option, only the large flush volumes of 4.5 / 6 or 9 litres are available.

General

Due to the easily adjustable drainage valve settings, the flush volumes can be adapted to each specific situation. In the new builds with custom pipes, gradients and using a 4.5 litre ceramic, it is possible to have a 4.5 litre saving flush in combination with a 3 litre flush. However, pipework systems are often installed which need a larger flush volume to ensure that they work correctly. In this case, flush volumes of up to 9 litres can be chosen to ensure this.

Setting the flush volumes

Adjusting the flush volume is performed centrally using a sliding lever, which is located on the side of the main part of the drainage valve. The flush volumes which can be set are clearly marked on the valve.



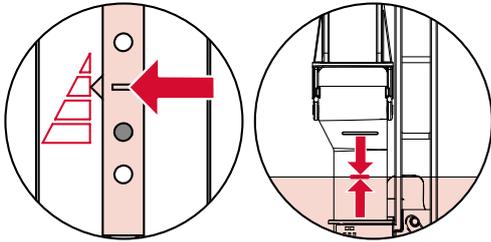
The large flush volume can be set to 4.5 / 6.0 or 9.0 litres.

The default setting is 6 litres. To change the large flush volume the drainage valve must be removed from the cistern. To do this, the splash guard and the actuation block must be removed. Then the drainage valve can be taken out of the cistern. The sliding lever is located on the side of the main part of the drainage valve. Move the sliding lever to the desired flush volume. This increases or decreases the flush volume.

This does not change the small flush volume and it remains set to 3 litres.

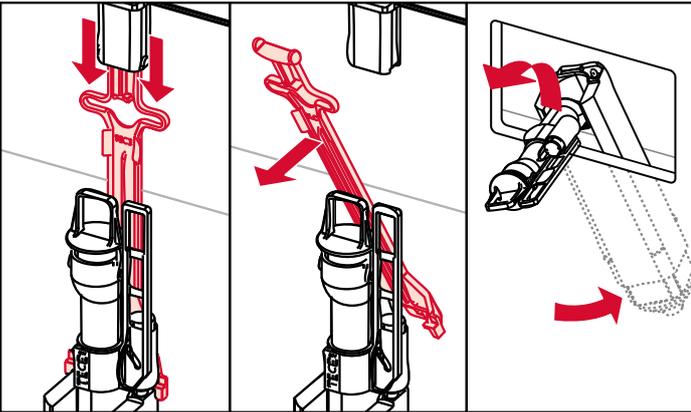
TECEbox 8 cm – Brick-wall toilet module

To reduce the default large volume to 4.0 and the small volume to 2.5 litres, the tank water level lever above the filling valve must also be moved to the lowest mark on the overflow.



Removing the drainage valve

To take out the filling valve open the splash guard with the actuation block. Press the hold-down device downwards as shown in the diagram and remove it from the tank. Now pull the filling valve upwards out of the valve seat, snap off the top part and take it out.



After removing the drainage valve, the valve seat can be removed by pulling it upwards.

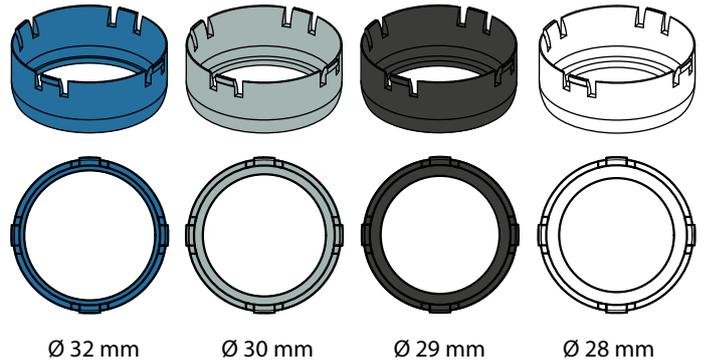


Throttle set

Problems with toilets not flushing correctly can be solved by using a throttle set.

The throttle set includes four different throttles:

- Blue: Diameter 32 mm (100%)
- Grey: Diameter 30 mm (90%)
- Black: Diameter 29 mm (80%)
- White: Diameter 28 mm (70%)

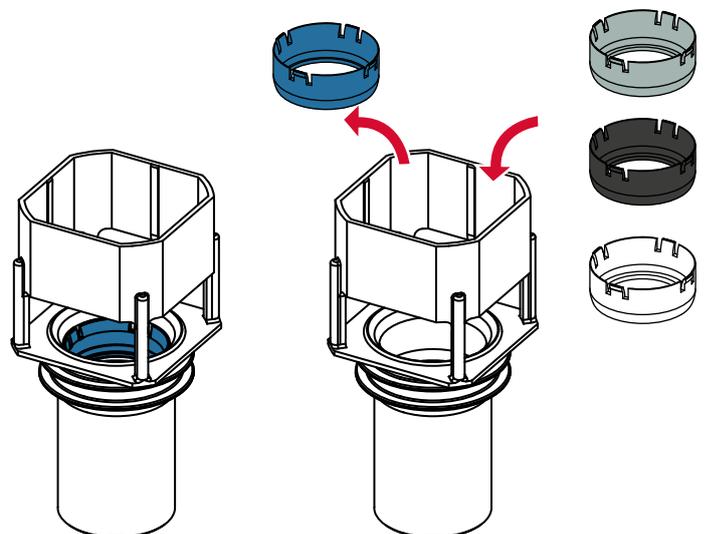


Reducing the flushing pressure

To prevent overspray by the toilet ceramics, the flush flow can be reduced using a throttle set. To control the flushing pressure, a throttle with a smaller internal diameter can be used.

Increasing the flushing pressure

If a toilet ceramic is not being correctly cleaned then the flushing pressure for 8 cm cistern can be subsequently increased. To increase the flushing pressure, install a throttle with a larger internal diameter or remove the inserted throttle.

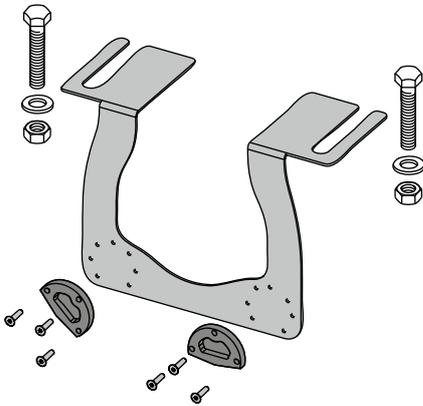


The flush flow throttle can be easily installed in the valve seat of the drainage valve.

Upgrade sets for TECEone

Upgrade sets are available to combine wall-mounted TECEone shower toilets with a brick-wall module or toilet module.

Upgrade set for TECEbox 8 cm brick-wall-mounted cistern

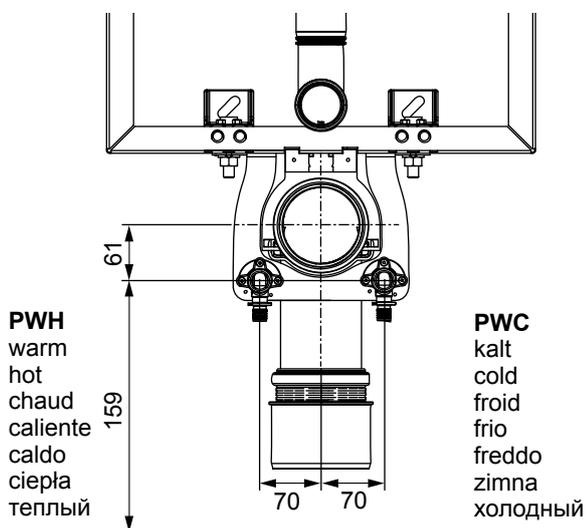


TECEone upgrade set for brick-wall construction - order number 9880048

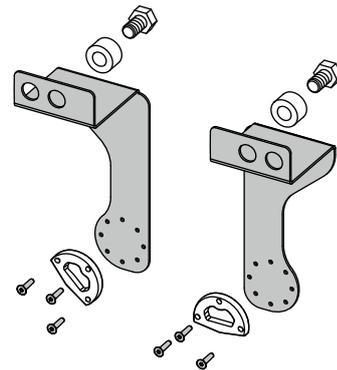
The shell installation set consists of:

- Holding plate for hot and cold water connections
- Sound-proofing elements for two wall disks
- Mounting materials

The holding plate is attached to both elbow brackets using the screws supplied.



Upgrade set for TECEbox 8 cm dry-wall module

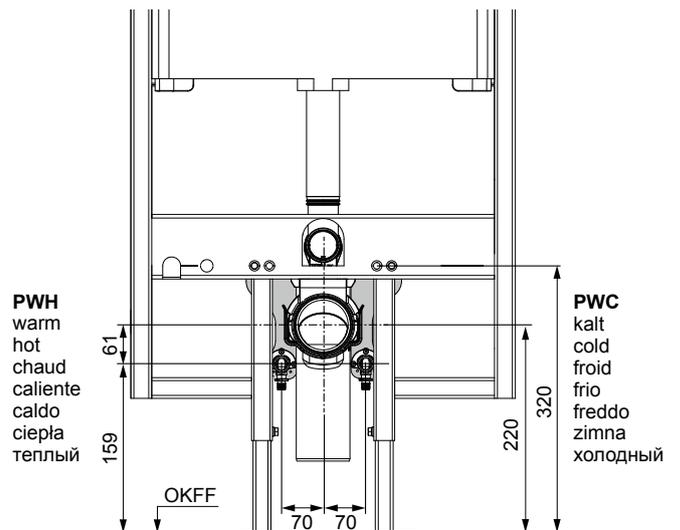


TECEone upgrade set for dry-wall construction - order number 9880056

The shell installation set consists of:

- Holding plate for hot and cold water connections
- Sound-proofing elements for two wall disks
- Mounting materials

The holding plate is mounted to the bottom of the module frame using the existing drain bend holder.



TECEbox 8 cm – Toilet module

Initial operation of the cistern

Shell construction stage

The corner valve of the TECE 8 cm cistern is closed and pre-installed as a complete unit. The pressure can be tested without the cistern needing to be opened. The cistern only needs to be opened during the fine installation phase. During the shell construction stage, the cistern remains sealed. An unbroken seal during fine installation work guarantees that the cistern is clean and functional. A damaged seal shows that the cistern has already been opened.



Splash guard with seal.

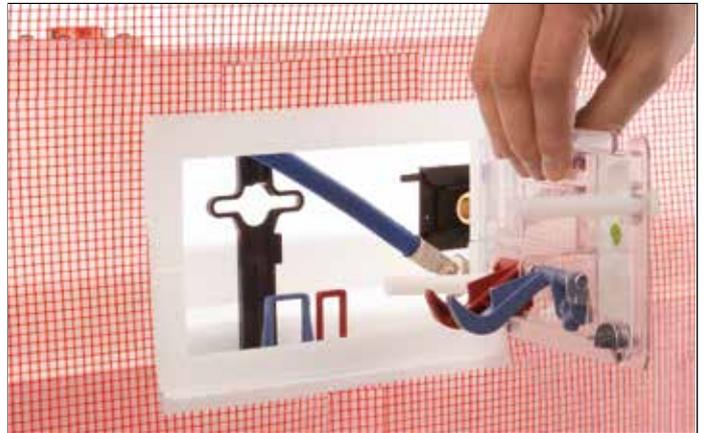
Fine installation

The TECE 8 cm cistern can only be opened by destroying the seal on the splash guard. If the seal is intact at the fine installation stage, the inner workings of the cistern are intact and free of contamination. The connection lead must be well flushed out during commissioning of the concealed cistern. To do this, the hose in the cistern can be pressed downwards. After being flushed out, the reinforced hose can be screwed to the filling valve without the need for any tools.



Connect the hose to the cistern filling valve.

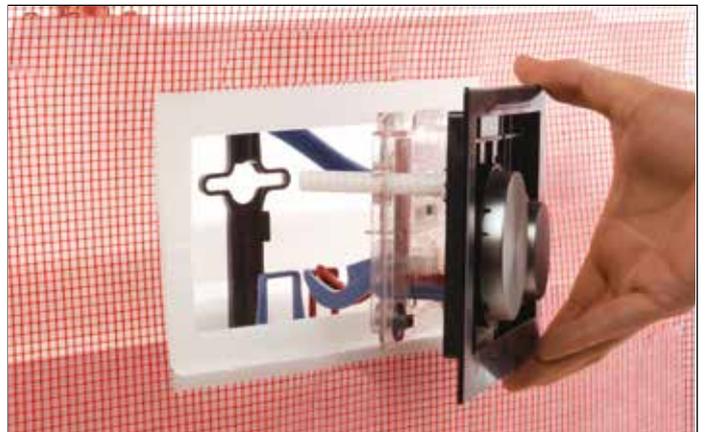
A special feature of the TECE concealed cistern is the actuation block mounted on the splash guard. When the concealed cistern is opened, it is completely removed. This also works with the support frame for the actuation.



Splash guard with actuation block

Service

Despite the small inspection opening there is ample space to work within the cistern. After removing the flush-plate cover, the flush-plate installation frame including the splash guard can be removed as one unit using a flat-head screwdriver.



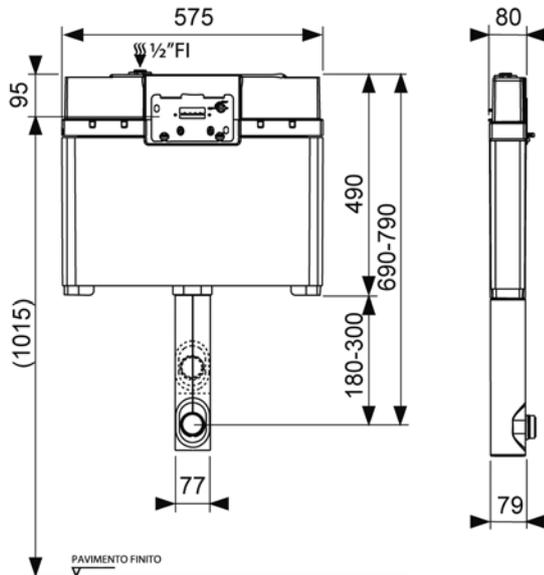
Removing the compact unit.

This approach is easy and saves time because it avoids laborious disassembly of individual components.

TECEbox basic

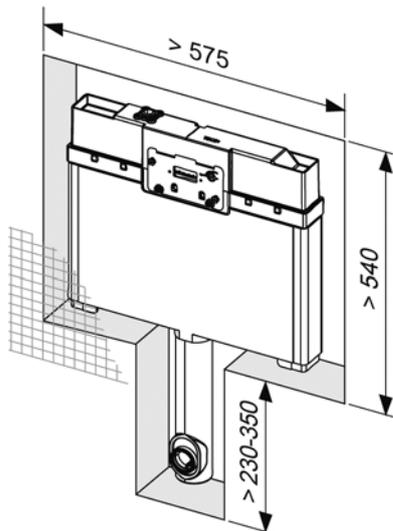
Toilet module with cistern, ideal for floor-standing toilets and compatible with all manual TECE flush plates (excluding the flush plates with IR sensor).

Only for installation in a bricked-in wall.



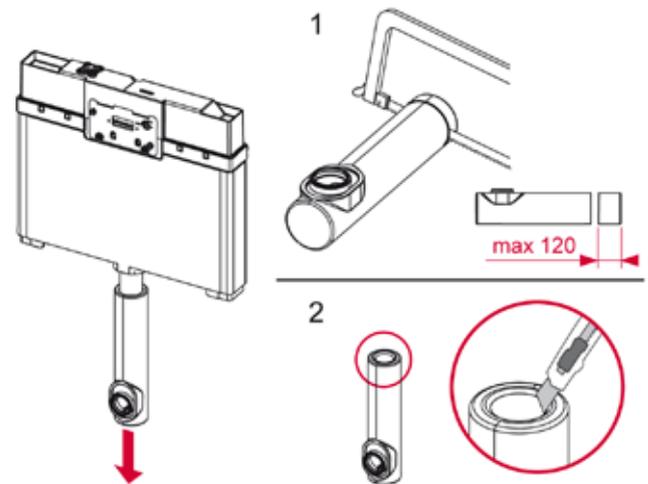
Assembly in the wall

Create a niche in the wall according to the dimensions specified.

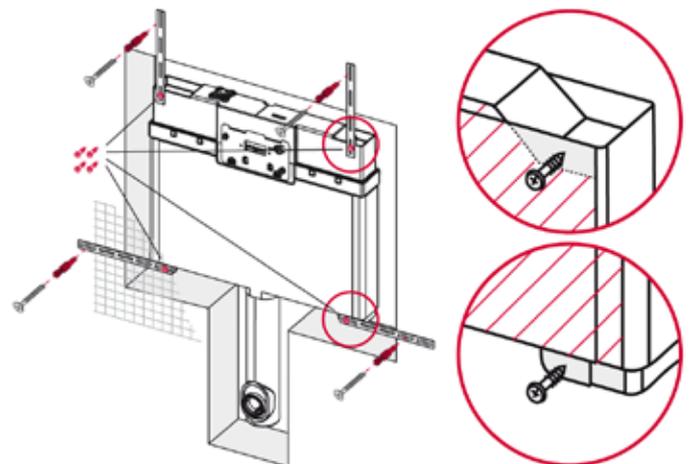


If the flush pipe (made of PE) is too long for the arrangement, it must be removed from the cistern and cut to length (maximum 120 mm).

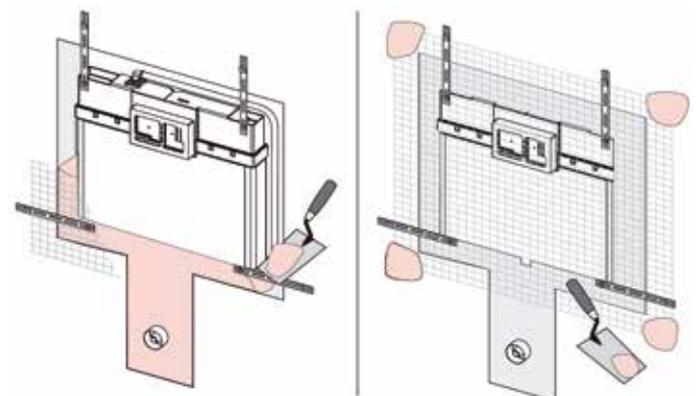
By contrast, if a flush pipe must be extended for a cistern exceeding the standard dimensions, this can be extended using via hot welding on an additional pipe.



Place the module in the niche, make sure it is level and attach it using perforated rails as shown in the following diagram.

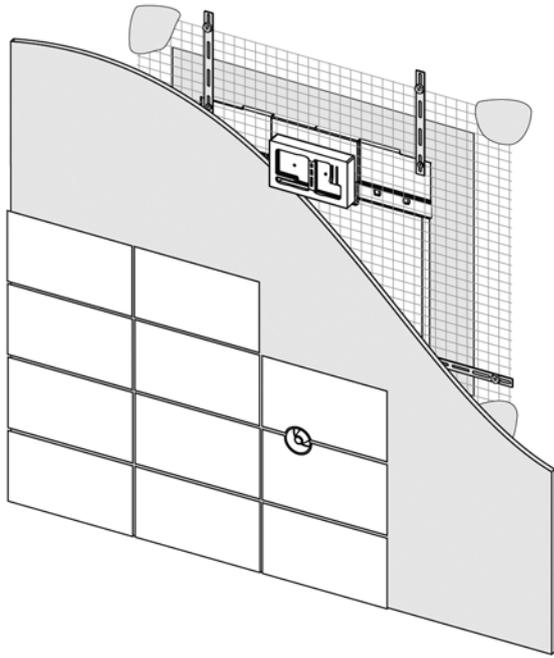


Attach the water connection (connection R 1/2" on the cistern) and then assemble both the polystyrene bare-wall protection and the drainage cover. Brick the module in completely. Fill all cavities and attach the metal mesh.



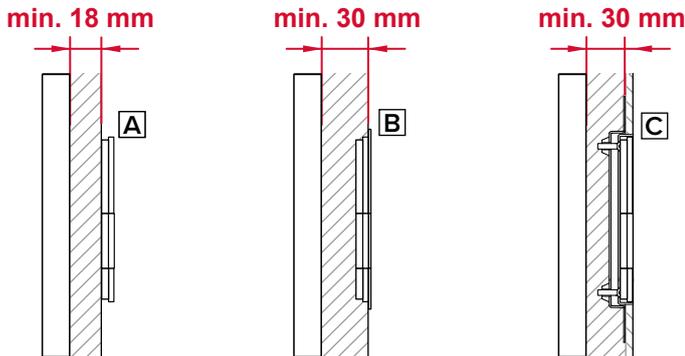
Plaster and tile the wall.

TECEbox 8 cm – Upgrade sets



TECEbox 8 cm

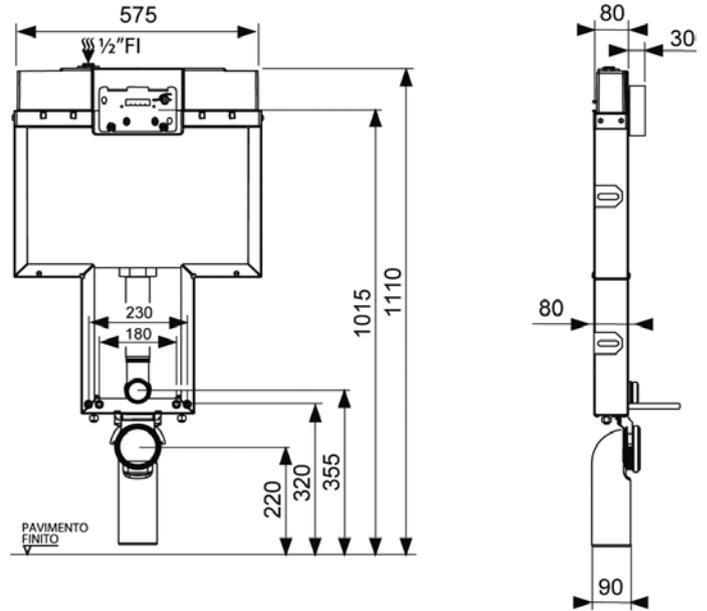
The wall construction must be at least 18 mm if the actuation is located on the wall (A). A minimum of 30 mm is required to install the TECESquare II (B) and when using the flush-mounted installation frame (C).



TECEbox toilet module

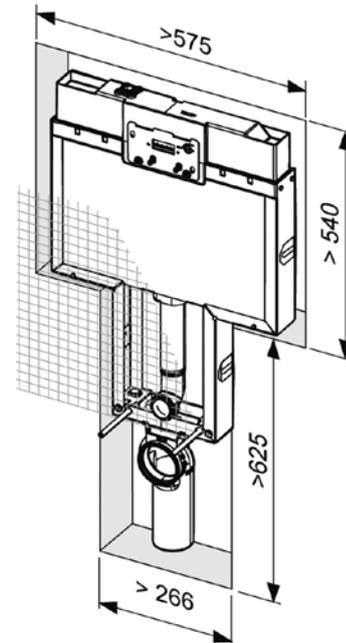
Toilet module with cistern, ideal for wall-hanging toilets and compatible with all TECE flush plates (excluding the TECE-planus flush plates with IR sensor).

For installation in a brick wall or in front of a solid wall.



Assembly in the wall

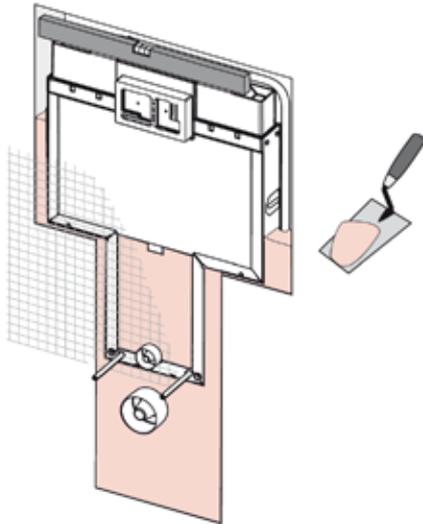
Create a niche in the wall according to the dimensions specified.



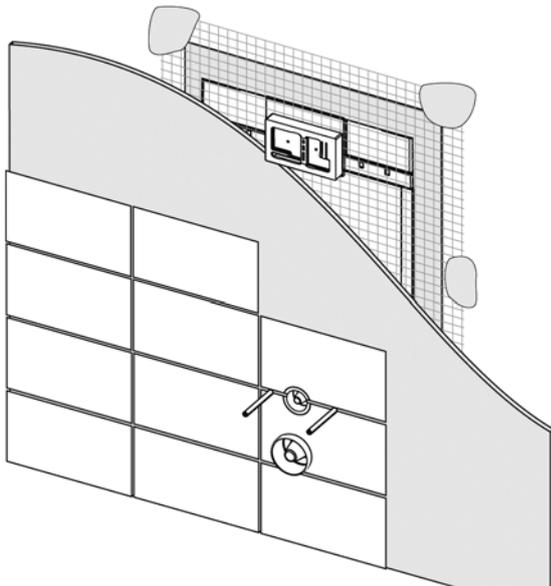
Place the module in the niche and attach the water connection (connection R 1/2" on cistern). Install the polystyrene bare-wall protection, the threaded rods and the odour traps. Make sure the module is level and brick it in completely. Fill all cavities as you do this.

Assembly in front of a solid wall

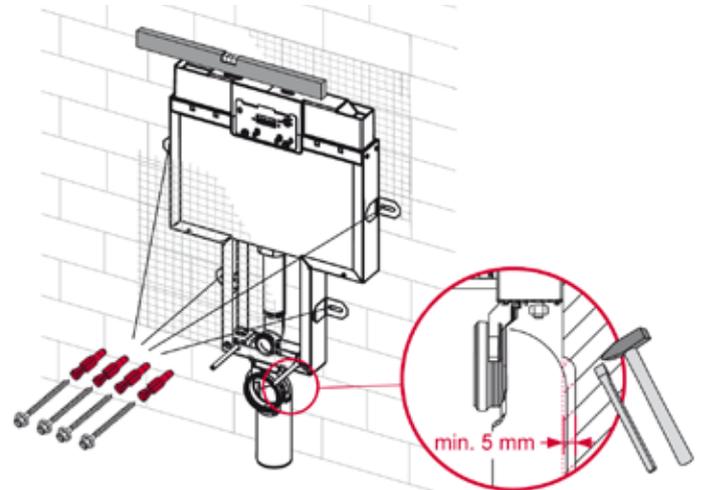
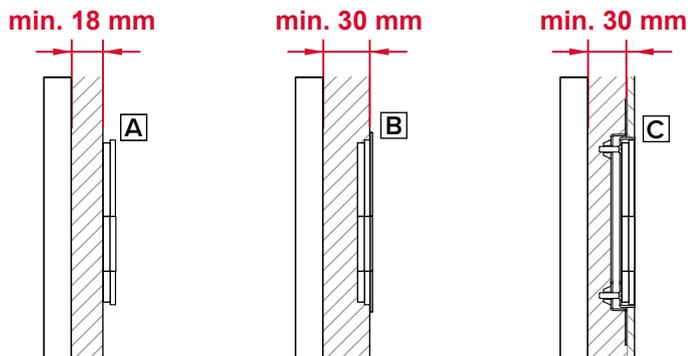
Create a small cavity at least 5 mm deep behind the flush pipe so that the cistern lies full against the wall. Make sure the TECEbox module is level, open the wings on the side of the aluminium frame and attach the module to the wall.



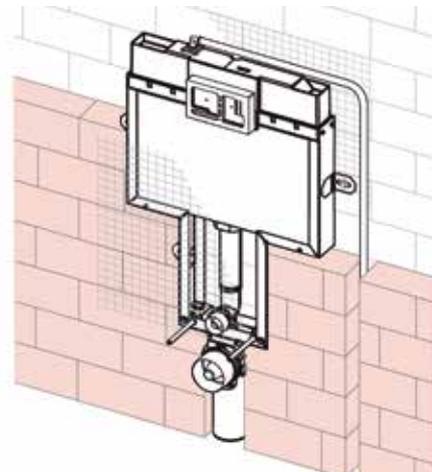
Attach the metal mesh, then plaster and tile the wall.



The wall construction must be at least 18 mm if the actuation is located on the wall (A). A minimum of 30 mm is required to install the TECESquare II (B) and when using the flush-mounted installation frame (C).

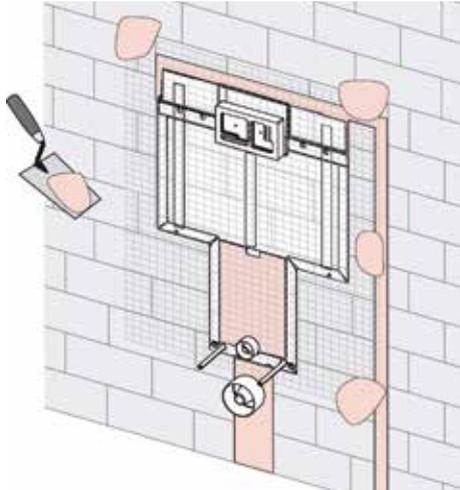


Attach the water connection (connection R 1/2" on cistern). Brick the module in completely and follow the outline. Install the polystyrene bare-wall protection, the threaded rods and the odour traps.

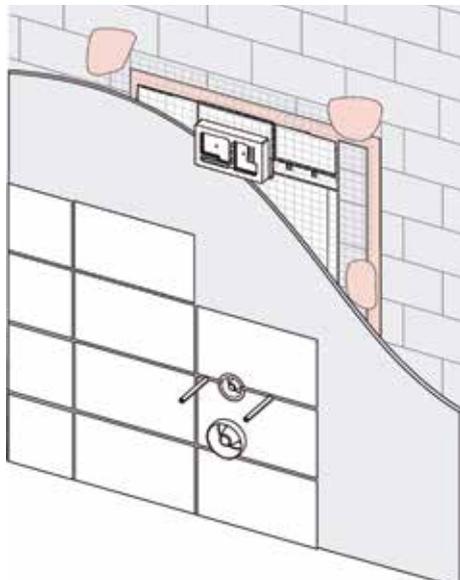


Fill all cavities and attach the metal mesh (see diagram).

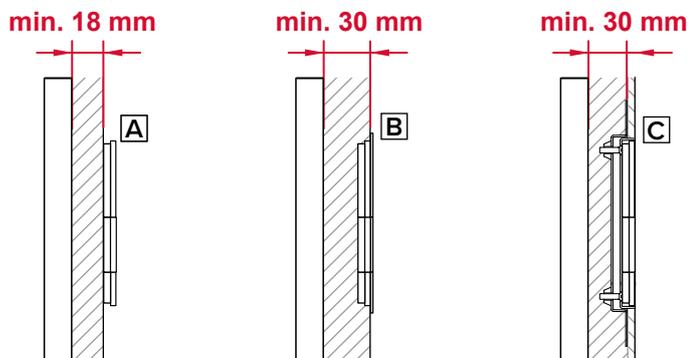
TECEbox 8 cm – Filling valve



Plaster and tile the wall.



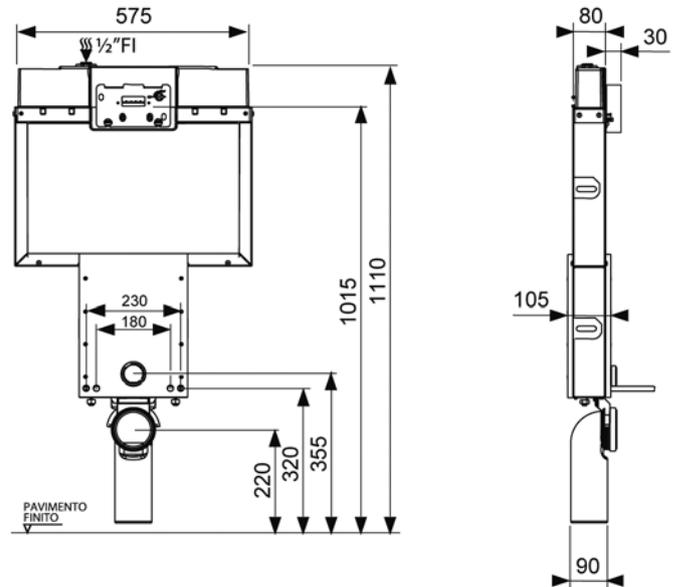
The wall construction must be at least 18 mm if the actuation is located on the wall (A). A minimum of 30 mm is required to install the TECEsquare II (B) and when using the flush-mounted installation frame (C).



TECEbox plus toilet module

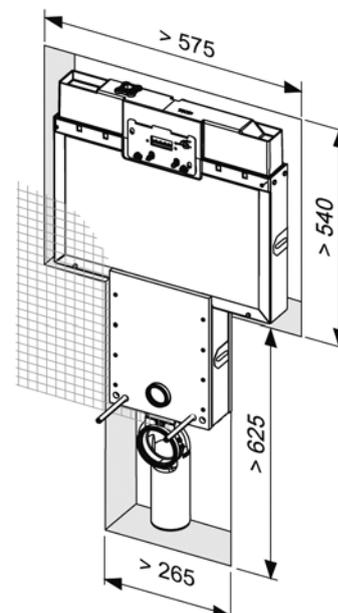
Toilet module with sound-insulated cistern, ideal for wall-hanging toilets and compatible with all TECE flush plates (excluding the TECEplanus flush plates with IR sensor). To insulate the cistern against noise, the flush pipe housing is filled with rock wool and enclosed by 12.5 mm thick fibre-cement plates on both sides.

The TECEbox plus module can be installed in a brick wall or in front of a solid wall.



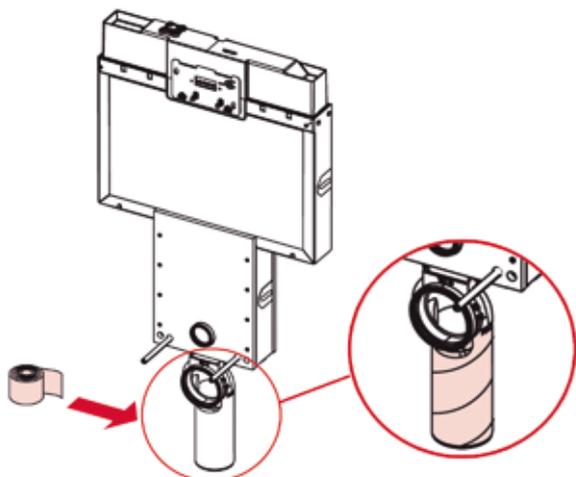
Assembly in the wall

Create a niche in the wall according to the dimensions specified.



Clad the flush pipe with the adhesive insulation tape supplied in the packaging.

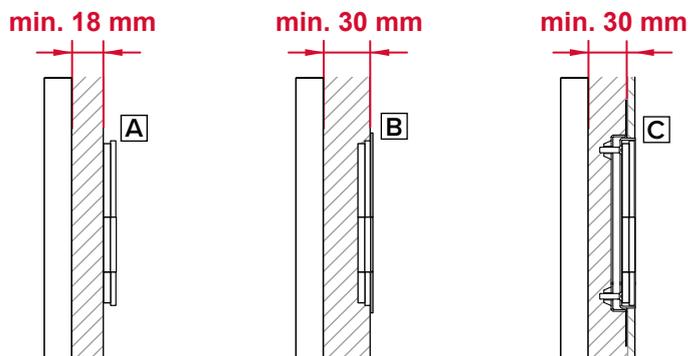
TECEbox 8 cm – Drain valve



Place the module in the niche and attach the water connection (connection R 1/2" on the cistern).

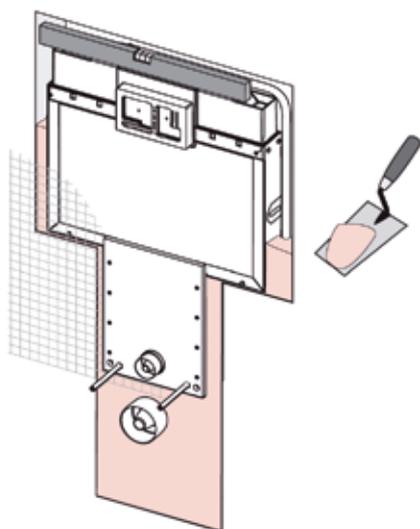
Install the polystyrene bare-wall protection, the threaded rods and the odour traps. Make sure the module is level and brick it in completely. Fill all cavities as you do this.

The wall construction must be at least 18 mm if the actuation is located on the wall (A). A minimum of 30 mm is required to install the TECESquare II (B) and when using the flush-mounted installation frame (C).

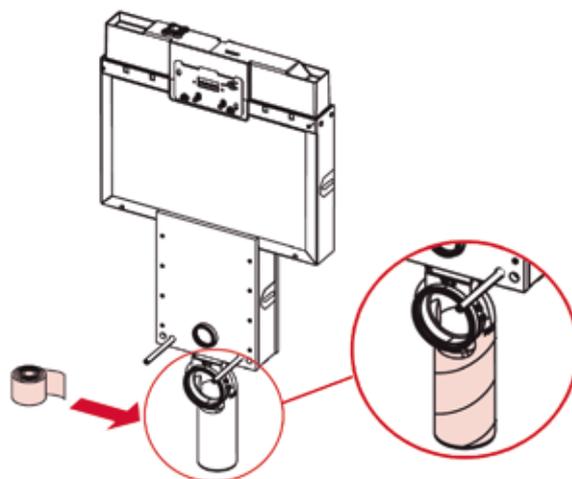
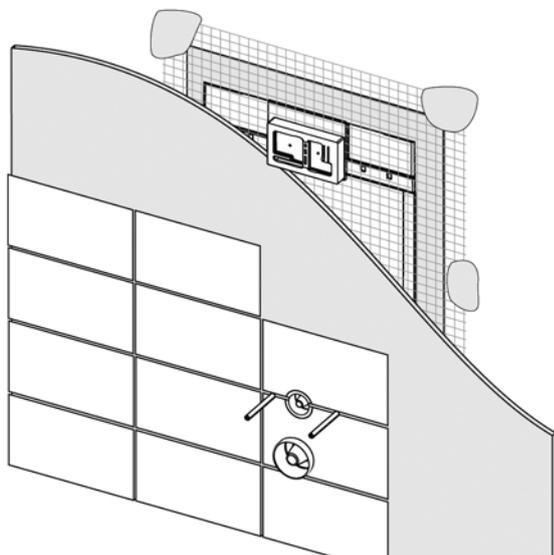


Assembly in front of a solid wall

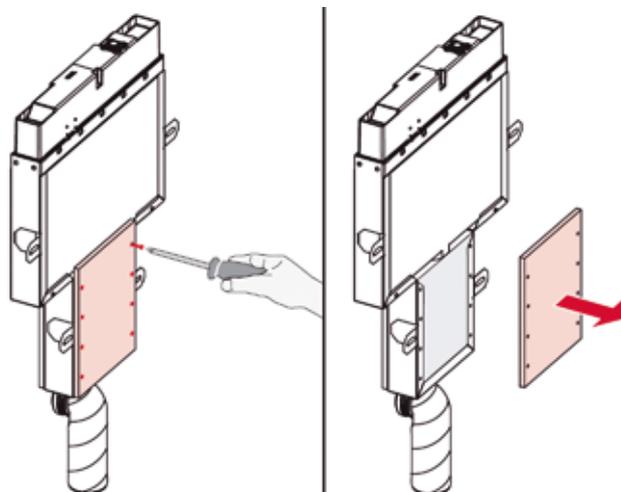
Clad the flush pipe with the adhesive insulation tape supplied in the packaging.



Attach the metal mesh, then plaster and tile the wall.

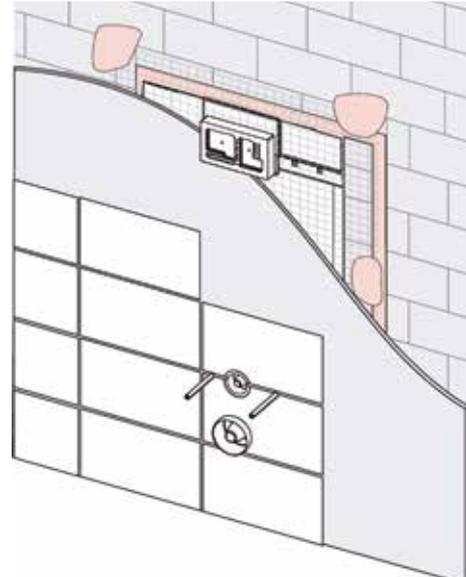
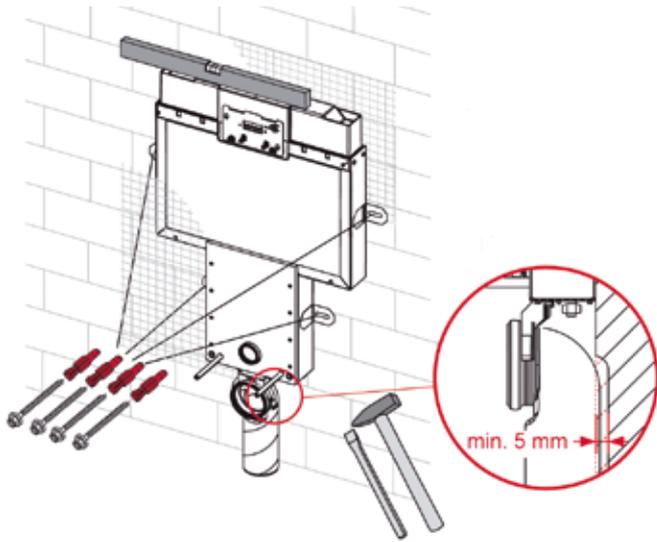


Remove the rear sound insulation plate.



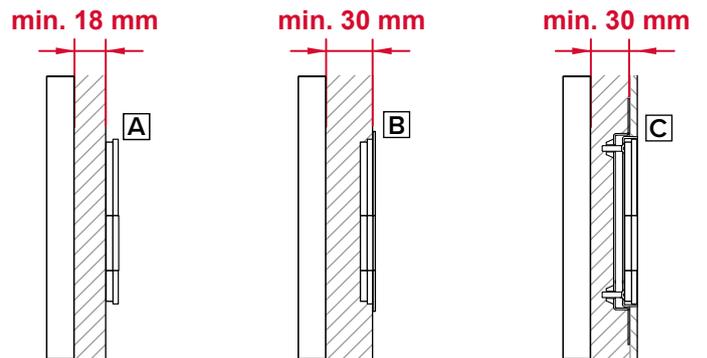
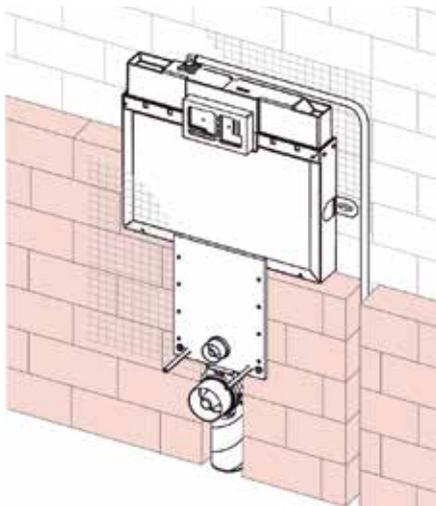
Create a small cavity at least 5 mm deep behind the flush pipe so that the cistern lies full against the wall. Make sure the TECEbox module is level, open the wings on the side of the aluminium frame and attach the module to the wall.

TECEbox 8 cm – Drain valve

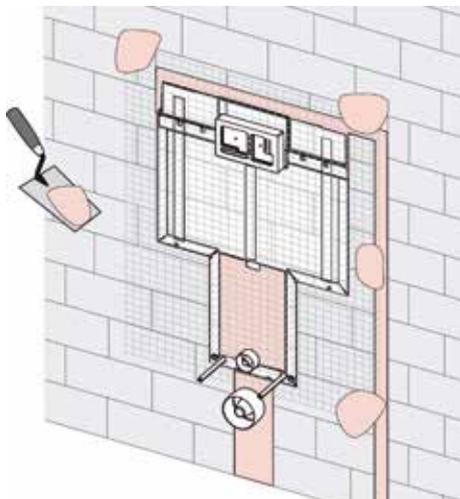


Attach the water connection (connection R 1/2" on cistern).
Brick the module in completely and follow the outline.
Install the polystyrene bare-wall protection, the threaded rods and the odour traps.

The wall construction must be at least 18 mm if the actuation is located on the wall (A). A minimum of 30 mm is required to install the TECESquare II (B) and when using the flush-mounted installation frame (C).



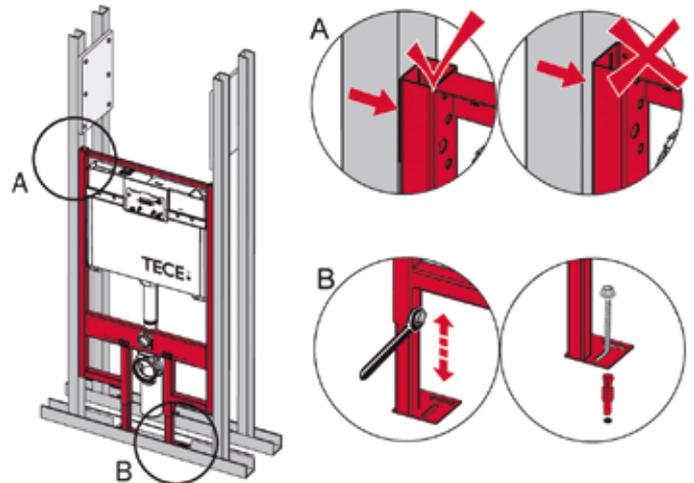
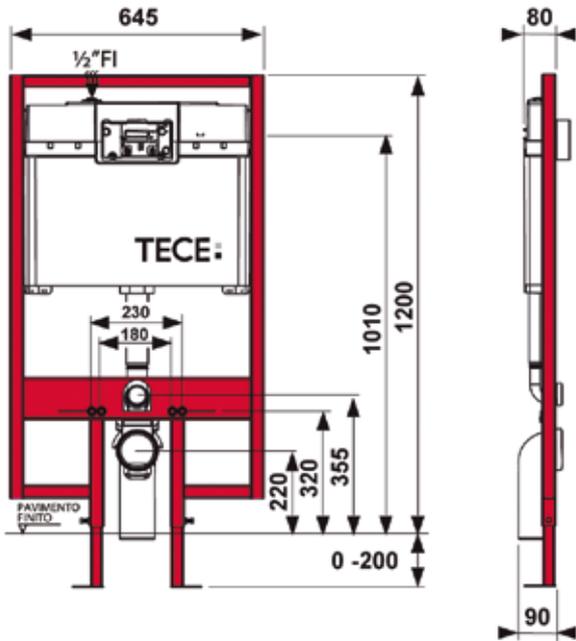
Fill all cavities and attach the metal mesh (see diagram).



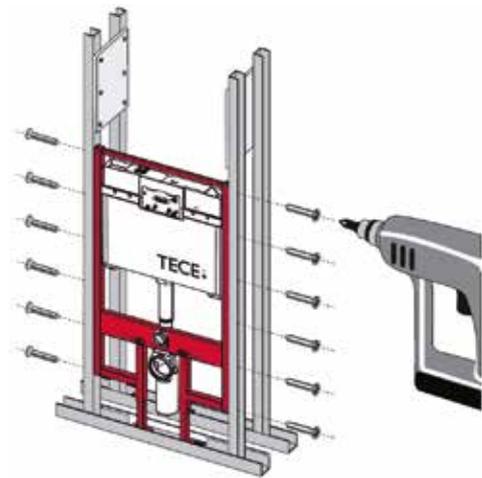
Plaster and tile the wall.

TECEbox toilet module

Toilet module with cistern (8 cm deep), compatible with all TECE flush plates (excluding the TECEplanus flush plates with IR sensor). The module can be installed in front of a brick wall or in lightweight partition walls with a metal or wooden frame.

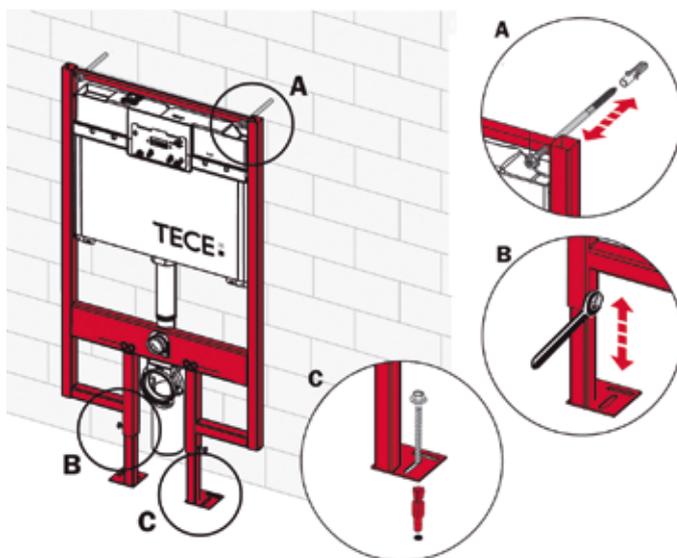


Attach the sides of the module to the supports on the frame.

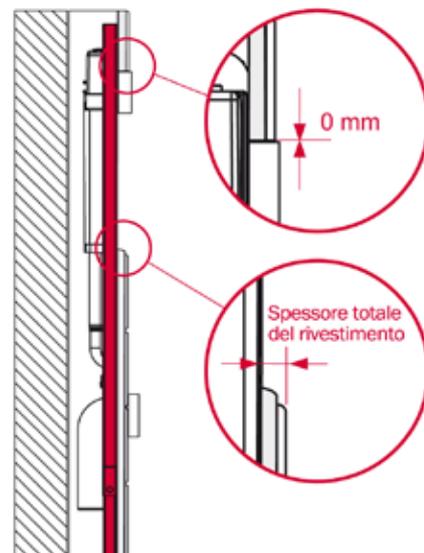


Assembly in front of a wall

The height of the telescopic feet must be checked first before installing the TECEbox module in front of a wall. The feet are then attached to the floor and the top part to the wall.



Attach the water connection (connection 1/2" FI on the cistern) and clad the wall with plasterboards. Ensure that openings are left for the flush plate, drainage and threaded rods. The total thickness of the coating (board, adhesive and tiles) must be at least 18 mm.



Assembly with a frame

Position the module on the frame flush against the supports. Adjust the height of the telescopic feet and attach them to the floor.

TECEbox 8 cm – Assembly

Repairing the cistern

The TECE cistern tank is made of polypropylene. If a leakage point is found (up to a diameter of approx. 12 mm), this can be mended using a repair set. This consists of:

- 5 plastic disks
- Sandpaper
- Solvent (125 ml)
- 2 cloths
- Hot glue gun
- 2 glue sticks



Repair set for TECE cistern (order number 9221013)

Repair instructions

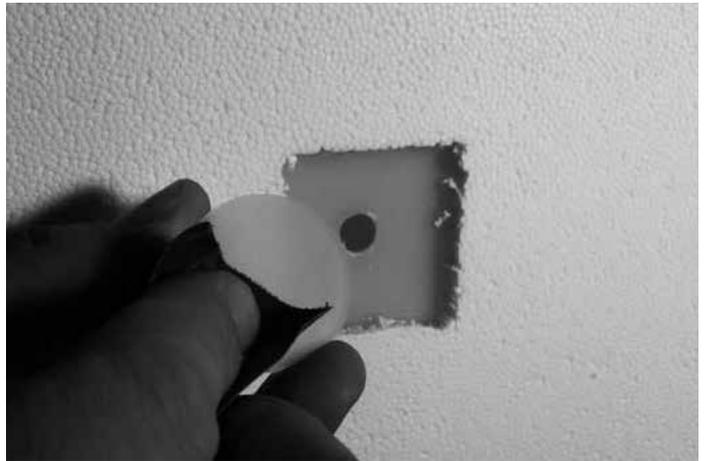
Clear and clean the area around the opening.



Round off the edges around the opening with a cutter knife.



Sand the area around the opening as well as the plastic disks with sandpaper.



Clean the area to be repaired thoroughly using a solvent or acetone.



Insert a glue stick into the hot glue gun and apply the glue to the plastic disk (the covered area must be twice as large as the diameter of the opening). Only use the original adhesive and do not mix this with other adhesives!



Immediately place the disk on the opening and press lightly. The drying time is approx. 15 minutes. Fill the cistern and check the seal.

TECEbox washstand and bidet

The TECEbox modules for washstand and bidet let you implement all connections with brick walls easily. Both modules comes with an all-around steel frame with a depth of 8 cm.

With the washstand module the distance between the threaded rods and the height of the attachment bracket must be adjusted, whereas with the bidet module both the height of the attaching rods as well as the height of the drainage must be checked. It is important that all adjustments are performed before bricking in the modules. It is not possible to change the dimensions in retrospect.



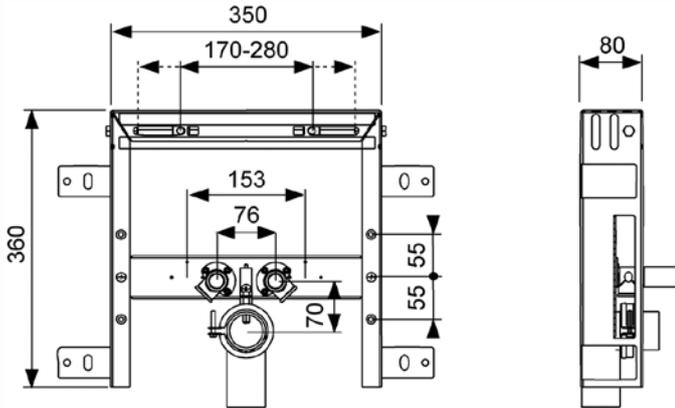
TECEbox washstand module (order no. 9 370 032)



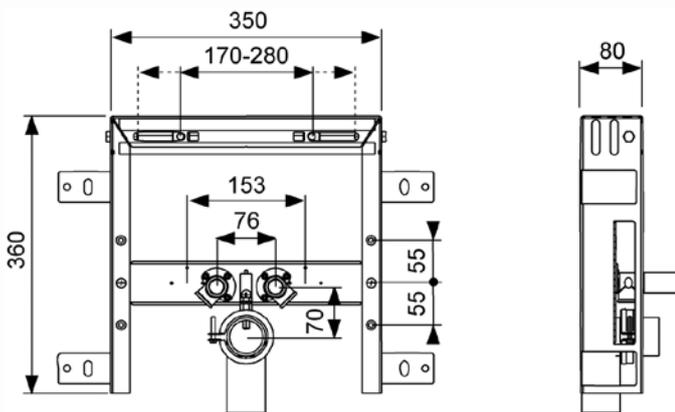
TECEbox bidet module (order no. 9 370 031)

Assembly for washstand and bidet modules

The assembly phases are the same for both modules (washstand and bidet). They can be installed in front of a solid wall or installed in the wall with the help of a small niche.



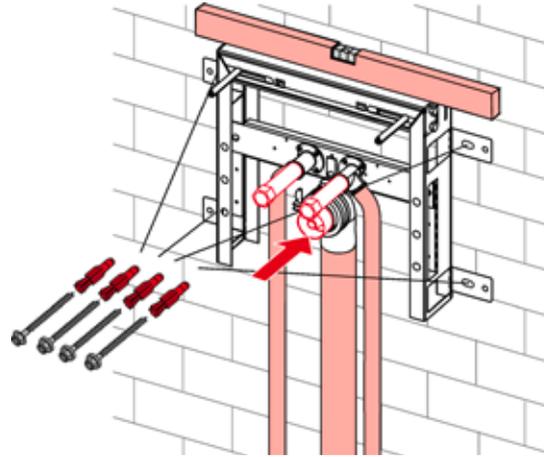
Dimensions of the TECEbox washstand module (order no. 9 370 32)



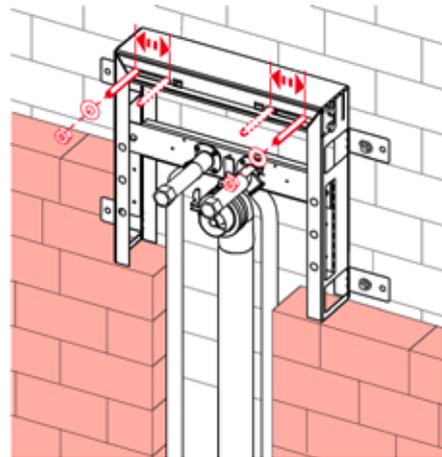
Dimensions of the TECEbox bidet module (order no. 9 370 031)

Assembly in front of the wall: Make sure the module is level, open the four wings on the sides and attach to the brick wall.

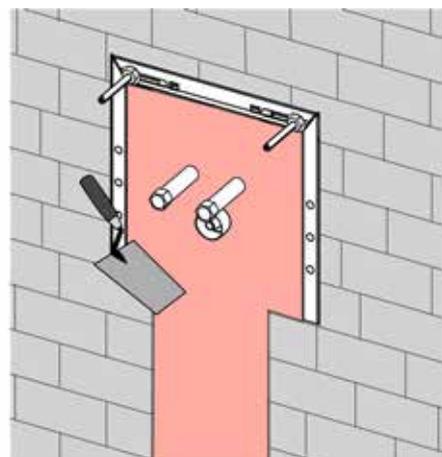
Adjust the height of the attachment bracket and drain bend. Connect the water connections and fit the caps for both ends as well as for the drainpipe.



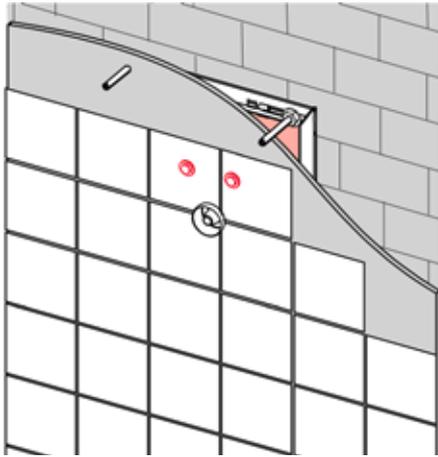
With the washstand module, you must set the distance between the threaded rods (minimum value 170 mm, maximum value 280 mm).



Brick the module in completely and fill all cavities.

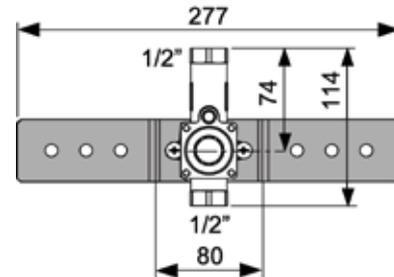


Plaster and tile the wall.

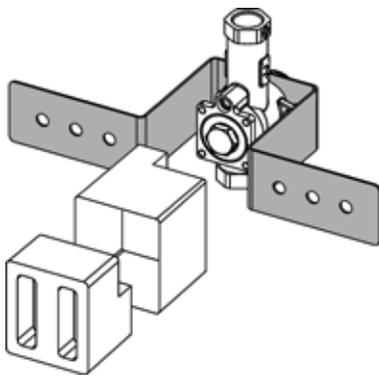


Assembly of TECEbox urinal flush valve housing

The depth and assembly height of the attachment bracket must be taken into account when installing the urinal flush valve housing. The position of the valve and the bare-wall protection must also be considered.



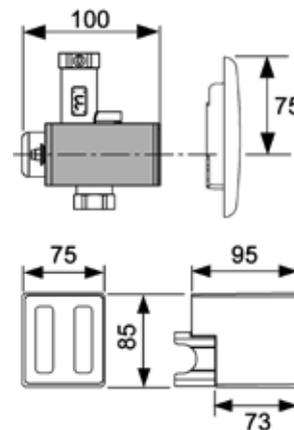
TECEbox urinal flush valve housing



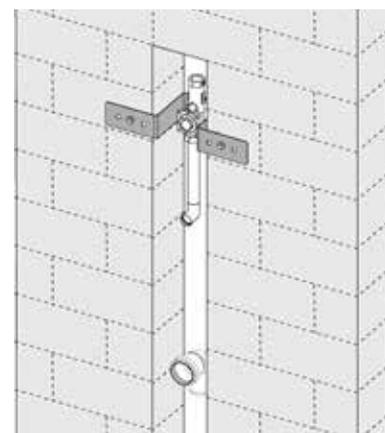
The urinal flush valve housing with TECE valve is already pre-mounted on an attachment plate and can easily be inserted into the slot in the wall. The big advantage of this urinal flush valve housing is its total compatibility with manual or electronic actuation variants. This means the flush plate can be swapped out at any time, even after assembly.

Note:

The urinal ceramics to be used must be known in advance prior to installation. You should use the current connection dimensions from the ceramic manufacturer for this purpose.

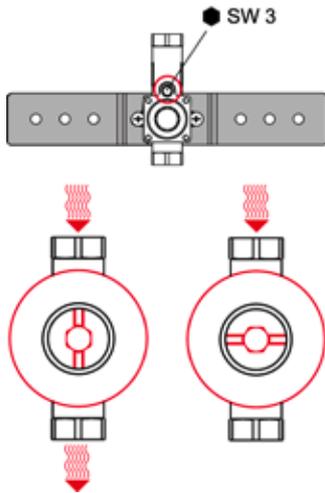


The flush valve housing is inserted into a slot in the wall and attached using a holding plate. The water connection and the intake for the urinal ceramics can be installed using any approved piping system.

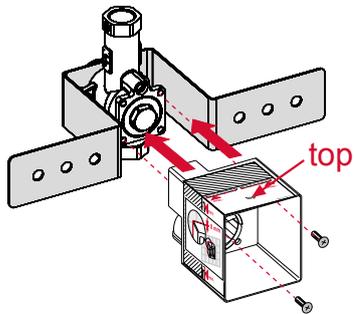


The urinal flush valve is locked in its as-delivered state so the required pressure test can be performed.

The inlet flow control is located above the stopper. This must only be removed during the fine installation.



Install the protective shell and ensure it is aligned correctly.



The bare-wall protection housing is cut flush to the wall after tiling.

Please remember to follow the required wall mounting dimensions when using the corresponding urinal actuation.

Toilet flush plates

All manual TECE flush plates are compatible with the 8 cm cistern!



TECEsquare



TECEloop



TECEplanus



TECEnow



TECEbase



TECEambia

The toilet flush plates shown here only give an overview of the available product range. See the whole range online at www.tece.com

There, you can also find a flush plate configurator, which allows you to select the material and colour for the buttons and covers.

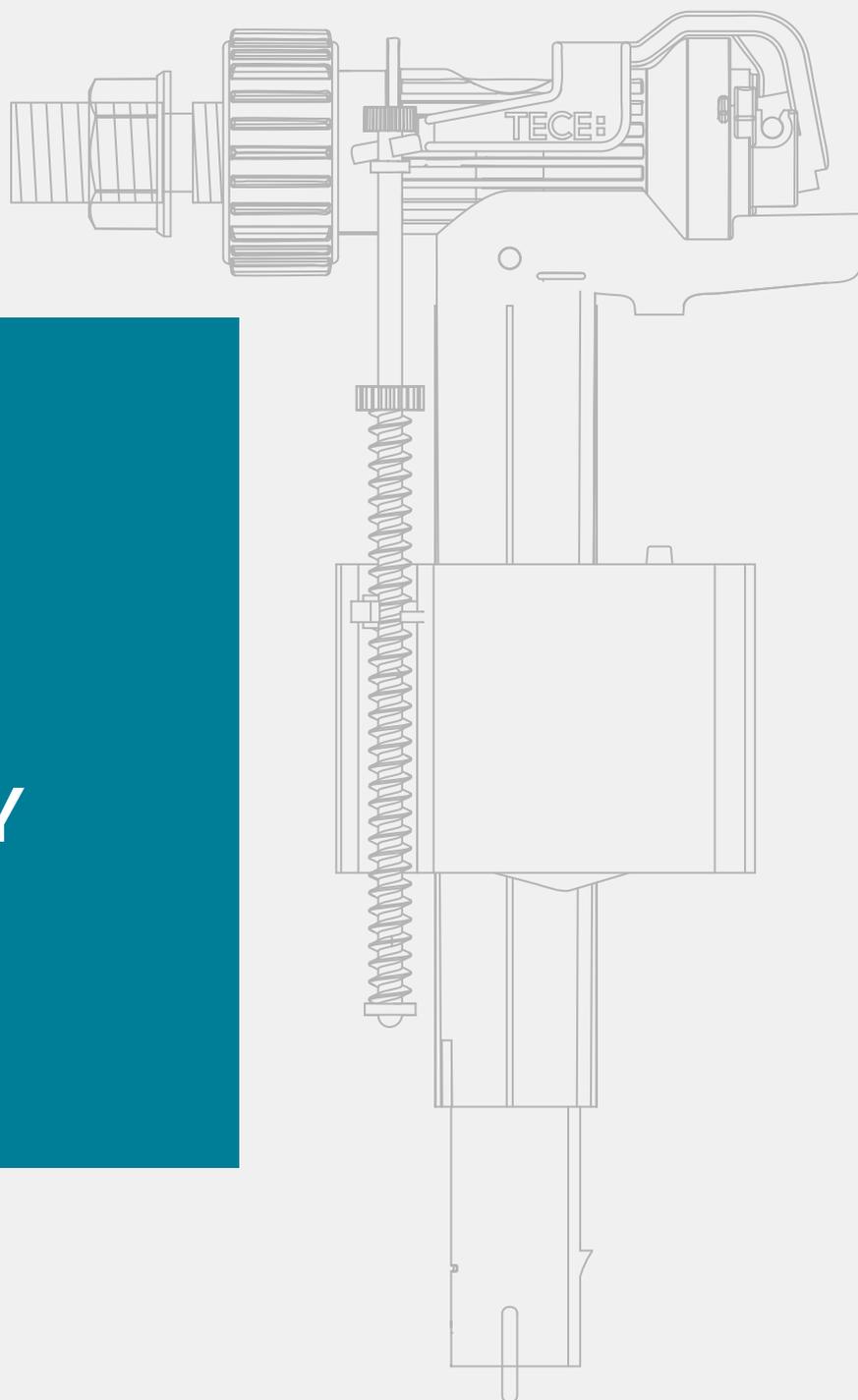
Please note the necessary installation dimensions and wall structure for the flush-mounted frames.



Sanitary systems

TECE FLUSHING TECHNOLOGY

TECHNICAL GUIDELINES



TECE cistern	6-4
Tank	6-4
A2 drain valve	6-4
Converting the A1 drain valve to the A2 drain valve	6-6
F 10 filling valve	6-6
Cleaning the filling valve	6-7
Assembly	6-8
Toilet flush plates	6-9
U 1 TECE urinal flush valve	6-10
Mechanical flush valve	6-10
U 1 electronic flush valve	6-11
Installation of urinal flush valves	6-13
Installing the mechanical U 1 urinal flush valve housing	6-14
Installing the electronic U 1 urinal flush valve housing, 6 V version	6-15
Installing the electronic urinal flush valve, 230 V/12 V mains version	6-16
Programming the urinal infrared electronics	6-18
Urinal flush plates for the new U 1 urinal flush valve	6-19
U 2 TECEfilo urinal flush valve	6-20
Bare wall – mounting and installation	6-21
Installing the wall-mounted TECEfilo urinal flush plate 230 V/12 V	6-21
Installing the flush-mounted TECEfilo urinal flush plate 230/12 V	6-24
Programming the urinal electronics	6-27

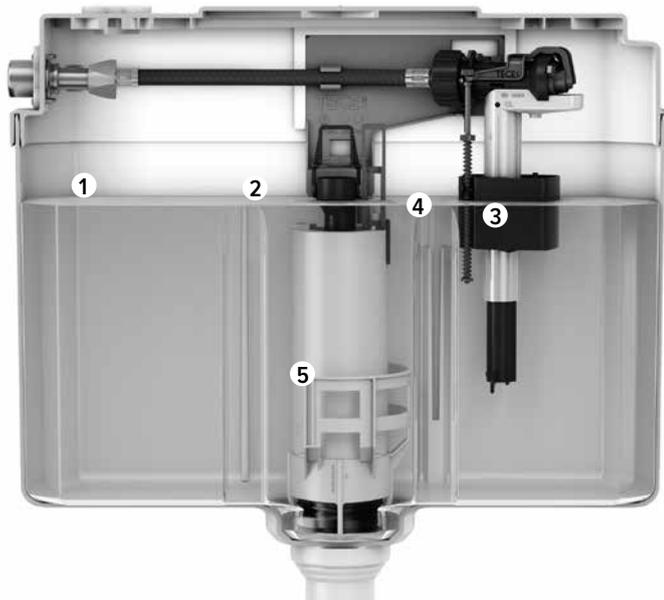
TECE flushing technology – cistern

TECE cistern

The concealed cistern from TECE is a universally adaptable standard cistern. By using different frames, the cistern can be installed in dry or wet-wall constructions. The TECE cistern is always equipped with the same internal technology inside and is therefore compatible with all TECE flush plates. Due to the cistern's universal nature, there is a clearly organised range and storage and the supply of spare parts is straightforward.

Properties of the cistern:

- Pre-assembled and sealed
- Can be combined with all TECE flush plates
- Single or dual-flush technology available
- Robust lever mechanism
- 10-litre safety tank: enough water when needed
- Compatible with standard spare parts available on the market:
 - 4.5 and 3 litres,
 - 6 and 3 litres,
 - 7.5 and 3 litres or
 - 9 and 3 litres.
- Cistern tank made of impact-resistant plastic
- Easy to install
- Self-explanatory technology



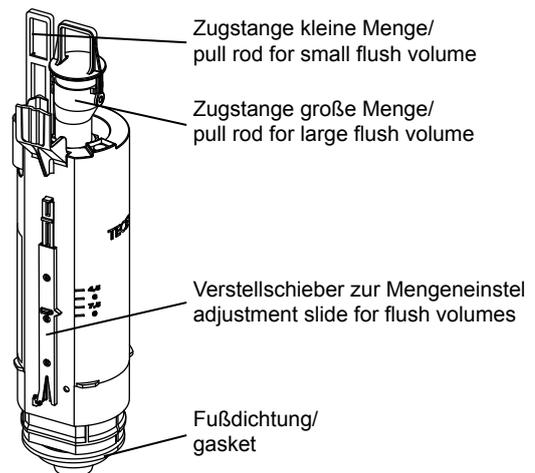
- TECE cistern with
1. Corner valve
 2. Reinforced hose
 3. Filling valve 3/8" standard connection
 4. Filling valve holder
 5. Drain valve (here, F 10)
 6. Valve seat (with throttle)

Tank

As the tank volume is 10 litres, there is always plenty of water for flushing. Even after flushing with the large flush volume, water is always available for a follow-up flush. The tank is made of impact-resistant plastic and is insulated to prevent condensation.

A2 drain valve

A2 drain valve has been installed in the TECE cistern since the middle of 2009.



A2 drain valve, important components

Dual-flush technology

During everyday use, a considerable amount of drinking water is used to flush toilets. The intelligent solution from TECE goes a long way towards saving water. With dual-flush technology, the small flush volume is set to 3 litres, and the large flush volume can be set to 4.5/6/7.5 or 9 litres. The default setting for the dual-volume flush is 6 litres for the large flush volume and 3 litres for the small flush volume.

Single-flush technology

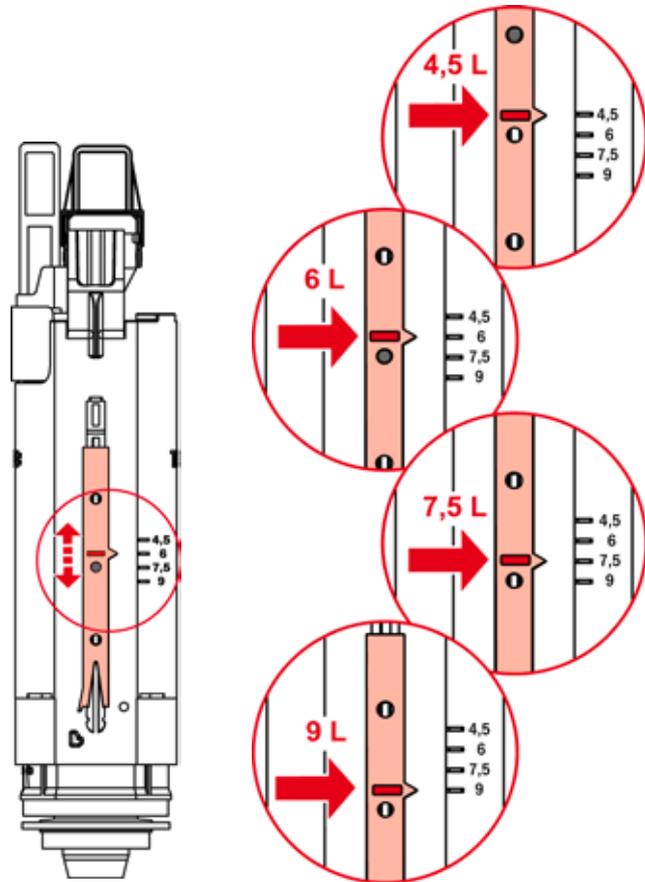
Single-flush technology is also possible with TECE cisterns and TECE drainage valves. However, with this flush option, only the large flush volumes of 4.5/6/7.5 or 9 litres are available.

General

Due to the easily adjustable drainage valve settings, the flush volumes can be adapted to each specific situation. In new builds with custom pipes, gradients and a 4.5-litre ceramic, it is possible to use a 4.5-litre saving flush in combination with a 3-litre flush. However, pipework systems are often installed which need a larger flush volume to ensure that they work correctly. In this case, flush volumes of up to 9 litres can be chosen to ensure this.

Setting the flush volumes

The flush volumes are adjusted centrally using an adjustment slide on the rear of the drain valve. The flush volumes which can be set are clearly marked on the valve.



A2 drain valve, adjusting the flush volume

Throttle set

Problems with the toilet ceramic not flushing correctly can be resolved with the aid of a throttle set.

The throttle set includes eight different throttles:

- Brown: 46 mm diameter (approx. 115% flush pressure)
- Red: 42 mm diameter (approx. 110% flush pressure)
- Yellow: 39 mm diameter (approx. 105% flush pressure)
- Blue: 36 mm diameter (approx. 100% flush pressure)
- Green: 34 mm diameter (approx. 95% flush pressure)
- Grey: 32 mm diameter (approx. 85% flush pressure)
- Black: 30 mm diameter (approx. 75% flush pressure)
- White: 28 mm diameter (approx. 65% flush pressure)

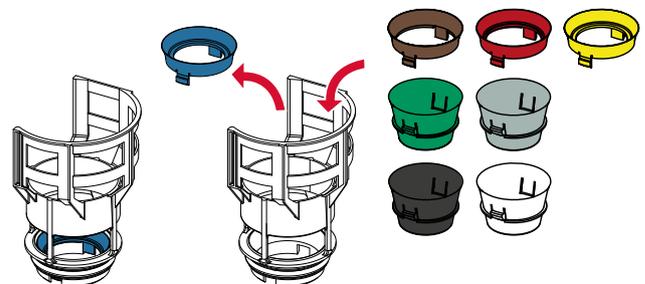
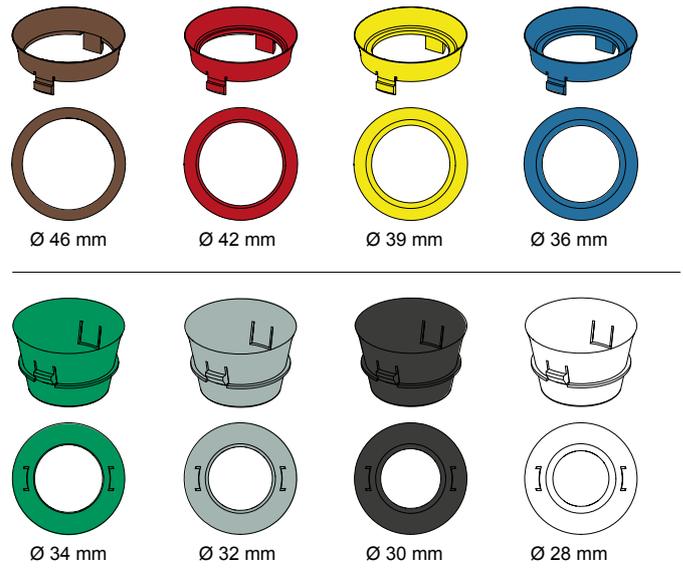
Reducing the flush pressure:

The throttle set can be used to reduce the flush pressure if water sprays out of the ceramic. To control the flushing pressure, a throttle with a smaller internal diameter can be used.

Increasing the flushing pressure:

If a toilet ceramic is not being correctly cleaned then the flushing pressure for standard cisterns can be subsequently increased. To increase the flushing pressure, install a throttle with a larger internal diameter or remove the inserted throttle.

The flush flow throttle can be easily installed in the valve seat of the drainage valve.



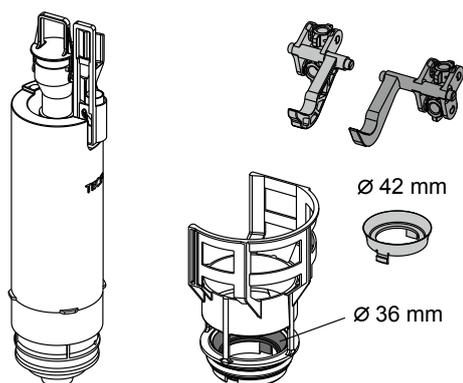
Installing/removing the flush flow throttle in the valve seat

TECE flushing technology – cistern

Converting the A1 drain valve to the A2 drain valve

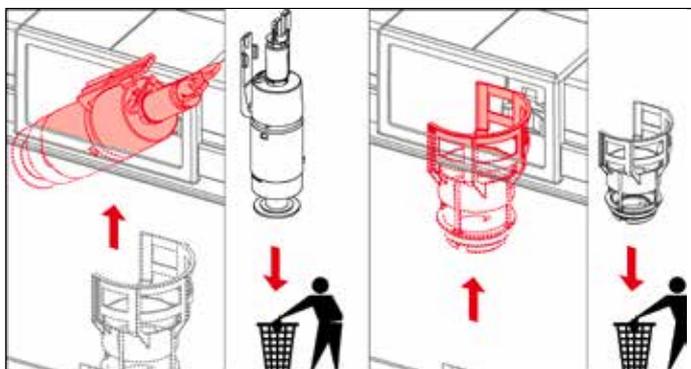
If a drain valve is replaced as a spare part or the new drain valve is modified because of the additional functions (4.5/7.5 litre flush, throttle set), the new A2 drain valve offers full compatibility with the old A1 version.

The operating lever, 2 throttles and valve seat are included in the scope of delivery along with the A2 drain valve.

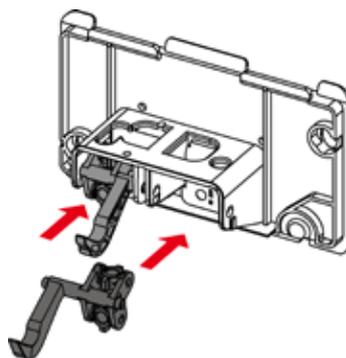
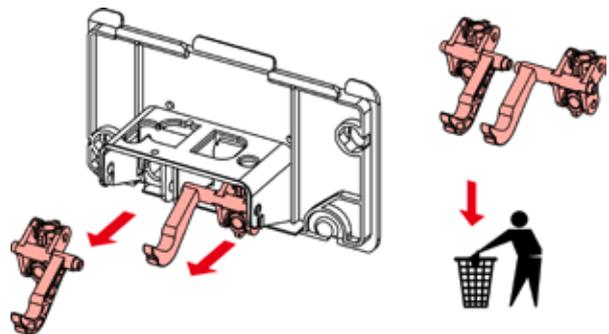


Conversion set 9820223, scope of delivery

The TECE cistern drain valve can be replaced easily.



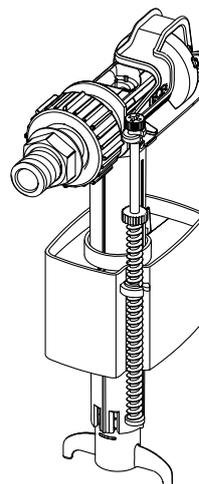
The old A1 drain valve should be disposed of, together with the associated valve seat and seal.



When replacing an old A1 drain valve with a new A2 one, care must be taken to ensure that the operating lever is also replaced.

F 10 filling valve

The F 10 replacement filling valve (order number 9820353) universally fits in all TECE cisterns and in many competing cisterns.



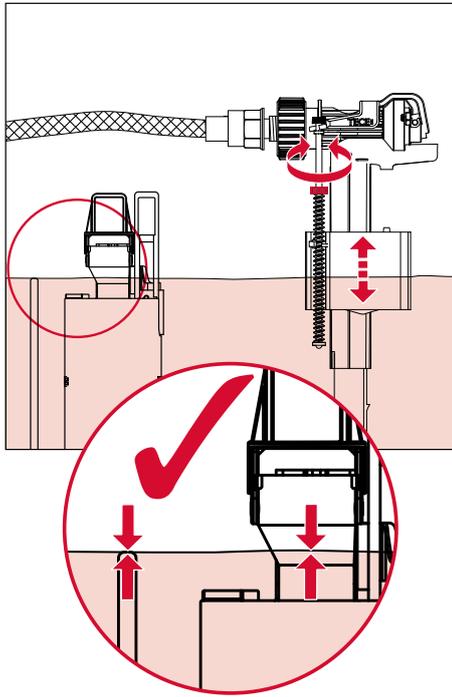
F 10 filling valve

Properties:

- Low-noise in accordance with acoustic group 1 (DIN 4109)
- Functional range: 100 hPa to 10,000 hPa
- Minimum flow pressure: 500 hPa
- Adjustable fill level
- Compact design
- Adjustable outlet pipe

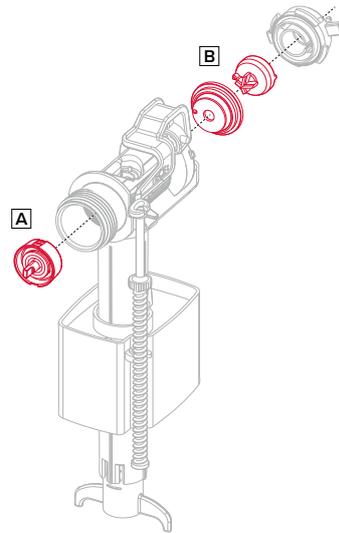
Setting the fill level (filling valve)

The fill level in the cistern can be set by turning the adjustment spindle on the filling valve.



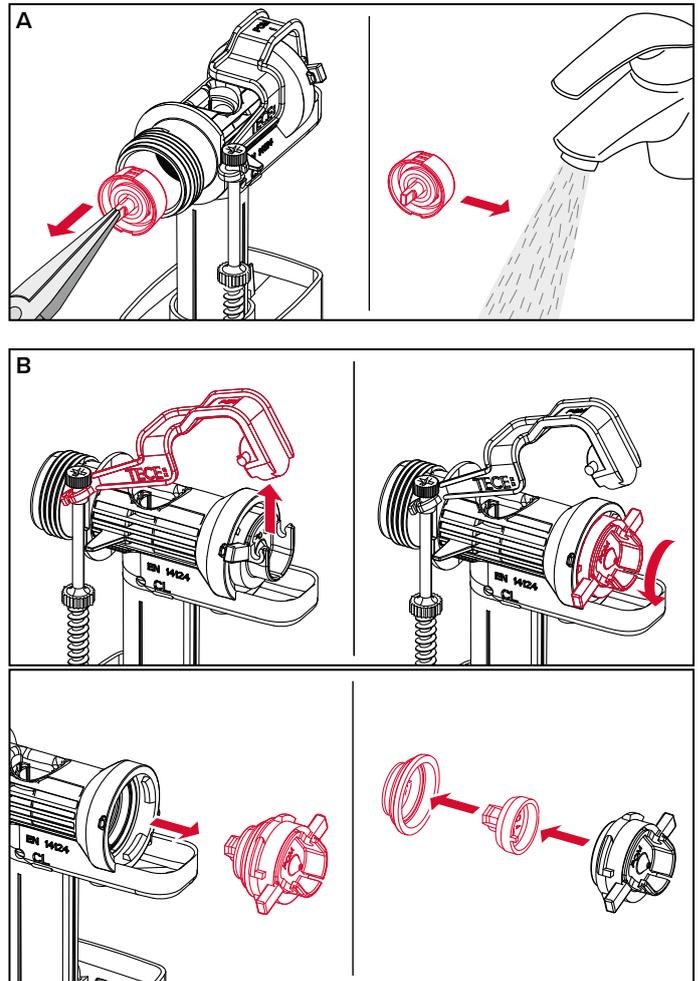
The height should be set so that the water reaches the upper mark on the overflow of the drain valve and the top mark in the cistern (see diagram).

Cleaning the filling valve



The inlet component (A) or the membrane of the pilot valve (B) can be cleaned if they become dirty due to polluted water.

To do this, remove the parts and simply hold them under running water.



If necessary, you can obtain replacement parts for the filling valve with order numbers 9820382 (valve lever set) and 9820383 (sealing kit).

TECE flushing technology – cistern

Assembly

Shell construction stage

The corner valve of the TECE concealed cistern is closed and pre-installed as a complete unit. The pressure can be tested without the cistern needing to be opened. The cistern only needs to be opened during the fine installation phase. During the shell construction stage, the cistern remains sealed. An unbroken seal during fine installation work guarantees that the cistern is clean and functional. A damaged seal shows that the cistern has already been opened.



Splash protection with seal

Fine installation

The TECE concealed cistern can only be opened by destroying the seal on the splash protection. If the seal is intact at the fine installation stage, the inner workings of the cistern are intact and free of contamination. The connection pipe must be well flushed out during commissioning of the concealed cistern. To do this, the hose can be lead out of the cistern towards the outside. After being flushed out, the reinforced hose can be screwed to the filling valve without the need for any tools.

A special feature of the TECE concealed cistern is the actuation block mounted on the splash protection. When the concealed cistern is opened, it is completely removed. This also works with the support frame for the actuation.



Splash protection with actuation block

Despite the small inspection opening there is ample space to work within the cistern. The operating lever is shaped in such a way that when inserted, it automatically hooks into the drain valve's drawbar eyelets.

Toilet flush plates

All TECE flush plates fit all standard cisterns!
For more information on TECE push plates, refer to the “Flush plates” technical guidelines.

Overview of TECE toilet flush plates



TECElux Mini



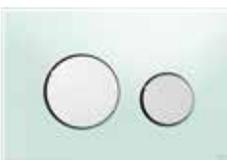
TECESquare II metal



TECESquare glass



TECEloop plastic



TECEloop glass



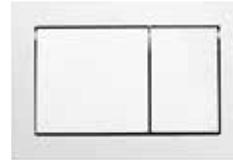
TECEplanus



TECEnow



TECEambia



TECEbase



Toilet flush handle

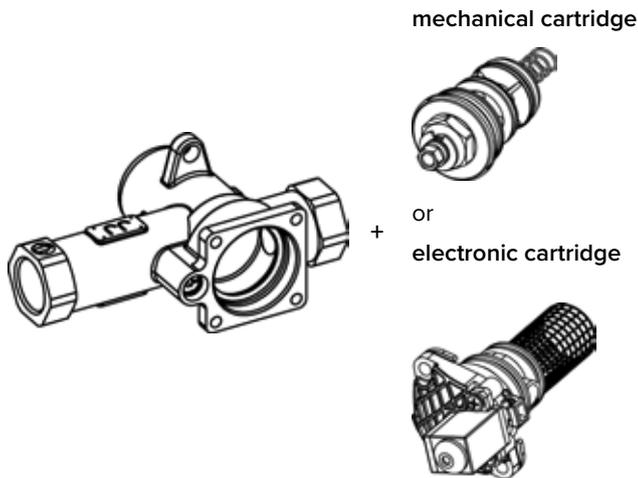
The toilet flush plates shown here only give an overview of the available product range. See the whole range online at www.tece.de. There, you can also find a flush plate configurator, which allows you to select the material and colour for the buttons and covers.

TECE flushing technology – U 1 urinal flush valve

U 1 TECE urinal flush valve

The TECE U 1 urinal flush valve is based on a further development of tried and tested flush valve technology. Well-conceived details and improved materials ensure a long life and high reliability.

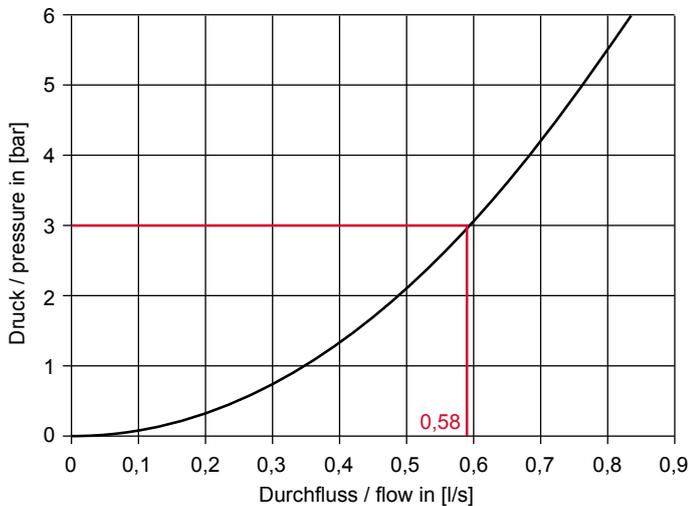
The TECE urinal flush valve is suitable for mechanical and electronic actuation. The same housing is used in both cases. The flush volume can be set from one to a maximum of about eight litres.



Housing for urinal flush valve and cartridges

Manual and electronic cartridges have the same flush valve housing and the same high flush performance of > 0.3 l/s at 1 bar.

Using the following flow diagram, you can calculate the flush volume for the urinal pressure flushing system depending on mains pressure and flush time.

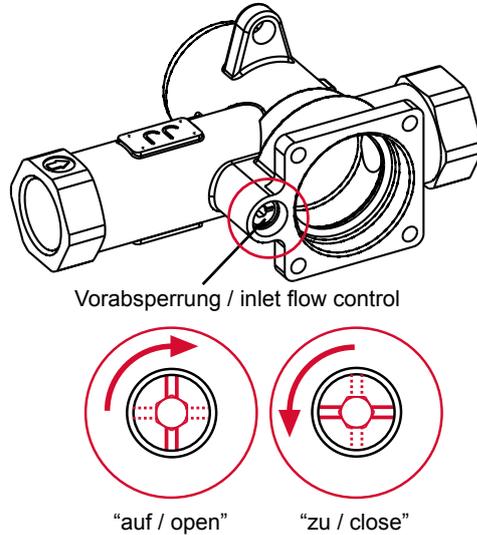


Flow diagram of urinal electronics

Example:

Mains pressure 3 bar: Flushing flow = 0.58 l/s
 Flush time e.g. 3.5 s: Flush volume approx: 2 litres

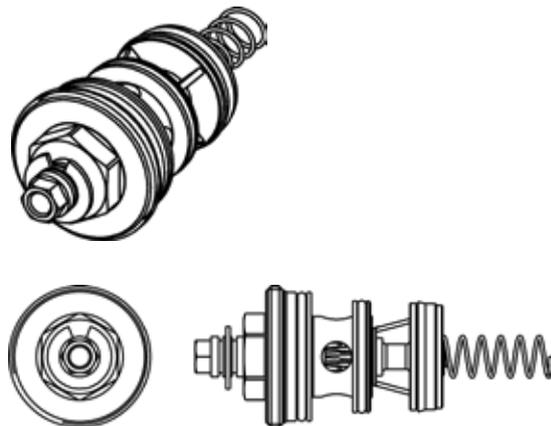
The flush housing contains the inlet flow control, this is adjusted using an Allen key (3 mm). A 90° anti-clockwise turn closes the inlet flow control, a 90° clockwise turn opens it.



Inlet flow control

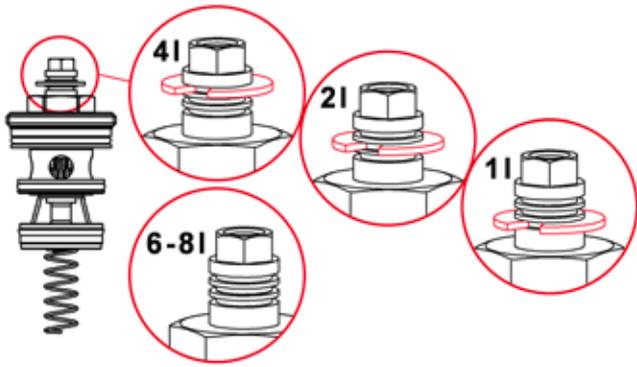
Mechanical flush valve

The mechanical flush valve (to DIN EN 12541) is hydraulically controlled and is sturdy and reliable. An automatic jet cleaning function ensures long and maintenance-free operation. The adjustable flush volume remains constant, irrespective of the supply pressure.



