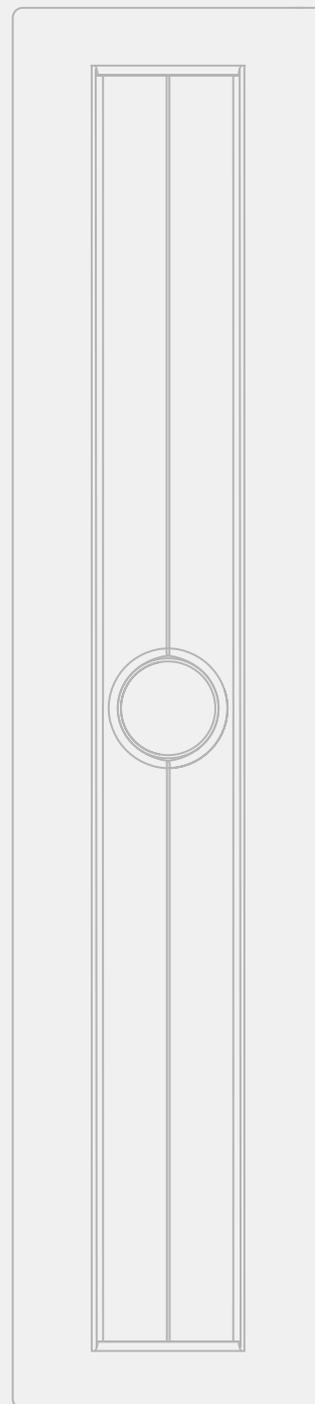




Drainage systems

TECEdrainline

TECHNICAL GUIDELINES



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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.



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.

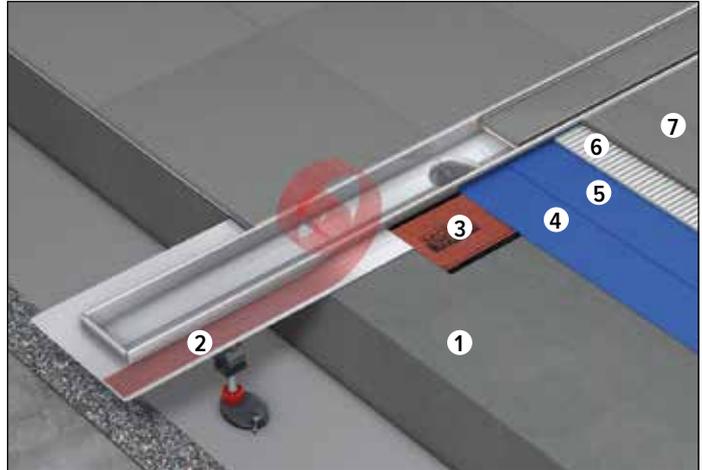
The currently certified composite seal products are shown in the table on the following page.

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

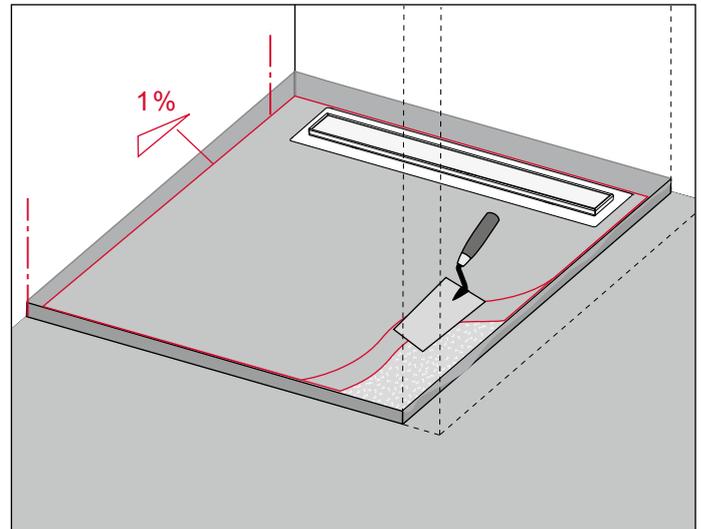
- The layout of the bathroom on the same level as the adjoining floor area and a maximum lowering of 2 cm; where applicable, any transition elements should preferably be formed as inclined surfaces;
- Slip-proof floor coverings in the shower zone (in accordance with GUV-I 8527 at least rating group B);
- (**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 %.