Volume adjustment

The flush volume of the mechanical cartridge can be set to 1, 2 or 4 litres using a retaining ring. When the retaining ring is removed, the flusher can be set to 6 – 8 litres.

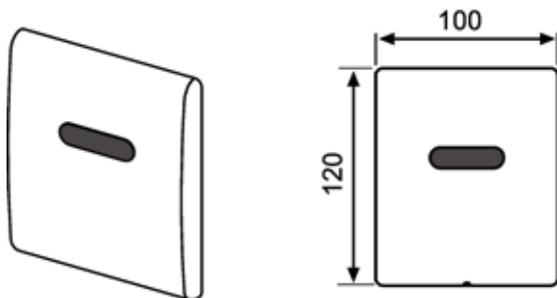


Adjusting the volume on the mechanical cartridge

All TECE manual urinal push plates can be used together with the U 1 mechanical urinal flush valve.

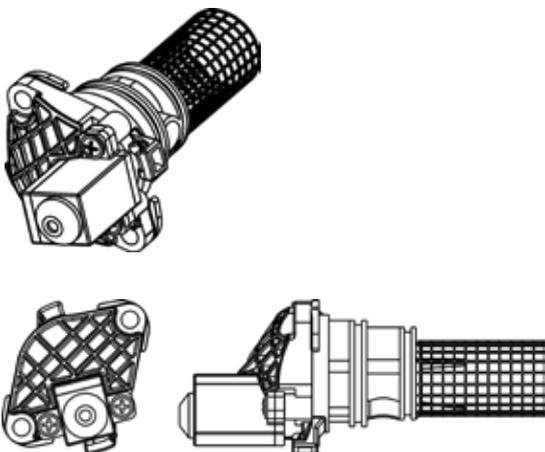
U 1 electronic flush valve

Touch-free electronics are often particularly required in the public sector. Because the covers of the TECEplanus electronics are made of metal and are also equipped with anti-vandal protection, the electronic units from TECE are particularly well-suited to this application.



TECEplanus urinal electronic unit with infrared sensor

The Autofocus infrared sensor reliably recognises every use. A magnetic key allows various settings to be performed on the electronics, including retrospectively.



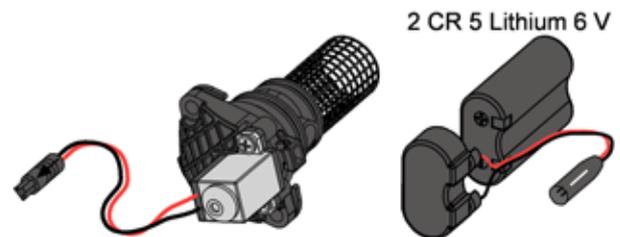
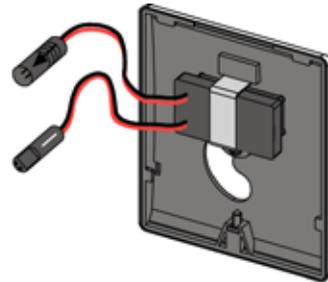
Electronic cartridge

The TECEplanus infrared electronics can be supplied with electricity in two different ways:

- 6 V battery
- 230 V/12 V mains power supply

6 V battery version

The electronics on the battery version have one connection to a battery (connector with white marking) and one to an electronic cartridge (connector with black marking).



Urinal electronics, 6 V battery version

Power is supplied by a 6 V battery, type: 2 CR 5 Lithium 6 V.

Based on a service life of two years, the battery lasts for

- 220,000 flushes or
- approx. 300 flushes/day.

When the voltage drops to 5.4 V, the voltage for operating the electronics is no longer sufficient and the battery must be replaced. The electronics notify you of this by beeping during the flush process. If the voltage drops any further, a flush can no longer be performed and the electronics will only beep when a person is in the detection range.

Technical data urinal infrared electronics, 6 V battery

Minimum flow pressure	0.5 bar
Max. operating pressure	12 bar
Flow rate at 3 bar	0.58 l/s
Operating voltage	6 V DC
Power input	1 W
Max. power input	5 W
Battery type	Lithium 6 V, 2 CR 5
Max. battery service life	approx. 3 years
Protection class	III
	Safety extra low voltage (SELV)
Flush time, factory setting	3 s
Flush time, setting range	2-10 s

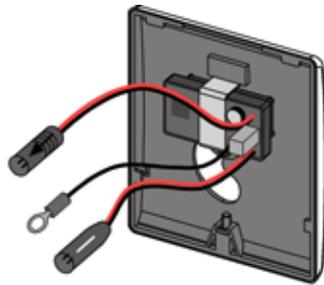
TECE flushing technology – U 1 urinal flush valve

Pre-flush, factory setting	off
Pre-flush, setting range	0.5-2 s
Pause function, factory setting	off
Hygiene flush, factory setting	off
Hygiene flush, setting range	off, 24 hours, 255 hours

230 V/12 V mains version

The power supply of the mains version is via a transformer which converts 230 V AC to 12 V DC (order no. 9810003, order separately).

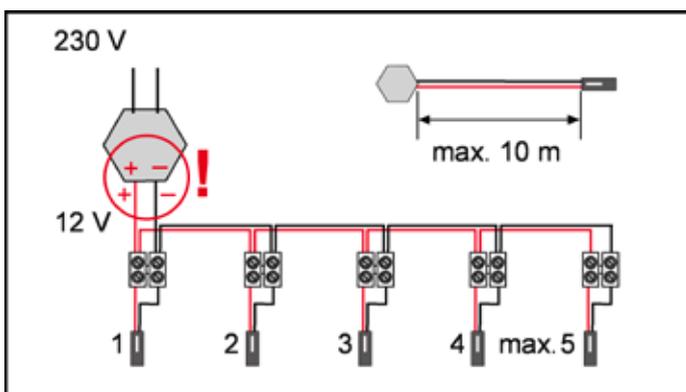
The electronics have one connection to the transformer (connector with white marking) and one to an electronic cartridge (connector with black marking). The third cable is to earth the electronics onto the flush valve's brass housing.



Urinal electronics, 230 V/12 V mains version

Up to five urinal electronic units can be powered at the same time by the transformer. For this reason, the transformer is not (!) located in the flush valve's bare-wall protection system. The transformer fits conveniently in a standard flush-mounted installation box.

For series installations, the electronics must be connected in parallel and the connection cable between the transformer and the furthest electronic unit can be a maximum of 10 m long.



Schematic diagram of a series installation of 5 urinal electronic units

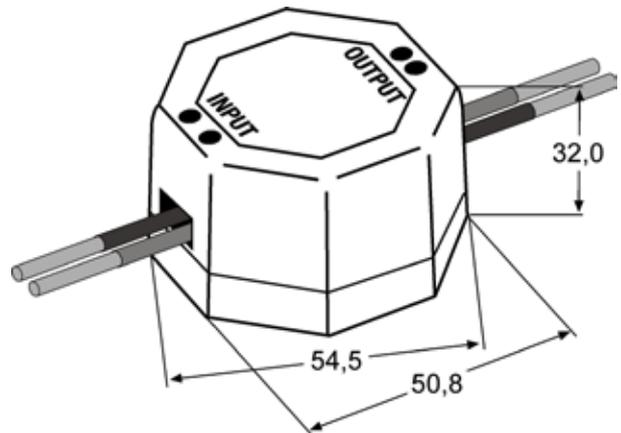
It is recommended that only TECE original products are used for the installation. Make sure that the polarity is correct when connecting the cables.

Technical data urinal infrared electronics, 230 V/12 V mains

Minimum flow pressure	0.5 bar
Max. operating pressure	12 bar
Flow rate at 3 bar	0.58 l/s
Mains voltage	230 V
Operating voltage	12 V (± 20%)
Power input	1 W
Max. power input	5 W
Protection class	III
	Safety extra low voltage (SELV)

Flush time, factory setting	3 s
Flush time, setting range	2-10 s
Pre-flush, factory setting	off
Pre-flush, setting range	0.5-2 s
Pause function, factory setting	off
Hygiene flush, factory setting	off
Hygiene flush, setting range	off, 24 hours, 255 hours

Technical data 230 V/12 V mains transformer

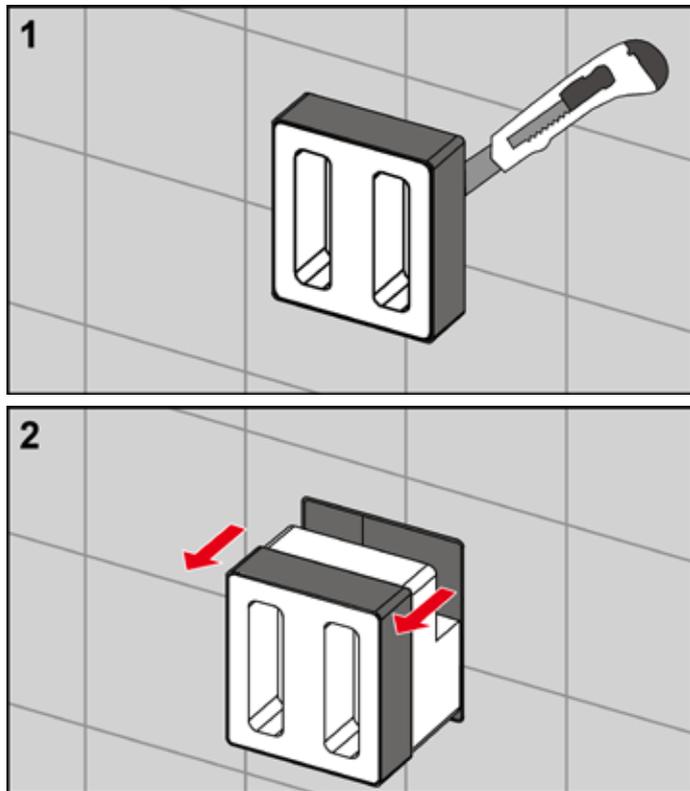


Input voltage	230 V AC (± 20 %)
Frequency	48–63 Hz
Rated Output voltage	12 V DC (± 20 %)
Output voltage tolerance	± 3%
Residual ripple	< 50 mVpp
Rated Output current	1.0 A
Nominal power	6 W
Minimum load	0
Energy efficiency	75 %
Overload protection	electronic
Short circuit protection	electronic
Type of protection	IP 20

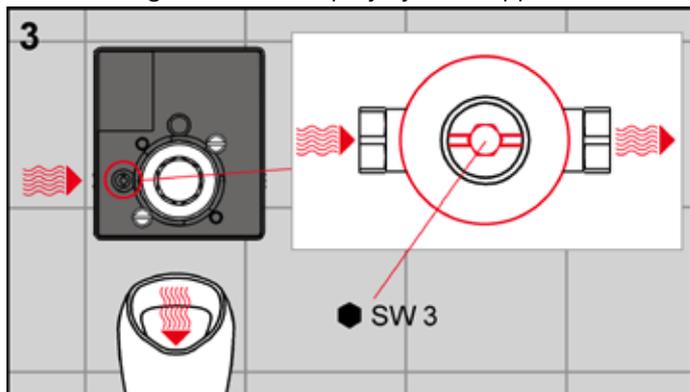
Protection class	II
	CE low voltage power supply
Operating temperature	- 20 °C to + 40 °C
Safety standard	EN 61 558/EN 60 950
EMV standard	EN 55 022/B
Technology	Switching
Switch frequency	100 KHz
Dielectric resistance	3 750 V/1 min
MTBF (MIL HDBK217)	120, 000 h

Installation of urinal flush valves

The installation procedures for the mechanical and the electronic flush valves are practically identical:



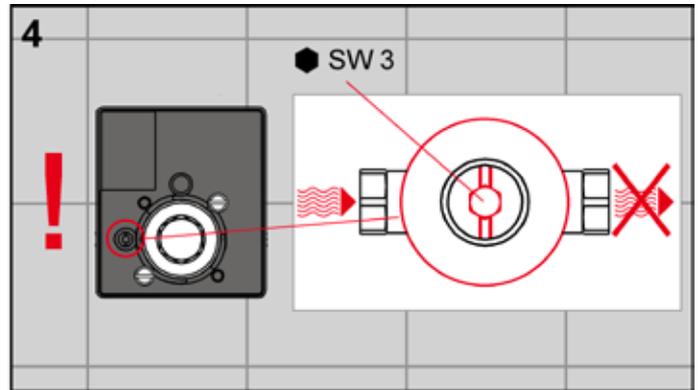
Cut the bare-wall protection flush against the wall, and remove it together with the polystyrene support.



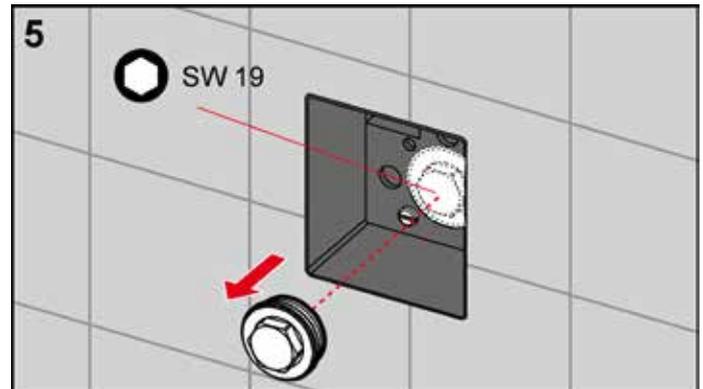
Sufficiently flush out the pipe.

Observe the following:

When performing the pressure test, the inlet flow control of the flush valve must be set to free-flow.



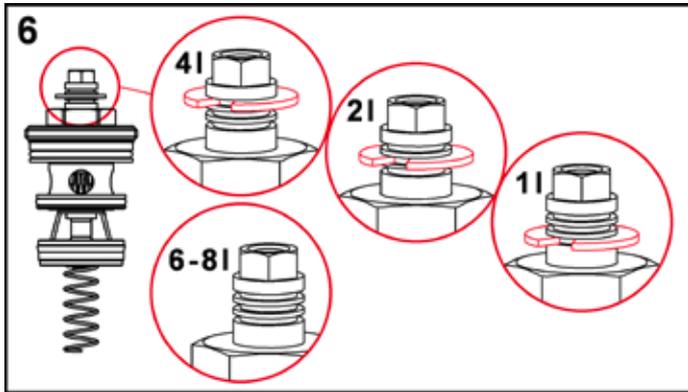
Before mounting the cartridge, ensure that the inlet flow control is closed so that no water can leak out during assembly. Close the shut-off using an Allen key. In the free-flow setting (fig. 3), the shut-off slot is parallel with the housing, and in the closed setting (fig. 4), it is at right angles to the housing.



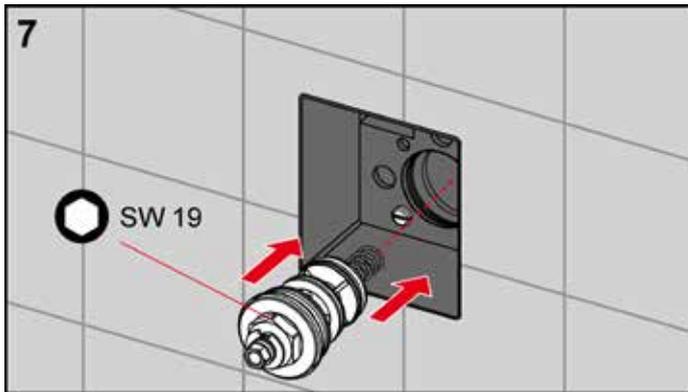
Remove the bare-wall plugs.

TECE flushing technology – U 1 urinal flush valve

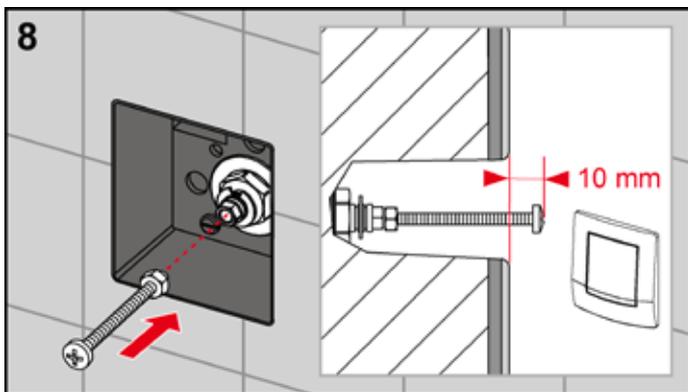
Installing the mechanical U 1 urinal flush valve housing



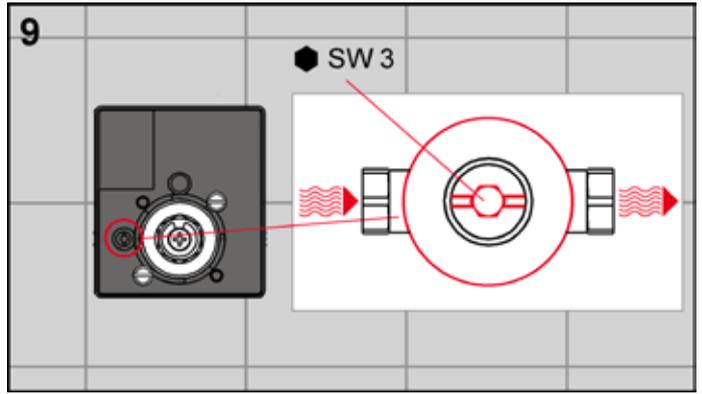
If applicable, set the flush volume before mounting the cartridge (factory setting = 2 litres). To do this, remove the retaining ring and insert it back into the corresponding slot: The first slot corresponds to a flush volume of 1 litre, the second to 2 litres, and the third slot to a flush volume of 4 litres. Without a retaining ring, the flush valve will flush a volume of 6–8 litres.



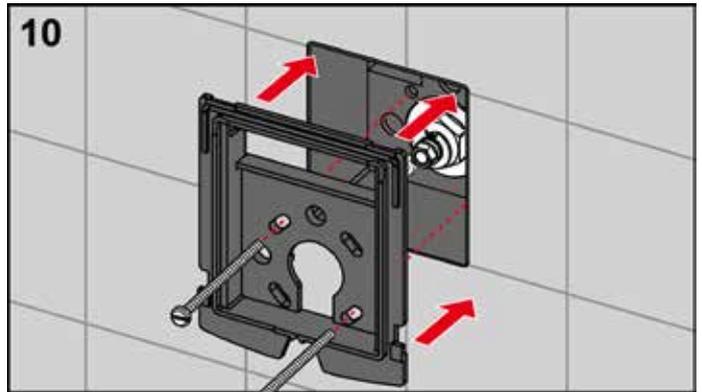
Screw in the mechanical cartridge.



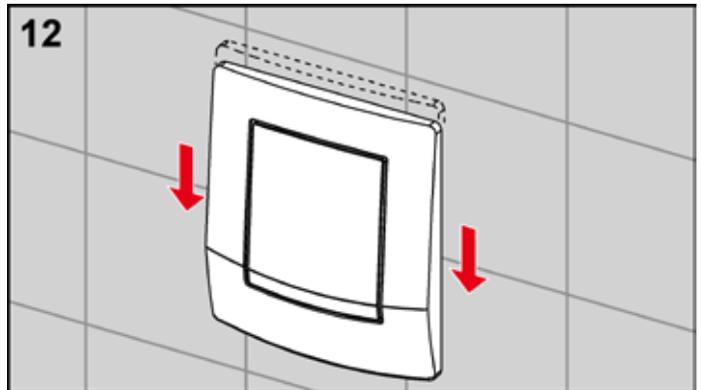
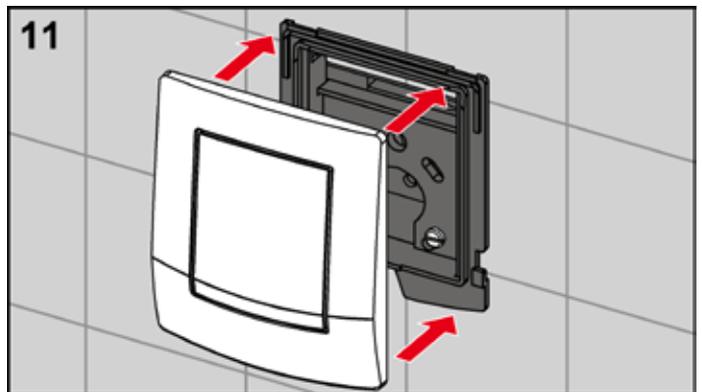
Screw in the actuating rods as described above (e.g. for the TECEambia, distance to wall surface = 10 mm), and screw on the counter nut to prevent them from turning.



Open the inlet flow control.

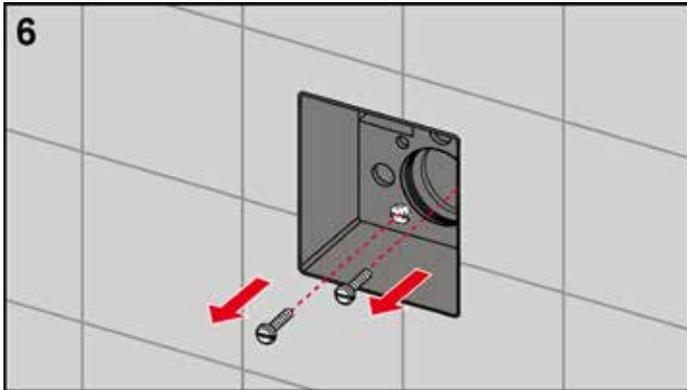


Screw the support frame onto the urinal flush valve housing.

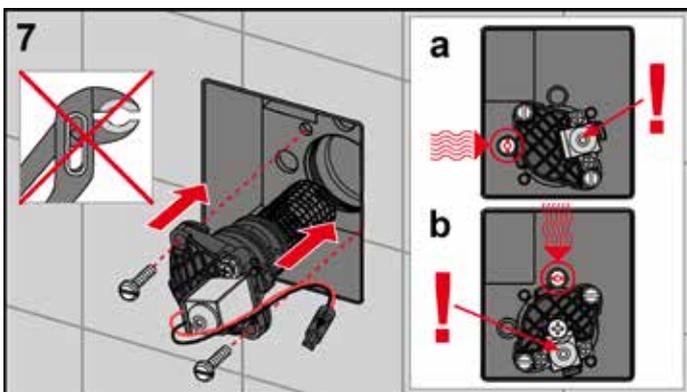


Finally, mount the flush plate cover (here, TECEambia).

Installing the electronic U 1 urinal flush valve housing, 6 V version



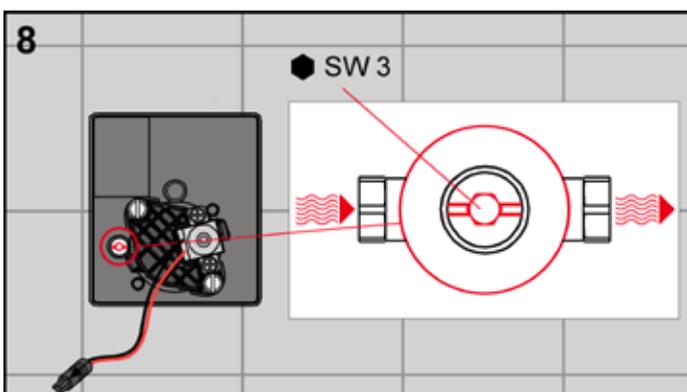
Unscrew the fastening screws on the bare-wall protection.



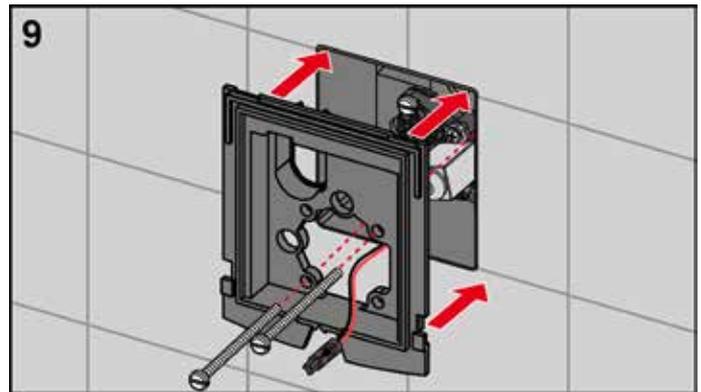
Install the electric cartridge (do not insert with tool !) and tighten the screws by hand.

Note:

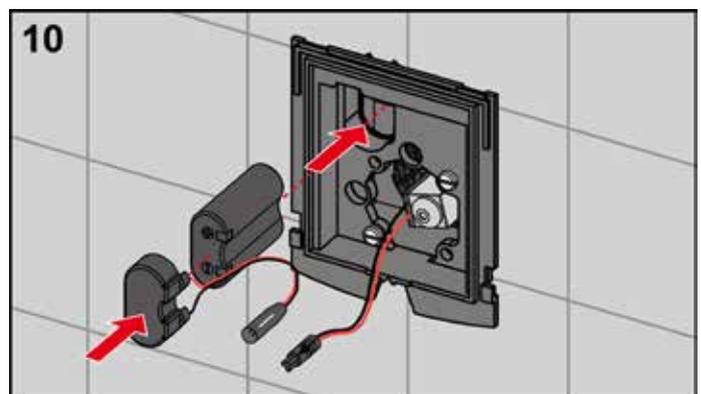
It is particularly important, when installing the electronic cartridge, to place it in the correct position. As can be seen on the right-hand side of the diagram, the position also depends on the installation situation of the flush valve housing: Horizontal housing = shut-off on the left, electronics on the right; vertical housing = shut-off at the top, electronics at the bottom. If the cartridge is installed incorrectly, the function may operate to start with, however, malfunctions will occur after a while.



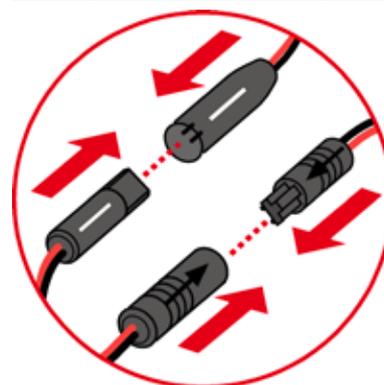
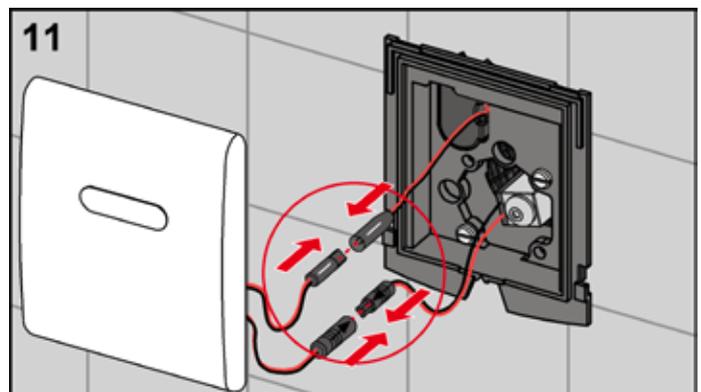
Open the inlet flow control.



Screw the support frame onto the urinal flush valve housing.

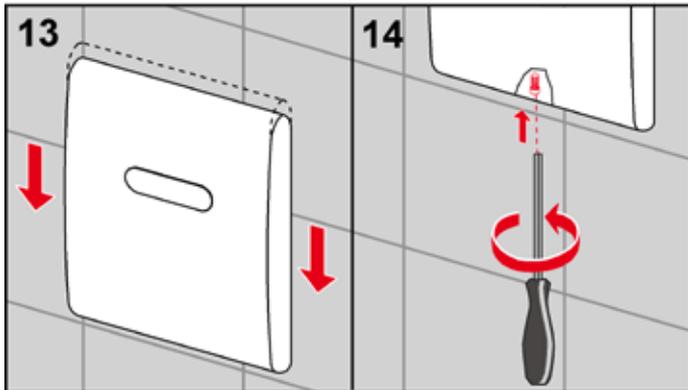
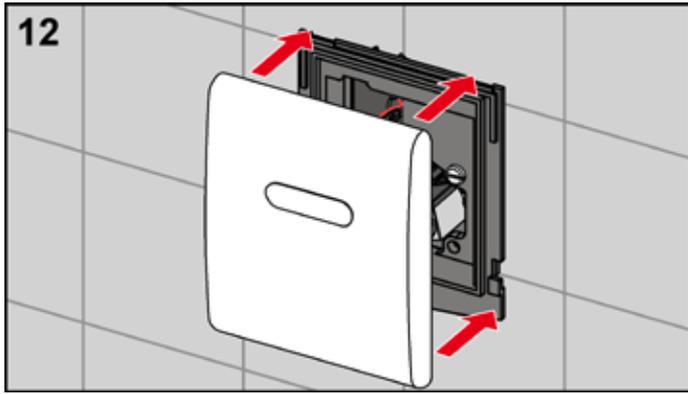


Place the connector adapter on the battery and position it in the opening provided for the purpose.



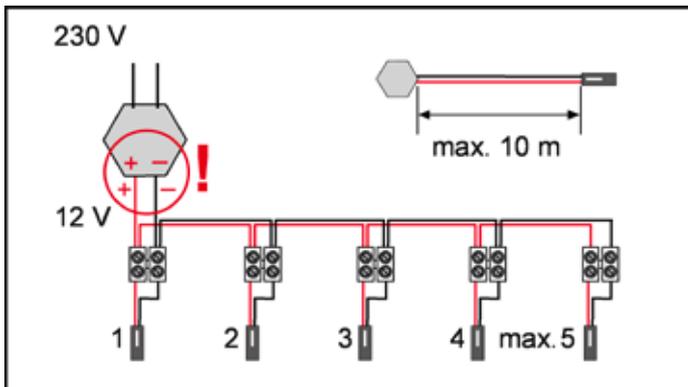
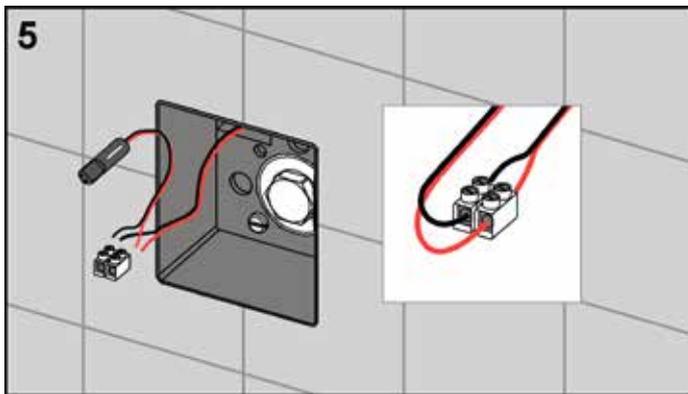
Connect the battery and cartridge to the electronics.

TECE flushing technology - U 1 urinal flush valve



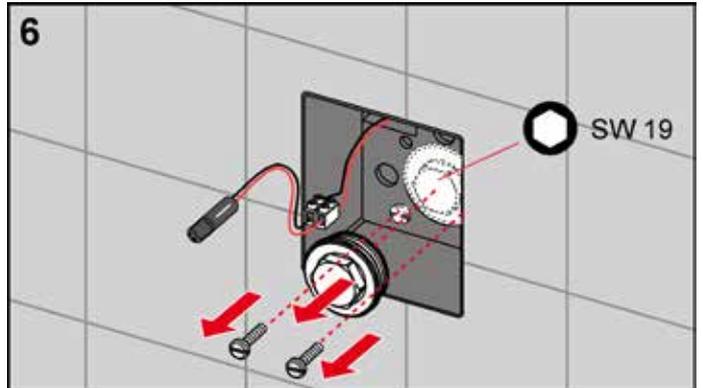
Finally, install the flush plate cover and mount the vandal-resistant screw supplied.

Installing the electronic urinal flush valve, 230 V/12 V mains version

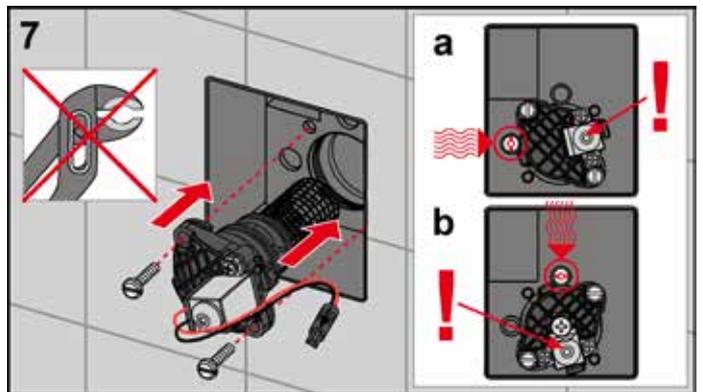


Connect the transformer cable to the mains connection adapter. Ensure correct polarity when making the connections.

Note the maximum number of connected electronics (= 5) and the maximum length of the connection cable (= 10 m).



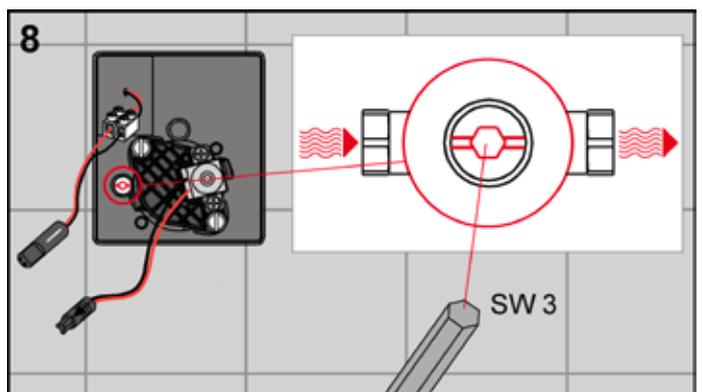
Remove the bare-wall plug and unscrew the fastening screws on the bare-wall protection.



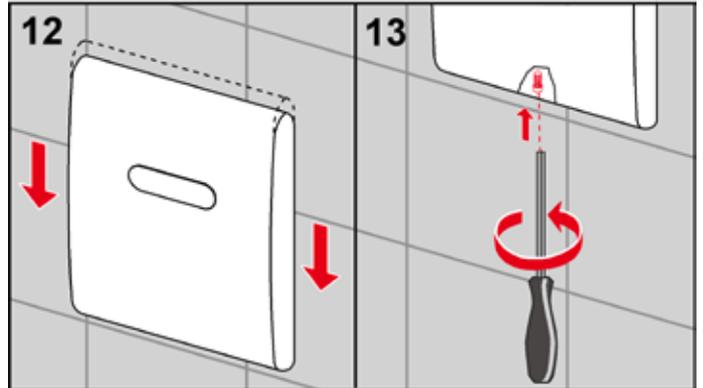
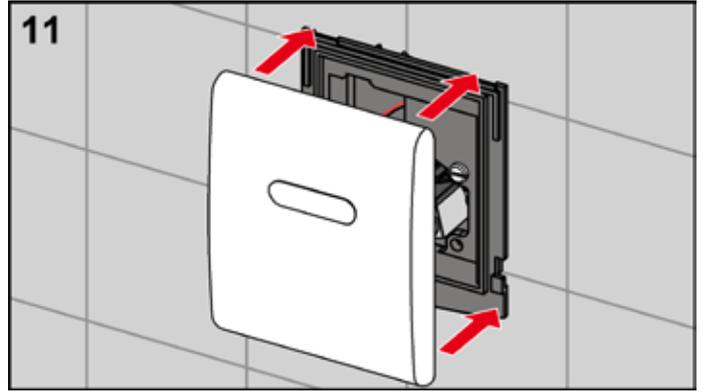
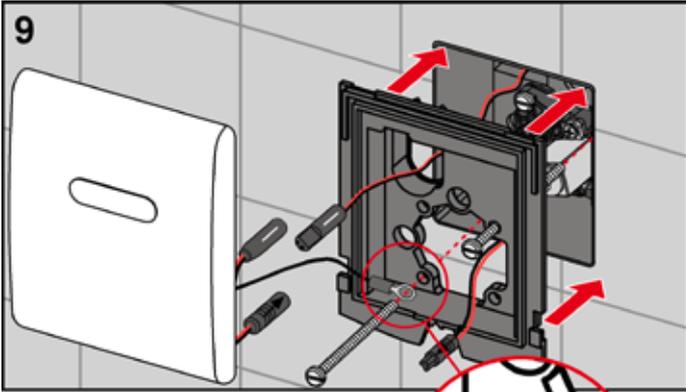
Install the electric cartridge (do not insert with tool!) and tighten the screws by hand.

Note:

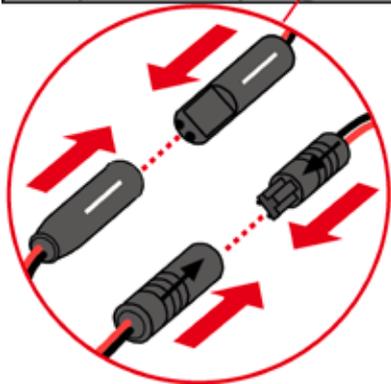
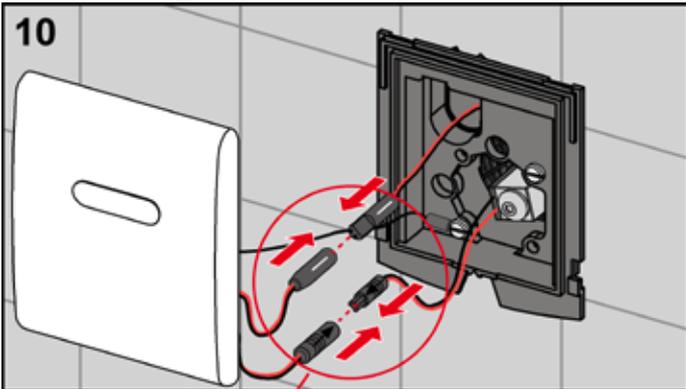
It is particularly important, when installing the electronic cartridge, to place it in the correct position. As can be seen on the right-hand side of the diagram, the position also depends on the installation situation of the flush valve housing: Horizontal housing = shut-off on the left, electronics on the right; vertical housing = shut-off at the top, electronics at the bottom. If the cartridge is installed incorrectly, the function may operate to start with, however, malfunctions will occur after a while.



Open the inlet flow control.



Finally, install the flush plate cover and mount the vandal-resistant screw supplied.



Connect the electronics to the mains and to the cartridge.

TECE flushing technology – U 1 urinal flush valve

Programming the urinal infrared electronics

After installing the electrical supply, the electronics can be programmed within one hour using the magnetic key supplied. If you wish to change the program, you must interrupt the power supply. Thanks to a memory chip, the last program set always remains active even after a power cut.

Approximately five seconds after being connected to the power supply, TECE electronics can be programmed in the first 60 minutes. Each configurable function is assigned a position.

Position	Function
1	Pause function "off"
2	Pause function "on"
3	Flush time 2 s
4	Flush time 2.5 s
5	Flush time 3 s
6	Flush time 3.5 s
7	Flush time 4 s
8	Flush time 5 s
9	Flush time 6 s
10	Flush time 8 s
11	Flush time 10 s
12	Pre-rinsing "off"
13	Pre-rinsing 0.5 s
14	Pre-rinsing 1 s
15	Pre-rinsing 2 s
16	Hygiene flush "off"
17	Hygiene flush 24 h
18	Hygiene flush 255 h
19	Sensor sensitivity "low"
...	...
23	Distance "standard"
24	Distance "short"
25	Distance "long"
...	...
28	Factory setting
29	Urinal covers "off"
30	Urinal covers "on"

 = factory setting

Programming list for the urinal electronics

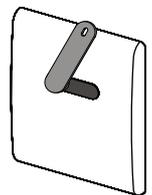
In programming mode, the electronics can be set with the magnetic key. In standard mode, only the cleaning function can be activated with this key.

- **Cleaning function:**
When cleaning the urinal, automatic flushing is generally not required as the cleaning agent needs time to take effect. For this reason, flushing can be delayed by 10 minutes.
- **Pre-flush (optional):**
(Duration 0–2 seconds) Briefly humidifies the ceramic before use, preventing adhesion of urine. Desired side

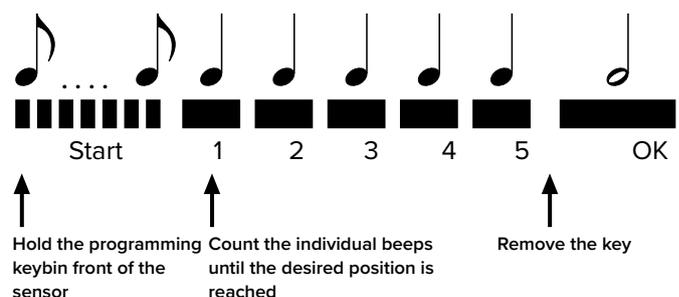
- effect: The pre-flush stimulates the urge to urinate.
- **Pause function (optional):**
The volume of water is automatically reduced if the urinal is flushed at intervals of less than two minutes. A cleaning flush takes place 45 minutes after the last water-saving flush.
- **Variable flush time:**
(Duration 2–10 seconds) The flush volume can be adapted to requirements throughout the flush time.
- **Distance:**
The modern autofocus sensor optical system operates reliably in varying construction situations. Nevertheless, the optical system's detection range can be changed on extremely small or large urinal systems.
- **Hygiene flush (optional):**
If this function is activated, a regular clean flush prevents the siphon from drying out and emitting unpleasant smells, and also prevents residues from being deposited (choice of 24 or 255 hours after the last flush).
- **Siphon refill (optional):**
Modern urinals generally suck the siphon contents completely away and then refill enough water to fill the siphon back up again. If this does not work, the refill function of the TECE electronics can be activated. A short flush impulse fills the siphon back up.

How to program the TECE electronics:

- Hold the programming key briefly in front of the sensor window. The programming mode starts with a quick series of short beeps.
- After the start-up phase, a sequence of the same beeps can be heard. Count the beeps until you reach your desired function.
- Now remove the programming key. A long beep indicates that the programming key has been removed.



Example: Setting the flush time to three seconds



Urinal flush plates for the new U 1 urinal flush valve



TECEsquare II metal



TECEsquare glass



TECEsquare metal



TECEloop plastic



TECEloop glass



TECEplanus



TECEnow



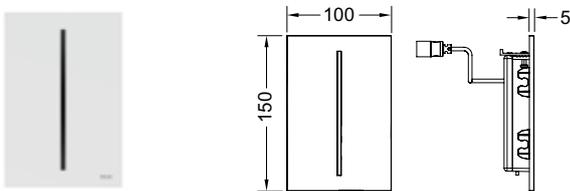
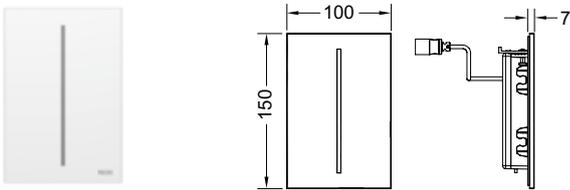
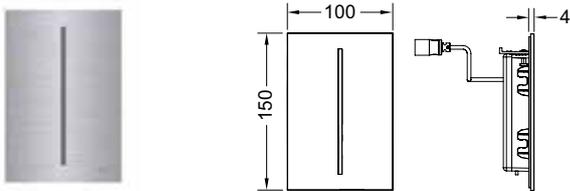
TECEambia

The urinal flush plates shown here only give an overview of the available product range. See the whole range online at www.tece.de. All urinal flush plates are shown in this overview. For more information on TECE push plates, refer to the “Flush plates” technical guidelines.

TECE flushing technology – U 2 TECEfilo urinal flush valve

U 2 TECEfilo urinal flush valve

The new TECEfilo urinal electronics are available with a metal, glass or plastic surface. Their appearance therefore harmonises perfectly with various TECE flush plates such as with the TECESquare metal, TECESquare glass toilet flush plates or with the TECEnow toilet flush plate. The TECEfilo urinal electronics with a glass or plastic surface can also be mounted flush to the surface with the TECEfilo installation frame.



TECEfilo, metal
TECEfilo, glass
TECEfilo, plastic

Based on a service life of two years, the battery lasts for

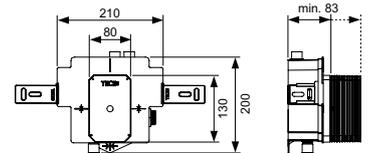
- 220,000 flushes or
- approx. 300 flushes/day.

The U 2 TECE urinal flusher is suitable for installation in dry and brick-wall constructions. For dry-wall structures, installation is performed together with the TECE urinal module. The transformer is already integrated into the two shell elements which means that it is suitable for direct 230 V connection.

U 2 TECEbox urinal flush valve housing for brick-wall structure (9370040)



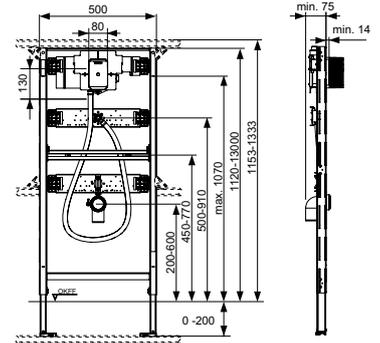
Compatible with the 230 V mains and the 7.2 V battery variants. The transformer for 230 V mains operation is already integrated.



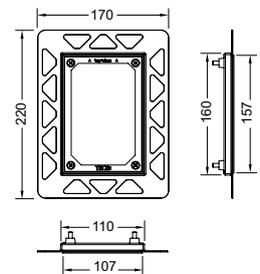
TECEprofil urinal module with U 2 flush valve housing (9320013)



Compatible with the 230 V mains and the 7.2 V battery variants. The transformer for 230 V mains operation is already integrated.

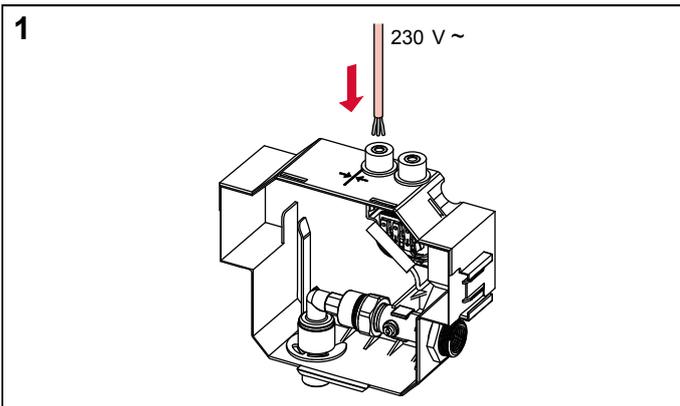


TECEfilo installation frame for flush-mounted installation, for dry-wall constructions only (9242040/...41/...42)

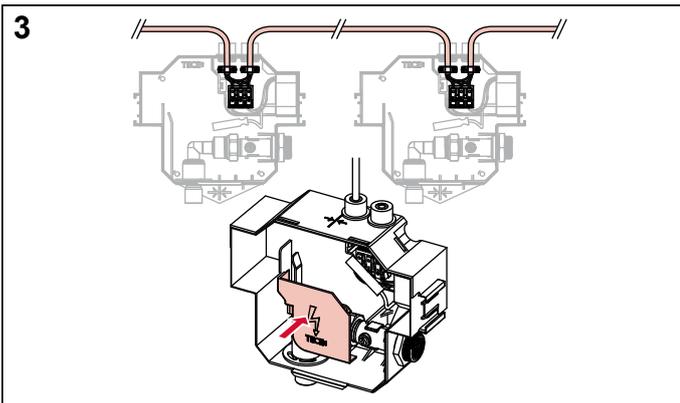
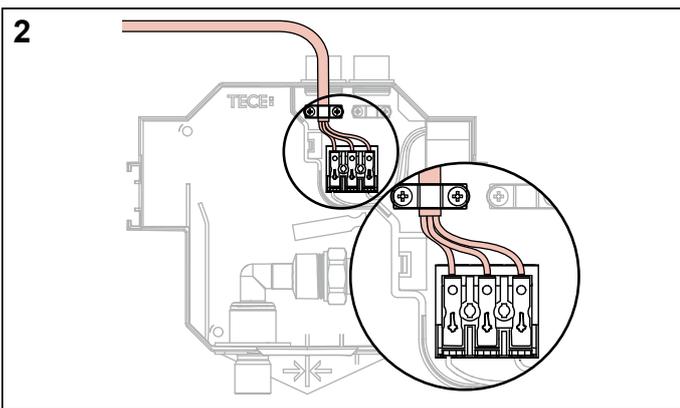


The TECEfilo plastic electronics, like the glass ones, can be mounted with the TECEfilo installation frame for flush-mounted installation in dry-wall structures.

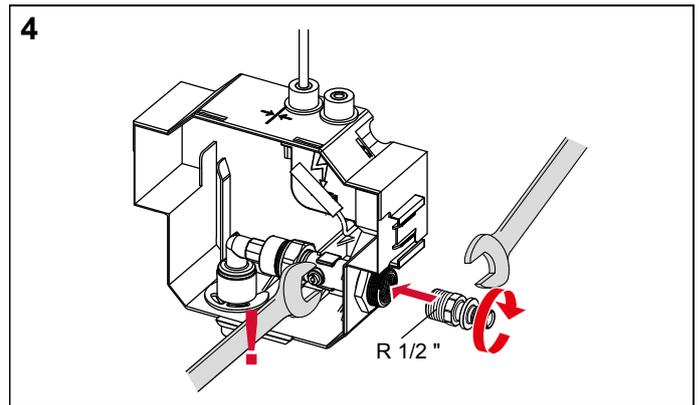
Bare wall – mounting and installation



The U 2 flush valve housing can be installed in dry-walls and brick-walls. The transformer is already integrated into the flush valve housing to facilitate coordination of the different trades carrying out the assembly work. Therefore, the transformer can be directly connected with a 230 V cable.

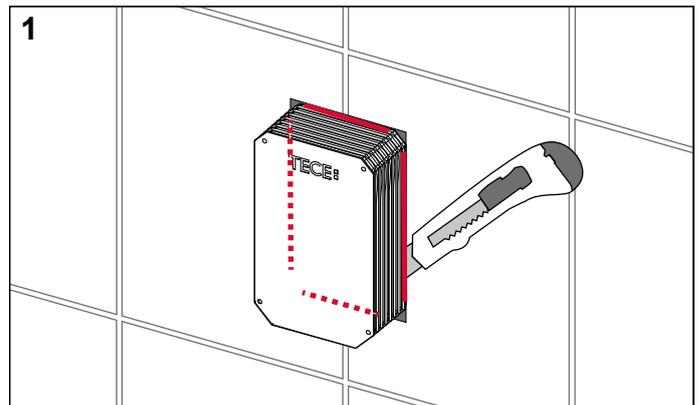


It is also possible to loop the connection through (fig. 3).

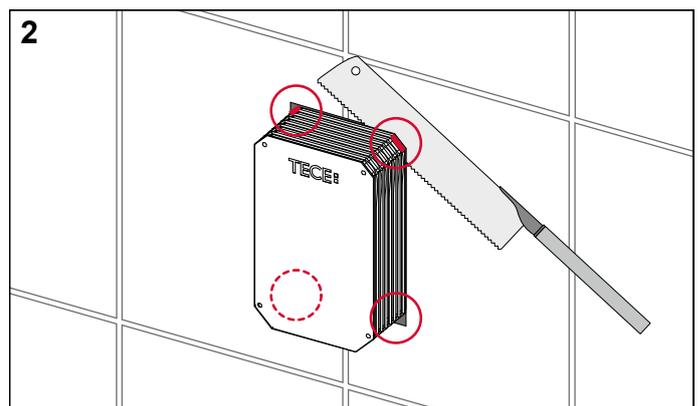


To connect the pipe, hold the connection housing as shown in fig. 4.

Installing the wall-mounted TECEfilo urinal flush plate 230 V/12 V

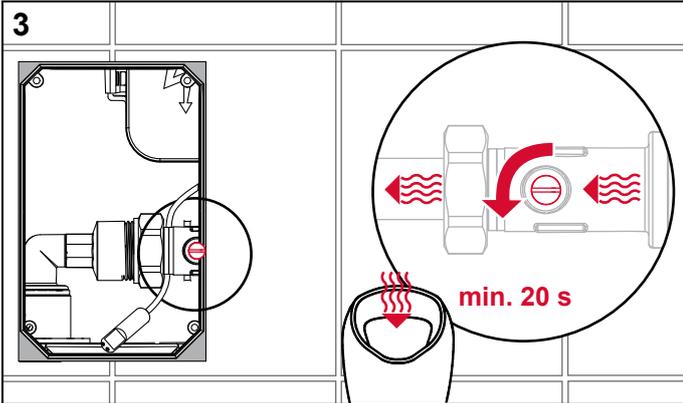


Cut the thin surface with a cutter knife.

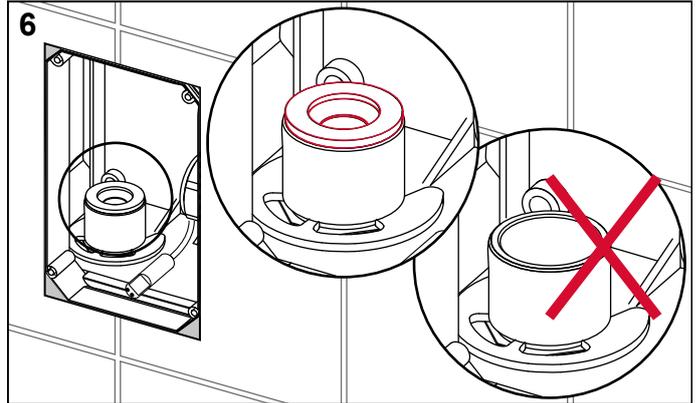


Use a saw to cut the corner areas, where the wall is thicker, flush to the wall.

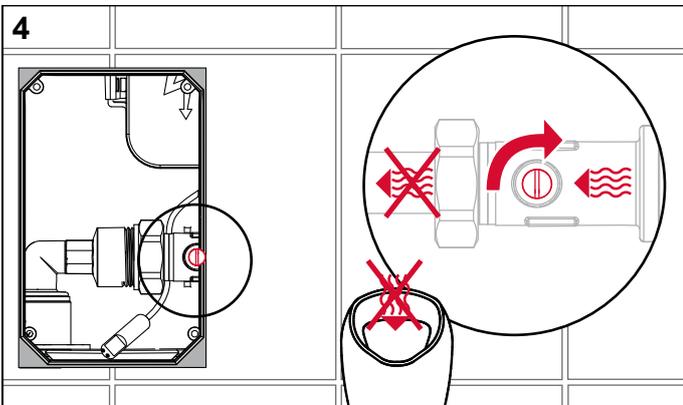
TECE flushing technology - U 2 TECEfilo urinal flush valve



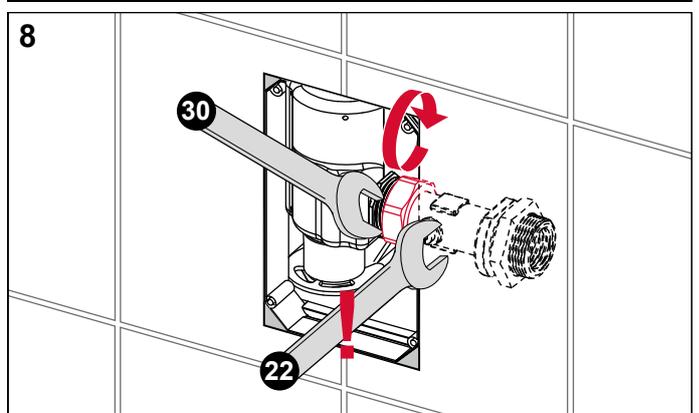
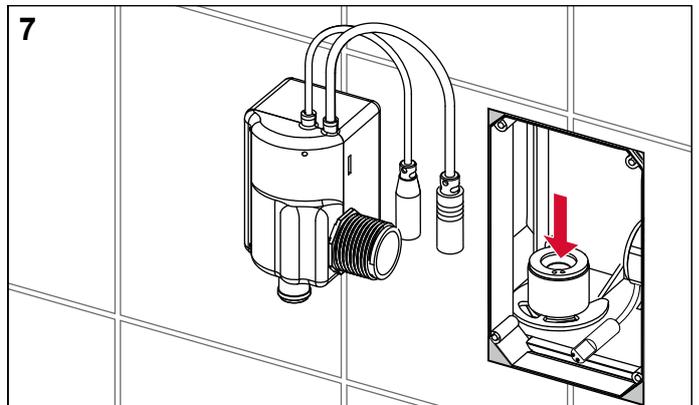
To flush out the connection pipe, open the inlet flow control and sufficiently flush out the pipe.



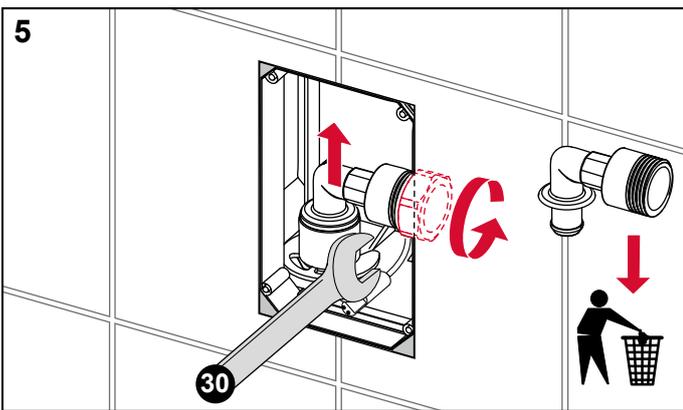
Make sure that the connection piece is fitted with a seal. This seal can be greased if necessary.



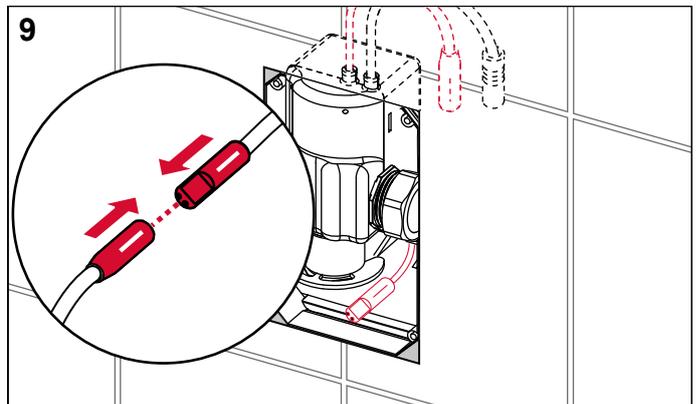
Before mounting the flusher, make sure that the inlet flow control is closed so that no water can leak out during assembly. Close the shut-off using a flat-head screwdriver. In the free-flow setting (fig. 3), the shut-off slot is parallel with the housing, and in the closed setting (fig. 4), it is at right angles to the housing.



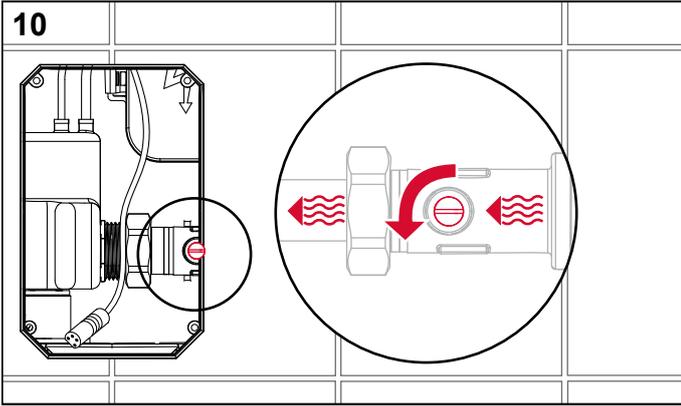
Insert the flusher and close it with the union nut.



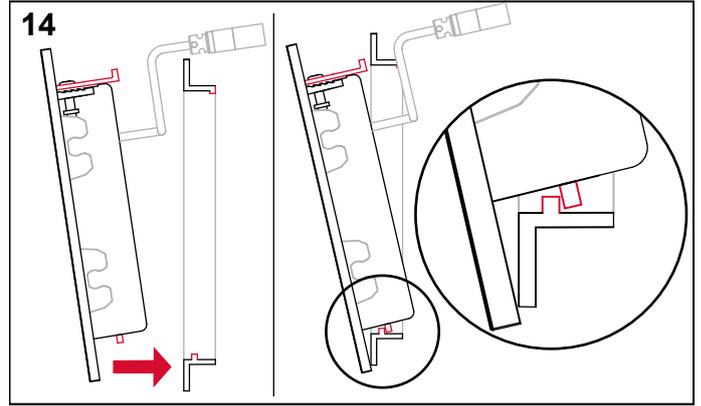
Loosen and remove the flush pipe elbow.



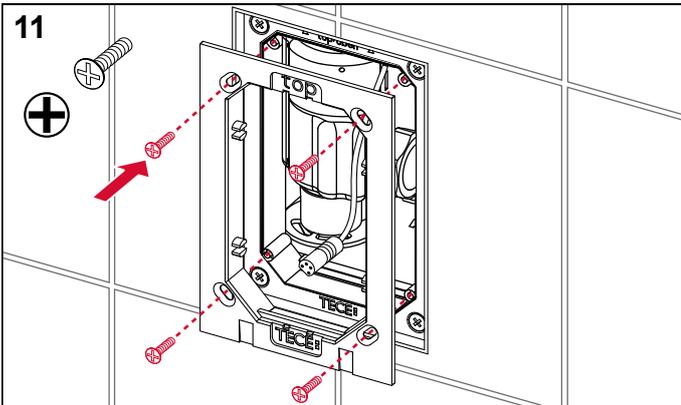
Connect the transformer's plug-in connection.



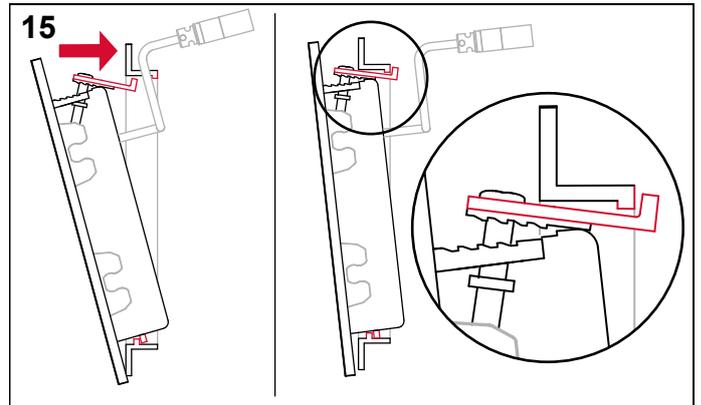
10 Open the inlet flow control.



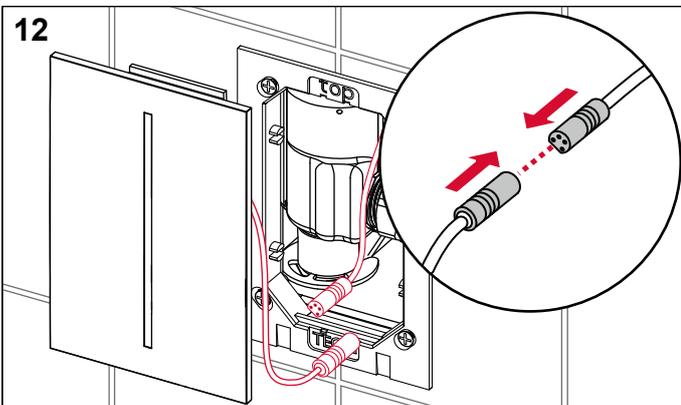
14 Hook in the bottom of the cover panel.



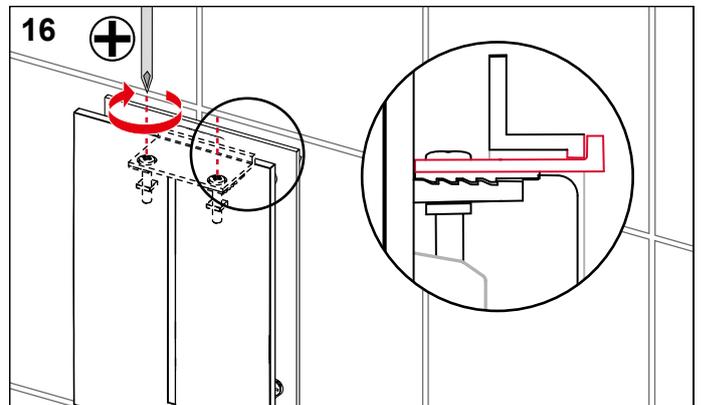
11 Screw the support frame onto the urinal flush valve housing.



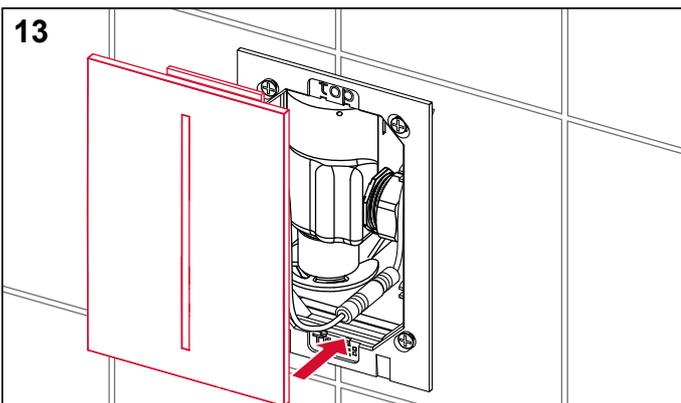
15 The top of the anti-theft device must be detached for the installation.



12 Connect the plug-in connection for the infrared sensor on the cover plate.

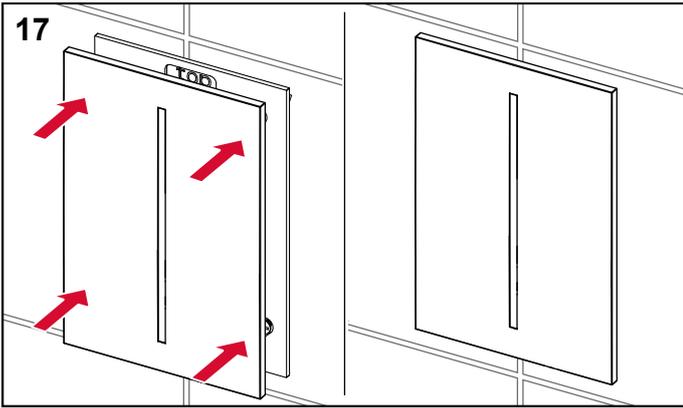


16 Mount the anti-theft device from the top of the cover using a Philips screwdriver.

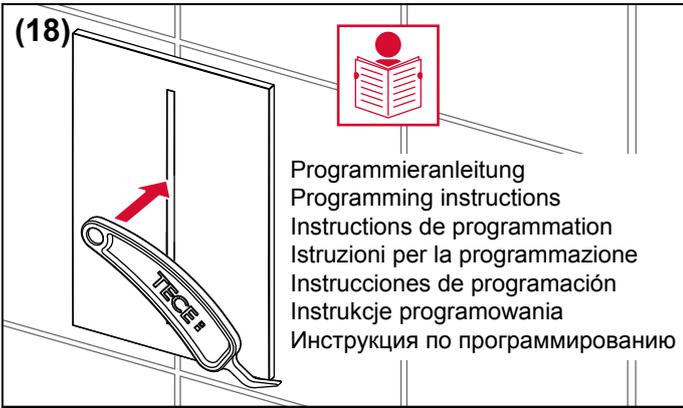


13 Mount the cover.

TECE flushing technology – U 2 TECEfilo urinal flush valve



Then click the cover into place.



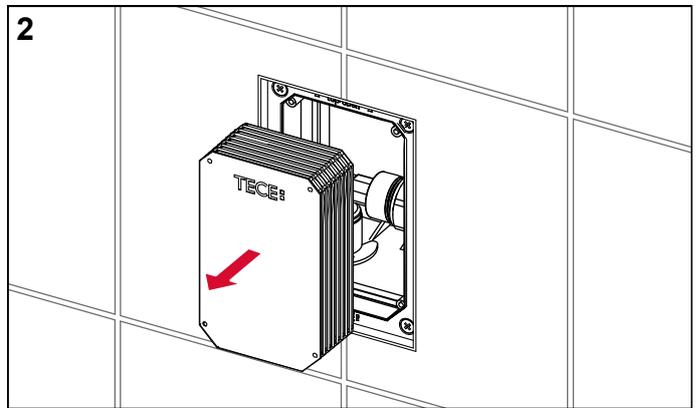
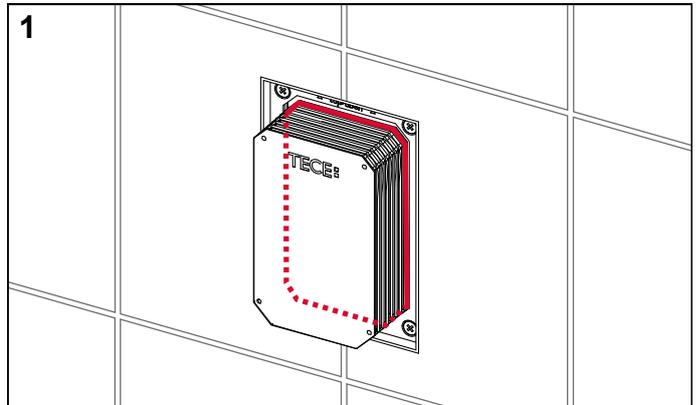
If necessary, the urinal electronics can be programmed. See the following programming instructions for more information.



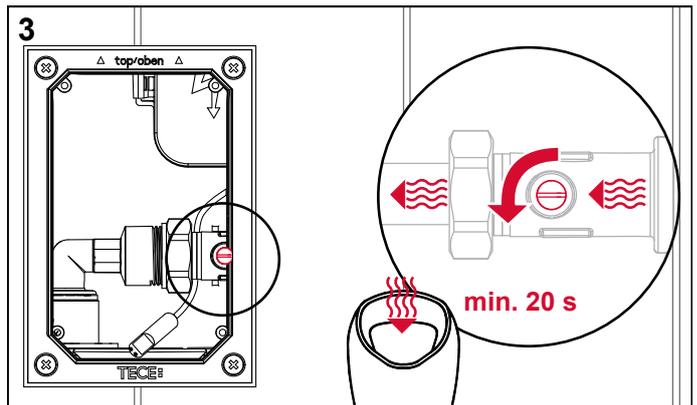
To dismantle the cover, insert the programming key into the notches on the underside of the flush plate.

The steps for installing the TECEfilo urinal electronics with the 7.2 V battery variant are virtually the same.

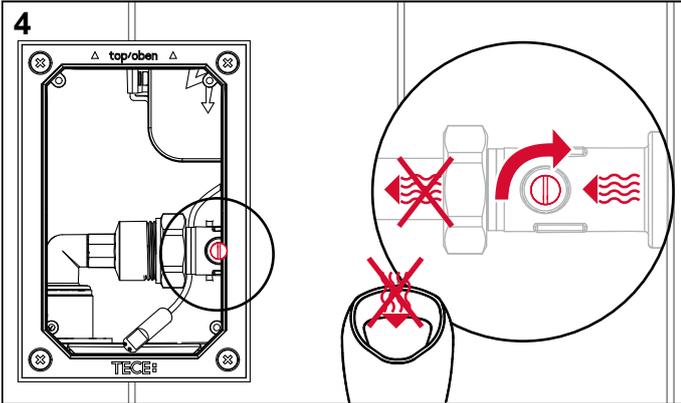
Installing the flush-mounted TECEfilo urinal flush plate 230/12 V



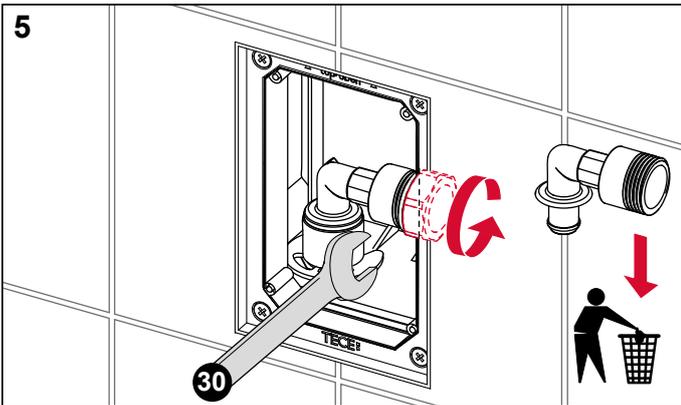
To facilitate installation, we recommend shortening the bare-wall protection to the correct size already when mounting the flush-mounted installation frame. If this has not already been done, shorten the bare-wall protection.



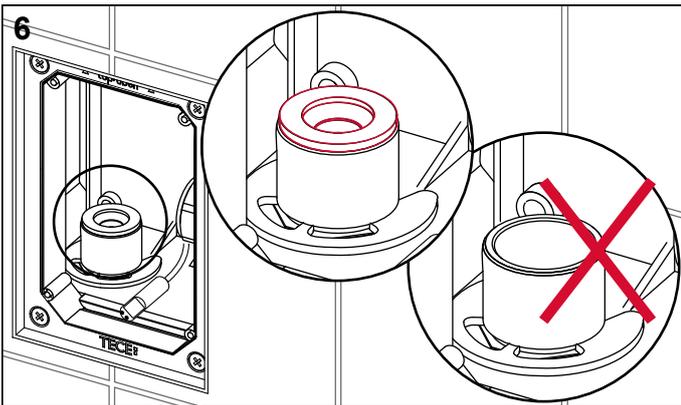
To flush out the connection pipe, open the inlet flow control and sufficiently flush out the pipe.



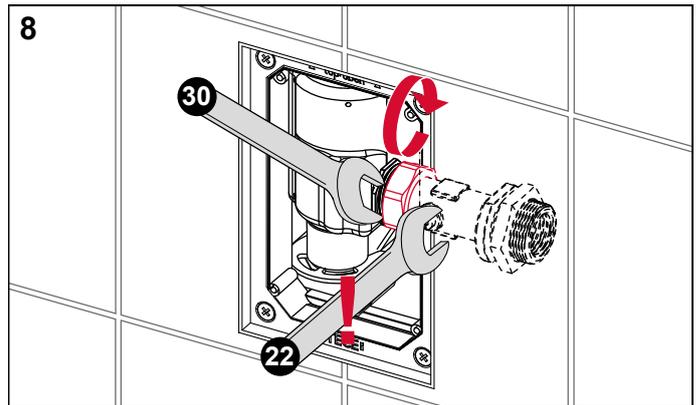
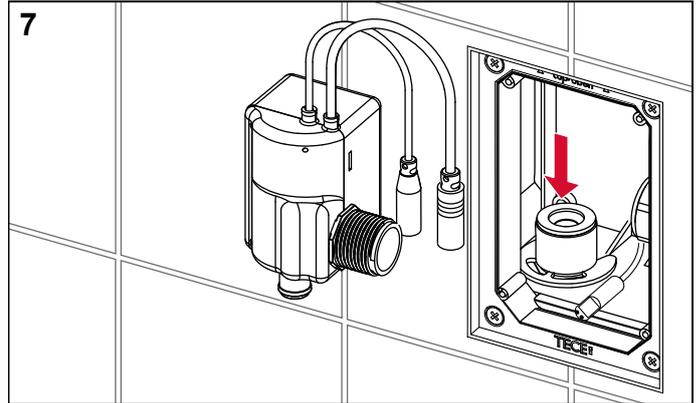
Before mounting the flusher, make sure that the inlet flow control is closed so that no water can leak out during assembly. Close the shut-off using a flat-head screwdriver. In the free-flow setting (fig. 3), the shut-off slot is parallel with the housing, and in the closed setting (fig. 4), it is at right angles to the housing.



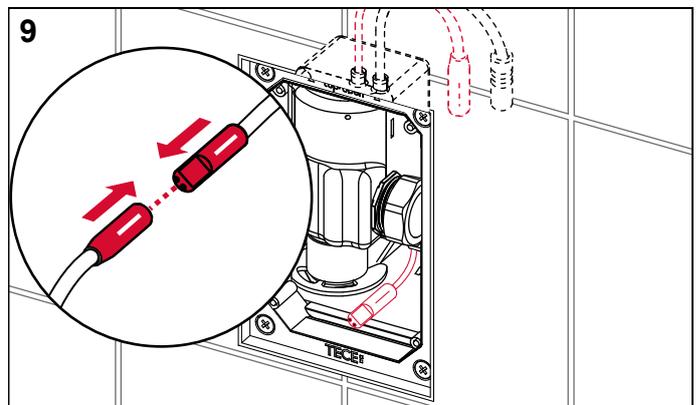
Loosen and remove the flush pipe elbow.



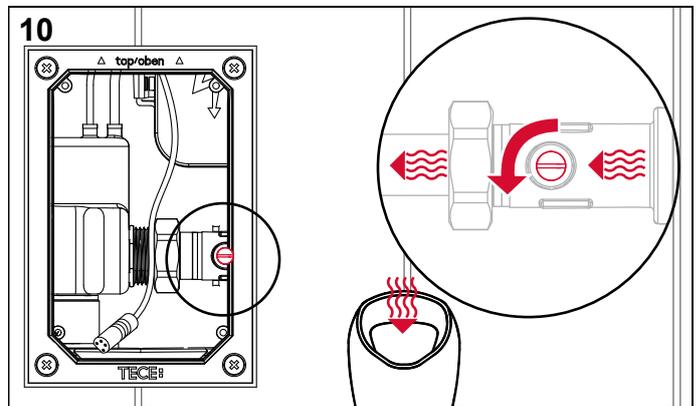
Make sure that the connection piece is fitted with a seal. This seal can be greased if necessary.



Insert the flusher and close it with the union nut.

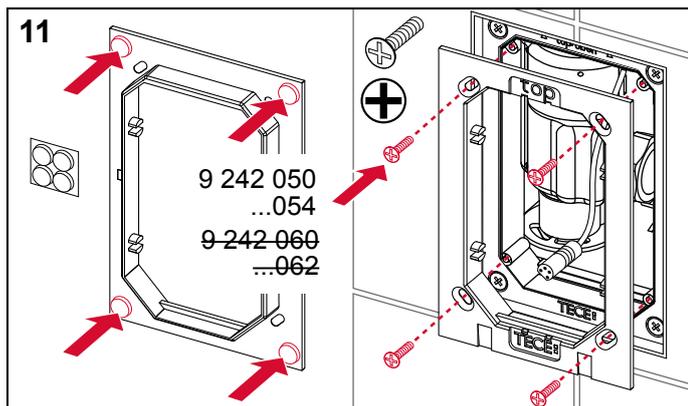


Connect the transformer's plug-in connection.

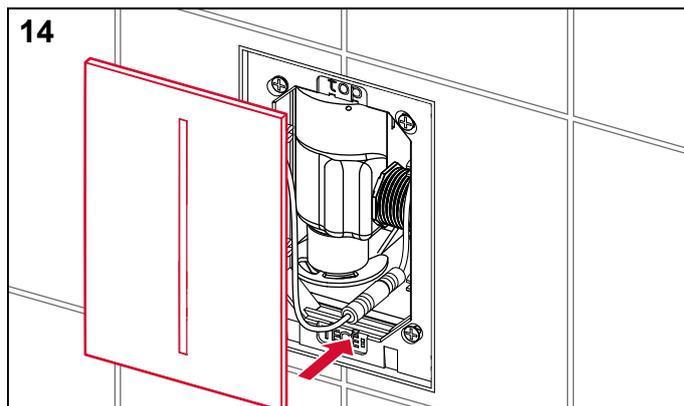


Open the inlet flow control.

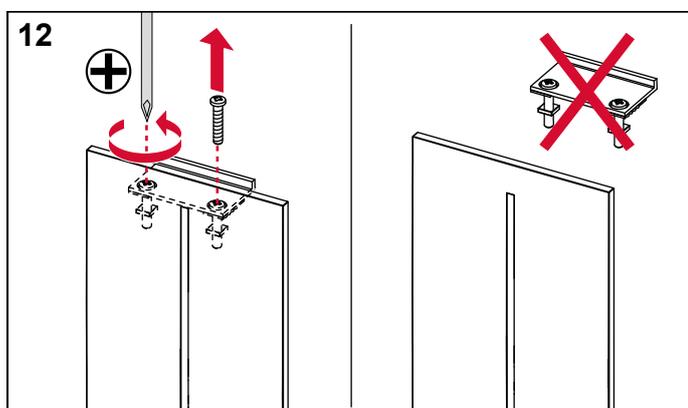
TECE flushing technology - U 2 TECEfilo urinal flush valve



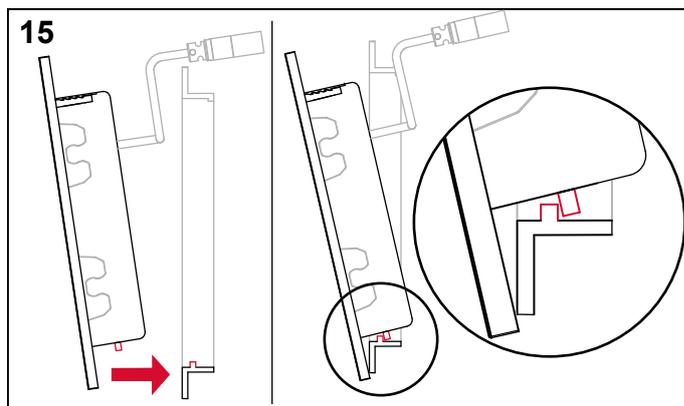
Stick the spacers to the back of the support frame of the plastic electronics, and screw the frame onto the urinal flush valve housing.



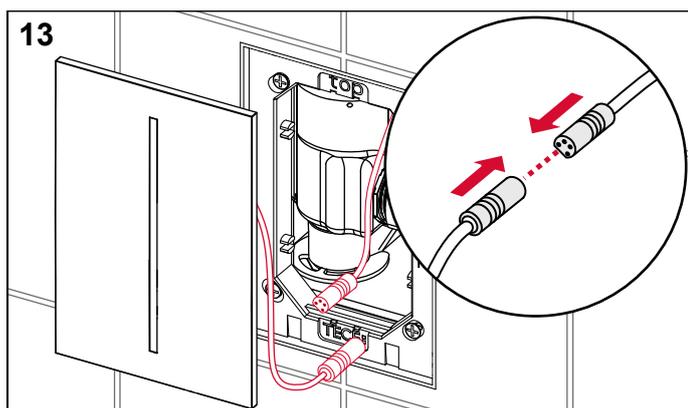
Mount the cover.



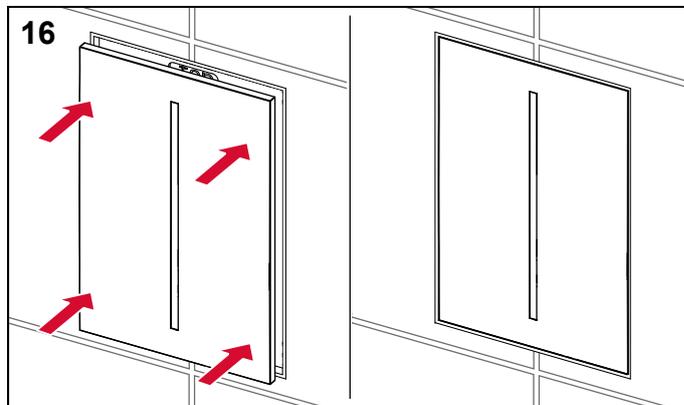
For the flush-mounted installation, leave out the anti-theft device. For the flush-mounted installation, the cover should always be removed using the bow-type handles.



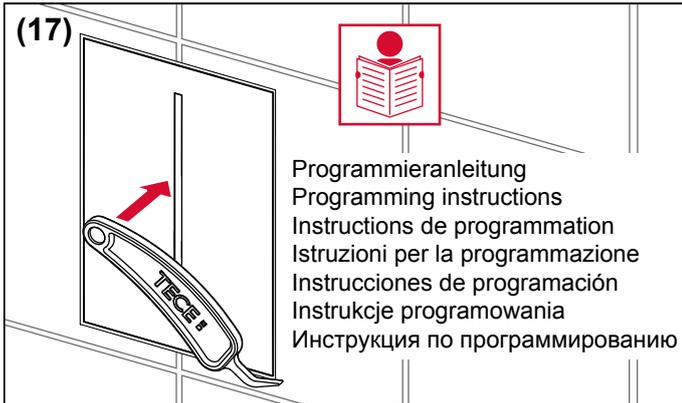
Hook in the bottom of the cover panel.



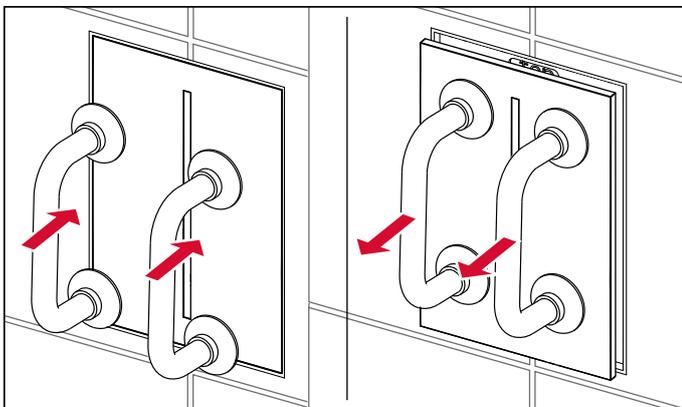
Connect the plug-in connection for the infrared sensor on the cover plate.



Press the cover into the mounting support.



If necessary, the urinal electronics can be programmed. See the following programming instructions for more information.



The installed cover can be removed from the flush plate using the bow-type handles included in the installation frame's scope of supply. Only position the suction cups on the cover to be removed.

The steps for installing the TECEfilo urinal electronics with the 7.2 V battery variant are virtually the same.

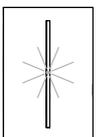
Programming the urinal electronics

To program the TECEfilo urinal electronics, the programming key provided in the scope of supply is required. The TECE electronics can be programmed during the first 30 minutes after connection to the power supply. In the event of a power failure, the last settings saved are retained. Each configurable setting is assigned a position on the remote control.

Position	Function
1	Pause function "off"
2	Pause function "on"
3	Flush time 1 s
4	Flush time 2 s
5	Flush time 3 s
6	Flush time 4 s
7	Flush time 5 s
8	Flush time 6 s
9	Flush time 7 s
10	Flush time 8 s
11	Flush time 9 s
12	Flush time 10 s
13	Pre-rinsing "off"
14	Pre-rinsing 0.5 s
15	Pre-rinsing 1 s
16	Pre-rinsing 2 s
17	Hygiene/interval flush "off"
18	Hygiene/interval flush 24 hrs
19	Hygiene/interval flush 72 hrs
20	Hygiene/interval flush 168 hrs
21	Refill "off"
22	Refill "on" (refill for 2 s after flushing for 2 s)
23	Sensor sensitivity "sensitive"
24	Sensor sensitivity "standard"
25	Hygiene flush volume small (5 s)
26	Hygiene flush volume medium (15 s)
27	Hygiene flush volume big (30 s)
28	Reset to factory settings
29	Urinal covers "off"
30	Urinal covers "on"

 = factory setting

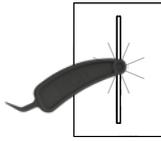
During the programming phase, a red diode flashes in the centre of the sensor field as soon as a person enters the area. This diode acknowledges that the programming mode is activated. In addition, it indicates the exact position of the programming key.



TECE flushing technology – U 2 TECEfilo urinal flush valve

How to program TECE electronics:

- Hold the programming key in front of the red diode (see diagram). The programming mode starts with a quick series of short beeps.
- After the start-up phase you will hear a sequence of the same distinct beeps. Count the beeps until you reach your desired function.
- Now remove the programming key. A long beep indicates that the programming key has been removed.



Adjustable functions:

Pause function/stadium function

When the pause function is activated, the flushing time is automatically reduced to one second following repeated flushes in short succession (= less than two minutes). 45 minutes after the last economy flush, a standard flush is activated.

Cleaning function

Activating the cleaning function stops the urinal from flushing for ten minutes. After this time, a cleaning flush is automatically triggered and it returns to the standard operating mode.

Activating the cleaning function:

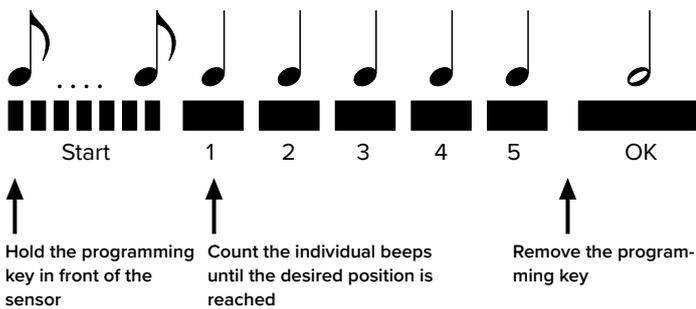
Hold the programming key briefly in front of the sensor window until an acknowledgement beep sounds.

The cleaning function can only be activated in standard mode, not during the programming phase.

Hygiene/interval flush

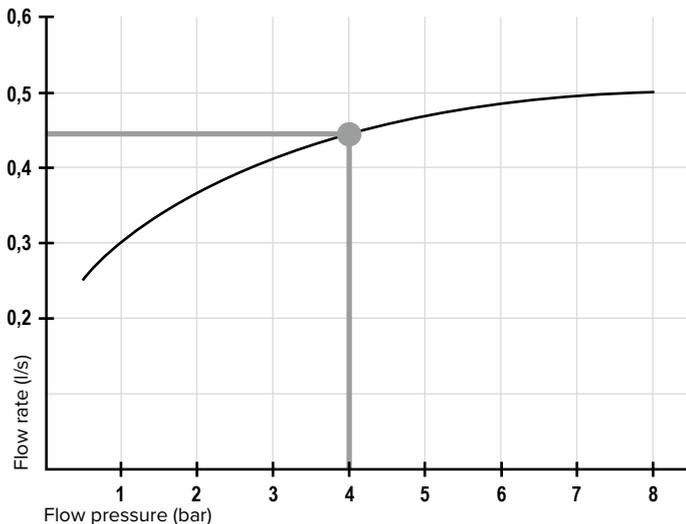
Automatic flush actuation, choose between 24, 72 or 168 hours after the last flush. The hygiene flush volume can be set to small (5 s), medium (15 s) or large (30 s).

Example: Setting the flush time to three seconds



Flow characteristic curve:

Using the flow characteristic curve, the TECEfilo flush volume flow rate can be read and set depending on the flow pressure as well as the flushing time:



● Example:

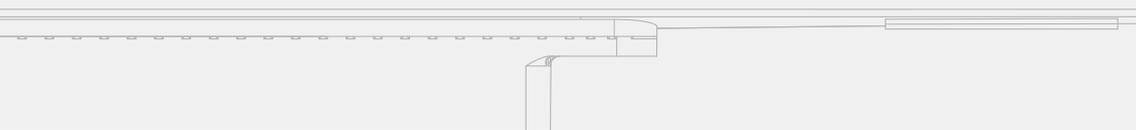
Mains pressure 4 bar → Flow rate 0.44 l/s → with 5 s flushing time ≈ 2.2 l



Drainage systems

TECEdrainprofile

TECHNICAL GUIDELINES



Introduction	7-4
Planning	7-5
Sealing	7-5
Sealing materials	7-6
Floors and wall areas	7-7
Connecting composite seals to floor drains and to shower channels and profiles	7-7
Drains	7-7
Loading capacity of gratings	7-8
Barrier-free bathroom design	7-8
Shower profile position and design of incline	7-9
Installation examples	7-9
Sound insulation	7-10
Fire protection	7-11
TECEdrainprofile – Advantages	7-12
Recessed installation solution	7-12
Safe sealing with click-in Seal System sealing sleeve	7-12
Straightforward assembly thanks to clever product details	7-12
Easiest cleaning for perfect hygiene	7-13
Range and technical data	7-14
Assembly instructions	7-16
Flush-to-wall installation – Drain position	7-16
Inserting the drain in the screed	7-18
Installing the Seal System sealing sleeve	7-18
Installing the Drainprofile shower profile	7-20
Maintenance and cleaning	7-23

TECEdrainprofile – Introduction

Introduction

The TECEdrainprofile shower profile enables recessed drainage to be easily implemented across the entire width of the shower area, making installation and sealing easier for technicians, and cleaning easier for users.

In typical cases, a piece of tile is precisely cut down to size and fitted in place to cover the gaps between the standard dimension shower channel and the sides of the shower zone. This spoils the visual appearance of the tile back splash, particularly in the case of modern, large-format tiles. With the TECEdrainprofile shower profile, simple adaptation right into the edges of the shower area is now possible. This speeds up the building process, saves money and gives the shower area an aesthetically pleasing overall look.

The TECEdrainprofile consists of a clear, easy-to-understand module which contains just a few components: a shower profile, a drain and accessories. The drain is installed in such way that it fits flush with the surface of the screed, so that no obstructive elements get in the way during trowelling. This makes the creation of an even screed surface with an incline really easy.

The flexible Seal System sealing collar ensures additional sealing reliability. The collar clicks right into the drain and is then integrated into the surface sealing. A water-tight connection is therefore guaranteed, and there is no need to glue the seal to the flange as has been customary up to now.

Finally, the profile is inserted, and can be easily laid on the screed like a tile. Simple height-adjustment allows adaptation to different tile thicknesses. The profile is available as brushed or polished stainless steel, in the lengths of 800, 900, 1,000 and 1,200 millimetres. For recessed adjustment to the width of the shower area, the installation technician or floor tiler can fit the profile simply and precisely on site. The assembly solution also allows subsequent fine positioning of the shower profile in all horizontal directions and via rotation once the drain has been integrated into the screed.



Planning

Sealing

Components and structural elements are constantly subjected to moisture. In the interior area, many “wet and humid rooms” are affected by this: Bathrooms, washrooms and kitchens in the private sector, commercial kitchens, washing facilities and production rooms in the commercial and industrial sector, and swimming pools, sports facilities and showers in the public sector. Moisture can penetrate into the components, causing structural alterations and changes in building chemicals, for example deterioration of thermal insulation or formation of mould. This can destroy the components and cause residents to develop health problems.

For this reason, the state of the Federal Republic of Germany has prescribed building regulations – the State Building Code – to protect components and structural elements against moisture and damp.

Adequate safeguard measures were originally regulated by DIN 18195, 1-10 “Waterproofing of buildings”. However, this did not contain any detailed specifications about composite seals currently in use today. So ZDB also published the “Composite sealing” bulletin.

A new series of standards has been in force since July 2017. Only part 1 remains from the previous DIN 18195 standard, and this only regulates the terms used for the new series of standards DIN 18531 - 18535. The waterproofing of indoor areas is regulated in this series of standards by standard DIN 18534.

DIN 18534 “Waterproofing for indoor applications” consists of the following parts:

- Part 1: Requirements and principles for design and execution
- Part 2: Waterproofing with waterproofing materials in sheet form
- Part 3: Waterproofing with liquid-applied waterproofing materials in conjunction with tiles and paving (AIV-F)
- Part 4: Waterproofing with mastic asphalt or asphalt mastic
- Part 5: Waterproofing with waterproofing materials in sheet form in conjunction with tiles and paving
- Part 6: Waterproofing with waterproofing materials in panel-shaped form in conjunction with tiles or paving

Parts 5 and 6 of DIN 18534 are currently still being drafted, the white print for these parts will follow at a later stage.

Parts 1, 3 and 5 are relevant to the area of TECE drainage products.

In addition to the regulations mentioned, the product-specific TECE installation instructions should also be observed.

The main contents of the standards DIN 18534-1:2017-07 and DIN 18534-3:2017-07 are described and explained below.

TECEdrainprofile – Planning

Water action classes according to DIN 18534-1

In DIN 18534, the “moisture stress classes” known from the ZDB “Composite seals” bulletin have been replaced by “water action classes”. Water action classes can be broken down as follows:

Water action classes	Water action	Stress	Application examples ^{***}	Waterproofing materials (DIN 18534-3, E DIN 18534-5)
W0-I	low	Areas exposed to infrequent splashing	<ul style="list-style-type: none"> • Wall areas above washstands in bathrooms and sinks in domestic kitchens • Floor areas without drainage in domestic spaces, e.g. in kitchens, utility rooms, guest toilets 	<ul style="list-style-type: none"> • Polymer dispersions (wall and floor) • Mineral sealing slurries (crack-bridging) • Reaction resin • Sheet-form waterproofing materials in conjunction with tiles and paving (E DIN 18534-5)
W1-I	moderate	Areas exposed to frequent splashing or to infrequent action of domestic water, without higher loads due to water accumulation	<ul style="list-style-type: none"> • Walls above bathtubs and in showers in bathrooms • Floor areas with drainage in domestic spaces • Floor areas in bathrooms <p>with/without drainage without high exposure to water from the shower area</p>	<ul style="list-style-type: none"> • Polymer dispersions (wall and floor) • Mineral sealing slurries (crack-bridging) • Reaction resin • Sheet-form waterproofing materials in conjunction with tiles and paving (E DIN 18534-5)
W2-I	high	Areas exposed to frequent splashing and/or to the action of domestic water, above all on the floor, occasionally through water accumulation	<ul style="list-style-type: none"> • Wall areas of showers in sports/commercial facilities^{***} • Floor areas with drains and/or channels • Floor areas in spaces with walk-in showers • Wall and floor areas in sports/commercial facilities^{***} 	<ul style="list-style-type: none"> • Polymer dispersions (wall) • Mineral sealing slurries (crack-bridging) • Reaction resin • Sheet-form waterproofing materials in conjunction with tiles and paving (E DIN 18534-5)
W3-I	extremely high	Areas exposed to regular or prolonged splashing and/or to the action of domestic water and/or water from intensive cleaning processes, intensified due to water accumulation	<ul style="list-style-type: none"> • Areas around swimming pools • Areas in showers and shower facilities in sports/commercial facilities^{***} • Areas in commercial facilities (commercial kitchens, launderettes, breweries, etc.) 	<ul style="list-style-type: none"> • Mineral sealing slurries (crack-bridging) • Reaction resin

W = water action class

0-3 = grade (low, moderate, high, very high)

I = indoors

* It may be appropriate to also assign the respectively higher water action class to adjoining areas which are not protected as they are located at a sufficient distance away or are not protected by structural measures (e.g. shower enclosures).

** Application scenarios can be assigned different water action classes depending on the anticipated water action.

*** Sealing surfaces, if applicable, with additional chemical action pursuant to 5.4 (DIN 18534-1)

Sealing materials

Different compound sealing materials comply with the standard, depending on the water action class. Compound sealing materials can be divided into two areas: liquid-applied sealing materials and waterproofing materials in sheet form.

Liquid-applied sealing materials include polymer dispersions, crack-bridging mineral sealing slurries and reaction resins. Polymer dispersions are in the lowest classification level. They may be used in classes W0-I and W1-I for wall and floor areas, and in class W2-I for wall areas only. Products in the next class up, are crack-bridging mineral

sealing slurries. These can be used in all classes, however in class W3-I only if no additional chemical, mechanical or technical effects can arise. Reaction resins which may be used without restriction in all water action classes are the highest graded products.

Waterproofing materials in sheet form are generally comprised of a waterproof plastic coating, mostly PP, PE or TPE materials, laminated on both sides with a non-woven fabric to guarantee bonding with the adhesive. According to E DIN 18534-5:2016-06, these sheet-form waterproofing materials can be used in conjunction with tiles and

paving in classes W0-I to W2-I for wall and floor areas not exposed to high mechanical action.

Composite sealing products require either a European Technical Assessment (ETA) on the basis of ETAG 022, or a general test certificate (abP) on the basis of PG-AIV-F or PG-AIV-B.

Floors and wall areas

In addition to sealing materials, DIN 18534-1 also regulates suitable substrates for floors and wall areas, according to the water action class. In water action classes W0-I and W1-I, moisture-sensitive substrates are permitted under the composite seal. These are, for example, calcium sulphate-bound screeds or gypsum wall panels. In classes W2-I and W3-I, only substrates which are insensitive to moisture are permitted. These are mostly substrates on a cement-based compound such as concrete, cement screed or fibre cement boards.

Connecting composite seals to floor drains and to shower channels and profiles

Floor drains, shower channels and profiles represent penetrations in the surface sealing (composite seal). Special attention is required to ensure that these constructional details remain permanently waterproof. Planners must coordinate the work carried out by the different trades (fitters, screed and tile layers). This includes realistically specifying the water action classes, and deciding on the right materials and products to use for substrates, the composite seal, drains and channels. Then there is the constructive design which must be flawlessly implemented.

Drains

The technical requirements for drains for buildings are regulated in DIN EN 1253. Among other things, the standard defines specifications for minimum drainage capacities, water seal depths for odour traps, and loading capacities for gratings.

Drainage capacities and odour traps

Discharge values for drains with one or more inlets are specified as follows in section 4.8.1 of DIN EN 1253-1:

Nominal value of outflow nozzles		Floor drains	
DN / OD	DN / ID	Flow values	Water level a
32	30	0.4 l/s	20 mm
40	40	0.6 l/s	20 mm
50	50	0.8 l/s	20 mm
75	70	0.8 l/s	20 mm
110	100	1.4 l/s	20 mm

Drainage capacity (inflow over grating) – minimum discharge value for drains

Odour traps should prevent channel gases from entering the building. To this end, DIN EN 1253 calls for odour traps with a water seal depth of at least 50 mm. An odour trap may only be omitted in certain cases in outdoor areas.

TECEdrainprofile – Planning

Loading capacity of gratings

Drains, drain tops and gratings must be designed so that they can withstand the expected loads (including traffic for instance). These classifications for installation inside buildings are described in DIN EN 1253-1.

Load class	Max. permitted load	Application area/site
H 1.5	< 150 kg (1.5 kN)	Areas which are not expected to be loaded.
K 3	< 300 kg (3 kN)	Areas without vehicle traffic such as flats, commercial buildings and certain public buildings. For example, bathrooms in dwellings, hotels, retirement homes, schools, swimming pools, public washing and showering facilities, balconies, recessed balconies, patios and green roofs.
L 15	< 1.5 t (15 kN)	Areas exposed to light vehicle traffic, commercially used areas and public areas.

Loading of gratings according to DIN EN 1253-1

The responsibility for selecting the suitable class lies with the designer. In case of doubt, the higher load class should always be chosen.

Barrier-free bathroom design

Demographic changes have led to an increased demand for barrier-free homes. A disability, an accident or growing older – there are many reasons why people can be limited in their mobility or become dependent on a wheelchair.

It is important for them that public buildings, and especially their own four walls, are equipped so that they can move around inside them without any problems. The technical term for this is “barrier-free”. This requires sufficiently wide doors, no thresholds or bumps, no steps and a walk-in shower. TECEdrainprofile makes a life without bumps and steps possible in the shower zone. The floor-level shower profile facilitates access into the shower area.

When planning a barrier-free bathroom, the specifications of DIN 18040-2 must be complied with.

DIN 18040-2:

DIN 18040-2 distinguishes between two types of requirements made upon buildings. On the one hand, barrier-free dwellings, and on the other, barrier-free dwellings which can be used by wheel-chairs users without any restrictions. The second category is identified by a large **R** in bold type.

General:

- In dwellings with several bathrooms, at least one bathroom must be barrier-free.
- Fittings should be designed as a single-lever, or touch-free. In the case of touch-free fittings, a temperature limiter must be provided. The water discharge temperature should be limited in this case to 45 °C.

Movement areas:

A movement area must be designed in front of each of the items of sanitary equipment such as toilet bowls, washstands, baths and in the shower zone. A minimum area of 1.20 m x 1.20 m is sufficient for this (**R**: 1.50 m x 1.50 m). Movement areas may overlay one another.

Shower zones:

Shower zones must be configured in such a way that they can be used barrier-free, e.g. also with a walking frame or wheelchair.

This is achieved by

- The layout of the bathroom on the same level as the adjoining floor area and a maximum lowering of 2 cm; where applicable, any transition elements should preferably be formed as inclined surfaces;
- Slip-proof floor coverings in the shower zone (in accordance with GUV-I 8527 at least rating group B);
- (**R**) the facility to retrofit a folding shower seat, with a seat height from 46 cm to 48 cm;
- (**R**) the facility to retrofit fold-up safety support arms both sides of the folding shower seat, the top edge of which is 28 cm above the height of the seat.)

The surface of the shower zone can be included in the movement areas of the bathroom if

- the transition to the shower area is designed level with the floor;
- the gradient required for drainage is maximum 2 %.

Shower profile position and design of incline

The shower profile can be installed flush-to-wall or away from the wall. A position in the transition between the wet and dry area is not recommended.

There must be an incline to the drain of at least 1 % for the shower water to flow away. Usually, an incline of 1-2 % is recommended.

Further details can be found in the following installation examples.

Installation examples

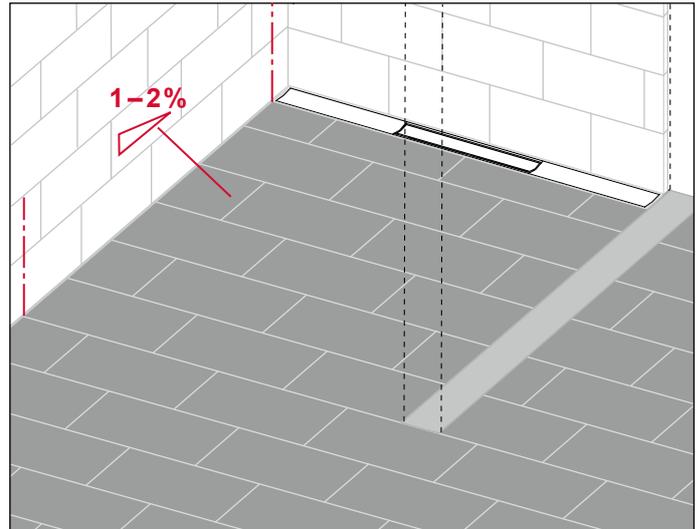
The Drainprofile shower profile has been specially developed for easy and reliable recessed installation. This means that it is installed across the entire width of the shower area. This reduces tile cutting, which, on the one hand, enhances the visual appearance, especially in the case of popular large-format tiles, and on the other, saves time and money in terms of preparation. The flush-to-wall installation is the most inconspicuous design.

The shower profile module is available in lengths of 800 mm, 900 mm, 1,000 mm and 1,200 mm. Each profile can be adapted, at the building site, to the individual width of the shower area, if necessary, simply by cutting it to the appropriate length. Each profile can be shortened to a minimum of 780 mm.

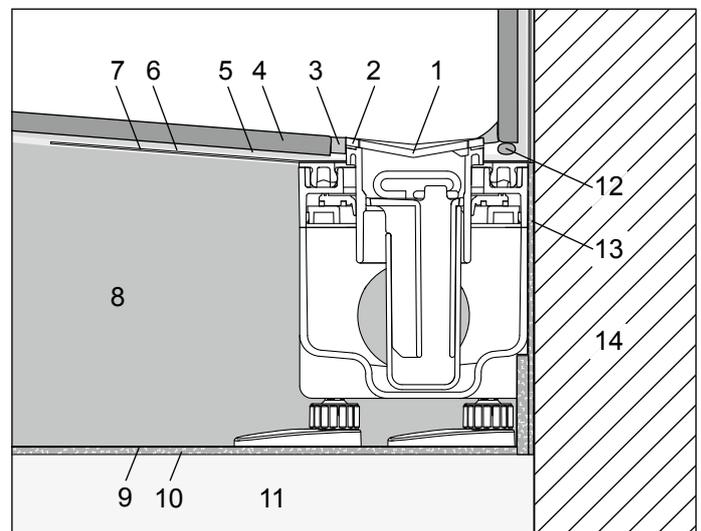
Flush-to-wall installation



“Flush-to-wall” installation



“Flush-to-wall” installation, incline



“Flush-to-wall” installation, layer structure:

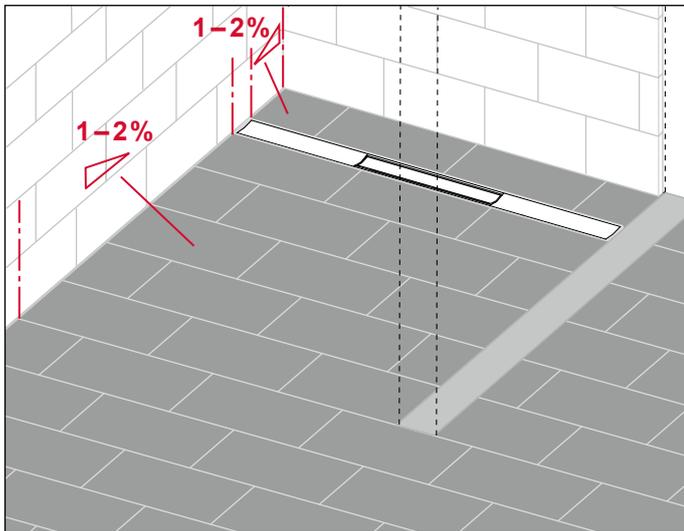
- | | |
|----------------------|------------------------------------|
| 1. Profile cover | 8. Screed |
| 2. Profile | 9. PE sheet |
| 3. flexible grouting | 10. Drainbase sound insulation mat |
| 4. Tile cover | 11. Bare floors |
| 5. Tile adhesive | 12. Backfill material |
| 6. Composite seal | 13. Edge insulation strip |
| 7. Sealing sleeve | 14. Masonry |

TECEdrainprofile – Planning

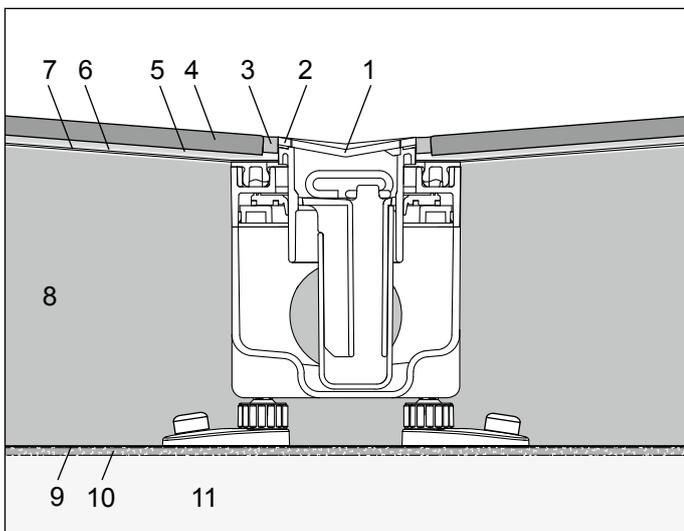
Installation close to the wall



Installation "close to the wall"



Installation "close to the wall", incline



Installation "close to the wall", layer structure:

- | | |
|----------------------|------------------------------------|
| 1. Profile cover | 7. Sealing sleeve |
| 2. Profile | 8. Screed |
| 3. flexible grouting | 9. PE sheet |
| 4. Tile cover | 10. Drainbase sound insulation mat |
| 5. Tile adhesive | 11. Bare floors |
| 6. Composite seal | |

Sound insulation

For sound insulation, the TECE range offers the pressure-resistant "Drainbase" sound insulation mat. Just 6 mm thick, the mat is laid throughout the whole shower area between the bare floor and the screed. In the case of flush-to-wall installations, sound insulation is enhanced by the supplied sound-proofing strips which are adapted to the contours of the Drainprofile drain. The shower profile, drain with assembly feet and wastewater pipe rest directly on the sound insulation mat which is covered by a PE sheet, and are therefore completely uncoupled from the structure.

The Drainbase sound insulation mat meets the more stringent requirements of DIN 4109 and VDI 4100 (sound protection level III). In accordance with DIN 4109, the requirements for sound pressure levels in living and sleeping spaces caused by water installations are ≤ 30 dB(A). The more stringent requirements of DIN 4109 and VDI 4100 (SST III) are actually as low as ≤ 25 dB(A) or ≤ 24 dB(A). When used in combination with TECEdrainprofile, the environmentally-friendly sound insulation mat made of recycled rubber achieves a sound pressure level of 25 dB(A) (rear lower floor) in accordance with DIN 4109 and 21 dB(A) (rear lower floor) in accordance with VDI 4100. This value has been confirmed by an official test report carried out by the Fraunhofer Institute for Building Physics. The Drainbase sound insulation mat achieves a rated impact sound reduction of $\Delta L_w = 19$ dB(A) (front lower floor).

Unlike conventional sound insulation of several centimetres thick, TECE's Drainbase sound insulation mat is only 6 mm "thin" and barely gives way at all under loading. Even under a pressure of 15 t/m^2 , compression is only 0.6 mm. Therefore, with the Drainbase, high sound insulation requirements can be fulfilled even with low floor projection heights.



Drainbase sound insulation mat

Drainbase technical data:

Material	recycled rubber granules bonded with PU elastomer
Colour	black/coloured
Surface	smooth with granular structure
Width x length	1,250 mm x 1,250 mm or 1,250 mm x 8 m (roll)
Strength	6 mm
Tensile strength	approx. 0.4 N/mm ²
Elongation at break	approx. 50%
Temperature stability	- 30 °C to + 80 °C
Fire behaviour	B2
Compression	0.6 mm at 15 t/m ²
Rated impact sound reduction ΔL_w	= 19 dB(A) (with 95 mm screed)

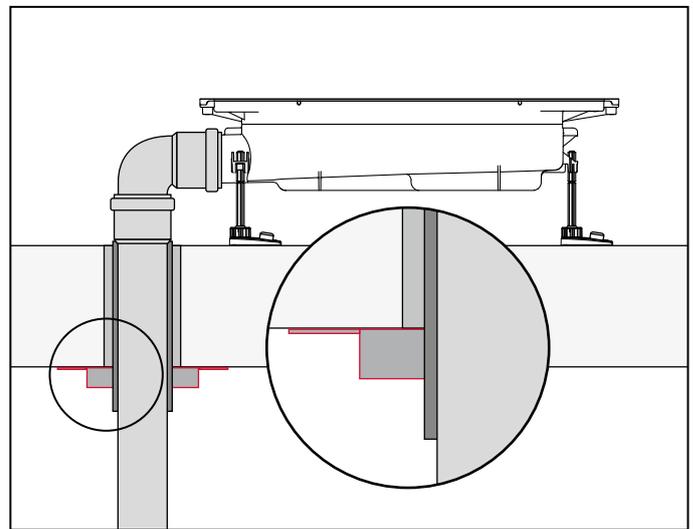
If you wish to achieve higher sound insulation values, the Drainbase sound insulation mat can also be combined with thin mineral-fibre impact sound insulation. To this end, the drain with assembly feet is installed on the Drainbase sound insulation mat (according to the installation instructions). The mineral fibre impact sound insulation is then laid over this and covered with a PE sheet before applying the screed.

In this way, installation sound-proofing L_{in} of 14 dB(A) (rear lower floor in accordance with DIN 4109), or 11 dB(A) (rear lower floor in accordance with VDI 4100) can be achieved for flush-to-wall installations. In the process, a rated impact sound reduction ΔL_w of 39 dB(A) (front lower floor) can be achieved. These values have been confirmed by sound insulation tests at the Fraunhofer Institute for Building Physics.

Certificates for the sound insulation tests can be found at www.tece.de.

Fire protection

When feeding the wastewater pipe through solid ceilings, fire protection solutions authorised to ensure protection against fire – such as the ROKU System AWM II fire protection sleeve – must be provided. This ROKU pipe penetration seal is authorised for many common pipes on the market, both for insulated and non-insulated plastic pipes, and also for sound-insulated wastewater pipes. The pipe is fed through the pipe penetration seal which is screwed under the ceiling. The gap between the pipe and the solid ceiling is first completely filled with a non-flammable, rigidly-retaining material (building material class DIN 4102-A) such as concrete, cement mortar or gypsum mortar.



In the event of fire, the foaming material inside the fire protection sleeve expands with strong foaming pressure, permanently closing the opening in the component and preventing the spread of fire and smoke.

The fire protection sleeve is classified in fire resistance class R90 (in accordance with DIN 4102) or EI 90/120/240 in accordance with EN 13501. The class depends on the design or installation of the fire protection sleeve and the pipes fed through.

TECEdrainprofile – Advantages

TECEdrainprofile – Advantages

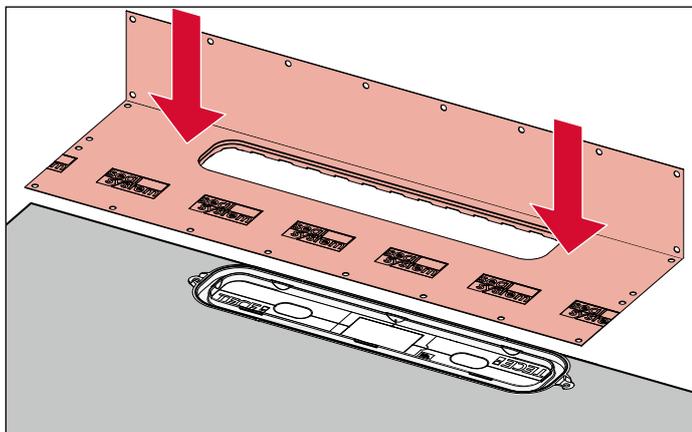
TECEdrainprofile facilitates simple recessed mounting of the drainage system across the entire width of the shower area. The product's technical details make it easier for the fitter, screed layer and tile layer to install the product correctly and ensure reliable sealing. The fact that the product is easy to clean facilitates the work of the end customer, enabling them to maintain perfect hygiene in the shower zone.

Recessed installation solution

Thanks to TECEdrainprofile's technical product design, the shower profile can be easily and reliably recess-mounted across the entire width of the shower area. Especially with the latest large-format tiles, this results in a more attractive and elegant overall impression, without the previously standard tile fragments on the sides as with shower channels. Simple, recessed installation is possible due to the fact that the shower profile is mounted over the composite sealing. This makes it far easier to reliably install the composite seal right in the corners of the shower. For the seal connection, flanges now no longer extend into the shower zone corners as is the case for shower channels. In addition, the shower profile can also be shortened by hand (stainless steel saw) at the building site. This means that, if necessary, it can be adapted to the existing width of the shower zone.

Safe sealing with click-in Seal System sealing sleeve

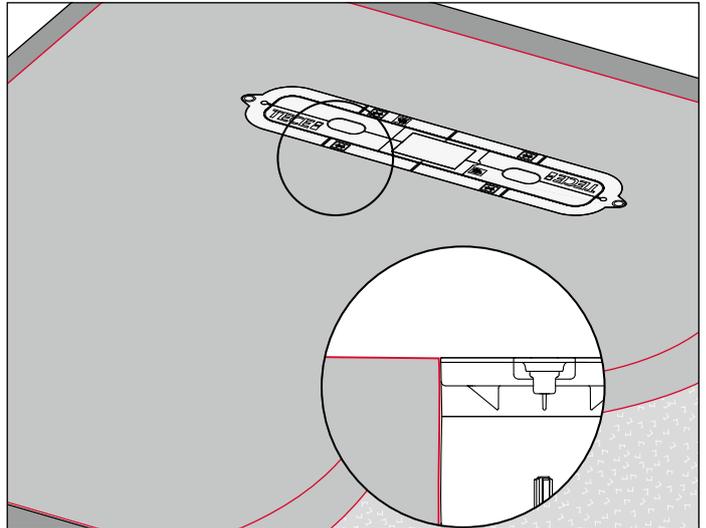
The factory mounted and clickable Seal System sealing sleeve forms part of the Drainprofile product. It is simply clicked into the drain by hand. This ensures a water-tight connection.



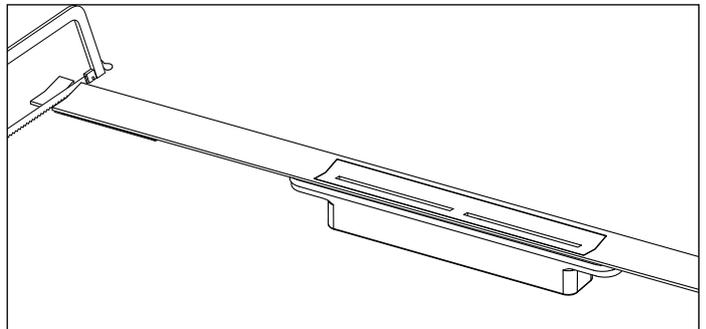
The flexible sealing sleeve must then simply be integrated into the composite seal.

Straightforward assembly thanks to clever product details

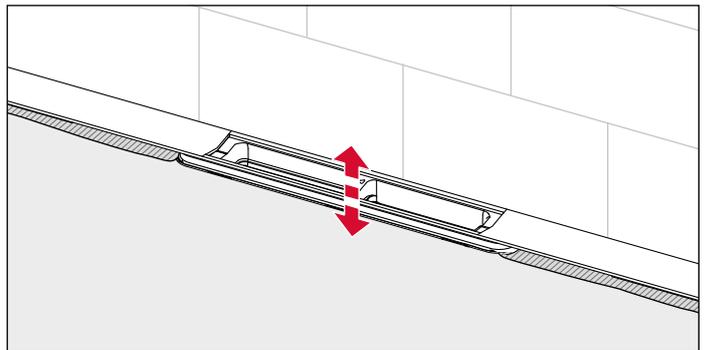
The drain, which is bound in the screed, simplifies the creation of a level screed surface with an incline. No elements get in the way when finishing the screed.



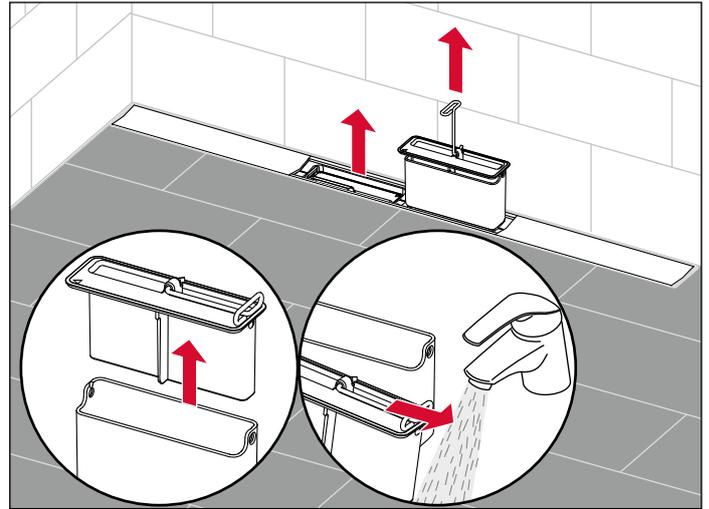
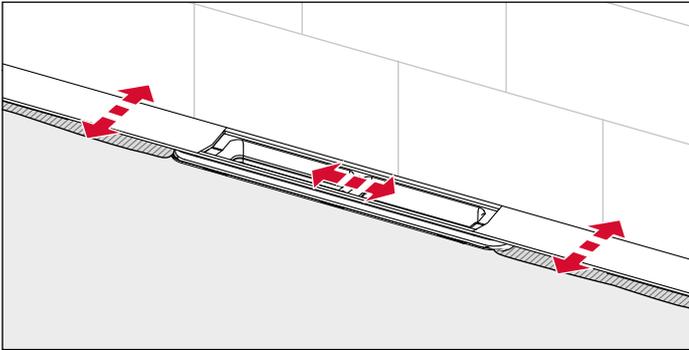
The shower profile can be cut to size and easily and precisely adjusted to fit the width of the shower area. This is carried out by means of a hand saw with a stainless steel hacksaw blade.



A simple height setting allows you to adjust the profile to various thicknesses of wall and floor tiles.



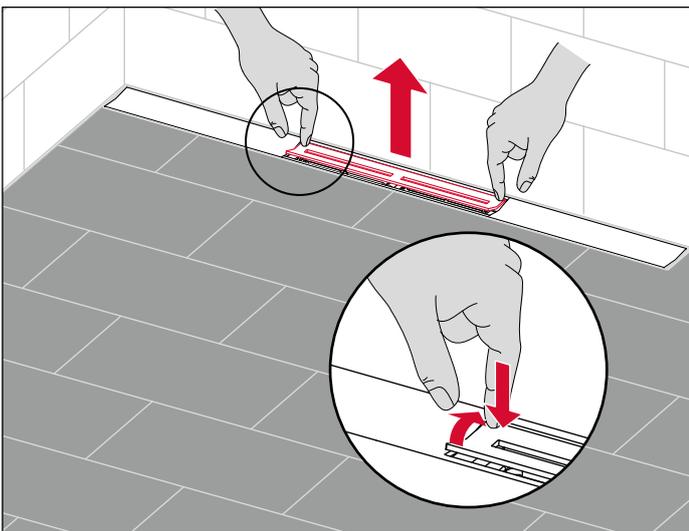
The shower profile is finely positioned by installing the drain in screed. The assembly solution allows subsequent fine positioning of the shower profile in all horizontal directions.



Easiest cleaning for perfect hygiene

Rinse, wipe, done! Removing the grate to clean the shower channel is now a thing of the past. The shower profile is made of hygienic stainless steel and has an internal incline. This optimises drainage of water and the self-cleaning effect, thus reducing the amount of cleaning required. The drain located beneath the shower profile is easily accessible and can be cleaned if required. The drain line can be accessed with a pipe cleaning cable.

Thanks to its special “push function”, the profile cover can simply be removed by hand without requiring any other accessories.



The odour trap which then becomes accessible can also be removed for easy cleaning by pulling out the stainless steel brackets.

TECEdrainprofile – Range and technical data

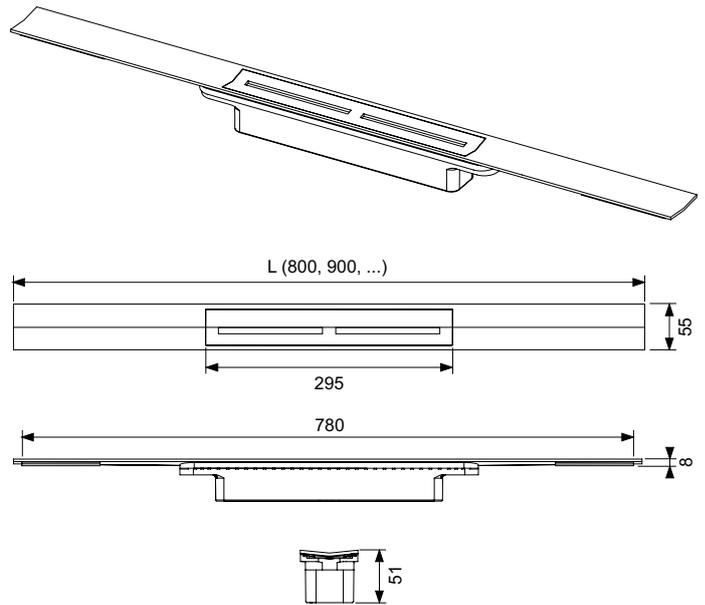
Range and technical data

The clearly structured, easily understandable range reduces storage space requirements. The few components include the shower profile, drain and accessories.



Various installation options can be implemented using just one shower profile – flush-to-wall, close to the wall or in the middle of the room.

Shower profiles



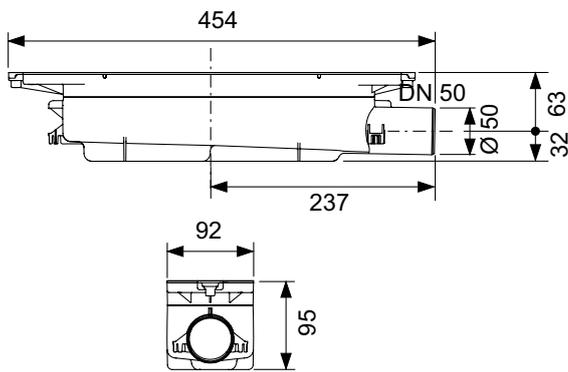
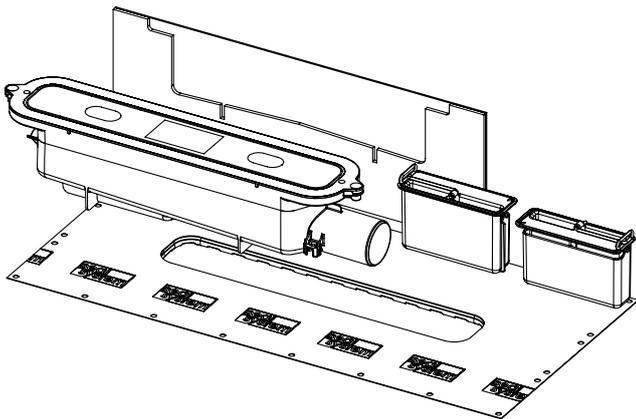
Shower profile for shower drainage, for installation in the tile adhesive above the screed and seal.

Properties:

- Stainless steel shower profile that can be cut to length with an internal incline for improving water drainage and a self-cleaning effect, material 1.4301 (304)
- Profile cover made of stainless steel, with “push function” for removal by hand, material 1.4301 (304)
- Connection trims for connection with the TECEdrainprofile drain
- Grip elements for easy installation and solid connection with the tile adhesive
- for floors from 8-25 mm (incl. adhesive bed)
- for flush-to-wall installation for coverings from 10 mm (incl. adhesive bed)
- for installation against the wall (flush-to-wall) or at any distance from the wall

Length	Width	Surface	Order no.
800 mm	55 mm	brushed	670800
800 mm	55 mm	polished	670810
900 mm	55 mm	brushed	670900
900 mm	55 mm	polished	670910
1,000 mm	55 mm	brushed	671000
1,000 mm	55 mm	polished	671010
1,200 mm	55 mm	brushed	671200
1,200 mm	55 mm	polished	671210

Drain



Drain for TECEdrainprofile shower profile, for installing in screed.

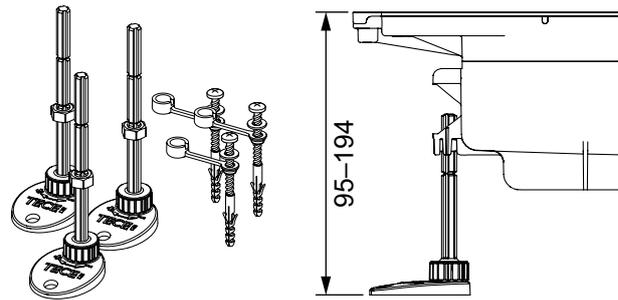
For connection to the side of a DN 50 drain pipe, factory-assembled and clickable sealing sleeve with Seal System, removable odour trap.

Properties:

- Min. installation height 95 mm (bottom edge of drain to upper edge of screed)
- Drainage capacity >0.6/>0.8 l/s (in compliance with DIN EN 1253 with 10/20 mm build-up above the profile cover)
- Water seal height 50 mm
- Removable odour trap
- Integrated screed anchor
- Factory-assembled, clickable and flexible sealing sleeve with Seal System
- Adapted prefabricated sound insulation strips
- Site protection cover
- Sliding/mobile seal for connection with TECEdrainprofile shower profile and to compensate dimensional tolerances

Order no. 673002

Assembly feet



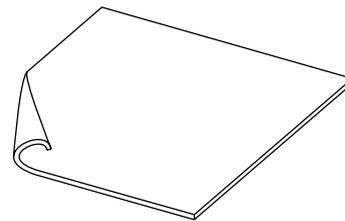
Assembly feet for TECEdrainprofile "standard" drain with universal flange to make it easy to adjust the height and attach in position during the bare-wall installation stage.

Properties:

- 3 assembly feet incl. sound insulation cap and attachment equipment
- Adjustment range 95-194 mm (lower edge of feet to upper edge of drain or screed).

Order no. 674000

Sound insulation mat



Sound insulation mat for fitting under floating screed in the area of floor-level showers or throughout the bathroom. To reduce plumbing noises and impact sounds and for impact sound insulation for renovations and new buildings. Installation sound level with TECEdrainprofile: 25 dB(A) (rear lower floor, in accordance with DIN 4109) and 21 dB(A) (rear lower floor, in accordance with VDI 4100). Made from recycled, sturdy rubber granules bound with PUR elastomer. Meets the more stringent sound insulation requirements to DIN 4109, issued 2001-01 and the highest sound protection level SSt III to VDI 4100, issued 2012-10 (sound test verification available from Fraunhofer IBP on request).

Properties:

- Form of delivery: 1.25 m x 1.25 m x 6 mm
- Fire class: B2 (DIN 4102)
- Thermal resistance: 0.05 (m²K)/W
- Compression at 15 t/sqm: 0.6 mm
- Impact sound reduction: $\Delta L_w = 20$ dB(A) (with 50 mm screed, in accordance with ISO 140-8/ISO 717-2)

Order no.	Form of delivery
660001	1.25 m x 1.25 m x 6 mm
660002	8.00 m x 1.25 m x 6 mm

TECEdrainprofile – Assembly instructions

Assembly instructions

This section describes the installation instruction and covers the main points for installing the Drainprofile. The instructions clarify sections from the overall installation process. The entire assembly process is described in the Drainprofile assembly instructions.

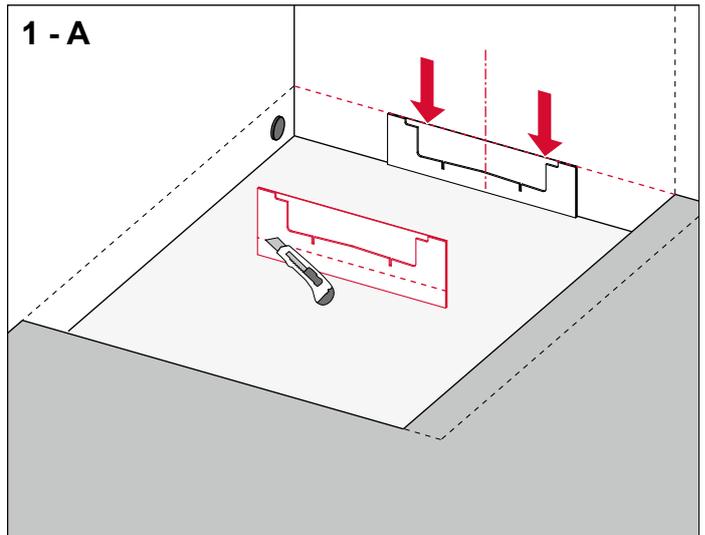
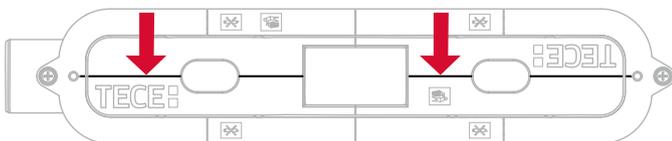
Flush-to-wall installation – Drain position

When performing the flush-to-wall installation of the shower profile, at the start of the installation process, the distance of the drain to the wall must be determined, and the drain is then built into the screed in this position. The distance of the drain to the wall depends on the required wall construction.

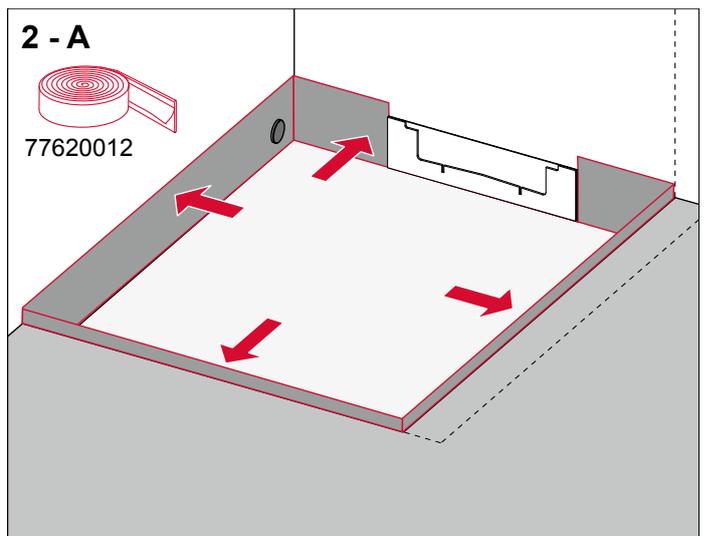
The thinnest possible wall construction (seal, adhesive, wall covering) is 13 mm. On wall constructions between 13 mm and 18 mm, the drain is positioned directly against the wall using the sound-proofing strips supplied. In this case, the distance from the centre of the drain to the wall is 48 mm. On a wall construction of > 18 mm, the distance of the drain to the wall is calculated as follows:

Distance from the centre of the drain to the bare wall (in mm) = wall construction (in mm) + 30 mm.

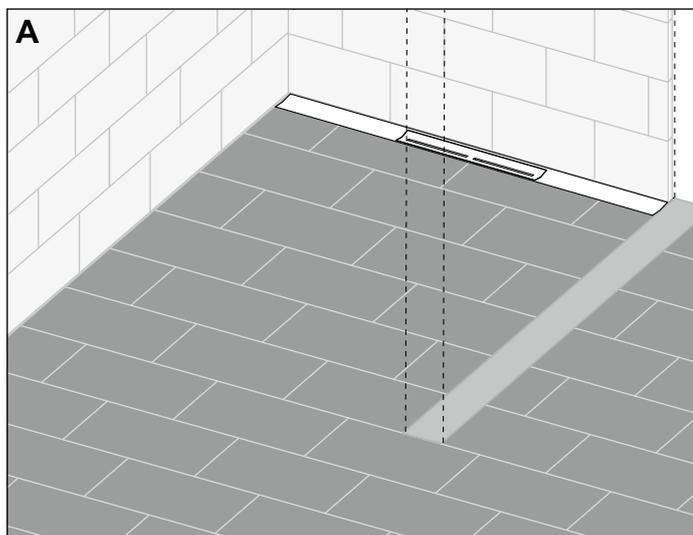
In order to measure the distance from the centre of the drain to the wall, a centre line is applied to the drain's bare-wall protection:



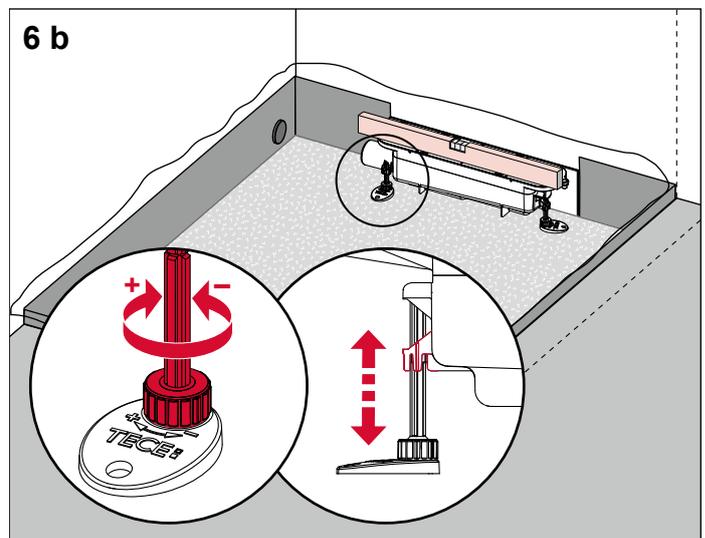
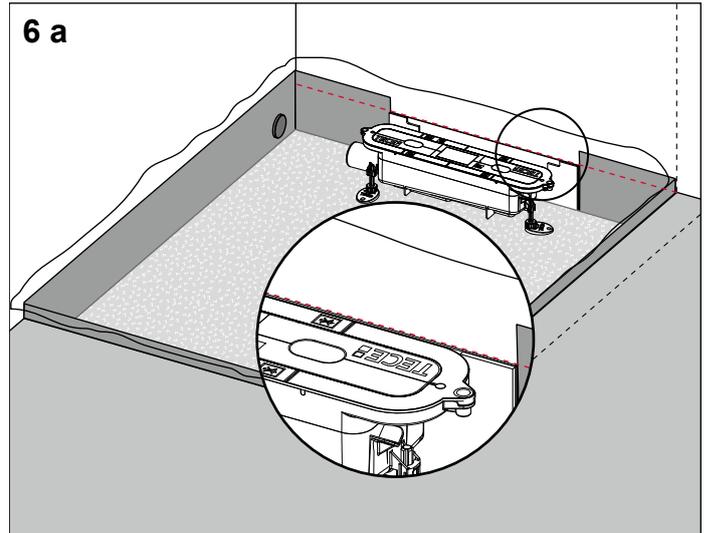
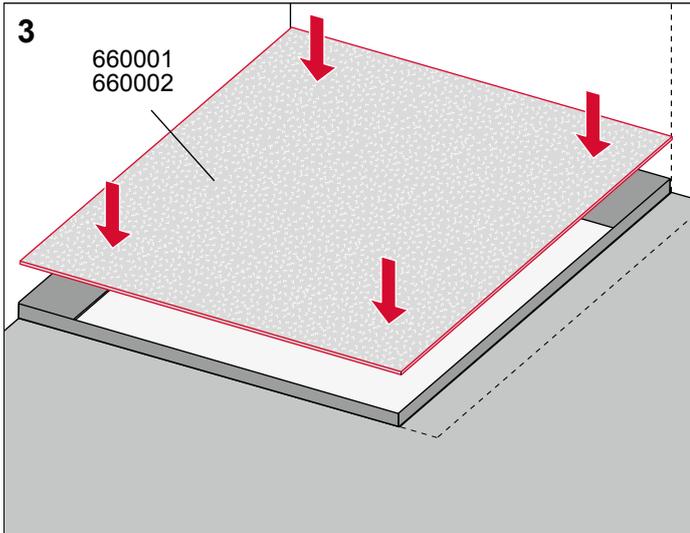
Before applying the screed, the special sound insulation strips supplied must be shortened to the required height. This should be shortened in such way that the top surface of the sound insulation strip fits flush with the surface of the screed.



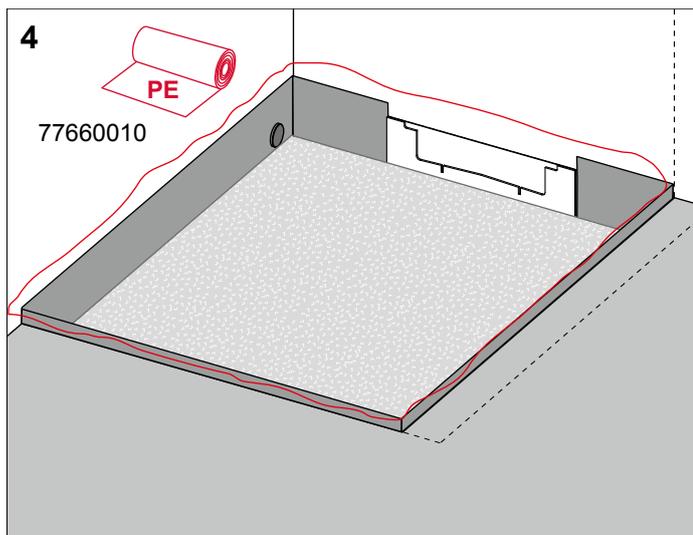
The Drainprofile sound insulation strip is positioned in the centre of the completed shower zone – observe the wall construction on both sides. In the illustrated example, the wall construction is identical on both sides of the shower zone, therefore it is positioned in the centre of the building structure opening. Finally, mount the remaining edge insulation strips. In the process, make sure that there are no gaps in the surrounding edge insulation strips (between the screed and the wall) in order to prevent the formation of sound bridges.



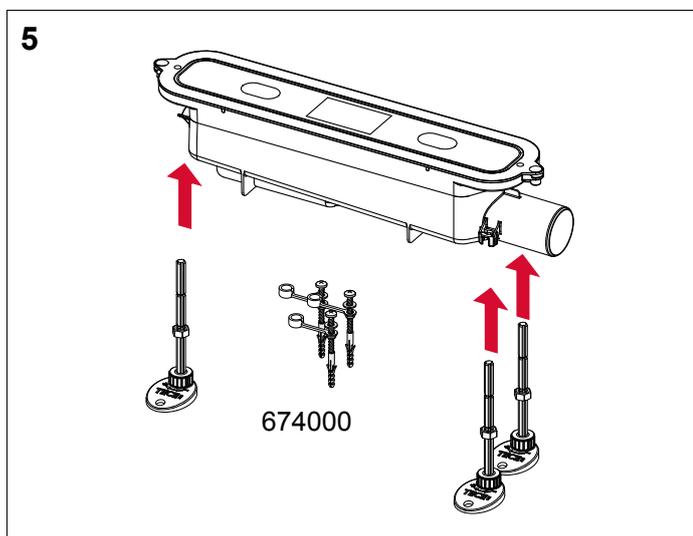
Flush-to-wall position of the drain profile after final installation.



Introduce the Drainbase sound insulation mat, cutting it down to size beforehand if necessary. Here too, you must make sure that there are no gaps or holes in the screed to prevent sound bridges from forming between the screed and the uncovered floor.



Finally, cover the entire area with a sheet. Make sure that there are no holes or gaps here too.



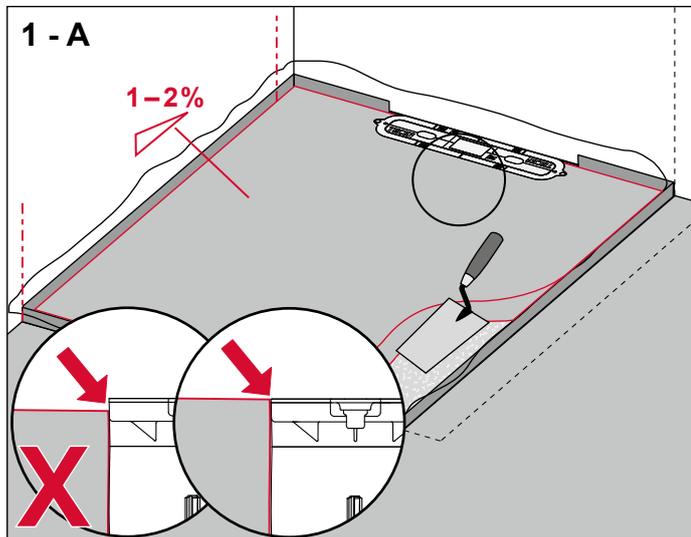
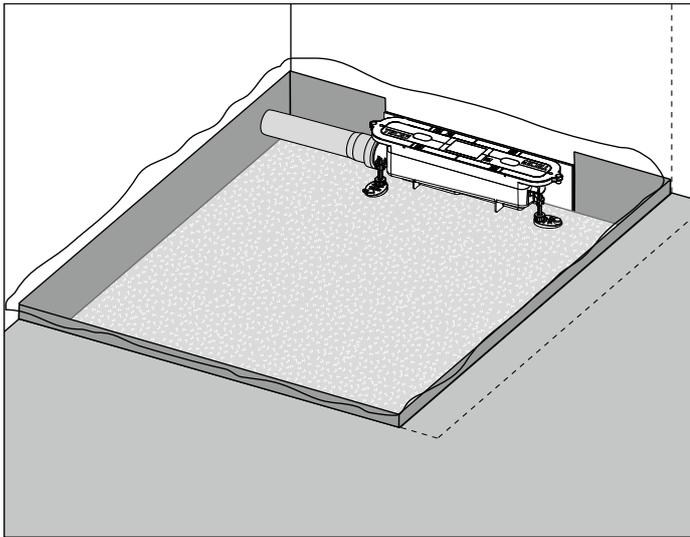
Manually screw in the assembly feet at the drain.

Adjust the height of the assembly feet, align horizontally and place in the indentations in the sound insulation strip. The height of the top edge of the drain must correspond with the later top edge of the screen.

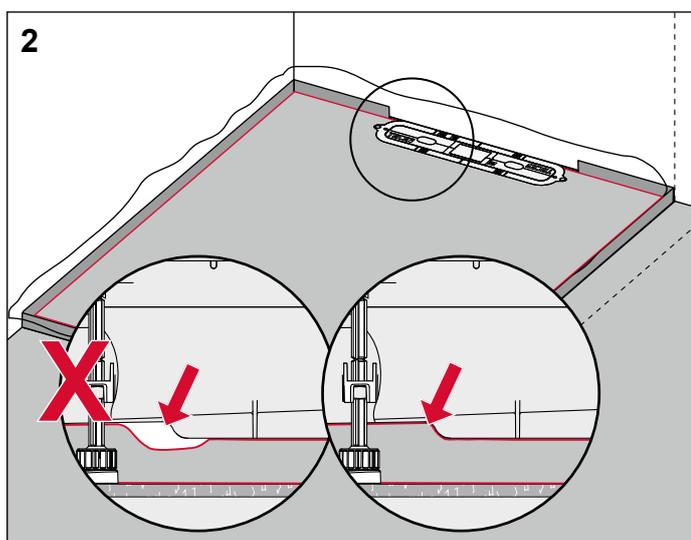
Finally, check that the drain is in the correct position in both horizontal directions, i.e. the distance to the rear wall (observe the wall construction) and the centre position in relation to the centre of the shower zone after completing the wall covering (observe the wall construction). Centre lines (lengthwise and crosswise) on the drain protection system can be used to easily and accurately ensure horizontal positioning.

TECEdrainprofile – Assembly instructions

Inserting the drain in the screed

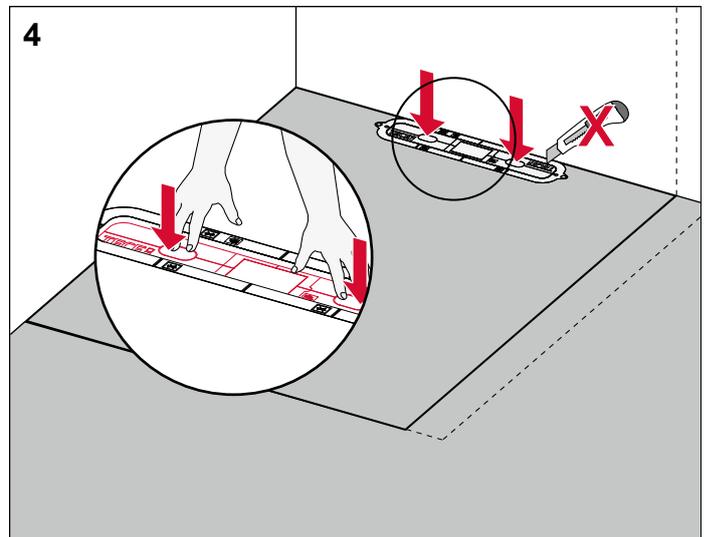
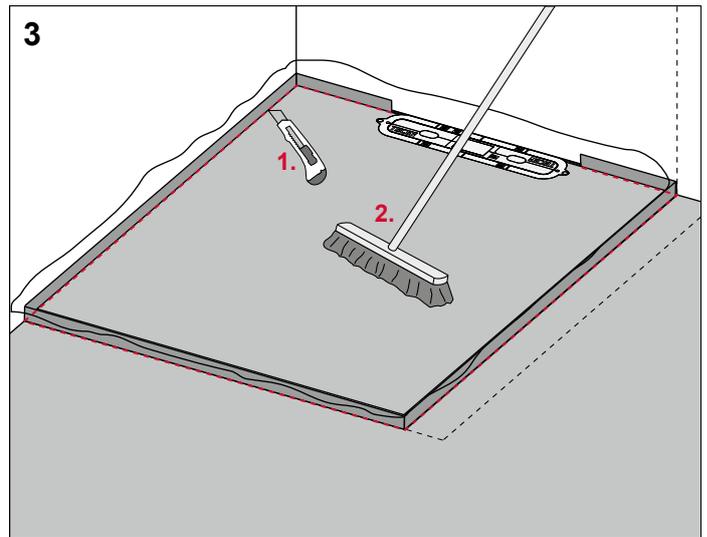


The drain must be inserted into the screed in such a way that it fits flush with the top surface of the screed.

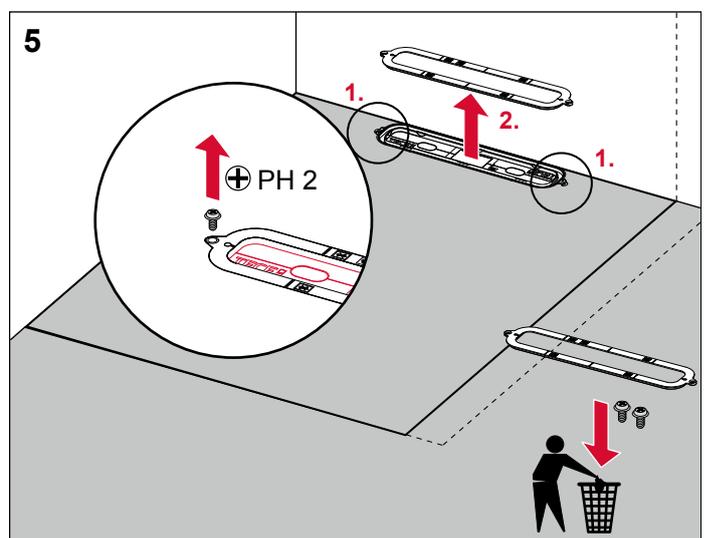


Make sure that the drain fits flush with the screed without any cavities.

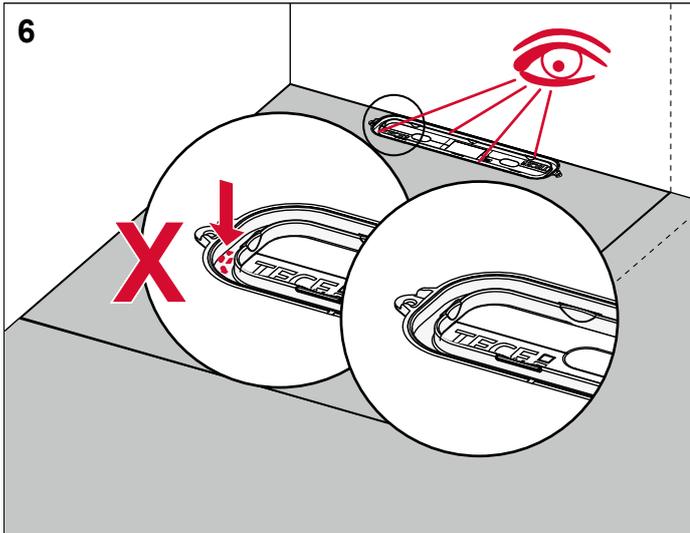
Installing the Seal System sealing sleeve



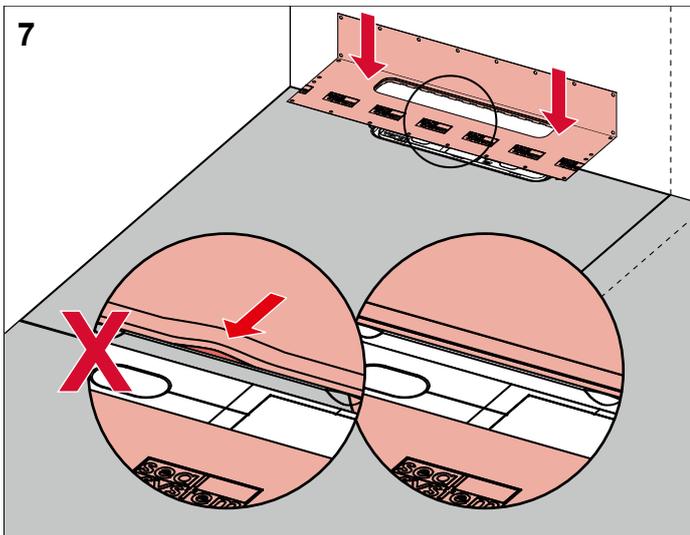
After cleaning the screed (vacuuming, brushing), push down with your fingers on the areas marked with “push” on the inner part of the protective cap. This will separate the inner area from the external area of the protective cap.



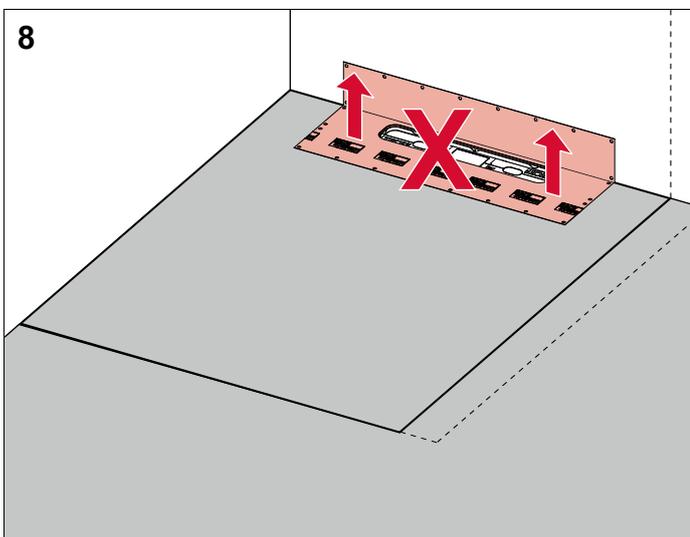
Loosen both screws and remove the external part of the protective cap.



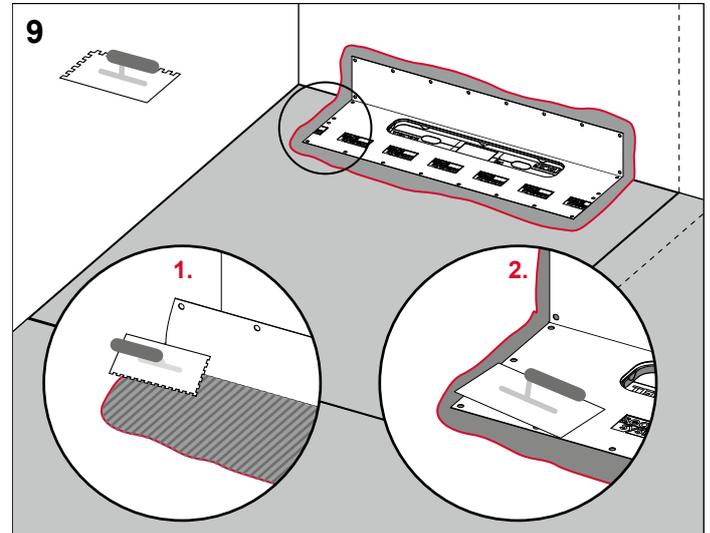
6
Check the groove area for dirt. Carefully remove any dirt from the groove area.



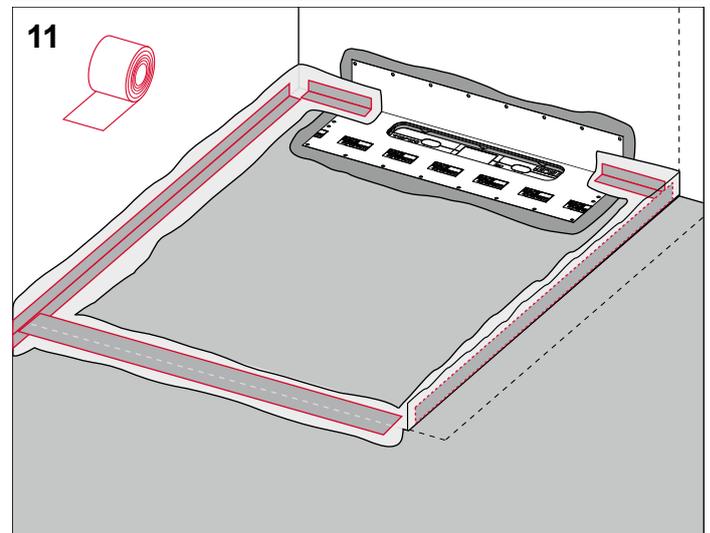
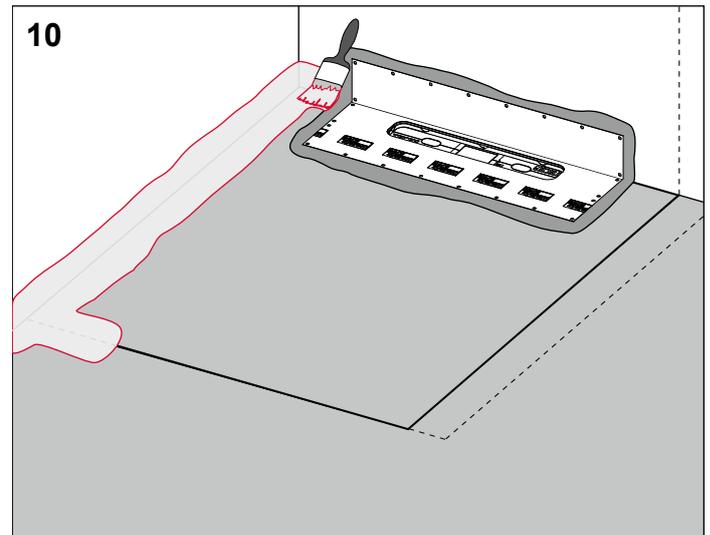
7
Remove the Seal System sealing sleeve from its packaging and press the frame manually into the slot. The sleeve is correctly installed when it is lying completely flat.



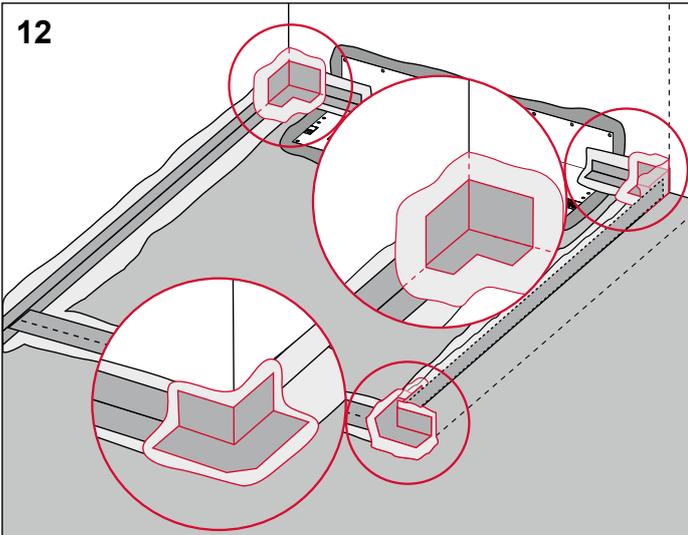
After the sealing sleeve has clicked into place, it may no longer be removed or pulled out again. Otherwise there is a risk that the sealing sleeve could become damaged and that leaks could develop.



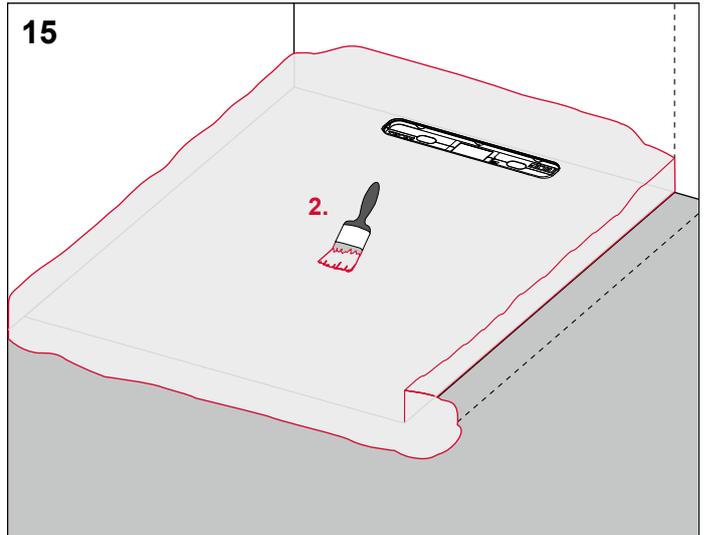
9
Install the sealing sleeve evenly across the whole area of the liquid-applied sealing material and press it down.



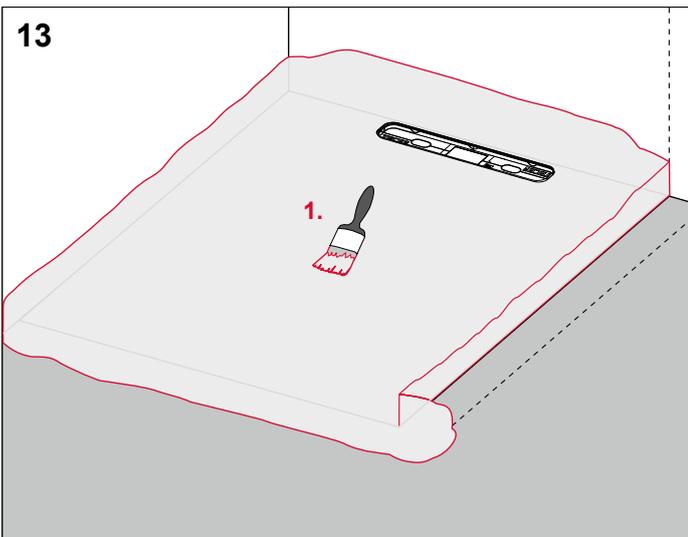
TECEdrainprofile – Assembly instructions



Finally, work the sealing tape and corner seals completely into the sealing material. The sealing tape should overlap the Drainprofile sealing sleeve by at least 50 mm.

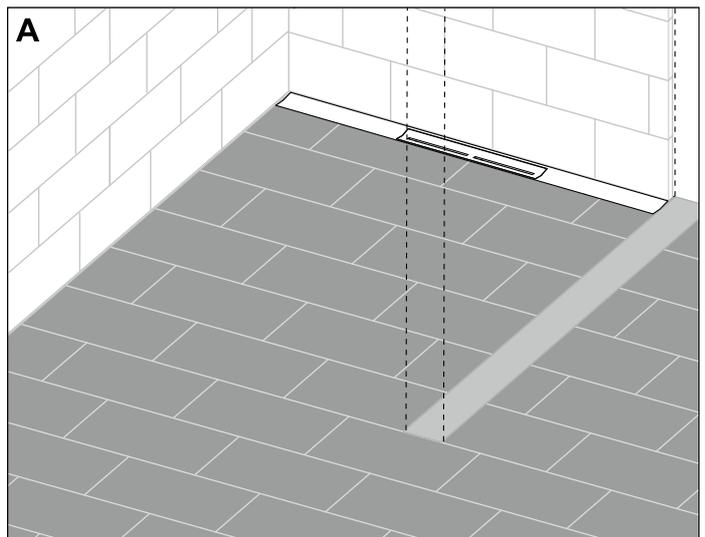


After the first coat has dried, apply the second coat over the entire surface.

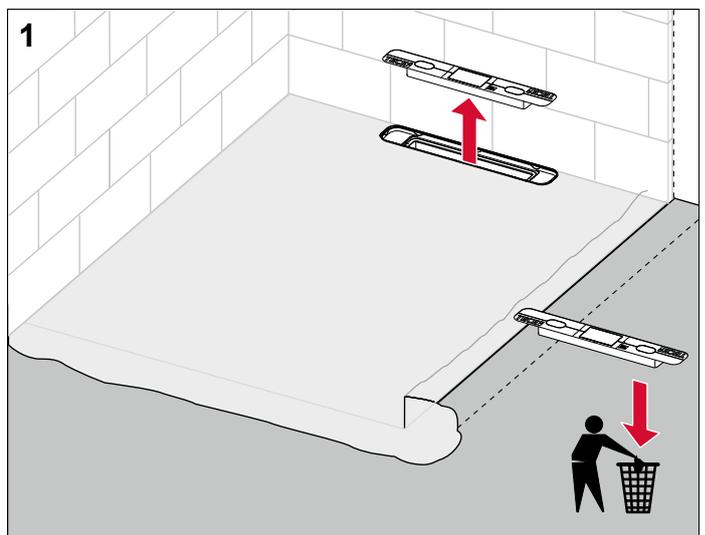
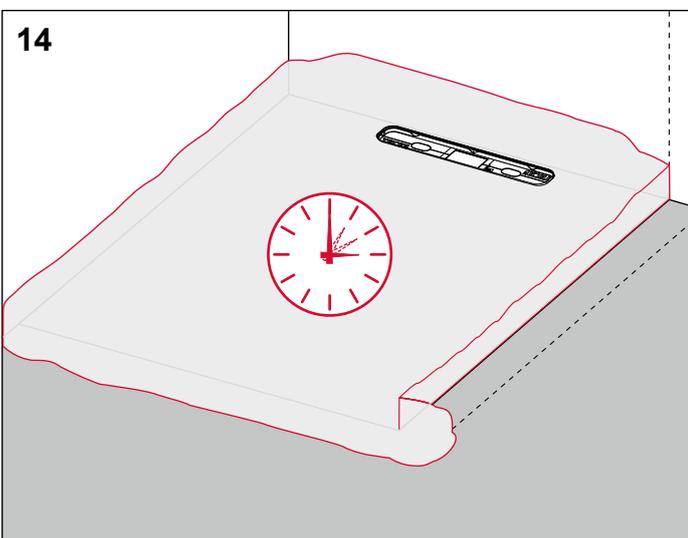


Finally, directly apply the first coat of sealing material wet-on-wet over the entire surface.

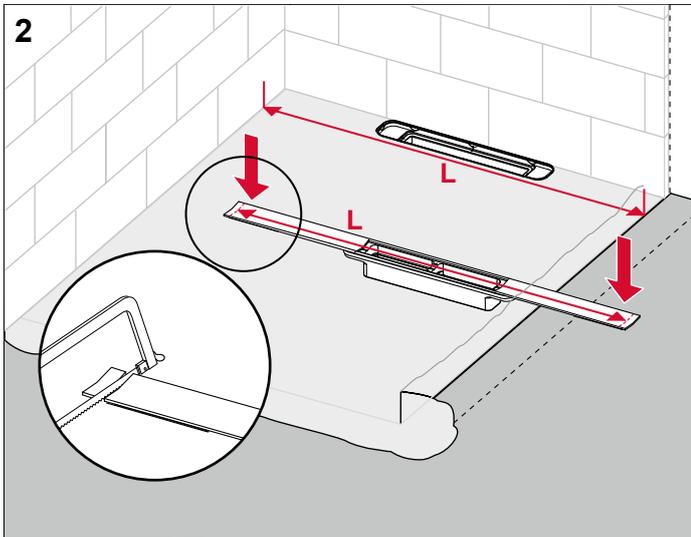
Installing the Drainprofile shower profile



An explanation of the recessed installation of the shower profile against the wall is provided here by way of example.

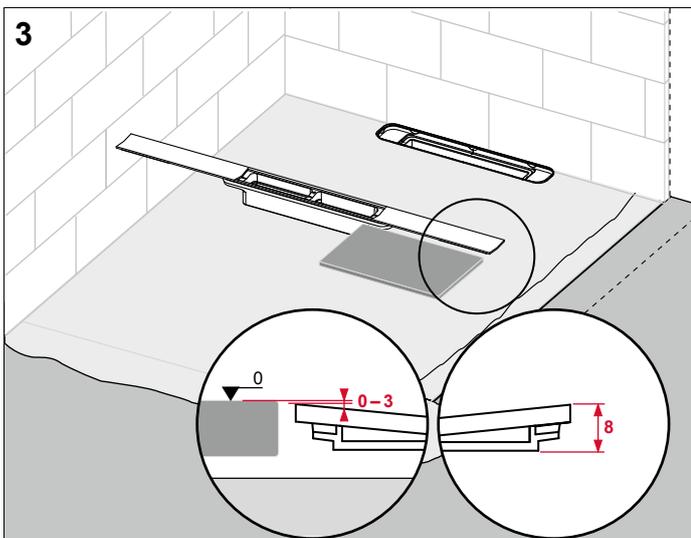


After the wall covering has been applied, the shower profile can be installed. To do so, remove the protective cap from the drain.

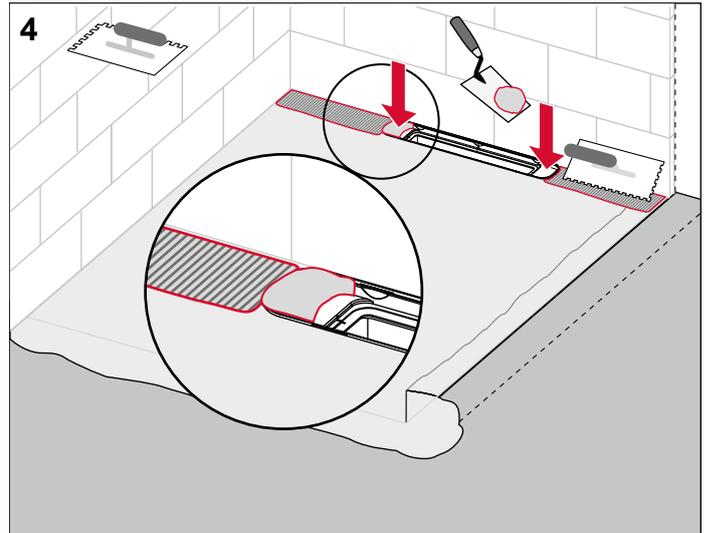


If the existing width of the shower zone does not correspond exactly with the as-delivered lengths of the Drain-profile shower profile, the profiles can be shortened with a saw. This should only be done with a stainless steel saw blade. The saw blade should be unused or it should at least be ensured that it has never been used to cut ferrous productions (steel, etc.). Otherwise, ferrous ions could be introduced causing external rust on the stainless steel profile.

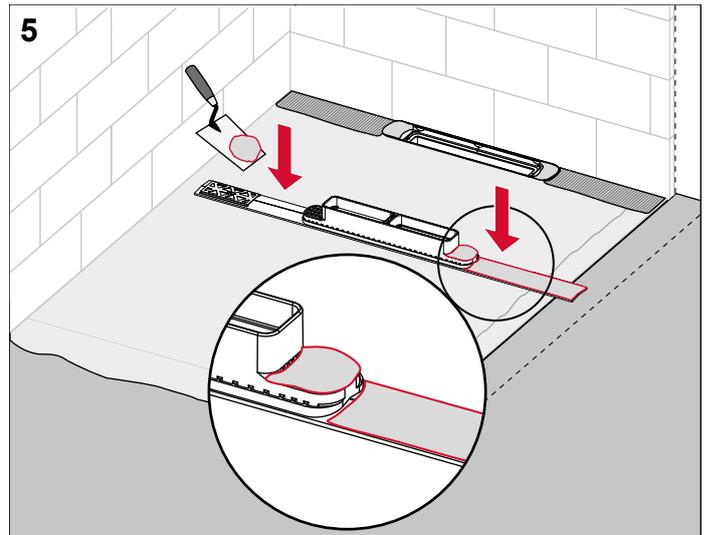
The shower profiles can be shortened up to the grip elements. This results in the following minimum producible shower profile length of 780 mm. This applies to all profile lengths (800 mm, 900 mm, 1,000 mm, 1,200 mm).



As is the case for every floor drainage element, the shower profile is the deepest element installed in the shower zone. Therefore it should be installed at the same height, or slightly deeper, than the subsequent tiles.

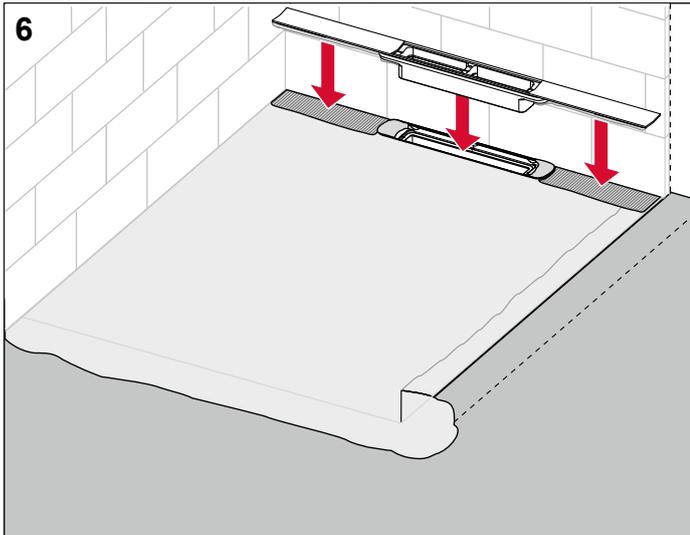


The shower profile is installed with tile adhesive following the “buttering-floating” method. To this end, the tile adhesive is applied to the floor and the deepened elements of the drain. Make sure that no tile adhesive gets into the drain or on the seal.

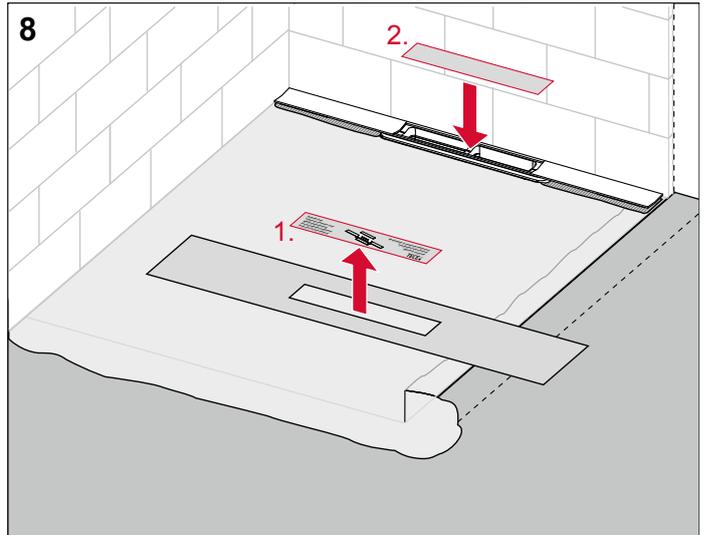


Apply tile adhesive to the underside of the entire shower profile.

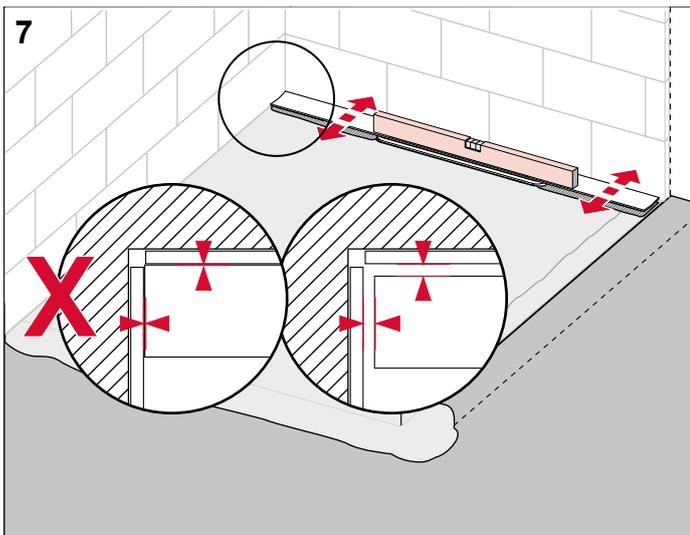
TECEdrainprofile – Assembly instructions



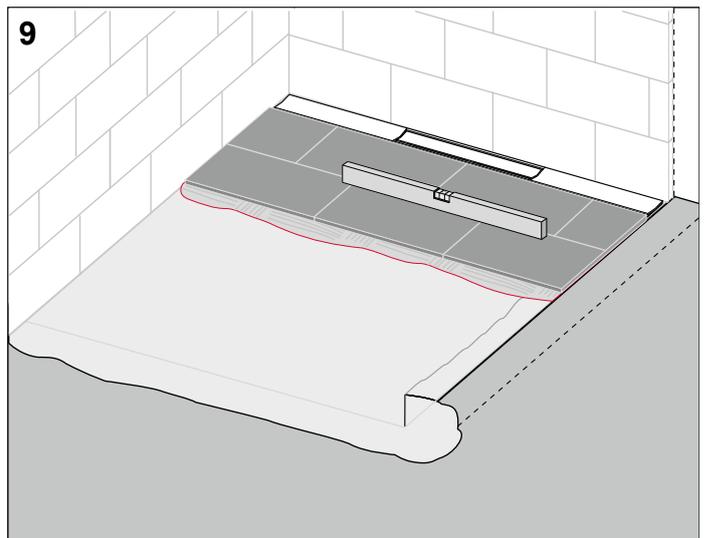
Then insert the shower profile with the supports into the drain. Also make sure, when doing so, that no tile adhesive gets into the drain (if necessary, remove any tile adhesive afterwards).



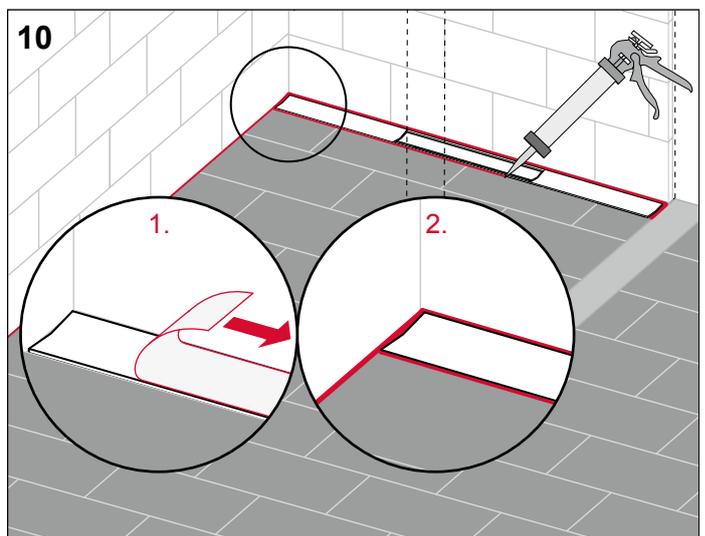
Place the protective cover over the shower profile opening so that nothing can get into the drain during the further course of the construction work.



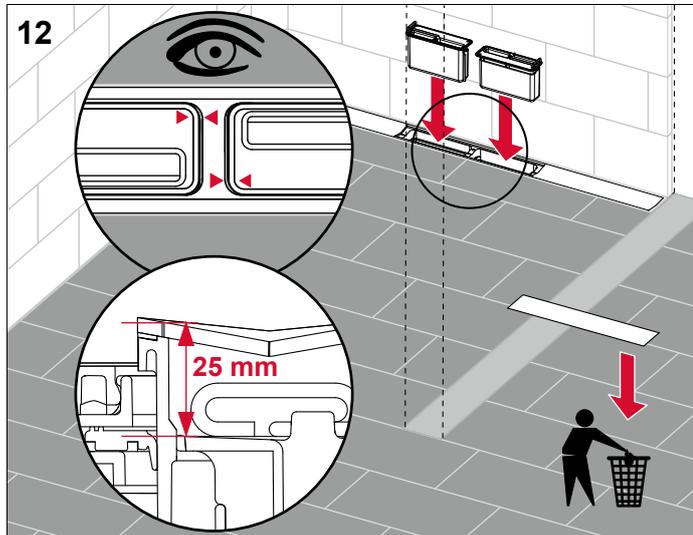
Adjust the height of the profile (also see illustration 3) and align horizontally. When aligning, make sure that the shower profile and wall tiles do not come into contact. The surrounding joint will later be filled in a permanently flexible way with sanitary silicone.



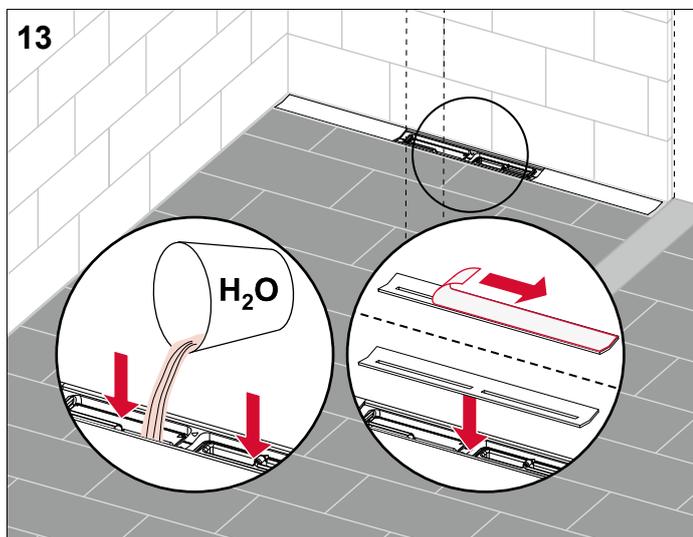
Lay the floor covering (8-25 mm including adhesive bed) with the required incline (1–2 %) towards the shower profile.