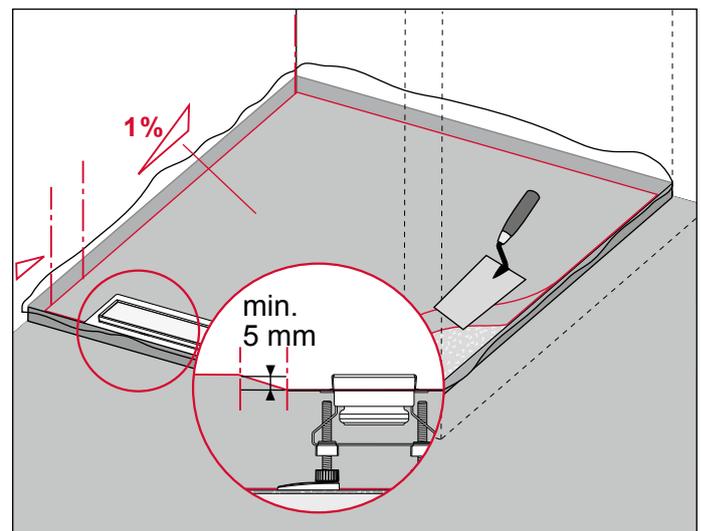
Channel position and design of incline

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.

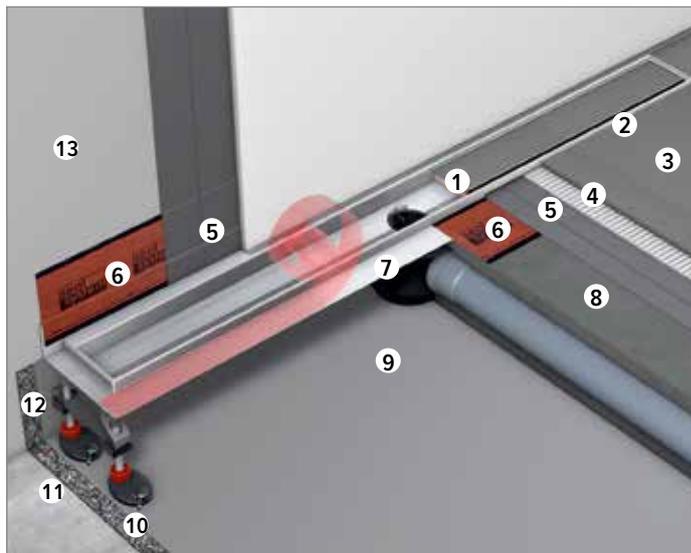
Recommended incline designs can also be found in the TECEdrainline shower channel installation instructions.

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.

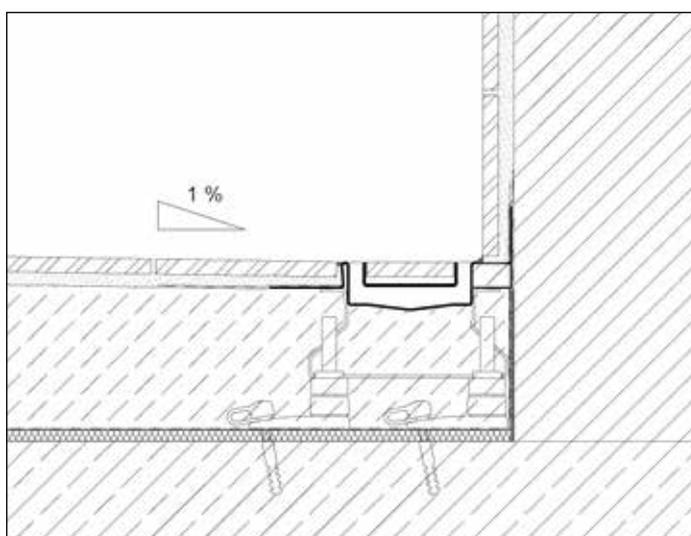
The advantage of installing the channel “directly at the wall” is that the channel fits more discreetly into the tiling pattern and therefore requires less tiling. It is no longer necessary to inset thin tile sections or paste joints between the wall and the shower channel, as is the case for “close-to-wall” 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.