Fill the surrounding joint between the profile, wall and floor tiles with sanitary silicone. To do this, prepare the joint beforehand and remove the protective sheet from the shower profile.



Remove the protective cover and insert both odour traps. When doing so, the arrows on the odour trap and supports should lie directly opposite each other. Then push in the odour trap up to the stop. If necessary, the push-in depth can be checked by measuring (25 mm from the top edge of the odour trap to the top edge of the profile opening).



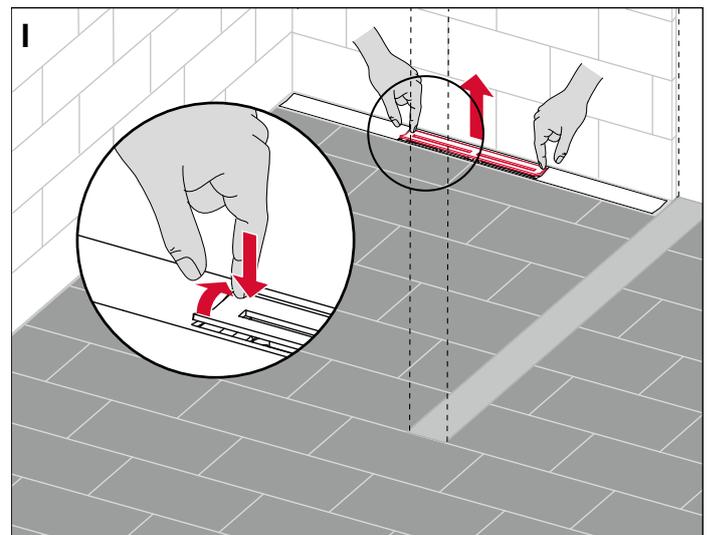
Fill up both odour traps with water. Remove the profile cover, pull off the protective sheet and position the cover.

Maintenance and cleaning

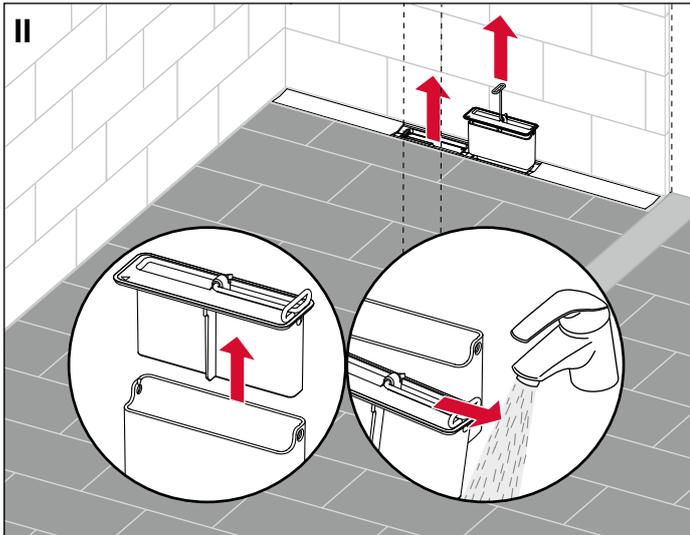
Thanks to its technical design and the materials used to make it, the shower profile can be hygienically cleaned quickly and easily. The inner incline optimises the flow of water and the self-cleaning effect. The stainless shower profile and profile cover have extremely good hygienic properties.

Generally speaking, it is sufficient to rinse the shower profile with water before cleaning and drying it with a soft (e.g. cotton) cloth. Make sure that the towel cannot cause scratches. For example, only microfibre cloths should be used which are suitable for stainless steel surfaces. Only use a mild household cleaner as the cleaning agent. Do not use any cleaning agents with strong acids, chlorine or bleaching agents. Only briefly apply cleaning agents, wipe and thoroughly rinse with water.

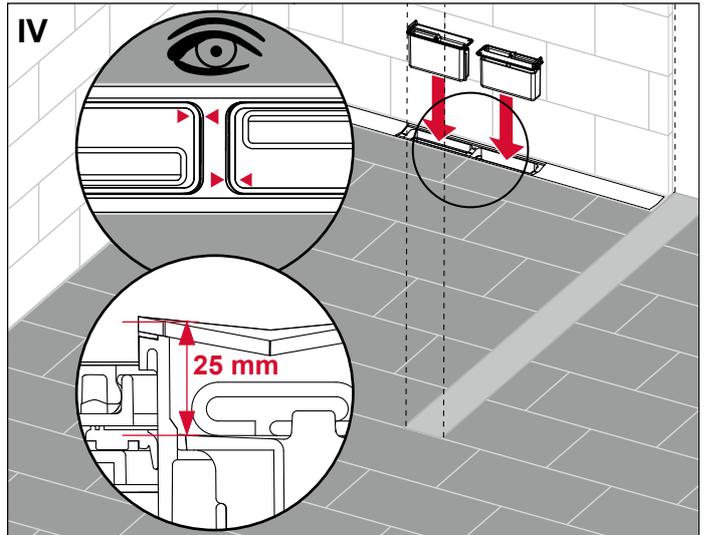
If the drain needs to be cleaned, the profile cover can be easily removed by hand thanks to its special “push” function.



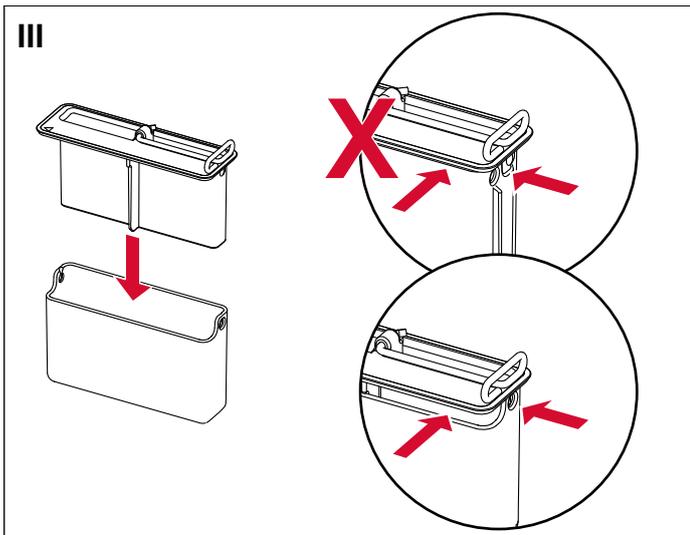
To do so, press the rear edge of the profile cover downwards. Doing this will slightly tilt the cover upwards; then it can be lifted up by hand.



The odour traps can be pulled out using the stainless steel brackets. To clean them as quickly as possible, the traps can simply be pulled apart and cleaned with water and a cloth.



Push in the odour traps up to the stop in the profile supports. When doing so, the arrows on the odour trap and supports should lie directly opposite each other. If necessary, the push-in depth can be checked by measuring (25 mm from the top edge of the odour trap to the top edge of the profile opening). Finally, insert the profile cover again.



After cleaning, put the odour traps back together.

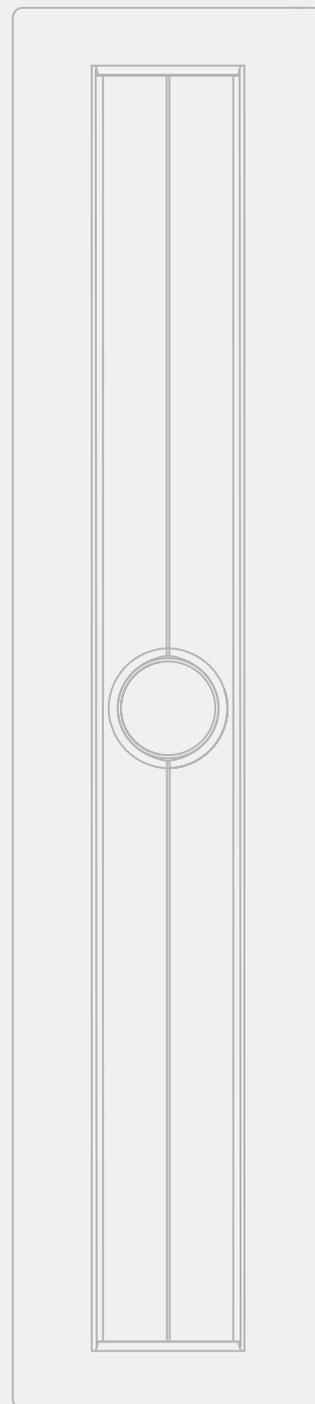
If the drain line becomes blocked, it is fully accessible after removing the odour trap, and can be cleaned with a commercially available pipe cleaning cable. Avoid the use of pipe cleaning products where possible. However, if you do need to use a pipe cleaning product in isolated cases, do not allow it to come into contact with the profile or the profile cover. Also make sure that the product does not contain any sodium hypochlorite. After observing the application time, rinse thoroughly with water.



Drainage systems

TECEdrainline

TECHNICAL GUIDELINES



Introduction	8-4
Planning	8-5
Sealing	8-5
Sealing materials	8-6
Floors and wall areas	8-7
Connecting composite seals to floor drains and to shower channels and profiles	8-7
Seal System – a certified composite seal	8-8
Drains	8-10
Loading capacity of grates	8-10
Barrier-free bathroom design	8-10
Channel position and design of incline	8-11
Installation examples	8-12
Sound insulation	8-15
Fire protection	8-16
TECEDrainline – Advantages	8-17
The TECEDrainline modular system	8-17
Channels	8-17
Covers	8-18
Drains	8-18
Seal System – a certified composite seal	8-19
Sound insulation and fire protection	8-19
Hygiene	8-20
Simple height adjustment	8-21
Range and technical data	8-22
Straight shower channel	8-22
Straight shower channel with wall upstand	8-22
Angled channel	8-23
Straight shower channel for natural stone	8-24
Drains	8-25
Design covers, straight	8-26
Glass cover, straight	8-27
Tileable channel, straight	8-27

Design covers for angled channel	8-28
Tileable channel for angled channel	8-28
Assembly feet	8-29
Fire protection set	8-29
Hair trap	8-30
Sound insulation mat	8-30
Membrane odour trap for TECEdrainline drains	8-30
Seal System sealing tape for TECEdrainline	8-30
Installation instructions	8-31
Installation instructions for shower channel, straight	8-31
Installation instructions for shower channel with wall upstand	8-39
Installation instructions for the angled channel	8-45
Installation instructions for shower channel for natural stone	8-50
Installation instructions for “vertical” drain	8-57
Installation instructions for the fire protection set	8-58
Installation instructions for sound insulation mat	8-61
Installation instructions for TECEdrainline assembly feet	8-62
Special channels	8-63
Guidelines	8-64

TECEdrainline – Introduction

Introduction

An innovation takes the bathroom by storm: TECEdrainline is in a class of its own. 35 years of channel experience and just as many years of hygiene expertise from the industrial kitchen sector have made TECEdrainline a sophisticated product right from the start, tailored to the needs of today's fitters.

Shower channels open up new design options in bathroom architecture. Stainless steel shower channels (made of stainless steel, material 1.4301 or 304) are now not only used between the dry and wet area, but can also be installed directly against the wall.

TECEdrainline has been on the market since 2005 and the applications have now become more varied and increasingly creative.

In high-quality bathrooms, the channels are also more often being incorporated into elegant natural stone floors. The TECEdrainline natural stone set is particularly suitable for this application because of its robust edge area and firmly connected sealing flange. In contrast to stainless steel covers, natural stone can be bonded directly with the channel, and then installed in a thick-bed process. A support plate for the covering is also supplied. The natural stone fitter cuts the stone to fit the support plate and bonds it on. On a finished floor, this results in a continuous texture with narrow drain slots, without the stainless steel channel being noticeable.

Another option is to use an angled channel or a tileable channel "plate" which can be clad with the respective flooring.



TECEdrainline

Planning

Sealing

Components and structural elements are constantly subjected to moisture. In the interior area, many “wet and humid rooms” are affected by this: Bathrooms, washrooms and kitchens in the private sector, commercial kitchens, washing facilities and production rooms in the commercial and industrial sector, and swimming pools, sports facilities and showers in the public sector. Moisture can penetrate into the components, causing structural alterations and changes in building chemicals, for example deterioration of thermal insulation or formation of mould. This can destroy the components and cause residents to develop health problems.

For this reason, the state of the Federal Republic of Germany has prescribed building regulations – the State Building Code – to protect components and structural elements against moisture and damp.

Adequate safeguard measures were originally regulated by DIN 18195, 1-10 “Waterproofing of buildings”. However, this did not contain any detailed specifications about composite seals currently in use today. So ZDB also published the “Composite sealing” bulletin.

A new series of standards has been in force since July 2017. Only part 1 remains from the previous DIN 18195 standard, and this only regulates the terms used for the new series of standards DIN 18531 - 18535. The waterproofing of indoor areas is regulated in this series of standards by standard DIN 18534.

DIN 18534 “Waterproofing for indoor applications” consists of the following parts:

- Part 1: Requirements and principles for design and execution
- Part 2: Waterproofing with waterproofing materials in sheet form
- Part 3: Waterproofing with liquid-applied waterproofing materials in conjunction with tiles and paving (AIV-F)
- Part 4: Waterproofing with mastic asphalt or asphalt mastic
- Part 5: Waterproofing with waterproofing materials in sheet form in conjunction with tiles and paving
- Part 6: Waterproofing with waterproofing materials in panel-shaped form in conjunction with tiles or paving

Parts 5 and 6 of DIN 18534 are currently still being drafted, the white paper for these parts will follow at a later stage.

Parts 1, 3 and 5 are relevant to the area of TECE drainage products.

In addition to the regulations mentioned, the product-specific TECE installation instructions should also be observed.

The main contents of the standards DIN 18534-1:2017-07 and DIN 18534-3:2017-07 are described and explained below.

TECEdrainline – Planning

Water action classes according to DIN 18534-1

In DIN 18534, the “moisture stress classes” known from the ZDB “Composite seals” bulletin have been replaced by “water action classes”. Water action classes can be broken down as follows:

Water action classes	Water action	Stress	Application examples ^{***}	Waterproofing materials (DIN 18534-3, E DIN 18534-5)
W0-I	low	Areas exposed to infrequent splashing	<ul style="list-style-type: none"> • Wall areas above washstands in bathrooms and sinks in domestic kitchens • Floor areas without drainage in domestic spaces, e.g. in kitchens, utility rooms, guest toilets 	<ul style="list-style-type: none"> • Polymer dispersions (wall and floor) • Mineral sealing slurries (crack-bridging) • Reaction resin • Sheet-form waterproofing materials in conjunction with tiles and paving (E DIN 18534-5)
W1-I	moderate	Areas exposed to frequent splashing or to infrequent action of domestic water, without higher loads due to water accumulation	<ul style="list-style-type: none"> • Walls above bathtubs and in showers in bathrooms • Floor areas with drainage in domestic spaces • Floor areas with/without drainage in bathrooms 	<ul style="list-style-type: none"> • Polymer dispersions (wall and floor) • Mineral sealing slurries (crack-bridging) • Reaction resin • Sheet-form waterproofing materials in conjunction with tiles and paving (E DIN 18534-5)
W2-I	high	Areas exposed to frequent splashing and/or to the action of domestic water, above all on the floor, occasionally through water accumulation	<ul style="list-style-type: none"> • Wall areas of showers in sports/commercial facilities^{***} • Floor areas with drains and/or channels • Floor areas in spaces with walk-in showers • Wall and floor areas in sports/commercial facilities^{***} 	<ul style="list-style-type: none"> • Polymer dispersions (wall) • Mineral sealing slurries (crack-bridging) • Reaction resin • Sheet-form waterproofing materials in conjunction with tiles and paving (E DIN 18534-5)
W3-I	extremely high	Areas exposed to regular or prolonged splashing and/or to the action of domestic water and/or water from intensive cleaning processes, intensified due to water accumulation	<ul style="list-style-type: none"> • Areas around swimming pools • Areas in showers and shower facilities in sports/commercial facilities^{***} • Areas in commercial facilities (commercial kitchens, launderettes, breweries, etc.) 	<ul style="list-style-type: none"> • Mineral sealing slurries (crack-bridging) • Reaction resin

W = water action class

0-3 = grade (low, moderate, high, very high)

I = indoors

* It may be appropriate to also assign the respectively higher water action class to adjoining areas which are not protected as they are located at a sufficient distance away or are not protected by structural measures (e.g. shower enclosures).

** Application scenarios can be assigned different water action classes depending on the anticipated water action.

*** Sealing surfaces, if applicable, with additional chemical action pursuant to 5.4 (DIN 18534-1)

Sealing materials

Different compound sealing materials comply with the standard, depending on the water action class. Compound sealing materials can be divided into two areas: liquid-applied sealing materials and waterproofing materials in sheet form.

Liquid-applied sealing materials include polymer dispersions, crack-bridging mineral sealing slurries and reaction resins. Polymer dispersions are in the lowest classification level. They may be used in classes W0-I and W1-I for wall and floor areas, and in class W2-I for wall areas only.

Products in the next class up, are crack-bridging mineral sealing slurries. These can be used in all classes, however in class W3-I only if no additional chemical, mechanical or technical effects can arise. Reaction resins which may be used without restriction in all water action classes are the highest graded products.

Waterproofing materials in sheet form are generally comprised of a waterproof plastic coating, mostly PP, PE or TPE materials, laminated on both sides with a non-woven fabric to guarantee bonding with the adhesive. According

to E DIN 18534-5:2016-06, these sheet-form waterproofing materials can be used in conjunction with tiles and paving in classes W0-I to W2-I for wall and floor areas not exposed to high mechanical action.

Composite sealing products require either a European Technical Assessment (ETA) on the basis of ETAG 022, or a general test certificate (abP) on the basis of PG-AIV-F or PG-AIV-B.

Floors and wall areas

In addition to sealing materials, DIN 18534-1 also regulates suitable substrates for floors and wall areas, according to the water action class. In water action classes W0-I and W1-I, moisture-sensitive substrates are permitted under the composite seal. These are, for example, calcium sulphate-bound screeds or gypsum wall panels. In classes W2-I and W3-I, only substrates which are insensitive to moisture are permitted. These are mostly substrates on a cement-based compound such as concrete, cement screed or fibre cement boards.

Connecting composite seals to floor drains and to shower channels and profiles

Floor drains, shower channels and profiles represent penetrations in the surface sealing (composite seal). Special attention is required to ensure that these constructional details remain permanently waterproof. Planners must coordinate the work carried out by the different trades (fitters, screed and tile layers). This includes realistically specifying the water action classes, and deciding on the right materials and products to use for substrates, the composite seal, drains and channels. Then there is the constructive design which must be flawlessly implemented.

Particularly the combination of the composite seal with drain/channel and the required sealing sleeve/sealing tape and adhesive must function perfectly together in the respective combination. As this perfect function in the respective combination is so important, TECE offers its drainage products greater security and clarity with its Seal System.

TECEdrainline – Planning

Seal System – a certified composite seal



The Seal System project was brought into being to change the confusing and uncertain situation regarding the use of composite seals on floor drains and shower channels.

To this end, the Seal System sealing tape and Seal System

sealing sleeve were developed as a first step. They form the connection elements between the composite seal and the drainage solution (channel/floor drain).

Extremely comprehensive combination tests were then carried out on composite seal products with TECEdrainline shower channels and TECEdrainpoint S floor drains. The functional safety (tightness) of the connection of the composite seal with the TECE drainage product was tested.

The tests were carried out by KIWA TBU, an independent testing institution, based on the testing principles required by the building inspectorate (PG-AIV-F/-B) in Germany.

More than 50 composite sealing products from well-known manufacturers were successfully tested and certified.

The tested and certified safety can be recognised from the Seal System quality seal. “Seal System – certified composite seal” stands for the tightness of the connection of drainage solutions and composite seals, and for a certificate which brings designers, tradespeople and end users security and clarity.

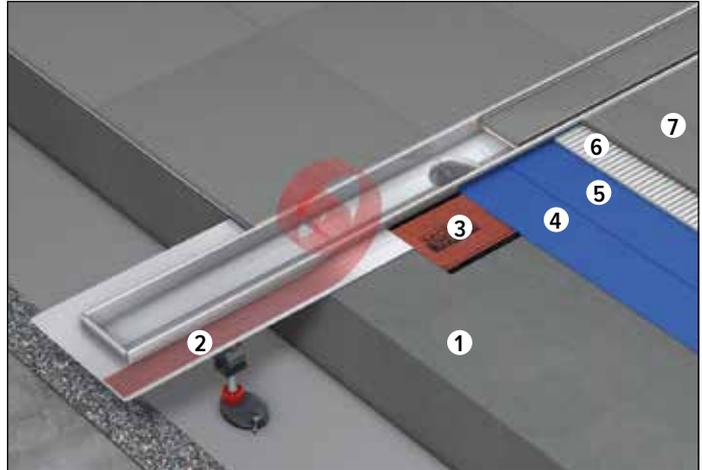
The currently certified composite seal products are shown in the table on the following page.

Seal System is available for the TECEdrainline shower channel, the TECEdrainprofile shower profile and for the TECEdrainpoint S plastic drain range. Information about the components and installation of other TECE products can be found in the corresponding chapters.

On the TECEdrainline shower channel, the Seal System consists of the following components:

1. TECEdrainline shower channel
2. Seal System sealing tape
3. One of the 50 tested and certified sealing products

Example of a Seal System seal of a TECEdrainline channel with a certified sealing product.



- 1 screed
- 2 channel flange protective film
- 3 Seal System sealing tape
- 4 first layer of composite seal
- 5 second layer of composite seal
- 6 tile adhesive
- 7 tile cover

A certificate is available for each composite seal product which has passed the test (www.sealsystem.net).



Seal System certificate (example)

The TECEdrainline shower channels and TECEdrainpoint S floor drains are identified with the Seal System seal on the packaging, and each product comes with a short description of the Seal System and a list of all certified composite seal products. This also makes it simple for contractors at the site to choose a safe and certified composite seal product.

Visit www.sealsystem.net, where you can find all certificates for successfully tested composite seal products, and information about the Seal System.

Manufacturer	Seal System certified product
Ardex GmbH	Ardex S 1-K
	Ardex S 7
	Ardex 8 + 9
Bostik GmbH (Ardal tile technology)	Ardal Flexdicht
	Ardalon 2K plus
Botament Systembaustoffe GmbH & Co. KG	Botact DF 9
	Botact MD 1
	Botact MD 28
Fermacell GmbH	Fermacell liquid foil
Henkel AG & Co. KGaA (Ceresit)	Ceresit CL 51
	Ceresit CL 50
	Ceresit CR 72
Hermann Otto GmbH (Otto Chemie)	Ottoflex liquid foil
	Ottoflex slurry seal
Kemper System GmbH & Co. KG	Kemperol 022
Kiesel Bauchemie GmbH & Co. KG	Okamul DF
	Servoflex DMS 1K Plus SuperTec
	Servoflex DMS 1K – fast setting SuperTec
Mapei GmbH	Mapegum WPS
	Mapelastic
	Monolastic Ultra
PCI Augsburg GmbH	PCI Lastogum
	PCI Seccoral 1K
	PCI Pecilastic W
Ramsauer GmbH & Co. KG	Flex sealing sheet
	Flex sealing slurry
	Flex 2K sealing slurry
Rywa GmbH & Co. KG	Rywalit Lastodicht
	Rywalit DS 99 X
	Rywalit DS 01 X
	Rywalit sealing foil sealing membrane

Manufacturer	Seal System certified product
Saint Gobain Weber GmbH	Weber.tec 822, liquid membrane
	Weber.tec 824, flexible sealing slurry 1-K
	Weber.tec Superflex D2 tiles, flexible sealing slurry 2-K
Sakret Trockenbaustoffe Europa GmbH & Co. KG	Alternative seal AA
	Property waterproofing
Schomburg GmbH	Saniflex
	Aquafin 1K flex
	Aquafin RS 300
	Aquafin 2K
	Aquafin 2K/M
Schönox GmbH	Schönox HA
	Schönox 2K DS Rapid
Sopro Bauchemie GmbH	Sopro FDF
	Sopro DSF 423
	Sopro DSF 523
	Sopro DSF 623
	Sopro TDS 823
	Sopro AEB 640

Seal System tested and certified composite sealing products

Drains

The technical requirements for drains for buildings are regulated in DIN EN 1253. Among other things, the standard defines specifications for minimum drainage capacities, water seal depths for odour traps, and loading capacities for grates.

Drainage capacities and odour traps

Discharge values for drains with one or more inlets are specified as follows in section 4.8.1 of DIN EN 1253-1:

Nominal value of outflow nozzles		Floor drains	
DN / OD	DN / ID	Flow values	Water level a
32	30	0.4 l/s	20 mm
40	40	0.6 l/s	20 mm
50	50	0.8 l/s	20 mm
75	70	0.8 l/s	20 mm
110	100	1.4 l/s	20 mm

Drainage capacity (inflow over grating) – minimum discharge value for drains

Odour traps should prevent channel gases from entering the building. To this end, DIN EN 1253 calls for odour traps with a water seal depth of at least 50 mm. An odour trap may only be omitted in certain cases in outdoor areas. Adhering to the required drainage capacity and water seal depth entails certain constructive installation heights for floor drains.

The necessary floor projection heights, as is the case with most old properties, are often not available. The TECE range offers flatter drains for such cases. The parties involved in the project should draw up written agreements with regard to its use.

Loading capacity of grates

Drains, drain tops and grates must be designed so that they can withstand the expected loads (including traffic for instance). These classifications for installation inside buildings are described in DIN EN 1253-1.

Load class	Max. permitted load	Application area/site
H 1.5	< 150 kg (1.5 kN)	Areas which are not expected to be loaded.
K 3	< 300 kg (3 kN)	Areas without vehicle traffic such as flats, commercial buildings and certain public buildings. For example, bathrooms in dwellings, hotels, retirement homes, schools, swimming pools, public washing and showering facilities, balconies, recessed balconies, patios and green roofs.
L 15	< 1.5 t (15 kN)	Areas exposed to light vehicle traffic, commercially used areas and public areas.

Loading of grates according to DIN EN 1253-1

The responsibility for selecting the suitable class lies with the designer. In case of doubt, the higher load class should always be chosen.

Barrier-free bathroom design

Demographic changes have led to an increased demand for barrier-free homes. A disability, an accident or growing older – there are many reasons why people can be limited in their mobility or become dependant on a wheelchair.

It is important for them that public buildings, and especially their own four walls, are equipped so that they can move around inside them without any problems. The technical term for this is “barrier-free”. This requires sufficiently wide doors, no thresholds or bumps, no steps and a walk-in shower. The TECEdrainline makes a life without bumps and steps possible in the shower area. The floor-level shower channel makes it easier to get into the shower zone. When planning a barrier-free bathroom, the specifications of DIN 18040-2 must be complied with.

DIN 18040-2:

DIN 18040-2 distinguishes between two types of requirements made upon buildings. On the one hand, barrier-free dwellings, and on the other, barrier-free, dwellings which can be used by wheel-chairs users without any restrictions. The second category is identified by a large **R** in bold type.

General:

- In dwellings with several bathrooms, at least one bathroom must be barrier-free.
- Fittings should be designed as a single-lever, or touch-free. In the case of touch-free fittings, a temperature limiter must be provided. The water discharge temperature should be limited in this case to 45 °C.

Movement areas:

A movement area must be designed in front of each of the items of sanitary equipment such as toilet bowls, wash-stands, baths and in the shower zone. A minimum area of 1.20 m x 1.20 m is sufficient for this (**R**: 1.50 m x 1.50 m). Movement areas may overlay one another.

Shower zones:

Shower zones must be configured in such a way that they can be used barrier-free, e.g. also with a walking frame or wheelchair.

This is achieved by

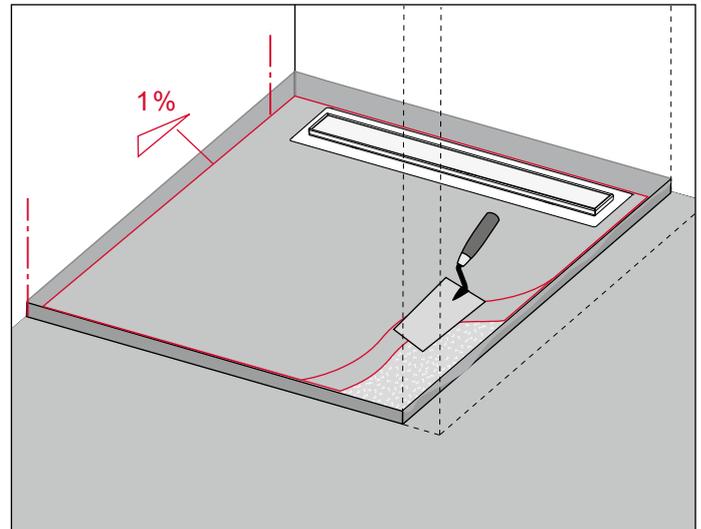
- The layout of the bathroom on the same level as the adjoining floor area and a maximum lowering of 2 cm; where applicable, any transition elements should preferably be formed as inclined surfaces;
- Slip-proof floor coverings in the shower zone (in accordance with GUV-I 8527 at least rating group B);
- **(R)** the facility to retrofit a folding shower seat, with a seat height from 46 cm to 48 cm;
- **(R)** the facility to retrofit fold-up safety support arms both sides of the folding shower seat, the top edge of which is 28 cm above the height of the seat.)

The surface of the shower zone can be included in the movement areas of the bathroom if

- the transition to the shower area is designed level with the floor;
- the gradient required for drainage is maximum 2 %.

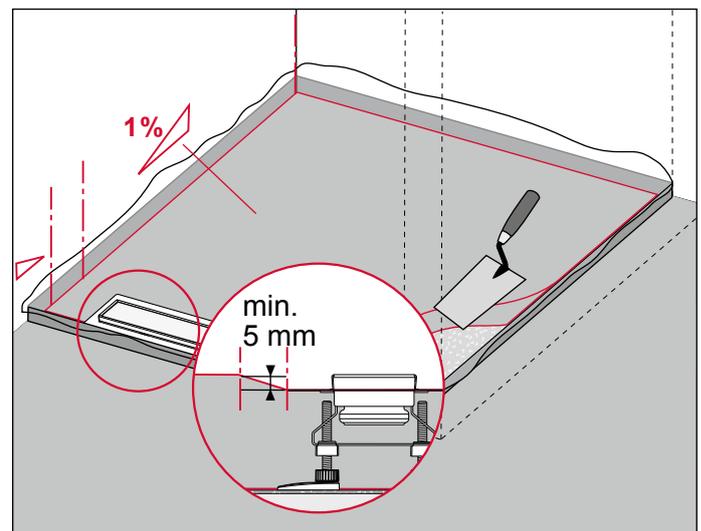
Channel position and design of incline

Forming the correct gradient depending on the position of the shower channel is paramount in ensuring unobstructed drainage of water in shower zones. The incline in the shower zone should be at least 1% with regard to the shower channel.



Designing the incline for channel installations "close to the wall"

If the channel separates the shower zone from the room's dry area, a steep reverse gradient with a height difference of 5 mm to the channel should also be implemented on the room side. This prevents the water from overflowing into the dry area.



Designing the incline when installing the channel in the middle of the room

The following installation examples provide more details about designing the incline.

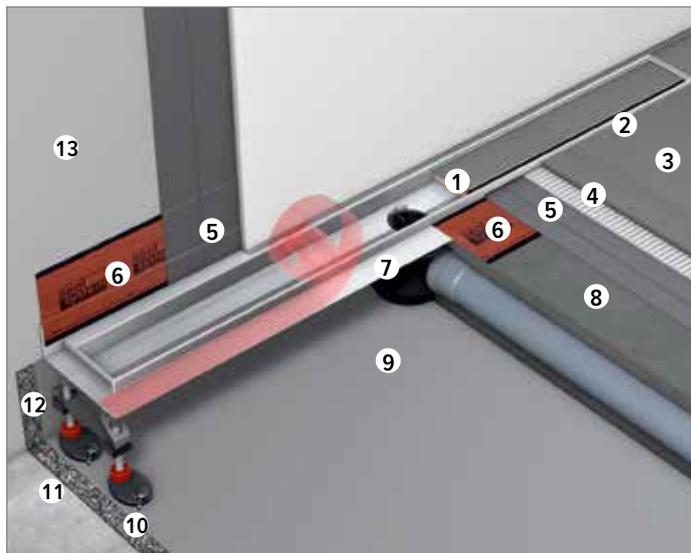
Recommended incline designs can also be found in the TECEdrainline shower channel installation instructions.

TECEdrainline – Planning

Installation examples

TECEdrainline shower channels open up new design possibilities in bathroom architecture – and bathroom designers can take advantage of this new freedom: Shower channels are generally installed directly at the wall or close to the wall, but a Drainline is also used as the transition between the wet and the dry area.

Installation “directly at the wall”



Installation “directly at the wall”, layer structure

- | | |
|-----------------------------|------------------------------------|
| 1. Shower channel/cover | 8. Screed |
| 2. Flexible grouting | 9. PE sheet |
| 3. Tile cover | 10. Drainbase sound insulation mat |
| 4. Tile adhesive | 11. Bare floor |
| 5. Composite seal | 12. Edge insulation strip |
| 6. Seal System sealing tape | 13. Masonry |
| 7. Channel flange | |

The 20 mm wide tile finishing edge offers scope for different wall construction/wall tile thicknesses and at the same time an aesthetically pleasing tile finish. It also facilitates the installation of the Seal System sealing tape and application of the composite seal.

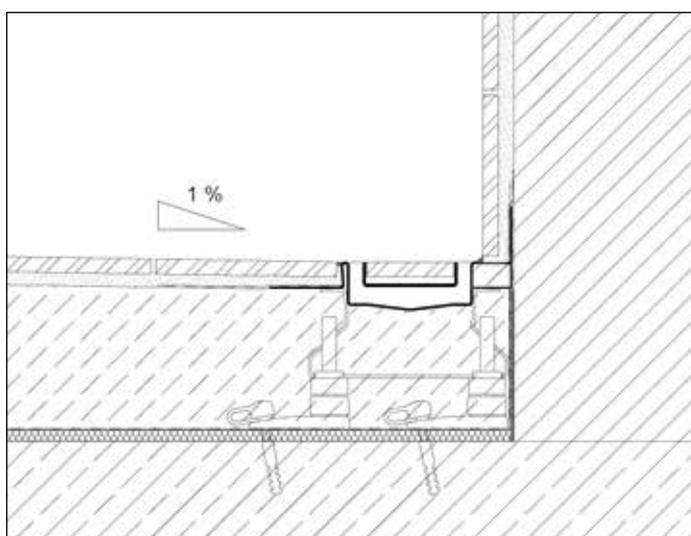
The advantage of installing the channel “directly at the wall” is that the channel fits more discreetly into the tiling pattern and therefore requires less tiling. It is no longer necessary to inset thin tile sections or paste joints between the wall and the shower channel, as is the case for “close-to-wall” installation. In comparison to an installation “in the middle of the room”, you only need an incline to the wall on one side – there is no need for a reverse gradient on the other side.

TECEdrainline with a wall upstand has been developed to enable installation “directly at the wall”.



TECEdrainline straight, with wall upstand

It must be ensured that the wall tiles do not protrude over the channel edge, so that it is possible to insert and remove the grating.



Installation “directly at the wall”, incline

Installation "close to the wall"

When installing the TECEdrainline "close to the wall", a space is formed between the channel and the wall, which, for example, can be covered with thin tile sections or mosaic stones.



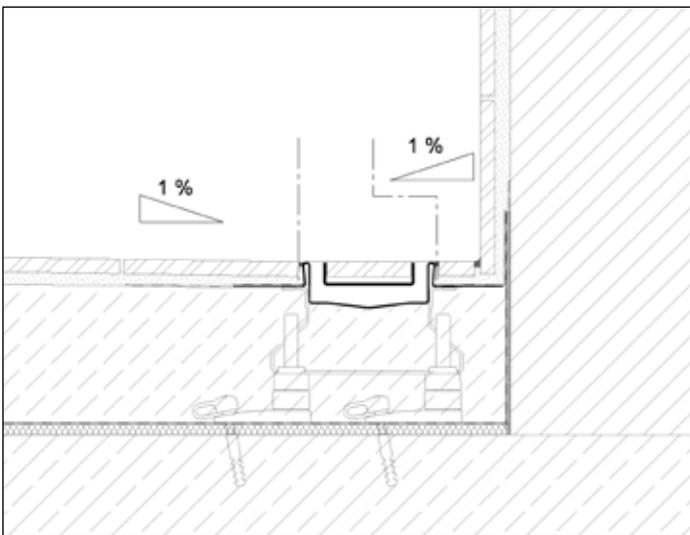
Installation "close to the wall"

Installation "in the middle of the room"

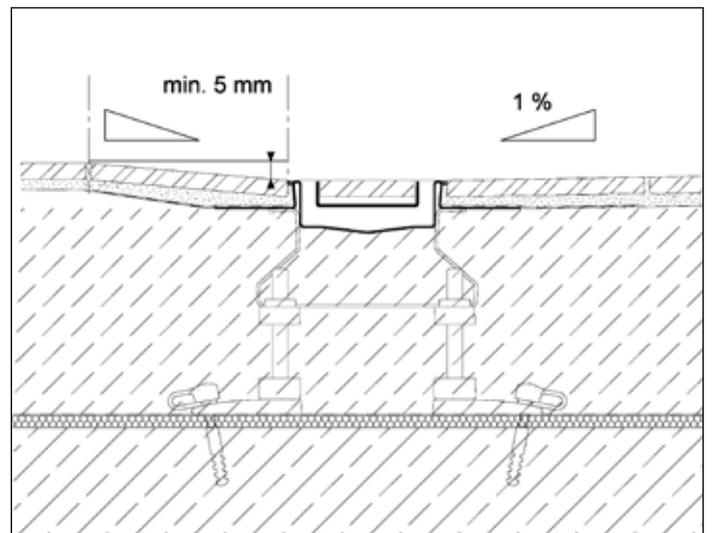


Installation "in the middle of the room"

When installing the TECEdrainline "in the middle of the room", as well as the 1% incline in the wet area, a reverse gradient with a 5 mm height difference must also be included.

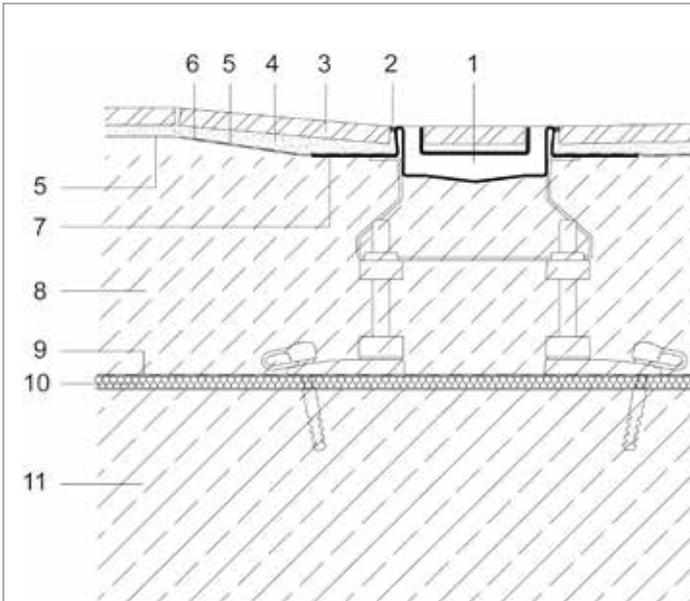


Installation "close to the wall", incline



"In the middle of the room" installation, incline

TECEdrainline – Planning



“In the middle of the room” installation, layer structure:

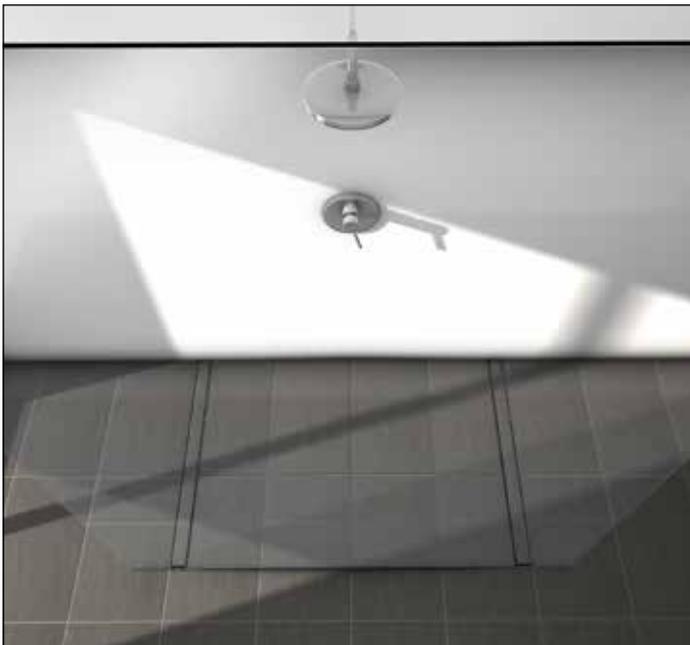
- | | |
|-----------------------------|------------------------------------|
| 1. Shower channel/cover | 7. Channel flange |
| 2. Flexible grouting | 8. Screed |
| 3. Tile cover | 9. PE sheet |
| 4. Tile adhesive | 10. Drainbase sound insulation mat |
| 5. Composite seal | 11. Bare floor |
| 6. Seal System sealing tape | |



Installation of an angled channel “in the middle of the room”

Alternatively to the straight design, the Drainline angled channel can also be used. Achieving the required incline is somewhat more difficult than with the straight version: the water in the wet area must be able to flow away evenly down both channels. With large format tiles, a diagonal cut from the corner of the wall to the crest of the channel is required – see illustration above. This is not required for small-format tiles (mosaic). The highest point in the wet area is therefore located in the corner of the wall. Furthermore, a reverse gradient of 5 mm in height in the dry area must be provided, to prevent water overflow.

You can find more information about installing shower channels in the “Installation instructions” section.



“Parallel” installation

When using two shower channels installed in parallel, as well as the 1% incline from the centre of the wet area to the channel, a reverse gradient with a 5 mm height difference “behind” the channel must also be included.

Sound insulation

For sound insulation, the TECE range offers the pressure-resistant “Drainbase” sound insulation mat. Just 6 mm thick, the mat is laid throughout the whole shower area between the bare floor and the screed. The shower channel, assembly feet, drain and wastewater pipe rest directly on the sound insulation mat which is covered by a PE sheet, and are therefore completely uncoupled from the structure. This can be used for TECEdrainline, TECEdrainprofile and TECEdrainpoint S.

The Drainbase sound insulation mat meets the more stringent requirements of DIN 4109 and VDI 4100 (sound protection level III). In accordance with DIN 4109, the requirements for sound pressure levels in living and sleeping spaces caused by water installations are ≤ 30 dB(A). The more stringent requirements of DIN 4109 and VDI 4100 (SST III) are actually as low as ≤ 25 dB(A) or ≤ 24 dB(A).

Used in combination with the TECEdrainline, the environmentally-friendly sound insulation mat made of recycled rubber achieves a sound pressure level of 22 dB(A) and is therefore below the more stringent sound insulation requirements. This value has been confirmed by an official test report carried out by the Fraunhofer Institute for Building Physics.

The Drainbase sound insulation mat achieves a rated impact sound reduction of $\Delta L_w = 20$ dB(A) (on 50 mm screed).

Unlike conventional sound insulation of several centimetres thick, TECE's Drainbase sound insulation mat is only 6 mm “thin” and barely gives way at all under loading. Even under a pressure of 15 t/m^2 , compression is only 0.6 mm. Therefore, with the Drainbase, high sound insulation requirements can be fulfilled even with low floor projection heights.



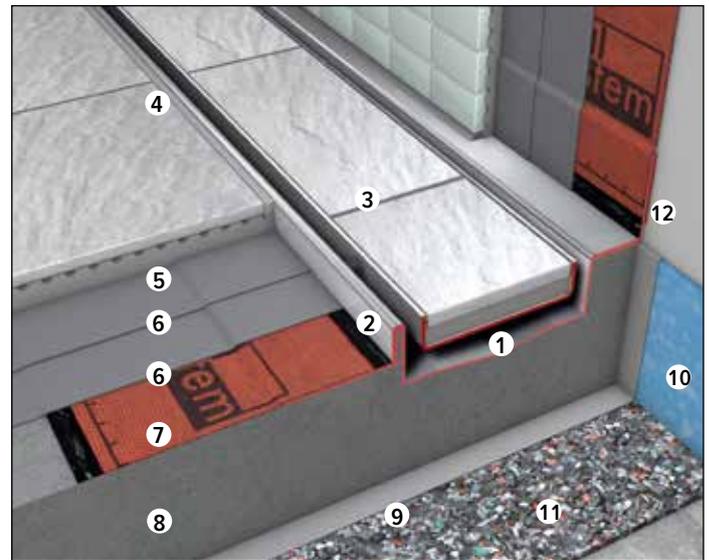
Drainbase sound insulation mat

Drainbase technical data:

Material	recycled rubber granules bonded with PU elastomer
Colour	black/coloured

Surface	smooth with granular structure
Width x length	1,250 mm x 1,250 mm or 1,250 mm x 8 m (roll)
Strength	6 mm
Tensile strength	approx. 0.4 N/mm^2
Elongation at break	approx. 50%
Temperature stability	- 30 °C to + 80 °C
Fire behaviour	B2
Load	0.6 mm at 15 t/m^2
Rated Impact sound reduction: ΔL_w	20 dB(A) (on 50 mm screed)

Installation example with sound insulation mat



- | | |
|-----------------------------|---|
| 1. “plate” tileable channel | 7. Seal System sealing tape |
| 2. Channel body | 8. Screed |
| 3. Tile cover | 9. PE sheet |
| 4. Flexible grouting | 10. Edge insulation strip |
| 5. Tile adhesive | 11. Drainbase sound insulation mat |
| 6. Composite seal | 12. Insulation strip flange (factory assembled) |

If you wish to achieve higher sound insulation values, the Drainbase sound insulation mat can also be combined with thin mineral-fibre impact sound insulation. To this end, the TECEdrainline shower channel with assembly feet is installed on the Drainbase sound insulation mat (according to the installation instructions). The mineral fibre impact sound insulation is then laid over this and covered with a PE sheet before applying the screed.

In this way, an installation sound level L_{in} of 12 dB(A) can be implemented when installing the channel in the middle of the room, and of 16 dB(A) when installing the channel against the wall. In this way, a rated impact sound reduction ΔL_w of 34 or 33 dB(A) can be achieved.

These values have been confirmed by sound insulation tests at the Fraunhofer Institute for Building Physics. Certificates for the sound insulation tests can be found at www.tece.de in the “Service” area.

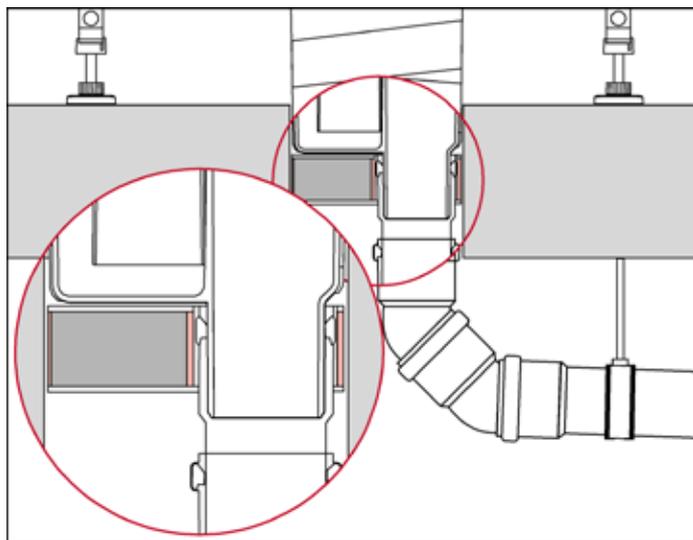
TECEdrainline – Planning

Fire protection

FireStop fire protection set for vertical drains.

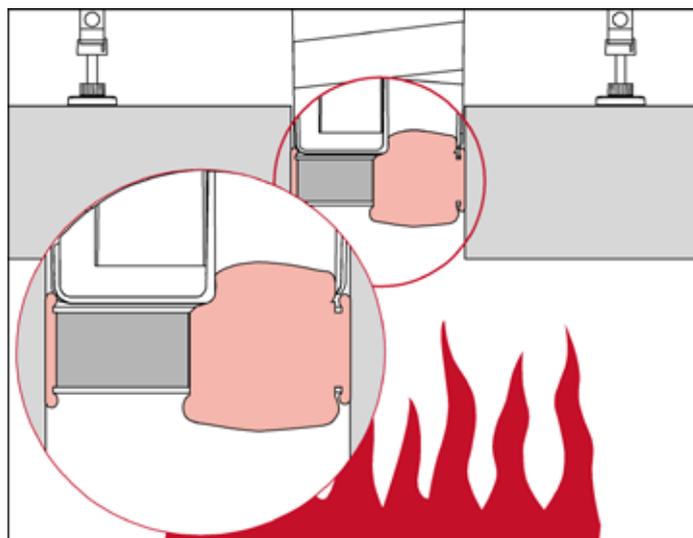
With the TECEdrainline FireStop EI 120 DN 50 fire protection set, TECE is offering a safe and innovative fire protection solution up to fire resistance class EI 120 in accordance with DIN EN 13501-2:2007 and A1:2009.

Inside the fire protection sleeve there are special gypsum plates fortified with additives. On the outside and in the nozzle area there are adhesive strips made of intumescent material based on expandable graphite.



As temperatures rise during a fire, this material foams up to many times its original form.

This causes the remaining annular gap towards the core hole on the outside of the fire protection sleeve to close.



In the socket area, the outflow nozzle including the pushed-on HT pipe sleeve becomes crushed.

The water seal in the outflow (trap) ensures that no smoke

or gas can escape into the room being protected. Together this creates a tested, highly fire-resistant pipe closure system (or firewall).

The usual mortar mix/filling of the remainder of the hole is not required with the TECE fire protection set.

The suitability of the TECE FireStop fire protection set is demonstrated by a European Technical Approval (ETA-11/0437).

TECEdrainline – Advantages

The TECEdrainline range offers various advantages such as free combination of products due to the modular system, channels and drains for the most diverse requirements, the Seal System certificate sealing system, solutions for sound insulation and fire protection and particularly good hygiene and cleaning properties.

The TECEdrainline modular system

The TECEdrainline range is a modular system consisting of numerous covers, channel bodies and drains. These can be combined with each other as desired. There are five different drains for different requirements and construction situations: e.g. drains with a particularly low installation height for the renovation of old buildings, or drains with a very high drainage capacity for power showers. The range also includes solutions for fire protection and sound insulation. Accessories such as assembly feet, membrane odour traps or hair traps are available as optional extras. TECEdrainline grates are available in nominal lengths of 700, 800, 900, 1,000, 1,200 and 1,500 mm and also as angled channels (900 to 1,200 mm).



Channels

The TECEdrainline range comprises 4 different types of channel body. The straight design, the straight design with a wall upstand (specially for installation against the wall), the 90° angled channel and a straight channel specially for natural stone coverings.



TECEdrainline, straight



TECEdrainline straight, with wall upstand



TECEdrainline angled channel



TECEdrainline for natural stone, straight

TECEdrainline – Advantages

Covers

Choice of eight design covers with different surfaces (stainless steel and glass) and two tileable channels. The TECEdrainline design grates are made of stainless steel with a polished or brushed surface. In addition, aesthetic glass covers are also available in three colours. The glass colours are fastened to stainless steel supports.

The stainless steel covers are available to suit the straight and angled versions of the channel lengths (basic, steel II and plate only), and comply with load class K3 (can be loaded up to 300 kg).

The photos show a few examples of the channel covers:



“quadratum” design grate



“steel II” design cover



Glass cover



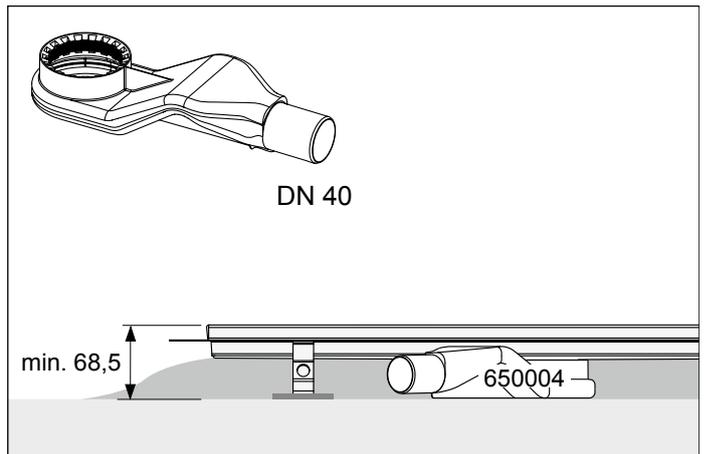
“plate” tileable channel

Drains

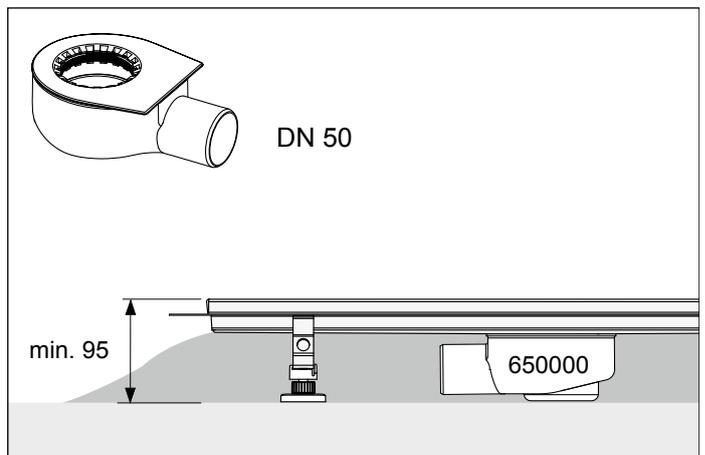
Horizontal

The TECE modular system includes several horizontal plastic drains for various applications. It offers drains for particularly low floor constructions (renovations of old buildings) and drains with a particularly high drainage capacity for modern power showers.

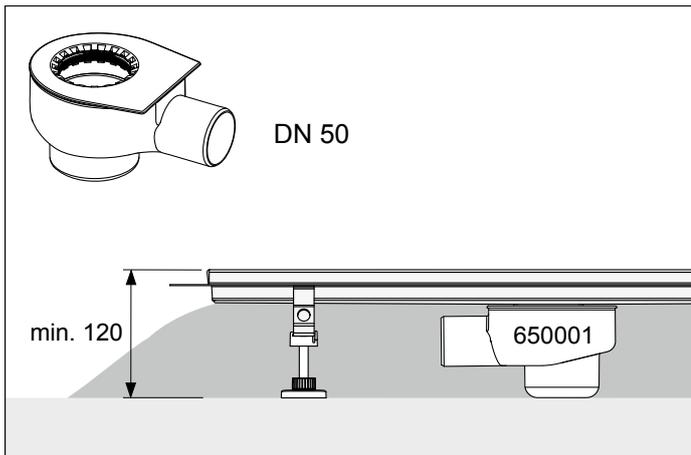
The lowest assembly height among the drains is 68.5 mm (up to top edge of finished floor). This “extra-flat” outlet has a drainage capacity of 0.6 l/s. It is therefore sufficient for average shower heads (throughput 10-15 l/min). For power showers which require a particularly high drainage capacity, the TECE range includes a drain with a drainage capacity of 1.4 l/s. The minimum installation height here is 148 mm. The “flat” drain has a minimum installation height of 95 mm and a drainage capacity of 0.8 l/s, the installation height of the “standard” outlet is a minimum of 120 mm, the drainage capacity 0.8 l/s.



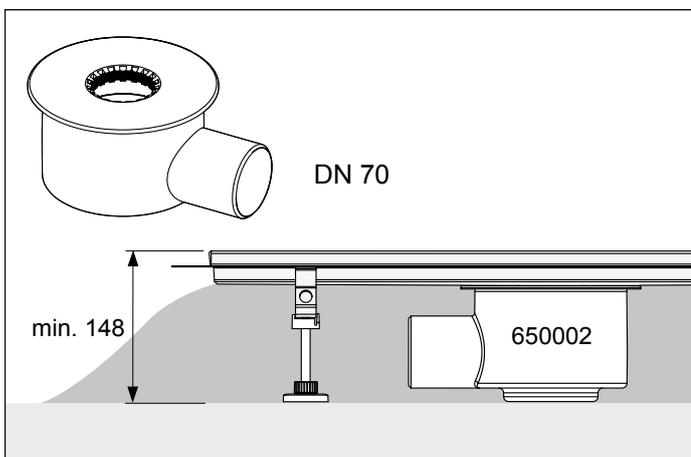
“Extra-flat” drain



“Flat” drain



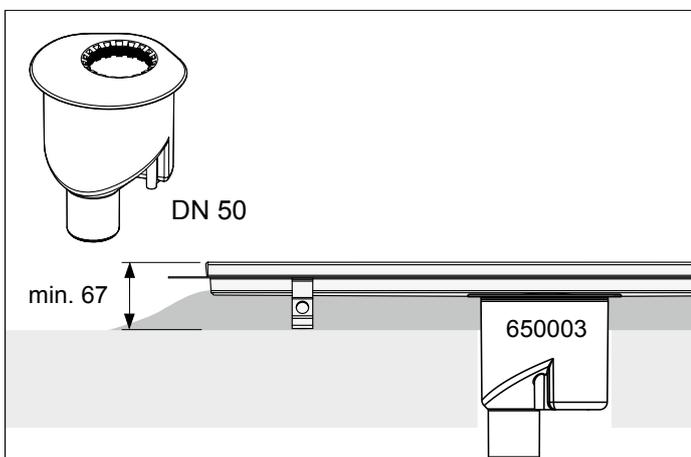
“Standard” drain



“Max” drain

Vertical

In addition to the horizontal drains, there is also a vertical drain. This is built into the bare floor with a 130 mm core bore. Here, the minimum assembly height (up to top edge of finished floor) is only 67 mm. This outlet has a drainage capacity of 1.3 l/s and can be enhanced with a fire protection element (class EI 120).



“Vertical” drain

The following adapters are available for transition to a PVC wastewater pipe:

Dimensions	Order no.
DN 40/DN 40	3690000
DN 50/DN 40	3690001
DN 50/DN 50	3690002
DN 50/2"	669012

Seal System – a certified composite seal

The special sealing concept employed with the TECEdrainline shower channel ensures that installation is reliable and easy. Use of the supplied Seal System sealing tape makes permanent and safe connection of the shower channel to the composite seal possible.

This has been tested and certified by an independent testing institute. You can find more information about the Seal System in the section entitled “Planning: Seal System - a certified composite seal” or at www.sealsystem.net.

Sound insulation and fire protection

Through the use of the Drainbase sound insulation mat, it is possible to meet the more stringent sound insulation requirements of DIN 4109 and also sound protection levels I to III of VDI 4100. Here, the sound insulation mat is only 6 mm thick and barely gives way at all under loading. Independent tests carried out by the Fraunhofer Institute are available. You can find more information about sound insulation in the section on “Planning: Sound-proofing”. With the TECEdrainline fire protection set FireStop EI 120, highly fire-resistant partitioning of ceiling bushings is possible for up to 120 minutes. With this set, in the case of the TECEdrainline shower channel, the vertical drain with wastewater pipe can be easily, safely and directly fed through the ceiling between floors, fulfilling fire protection requirements. The fire protection sleeve is rated and approved according to DIN EN 13501 (European Technical Approval ETA-11/0437). You can find more information under “Planning: Fire protection”.

TECEdrainline – Advantages

Hygiene

The channel body of the TECEdrainline is made of stainless steel, without any gaps, screws or unreachable edges. Therefore, hair, soap residues and other dirt or grime cannot build up on the inside of the channel. This means that it is easy to clean and particularly hygienic. The inside of the channel can be easily cleaned with a cloth. The immersion pipe can simply be removed for cleaning purposes. The “self-cleaning” drain can be rinsed with the shower head. As the Drainline is made of stainless steel – material 1.4301 (304), no cleaning agent should be used which could attack this material.

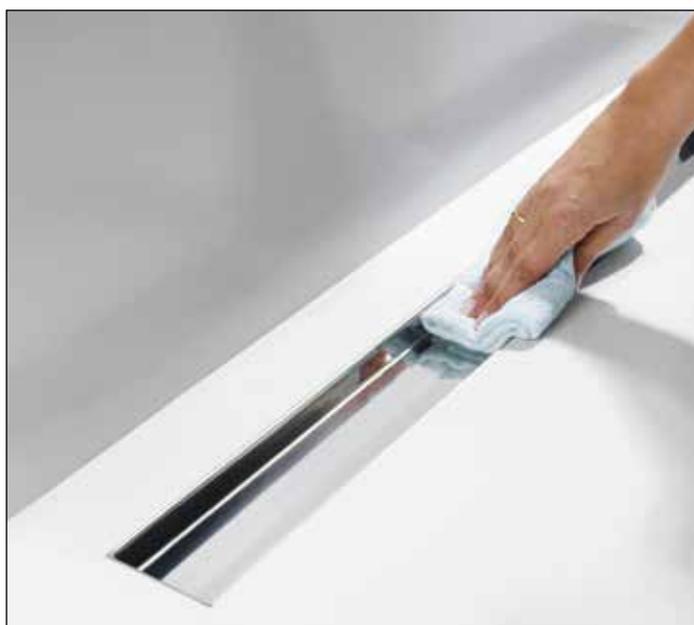
In an emergency, if there is an obstruction in the wastewater pipe, access is provided for a small manual pipe cleaning cable (e.g. Rothenberger ROSPI 6 H+E PLUS, diameter 6.4 mm/4.5 m, item no. 7.2090). A marking on the inside of the drain shows the location of the outflow nozzle for this purpose.



Remove the cover with the lift tool



Remove the immersion pipe for cleaning



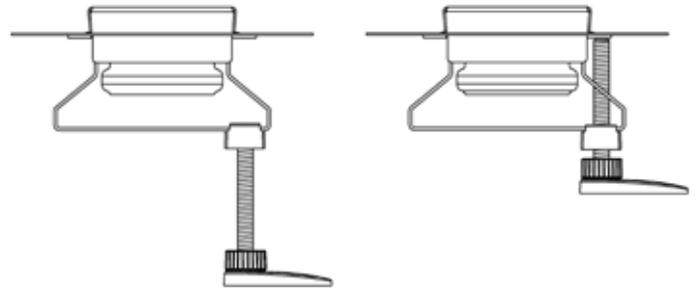
Clean the channel body – do not use aggressive cleaning agents



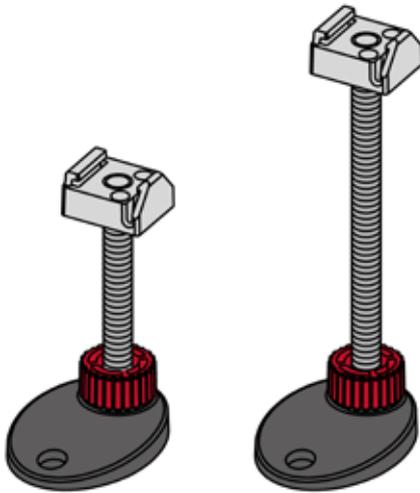
Clean the outlet pipe with a small manual pipe cleaning cable

Simple height adjustment

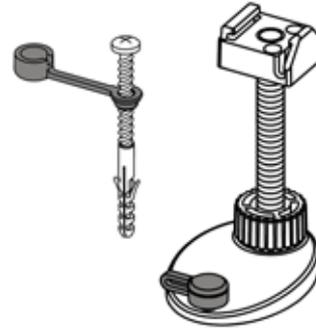
The assembly feet facilitate installation of the TECEdrainline. Using just one screw on each foot, the Drainline can be easily and quickly matched to the required floor level. The clip mechanism is an additional advantage. Simply clip the feet onto the two brackets of the channel and align the channel. A sound-absorbing element is included in the scope of delivery. This is inserted between the foot and the fixing screw; and together with the Drainbase sound insulation mat, it prevents an acoustic bridge from forming between the floor and the assembly foot.



Height-adjustment facility of the assembly feet



Mounting foot – normal and long format (according to floor drain)



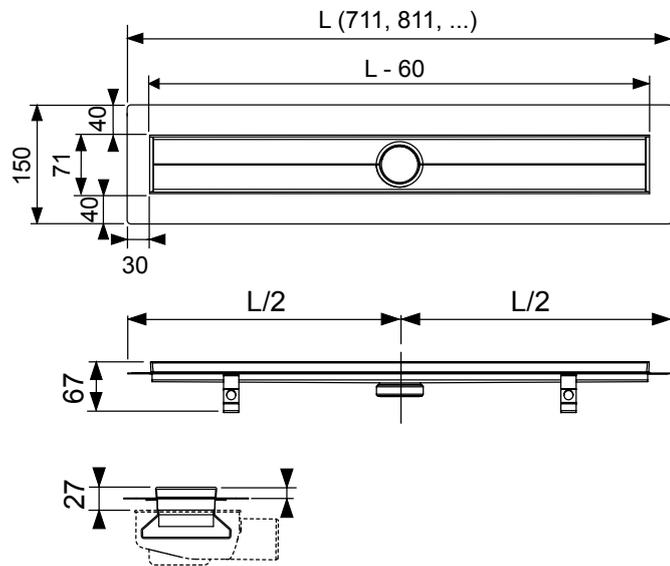
Sound-absorbing element on assembly foot

TECEdrainline – Range and technical data

Range and technical data

Straight shower channel

TECEdrainline shower channel, straight, with Seal System* sealing tape



Straight channel body for installation in screed, with flange and Seal System* sealing tape, for creating a tested and certified connection of the TECEdrainline channel to the composite seal.

Consisting of:

- Channel body with flange made of polished stainless steel, material 1.4301 (304)
- Seal System* sealing tape with matting for on-site installation in the liquid or strip composite seal
- Connecting clip for anchoring in the screed and fitting the optional assembly feet
- with central connection trims for drain
- with internal 3D incline for improved water drainage and self-cleaning effect
- Seal

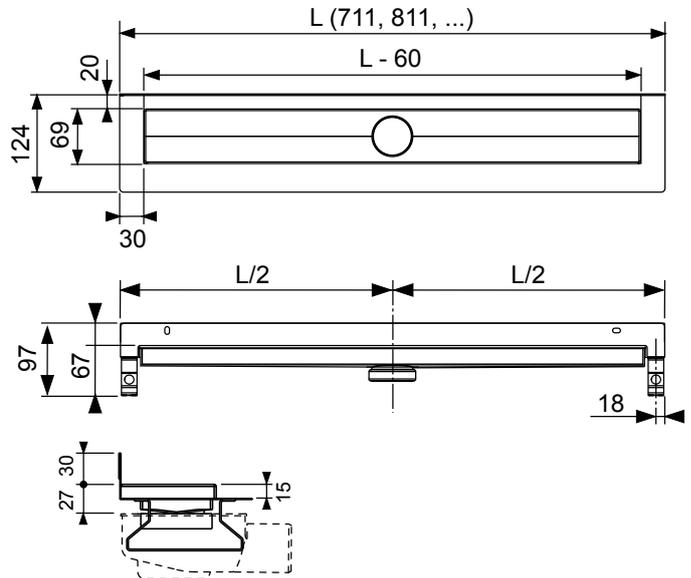
Please order separately: Design grate or tileable channel, drain, assembly feet (optional) Drainbase sound insulation mat (optional), for adherence to installation noise level according to DIN 4109 and VDI 4100 sound protection levels (SS) I to III.

Order number	Nominal length	Total length L	Visible dim. after installation L - 60
600700	700 mm	711 mm	651 mm
600800	800 mm	811 mm	751 mm
600900	900 mm	911 mm	851 mm
601000	1,000 mm	1,011 mm	951 mm
601200	1,200 mm	1,211 mm	1,151 mm
601500	1,500 mm	1,511 mm	1,451 mm

TECEdrainline channel range, straight

Straight shower channel with wall upstand

TECEdrainline channel, straight, with wall upstand and Seal System* sealing tape



Straight shower channel with wall upstand for installation in the screed against the wall, with flange and Seal System* sealing tape, for creating a tested and certified connection of the TECEdrainline channel to the composite seal.

Consisting of:

- Channel body with flange made of polished stainless steel, material 1.4301 (304)
- Seal System* sealing tape with matting for on-site installation in the liquid or strip composite seal
- Connecting clip for anchoring in the screed and fitting the optional assembly feet
- with central connection trims for drain
- with internal 3D incline for improved water drainage and self-cleaning effect
- Seal

Note: Not compatible with the “Max” drain.

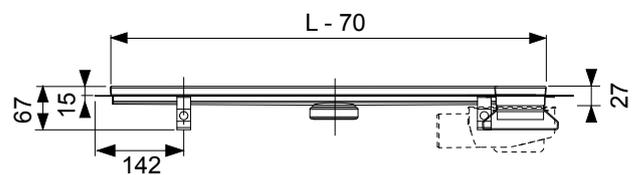
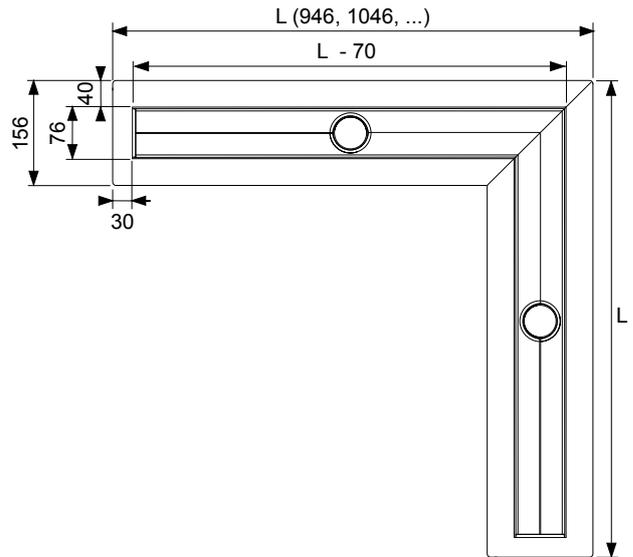
Please order separately: Design grate or tileable channel, drain, assembly feet (optional) Drainbase sound insulation mat (optional), for adherence to installation noise level according to DIN 4109 and VDI 4100 sound protection levels (SSt) I to III.

Order number	Nominal length	Total length L	Visible dim. after installation L - 60
600701	700 mm	711 mm	651 mm
600801	800 mm	811 mm	751 mm
600901	900 mm	911 mm	851 mm
601001	1,000 mm	1,011 mm	951 mm
601201	1,200 mm	1,211 mm	1,151 mm
601501	1,500 mm	1,511 mm	1,451 mm

TECEdrainline channel range, straight with wall upstand

Angled channel

TECEdrainline angled channel with Seal System* sealing tape



Shower channel with 90° angle for installation in the screed, with flange and Seal System* sealing tape for creating a tested and certified connection of the TECEdrainline channel to the composite seal.

Consisting of:

- Channel body with flange made of polished stainless steel, material 1.4301 (304)
- Seal System* sealing tape with matting for on-site installation in the liquid or strip composite seal
- Connecting clip for anchoring in the screed and fitting the optional assembly feet
- with two connection trims for drain
- with internal 3D incline for improved water drainage and self-cleaning effect
- Seals

Please order separately: Design grate or tileable channel, 2 drains, 2 sets of assembly feet (optional), Drainbase sound insulation mat (optional), for adherence to installation noise level according to DIN 4109 and VDI 4100 sound protection levels (SSt) I to III.

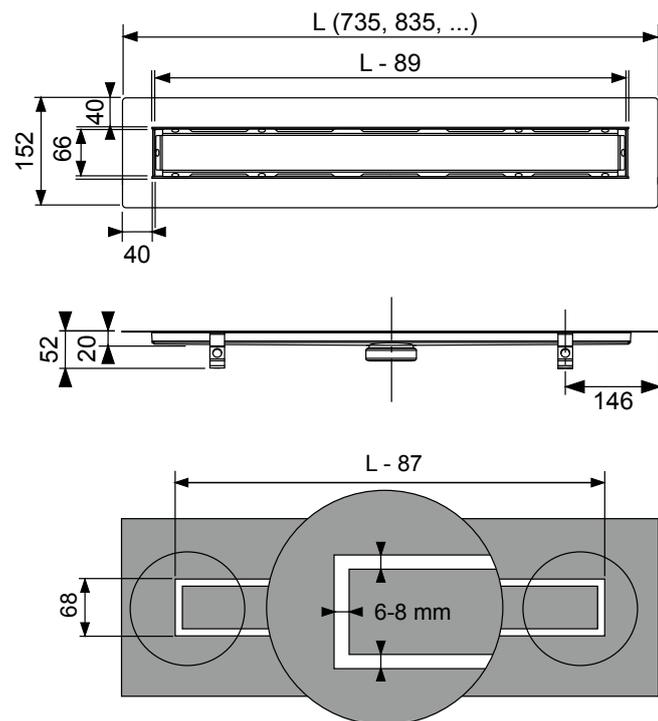
Order number	Nominal length	Total length L	Visible dim. after installation L - 70 mm
610900	900 x 900 mm	944 x 944 mm	874 x 874 mm
611000	1,000 x 1,000 mm	1,044 x 1,044 mm	974 x 974 mm
611200	1,200 x 1,200 mm	1,244 x 1,244 mm	1,174 x 1,174 mm

TECEdrainline angled channel range

TECEdrainline – Range and technical data

Straight shower channel for natural stone

TECEdrainline channel for natural stone, straight, with Seal System* sealing tape and a stainless steel support as a set



Installation dimension (length x width): (L - 87 mm) x 68 mm

Width of the surrounding drain opening: 6 to 8 mm (see drawing right).

Please order separately:

Drain, assembly feet (optional) and Drainbase sound insulation mat (optional), for adherence to installation noise level according to DIN 4109 and VDI 4100 sound protection levels (SSt) I to III.

Note: Design grate “steel II” as custom-made grate (see dimension sheet for natural stone custom channel); all other design covers (tileable channel, glass covers, design grates) are unsuitable.

Order no.	Nominal length	Total length L	Support sheet length* L - 89
650700	700 mm	735 mm	646 mm
650800	800 mm	835 mm	746 mm
650900	900 mm	935 mm	846 mm
651000	1,000 mm	1035 mm	946 mm
651200	1,200 mm	1235 mm	1146 mm
651500	1,500 mm	1,535 mm	1,446 mm

* Support sheet length = L - 87

TECEdrainline channel range for natural stone, straight

Straight channel body and support sheet for TECEdrainline shower channel, for installation in the screed and on-site laying of large tiles/natural stone slabs, with flange and Seal System* sealing tape, for creating a tested and certified connection of the TECEdrainline channel to the composite seal.

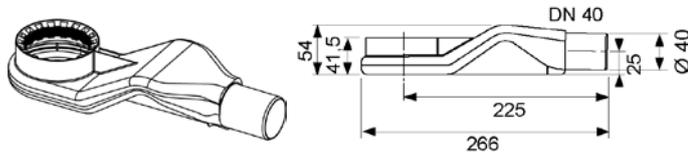
Consisting of:

- Channel body with flange made of polished stainless steel, material 1.4301 (304)
- Seal System* sealing tape with matting for on-site installation in the liquid or strip composite seal
- Connecting clip for anchoring in the screed and fitting the optional assembly feet
- with central connection trims for drain
- with internal 3D incline for improved water drainage and self-cleaning effect
- Support sheet made of stainless steel – material 1.4301 (304) – for insertion in the channel body
- Seal

Drains

“Extra-flat” drain

TECEDrainline “extra-flat” drain, DN 40, side drain, 0.6 l/s**



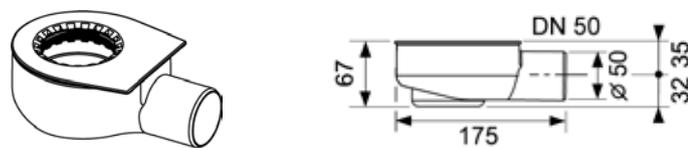
Extra-low drain for TECEDrainline shower channel to create rotatable fitting with the channel body and side connection to DN 40 wastewater pipe, with removable siphon immersion pipe.

- Installation height from bottom edge of drain to top edge of shower channel = 68.5 mm
- Drainage capacity of shower channel with “basic” design grate = 0.6 l/s
- Reduced water seal depth = 30 mm

Order no. 650004

“Flat” drain

TECEDrainline “flat” drain, DN 50, side drain, 0.8 l/s**



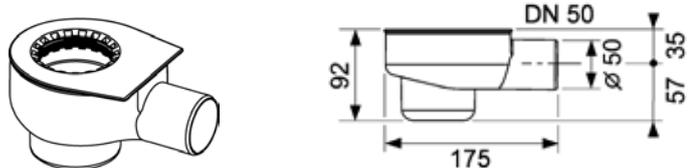
Low drain for TECEDrainline shower channel to create rotatable fitting on the channel body and side connection to DN 50 wastewater pipe, with removable siphon immersion pipe

- Installation height from bottom edge of drain to top edge of shower channel = 95 mm
- Drainage capacity of shower channel with “basic” design grate = 0.8 l/s
- Reduced water seal depth = 25 mm

Order no. 650000

“Standard” drain

TECEDrainline “standard” drain, DN 50 side drain, 0.8 l/s**

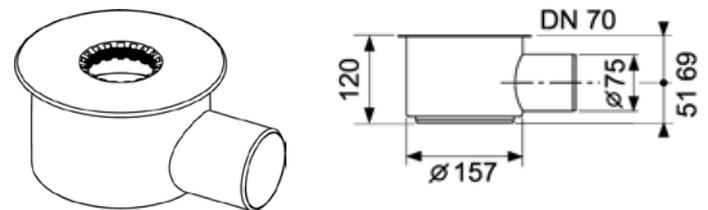


“Standard” drain for the TECEDrainline shower channel for rotatable fitting to the channel body and side connection to DN 50 wastewater pipe, with removable siphon immersion pipe

- Installation height from bottom edge of drain to top edge of shower channel = 120 mm
 - Drainage capacity of shower channel with “basic” design grate = 0.9 l/s
 - Water seal depth = 50 mm in keeping with DIN EN 1253
- Order no. 650001

“Max” drain

“Max” TECEDrainline drain, DN 70 side drain, 1.2 l/s**



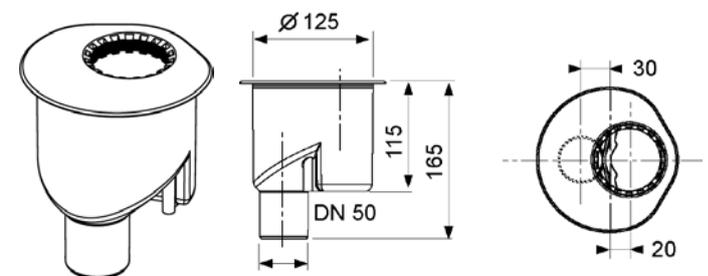
Large drain for TECEDrainline shower channel to create rotatable fitting with the channel body and side connection to DN 70 wastewater pipe, with removable siphon immersion pipe.

- Installation height from bottom edge of drain to top edge of shower channel = 148 mm
- Drainage capacity of shower channel with “basic” design grate = 1.4 l/s
- Water seal depth = 60 mm in keeping with DIN EN 1253 > 50 mm

Order no. 650002

“Vertical” drain

“Vertical” TECEDrainline drain, DN 50, 1.2 l/s**



Vertical drain for TECEDrainline shower channel to create rotatable fitting with the channel body and side connection to DN 50 wastewater pipe, with removable siphon immersion pipe

* Information about the Seal System can be found this section in the “Planning” section and online at www.sealsystem.net

TECEdrainline – Range and technical data

- Minimum installation height from top edge of channel to lower edge of stirrup = 65 mm.
- Drainage capacity of shower channel with “basic” design grate = 1.3 l/s
- Water seal depth = 50 mm in keeping with DIN EN 1253
- Core hole required = 130 mm

Order no. 650003

Drainage capacity

The TECEdrainline range includes five drains to meet different requirements and structural features. The models match all the shower channels in the TECEdrainline range.

Drainage capacity of TECEdrainline floor drains in combination with different covers according to DIN EN 1253-1:

Design grate	extra-flat drain 650004 (PP)	Flat drain 650000 (PP)	Standard drain 650001 (PP)	Max. drain 650002 (PP)	Vertical drain 650003 (PP)
“basic” 600710/1	0.5 0.6	0.8 0.8	0.8 0.9	1.2 1.4	1.3 1.3
“lines” 600720/1	0.4 0.6	0.7 0.8	0.7 0.8	1.3 1.4	1.2 1.3
“drops” 600730/1	0.5 0.6	0.8 0.8	0.8 0.8	1.3 1.4	1.2 1.3
“royal” 600740/1	0.6 0.6	0.8 0.8	0.8 0.8	1.3 1.4	1.1 1.3
“quadratum” 600750/1	0.6 0.6	0.7 0.8	0.8 0.8	1.3 1.4	1.1 1.3
“organic” 600760/1	0.5 0.6	0.6 0.8	0.8 0.8	1.3 1.4	1.0 1.3
“steel II” 600782/3	0.5 0.6	0.7 0.8	0.7 0.8	1.2 1.3	1.3 1.3
“plate”, tiled 600770	0.5 0.6	0.7 0.8	0.7 0.8	1.1 1.2	1.2 1.2

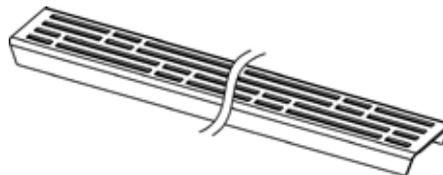
Drainage capacity of TECEdrainline floor drains according to DIN EN 1253-1 in l/s at 10 mm (highest value) and 20 mm (lowest value) accumulation height above grate.

Design covers, straight

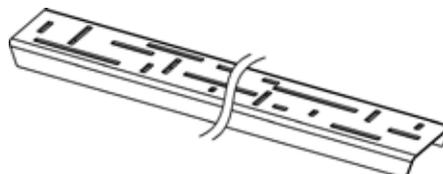
Design grate for TECEdrainline shower channel made of polished or brushed stainless steel for fitting into the channel body, load class K3 – test load 300 kg. Different designs.

The “quadratum” design of the brushed version has been proven to also be suitable for the public barefoot area.

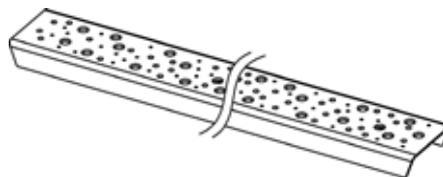
The grate has achieved the highest slip resistance class C according to DIN 51097.



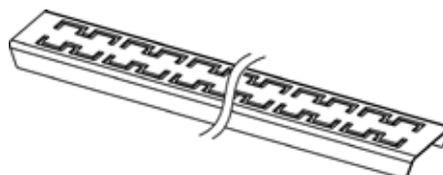
Design grate - “basic” design



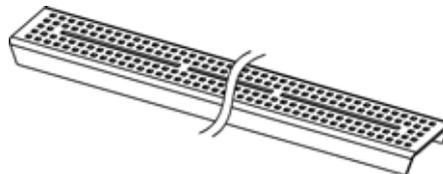
Design grate - “lines” design



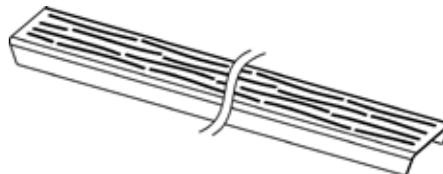
Design grate - “drops” design



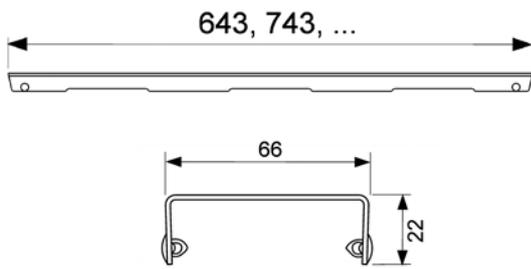
Design grate - “royal” design



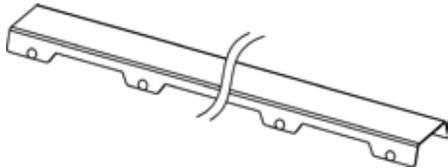
Design grate - “quadratum” design



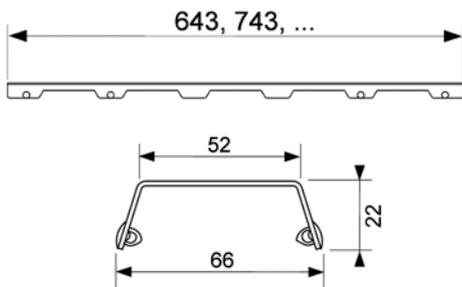
Design grate - “organic” design



Design grate dimensions



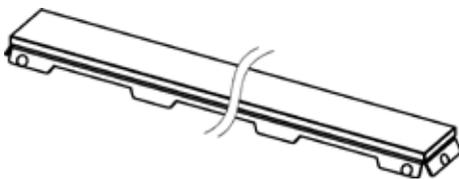
Design grate - "steel II" design



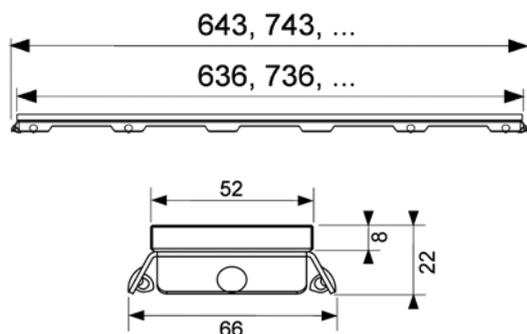
Dimensions of "steel II" design grate

Glass cover, straight

Design grate for TECEdrainline shower channel made of stainless steel with a glass surface, for fitting into the straight channel body. Maximum test load 300 kg based on load class K3, three different colour designs (white, green, black).



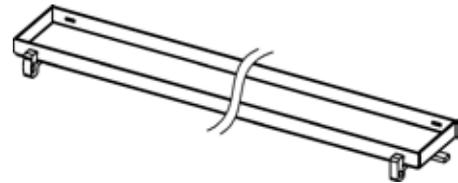
Glass cover



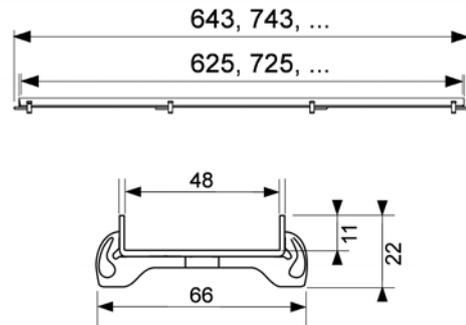
Glass cover dimensions

Tileable channel, straight

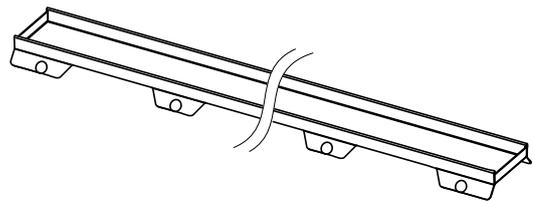
Tileable channel for TECEdrainline shower channel, for fitting into the channel body, made of stainless steel with polished visible edges. Maximum test load 300 kg based on load class K3, for on-site attachment of tiles with flexible adhesive, e.g. silicon or epoxy resin adhesive; Note: check the adhesive to ensure tile compatibility. Design version = "plate" and "plate II".



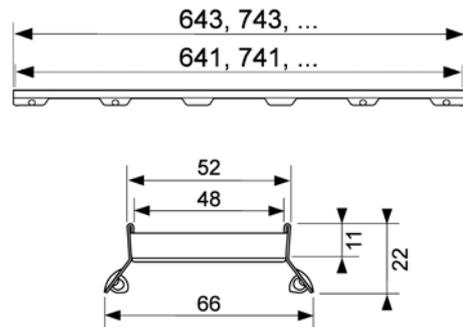
"plate" tileable channel



Dimensions of "plate" tileable channel



"plate II" tileable channel

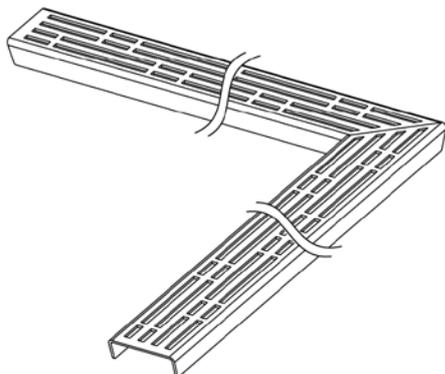


Dimensions of "plate II" tileable channel

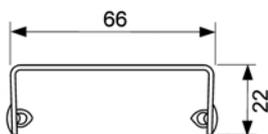
TECEdrainline – Range and technical data

Design covers for angled channel

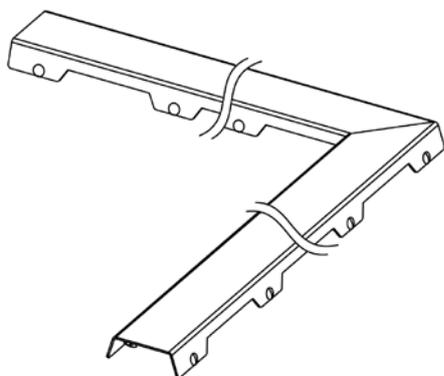
Design grate for TECEdrainline angled channel made of polished stainless steel for fitting into the channel body, load class K3 – test load 300 kg, in two parts. “basic” and “steel II” design versions:



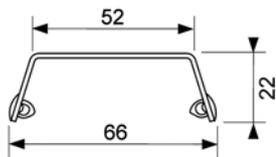
Design grate - “basic” design



Dimensions of “basic” design grate



Design grate - “steel II” design



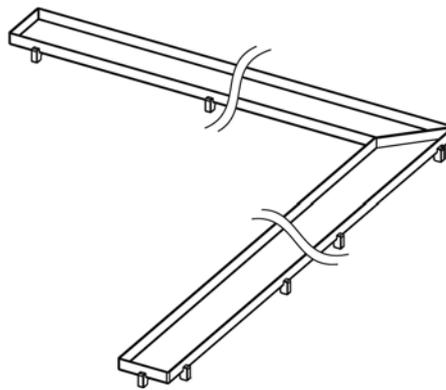
Dimensions of “steel II” design grate

Tileable channel for angled channel

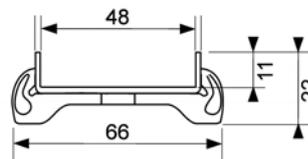
Tileable channel – in two parts – for TECEdrainline shower channel for fitting into the channel body, made of stainless steel in two parts, with polished visible edges. Maximum test load 300 kg based on load class K3; for on-site attachment of tiles with flexible adhesive, e.g. silicon or epoxy resin adhesive;

Note: check the adhesive to ensure tile compatibility.

Design version = “plate”:



“plate” tileable channel



Dimensions of tileable channel

Assembly feet

Assembly feet for fitting to the TECEdrainline shower channel body, for easy height adjustment of the channel body and to fix the position of the channel body during the shell installation phase.

Adjustment range, lower edge of the foot to the upper edge of the finished floor:

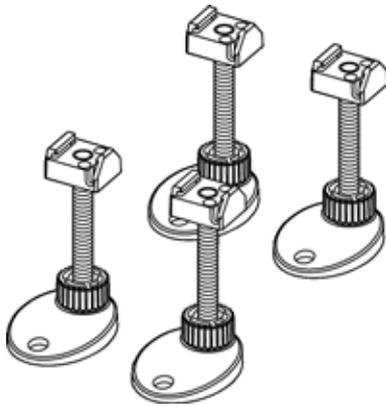
- 92–139 mm (for “extra-flat”, “flat” and “standard” drain)
- 137–184 mm (for “Max” drain)

Consisting of:

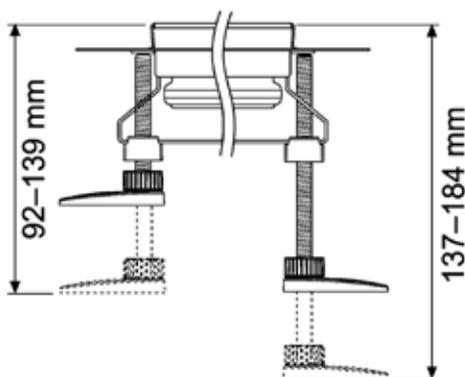
- Four assembly feet including sound-proofing elements
- Mounting materials

Order number 660003 (92–139 mm)

Order number 660004 (137–184 mm)



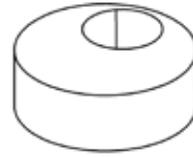
Assembly feet



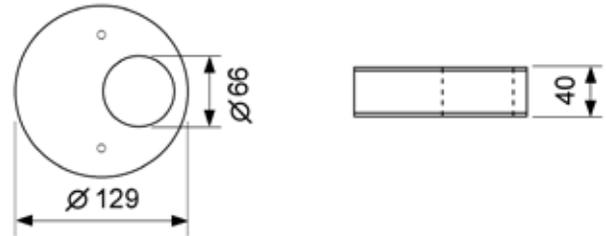
Assembly feet adjustment range: 6 600 03 (left) and 6 600 04 (right)

Fire protection set

TECEdrainline fire protection set FireStop EI 120 DN 50



Fire protection set



Dimensions of fire protection set

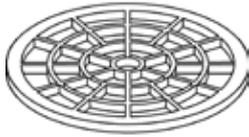
Fire protection set for direct installation on the TECEdrainline DN 50 vertical drain for highly fire resistant partitioning of ceiling bushings in solid ceilings up to 120 min. Classification in accordance with DIN EN 13501 for fire resistance class EI 120.

- Set consists of: Fire protection sleeve, 2 cross-recessed screws, identification plate and 150 mm DN 50 PP-HT pipe to DIN EN 1451
 - Required core drill hole: Ø 130 mm (Ø min = 129 mm, Ø max = 133 mm)
 - Application area: Solid ceilings from 150 mm to 325 mm ceiling thickness
 - No grouting or filling of the gap is necessary
 - Compatible with all TECEdrainline channels and covers
 - **European technical approval (ETA-11/0437)**
- Order no. 660006

TECEdrainline – Range and technical data

Hair trap

TECEdrainline hair trap



Hair trap

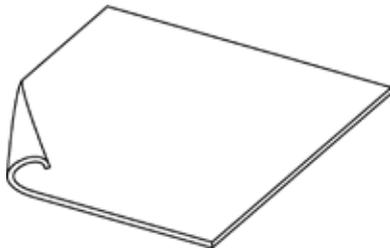
For placing on the immersion pipe of the TECEdrainline channel body, made of stainless steel.

Take out the hair trap regularly and remove the hair.

Order no. 660005

Sound insulation mat

Drainbase sound insulation mat for TECEdrainline, TECEdrainprofile, and TECEdrainpoint S



“Drainbase” sound insulation mat

Sound insulation mat for fitting under floating screed in the area of floor-level showers or throughout the bathroom. To reduce plumbing noises and improve impact sound absorption for renovations and new buildings.

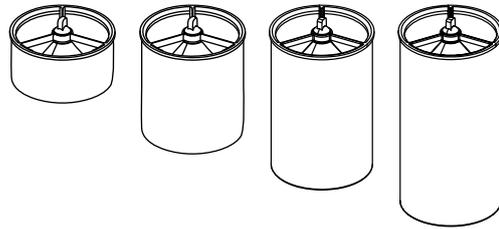
Installation noise level with normal shower setting: 22 dB(A) with TECEdrainline. Made from recycled, sturdy rubber granules bound with PUR elastomer.

Meets the sound insulation requirements in accordance with DIN 4109 as well as the more stringent sound insulation requirements in accordance with VDI 4100 (report by Fraunhofer IBP available on request)

- Form of delivery: 1.25 m x 1.25 m x 6 mm and 8.0 m x 1.25 m x 6 mm (roll, approx. 50 kg)
 - Rated Impact sound reduction: $\Delta L_w = 20$ dB(A) (on 50 mm screed)
 - Fire class: B2 (DIN 4102)
 - Thermal resistance: 0,05 (m²·K)/W
 - Compression at 15 t/sqm: 0.6 mm
- Order number 660001 or 660002

Membrane odour trap for TECEdrainline drains

Plastic immersion pipe with inner sealing lip membrane



as protection against evaporation, barrier against odour and vermin (two-stage trap effect through water seal and sealing lip membrane)

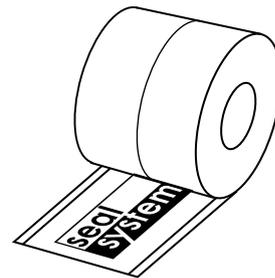
Order number 660015 (for “extra-flat” drain)

Order number DN 660016 (for “flat” drain)

Order number 660017 (for “Max” and “vertical” drain)

Order number 660018 (for “standard” drain)

Seal System sealing tape for TECEdrainline



Self-adhesive butyl sealing tape with matting for sealing TECEdrainline shower channels. For direct on-site adhesion to the stainless steel flange of the shower channel. With matting for installation in the liquid or strip composite seal.

Width: 100 mm, roll length: 3.9 m

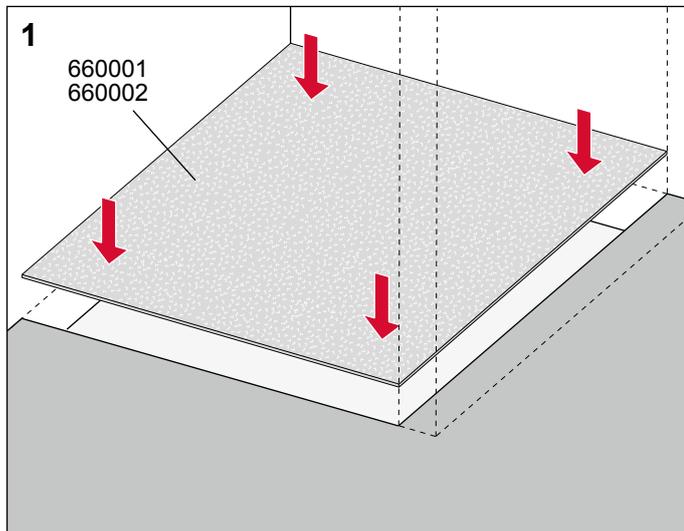
Order no. 660019

Installation instructions

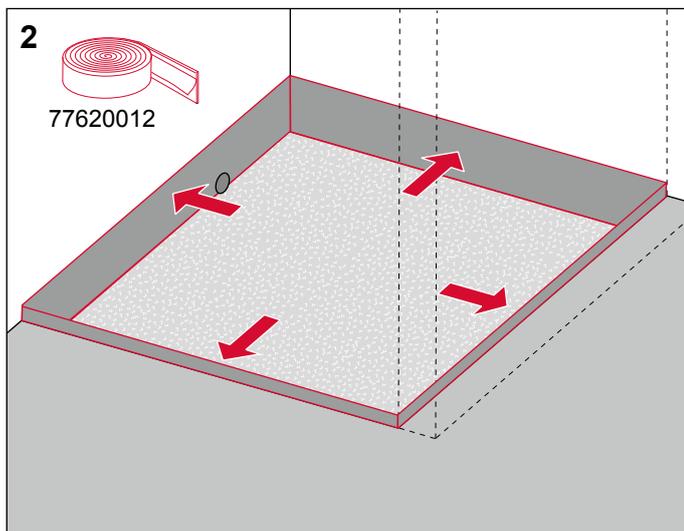
Installation of the various TECE shower channels is illustrated here with a horizontal drain. For the specific features when using a vertical or extra-flat drain, refer to the corresponding installation instructions for these drains.

Installation instructions for shower channel, straight

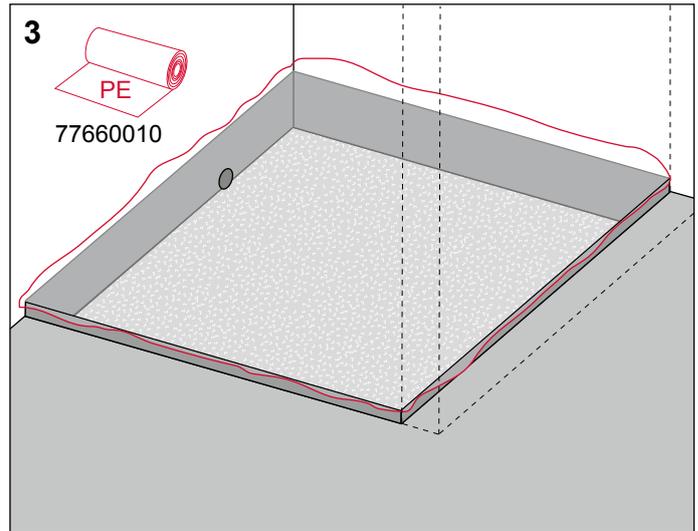
When installing the TECEdrainline, the steps involved can differ depending on the position of the installation. A distinction is made between an installation in the middle of the room (A) and an installation close to the wall (B).



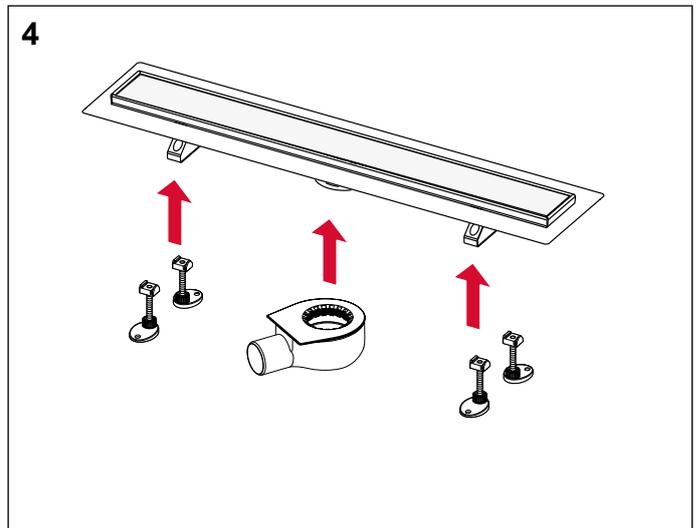
Optional: Cut the drainline sound-proofing mat and place in position so that it covers the whole surface of the shower area.



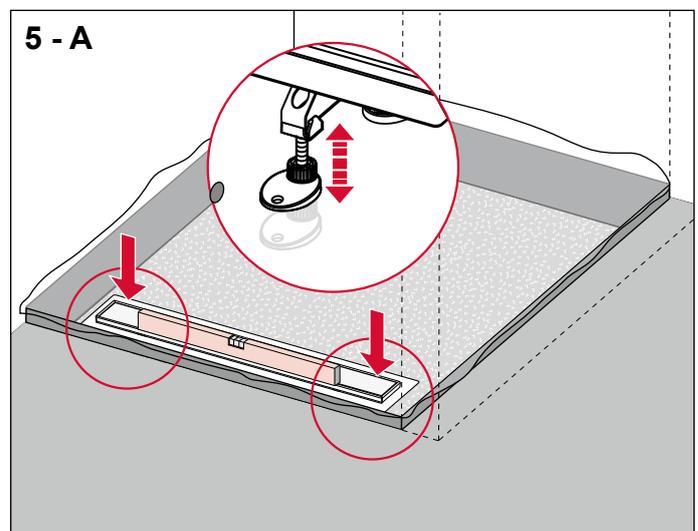
Add edge insulation strips on all sides.



Lay the PE sheet.

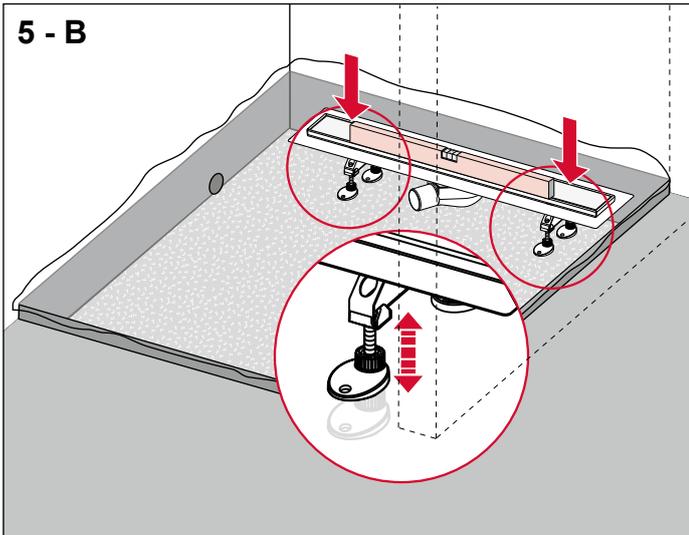


Mount the drain and click on the assembly feet if applicable.



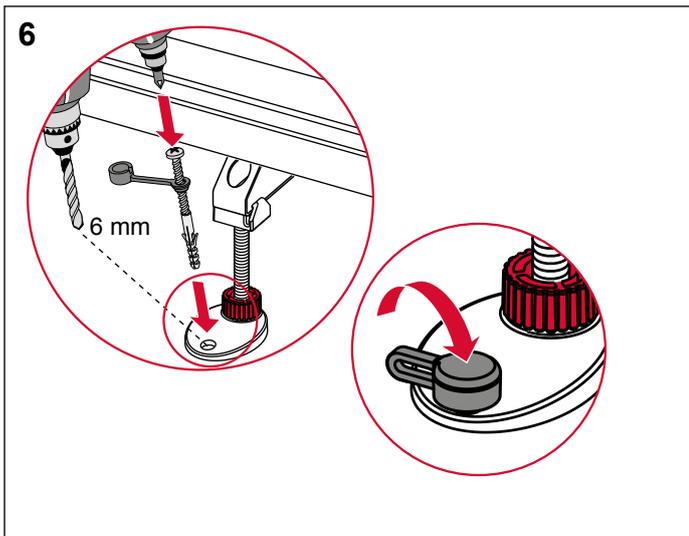
(A = positioning in the middle of the room)
Use the adjustable assembly feet to align the shower channel horizontally, if necessary pack the drain body.

TECEdrainline - Installation instructions

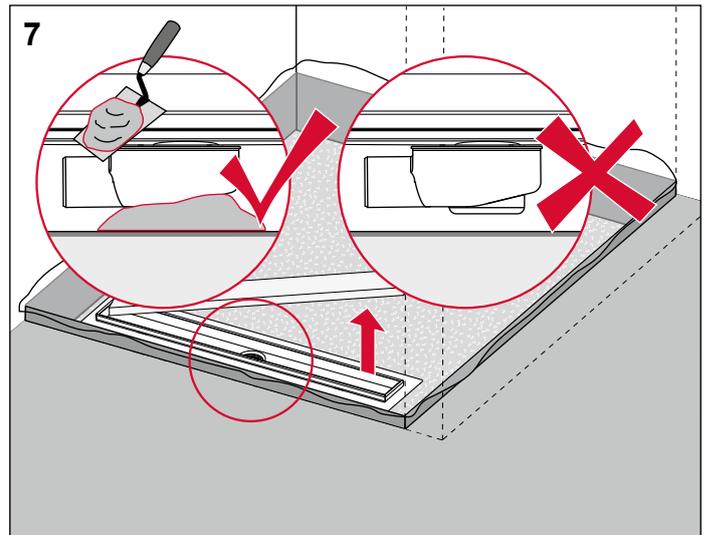


(B = positioning against the wall)

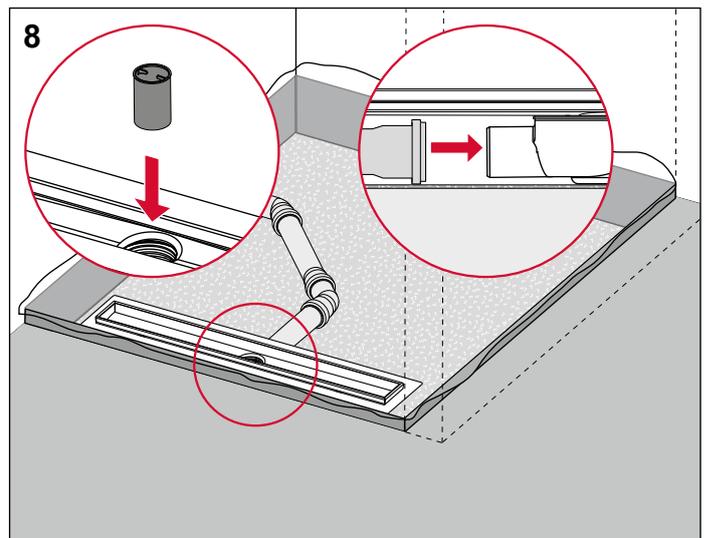
Use the adjustable assembly feet to raise the shower channel to the required height and align horizontally, if necessary pack the drain body.



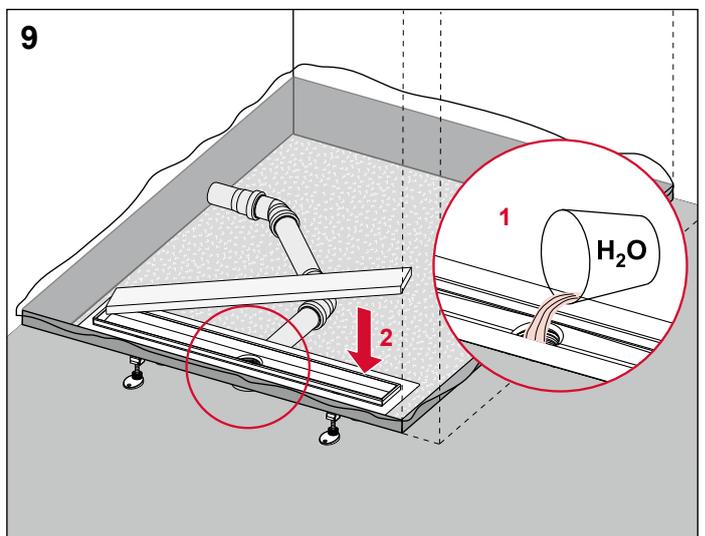
Fasten the assembly feet and press sound insulation caps onto the bolt heads.



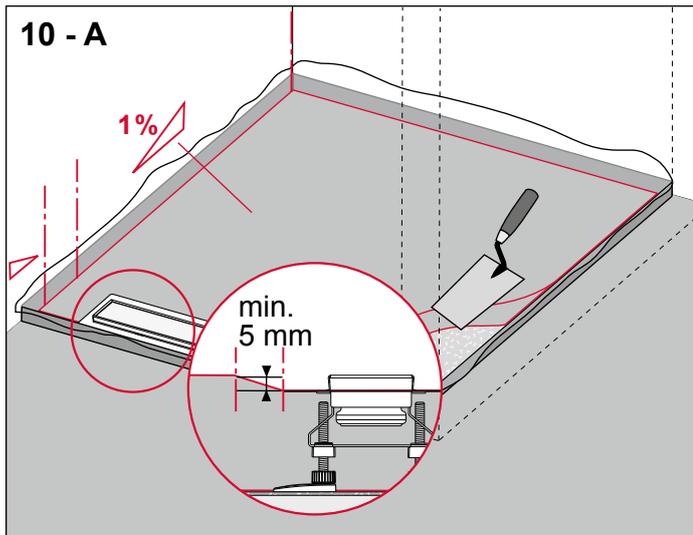
Pack the drain body if it is not lying flat. Remove the protective cover and push in the immersion pipe up to the stop.



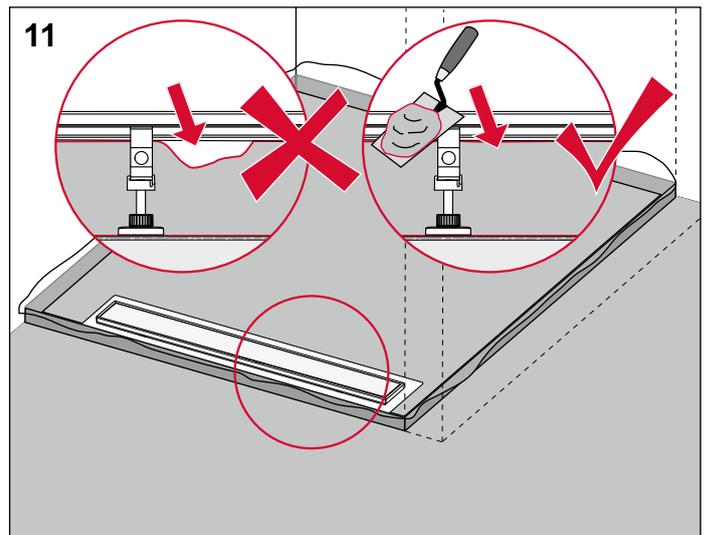
Attach the wastewater pipe to the outlet socket.



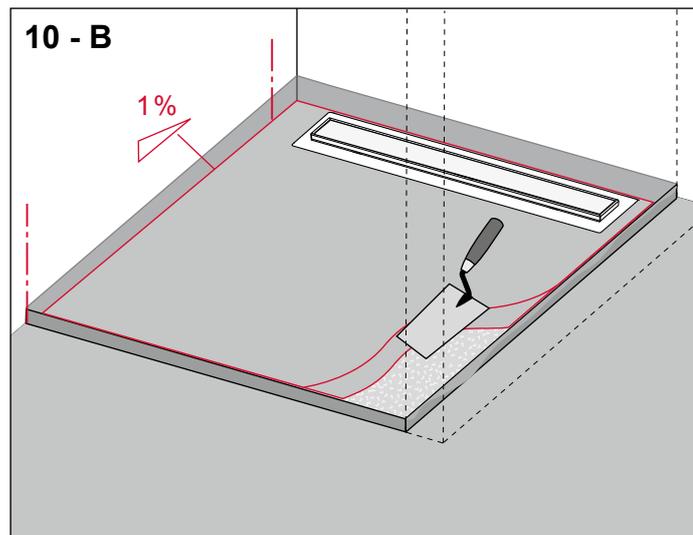
Test for leaks and then place the protective cover back in the channel.



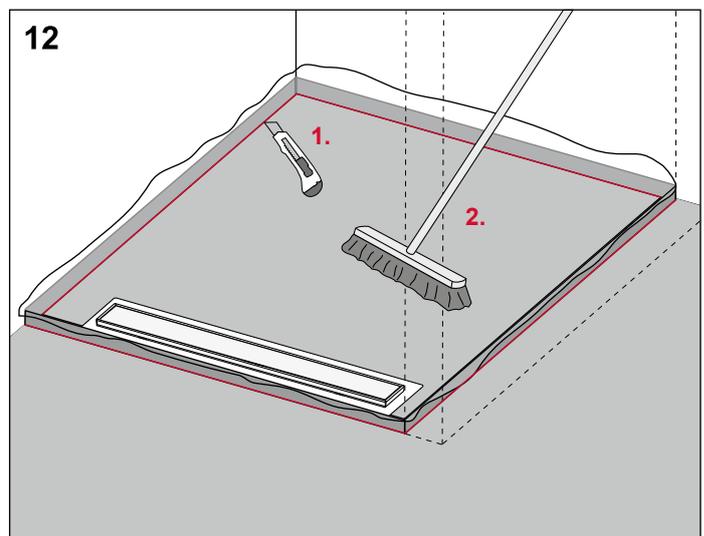
(A = positioning in the middle of the room)
 Apply the screed and fully incorporate the channel into the screed up to flange height, making sure that there are no cavities. Include an incline of 1%. When installing in the middle of the room, include a reverse gradient of at least 5 mm.



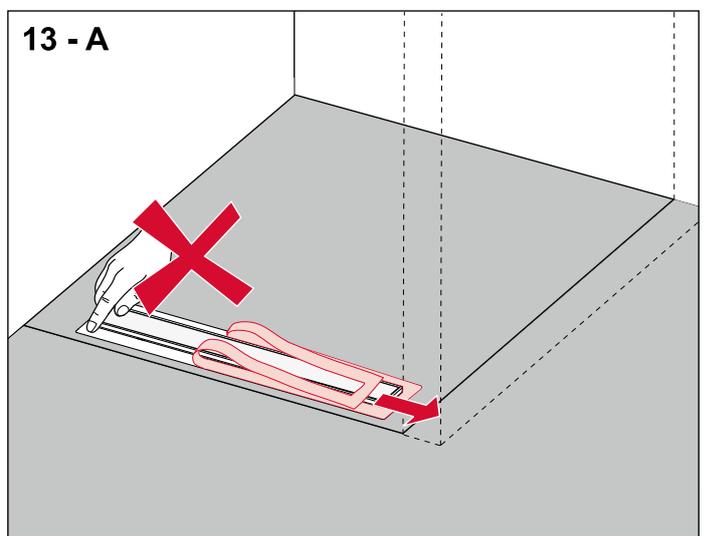
Make sure that there are no cavities between the screed and the channel or drain.



(B = position at the wall)
 Apply the screed and fully incorporate the channel into the screed up to flange height, making sure that there are no cavities. Include an incline of 1%.

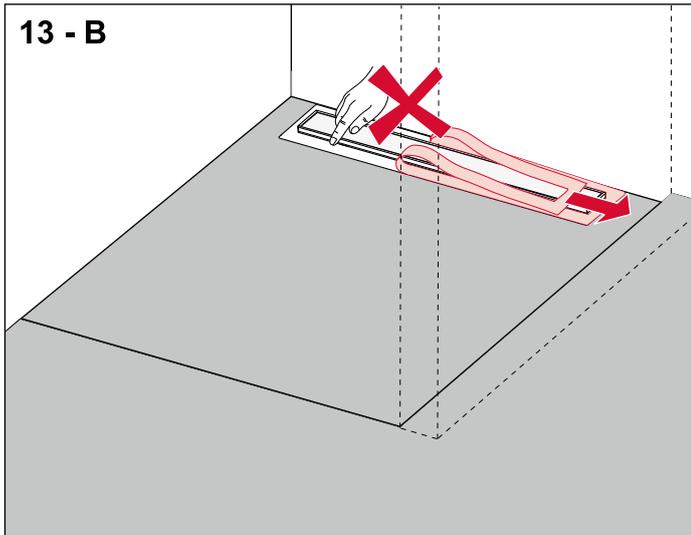


Remove the edge insulation strips and PE sheet above the screed. Clean the screed surface.

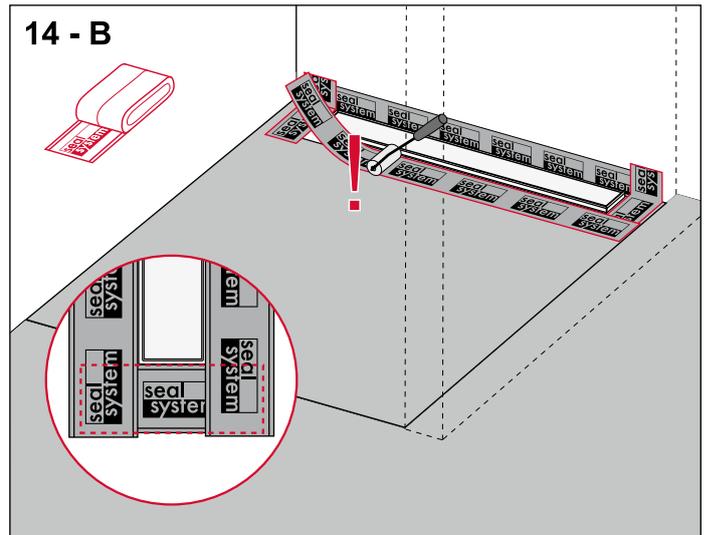


Completely remove the protective sheet from the channel flange. Do not touch the flange any more or let it get dirty.

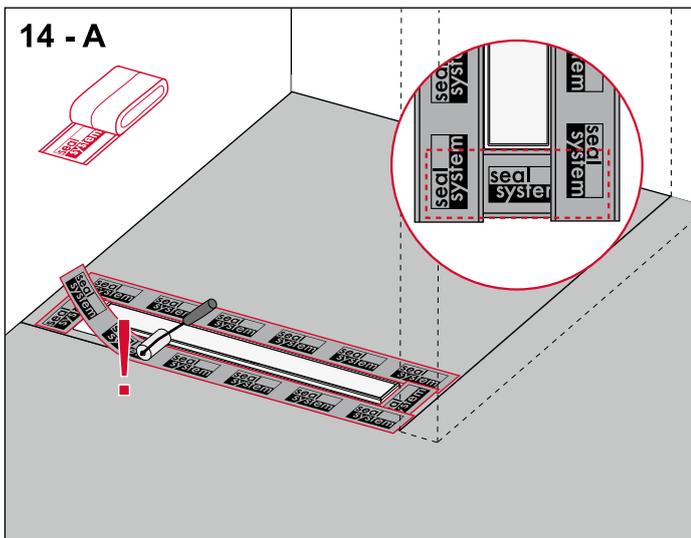
TECEdrainline - Installation instructions



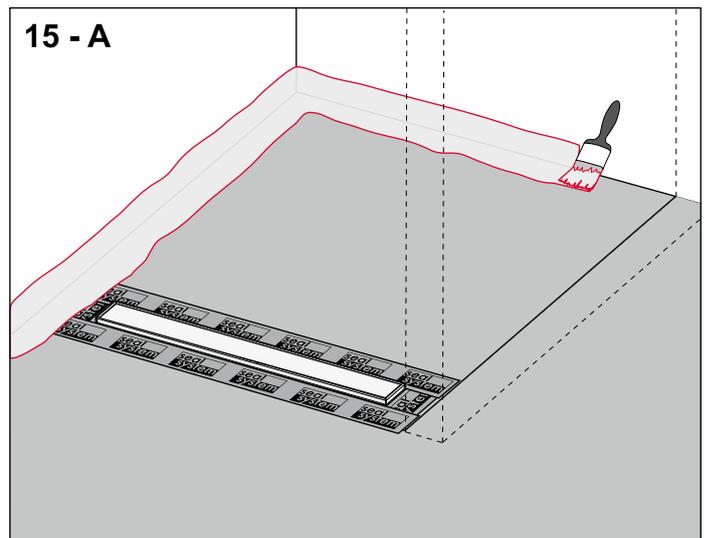
13 - B
Completely remove the protective sheet from the channel flange. Do not touch the flange any more or let it get dirty.



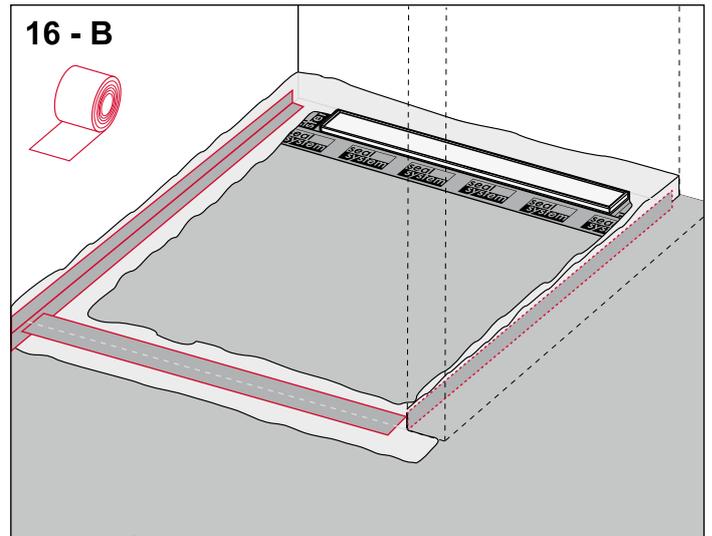
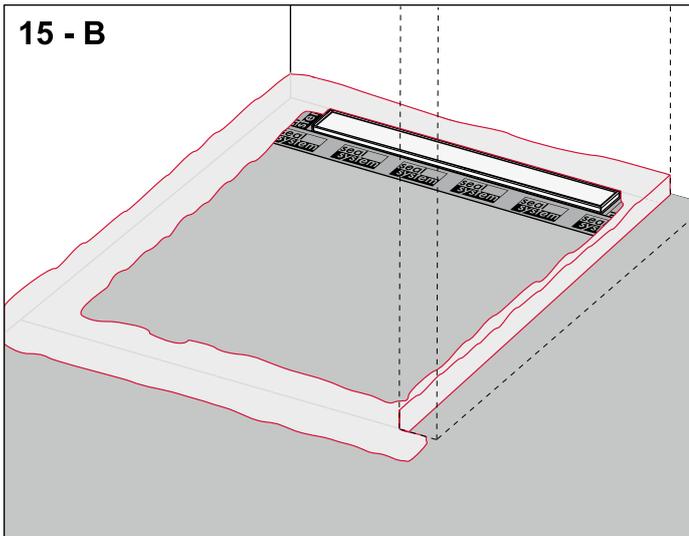
14 - B
Cut the Seal System sealing tape to length, remove the protective film and fold the tape, overlapping it over the channel flange and screed as illustrated, then stick it down, pressing with a roller and making sure that there are no air bubbles.



14 - A
Cut the Seal System sealing tape to length, remove the protective film and fold the tape, overlapping it over the channel flange and screed as illustrated, then stick it down, pressing with a roller and making sure that there are no air bubbles.

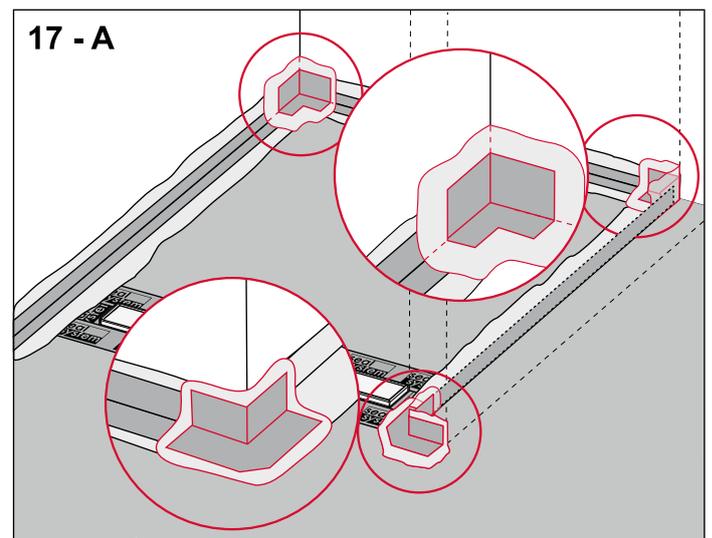
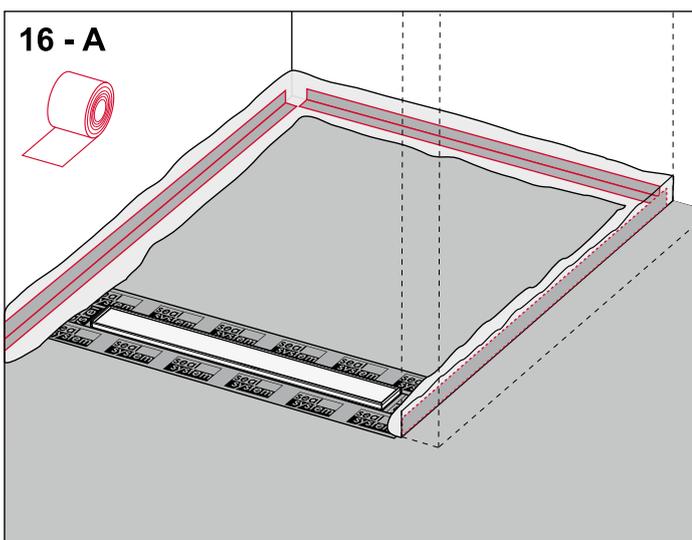


15 - A
Apply a coat of composite seal to the transitions between the wall and the screed. Observe manufacturer's instructions when creating the composite seal (figs. 15-A to 22).



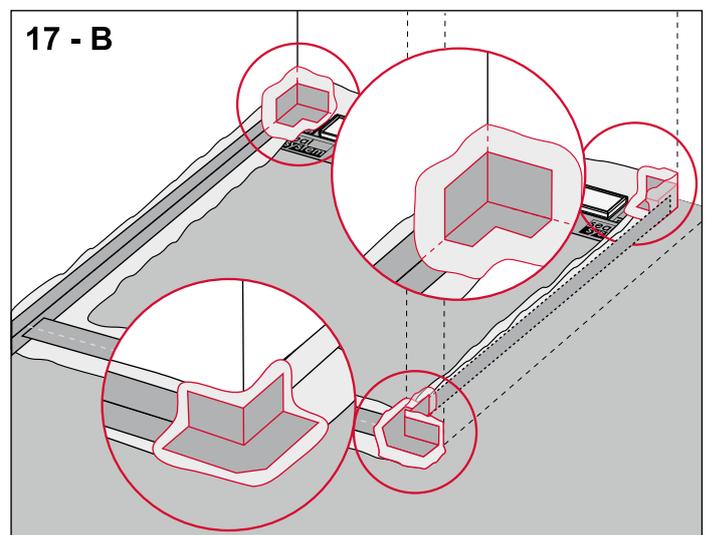
Apply a coat of composite seal to the transitions between the wall and the screed. Observe manufacturer's instructions when creating the composite seal (figs. 15-A to 22).

Fold the sealing tape and fit it directly into the connection in the fresh composite seal, making sure that there are no air bubbles.



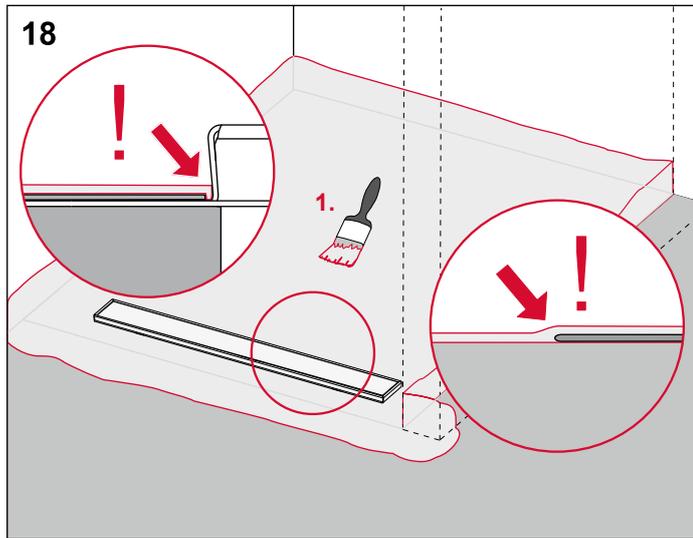
Fold the sealing tape and fit it directly into the connection in the fresh composite seal, making sure that there are no air bubbles.

Apply the composite seal to the corners and fold and fit the corner seals, making sure that there are no air bubbles.

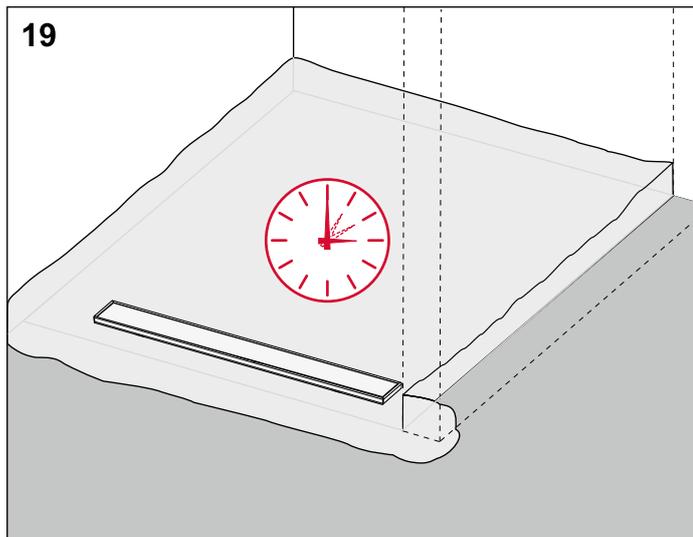


TECEdrainline - Installation instructions

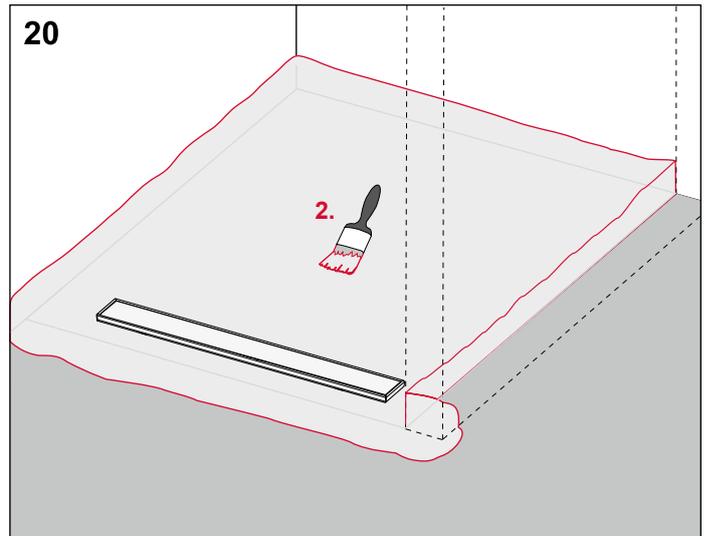
Apply the composite seal to the corners and fold and fit the corner seals, making sure that there are no air bubbles.



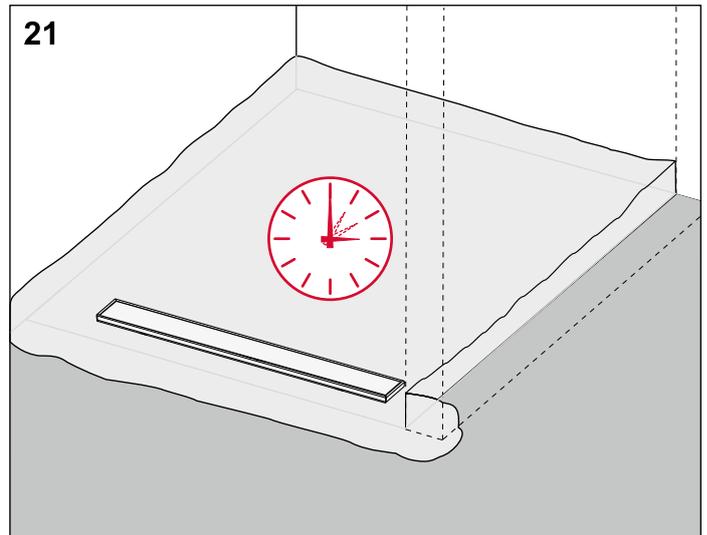
Apply the first coat of composite seal spotlessly over the entire area. When doing so, fully integrate the Seal System sealing tape.



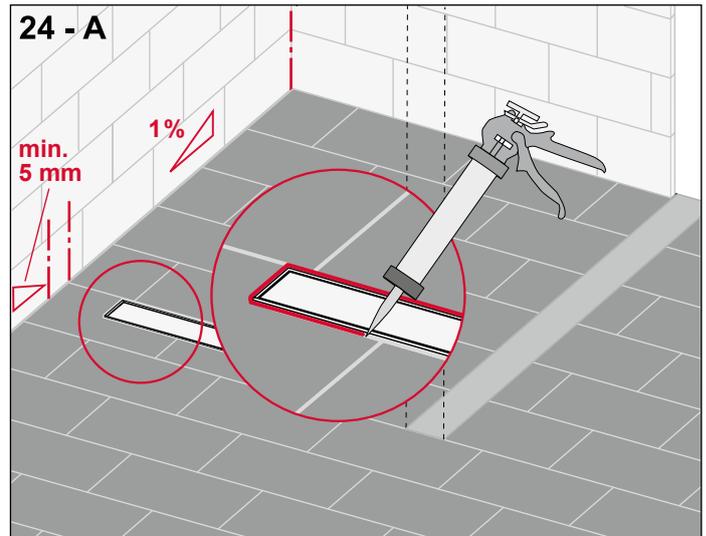
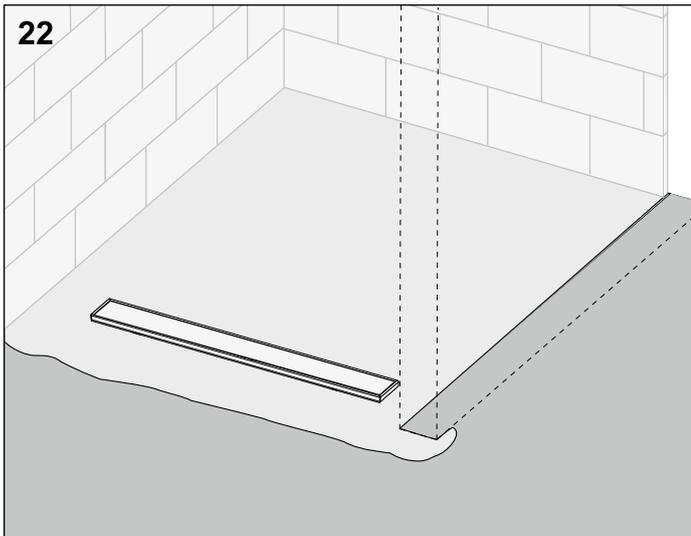
Allow the composite seal to harden, observe the specified drying time.



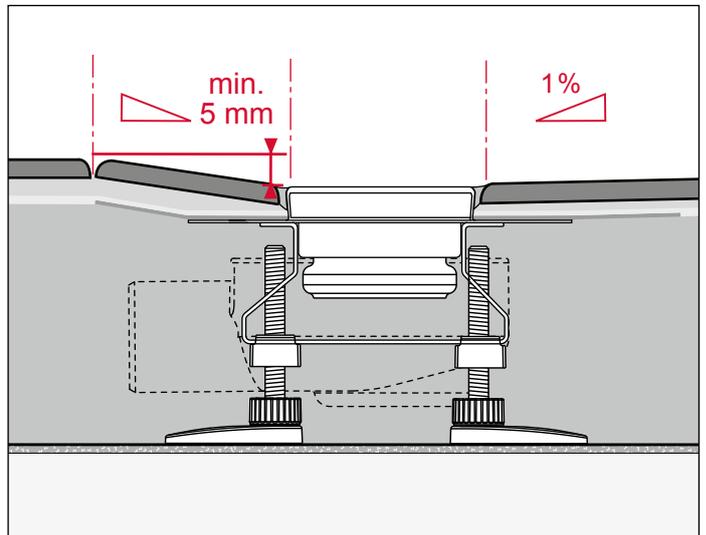
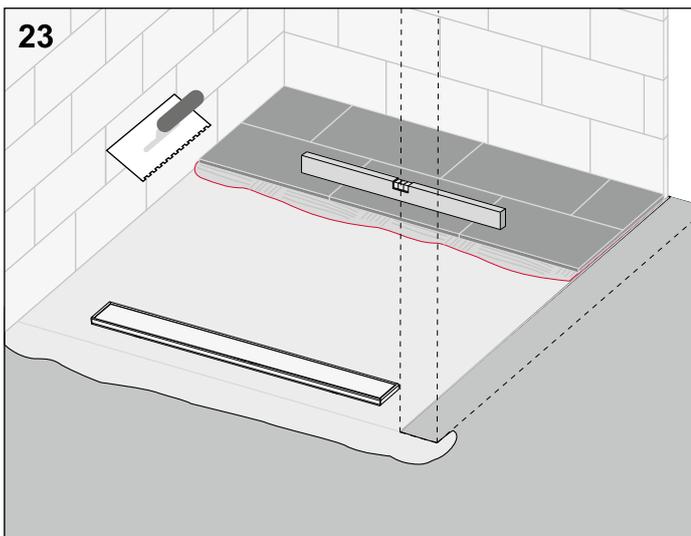
Apply the second coat of composite seal spotlessly over the entire area.



Allow the composite seal to harden, observe the specified drying time.



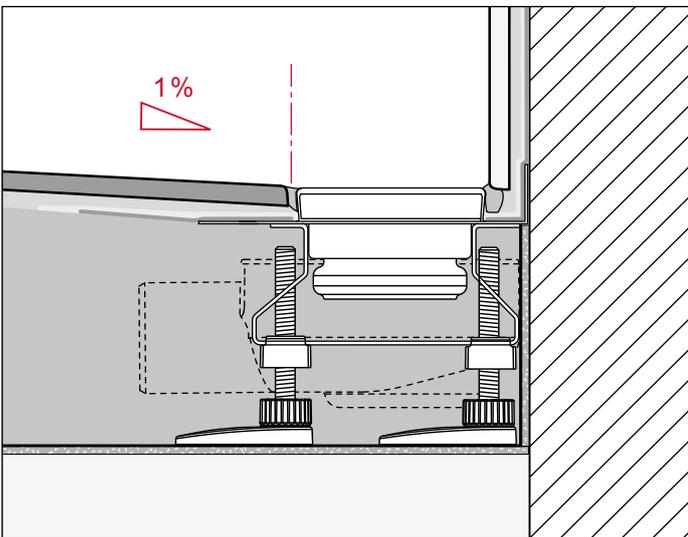
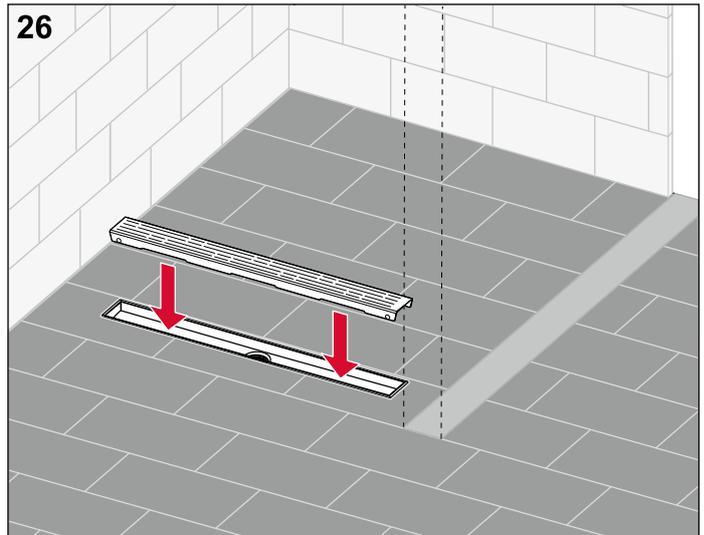
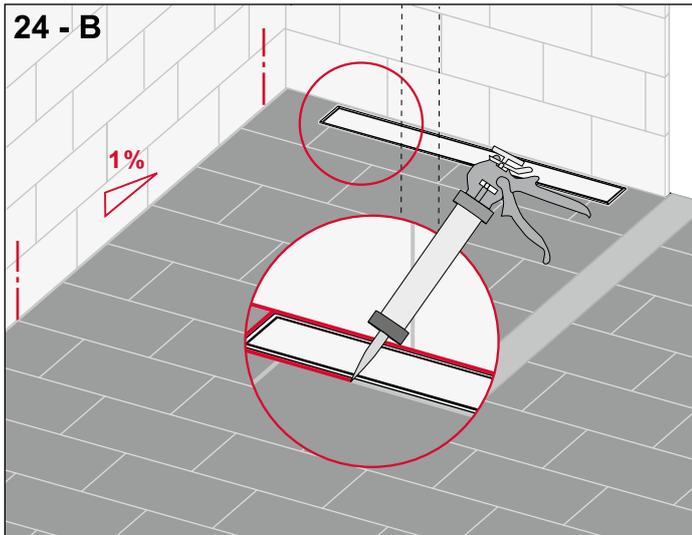
If necessary, also seal the wall areas with composite seal, following the manufacturer's instructions, and apply the tiles or natural stone covering.



(A = positioning in the middle of the room)
Seal the joint between the stainless steel channel and tiles or natural stone with permanently flexible material. Check the incline and reverse gradient.

Apply tile adhesive and tiles or natural stone. Observe the necessary 1% incline to the channel.

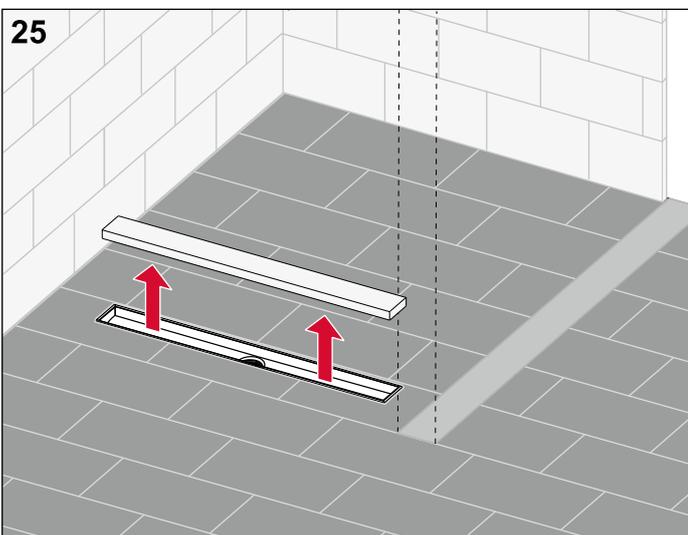
TECEdrainline - Installation instructions



Insert the channel cover. Lay the cover flush with the floor in the shower channel.

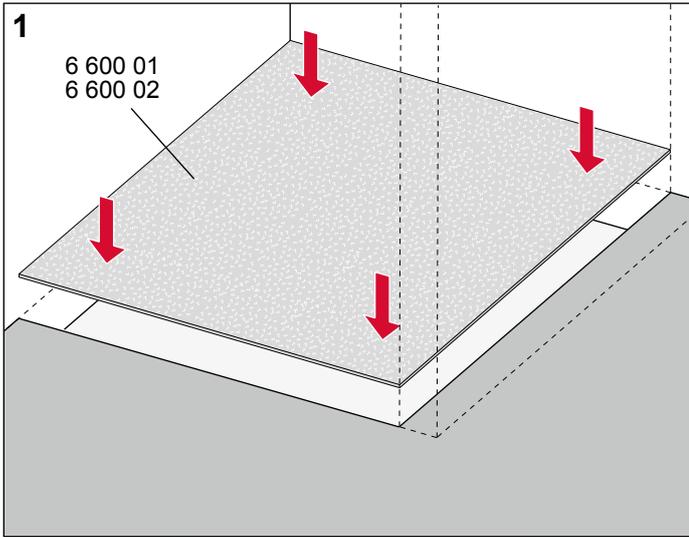
(B = position at the wall)

Seal the joint between the stainless steel channel and tiles or natural stone with permanently flexible material, check the incline.

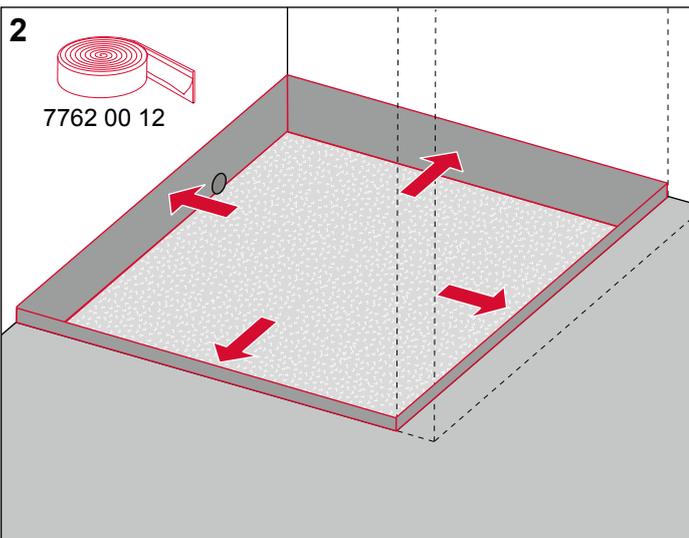


Remove the protective cover and clean the channel.

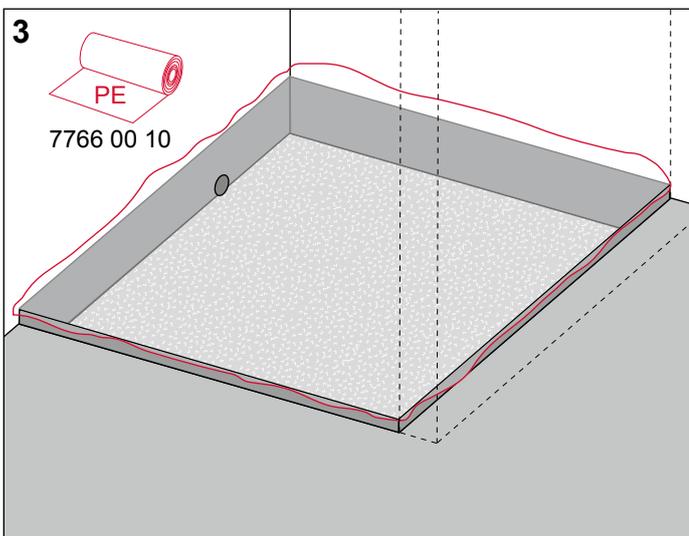
Installation instructions for shower channel with wall upstand



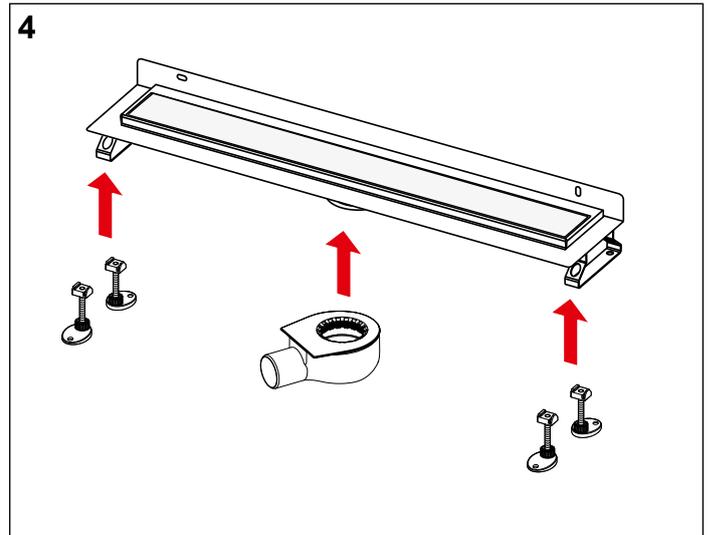
Optional: Cut the drainline sound-proofing mat and place in position so that it covers the whole surface of the shower area.



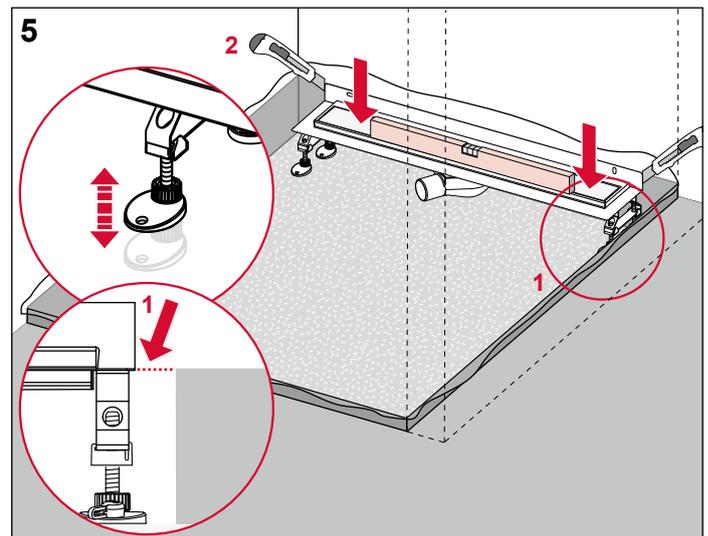
Add edge insulation strips on all sides.



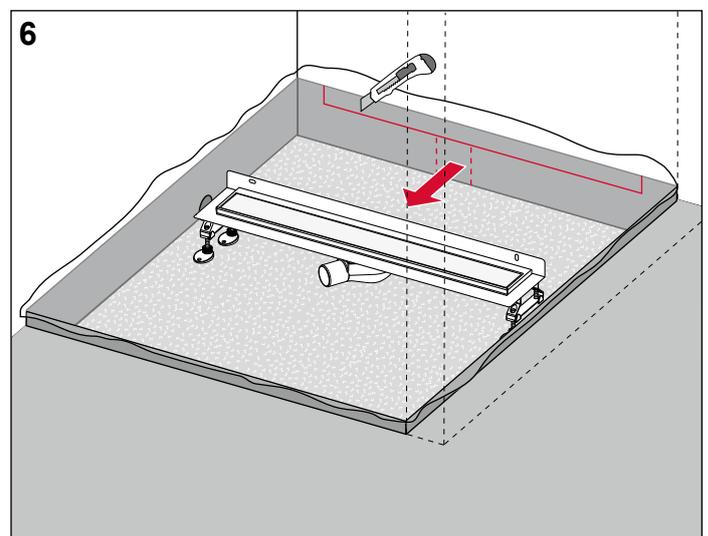
Lay the PE sheet.



Mount the drain and click on the assembly feet if applicable.

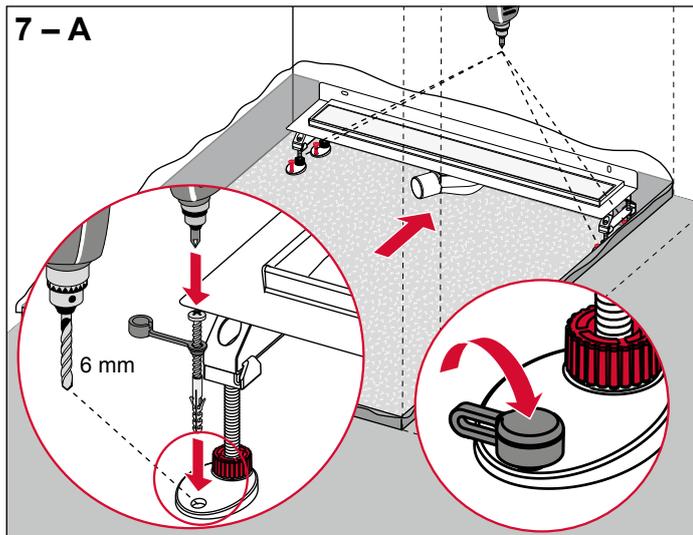


Use the adjustable assembly feet to raise the channel to the required height and align horizontally, if necessary pack the drain body.

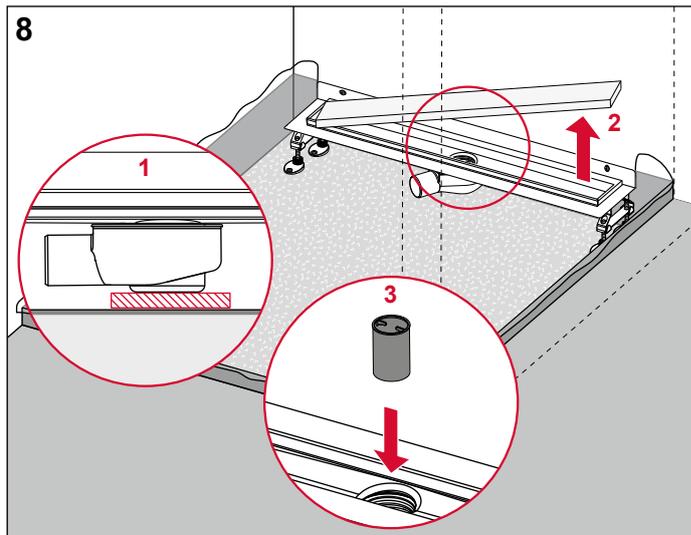


Remove the edge insulation strips above the horizontal shower flange.

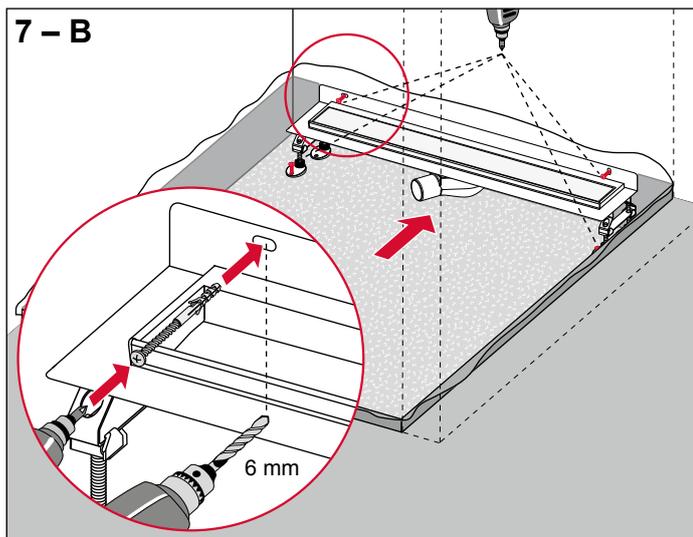
TECEdrainline - Installation instructions



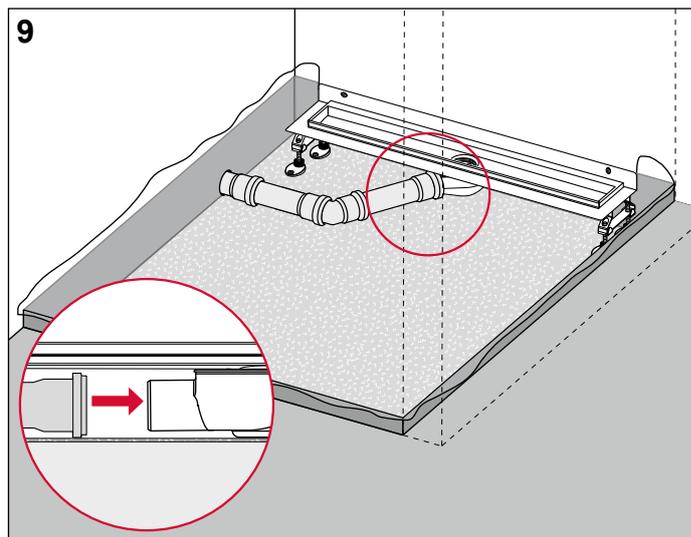
Place the channel at the wall. Either attach the assembly feet as shown here, and press the sound insulation caps on to the bolt heads, or ...



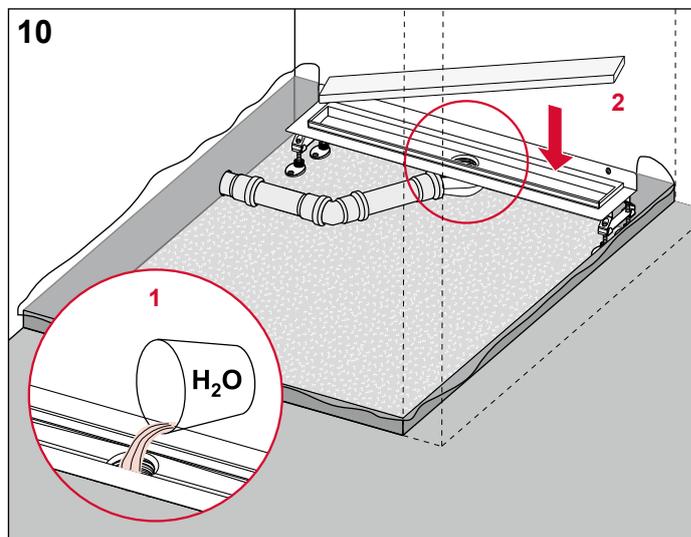
Completely pack the drain body. Remove the protective cover sheet and insert the immersion pipe.



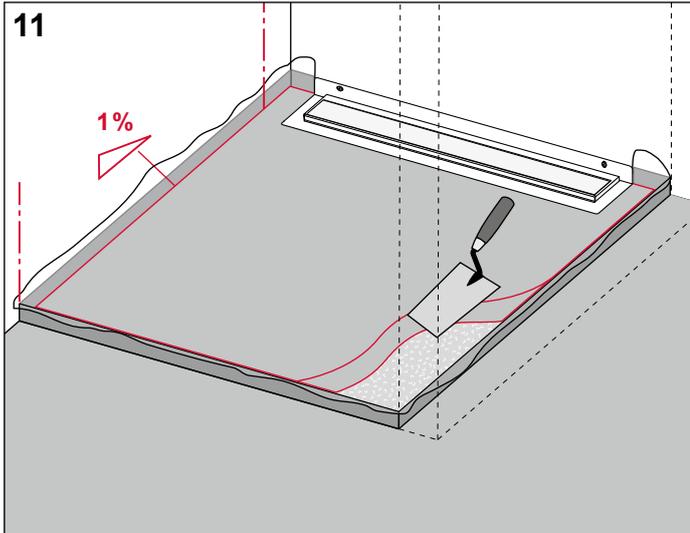
... Attach the channel to the wall. Remove the wall attachment screws again after the screed has hardened.



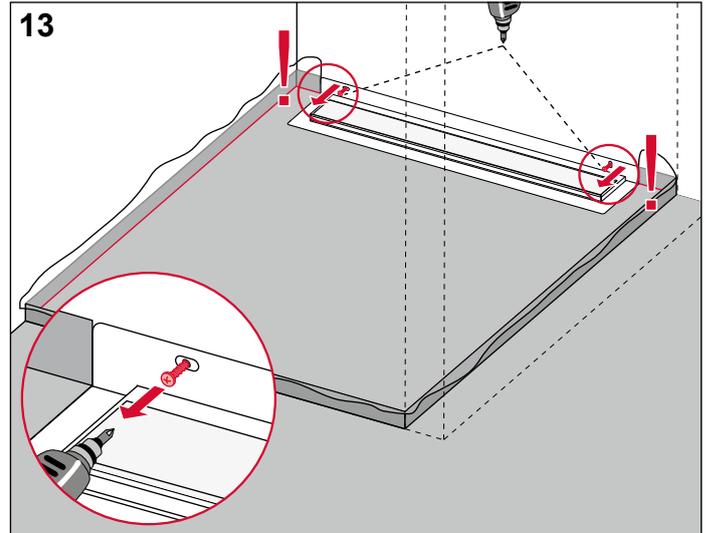
Attach the wastewater pipe to the outlet socket.



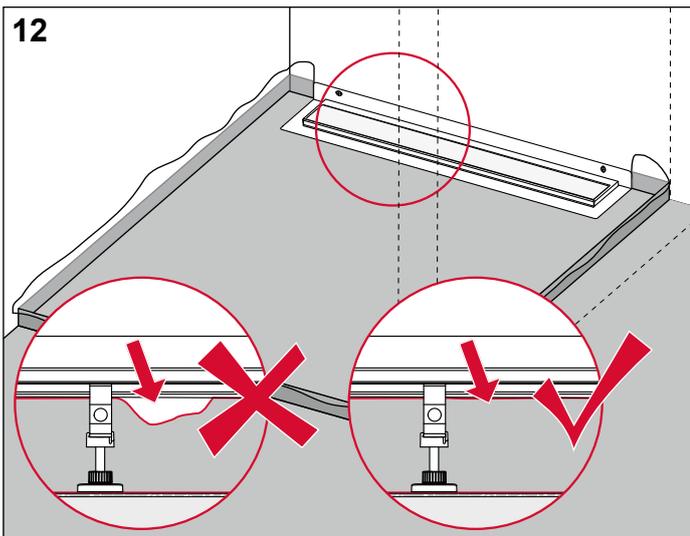
Test for leaks and then place the protective cover back in the channel.



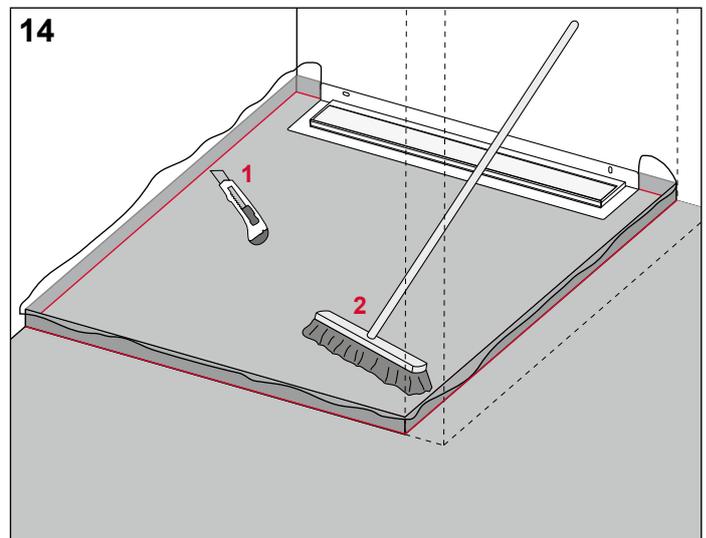
Apply the screed and fully incorporate the channel into the screed up to flange height, making sure that there are no cavities. Include an incline of 1%.



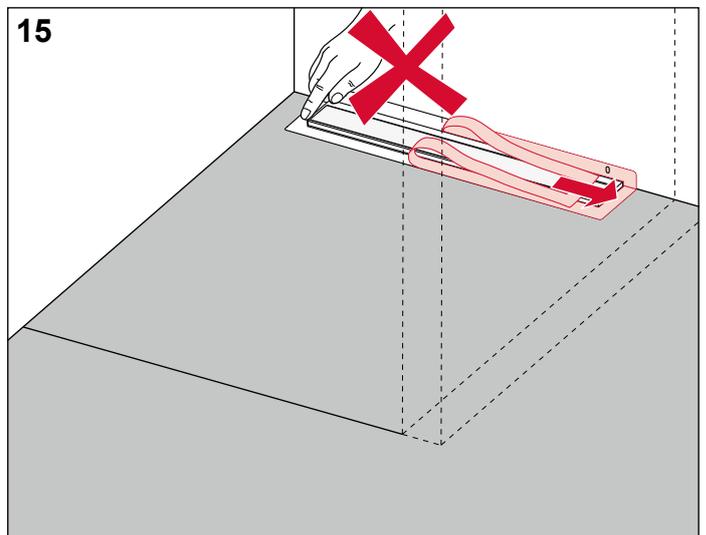
After the screed has hardened, remove the screws from the wall again (where used).



Make sure that there are no cavities between the screed and the channel or drain.

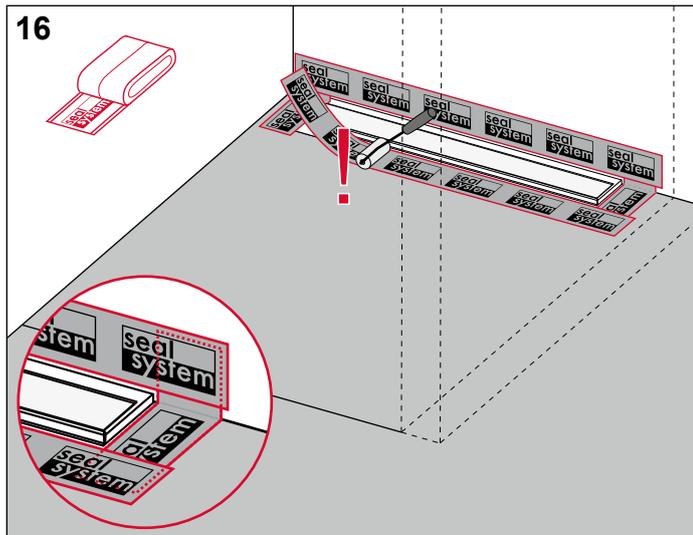


Remove the edge insulation strips and PE sheet above the screed. Clean the screed surface.

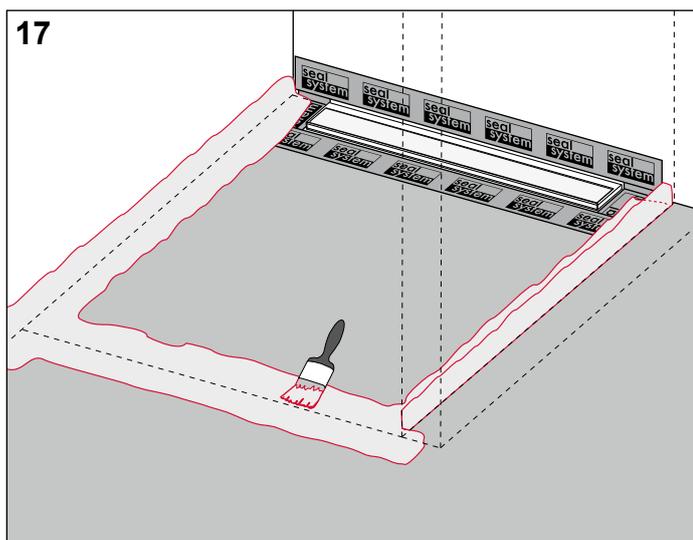


Completely remove the protective sheet from the channel flange. Do not touch the flange any more or let it get dirty.

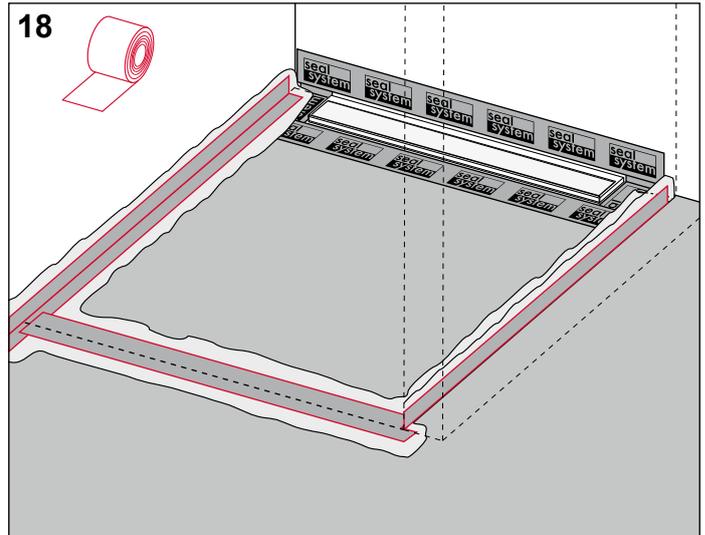
TECEdrainline - Installation instructions



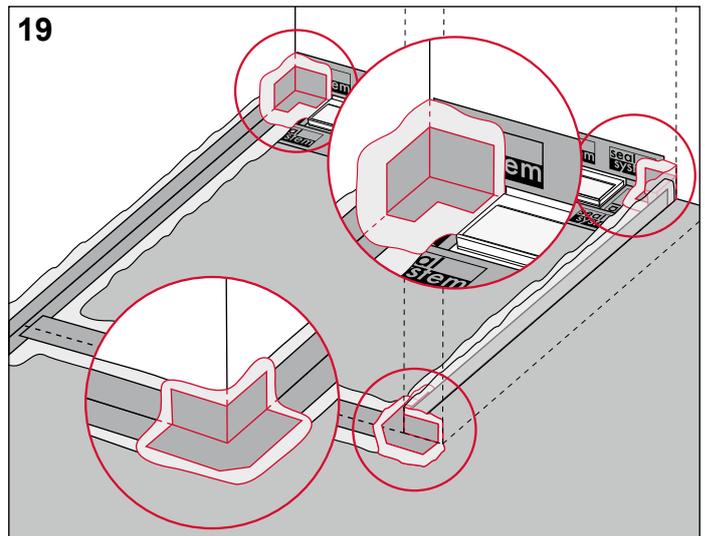
Cut the Seal System sealing tape to length, remove the protective film and fold the tape, overlapping it over the channel flange and screed as illustrated, then stick it down, pressing with a roller and making sure that there are no air bubbles.



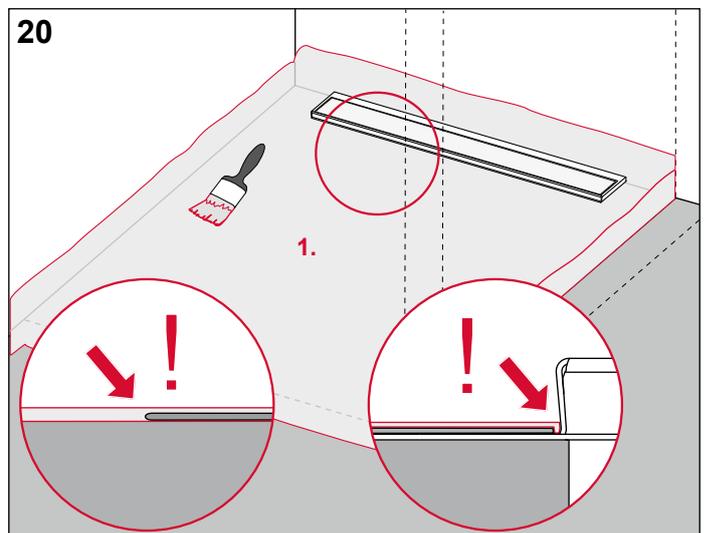
Apply a coat of composite seal to the transitions between the wall and the screed. Observe the manufacturer's instructions when creating the composite seal (figs. 17 to 23).



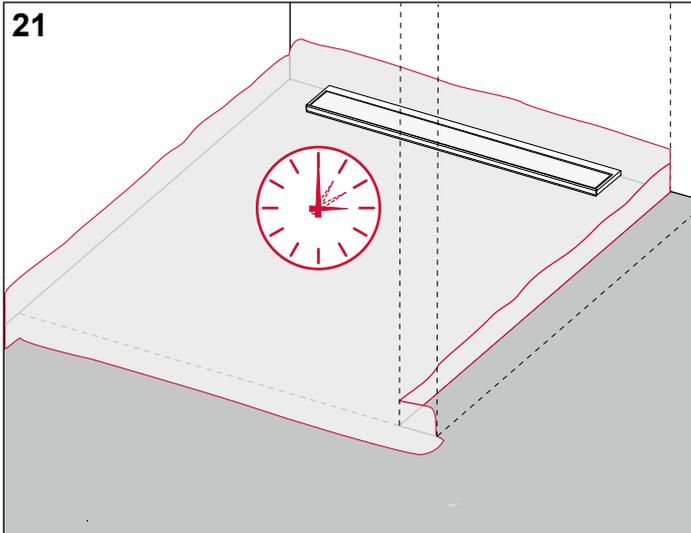
Fold the sealing tape and fit it directly into the fresh composite seal, making sure that there are no air bubbles.



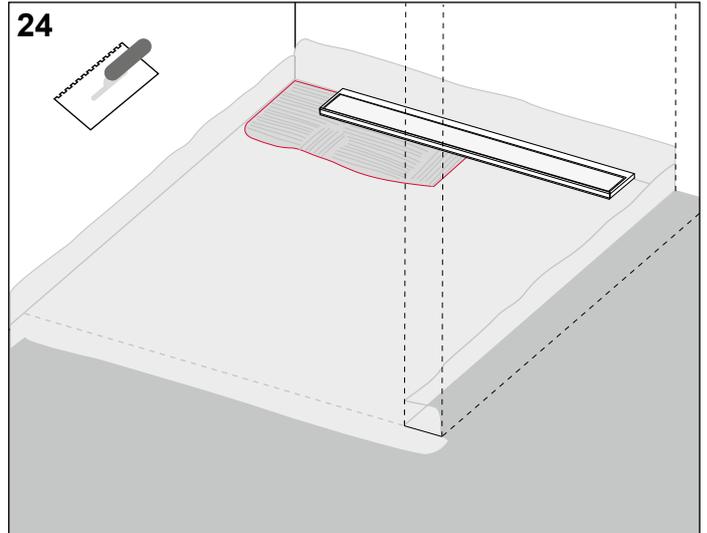
Apply the composite seal to the corners and fold and fit the corner seals, making sure that there are no air bubbles.



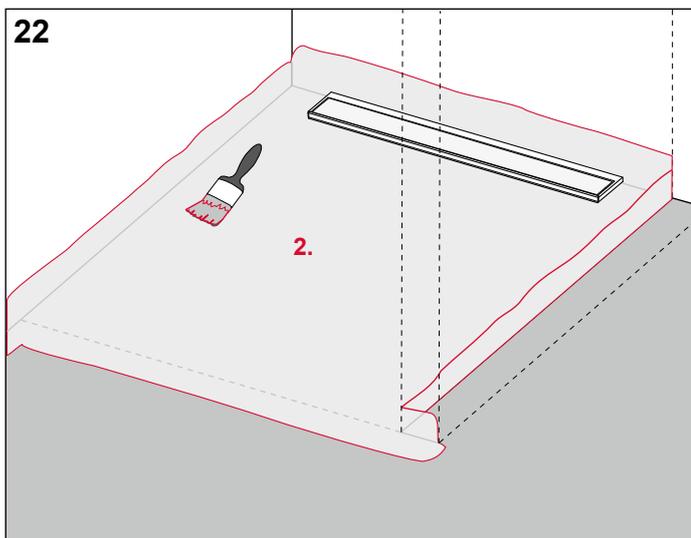
Apply the first coat of composite seal spotlessly over the entire area. In doing so, fully integrate the Seal System sealing tape.



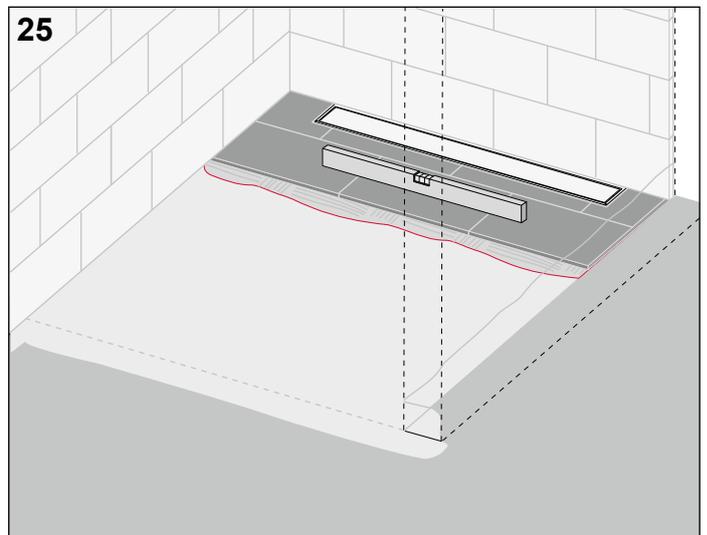
21
Allow the composite seal to harden, observe the specified drying time.



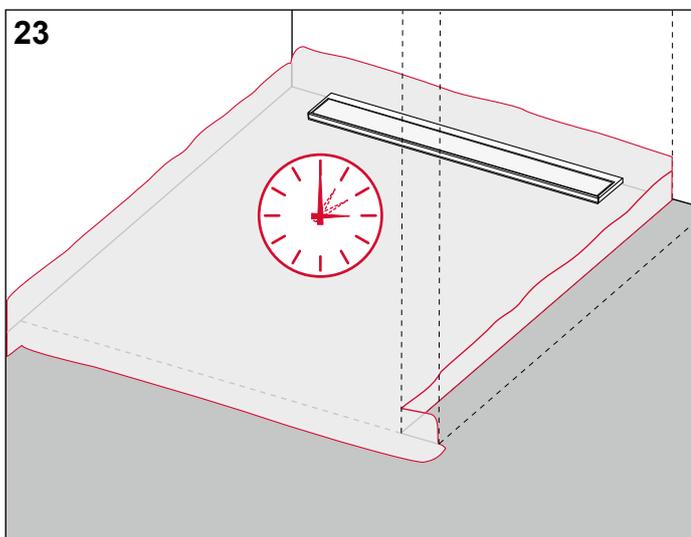
24
Apply the tile adhesive.



22
Apply the second coat of composite seal spotlessly over the entire area.

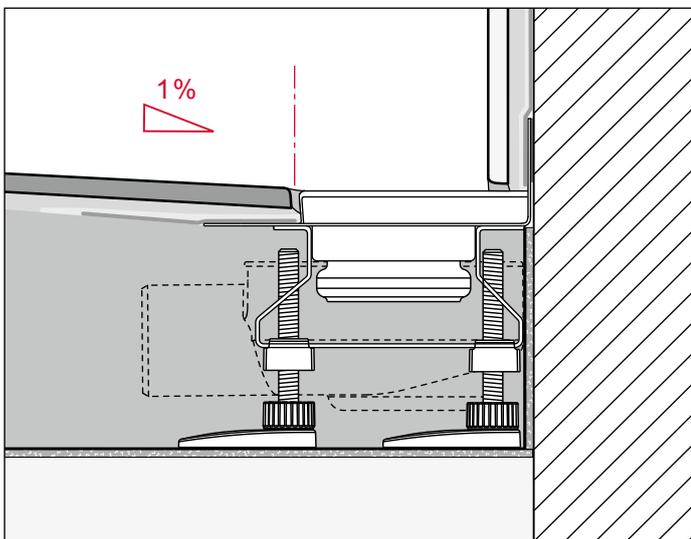
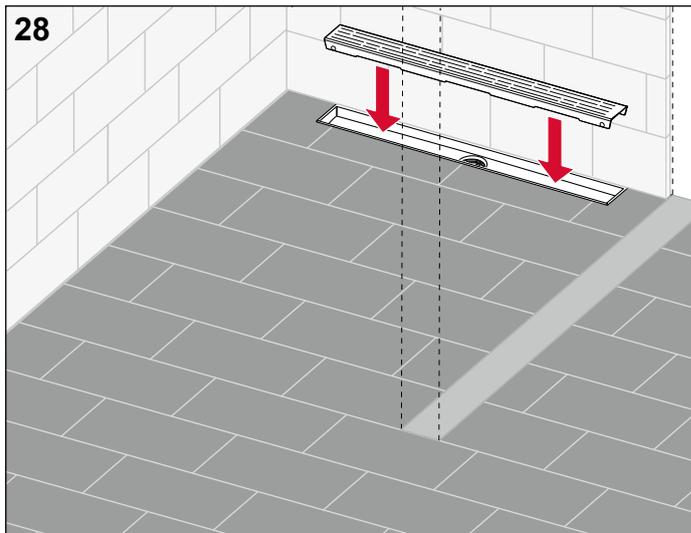
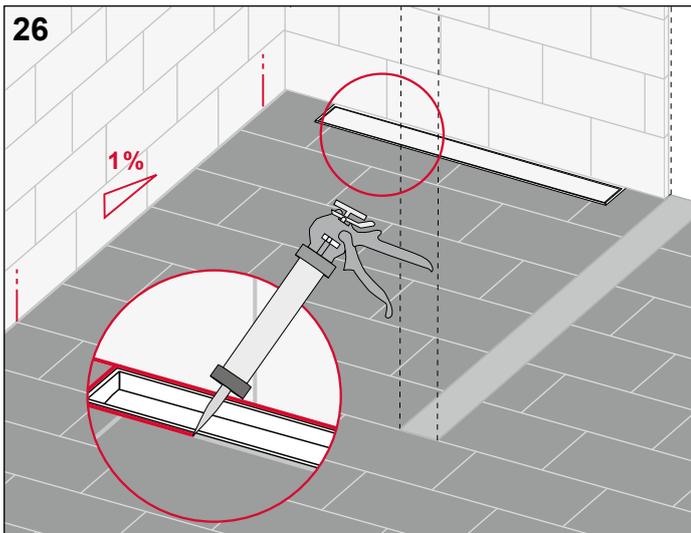


25
If necessary, also seal the wall areas with composite seal, following the manufacturer's instructions, and apply the tiles or natural stone covering.

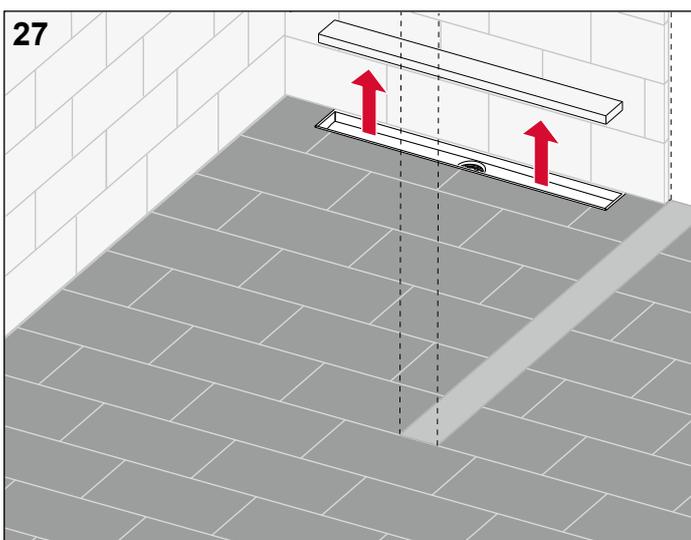


23
Allow the composite seal to harden, observe the specified drying time.

TECEdrainline - Installation instructions

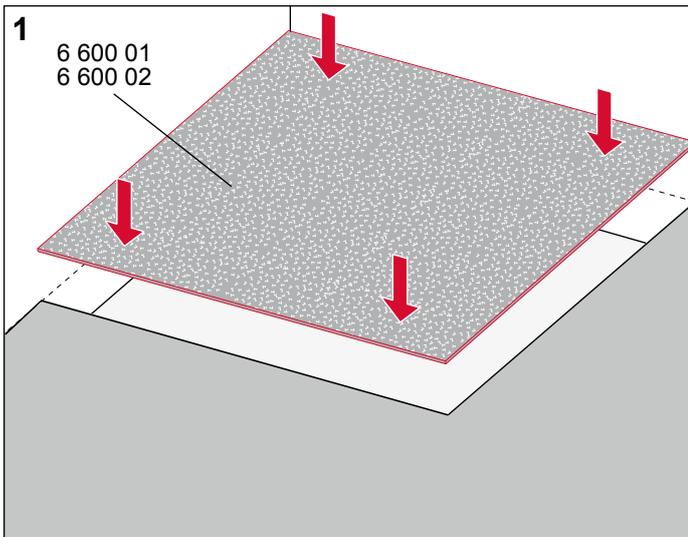


Insert the channel cover. Lay the cover flush with the floor in the shower channel.