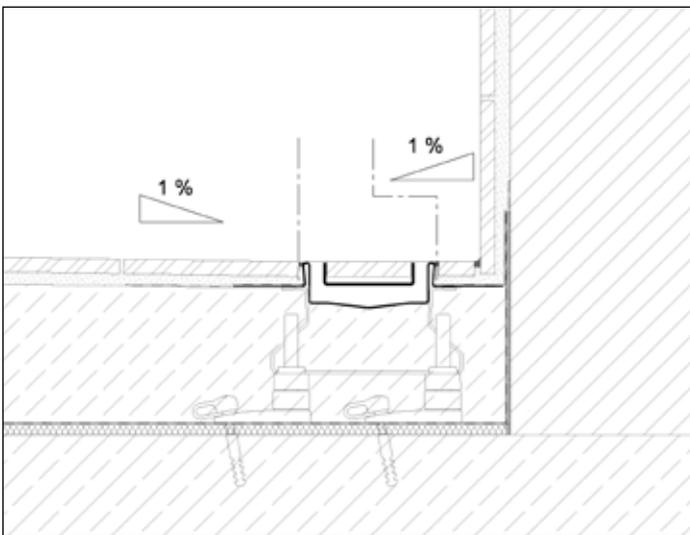
Installation "close to the wall"

Installation "in the middle of the room"

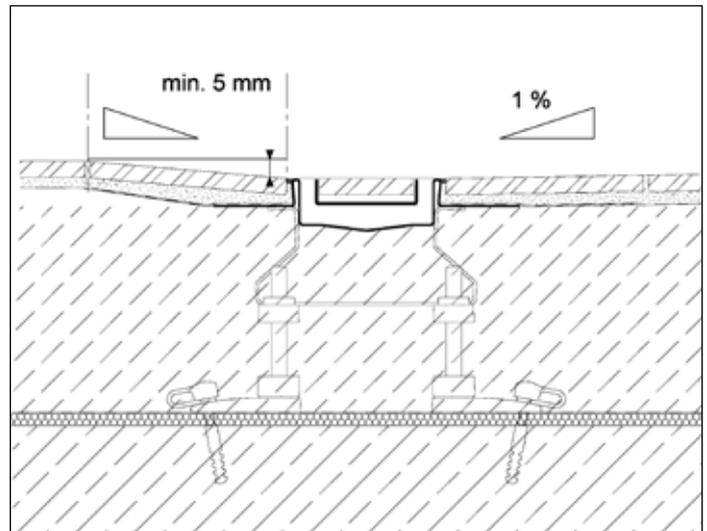


Installation "in the middle of the room"

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.

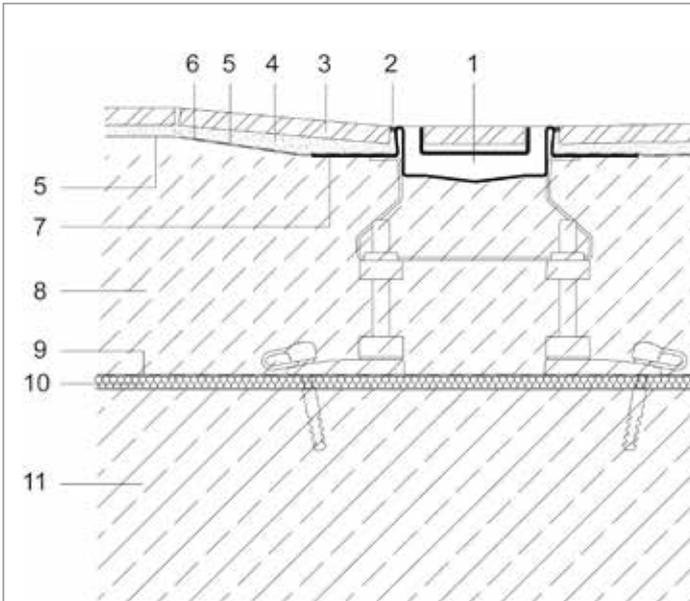


Installation "close to the wall", incline



"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.



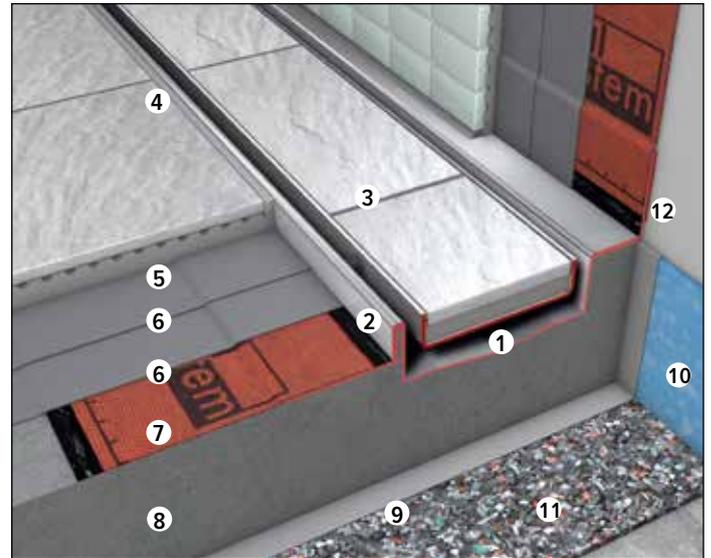
Drainbase sound insulation mat

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.