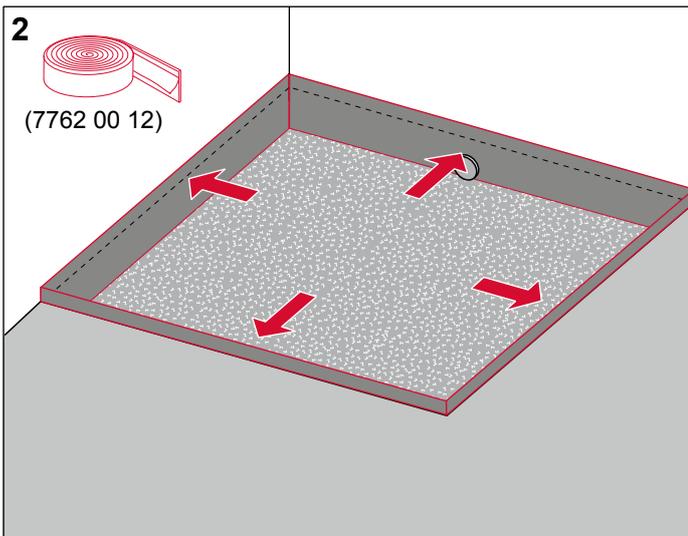


Remove the protective cover and clean the channel.

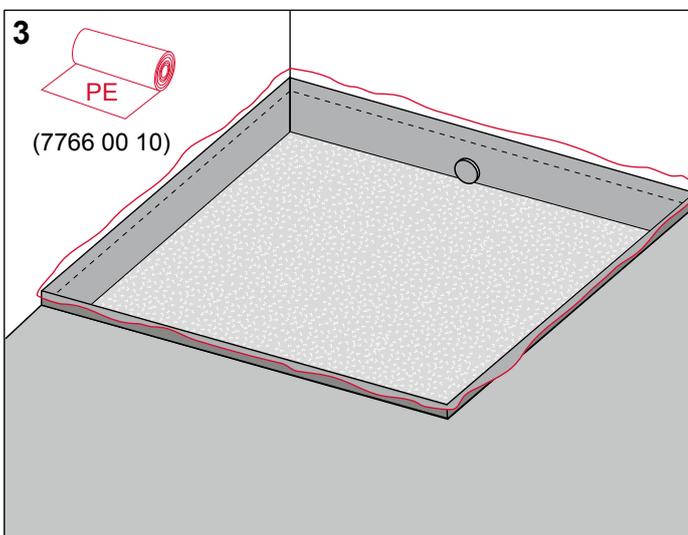
Installation instructions for the angled channel



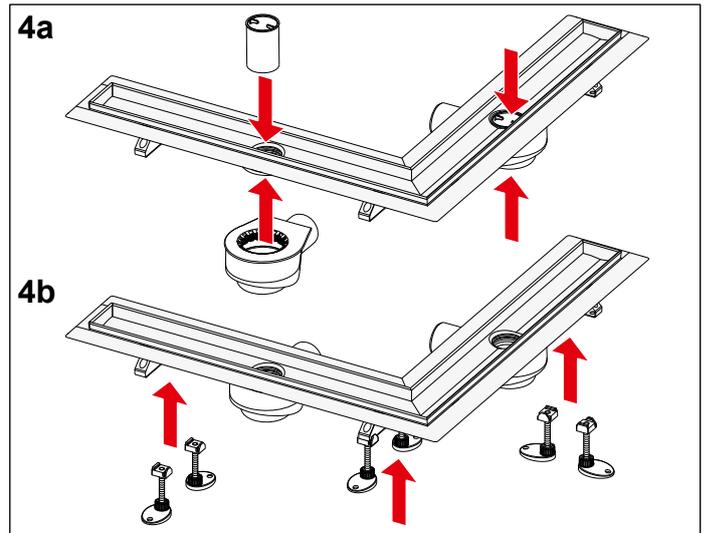
Optional: Cut the drainline sound-proofing mat and place in position so that it covers the whole surface of the shower area.



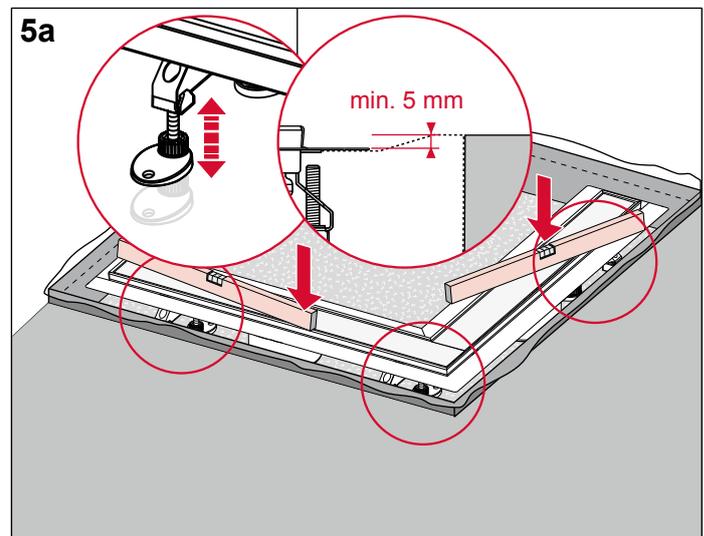
Add edge insulation strips on all sides.



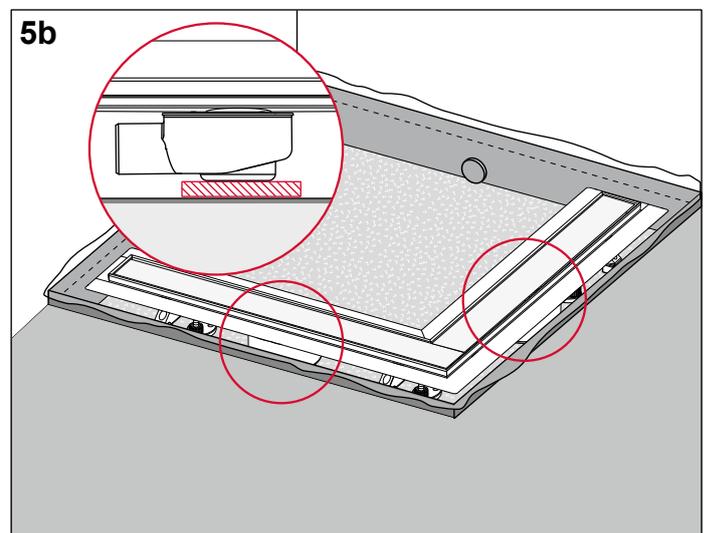
Lay the PE sheet.



Install the drain and immersion pipe, if necessary clip on the assembly feet.

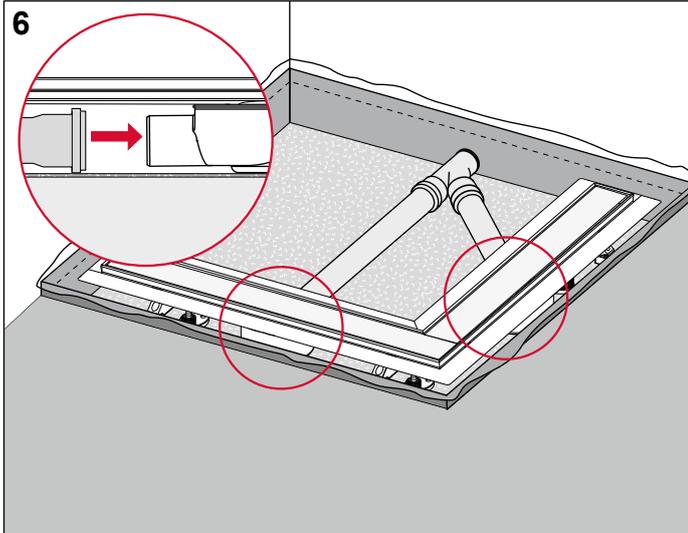


Use the adjustable assembly feet to raise the shower channel to the required position and align horizontally.

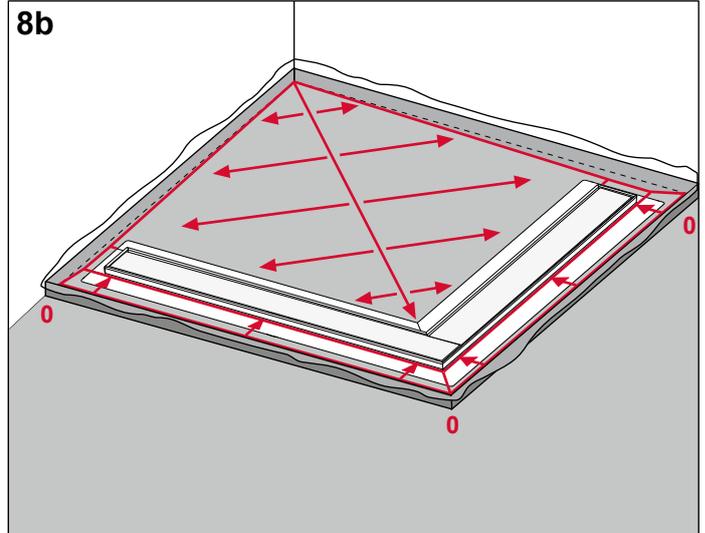


If necessary pack the drain body.

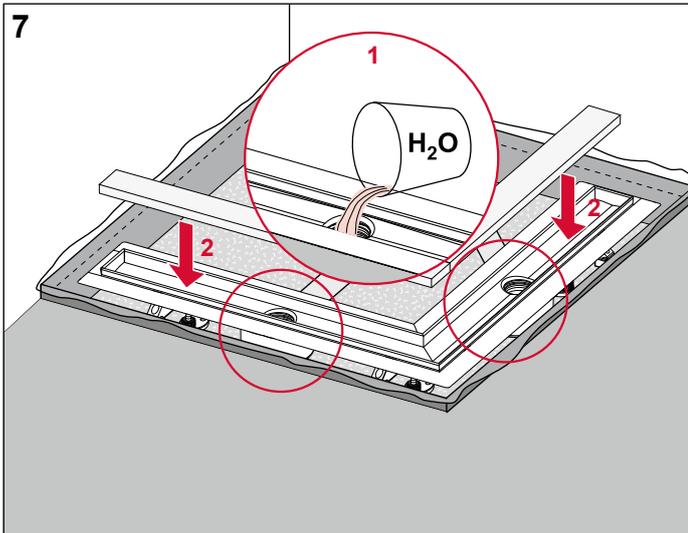
TECEdrainline – Installation instructions



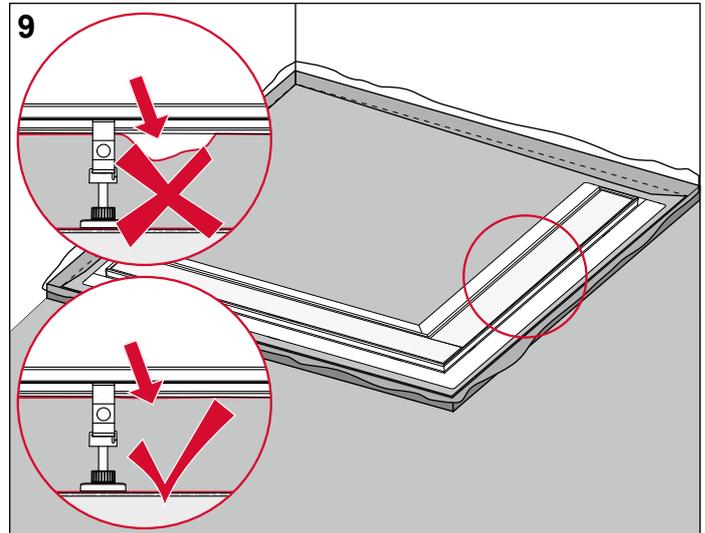
Attach the wastewater pipe to the outflow nozzle.



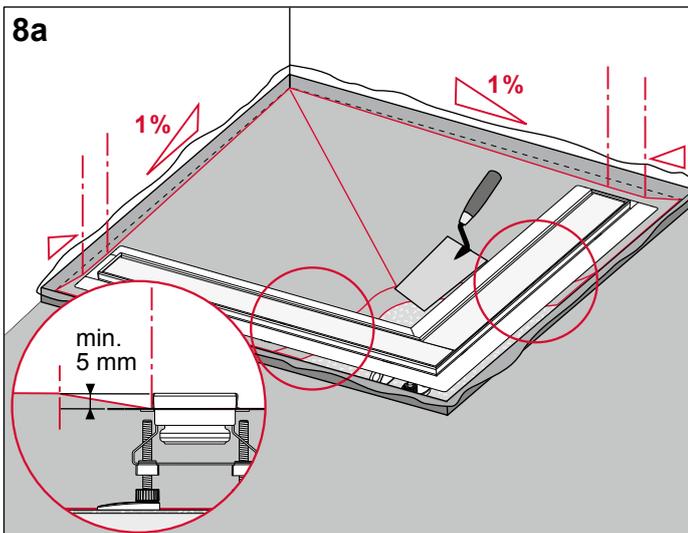
Create the incline as illustrated above.



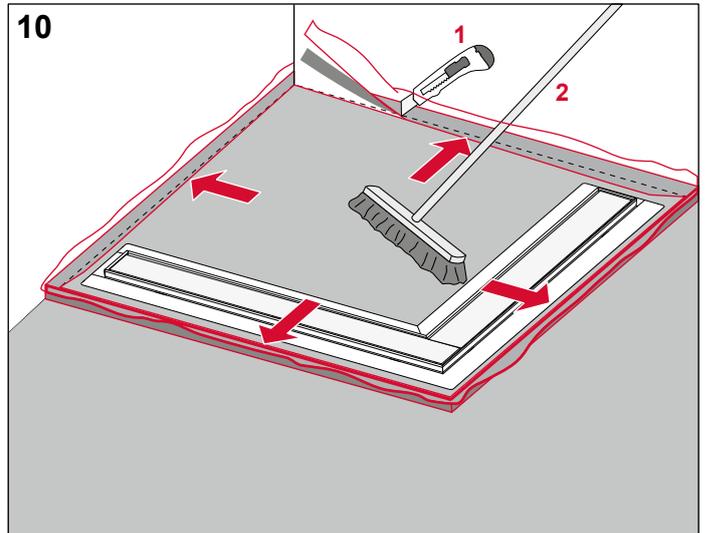
Remove the protective cover, check for leaks and replace the protective cover.



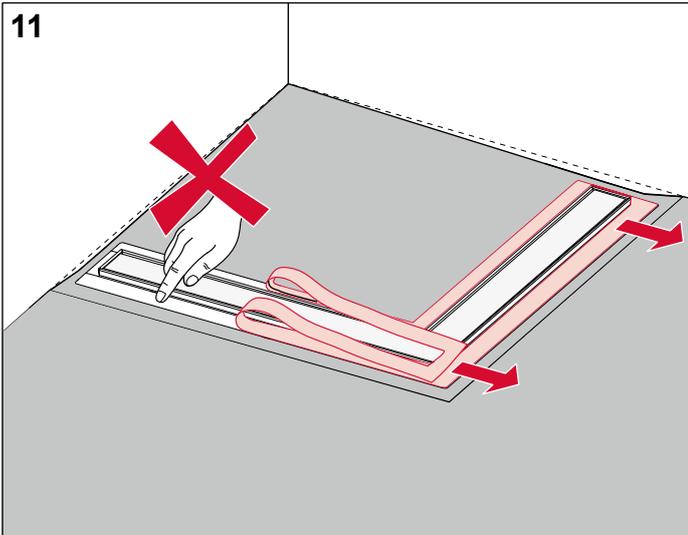
Make sure that there are no cavities between the screed and the channel or drain.



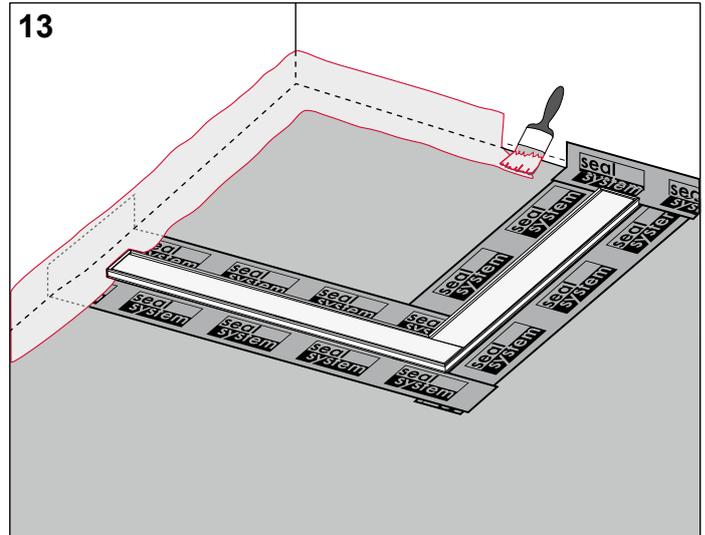
Apply screed with the necessary incline – in the shower zone – of at least one percent to both channels. The reverse gradient should be at least 5 mm.



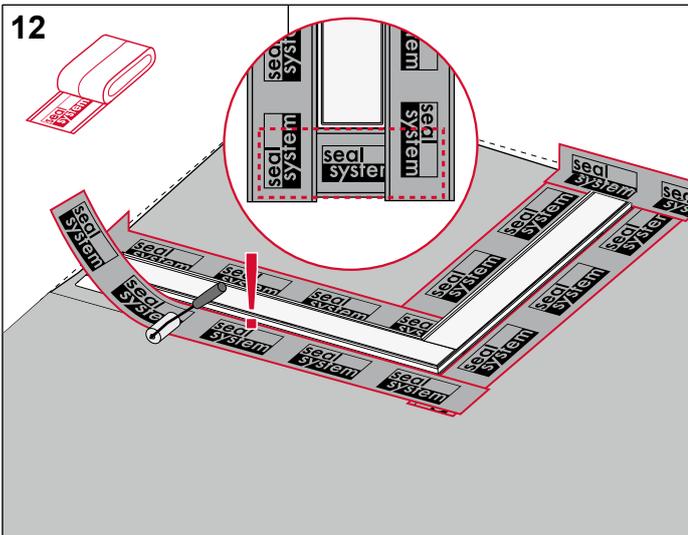
Cut off any protruding edge insulation strips and PE sheet, clean the screed.



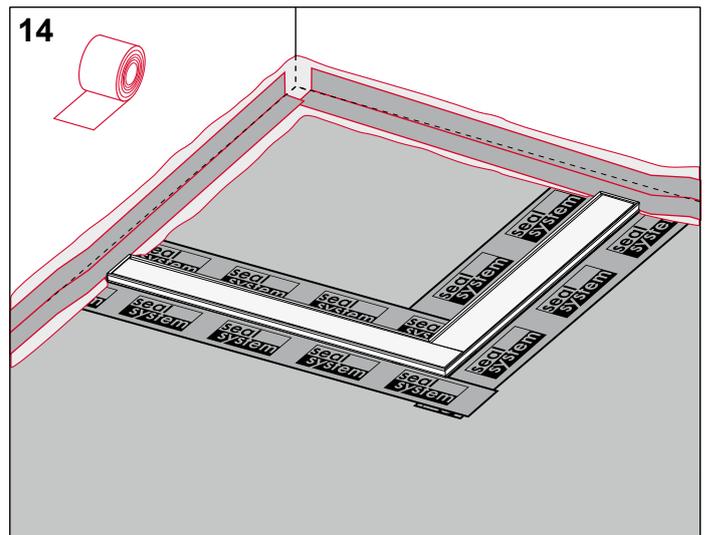
11 Completely remove the protective sheet from the channel flange. Do not touch the flange any more or let it get dirty.



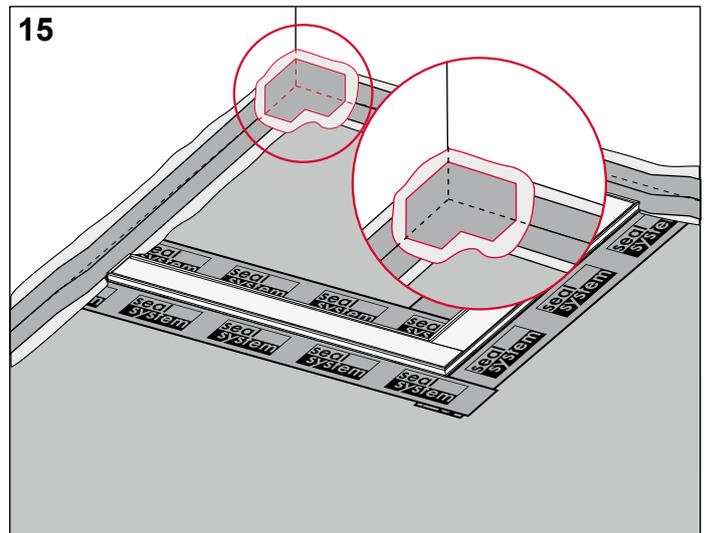
13 Apply a coat of composite seal to the transitions between the wall and the screed. Observe the manufacturer's instructions when creating the composite seal (figs. 13 to 20).



12 Cut the Seal System sealing tape to length, remove the protective film and fold the tape, overlapping it over the channel flange and screed as illustrated, then stick it down, pressing with a roller and making sure that there are no air bubbles.



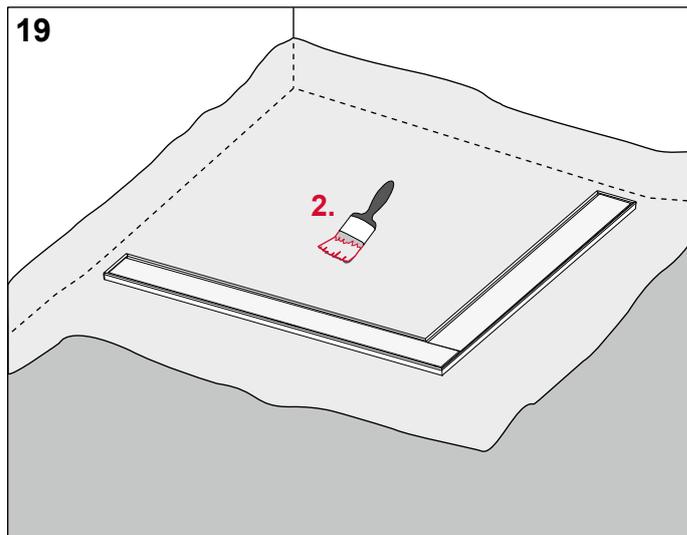
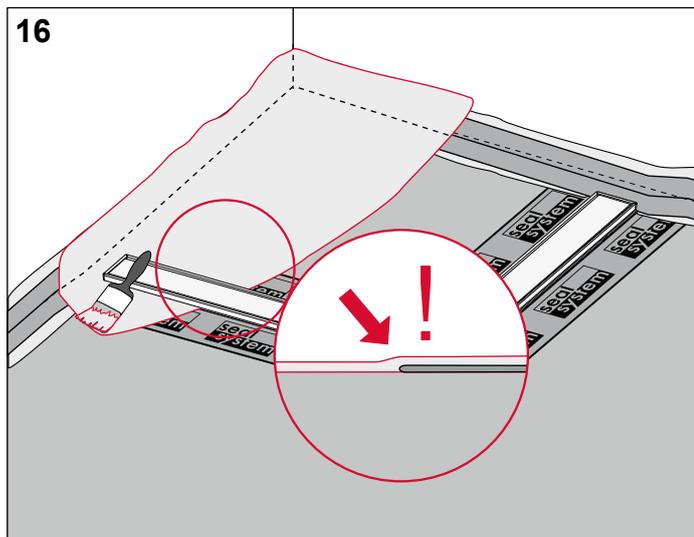
14 Fold the sealing tape and fit it directly into the connection in the fresh composite seal, making sure that there are no air bubbles.



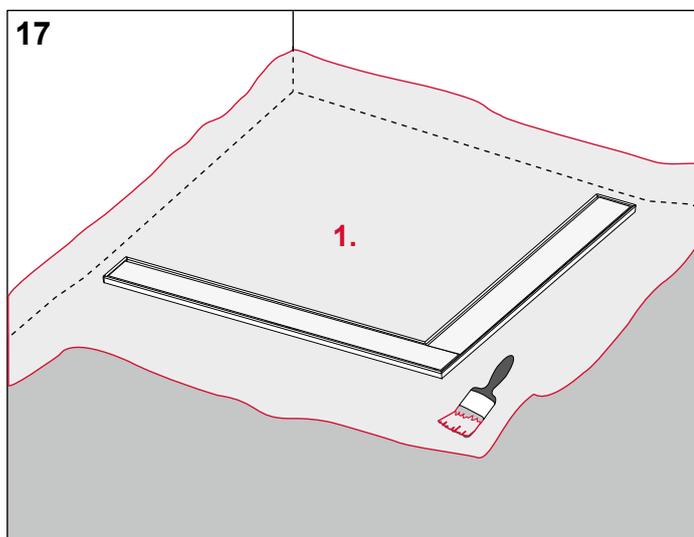
15

TECEdrainline - Installation instructions

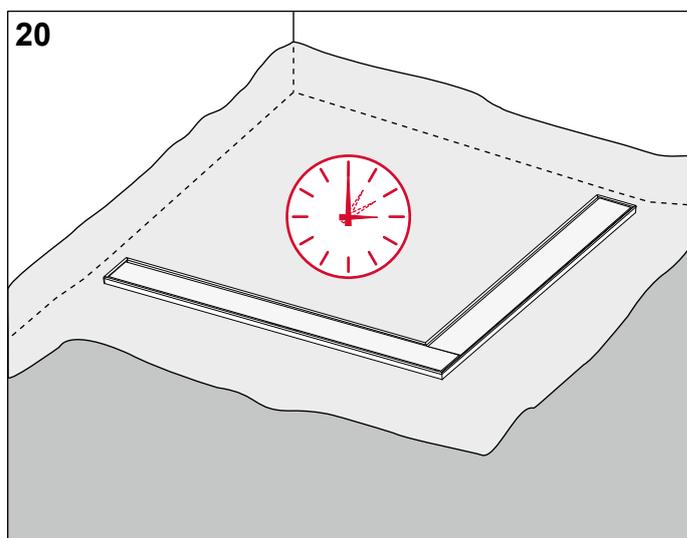
Apply the composite seal to the corners and fold and fit the corner seals, making sure that there are no air bubbles.



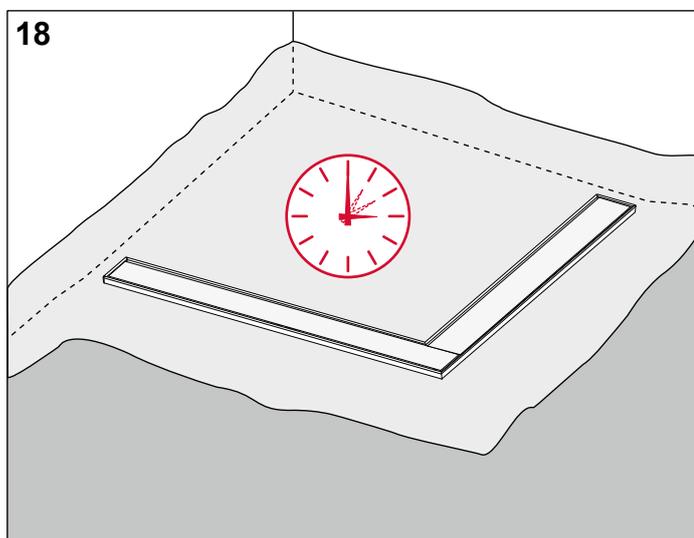
Apply the second coat of composite seal spotlessly over the entire area.



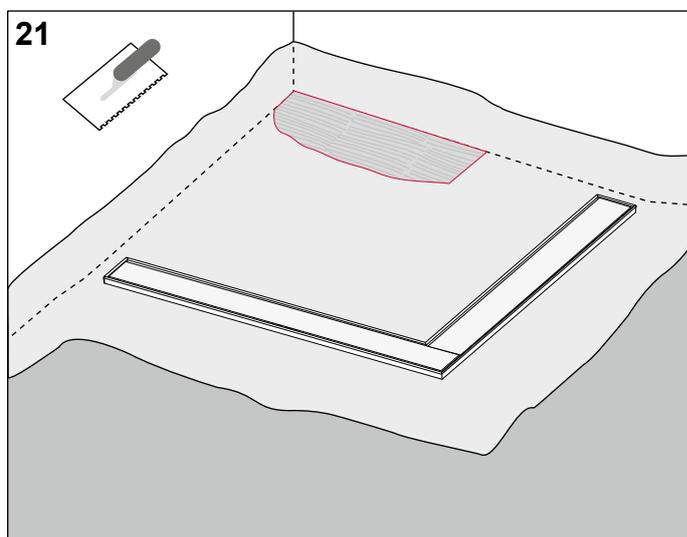
Apply the first coat of composite seal spotlessly over the entire area. In doing so, fully integrate the Seal System sealing tape.



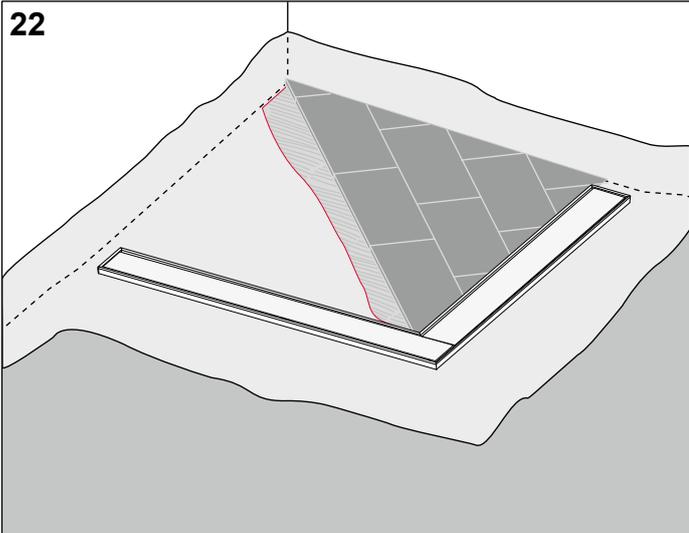
Allow the specified drying time.



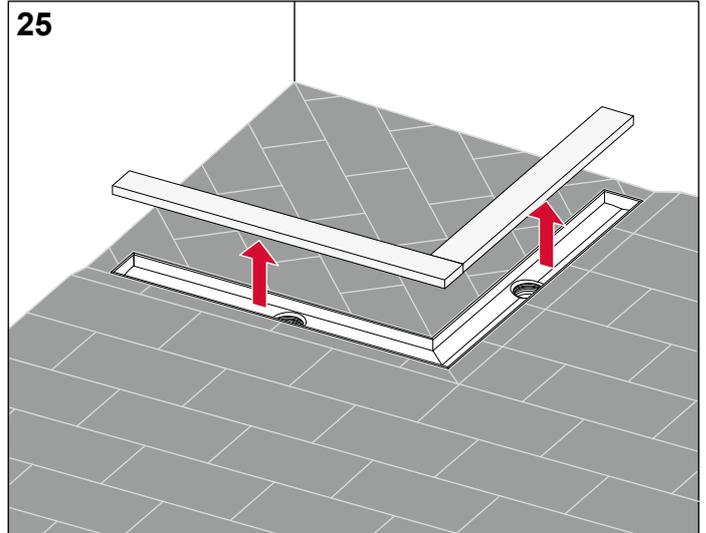
Allow the specified drying time.



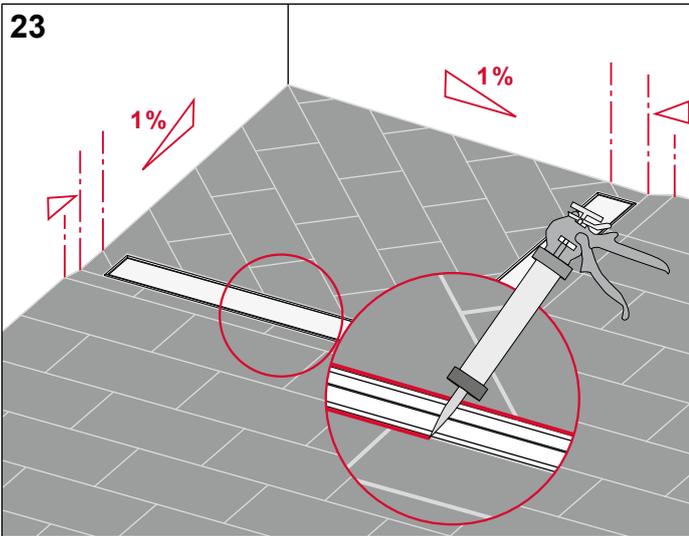
Apply the tile adhesive.



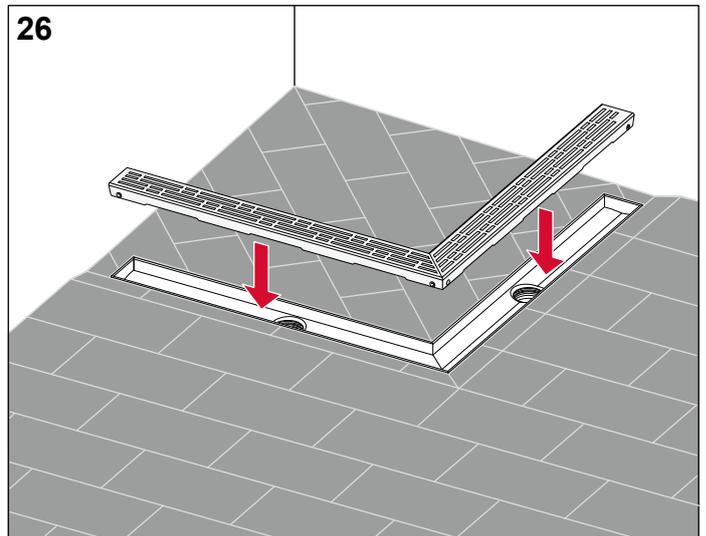
Apply the floor covering (tiles, etc.), allowing for the specified incline in the process.



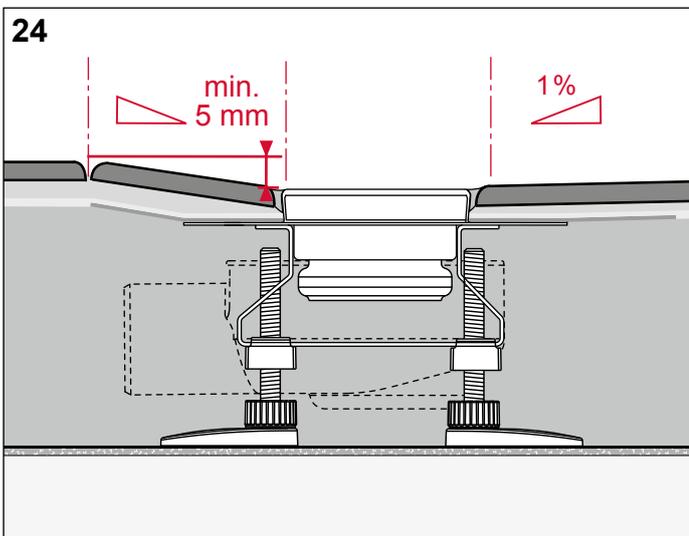
Remove the protective cover, clean the channel.



Seal the joint between the stainless steel channel and the tiles or natural stone with permanently flexible material.



Insert the required cover (design grate, tileable channel).

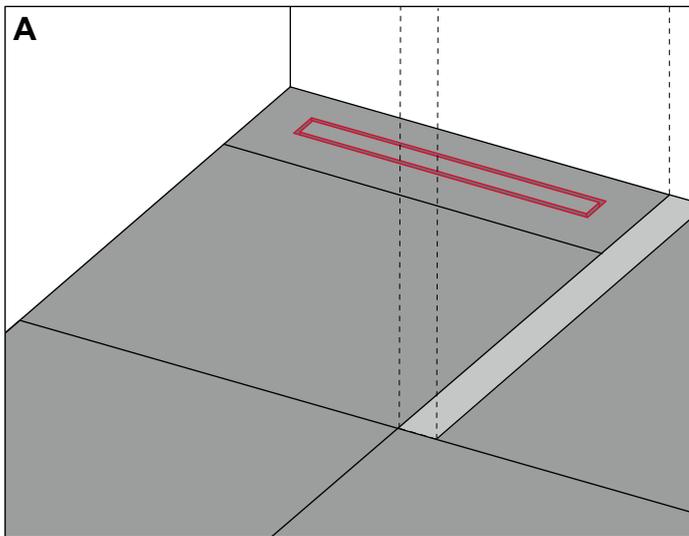


Check the incline and reverse gradient.

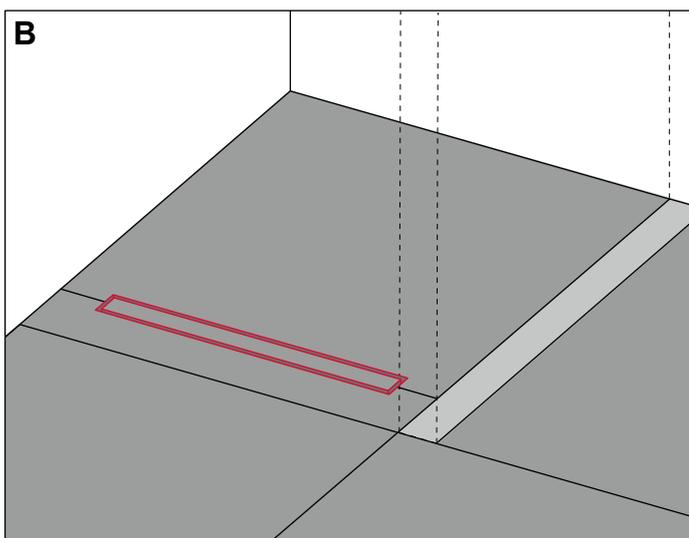
TECEdrainline - Installation instructions

Installation instructions for shower channel for natural stone

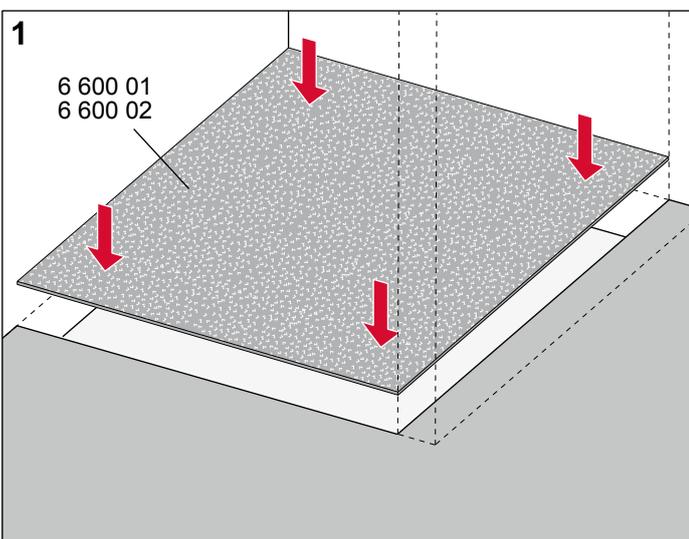
it in position so that it covers the whole surface of the shower area.



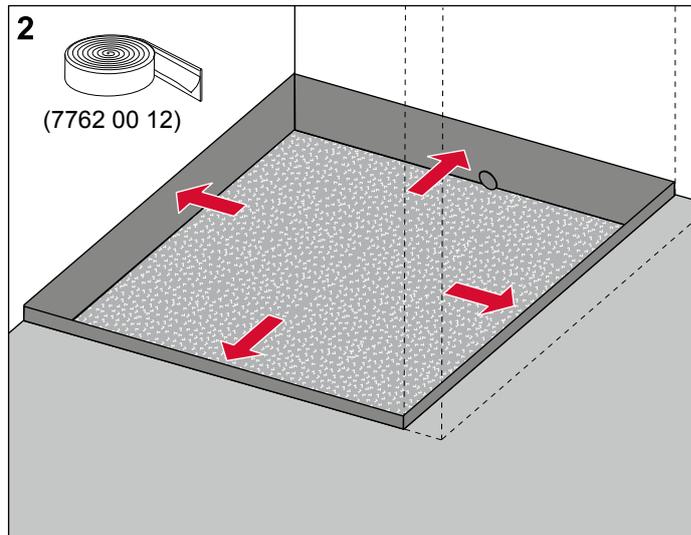
Positioning the shower channel close to the wall (A).



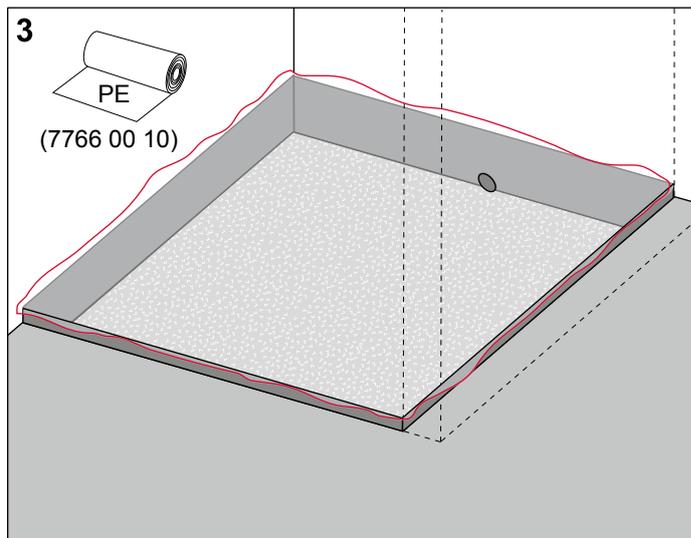
Positioning the shower channel in the middle of the room (B)



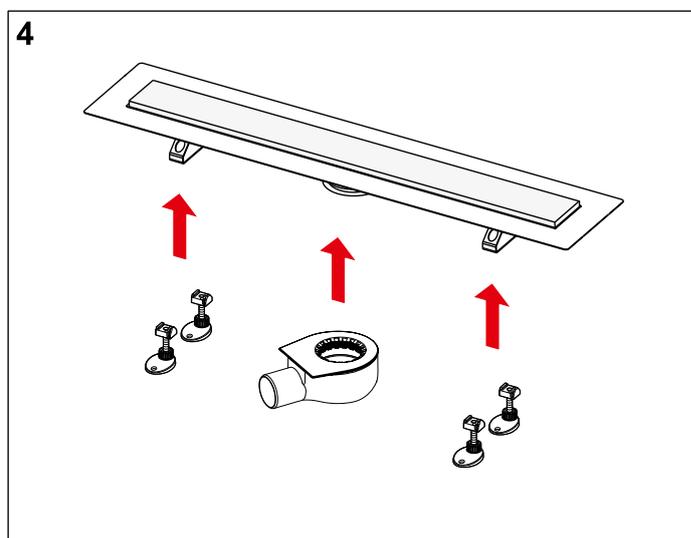
Optional: Cut the Drainbase sound-proofing mat and put 8-50



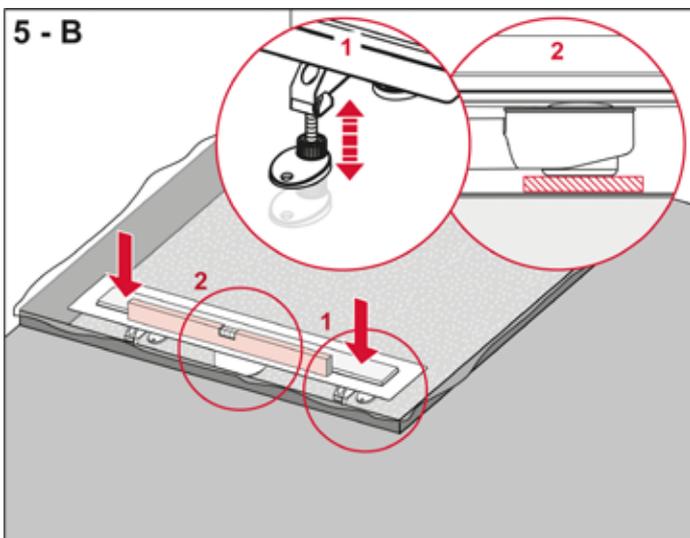
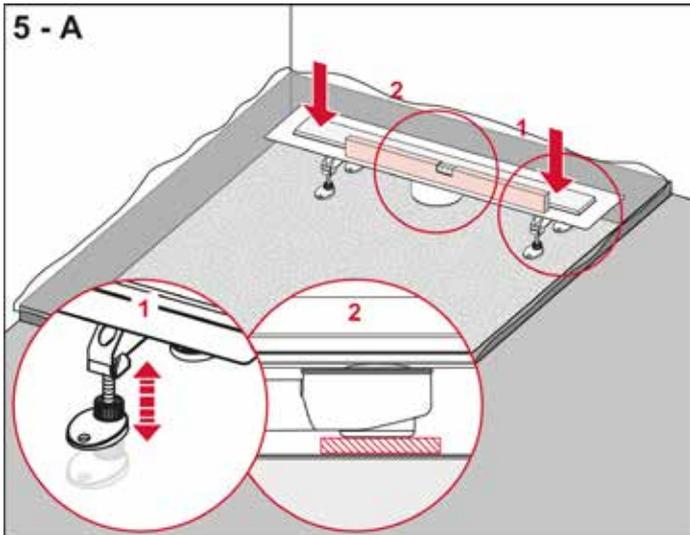
Apply the edge insulation strips.



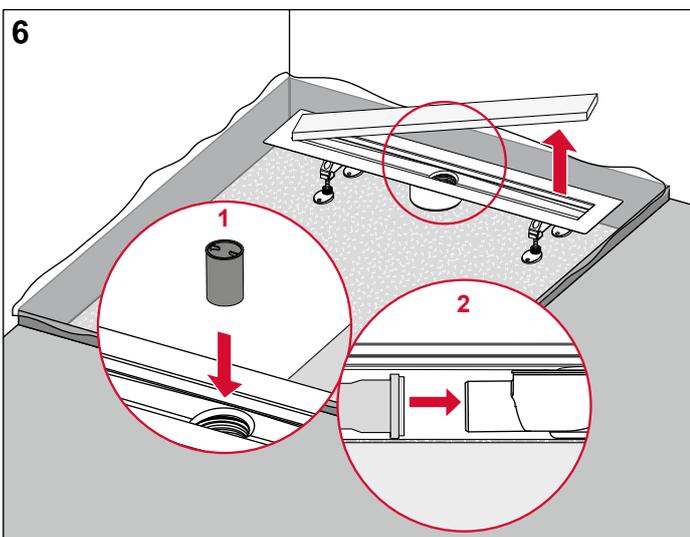
Lay the PE sheet.



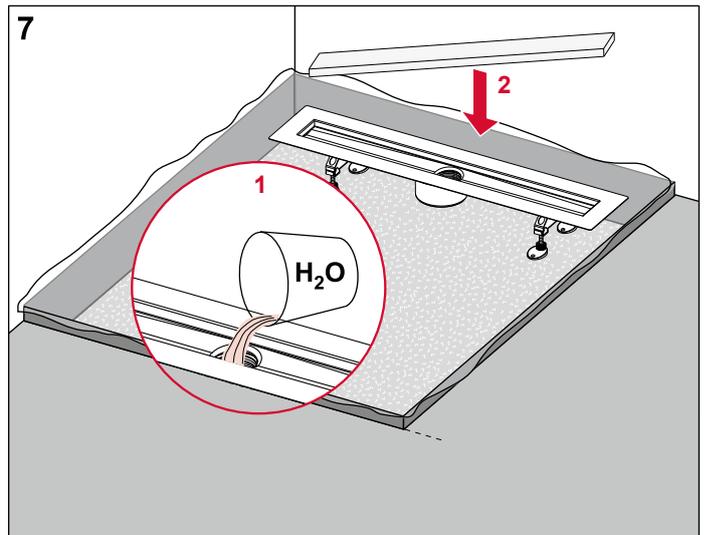
Mount the drain and click on the assembly feet if applicable.



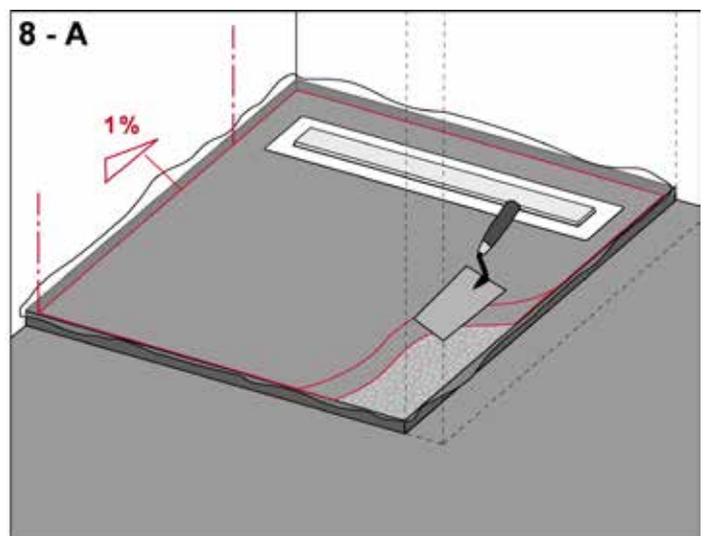
Use the adjustable assembly feet to raise the shower channel to the required position and align horizontally, if necessary, pack the drain body.



Remove the protective cover, insert the immersion pipe and attach the drainage pipe to the outflow nozzle.



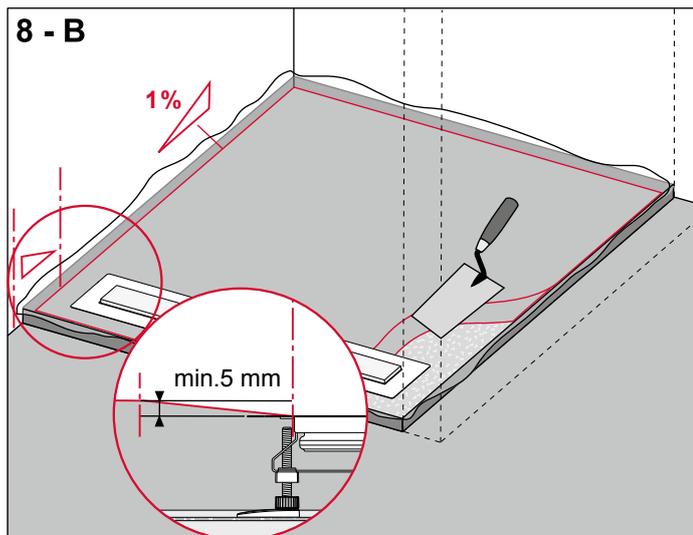
Check for leaks and replace the protective cover.



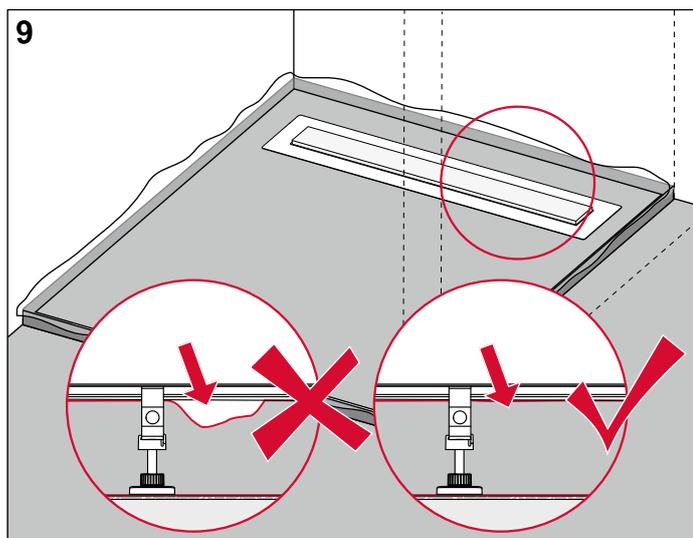
(A = positioning close to the wall)

Apply the screed and fully incorporate the channel into the screed up to flange height, making sure that there are no cavities. Include an incline of 1%.

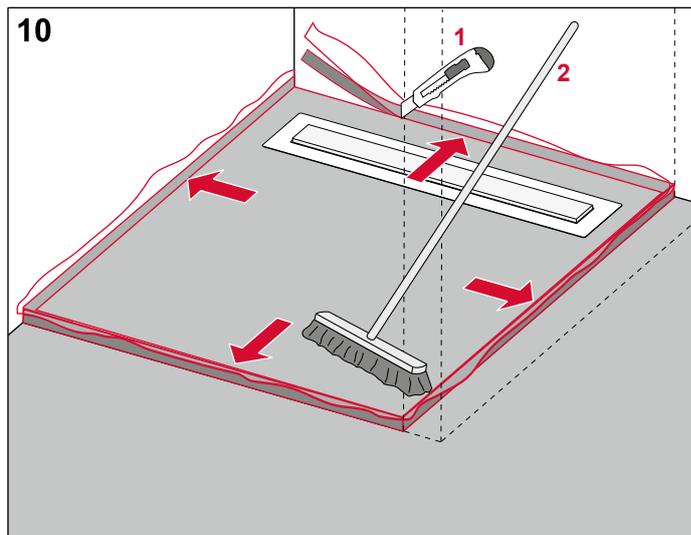
TECEdrainline - Installation instructions



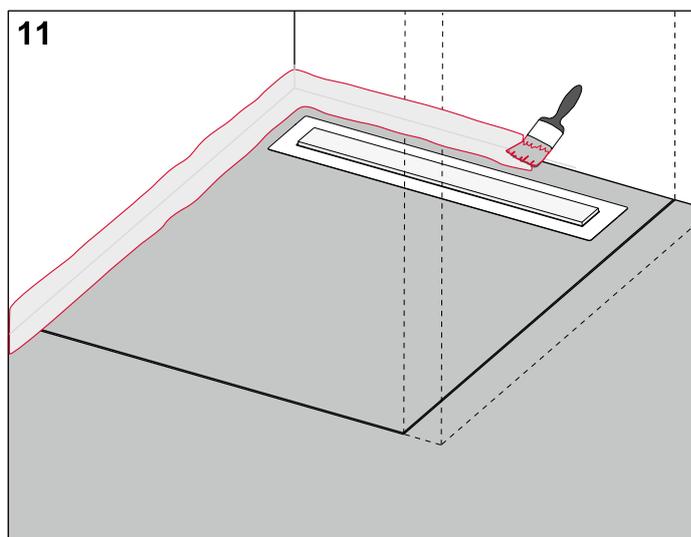
(A = positioning in the middle of the room)
 Apply the screed and fully incorporate the channel into the screed up to flange height, making sure that there are no cavities. Include an incline of 1%. When installing in the middle of the room, include a reverse gradient of at least 5 mm.



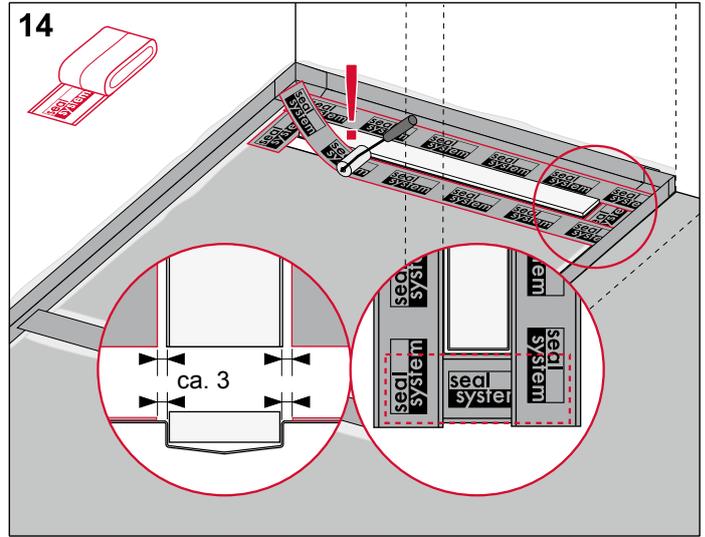
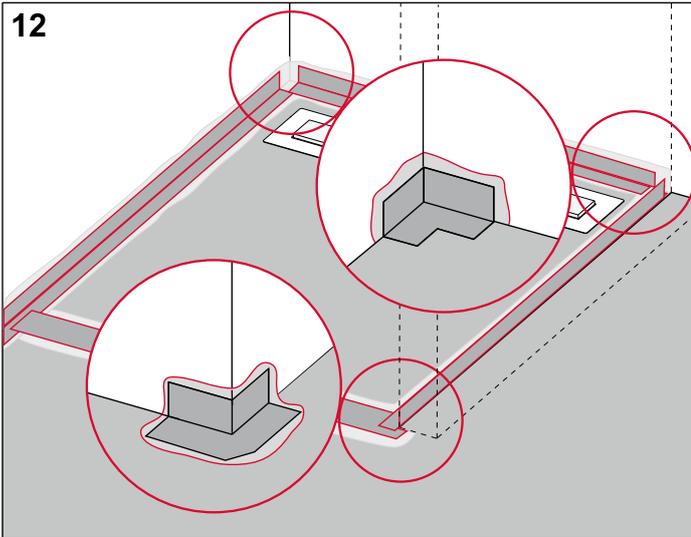
Make sure that there are no cavities between the screed and the channel or drain.



Cut off any protruding edge insulation strips and PE sheet, clean the screed.

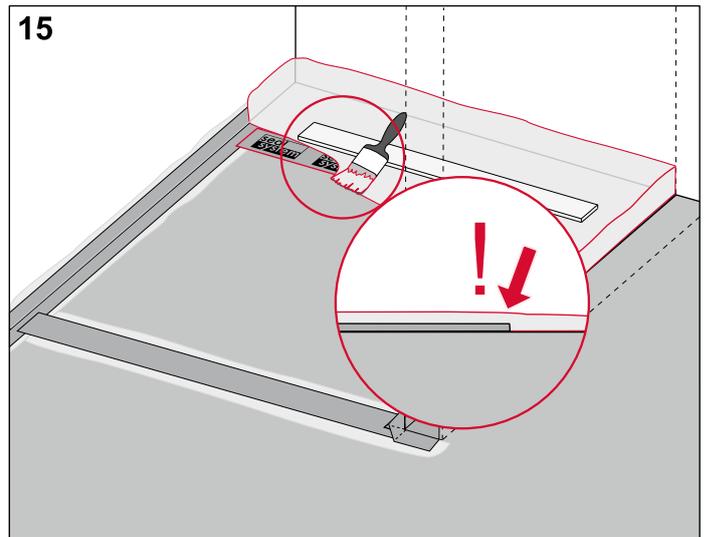
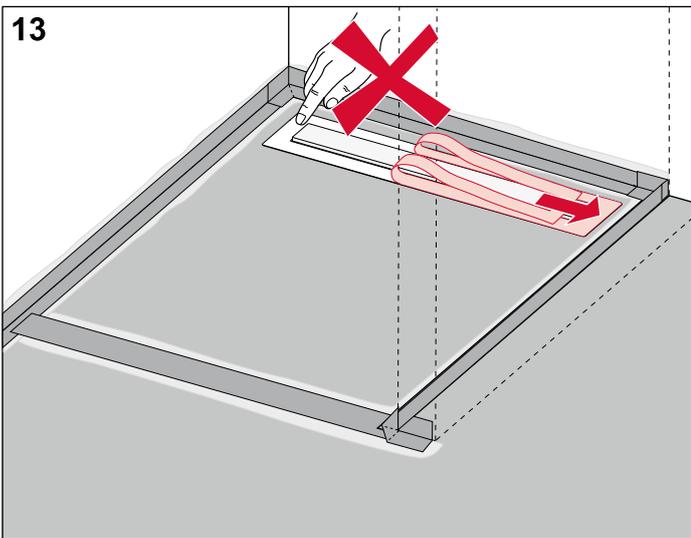


Apply a coat of composite seal to the transitions between the wall and the screed. Observe the manufacturer's instructions when creating the composite seal (figs. 11 to 19).



Fold the sealing tape and fit it directly into the connection in the fresh composite seal, making sure that there are no air bubbles.
Apply the composite seal to the corners again and and fold and fit the corner seals, making sure that there are no air bubbles.

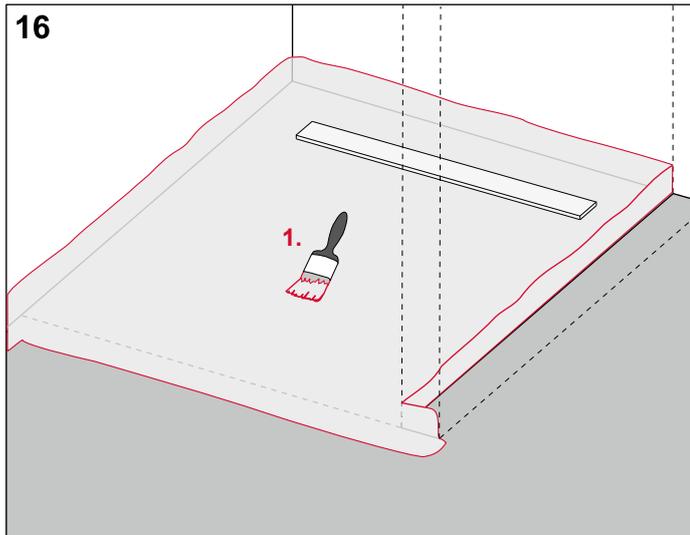
Cut the Seal System sealing tape to length, remove the protective film and fold the tape, overlapping it over the channel flange and screed as illustrated, then stick it down, pressing with a roller and making sure that there are no air bubbles.



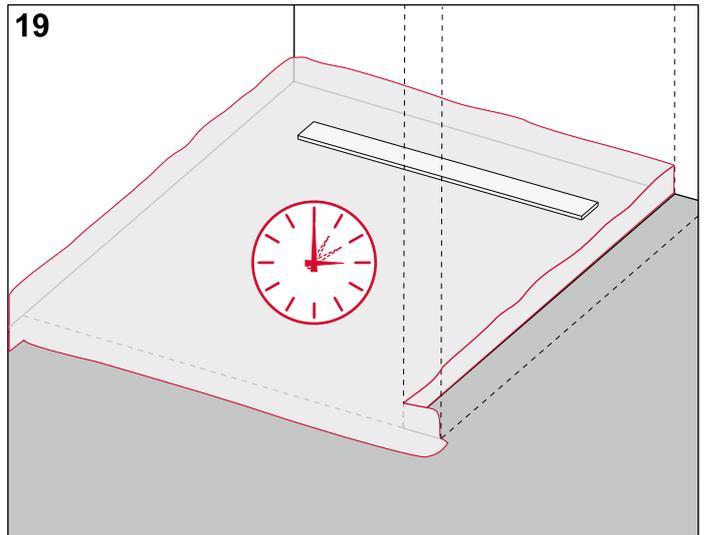
Completely remove the protective sheet from the channel flange. Do not touch the flange any more or let it get dirty.

Apply the first coat of composite seal. In doing so, completely work in the Seal System sealing tape and corners.

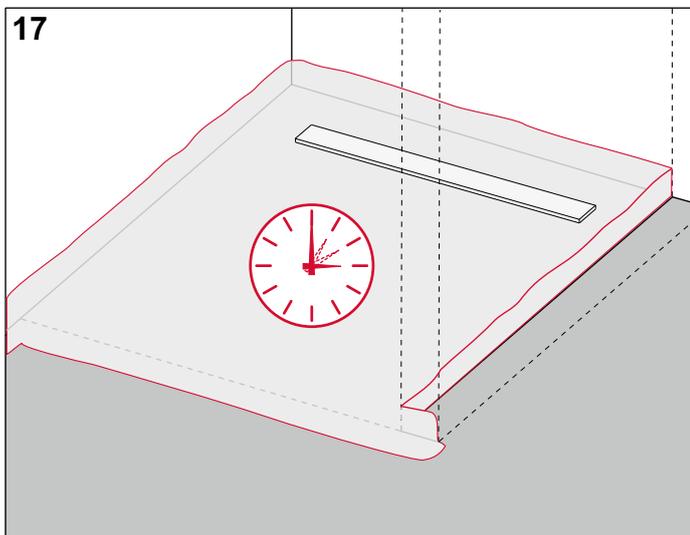
TECEdrainline - Installation instructions



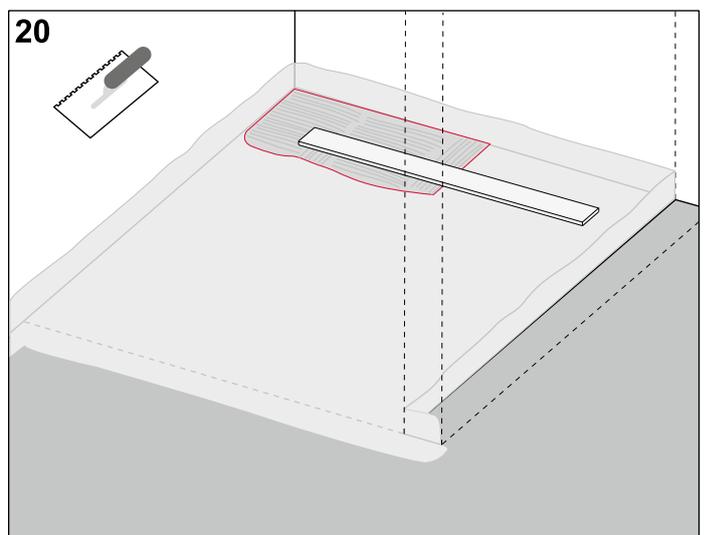
Spotlessly complete the first coat of composite seal.



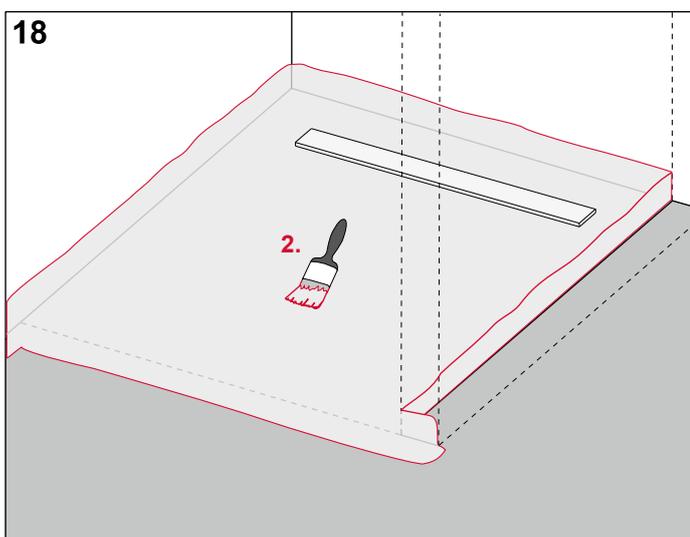
Allow the specified drying time.



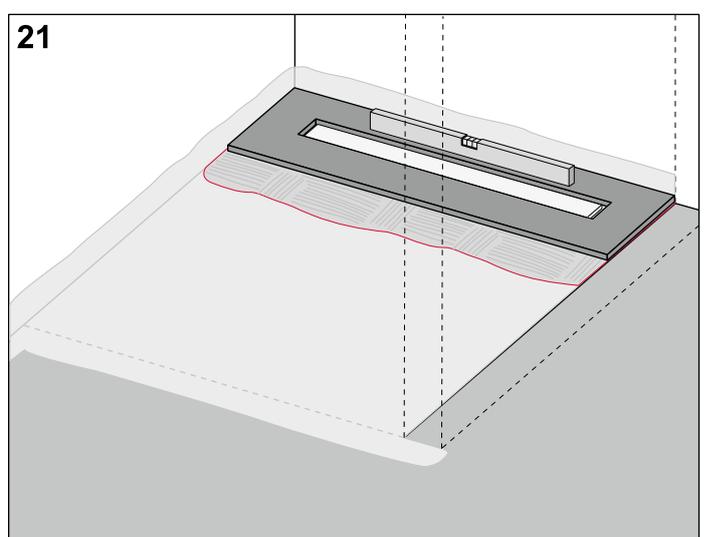
Allow the specified drying time.



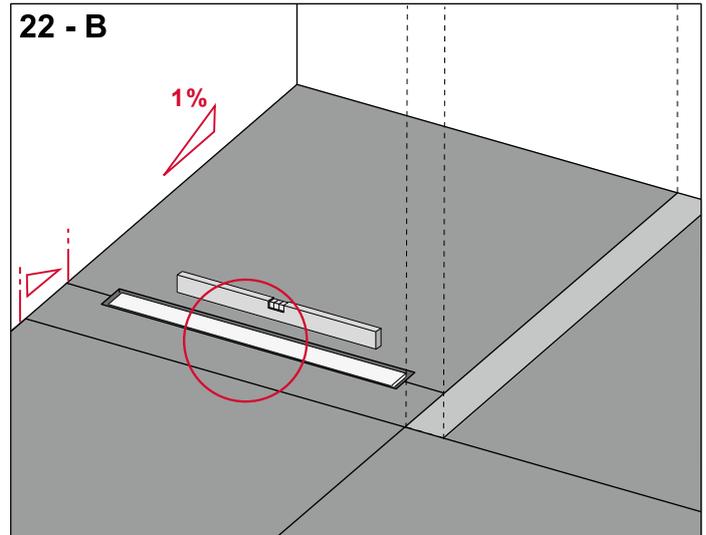
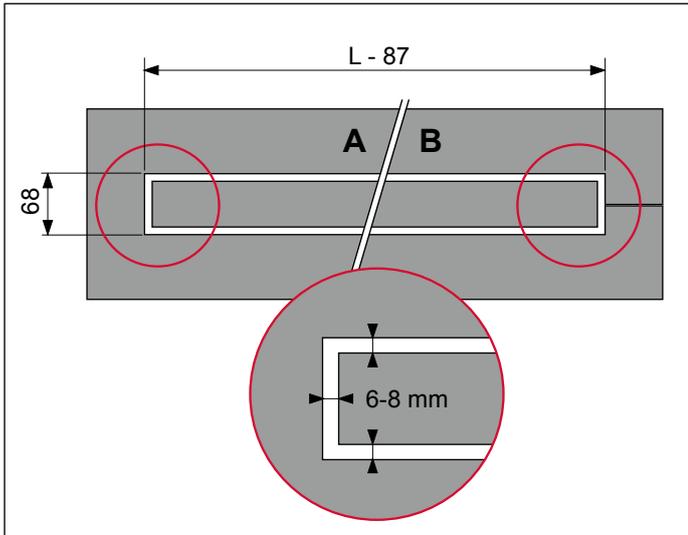
Apply the tile adhesive.



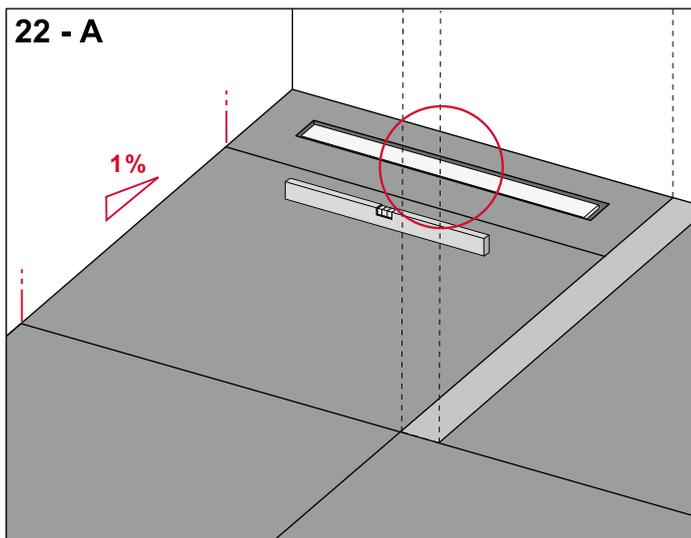
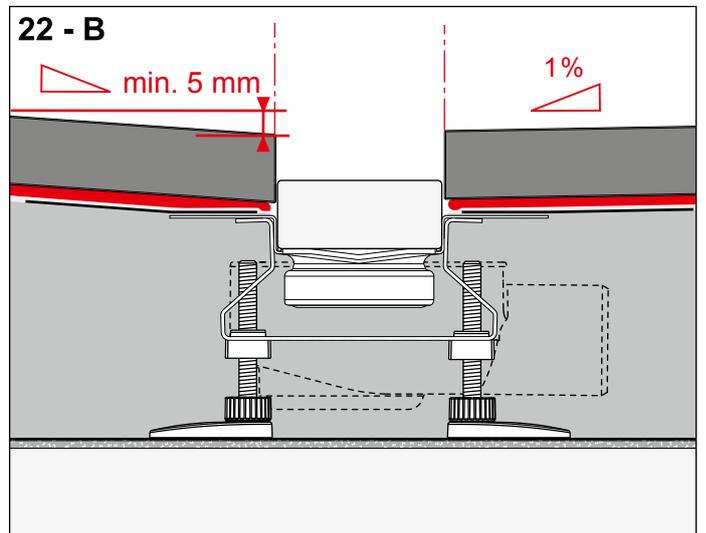
Apply the second coat of composite seal spotlessly over the entire area.



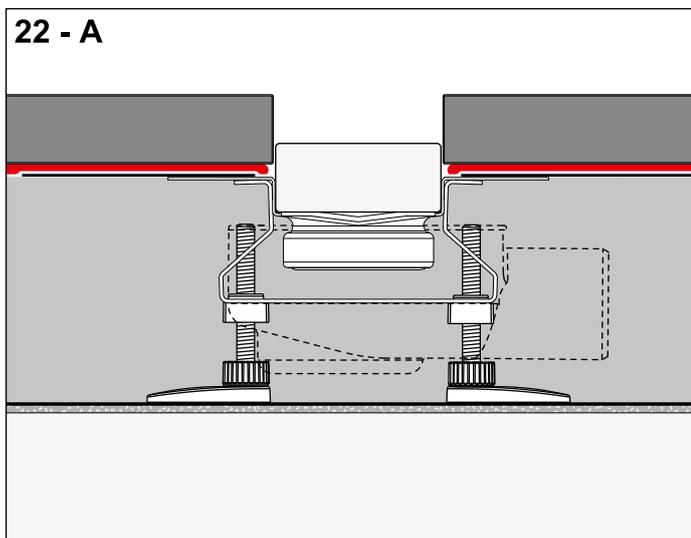
Lay the floor covering (e.g. natural stone slabs) around the shower channel and align horizontally.



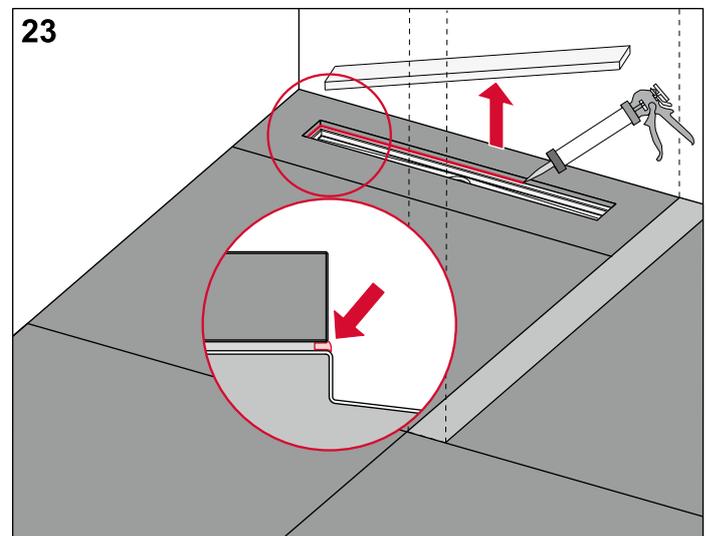
Create the cut-outs in the covering, preferably using a water jet cutter. The gap width must be between 6 and 8 mm.



Installation in the middle of the room (B): Lay the floor covering in the remaining shower area with the required incline of at least one percent to the shower channel. The reverse gradient must be at least 5 mm.



Installation close to the wall (A): Lay the floor covering in the remaining shower area with the required incline of at least one percent to the shower channel.



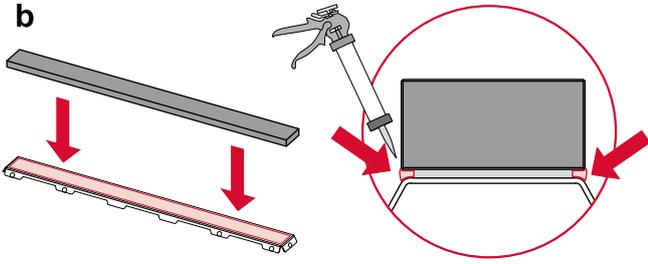
Seal the space between the floor covering and the screed with permanently flexible material.

TECEdrainline – Installation instructions

24 a

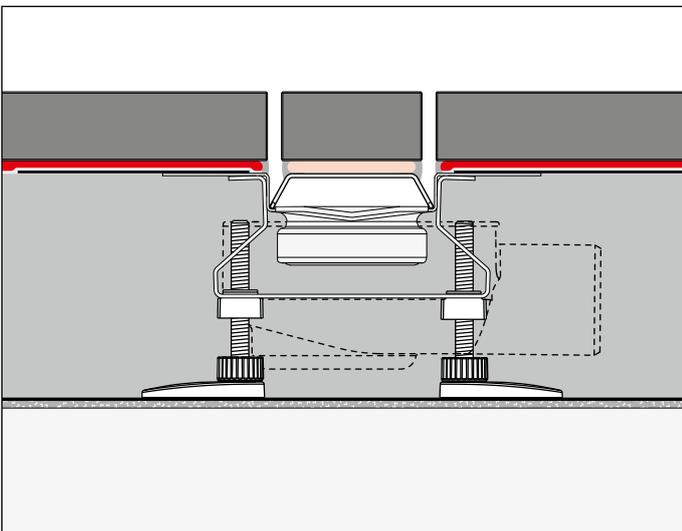
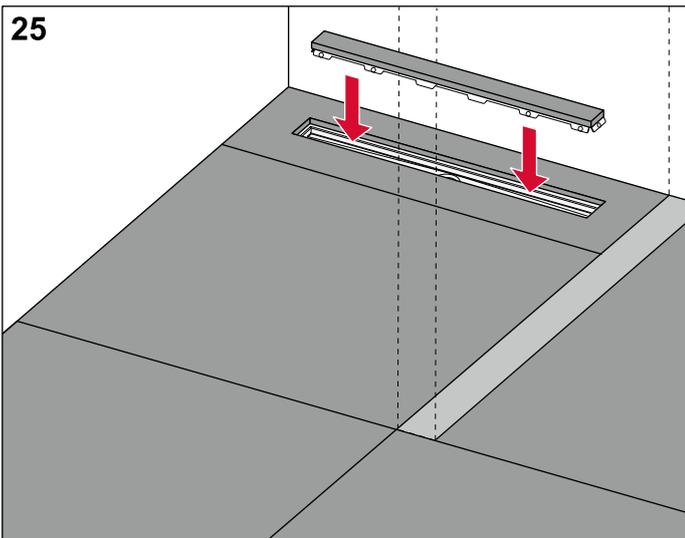


b



Stick the adapted covering with suitable adhesive onto the support sheet (following the manufacturer's instructions). Seal the space between the bonded covering and the support with permanently flexible material.

25

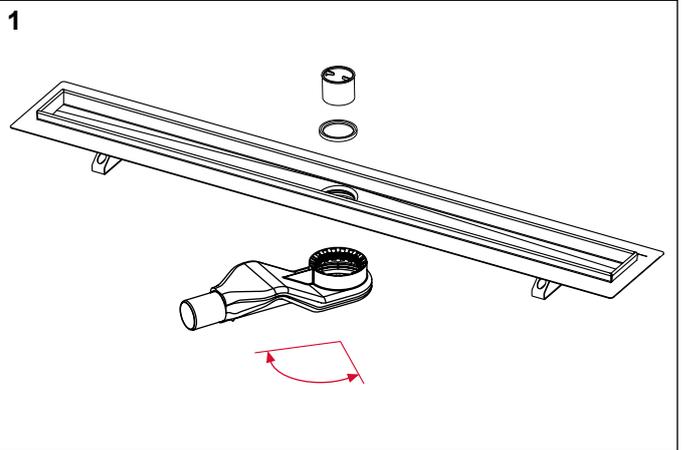


Clean the shower channel, insert the support sheet into it, and check the spacing dimensions.

Installation instructions for "extra-flat" drain

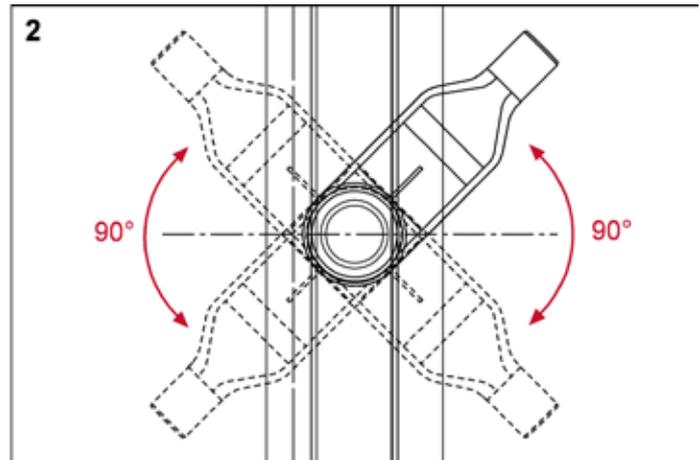
A shower channel using an extra-flat drain is basically installed in the same way as any other horizontal TECEdrainline drain body. However, due to the extra flat design, attention should be paid to certain points.

1



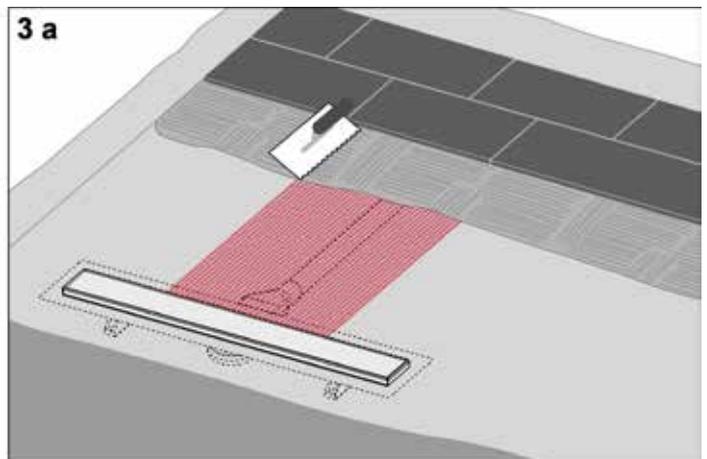
Place the drain on the channel body.

2



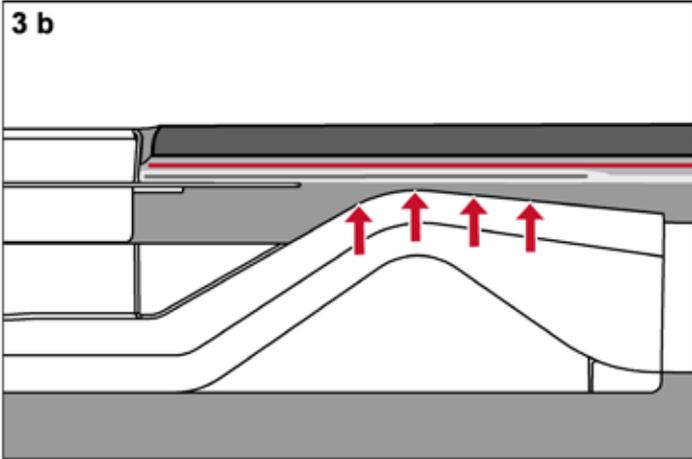
The turning range of the extra-flat drain is approx. 90° to either side of the shower channel.

3 a

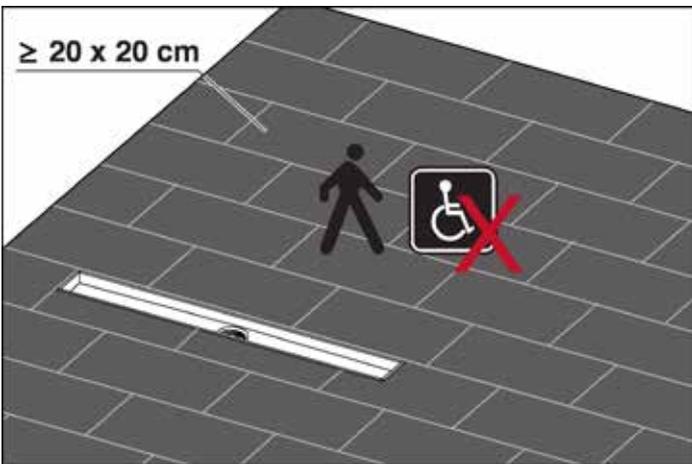


Due to the partially limited screed covering, a sufficiently wide piece of reinforcement fabric must be worked into the area between the drain and the outlet pipe.

3 b

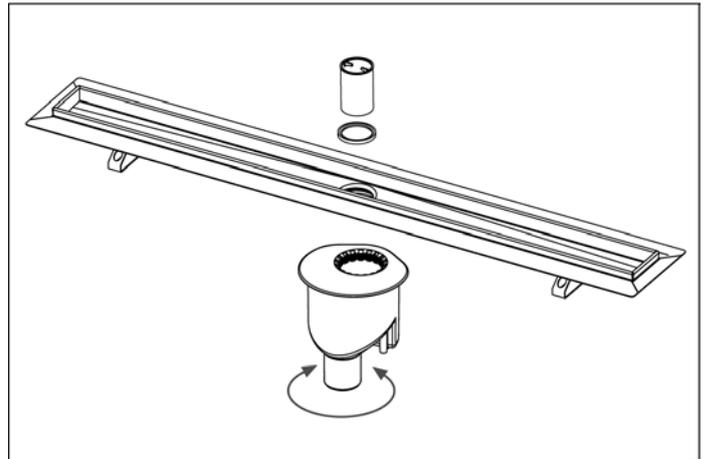
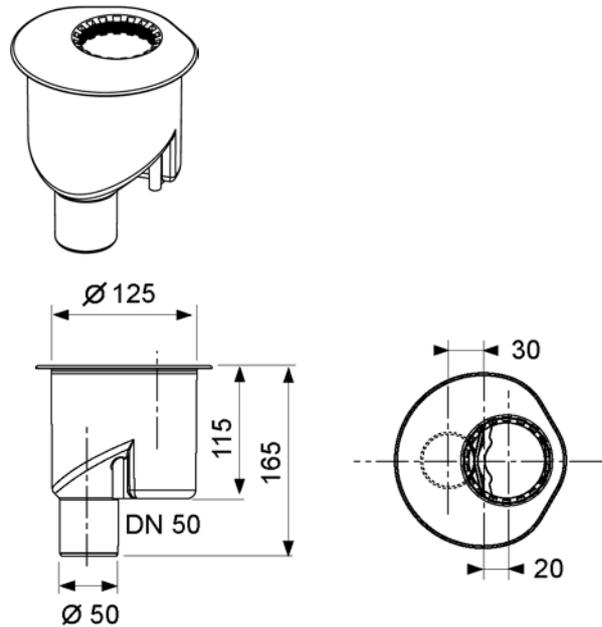


There should be no joints in the marked area above the drain body.

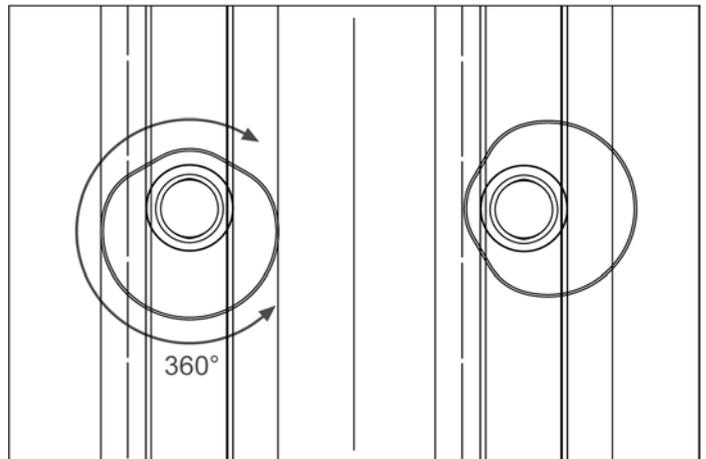


When choosing the floor covering, it should be taken into account that only slabs with an edge length of at least 20 cm should be used. The shower area is not suitable for wheelchairs.

Installation instructions for "vertical" drain

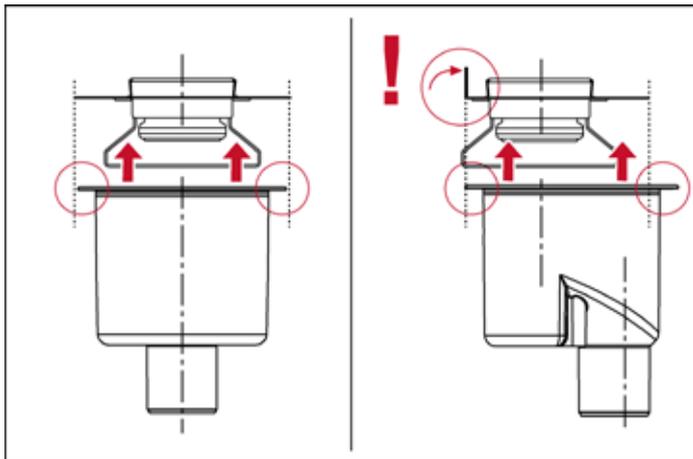


Secure the drain to the shower channel.

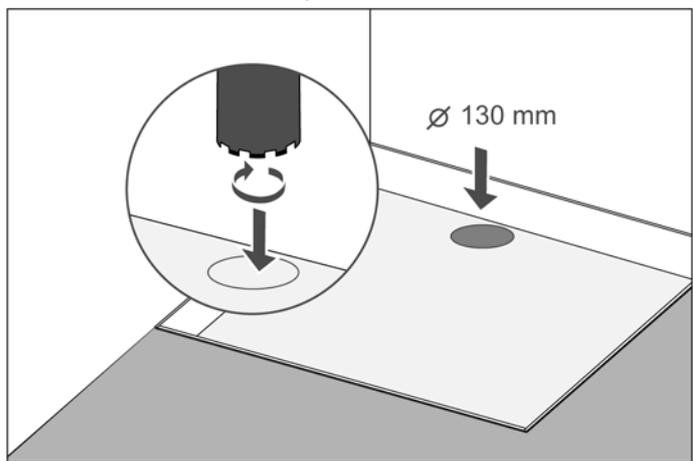


When the installation is close to the wall, the body of the drain can be turned. In this case, there is no need to chisel into the wall.