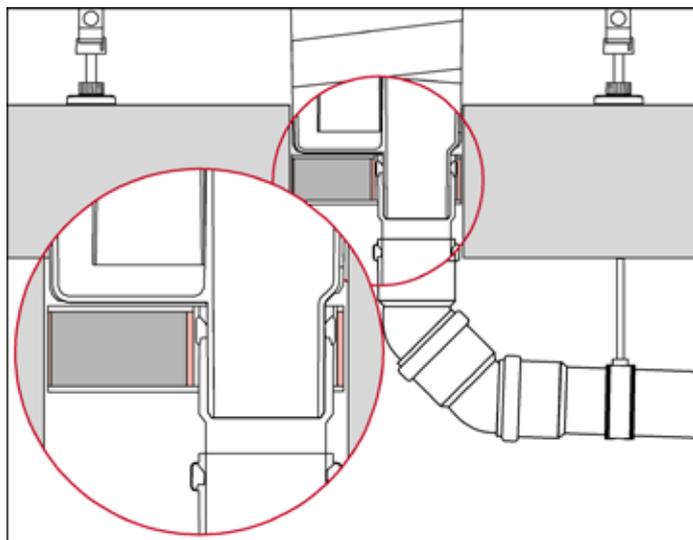
TECEdrainline – Planning

Fire protection

FireStop fire protection set for vertical drains.

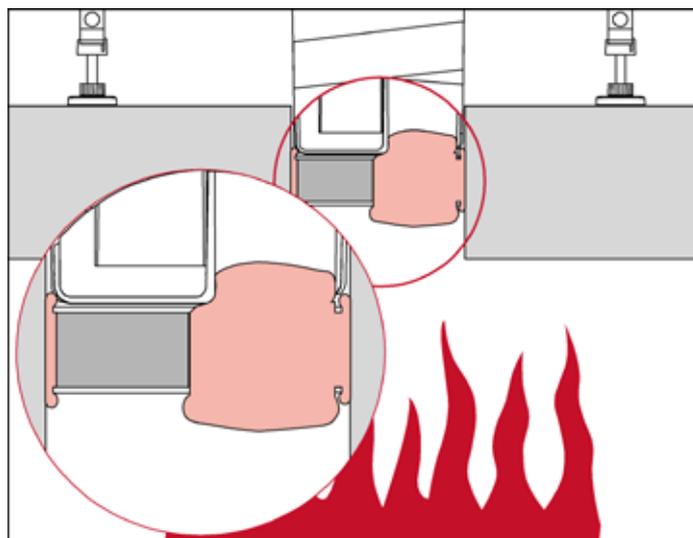
With the TECEdrainline FireStop EI 120 DN 50 fire protection set, TECE is offering a safe and innovative fire protection solution up to fire resistance class EI 120 in accordance with DIN EN 13501-2:2007 and A1:2009.