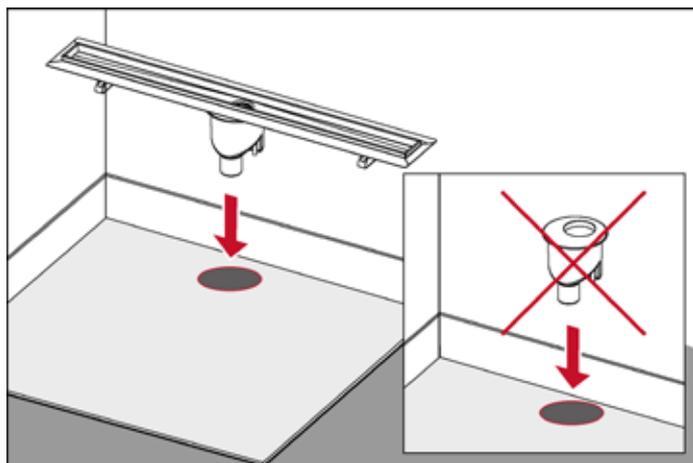
TECEdrainline – Installation instructions



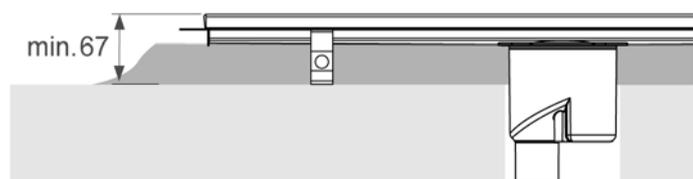
When installing the channel against the wall, the flange must be flush with the edge of the drain.



Drill a core hole with Ø 130 mm.



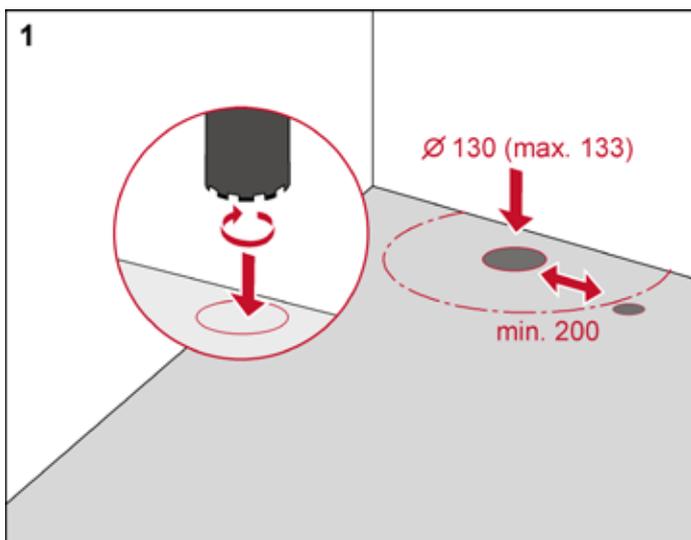
Insert the drain body including the drain channel into the core hole. Check for leaks. The edge of the drain must be packed with screed – make sure that there are no cavities.



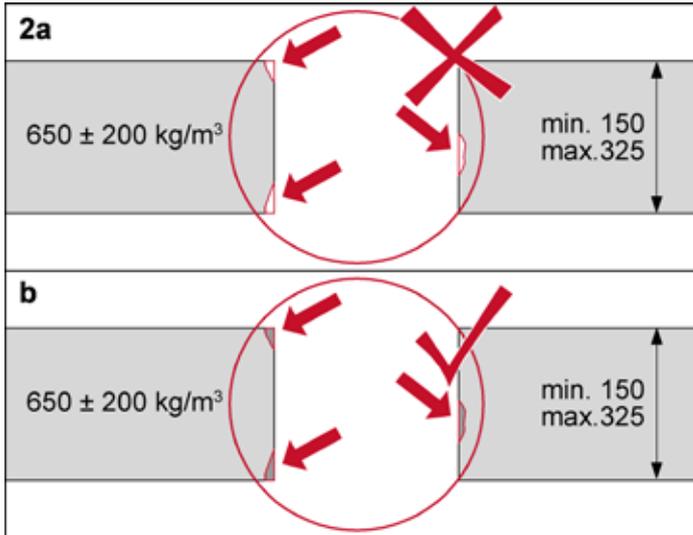
Minimum installation height without assembly feet is 67 mm.

Installation instructions for the fire protection set

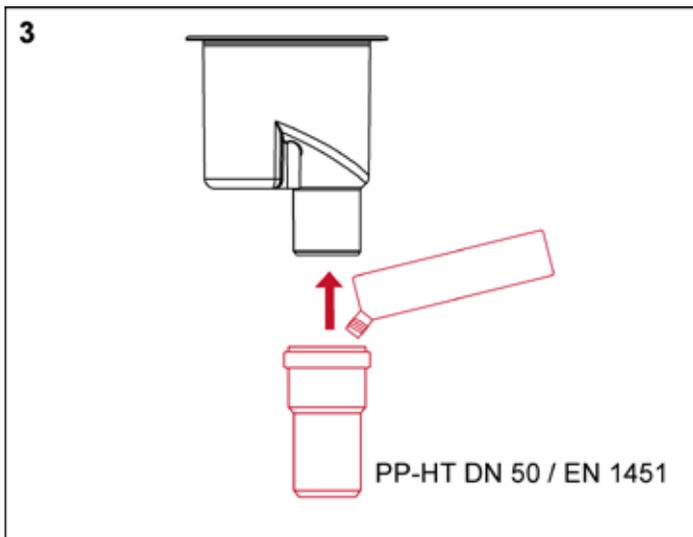
The fire protection set can only be used together with the vertical drain (order number 6 500 03).



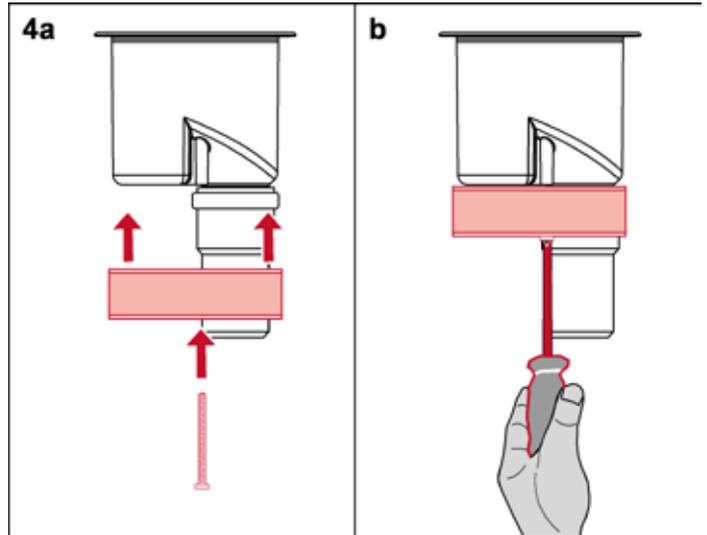
Make a core hole for the drain, diameter 130 mm (max. 133 mm). The distance to the nearest ceiling duct must be at least 200 mm.



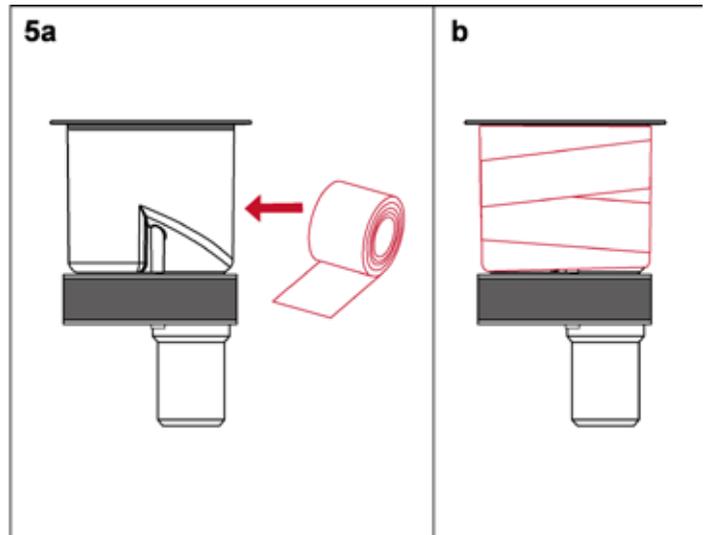
The fire protection set is only permitted for use with solid ceiling constructions with a density of $650 \pm 200 \text{ kg/m}^3$ and a thickness of 150 to 325 mm. Any damages along the drilled hole must be made good using suitable material.



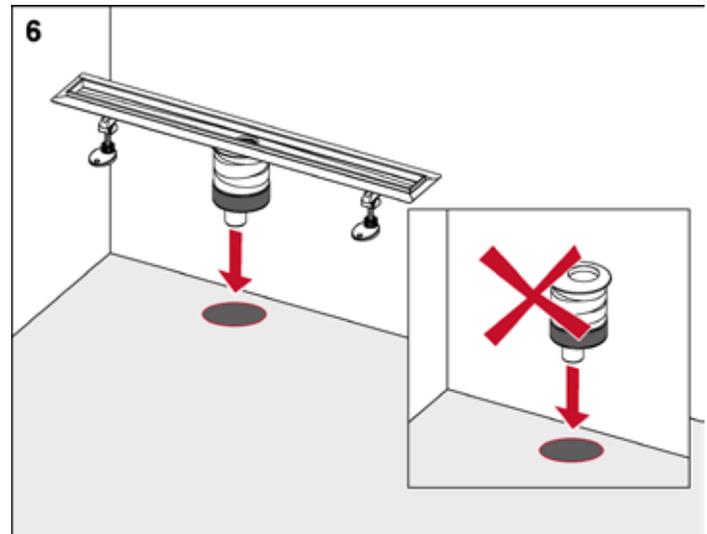
To connect the drain to the wastewater pipe, in the immediate area around the fire protection sleeve, use a PP-HT pipe DN 50 with a wall thickness of 2 mm (according to DIN EN 1451-1: 1999).



Secure the fire protection sleeve to the drain using the two screws supplied.

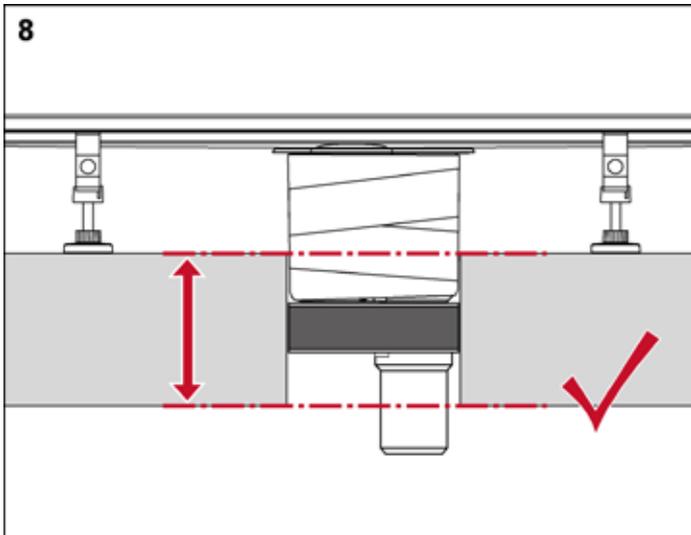
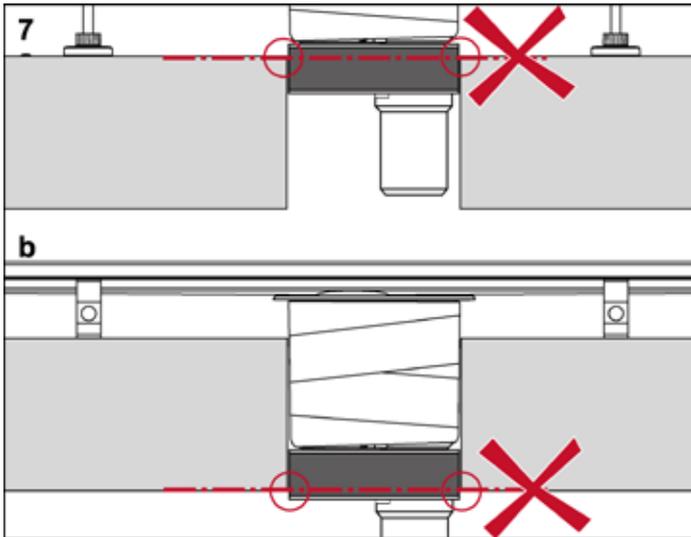


Place a spiral duct, or wrap adhesive binding or other sound insulation material around the drain body - not the sleeve.

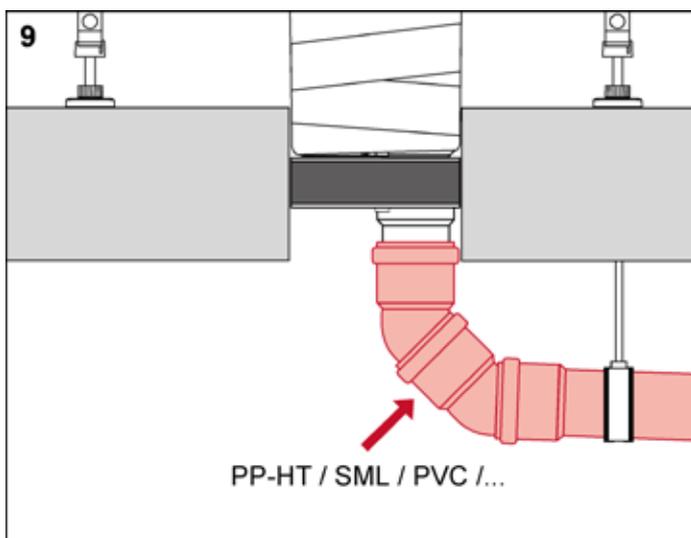


Place the drain on the channel body and move to the required position.

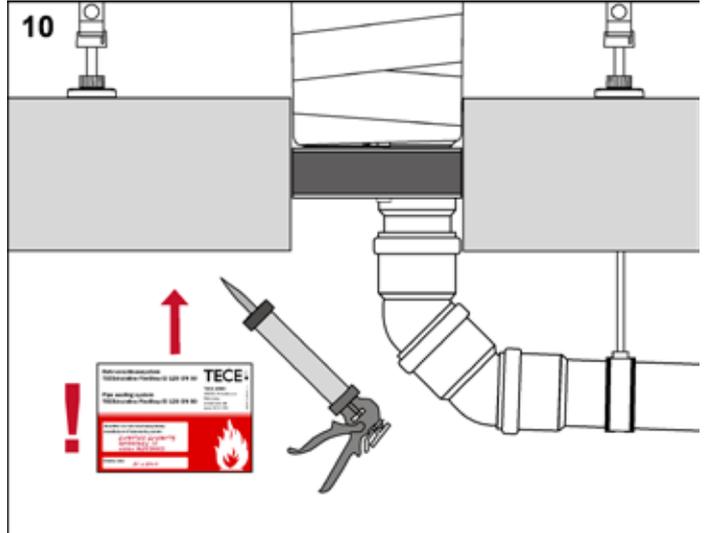
TECEdrainline – Installation instructions



The fire protection sleeve should not protrude above or below the concrete ceiling.



Transitions to other commercially available types of pipe and materials (made of PP-HT, SML, PVC, etc.) can be connected to the first PP-HT pipe.

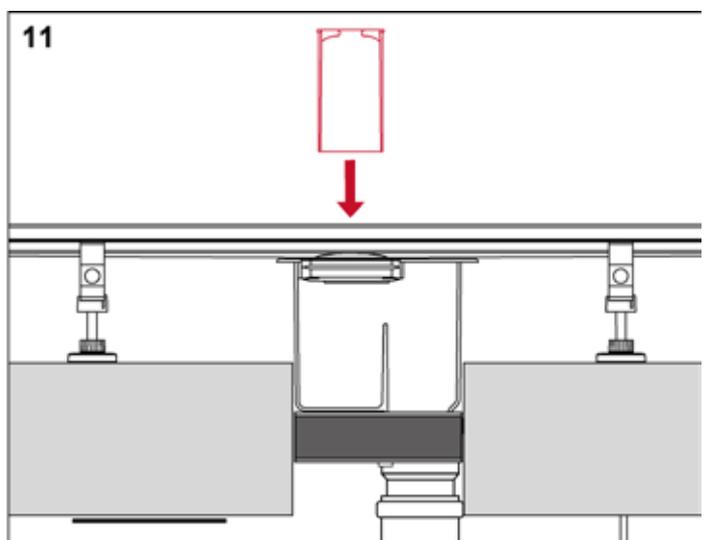


Attach a completed identification plate in a clearly visible and permanent manner – e.g. with silicone – next to the pipe closure system beneath the ceiling.

<p>Rohrverschlussystem TECEdrainline FireStop EI 120 DN 50</p> <p>Pipe sealing system TECEdrainline FireStop EI 120 DN 50</p> <p>Hersteller des Rohrverschlussystems/ manufacturer of pipe sealing system:</p> <p>Datum/date:</p>	<p>TECE</p> <p>TECE GmbH 48282 Emsdetten Germany info@tece.de www.tece.info</p> 
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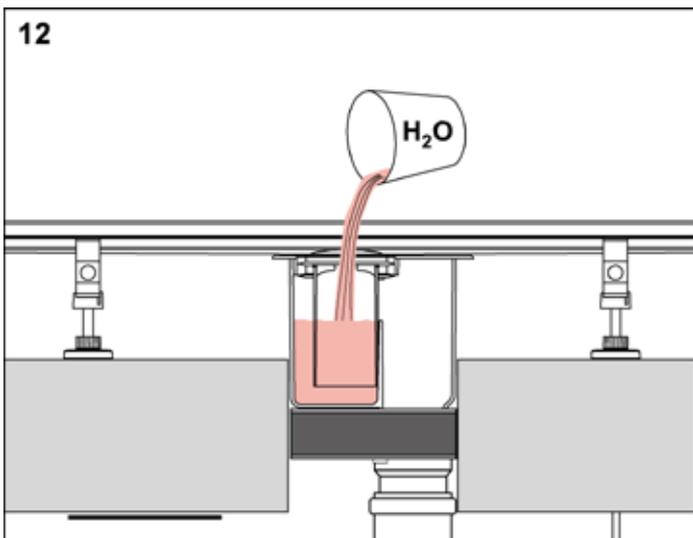
VP263 016 00 a

Enter the date on which the fire protection sleeve was installed next to the name of the fitter on the identification plate.

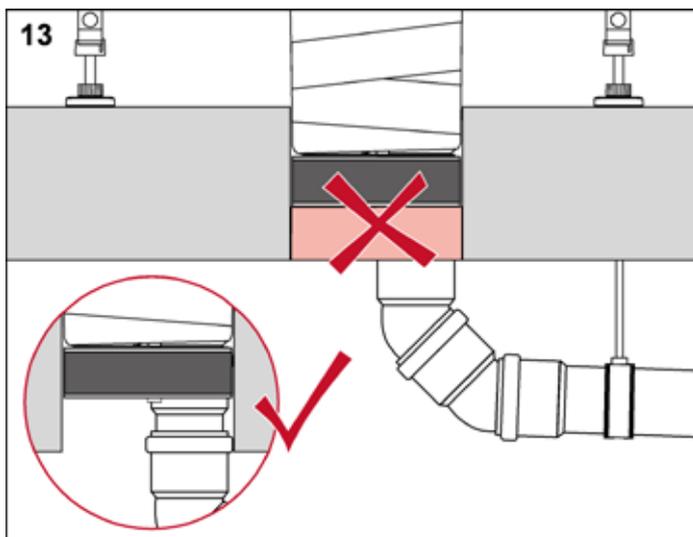


Insert the immersion pipe into the channel body.

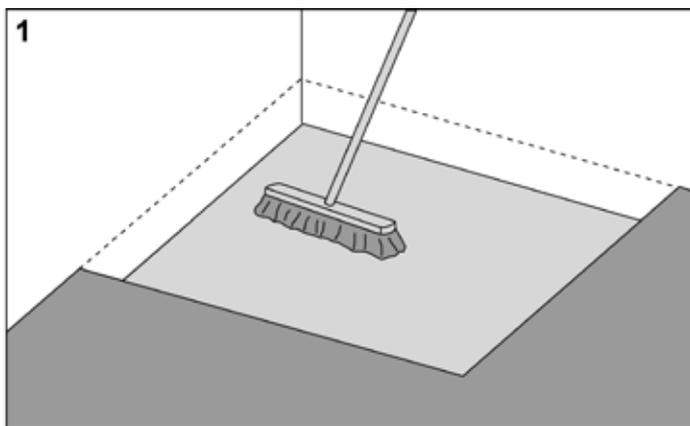
Installation instructions for sound insulation mat



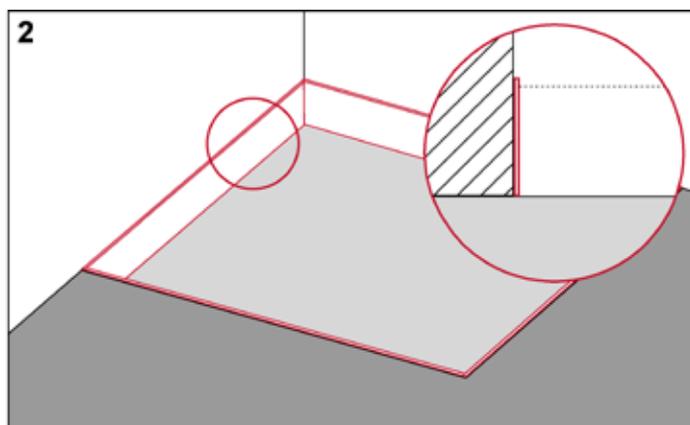
Fill the water trap to prevent penetration of flames and fumes.



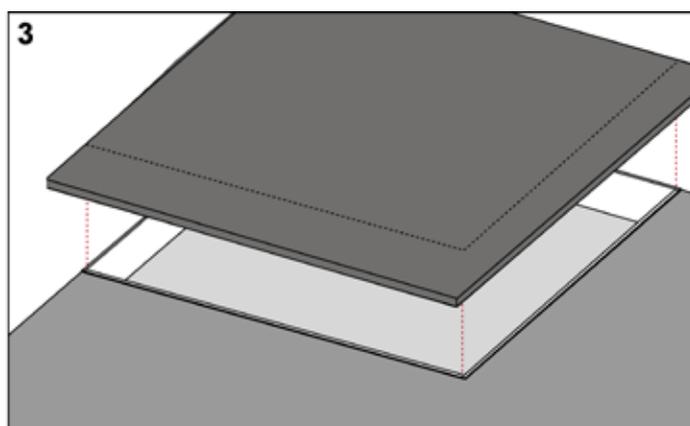
Important: The drilled hole under the fire protection sleeve must not be filled.



Clean the unfinished floor.

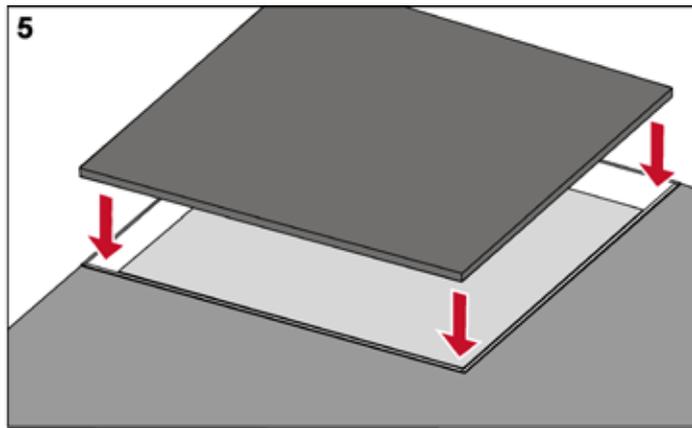
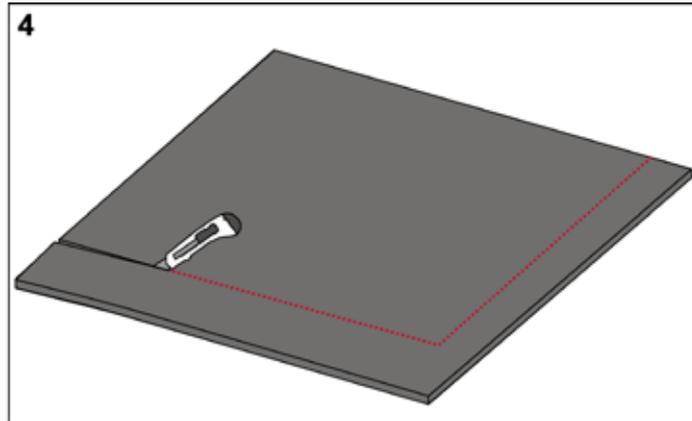


Apply the edge insulation strips along the wall and to the existing screed surfaces.

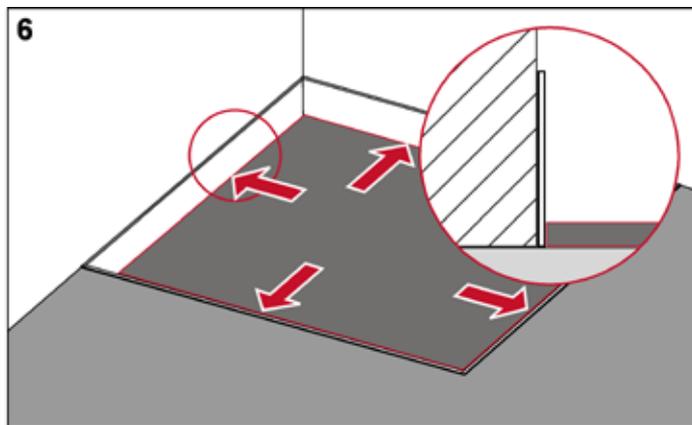


Transfer the required dimensions to the "Drainbase" sound insulation mat.

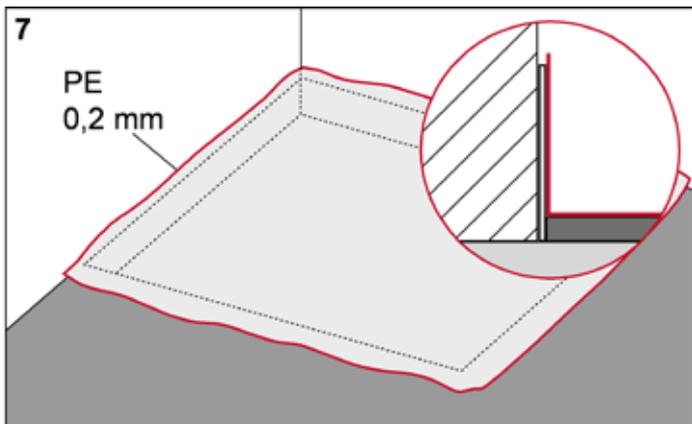
TECEdrainline – Installation instructions



Cut the sound insulation mat to size and lay in place.

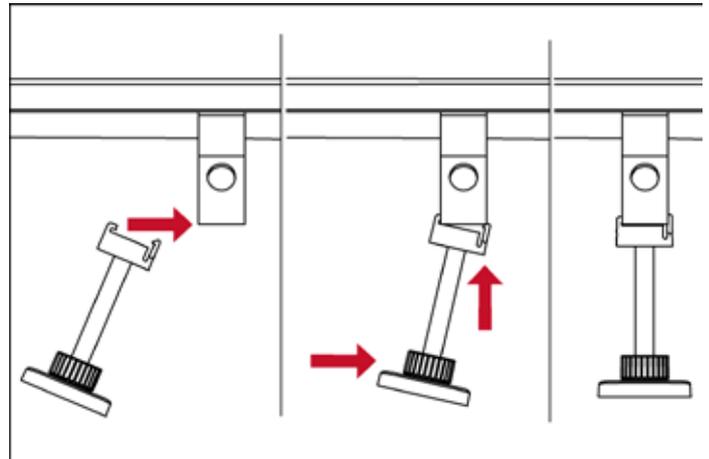


The sound-proofing mat should cover the whole floor surface.

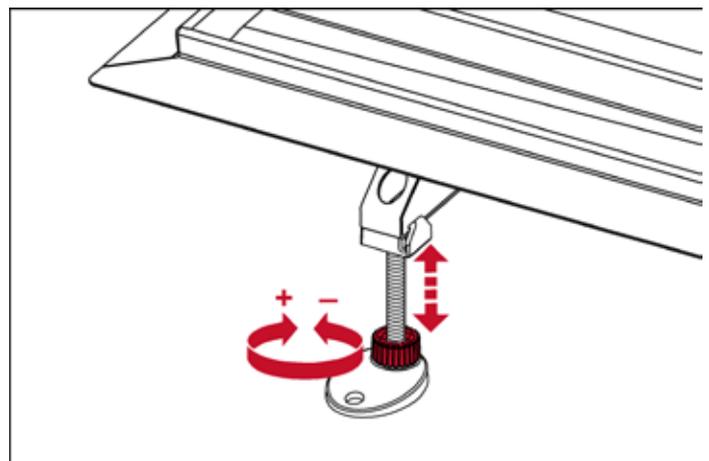


Lay out the PE film as shown.

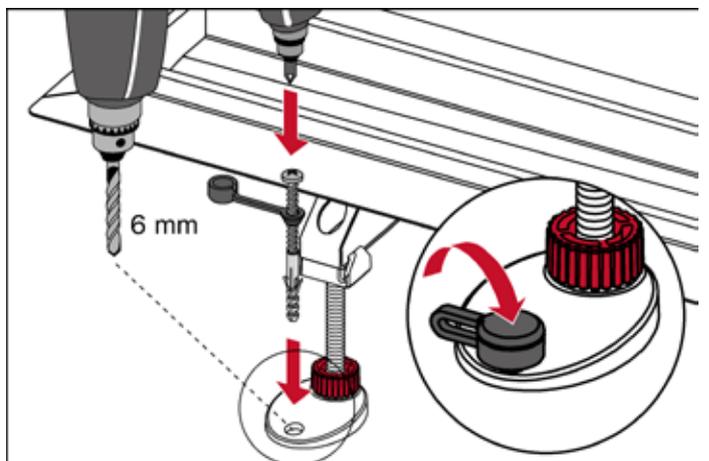
Installation instructions for TECEdrainline assembly feet



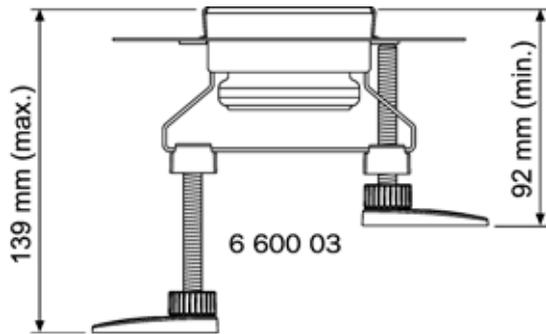
Hook the assembly feet in place, engage the clips and align them.



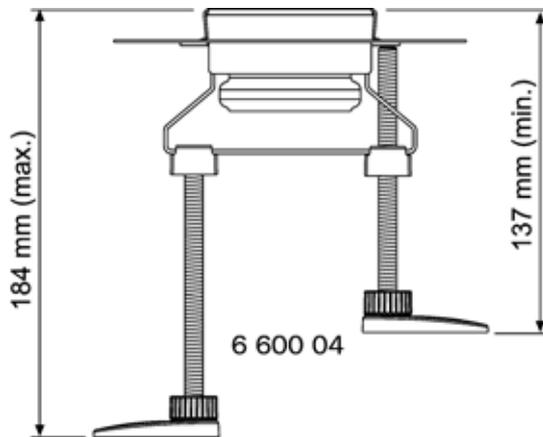
The height of the channel is set by turning the red adjusters on the feet. Check the alignment of the shower channel using a spirit level.



After alignment, the feet can be secured in the floor through the Drainbase sound-proofing mat. Then press the sound insulation caps onto the bolt heads. This will prevent a sound bridge from forming.



The adjustment range from the lower edge of the feet to the upper edge of the finished floor for item number 660003 is 92–139 mm.



The adjustment range from the lower edge of the feet to the upper edge of the finished floor for item number 660004 is 137-184 mm. When the “Max” drain is installed, these longer mounting feet must be used.

Special channels

The TECEdrainline range is so comprehensive that straight and angled channels from 700 mm to 1,500 mm (angled channels 900 to 1200 mm) are offered as standard. If the standard channels do not meet the requirements, special manufacture is possible – for the shower channels. Whether you require an exact length or two drains for an extremely high drainage capacity – special channels can help realise remarkable bathroom designs.

Please refer to our website www.tece.de for measuring and ordering.

Guidelines

DIN 1986: Drainage systems for buildings and property

- Part 3: Rules for operation and maintenance (2004)
- Part 4: Fields of application of sewage pipes and fittings of different materials (2011)
- Part 30: Maintenance (2012)

DIN 1986-100: Drainage systems for buildings and property/Provisions in conjunction with DIN EN 752 and DIN EN 12056 (2008)

DIN 18040 Planning guidelines Part 1: Publicly accessible buildings (2010)

DIN 18040 Planning guidelines Part 2: Dwellings (2011)

DIN 18195 Parts 1 to 10: Waterproofing of buildings (2009–2011)

DIN EN 12056, DIN 1986 and DIN EN 1610 comments: Buildings and drainage systems (2012)

DIN EN 1253: Gullies for buildings
Part 1: Trapped floor gullies with a water seal depth of at least 50 mm. (2015-03)

DIN 4109 (1989): Sound insulation in buildings; requirements and testing, amendment A1 (2001)

VDI 4100: Sound insulation between rooms in buildings
- Dwellings - Assessment and proposals for enhanced sound insulation between rooms (2012)

Model buildings regulations (MBO) (2002)

DIN 18195-1: Waterproofing of buildings (2017-07)

DIN 18534: Waterproofing for indoor applications
Part 1: Requirements and principles for design and execution

Part 3: Waterproofing with liquid-applied waterproofing materials in conjunction with tiles and paving (AIV-F) (2017-07)

Part 5: Waterproofing with waterproofing materials in sheet form in conjunction with tiles or paving (draft 2016-07)

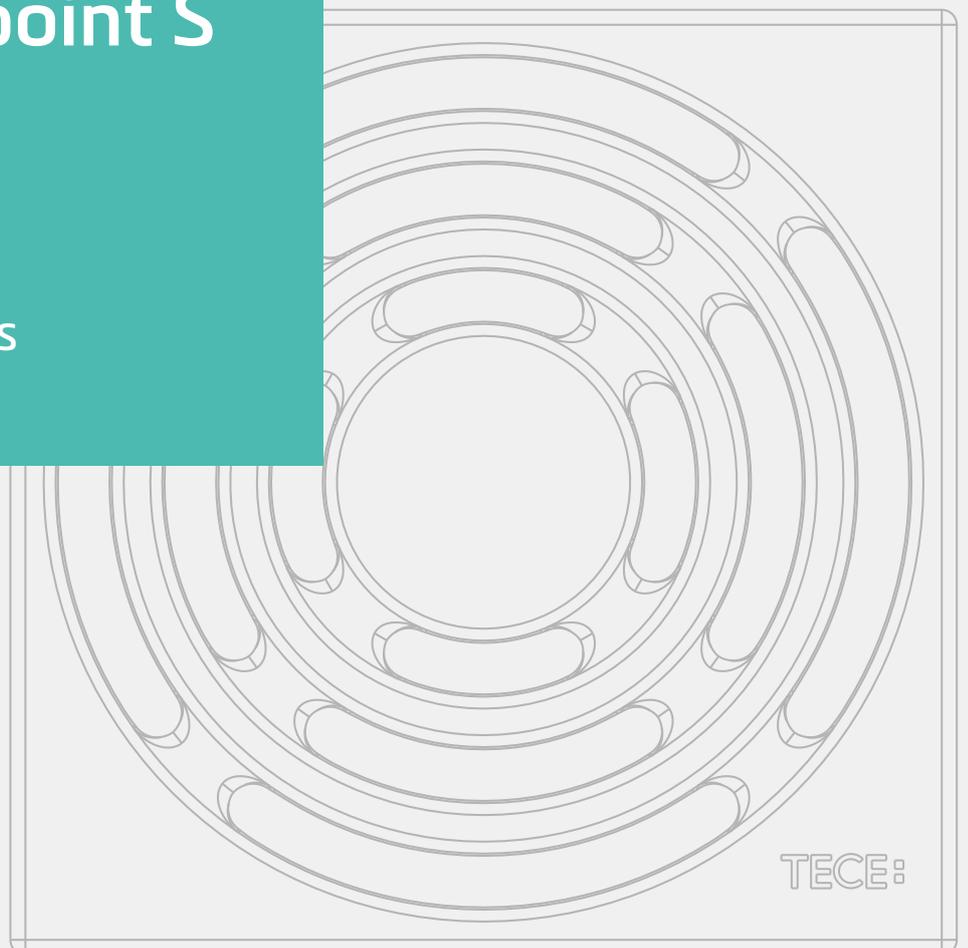
GIPS bulletin 5: Bathrooms and wet rooms in timber and dry wall construction (2006)



Drainage systems

TECEdrainpoint S

TECHNICAL GUIDELINES



Introduction	9-4
The most important product features	9-4
Planning	9-5
Sealing	9-5
Sealing materials	9-6
Floors and wall areas	9-7
Connecting composite seals to floor drains and to shower channels and profiles	9-7
Seal System – a certified composite seal	9-7
Drains	9-9
Loading capacity of grates	9-10
Barrier-free bathroom design	9-10
Fire protection	9-11
Installation	9-11
Build-up and incline	9-11
TECEdrainpoint S – Advantages	9-12
Installation examples	9-13
Range and technical data	9-14
Drain sets	9-14
Modular system	9-17
Drains	9-18
Fire protection set	9-19
Drain tops	9-20
Accessories	9-22
Installation instructions	9-26
Installation of drain with thin-bed sealing	9-26
Installation of drain with clamped flange sealing	9-29
Installation of drain without flange	9-33
Installation of the “frameless” tile base	9-34
Installing the “plate” tileable channel	9-35
Guidelines	9-37

TECEdrainpoint S – Introduction

Introduction

The standard for point drainage:
Innovation with a system – resistant, robust, universal.
For the first time, TECE is offering a completely newly developed and innovative drain range made of plastic.

The most important product features

The universal flange

Just one flange for all applications – as a result, both liquid and strip composite seals and clamped flange connections are possible.

The advantage: There is no longer any distinction between planning and ordering.

Direct thin-bed sealing without an extension piece

With the universal flange of the new TECEdrainpoint S drains, DN 50 – and now also DN 70 and DN 100 drains – can be installed directly in the thin-bed seal, without an additional raising element.

Universality

Regardless of whether you use DN 50 extra-flat or DN 100 vertical drains, there is now just one size for all extension pieces, raising elements and grate frames. Grates with dimensions 100 x 100 mm and 150 x 150 mm also fit all drains.

Always the right drain

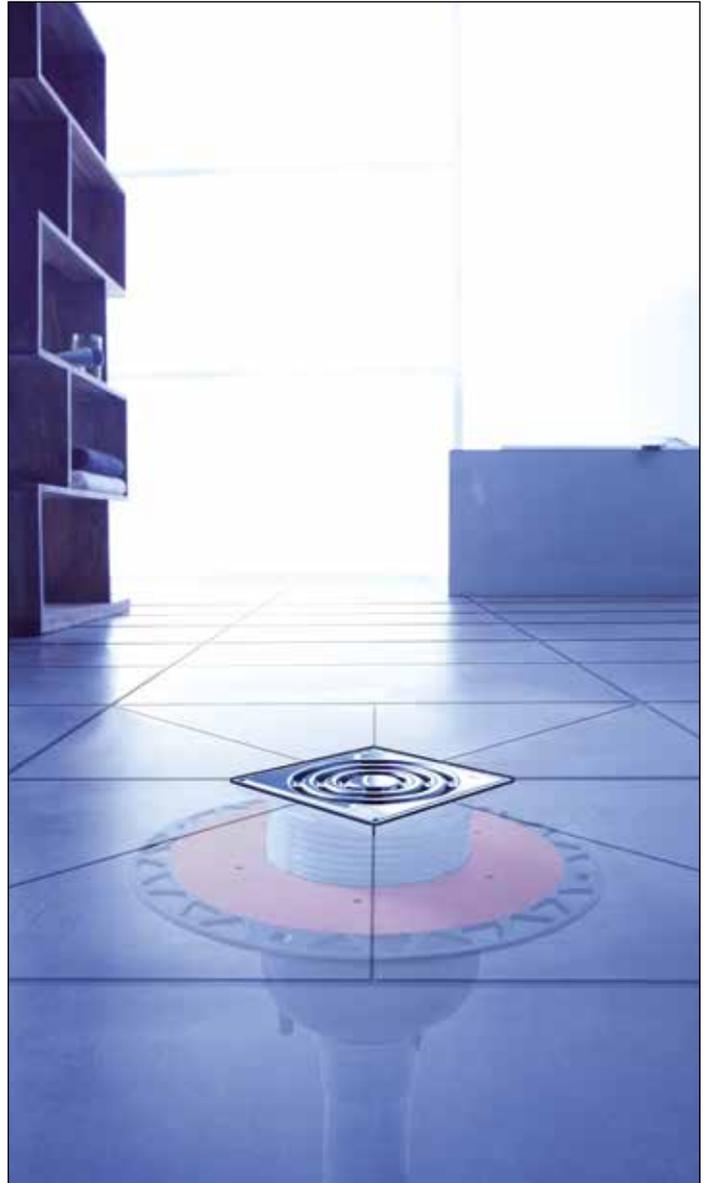
Whether just a low assembly height is available, or whether you need a high drainage capacity, you will always find the right drain in the TECEdrainpoint S range. For example, the TECEdrainpoint S DN 70 with an installation height of 98 mm is currently one of the flattest DN 70 floor drains available on the market.

Innovation

The removable, two-stage membrane odour trap reliably prevents unpleasant odours from escaping, and can work as a foam barrier if necessary.

Cleaning and maintenance

All odour traps can be removed at any time, including after installation.



Planning

Sealing

Components and structural elements are constantly subjected to moisture. In the interior area, many “wet and humid rooms” are affected by this: bathrooms, washrooms and kitchens in the private sector, commercial kitchens, washing facilities and production rooms in the commercial and industrial sector, and swimming pools, sports facilities and showers in the public sector. Moisture can penetrate into the components, causing structural alterations and changes in building chemicals, for example deterioration of thermal insulation or formation of mould. This can destroy the components and cause residents to develop health problems.

For this reason, the state of the Federal Republic of Germany has prescribed building regulations – the State Building Code – to protect components and structural elements against moisture and damp.

Adequate safeguard measures were originally regulated by DIN 18195, 1-10 “Waterproofing of buildings”. However, this did not contain any detailed specifications about composite seals currently in use today. So ZDB also published the “Composite sealing” bulletin.

A new series of standards has been in force since July 2017. Only part 1 remains from the previous DIN 18195 standard, and this only regulates the terms used for the new series of standards DIN 18531 - 18535. The waterproofing of indoor areas is regulated in this series of standards by standard DIN 18534.

DIN 18534 “Waterproofing for indoor applications” consists of the following parts:

- Part 1: Requirements and principles for design and execution
- Part 2: Waterproofing with waterproofing materials in sheet form
- Part 3: Waterproofing with liquid-applied waterproofing materials in conjunction with tiles and paving (AIV-F)
- Part 4: Waterproofing with mastic asphalt or asphalt mastic
- Part 5: Waterproofing with waterproofing materials in sheet form in conjunction with tiles and paving
- Part 6: Waterproofing with waterproofing materials in panel-shaped form in conjunction with tiles or paving

Parts 5 and 6 of DIN 18534 are currently still being drafted, the white paper for these parts will follow at a later stage.

Parts 1, 3 and 5 are relevant to the area of TECE drainage products.

In addition to the regulations mentioned, the product-specific TECE installation instructions should also be observed.

The main contents of the standards DIN 18534-1:2017-07 and DIN 18534-3:2017-07 are described and explained below.

TECEdrainpoint S – Planning

Water action classes according to DIN 18534-1

In DIN 18534, the “moisture stress classes” known from the ZDB “Composite seals” bulletin have been replaced by “water action classes”. Water action classes can be broken down as follows:

Water action classes	Water action	Stress	Application examples ^{***}	Waterproofing materials (DIN 18534-3, E DIN 18534-5)
W0-I	low	Areas exposed to infrequent splashing	<ul style="list-style-type: none"> • Wall areas above washstands in bathrooms and sinks in domestic kitchens • Floor areas without drainage in domestic spaces, e.g. in kitchens, utility rooms, guest toilets 	<ul style="list-style-type: none"> • Polymer dispersions (wall and floor) • Mineral sealing slurries (crack-bridging) • Reaction resin • Sheet-form waterproofing materials in conjunction with tiles and paving (E DIN 18534-5)
W1-I	moderate	Areas exposed to frequent splashing or to infrequent action of domestic water, without higher loads due to water accumulation	<ul style="list-style-type: none"> • Walls above bathtubs and in showers in bathrooms • Floor areas with drainage in domestic spaces • Floor areas with/without drainage in bathrooms 	<ul style="list-style-type: none"> • Polymer dispersions (wall and floor) • Mineral sealing slurries (crack-bridging) • Reaction resin • Sheet-form waterproofing materials in conjunction with tiles and paving (E DIN 18534-5)
W2-I	high	Areas exposed to frequent splashing and/or to the action of domestic water, above all on the floor, occasionally through water accumulation	<ul style="list-style-type: none"> • Wall areas of showers in sports/commercial facilities^{***} • Floor areas with drains and/or channels • Floor areas in spaces with walk-in showers • Wall and floor areas in sports/commercial facilities^{***} 	<ul style="list-style-type: none"> • Polymer dispersions (wall) • Mineral sealing slurries (crack-bridging) • Reaction resin • Sheet-form waterproofing materials in conjunction with tiles and paving (E DIN 18534-5)
W3-I	extremely high	Areas exposed to regular or prolonged splashing and/or to the action of domestic water and/or water from intensive cleaning processes, intensified due to water accumulation	<ul style="list-style-type: none"> • Areas around swimming pools • Areas in showers and shower facilities in sports/commercial facilities^{***} • Areas in commercial facilities (commercial kitchens, laundrettes, breweries, etc.) 	<ul style="list-style-type: none"> • Mineral sealing slurries (crack-bridging) • Reaction resin

W = water action class

0-3 = grade (low, moderate, high, very high)

I = indoors

* It may be appropriate to also assign the respectively higher water action class to adjoining areas which are not protected as they are located at a sufficient distance away or are not protected by structural measures (e.g. shower enclosures).

** Application scenarios can be assigned different water action classes depending on the anticipated water action.

*** Sealing surfaces, if applicable, with additional chemical action pursuant to 5.4 (DIN 18534-1)

Sealing materials

Different compound sealing materials comply with the standard, depending on the water action class. Compound sealing materials can be divided into two areas: liquid-applied sealing materials and waterproofing materials in sheet form.

Liquid-applied sealing materials include polymer dispersions, crack-bridging mineral sealing slurries and reaction resins. Polymer dispersions are in the lowest classification level. They may be used in classes W0-I and W1-I for wall and floor areas, and in class W2-I for wall areas only. Products in the next class up, are crack-bridging mineral

sealing slurries. These can be used in all classes, however in class W3-I only if no additional chemical, mechanical or technical effects can arise. Reaction resins which may be used without restriction in all water action classes are the highest graded products.

Waterproofing materials in sheet form are generally comprised of a waterproof plastic coating, mostly PP, PE or TPE materials, laminated on both sides with a non-woven fabric to guarantee bonding with the adhesive. According to E DIN 18534-5:2016-06, these sheet-form waterproofing materials can be used in conjunction with tiles and

paving in classes W0-I to W2-I for wall and floor areas not exposed to high mechanical action.

Composite sealing products require either a European Technical Assessment (ETA) on the basis of ETAG 022, or a general test certificate (abP) on the basis of PG-AIV-F or PG-AIV-B.

Floors and wall areas

In addition to sealing materials, DIN 18534-1 also regulates suitable substrates for floors and wall areas, according to the water action class. In water action classes W0-I and W1-I, moisture-sensitive substrates are permitted under the composite seal. These are, for example, calcium sulphate-bound screeds or gypsum wall panels. In classes W2-I and W3-I, only substrates which are insensitive to moisture are permitted. These are mostly substrates on a cement-based compound such as concrete, cement screed or fibre cement boards.

Connecting composite seals to floor drains and to shower channels and profiles

Floor drains, shower channels and profiles represent penetrations in the surface sealing (composite seal). Special attention is required to ensure that these constructional details remain permanently waterproof. Planners must coordinate the work carried out by the different trades (fitters, screed and tile layers). This includes realistically specifying the water action classes, and deciding on the right materials and products to use for substrates, the composite seal, drains and channels. Then there is the constructive design which must be flawlessly implemented.

Particularly the combination of the composite seal with drain/channel and the required sealing sleeve/sealing tape and adhesive must function perfectly together in the respective combination. As this perfect function in the respective combination is so important, TECE offers its drainage products greater security and clarity with its Seal System.

Seal System – a certified composite seal



The Seal System project was brought into being to change the confusing and uncertain situation regarding the use of composite seals on floor drains and shower channels.

To this end, the Seal System sealing tape and Seal System

sealing sleeve were developed as a first step. They form the connection elements between the composite seal and the drainage solution (channel/floor drain).

Extremely comprehensive combination tests were then carried out on composite seal products with TECEdrainline shower channels and TECEdrainpoint S floor drains. The functional safety (tightness) of the connection of the composite seal with the TECE drainage product was tested.

The tests were carried out by KIWA TBU, an independent testing institution, based on the testing principles required by the building inspectorate (PG-AIV-F/-B) in Germany.

More than 50 composite sealing products from well-known manufacturers were successfully tested and certified.

The tested and certified safety can be recognised from the Seal System quality seal. “Seal System – certified composite seal” stands for the tightness of the connection of drainage solutions and composite seals, and for a certificate which brings designers, tradespeople and end users security and clarity.

The currently certified composite seal products are shown in the table on the following page.

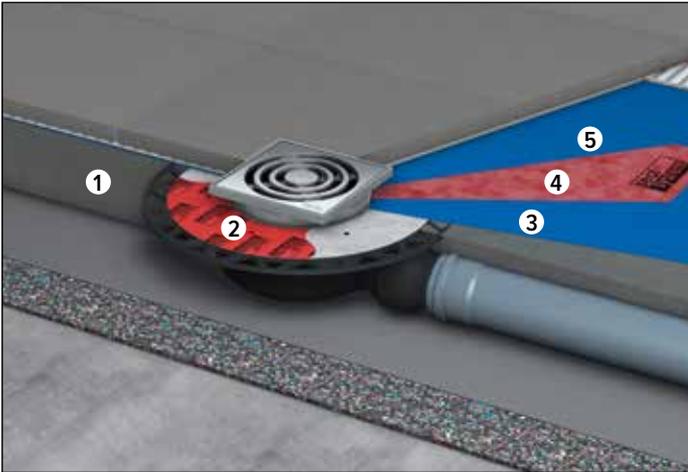
Seal System is available for the TECEdrainline shower channel, the TECEdrainprofile shower profile and for the TECEdrainpoint S plastic drain range. Information about the components and installation of other TECE products can be found in the corresponding chapters.

The TECEdrainpoint S Seal System consists of the following components:

1. TECEdrainpoint S drain
2. Seal System sealing sleeve
3. one of the 50 tested and certified sealing products

TECEdrainpoint S – Planning

Example of one Seal System seal of a TECEdrainpoint S drain with a certified sealing product.



- 1 screed
- 2 universal flange protective film
- 3 first coat of composite seal
- 4 Seal System sealing sleeve
- 5 second coat of composite seal

A certificate is available for each composite seal product which has passed the test (www.sealsystem.net).



Seal System certificate (example)

The TECEdrainline shower channels and TECEdrainpoint S floor drains are identified with the Seal System seal on the packaging, and each product comes with a short description of the Seal System and a list of all certified composite seal products. This also makes it simple for contractors at the site to choose a safe and certified composite seal product.

Visit www.sealsystem.net, where you can find all certificates for successfully tested composite seal products, and information about the Seal System.

Manufacturer	Seal System certified product
Ardex GmbH	Ardex S 1-K
	Ardex S 7
	Ardex 8 + 9
Bostik GmbH (Ardal tile technology)	Ardal Flexdicht
	Ardalon 2K plus
Botament Systembaustoffe GmbH & Co. KG	Botact DF 9
	Botact MD 1
	Botact MD 28
Fermacell GmbH	Fermacell liquid foil
Henkel AG & Co. KGaA (Ceresit)	Ceresit CL 51
	Ceresit CL 50
	Ceresit CR 72
Hermann Otto GmbH (Otto Chemie)	Ottoflex liquid foil
	Ottoflex slurry seal
Kemper System GmbH & Co. KG	Kemperol 022
Kiesel Bauchemie GmbH & Co. KG	Okamul DF
	Servoflex DMS 1K Plus SuperTec
	Servoflex DMS 1K – fast setting SuperTec
Mapei GmbH	Mapegum WPS
	Mapelastic
	Monolastic Ultra
PCI Augsburg GmbH	PCI Lastogum
	PCI Seccoral 1K
	PCI Pecilastic W
Ramsauer GmbH & Co. KG	Flex sealing sheet
	Flex sealing slurry
	Flex 2K sealing slurry
Rywa GmbH & Co. KG	Rywalit Lastodicht
	Rywalit DS 99 X
	Rywalit DS 01 X
	Rywalit sealing foil sealing membrane

Manufacturer	Seal System certified product
Saint Gobain Weber GmbH	Weber.tec 822, liquid membrane
	Weber.tec 824, flexible sealing slurry 1-K
	Weber.tec Superflex D2 tiles, flexible sealing slurry 2-K
Sakret Trockenbaustoffe Europa GmbH & Co. KG	Alternative seal AA
	Property waterproofing
Schomburg GmbH	Saniflex
	Aquaфин 1K flex
	Aquaфин RS 300
	Aquaфин 2K
	Aquaфин 2K/M
Schönox GmbH	Schönox HA
	Schönox 2K DS Rapid
Sopro Bauchemie GmbH	Sopro FDF
	Sopro DSF 423
	Sopro DSF 523
	Sopro DSF 623
	Sopro TDS 823
	Sopro AEB 640

Seal System tested and certified composite sealing products

Drains

The technical requirements for drains for buildings are regulated in DIN EN 1253. Among other things, the standard defines specifications for minimum drainage capacities, water seal depths for odour traps, and loading capacities for grates.

Drainage capacities and odour traps

Discharge values for drains with one or more inlets are specified as follows in section 4.8.1 of DIN EN 1253-1:

Nominal value of outflow nozzles		Floor drains	
DN / OD	DN / ID	Flow values	Water level a
32	30	0.4 l/s	20 mm
40	40	0.6 l/s	20 mm
50	50	0.8 l/s	20 mm
75	70	0.8 l/s	20 mm
110	100	1.4 l/s	20 mm

Drainage capacity (inflow over grating) – minimum discharge value for drains

Odour traps should prevent channel gases from entering the building. To this end, DIN EN 1253 calls for odour traps with a water seal depth of at least 50 mm. An odour trap may only be omitted in certain cases in outdoor areas. Adhering to the required drainage capacity and water seal depth entails certain constructive installation heights for floor drains.

The necessary floor projection heights, as is the case with most old properties, are often not available. The TECE range disposes of flatter drains for such cases. The parties involved in the project should draw up written agreements with regard to its use.

TECEdrainpoint S – Planning

Loading capacity of grates

Drains, drain tops and grates must be designed so that they can withstand the expected loads (including traffic for instance). These classifications for installation inside buildings are described in DIN EN 1253-1.

Load class	Max. permitted load	Application area/site
H 1.5	< 150 kg (1.5 kN)	Areas which are not expected to be loaded.
K 3	< 300 kg (3 kN)	Areas without vehicle traffic such as flats, commercial buildings and certain public buildings. For example, bathrooms in dwellings, hotels, retirement homes, schools, swimming pools, public washing and showering facilities, balconies, recessed balconies, patios and green roofs.
L 15	< 1.5 t (15 kN)	Areas exposed to light vehicle traffic, commercially used areas and public areas.

Loading of grates according to DIN EN 1253-1

The responsibility for selecting the suitable class lies with the designer. In case of doubt, the higher load class should always be chosen.

Barrier-free bathroom design

Demographic changes have led to an increased demand for barrier-free homes. A disability, an accident or growing older – there are many reasons why people can be limited in their mobility or become dependant on a wheelchair.

It is important for them that public buildings, and especially their own four walls, are equipped so that they can move around inside them without any problems. The technical term for this is “barrier-free”. This requires sufficiently wide doors, no thresholds or bumps, no steps and a walk-in shower. The TECEdrainline makes a life without bumps and steps possible in the shower area. The floor-level shower channel makes it easier to get into the shower zone. When planning a barrier-free bathroom, the specifications of DIN 18040-2 must be complied with.

DIN 18040-2:

DIN 18040-2 distinguishes between two types of requirements made upon buildings. On the one hand, barrier-free dwellings, and on the other, barrier-free, dwellings which can be used by wheel-chairs users without any restrictions. The second category is identified by a large **R** in bold type.

General:

- In dwellings with several bathrooms, at least one bathroom must be barrier-free.
- Fittings should be designed as a single-lever, or touch-free. In the case of touch-free fittings, a temperature lim-

iter must be provided. The water discharge temperature should be limited in this case to 45 °C.

Movement areas:

A movement area must be designed in front of each of the items of sanitary equipment such as toilet bowls, wash-stands, baths and in the shower zone. A minimum area of 1.20 m x 1.20 m is sufficient for this (**R**: 1.50 m x 1.50 m).

Movement areas may overlay one another.

Shower zones:

Shower zones must be configured in such a way that they can be used barrier-free, e.g. also with a walking frame or wheelchair.

This is achieved by

- The layout of the bathroom on the same level as the adjoining floor area and a maximum lowering of 2 cm; where applicable, any transition elements should preferably be formed as inclined surfaces;
- Slip-proof floor coverings in the shower zone (in accordance with GUV-I 8527 at least rating group B);
- (**R**) the facility to retrofit a folding shower seat, with a seat height from 46 cm to 48 cm;
- (**R**) the facility to retrofit fold-up safety support arms both sides of the folding shower seat, the top edge of which is 28 cm above the height of the seat.)

The surface of the shower zone can be included in the movement areas of the bathroom if

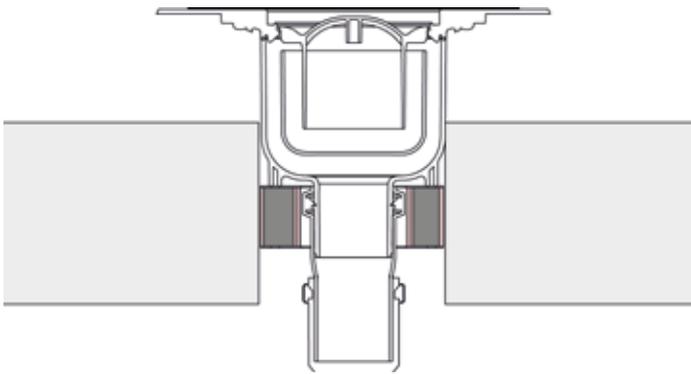
- the transition to the shower area is designed level with the floor;
- the gradient required for drainage is maximum 2 %.

Fire protection

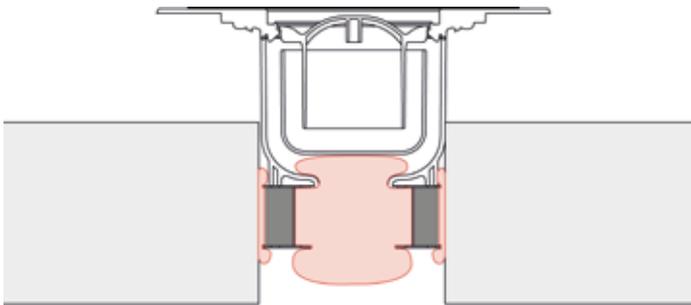
FireStop fire protection set for vertical drain DN 50

With the FireStop fire protection set, TECE is offering a safe and innovative fire protection solution up to fire resistance class EI 120 in accordance with DIN EN 13501-2:2007 and A1:2009.

Inside the fire protection sleeve there are special gypsum plates fortified with additives. On the outside and in the nozzle area there are adhesive strips made of intumescent material based on expandable graphite.



As temperatures rise during a fire, this material foams up to many times its original form. This causes the remaining annular gap towards the core hole on the outside of the fire protection sleeve to close.



In the socket area, the outflow nozzle including the pushed-on HT pipe sleeve becomes crushed.

Note:

The use of an HT pipe as a connection to the drain is mandatory, otherwise partitioning in the event of a fire cannot be guaranteed.

The water seal in the outflow (trap) ensures that no smoke or gas can escape into the room being protected. Together, this creates a tested, highly fire-resistant pipe closure system (or firewall).

The usual mortar mix/filling of the remainder of the hole is not required with the TECE fire protection set.

Installation

Various points must be taken into account when planning a floor drain. Firstly, the question arises as to its purpose: Is the drain intended to be used in the bathroom as a shower drain or as an emergency/additional drain? Is the drain intended to be used as a cellar drain or outdoors as a patio drain? Depending on the application, there are, of course, special requirements such as sealing, fire protection requirements, protection from drying out and protection from ice formation.

In addition to these basic requirements, certain other design-related points must also be considered. These could be points such as positioning, installation heights, drainage capacity or incline (both of the drain line and of the screed or rather the floor covering).

Build-up and incline

For a floor drain to work smoothly, achieving the right incline is a fundamental prerequisite. Regardless of the direction, the incline must always lead to the drain and must be at least 1 % (1 % corresponds to 1 cm/m). This is easiest to implement if the area to be drained is relatively small, and the drain is in the centre of this area. In this case, it is sufficient if the tiles are evenly cut and this continues from the four corners of the drain to the area to be drained. This central position can also be regarded as standard in bathroom drainage.

However, the situation becomes more problematic when the shower area is not in a central position, or when the area to be drained is larger, or does not have a simple geometric shape. A decentralised position in a small area can be tackled by adapting the tile cutting, however, in the case of larger areas, this is often no longer sufficient and the situation can only be resolved by using several drains. However, in the process, careful thought must be given when deciding which area will be drained by which drain, and when ensuring that there will be no “dead spaces” where water could remain standing.

TECEdrainpoint S – Advantages

TECEdrainpoint S – Advantages

Modular system

The TECEdrainpoint S range has a completely modular design. This small yet clearly organised range is suitable for innumerable areas of application. You can customise your “own” drain set out of the individual modular components. Choose from drains, drain tops, grates and accessories to meet your requirements. Everything fits together and can be combined any way you wish.

Universal flange

TECEdrainpoint S plastic drains are equipped with a universal flange. The flange is suitable for both liquid and strip composite seals and also for sealing with a clamped flange connection.

Therefore, the range is compact and easy to mount. Regardless which installation situation or sealing is required – the right drain is always available.

Hygiene

The odour trap on TECEdrainpoint S drains can be easily removed at any time. It consists of an inlet part and a beaker and can therefore be taken apart and cleaned. Any dirt that has entered the drain is therefore caught in the odour trap beaker and can be removed easily.

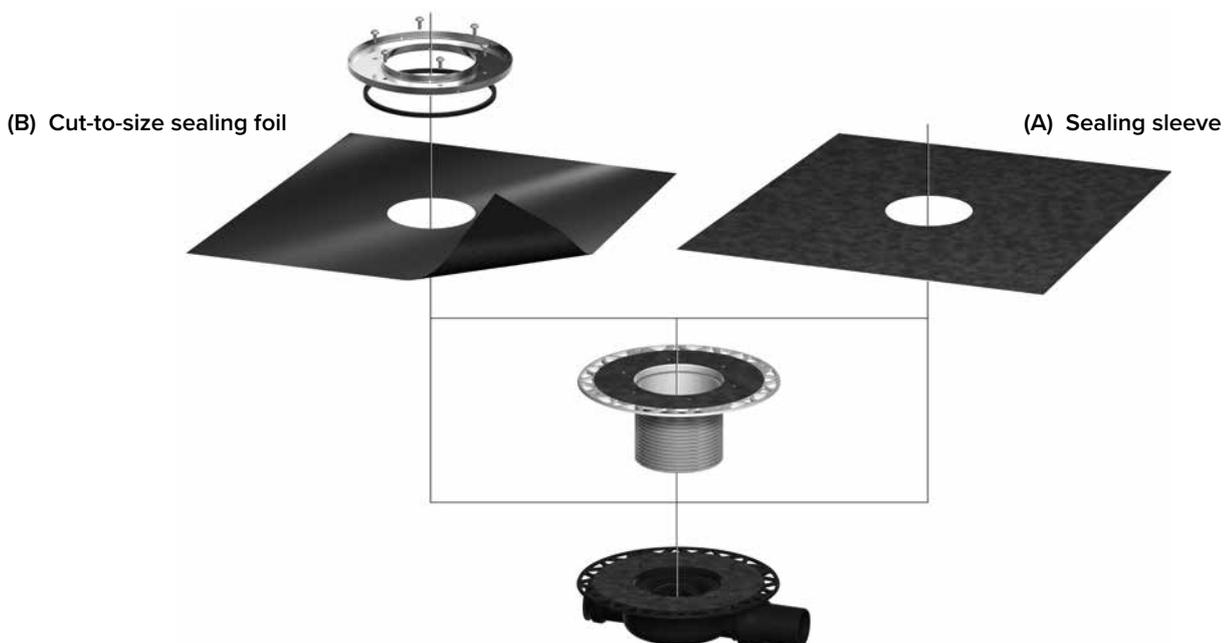
Membrane odour trap

Another innovation is the two-stage membrane odour trap for retrofitting. This has two functions: Firstly, it has a membrane that opens as soon as water runs into the drain, and closes again afterwards to retain any odours. Secondly, it has a low water seal and is therefore twice as reliable. The membrane odour trap can also be used as a foam barrier, e.g. in rooms with multiple showers, or as a vermin barrier in patio drains without a beaker.

Sealing

Two sealing methods are possible (see also figure below) with TECEdrainpoint S plastic drains:

- (A) Liquid or strip composite seal using the Seal System sealing sleeve (PE/PP) or
- (B) Connection of bitumen strips, for example, with cut-to-size sealing foil (EPDM) as a clamped flange connection



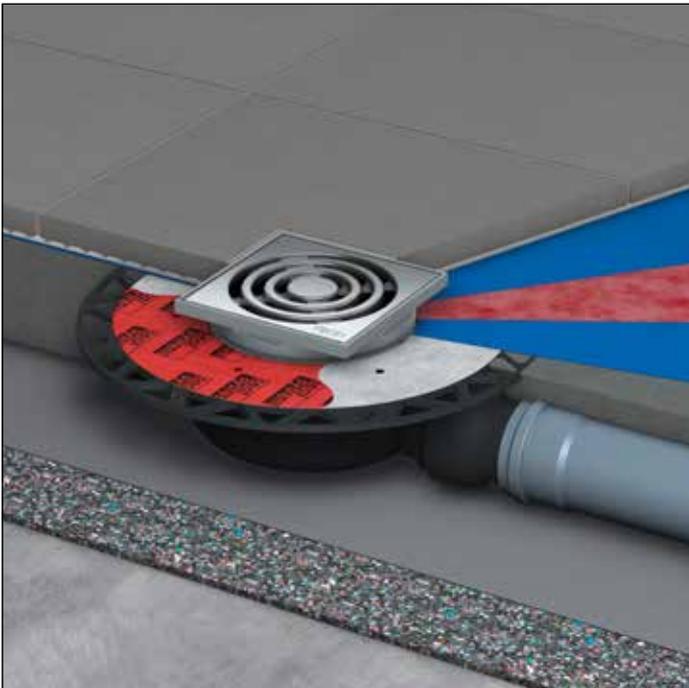
Installation examples

TECEdrainpoint plastic drains bring together several application scenarios in a single drain system. They can be used as bathroom, floor, patio or cellar drains.

Suitable drain bodies, drain tops and accessories are available for each of these scenarios.

Shower drain

In principle, a shower drain is incorporated into the screed. For this, it is fixed to the bare floor and connected to the wastewater pipe, then the screed is applied in such a way that it completely encompasses the drain. When the screed dries, the floor area and drain must be sealed; in the case of floor-level shower areas without a fixed shower screen, the entire room must also be sealed. After sealing, the tile or floor covering can be applied.



Installation in the bathroom/shower area with a composite seal

Patio drain

A floor drain to be installed on a patio, balcony or in another outdoor area should not have an odour trap with a water seal. Otherwise, during the winter, there is the risk that the water in the drain could cause frost damage. With TECEdrainpoint S plastic drains, there is the option of using a membrane odour trap without a beaker. This provides protection against any channel gases while at the same time acting as a vermin barrier.

Installation in the cellar

In most cases, a cellar drain is used to drain away water which is not planned or of a regular nature. Such drains are mostly located near technical devices such as in utility rooms or boiler rooms. They are intended to drain away water which, for example, leaks out of these devices in the event of damage.

As tiles are rarely used in cellars, cellar drains are generally not sealed with a composite seal. A cellar seal is generally implemented according to DIN 18195 or without any seal at all.

If the cellar is provided with building waterproofing in accordance with DIN 18195, it makes sense, of course, to incorporate the cellar drain into this sealing layer. In this case, the drain should already be embedded in the unfinished floor. Cellar waterproofing is generally achieved by applying bitumen membrane sheets which can be welded to the unfinished floor with a torch. EPDM sealing foil is used to connect the TECEdrainpoint S cellar drain to such a membrane sheet. It is first attached to the floor drain using the compression ring set. The sealing sheet is then shaped to fit the membrane sheet with a hot-air fan.



Installation in the cellar area, sealing using clamped flange sealing

TECEdrainline S – Range and technical data

Range and technical data

The TECEdrainpoint S plastic drain range has a modular design and consists of six complete drains, a drain modular system and various accessories.

Drain sets

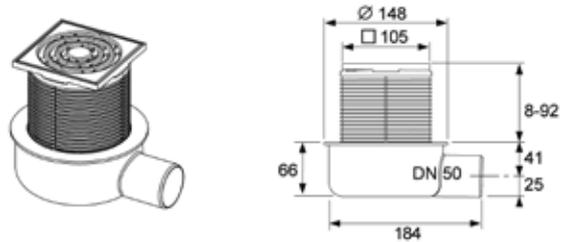
The six drain sets each consist of a drain base body, a drain top and a cover. All drain sets have a drain socket in nominal width DN 50 drains. There are five horizontal versions (3 x extra-flat and 2 x standard) and one vertical version.



The six TECEdrainpoint S drain sets

Drain set S 50

Floor drain set, horizontal, extra-flat DN 50



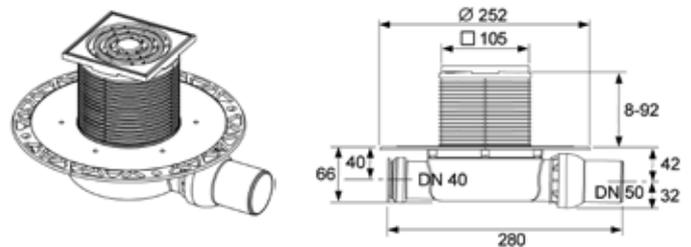
Consisting of:

- Drain body DN 50, horizontal, extra-flat, made of plastic (PP)
- With retaining edge
- With removable odour trap
- Drainage capacity 0.81–1.12 l/s*
- Reduced water seal depth = 30 mm
- Drain top with grate frame made of plastic (ABS) and O-ring seal
- TECEdrainpoint S design grate made of drawn stainless steel, material 1.4301 (304), dimension 100 x 100 mm, polished surface, load class K3 (load of up to 300 kg)

Order no. 3601050

Drain set S 110

Floor drain set, horizontal, extra-flat DN 50



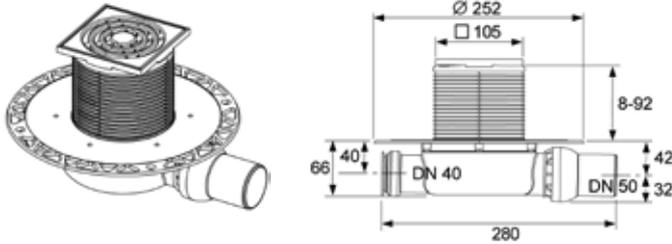
Consisting of:

- Drain body DN 50, horizontal, extra-flat with universal flange, made of plastic (PP)
- With universal flange to connect composite seals or clamped flange connections
- With ball joint
- With lateral inflow DN 40 incl. closure plug
- With removable odour trap
- Drainage capacity 0.61–1.12 l/s*
- Reduced water seal depth = 30 mm
- Drain top with grate frame made of plastic (ABS) and O-ring seal
- TECEdrainpoint S design grate made of drawn stainless steel, material 1.4301 (304), dimension 100 x 100 mm, polished surface, load class K3 (load of up to 300 kg)

Order no. 3601100

Drain set S 112

Floor drain set, horizontal, extra-flat with universal flange, DN 50, stainless steel grate frame with stainless steel grate and membrane odour trap



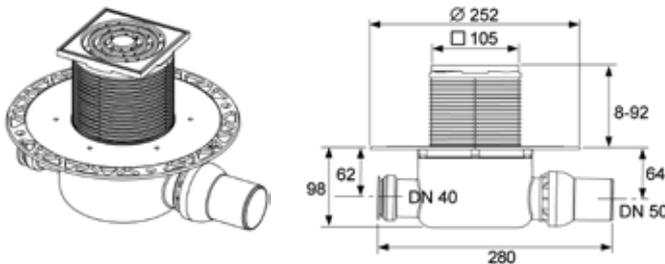
Consisting of:

- Drain body DN 50, horizontal, extra-flat, made of plastic (PP)
- With universal flange to connect composite seals or clamped flange connections
- With ball joint
- With lateral inflow DN 40 incl. closure plug
- with removable membrane odour trap
- Drainage capacity 0.62-0.98 l/s*
- reduced water seal depth = 20 mm
- Drain top made of plastic (ABS) and O-ring seal
- Grate frame made of drawn stainless steel, material 1.4301 (304), for grate dimension 100 x 100 mm
- TECEdrainpoint S design grate made of drawn stainless steel, material 1.4301 (304), dimension 100 x 100 mm, polished surface, load class K3 (load of up to 300 kg)

Order no. 3601102

Drain set S 120

Floor drain set, horizontal, standard with universal flange, DN 50, tested to DIN EN 1253



Consisting of:

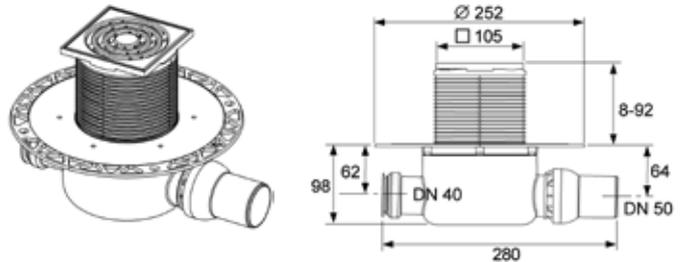
- Drain body DN 50, horizontal, standard, made of plastic (PP)
- with universal flange to connect composite seals or clamped flange connections
- with ball joint
- with lateral inflow DN 40 incl. closure plug
- with removable odour trap
- Drainage capacity 0.8-1.17 l/s*
- Water seal depth = 50 mm in keeping with standard DIN EN 1253

* Minimum drainage capacity with maximally shortened drain top; maximum drainage capacity with unshortened drain top

- Drain top with grate frame made of plastic (ABS) and O-ring seal
 - TECEdrainpoint S design grate made of drawn stainless steel, material 1.4301 (304), dimension 100 x 100 mm, polished surface, load class K3 (load of up to 300 kg)
- Order no. 3601200

Drain set S 122

Floor drain set, horizontal, standard with universal flange, DN 50, stainless steel grate frame with stainless steel grate and membrane odour trap, tested to DIN EN 1253



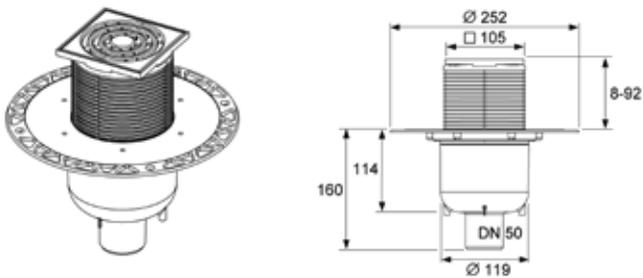
Consisting of:

- Drain body DN 50, horizontal, standard, made of plastic (PP)
 - With universal flange to connect composite seals or clamped flange connections
 - with ball joint
 - with lateral inflow DN 40 incl. closure plug
 - with removable membrane odour trap
 - Drainage capacity 0.97-1.17 l/s*
 - Water seal depth = 50 mm in keeping with standard DIN EN 1253
 - Drain top made of plastic (ABS) and O-ring seal
 - Grate frame made of drawn stainless steel, material 1.4301 (304), for grate dimension 100 x 100 mm
 - TECEdrainpoint S design grate made of drawn stainless steel, material 1.4301 (304), dimension 100 x 100 mm, polished surface, load class K3 (load of up to 300 kg)
- Order no. 3601202

TECEdrainpoint S – Range and technical data

Drain set S 130

Floor drain set, vertical with universal flange, DN 50, tested to DIN EN 1253



Consisting of:

- Drain body DN 50, vertical, made of plastic (PP)
- With universal flange to connect composite seals or clamped flange connections
- With removable odour trap
- Drainage capacity 1.36-1.52 l/s*
- Water seal depth = 50 mm in keeping with standard DIN EN 1253
- Drain top with grate frame made of plastic (ABS) and O-ring seal
- TECEdrainpoint design grate made of drawn stainless steel, material 1.4301 (304), dimension 100 x 100 mm, polished surface, load class K3 (load of up to 300 kg)

Order no. 3601300

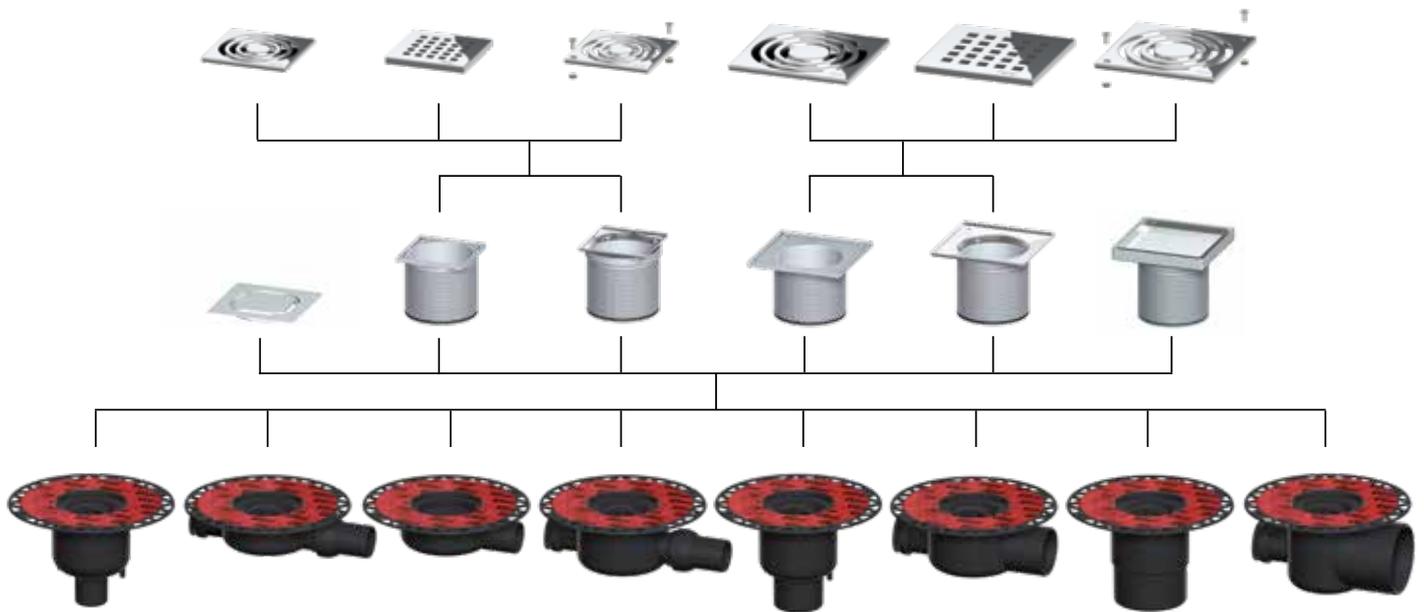
Modular system

With TECEdrainpoint modules, a complete drain can always be produced from three basic components – drain body, drain top and cover:

- 8 drain bodies from DN 50 horizontal extra-flat to DN 100 vertical,
- Drain tops with grate frames made of plastic, stainless steel or tileable, □ 100 or 150 mm,
- Stainless steel design grate, 100 x 100 mm or 142 x 142 mm, “loose” or screw-down.

The fact that the elements can be freely combined reduces storage costs and simplifies ordering.

Alternatively, there are six complete drain sets for the most common drain combinations.



TECEdrainpoint S – The modular system with method

The following components are available as an option:

- Raising element with universal flange
- Extension

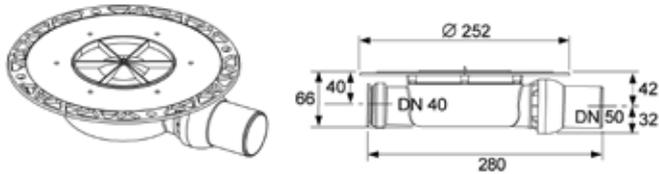


TECEdrainpoint S – Range and technical data

Drains

Drain DN 50 extra-flat

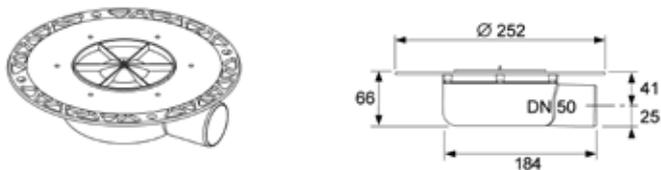
Floor drain DN 50 horizontal extra-flat made of plastic (PP)



- With universal flange to connect composite seals or clamped flange connections
 - with ball joint
 - with lateral inflow DN 40 incl. closure plug
 - with removable odour trap
 - Drainage capacity 0.61-1.15 l/s*
 - reduced water seal depth = 30 mm
- Order no. 3601400

Drain DN 50, patio, extra-flat

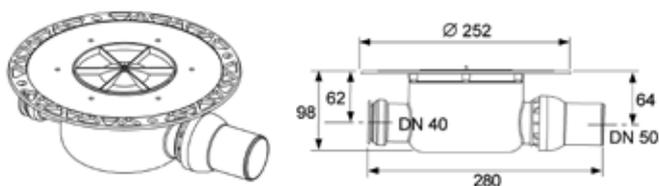
Floor drain as patio or balcony drain DN 50, horizontal extra-flat made of plastic (PP)



- With universal flange to connect composite seals or clamped flange connections
 - Without odour trap
 - Drainage capacity 1.33-2.02 l/s*
- Order number 360 14 01

Drain DN 50 standard

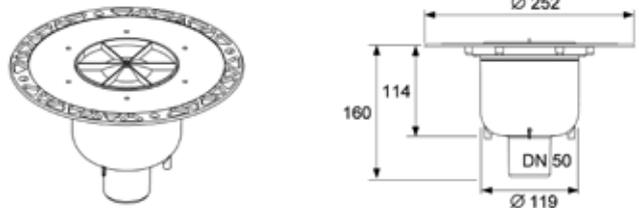
Floor drain DN 50 horizontal, standard made of plastic (PP) tested to DIN EN 1253



- With universal flange to connect composite seals or clamped flange connections
 - with ball joint
 - with lateral inflow DN 40 incl. closure plug
 - with removable odour trap
 - Drainage capacity 0.8-1.2 l/s*
 - Water seal depth = 50 mm in keeping with standard DIN EN 1253
- Order no. 3601500

Drain DN 50 vertical

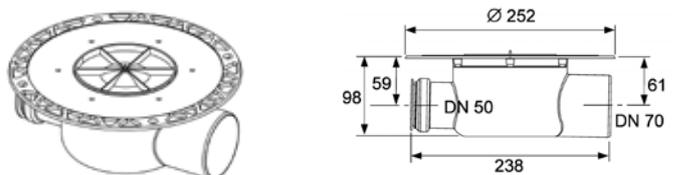
Floor drain DN 50 vertical made of plastic (PP) tested to DIN EN 1253



- With universal flange to connect composite seals or clamped flange connections
 - With removable odour trap
 - Drainage capacity 1.36-1.64 l/s*
 - Water seal depth = 50 mm in keeping with standard DIN EN 1253
- Order no. 3601600

Drain DN 70

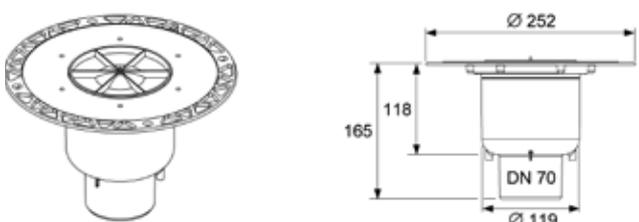
Floor drain DN 70 horizontal made of plastic (PP) tested to DIN EN 1253



- with universal flange to connect composite seals or clamped flange connections
 - with lateral inflow DN 50 incl. closure plug
 - with removable odour trap
 - Drainage capacity 1.24-1.64 l/s*
 - Water seal depth = 50 mm in keeping with standard DIN EN 1253
- Order no. 3603500

Drain DN 70 vertical

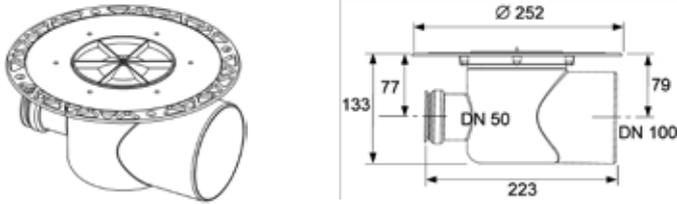
Floor drain DN 70, vertical made of plastic (PP) tested to DIN EN 1253



- with universal flange to connect composite seals or clamped flange connections
 - with removable odour trap
 - Drainage capacity 1.49-2.07 l/s*
 - Water seal depth = 50 mm in keeping with standard DIN EN 1253
- Order no. 3603600

Drain DN 100

Floor drain DN 100, horizontal, made of plastic (PP) tested to DIN EN 1253

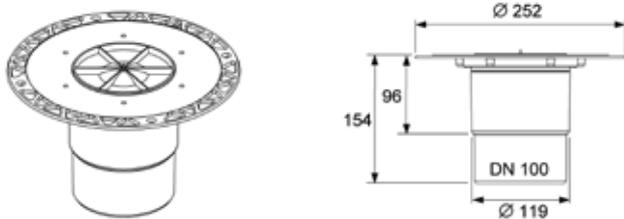


- with universal flange to connect composite seals or clamped flange connections
- with lateral inflow DN 50 incl. closure plug
- with removable odour trap
- Drainage capacity 1.22-1.75 l/s*
- Water seal depth = 50 mm in keeping with standard DIN EN 1253

Order no. 3607500

Drain DN 100 vertical

Floor drain DN 100 vertical made of plastic (PP) tested to DIN EN 1253



- with universal flange to connect composite seals or clamped flange connections
- with removable odour trap
- Drainage capacity 1.1-1.62 l/s*
- Water seal depth = 50 mm in keeping with standard DIN EN 1253

Order no. 3607600

The following adapters are available for transition to a PVC wastewater pipe:

Dimensions	Order no.
DN 40/DN 40	3690000
DN 50/DN 40	3690001
DN 50/DN 50	3690002
DN 50/2"	669012

Fire protection set

Fire protection set FireStop EI 120 DN 50

Fire protection set for direct installation at the TECEdrainpoint S DN 50 drain vertical for highly fire-resistant partitioning of ceiling bushings in solid ceilings for up to 120 minutes. Classification in accordance with DIN EN 13501 for fire resistance class EI 120.

A European Technical Approval (ETA-11/0437) exists for the fire protection set.



Set consists of fire protection sleeve, 2 cross-recessed screws, identification plate and 150 mm DN 50 PP-HT pipe to DIN EN 1451.

Required core hole:

Diameter 120 mm (min = 119 mm, max = 123 mm)

Application area:

Solid ceilings from 150 mm to 325 mm ceiling thickness

No grouting or filling of the gap is necessary.

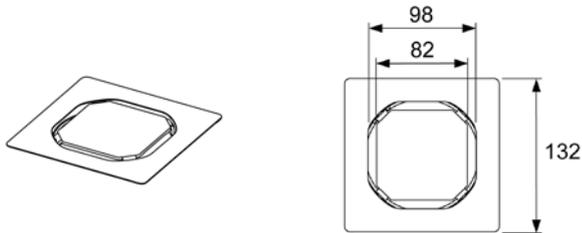
Order no. 3690050

TECEdrainpoint S – Range and technical data

Drain tops

TECEdrainpoint S tileable drain top, 100 mm, “frameless”

Set consisting of tileable drain top and frameless tile base, 100 x 100 mm made of stainless steel.

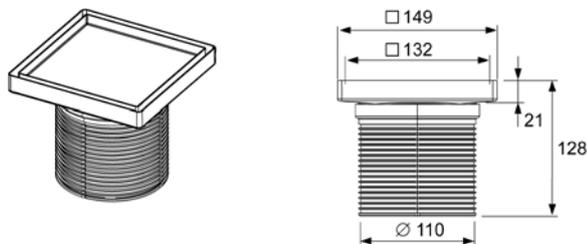


- Outer diameter = 110 mm
- Height adjustment = none, height 1 mm (suitable for all tile/natural stone thicknesses)
- Grate frame made of drawn stainless steel, material 1.4301 (304)
- Frameless tile base made of stainless steel, material 1.4301 (304), dimension 82 x 82 mm, polished surface, load class K3 (load of up to 300 kg)

Order no. 3660016

TECEdrainpoint S grate frame stainless steel, 150 mm, design “plate”

Set consisting of drain top with stainless steel grate frame and “plate” tileable channel 142 x 142 mm



- Drain top made of plastic (ABS)
- O-ring seal
- Outer diameter = 110 mm
- Height adjustment = 23 to 118 mm
- Grate frame made of drawn stainless steel, material 1.4301 (304)
- “plate” tileable channel made of stainless steel, material 1.4301 (304), dimension 142 x 142 mm, polished surface, load class K3 (load of up to 300 kg)

Order no. 3660011

TECEdrainpoint S grate frame, plastic, 100 mm, incl. design grate

Set consisting of drain top with grate frame (plastic) and TECEdrainpoint design grate 100 x 100 mm

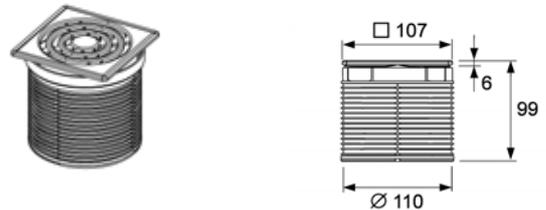


- Drain top with grate frame made of plastic (ABS)
- O-ring seal
- Outer diameter = 110 mm
- Height adjustment = 8 to 92 mm
- TECEdrainpoint design grate made of drawn stainless steel, material 1.4301 (304), dimension 100 x 100 mm polished surface, load class K3 (load up to 300 kg)

Order no. 3660001

TECEdrainpoint S grate frame, stainless steel, 100 mm, incl. design grate

Set consisting of drain top with grate frame (stainless steel) and TECEdrainpoint design grate 100 x 100 mm

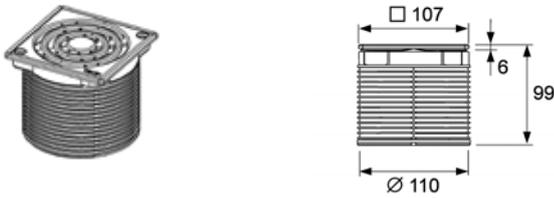


- Drain top made of plastic (ABS)
- O-ring seal
- Outer diameter = 110 mm
- Height adjustment = 7 to 89 mm
- Grate frame made of drawn stainless steel, material 1.4301 (304)
- TECEdrainpoint design grate made of drawn stainless steel, material 1.4301 (304), dimension 100 x 100 mm polished surface, load class K3 (load up to 300 kg)

Order no. 3660002

TECEDrainpoint S grate frame, stainless steel, 100 mm, incl. design grate, screw-down

Set consisting of drain top with grate frame (stainless steel) and TECEDrainpoint S design grate 100 x 100 mm

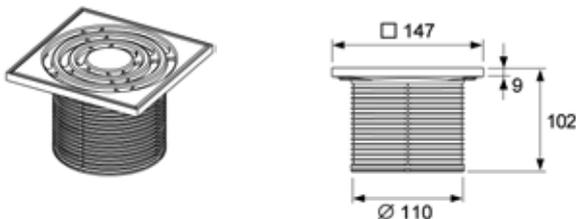


- Drain top made of plastic (ABS)
- O-ring seal
- Outer diameter = 110 mm
- Height adjustment = 7 to 89 mm
- Grate frame made of drawn **stainless steel, material 1.4301 (304)**
- TECEDrainpoint design grate made of drawn **stainless steel, material 1.4301 (304)**, dimension 100 x 100 mm, polished surface, load class K3 (load up to 300 kg)
- 2 stainless steel countersunk screws and self-cutting threaded bushes

Order no. 3660009

TECEDrainpoint S grate frame plastic, 150 mm, incl. design grate

Set consisting of drain top with grate frame (plastic) and TECEDrainpoint design grate 142 x 142 mm

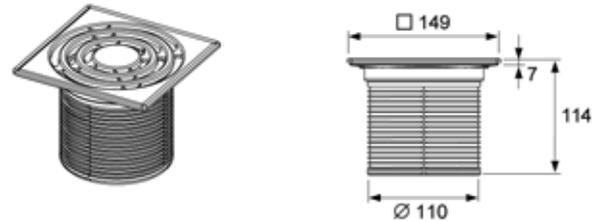


- Drain top with grate frame made of plastic (ABS)
- O-ring seal
- Outer diameter = 110 mm
- Height adjustment = 12 to 92 mm
- TECEDrainpoint design grate made of drawn stainless steel, material 1.4301 (304), dimension 142 x 142 mm, polished surface, load class K3 (load up to 300 kg)

Order no. 3660003

TECEDrainpoint S grate frame stainless steel, 150 mm, incl. design grate

Set consisting of drain top with grate frame (stainless steel) and TECEDrainpoint design grate 142 x 142 mm

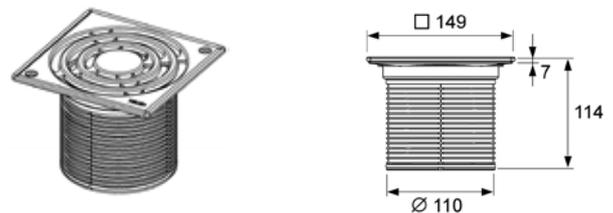


- Drain top made of plastic (ABS)
- O-ring seal
- Outer diameter = 110 mm
- Height adjustment = 9 to 104 mm
- Grate frame made of drawn stainless steel, material 1.4301 (304)
- TECEDrainpoint design grate made of drawn stainless steel, material 1.4301 (304), dimension 142 x 142 mm, polished surface, load class K3 (load up to 300 kg)

Order no. 3660004

TECEDrainpoint S grate frame, stainless steel, 150 mm, incl. design grate, screw-down

Set consisting of drain top with grate frame (stainless steel) and TECEDrainpoint S design grate 142 x 142 mm.



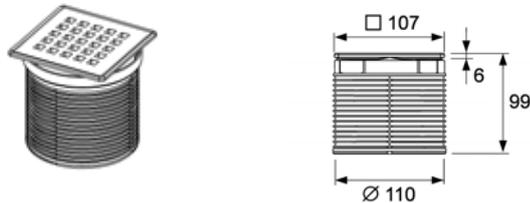
- Drain top made of plastic (ABS)
- O-ring seal
- Outer diameter = 110 mm
- Height adjustment = 9 to 104 mm
- Grate frame made of drawn **stainless steel, material 1.4301 (304)**
- TECEDrainpoint design grate made of drawn **stainless steel, material 1.4301 (304)**, dimension 142 x 142 mm, polished surface, load class K3 (load up to 300 kg)
- 2 stainless steel countersunk screws and self-cutting threaded bushes

Order no. 3660010

TECEdrainpoint S – Range and technical data

TECEdrainpoint S grate frame, stainless steel, 100 mm incl. design grate, “quadratum”

Set consisting of drain top with stainless steel grate frame and design grate “quadratum” 100 x 100 mm.

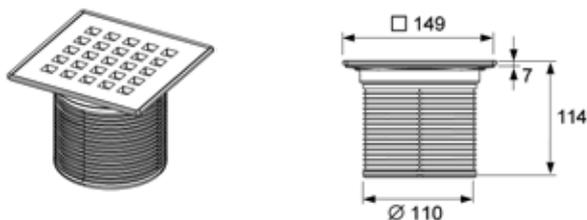


- Drain top made of plastic (ABS)
- O-ring seal
- Outer diameter = 110 mm
- Height adjustment = 7 to 89 mm
- Grate frame made of drawn stainless steel, material 1.4301 (304)
- “quadratum” design grate made of stainless steel, material 1.4301 (304), dimension 100 x 100 mm, polished surface, load class K3 (load to 300 kg)

Order no. 3660007

TECEdrainpoint S grate frame stainless steel, 150 mm, incl. design grate

Set consisting of drain top with stainless steel grate frame and design grate “quadratum” 142 x 142 mm.



Consisting of:

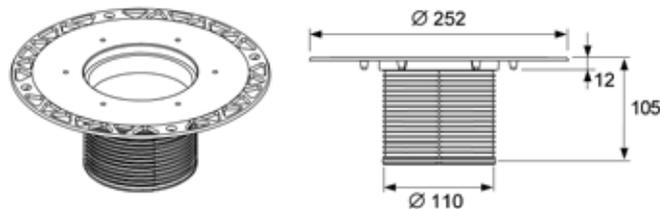
- Drain top made of plastic (ABS)
- O-ring seal
- Outer diameter = 110 mm
- Height adjustment = 9 to 104 mm
- Grate frame made of drawn stainless steel, material 1.4301 (304)
- “quadratum” design grate made of stainless steel, material 1.4301 (304), dimension 142 x 142 mm, polished surface, load class K3 (load to 300 kg)

Order no. 3660008

Accessories

TECEdrainpoint S raising element with universal flange

Drain top made of plastic with universal flange made of plastic (PP) for composite seals and clamped flange connections

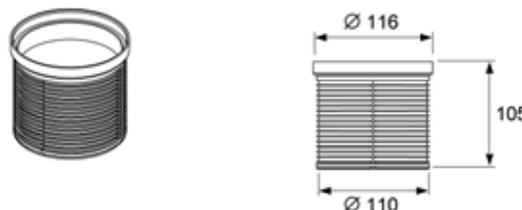


- With universal flange to connect composite seals or clamped flange connections
- Incl. O-ring seal
- Outer diameter = 110 mm
- Height adjustment = 12 to 95 mm

Order no. 3660005

TECEdrainpoint S extension

Drain top extension made of plastic (ABS)

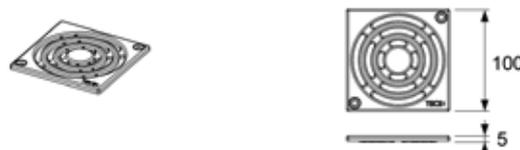


- with O-ring seal
- Outer diameter = 110 mm
- Height adjustment = 4 to 85 mm

Order no. 3660006

TECEdrainpoint S design grate stainless steel 100 x 100 mm, screw-down

Design grate TECEdrainpoint 100 x 100 mm made of drawn stainless steel, material 1.4301 (304), screw-down

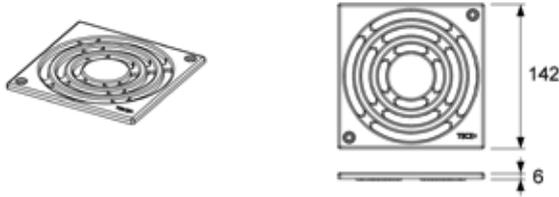


- Dimension = 100 x 100 mm (outer dimensions)
- Polished surface
- Load class K3 (load to 300 kg)
- Incl. 2 stainless steel countersunk screws and self-cutting threaded bushes

Order no. 3665000

TECEdrainpoint S design grate stainless steel 142 x 142 mm, screw-down

Design grate TECEdrainpoint 142 x 142 mm made of drawn stainless steel, material 1.4301 (304), screw-down



- Dimension = 142 x 142 mm (outer dimensions)
 - Polished surface
 - Load class K3 (load to 300 kg)
 - Incl. 2 stainless steel countersunk screws and self-cutting threaded bushes
- Order no. 3665001

TECEdrainpoint S design grate stainless steel 100 x 100 mm

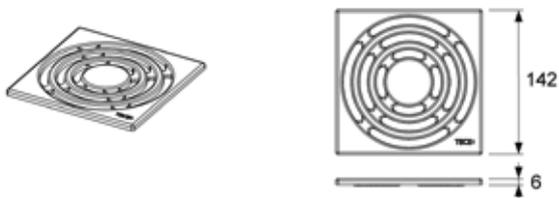
Design grate TECEdrainpoint 100 x 100 mm made of drawn stainless steel, material 1.4301 (304)



- Dimension = 100 x 100 mm (outer dimensions)
 - Polished surface
 - Load class K3 (load to 300 kg)
- Order no. 3665002

TECEdrainpoint S design grate stainless steel 142 x 142 mm

Design grate TECEdrainpoint 142 x 142 mm made of drawn stainless steel, material 1.4301 (304)



- Dimension = 142 x 142 mm (outer dimensions)
 - Polished surface
 - Load class K3 (load to 300 kg)
- Order no. 3665003

TECEdrainpoint S design grate “quadratum” stainless steel 100 x 100 mm

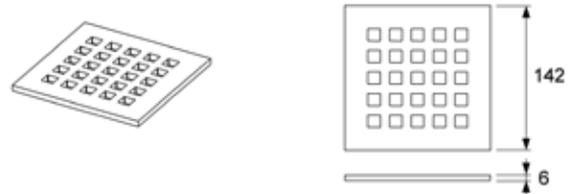
made of stainless steel, material 1.4301 (304)



- Dimension = 100 x 100 mm (outer dimensions)
 - Polished surface
 - Load class K3 (load to 300 kg)
- Order no. 3665006

TECEdrainpoint S design grate “quadratum” stainless steel 142 x 142 mm

made of stainless steel, material 1.4301 (304)



- Dimension = 142 x 142 mm (outer dimensions)
 - Polished surface
 - Load class K3 (load to 300 kg)
- Order no. 3665009

TECEdrainpoint S stainless steel compression ring incl. screws and seal

Compression sealing ring set for clamped flange connections

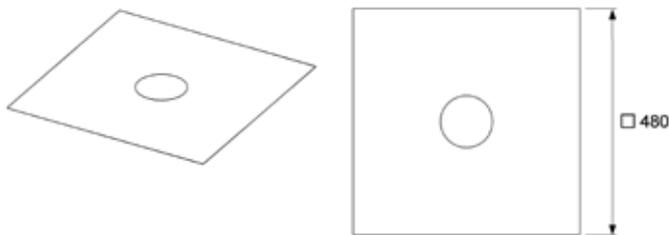


- Compression ring made of stainless steel, material 1.4301 (304) with pre-drilled hole circle
 - Sealing ring made of cellular rubber
 - 6 stainless steel screws
- Order no. 3690003

TECEdrainpoint S – Range and technical data

TECEdrainpoint S Seal System sealing sleeve for composite seals

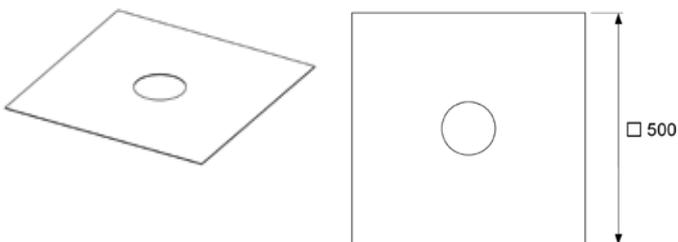
Seal System sealing sleeve to create a tested and certified connection of the TECEdrainpoint S drains of the composite seal



- PP fleece (top and underside) and inner waterproof PE foil
 - Dimension = 480 x 480 mm
- Order no. 3690004

TECEdrainpoint S cut-to-size sealing foil EPDM

Seal sleeve for connection of bitumen membrane sheets, polymer bitumen membrane sheets or EPDM sealing strips using hot-air welding, full-area welding or gluing with PU adhesive. The sealing sleeve is fixed to the universal flange with the compression ring set.



- Material: EPDM with insert made of glass cloth, underside with polymer-modified bitumen layer and fine quartz coating
 - Dimension = 500 x 500 mm
 - Material thickness = 3.1 mm
 - Manufacturer: Phoenix Restrix Classic
- Order no. 3690006

TECEdrainpoint S odour trap extra-flat

Extra-flat plastic (PP) odour trap



- Reduced water seal depth = 30 mm
 - Can be used for horizontal drains DN 50, extra-flat
- Order no. 3695000

TECEdrainpoint odour trap standard

Standard plastic (PP) odour trap



- Water seal depth = 50 mm in keeping with standard DIN EN 1253
 - Can be used for all horizontal and vertical drains DN 50 standard, DN 70 and DN 100
- Order no. 3695001

TECEdrainpoint S fire membrane odour trap

Odour trap for TECEdrainpoint S drains made of plastic (PP) with inner sealing lip membrane as a protection against evaporation and a barrier against odour and vermin, water seal and sealing lip membrane provide two-stage trap effect



- Available in three versions, for DN 50 extra-flat drains, for DN 50 standard and vertical drains and for DN 100 drains
 - Two-stage odour trap
- Order numbers 3695002, 3695005 and 3695006

TECEdrainpoint S hair trap

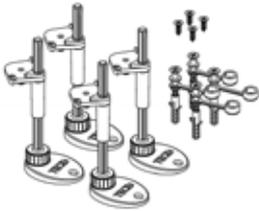
made of plastic, for insertion in the TECEdrainpoint S drain



Order no. 3690005

TECEdrainpoint S assembly feet, sound-insulated

to make it easy to adjust height and for fixing during the shell installation phase of Drainpoint S drains with Seal System universal flange



Adjustment range lower edge of feet to upper edge of universal flange: 64 to 165 mm

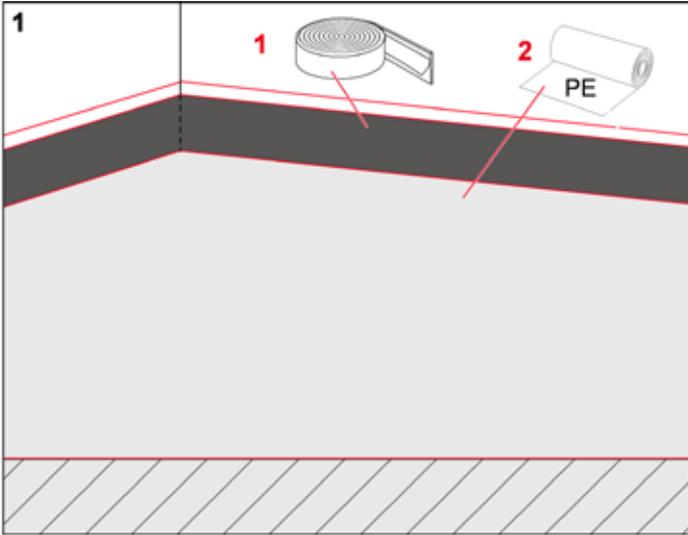
Consisting of 4 assembly feet incl. sound-proofing element and mounting material

Order no. 3690007

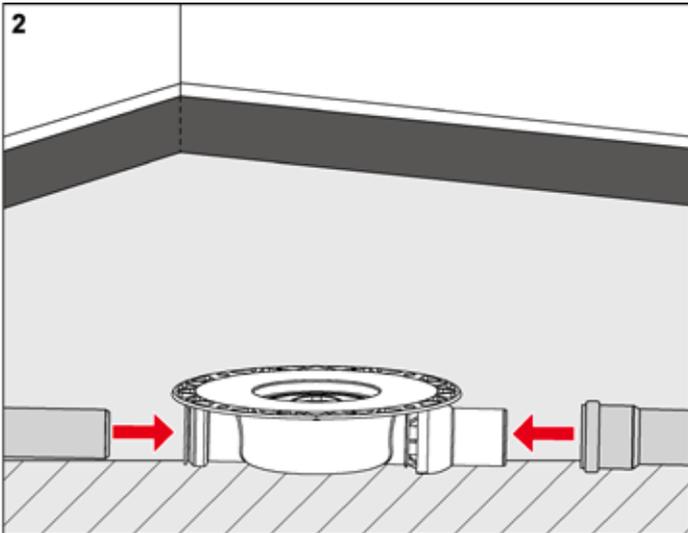
TECEdrainpoint S – Installation instructions

Installation instructions

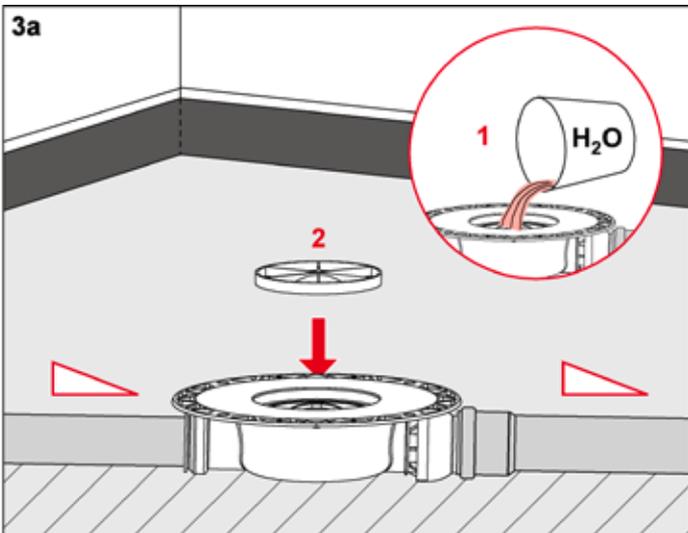
Installation of drain with thin-bed sealing



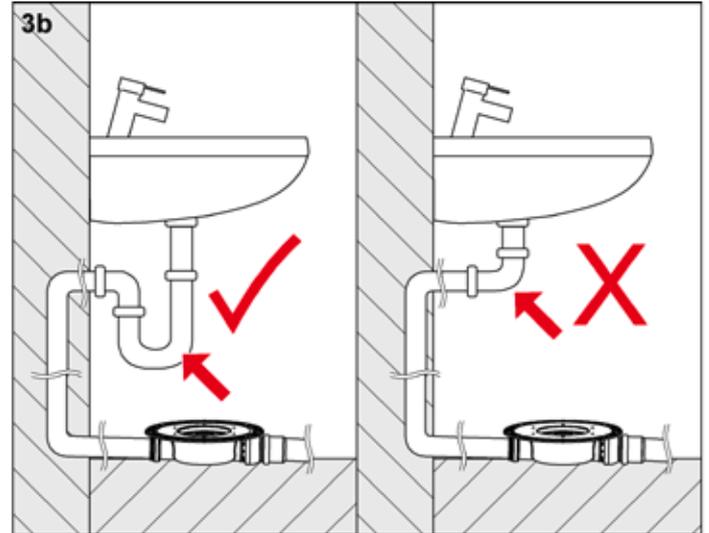
Attach edge insulation strips and lay PE foil.



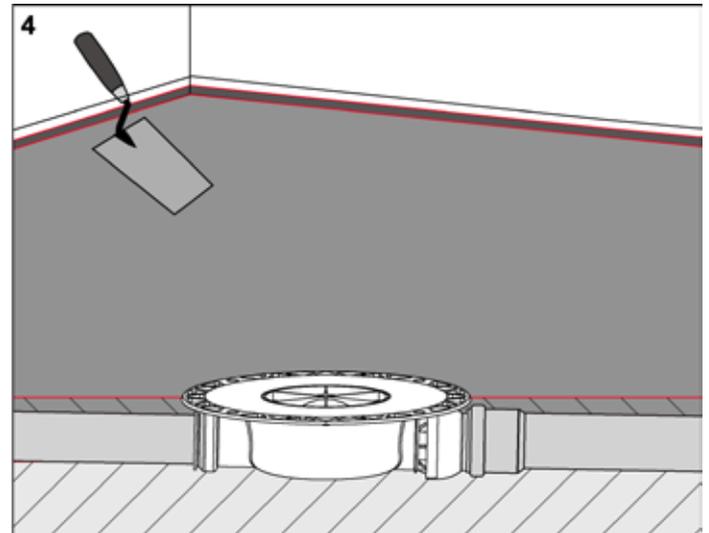
Position drain and connect to the wastewater pipe. In the case of drains with a vertical socket, a core hole with a diameter of 130 mm is required.



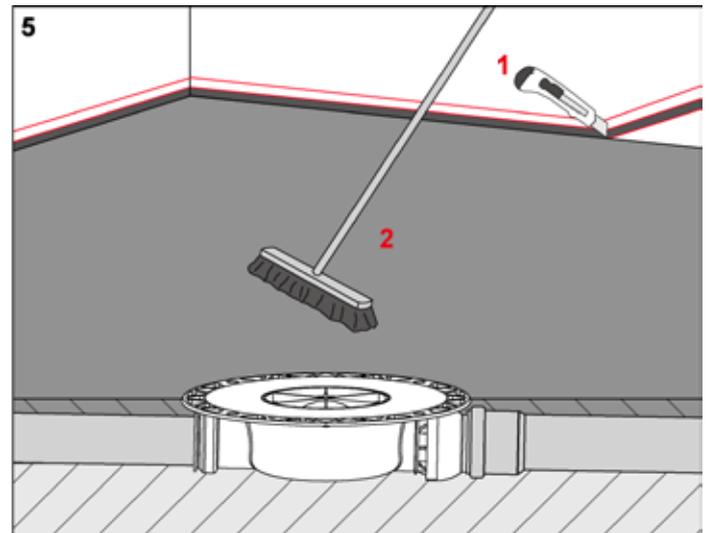
Carry out tightness test.



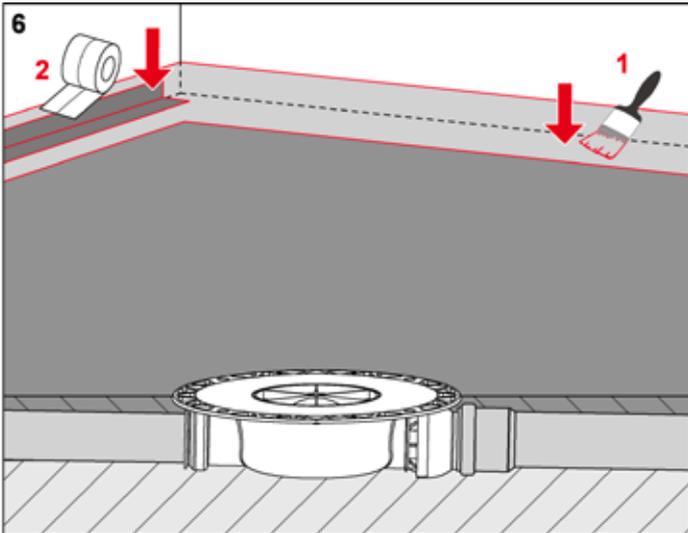
If a lateral inflow is used, an odour trap is required in the inlet pipe.



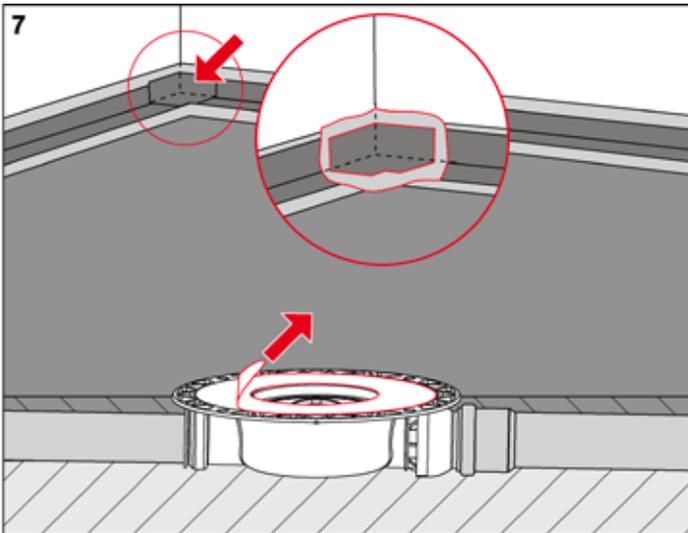
Lay the screed.



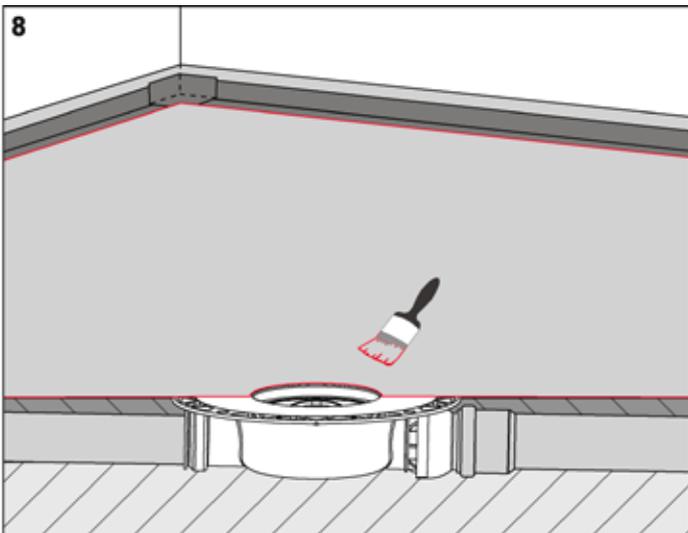
Once dry, cut off the excess edge insulation strips and PE foil, clean screed.



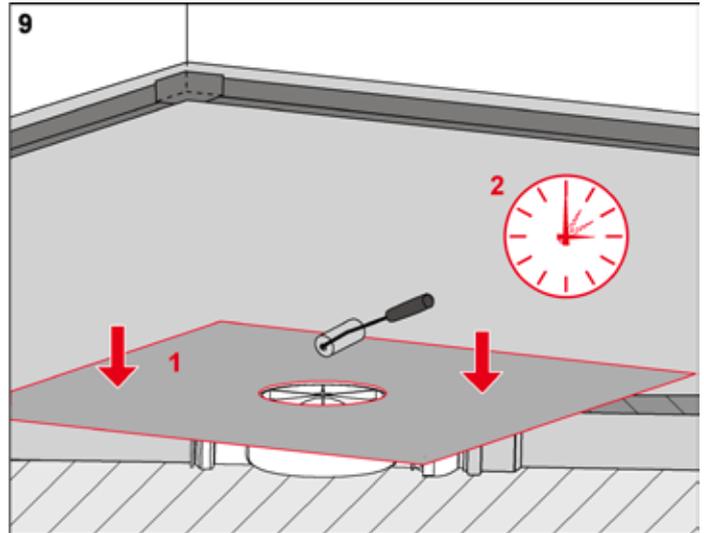
Attach sealing collar and sealing tape in the transition between the screed and the wall (and if necessary to other screed areas).



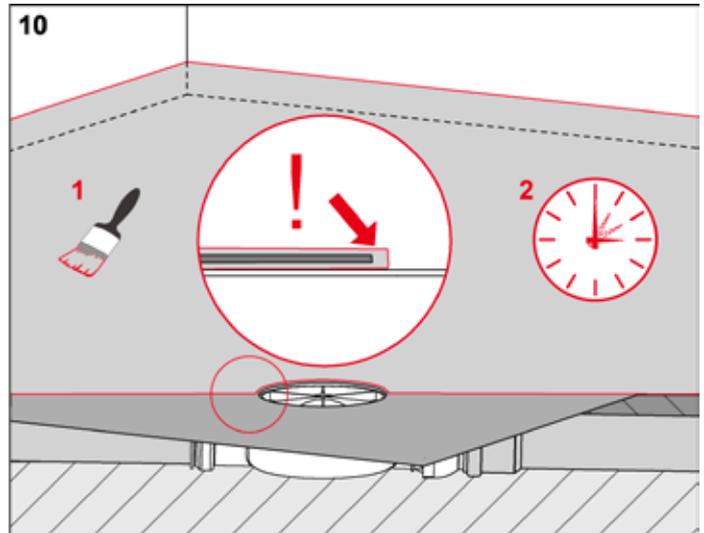
Attach corner seal(s), remove protective film from flange.



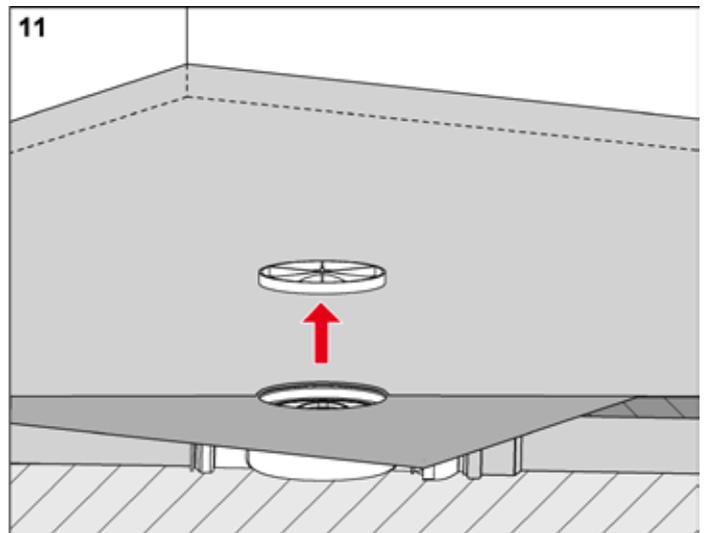
Apply first sealing coating over complete area.



Insert sealing sleeve in fresh coating and press to remove creases. Allow coating to dry.

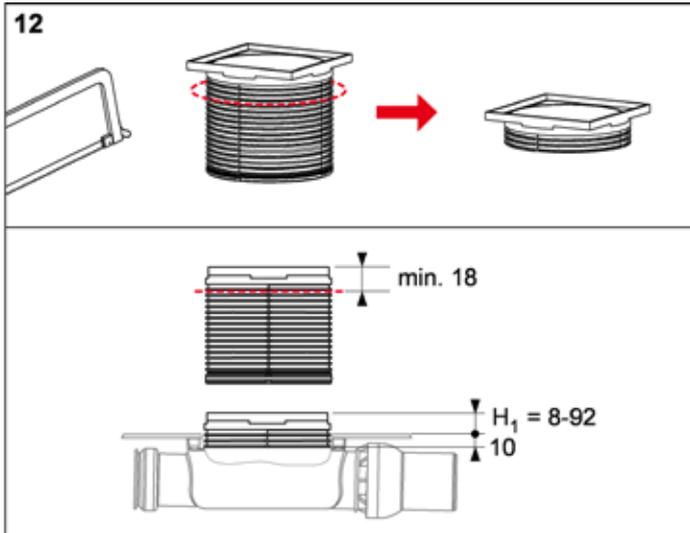


Apply second sealing coating over complete area: The sealing sleeve must be completely covered by the damp-proof coating. Allow coating to dry.

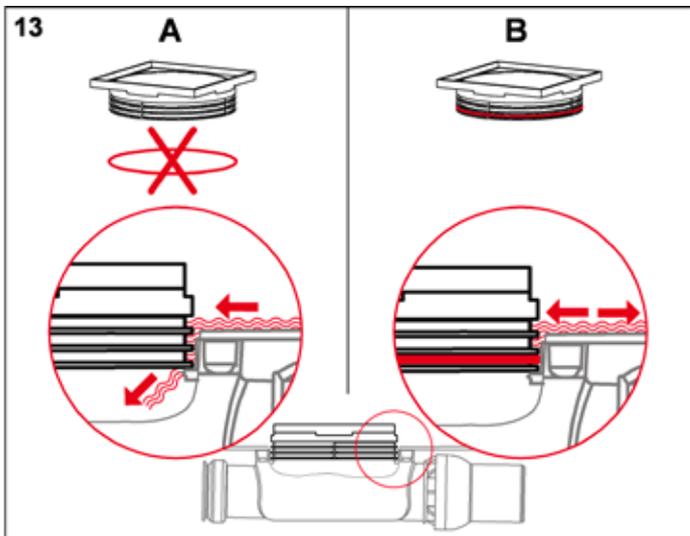


Remove protective cover.

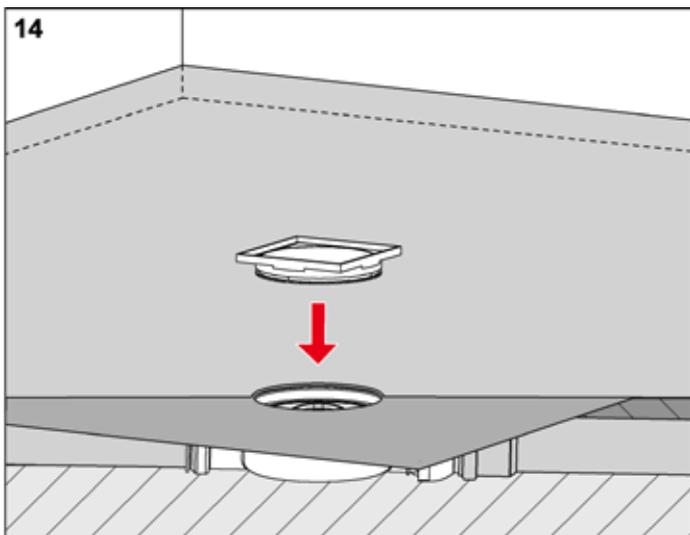
TECEdrainpoint S – Installation instructions



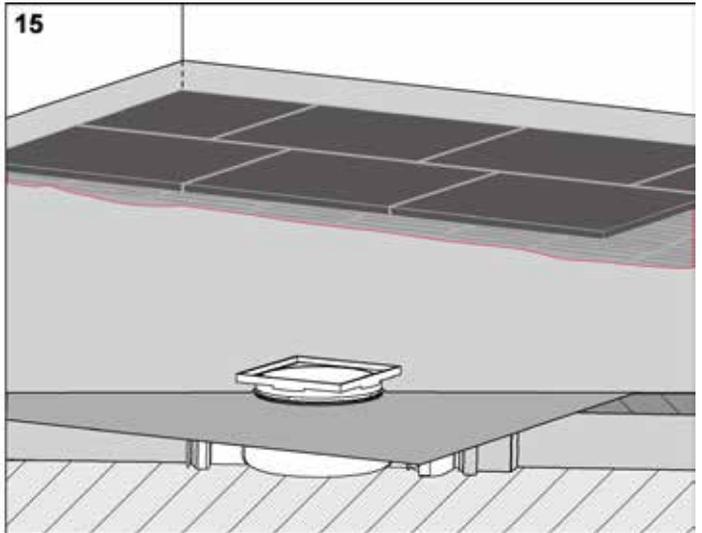
Cut the drain top to length.



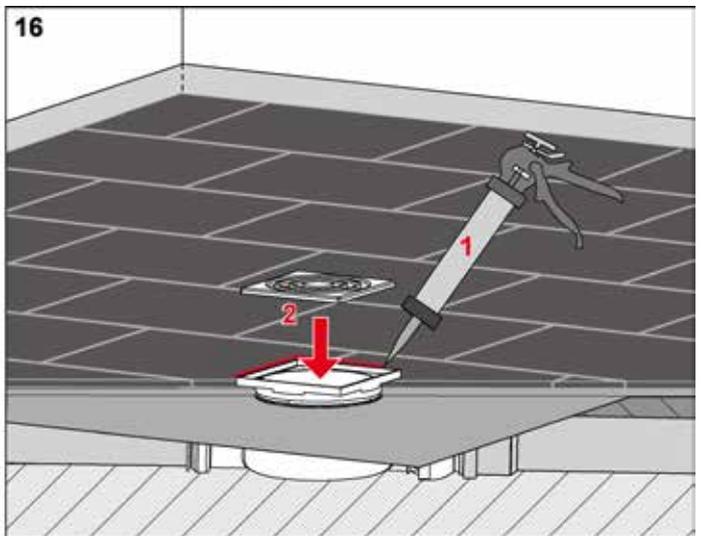
The drainage of seepage water is ensured without an O-ring.



Insert the cropped drain top.



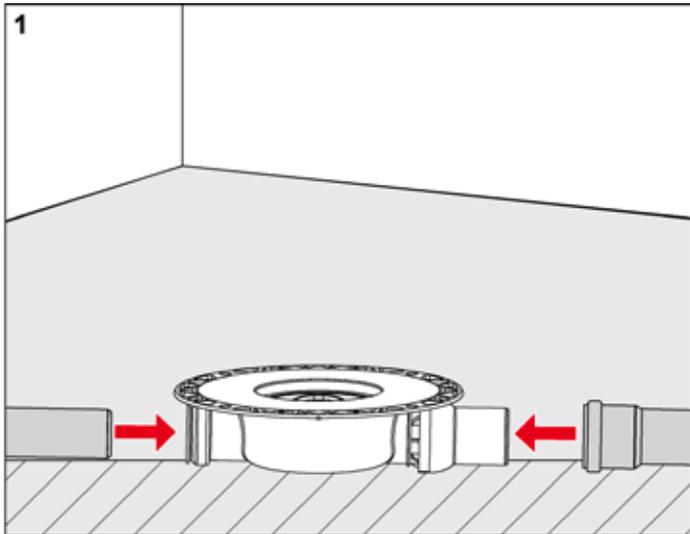
Apply the floor covering.



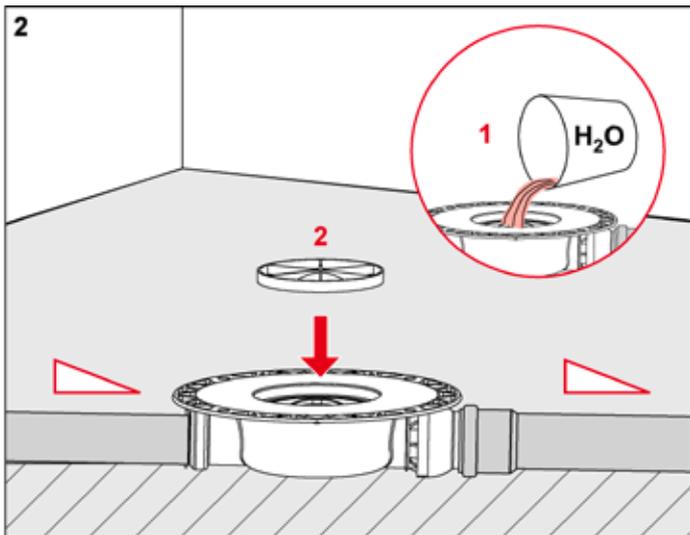
Seal the joint with permanently elastic material and install the grate.

TECEdrainpoint S

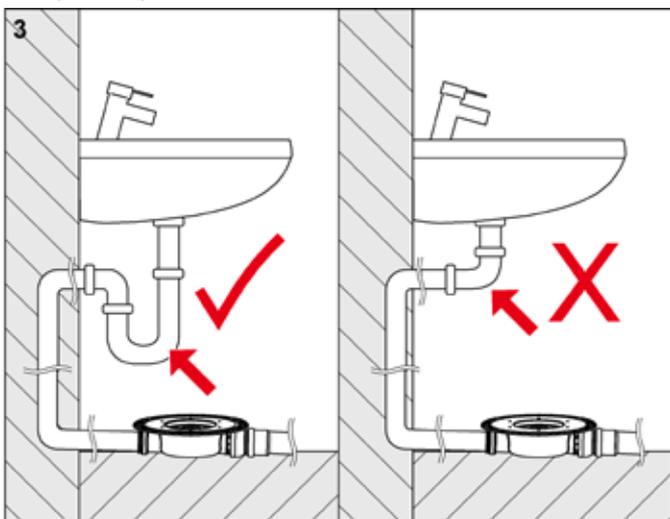
Installation of drain with clamped flange sealing



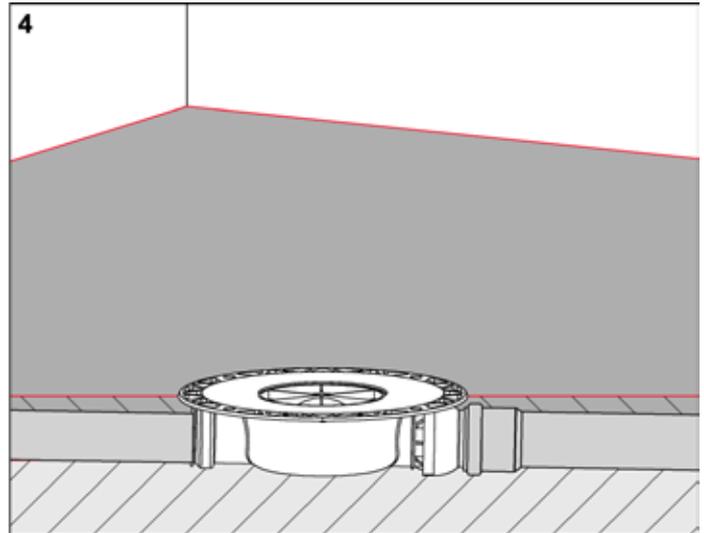
Position drain and connect to wastewater pipe. In the case of drains with a vertical socket, a core hole with a diameter of 130 mm is required.



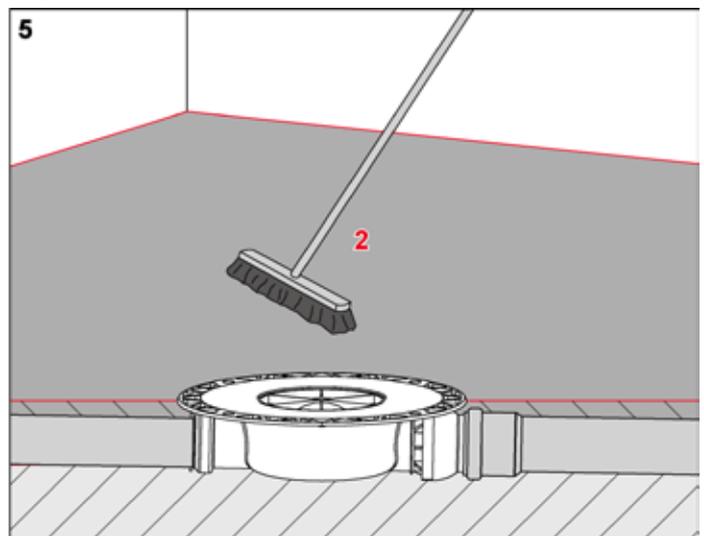
Carry out tightness test.



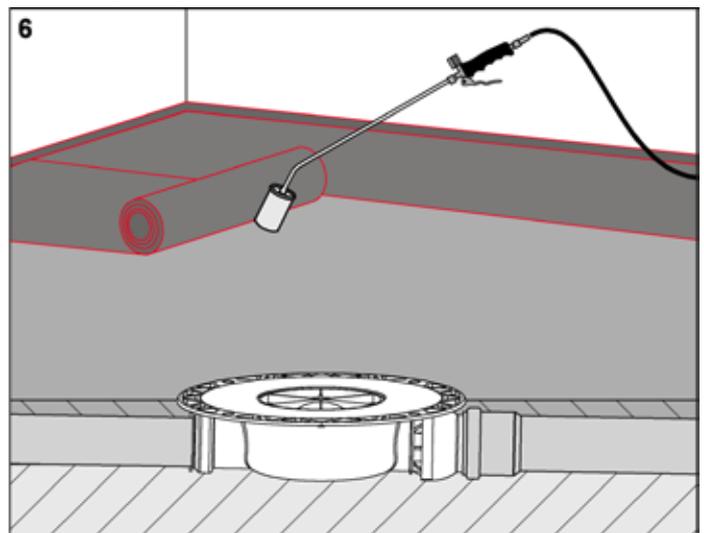
If a lateral inflow is used, an odour trap is required in the inlet pipe.



Lay the screed.

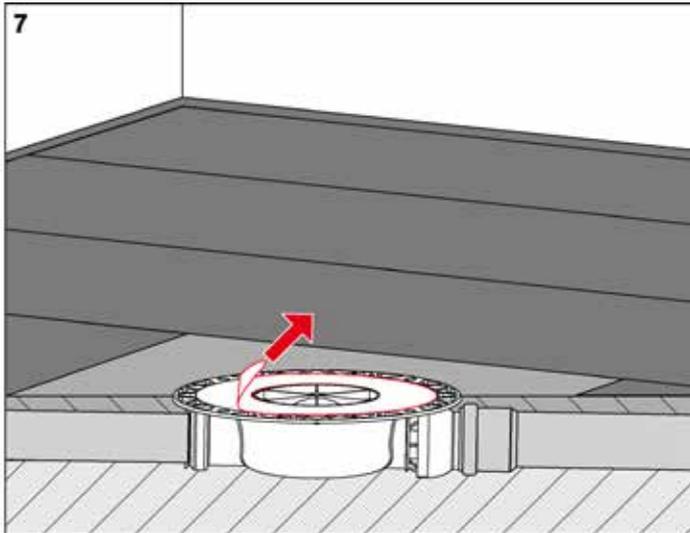


Once dry, clean the screed.

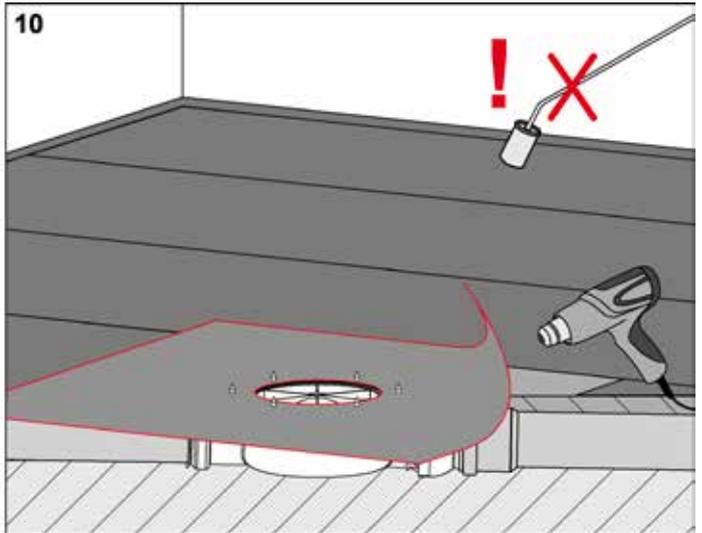


Apply sealing strips (bitumen/EPDM) in accordance with the manufacturer's instructions.

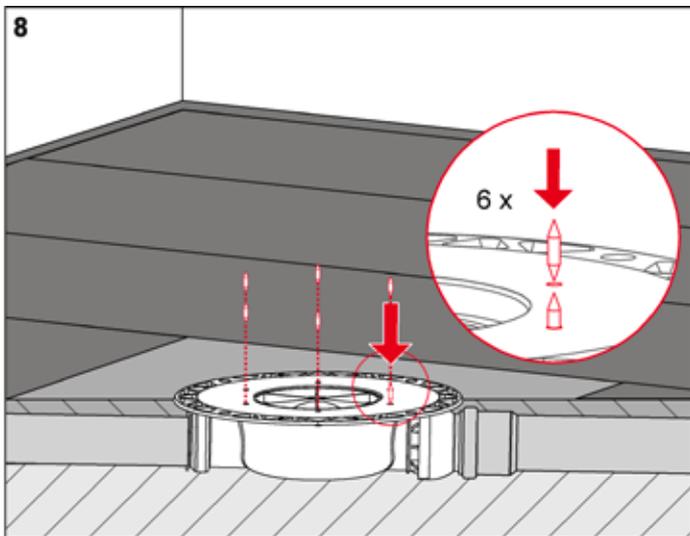
TECEdrainpoint S – Installation instructions



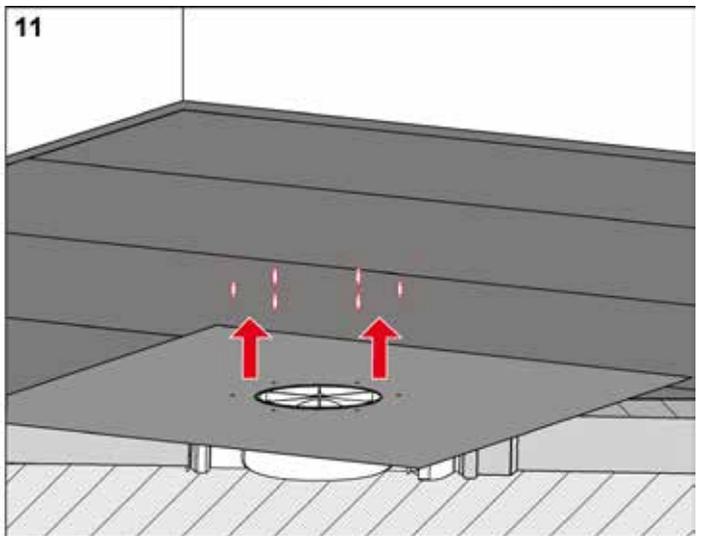
Remove protective foil from flange.



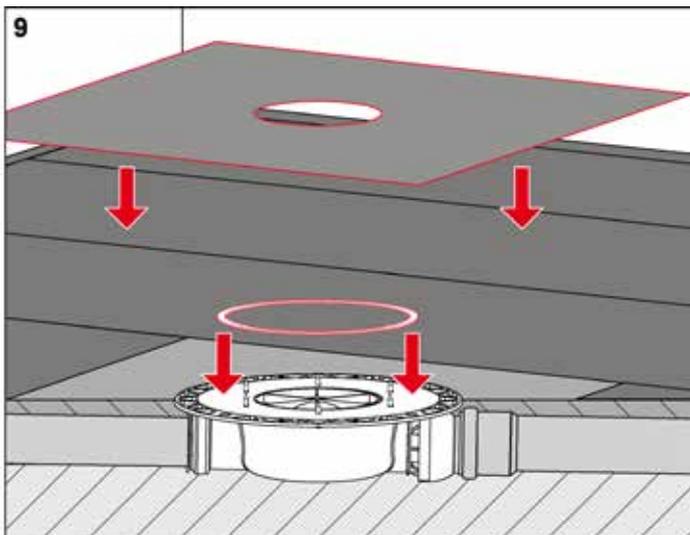
Weld the cut-to-size sealing foil with the sealing strip.



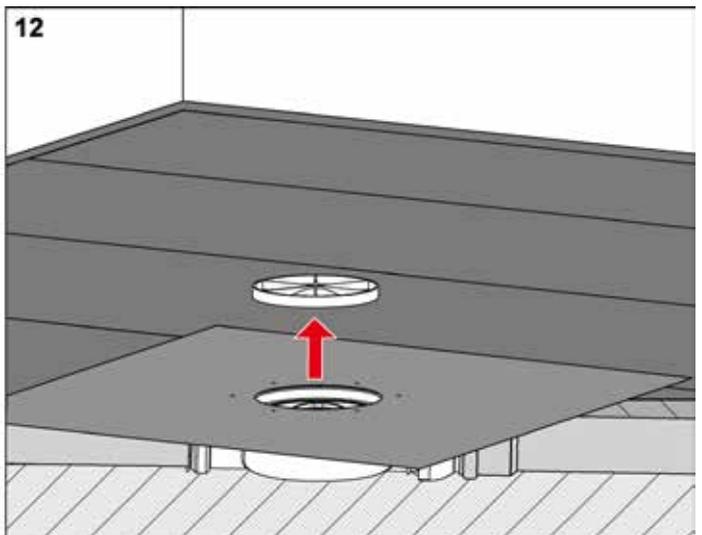
Insert pins for flange assembly (6 x).



Remove pins.

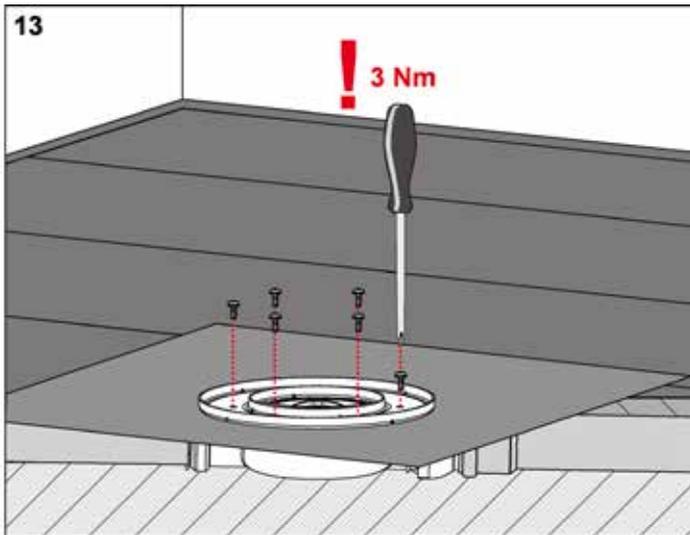


Apply seal and accurately cut the sealing foil (EPDM) to size.

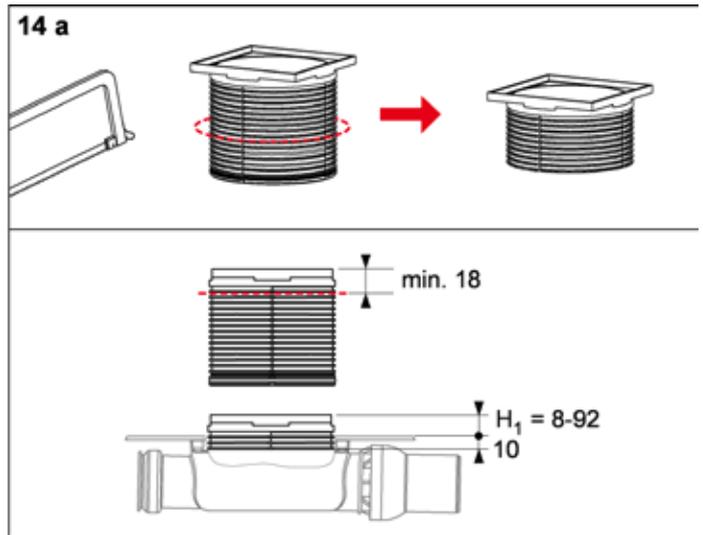


Remove protective cover.

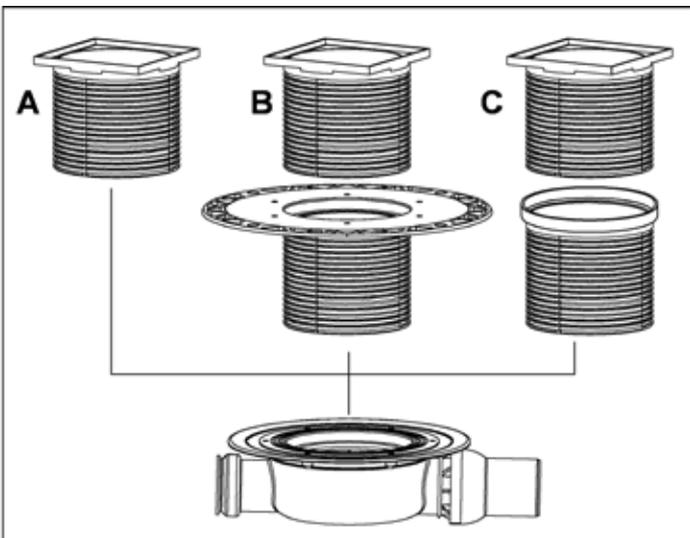
TECEdrainpoint S



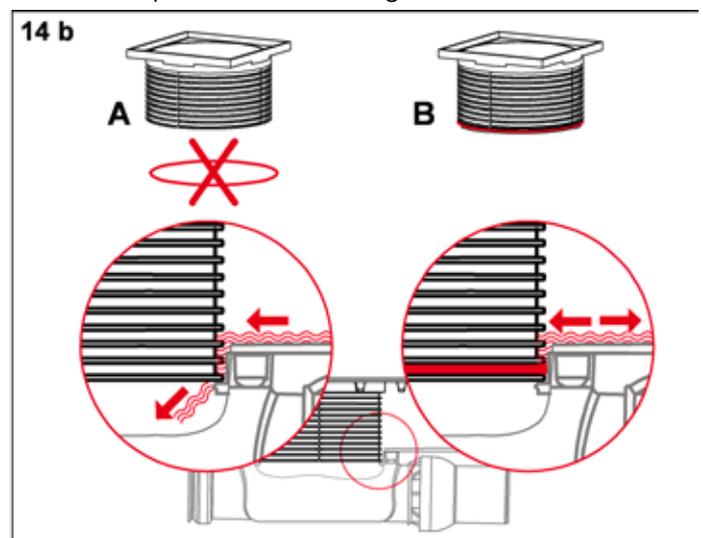
Screw on the compression ring (torque 3 Nm!).



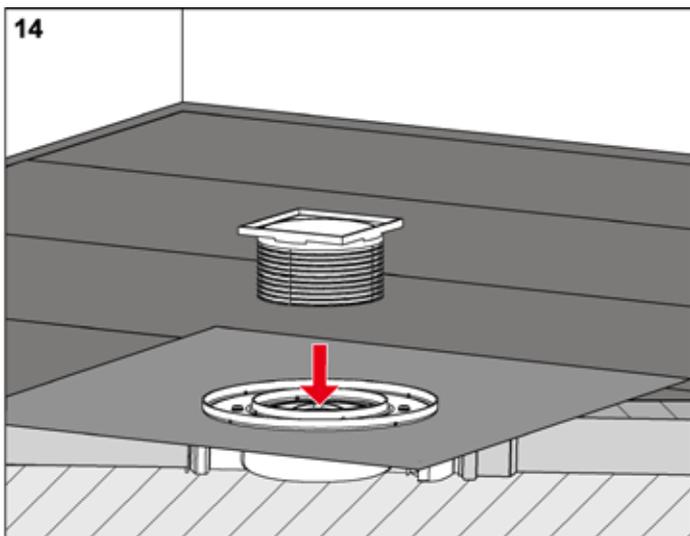
The drain top must be cut to length.



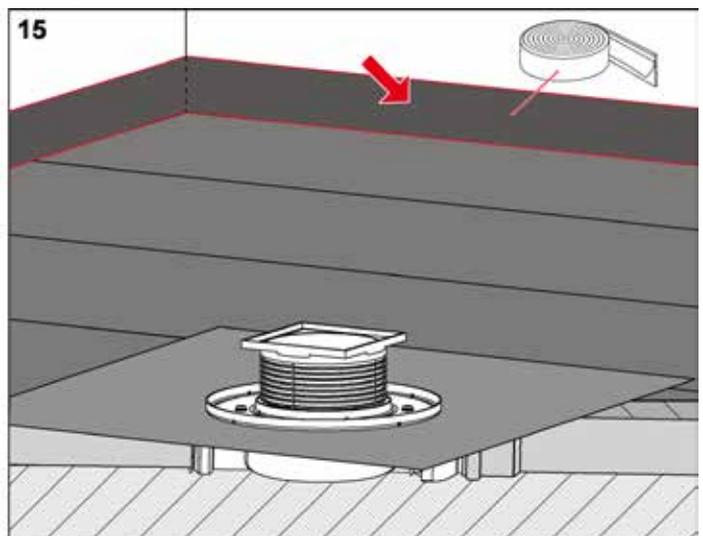
Various drain tops can be used.



The drainage of seepage water is ensured without an O-ring.

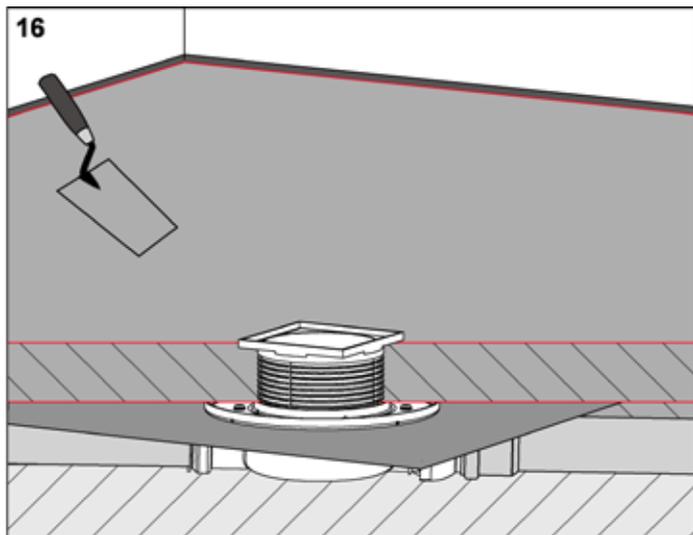


Insert the drain top.

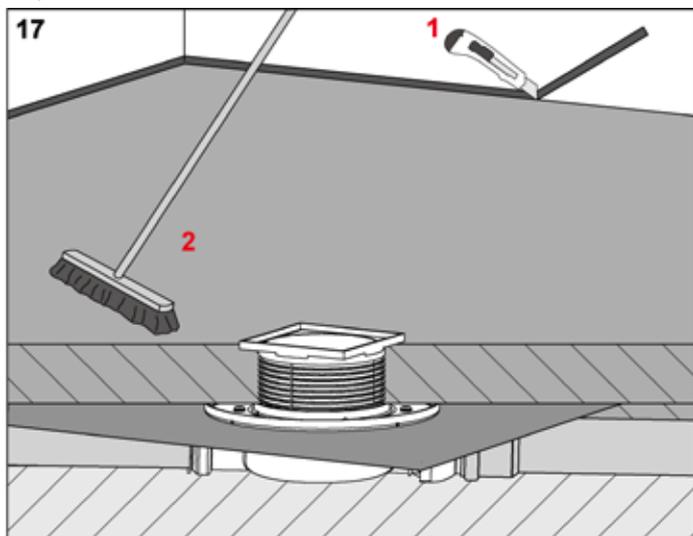


Apply the edge insulation strips.

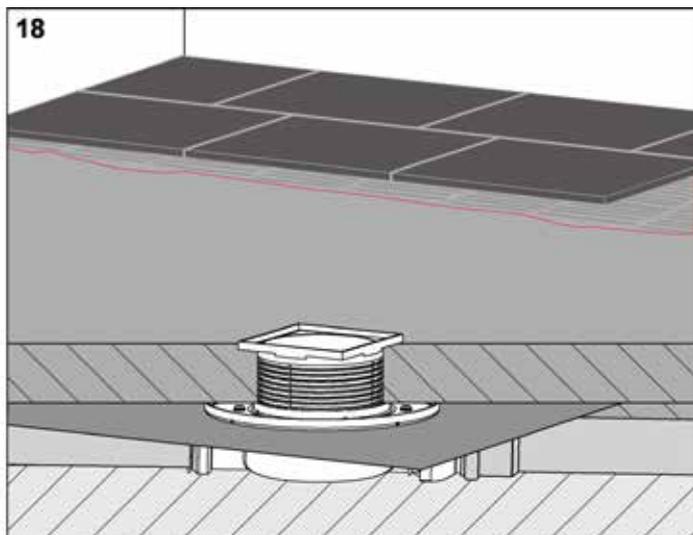
TECEdrainpoint S – Installation instructions



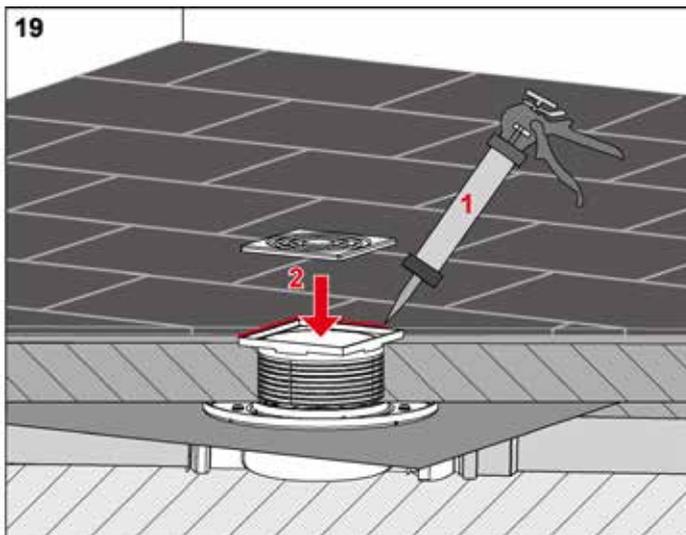
Lay the screed.



Once dry, cut off the excess edge insulation strips and PE foil, clean screed.

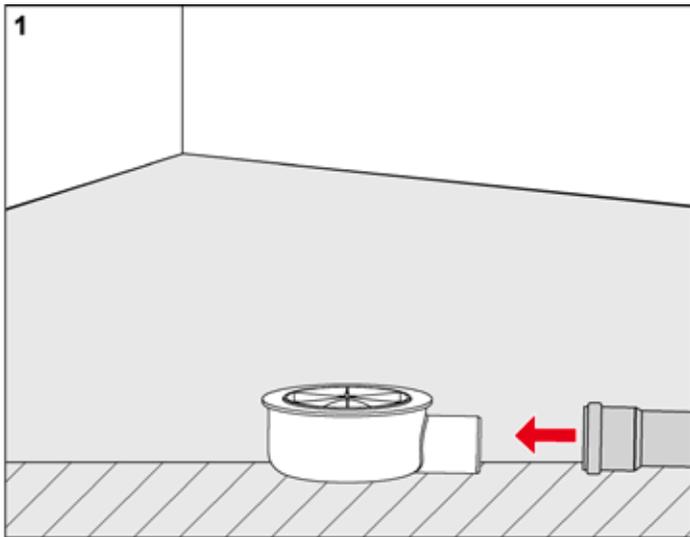


Apply the floor covering.

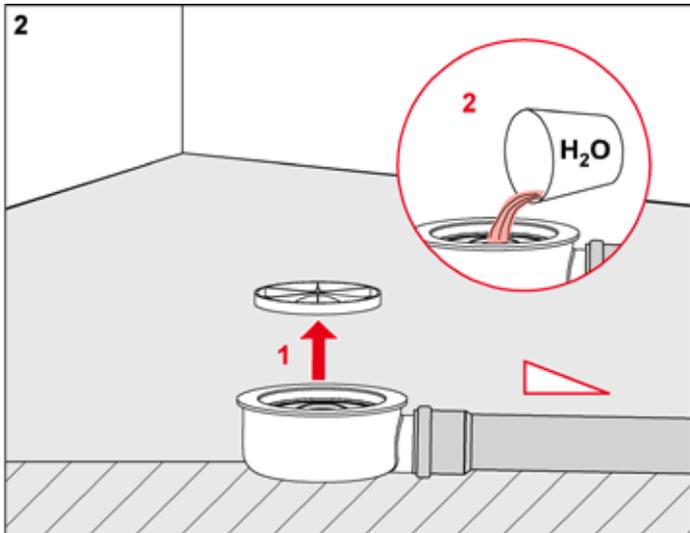


Seal the joint with permanently elastic material and install the grate.

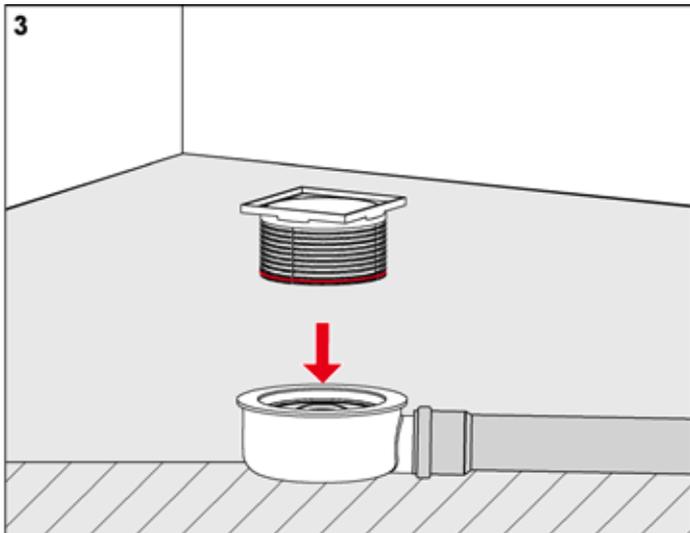
Installation of drain without flange



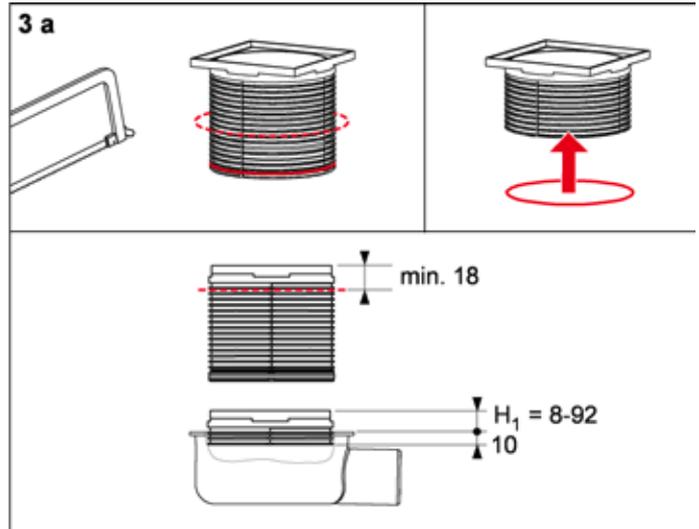
Position the floor drain and connect the wastewater pipe.



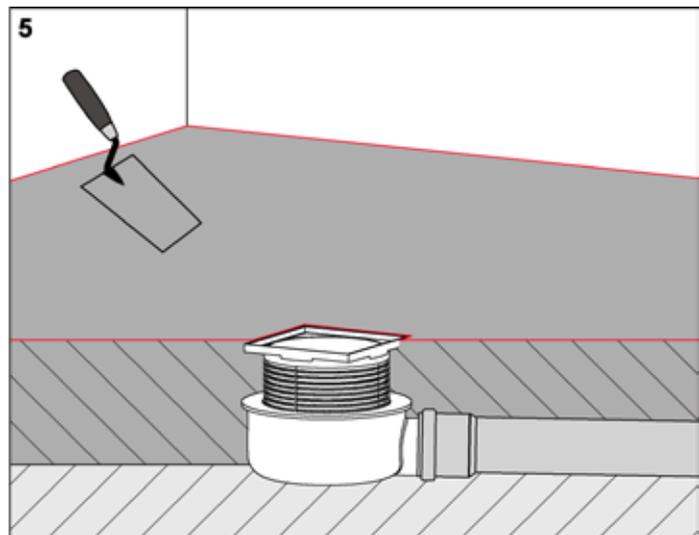
Carry out tightness test.



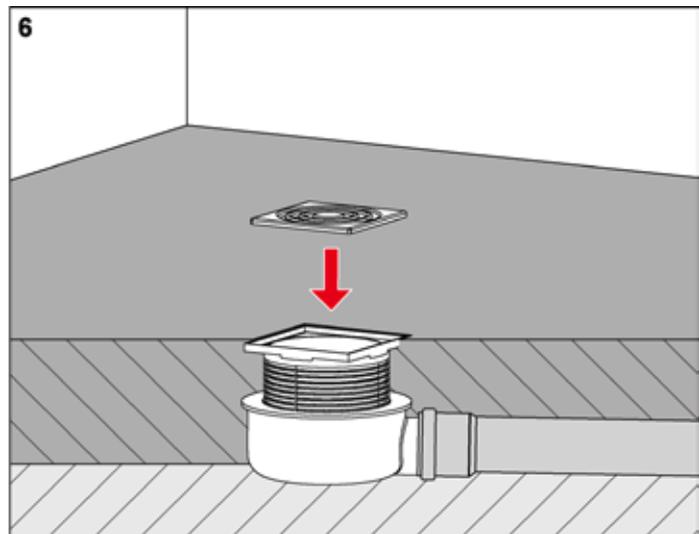
Insert the drain top.



The drain top must be cut to length, the O-ring seal should sit in the lowest groove.



Lay screed or other floor material.



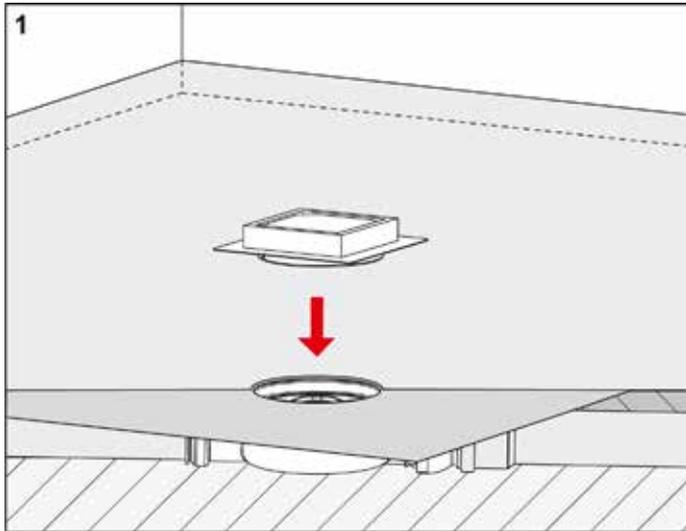
Insert grate.

TECEdrainpoint S – Installation instructions

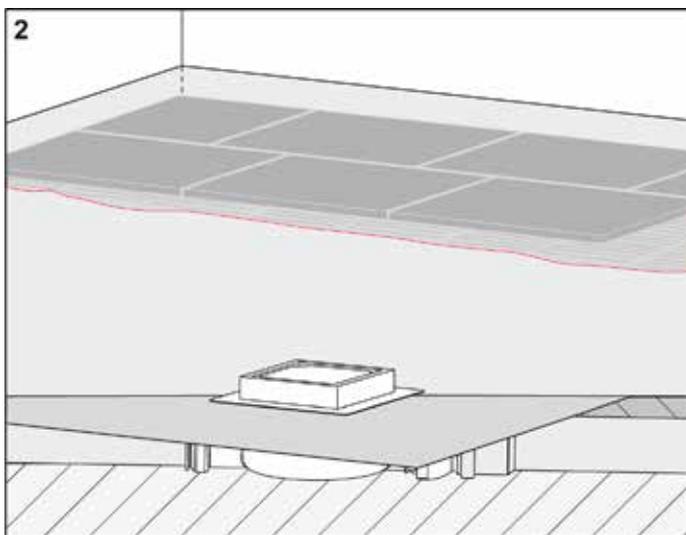
Installation of the “frameless” tile base

The “frameless” tile base is generally installed directly on a drain with a Seal System universal flange.

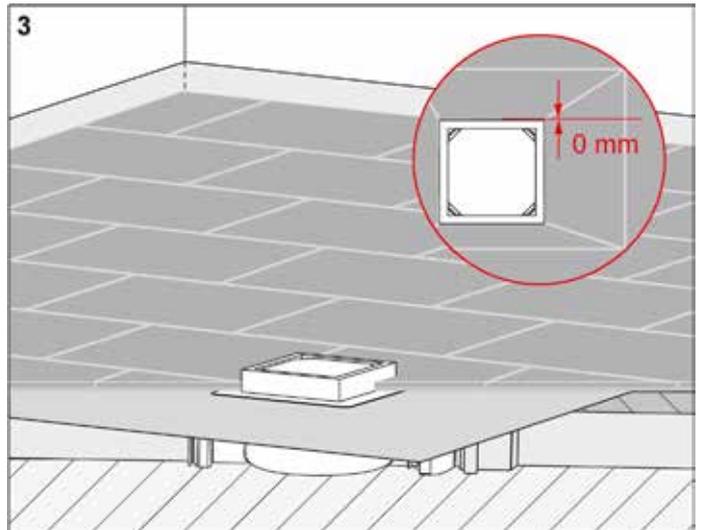
For the installation, it is presumed here that the drain is incorporated and connected to the wastewater pipe, and that the seal has been produced properly.



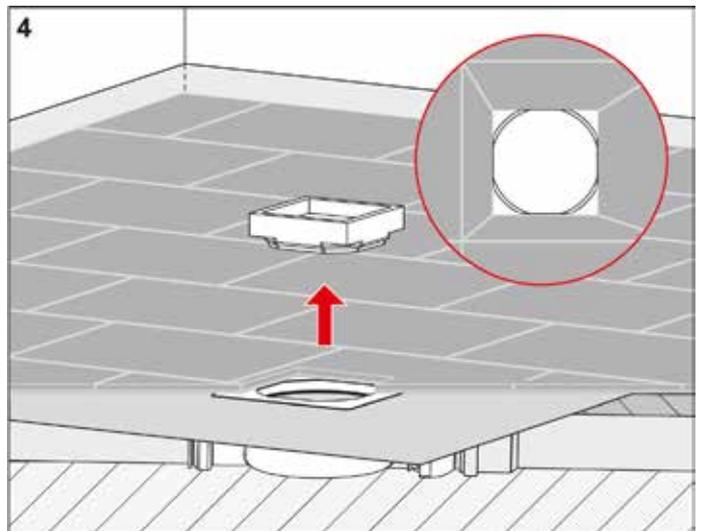
Insert the grate frame with the bare-wall protection into the drain, and align.



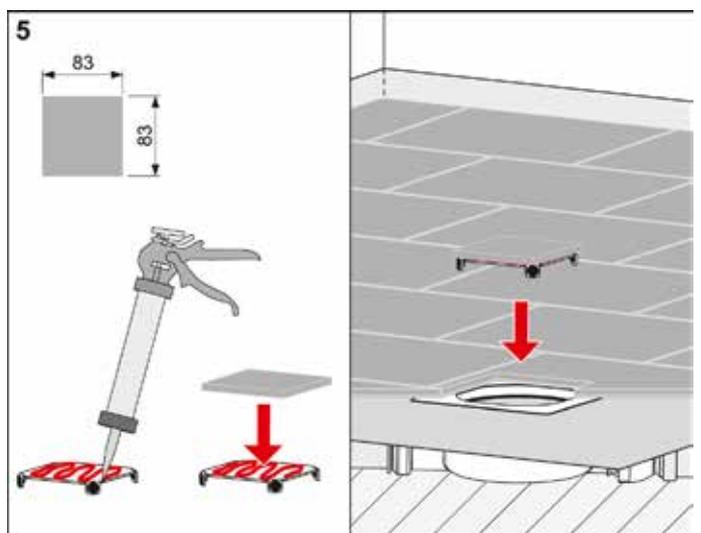
Apply the floor covering.



Mount the floor covering without any distance between the bare-wall protection.



Remove the bare-wall protection.

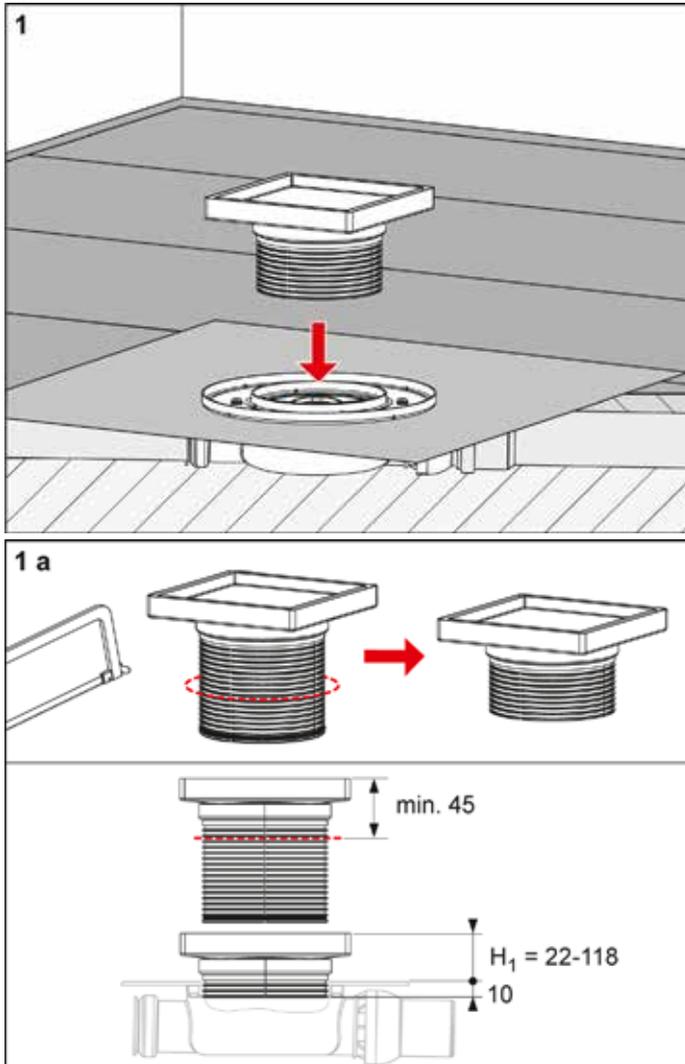


Cut the floor covering (approx. 83 x 83 mm) and bond to the support with flexible adhesive (e.g. silicone or epoxy resin adhesive). After drying, insert the tile base into the grate frame.

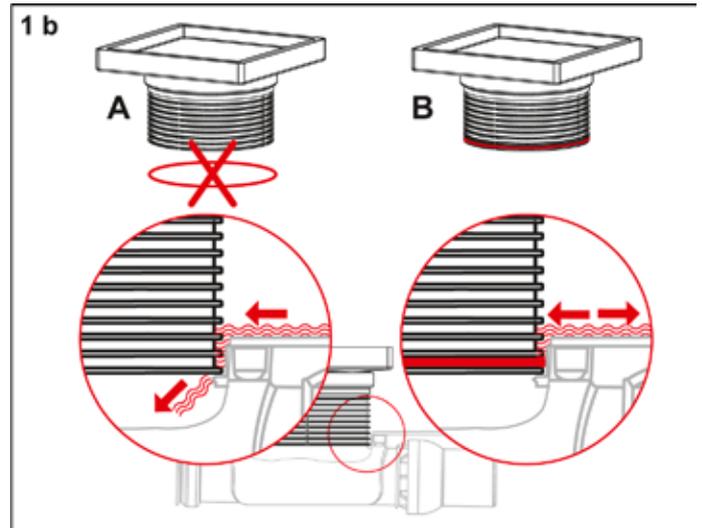
Installing the "plate" tileable channel

The tileable channel is generally installed with a drain using a compression sealing ring and an extension piece.

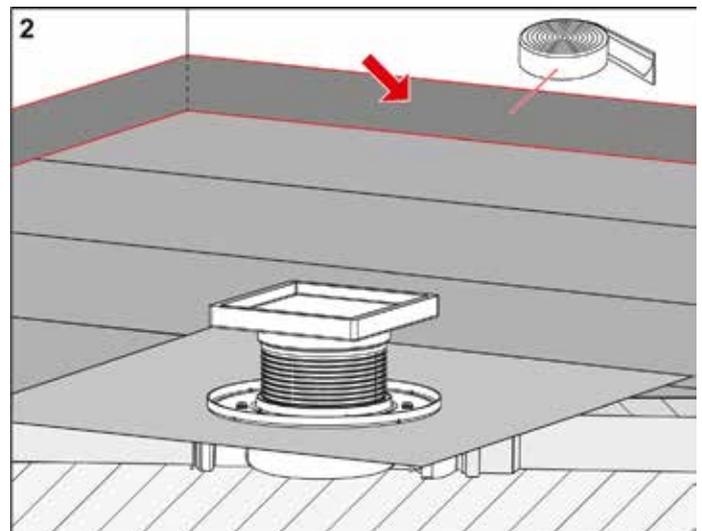
For the installation, the drain must be incorporated and connected to the wastewater pipe, and the seal must have been produced properly.



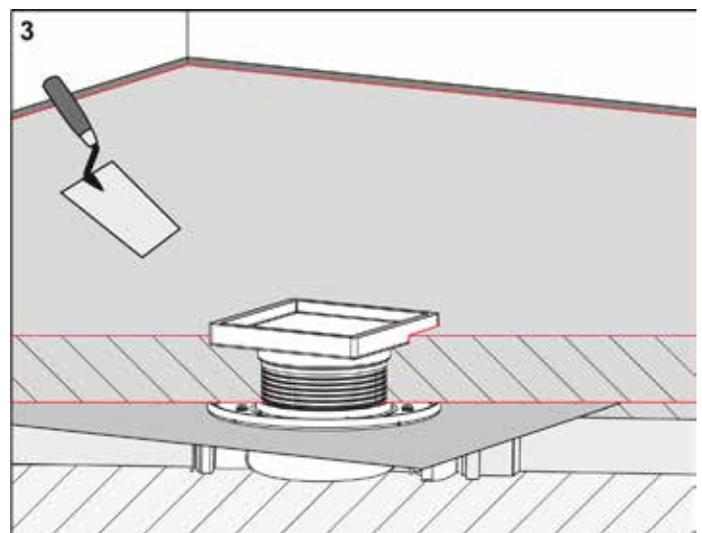
Install the drain top – it must be cut to length.



The drainage of seepage water is ensured without an O-ring.

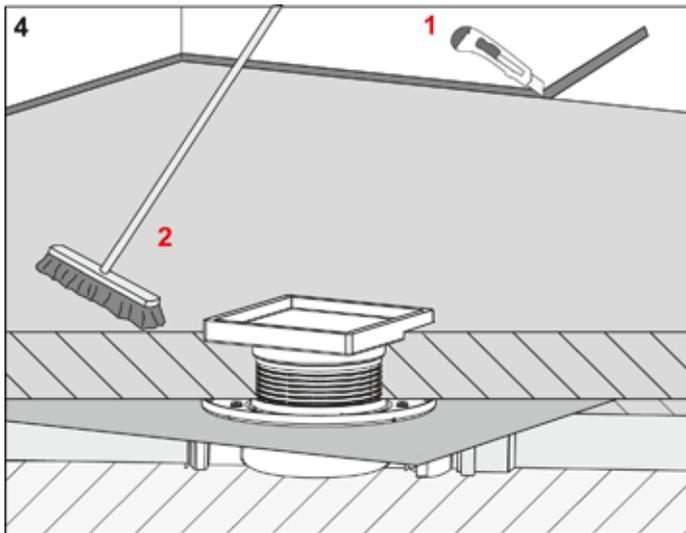


Apply the edge insulation strips.

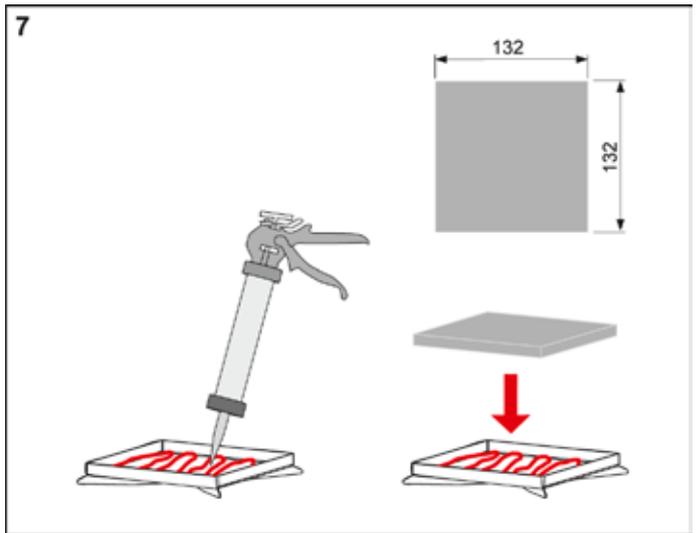


Lay the screed.

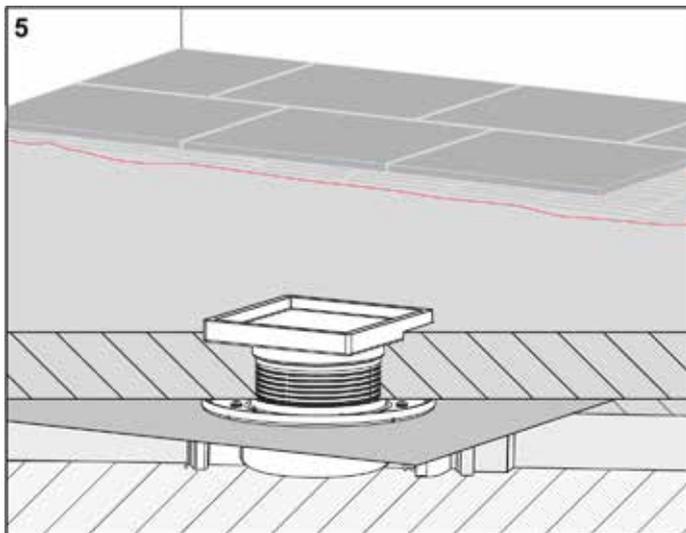
TECEdrainpoint S – Installation instructions



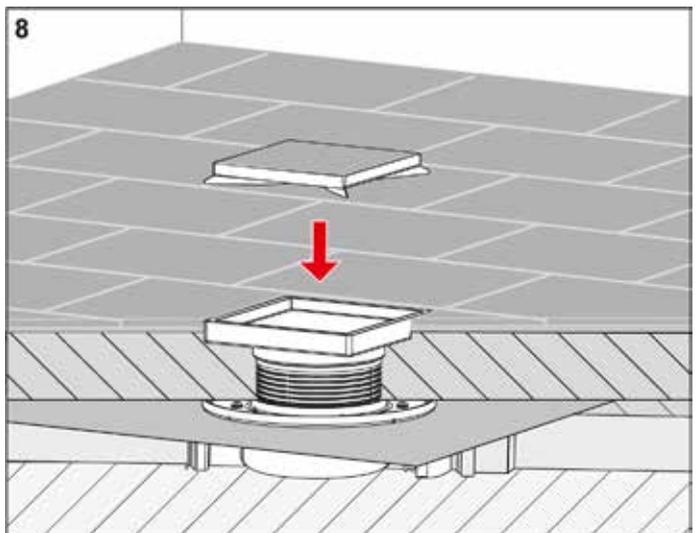
Once dry, cut off the excess edge insulation strips and PE foil, clean screed.



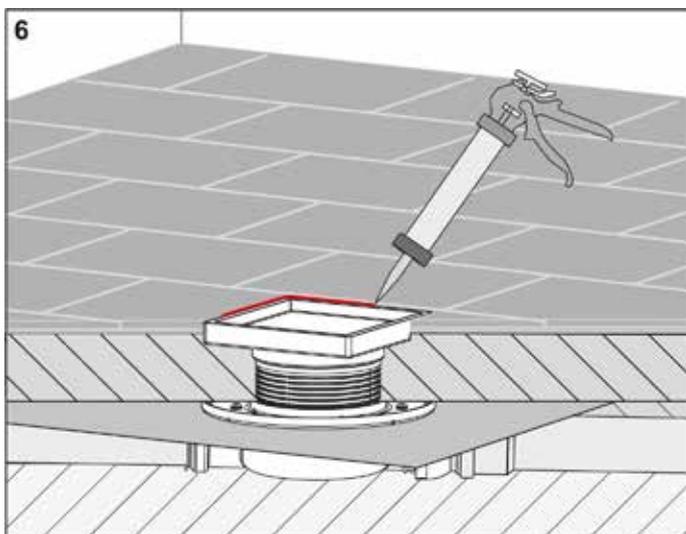
Cut the floor covering (approx. 132 x 132 mm) and bond in the tileable channel with flexible adhesive (e.g. silicone or epoxy resin adhesive).



Apply the floor covering.



After drying, insert the tileable channel into the grate frame.



Seal the joint with permanently flexible material.

Guidelines

DIN 1986: Drainage systems for buildings and property

- Part 3: Rules for operation and maintenance (2004)
- Part 4: Fields of application of sewage pipes and fittings of different materials (2011)
- Part 30: Maintenance (2012)

DIN 1986-100: Drainage systems for buildings and property/Provisions in conjunction with DIN EN 752 and DIN EN 12056 (2008)

DIN 18040 Part 2: Barrier-free construction - Planning guidelines - Dwellings (2011)

DIN 18195 Parts 1 to 10: Waterproofing of buildings (2009–2011)

DIN EN 12056, DIN 1986 and DIN EN 1610 comments: Buildings and drainage systems (2000)

DIN EN 1253, Parts 1 to 3: Gullies for buildings (1999–2003)

DIN 4109 (1989): Sound insulation in buildings; requirements and testing, amendment A1 (2001)

VDI 4100: Sound insulation between rooms in buildings - Dwellings - Assessment and proposals for enhanced sound insulation between rooms (2012)

Model buildings regulations (MBO) (2002)

ZDB bulletin: Composite seals – Instructions for processing liquid-applied waterproofing materials together with coverings and claddings made of tiles and panels for indoor and outdoor areas (2012)

GIPS bulletin 5: Bathrooms and wet rooms in timber and dry wall construction (2006)

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