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



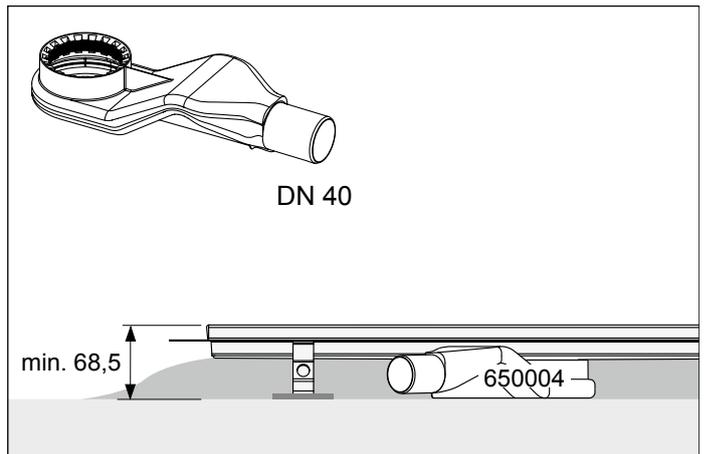
“plate” tileable channel

Drains

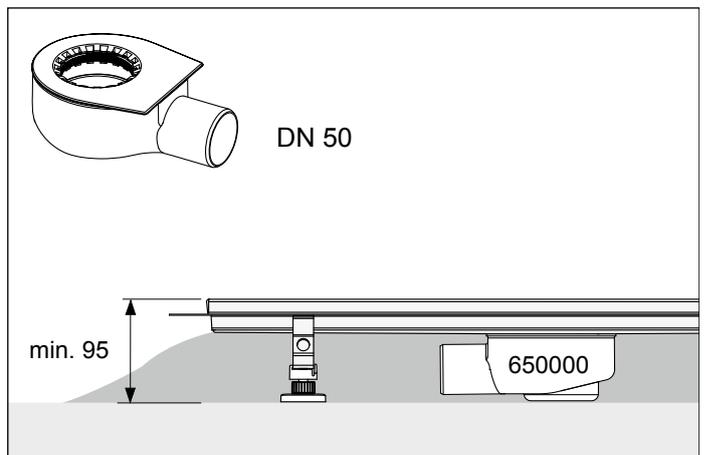
Horizontal

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.

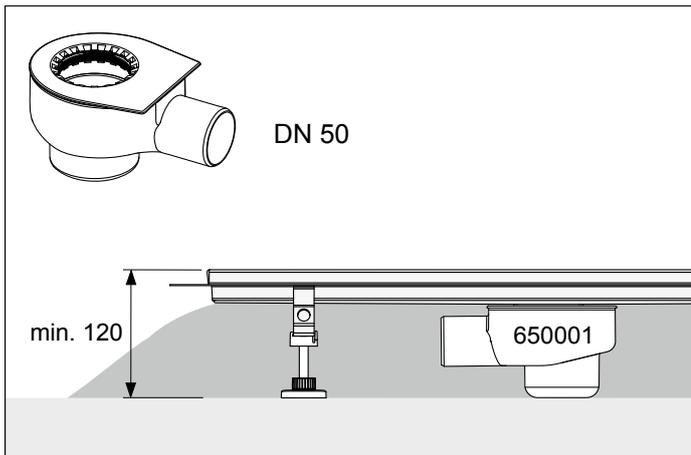
The lowest assembly height among the drains is 68.5 mm (up to top edge of finished floor). This “extra-flat” outlet has a drainage capacity of 0.6 l/s. It is therefore sufficient for average shower heads (throughput 10-15 l/min). For power showers which require a particularly high drainage capacity, 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.



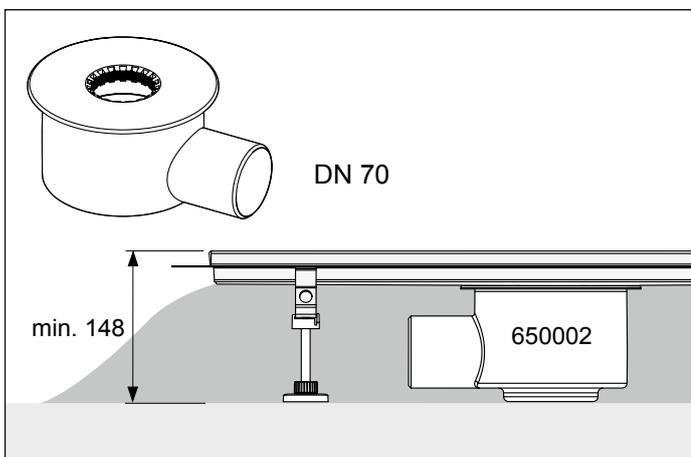
“Extra-flat” drain



“Flat” drain



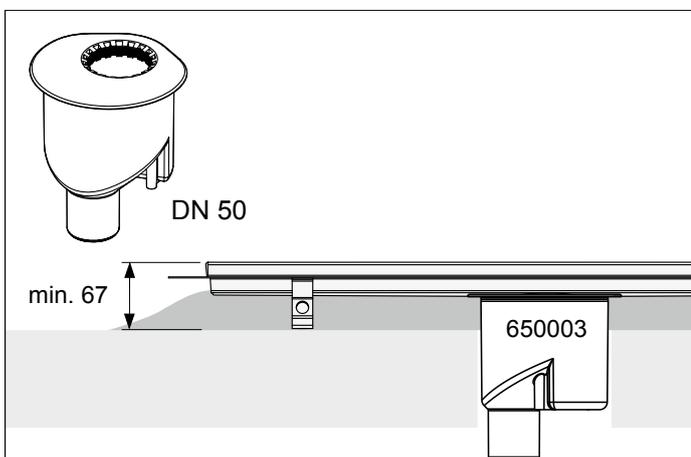
“Standard” drain



“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



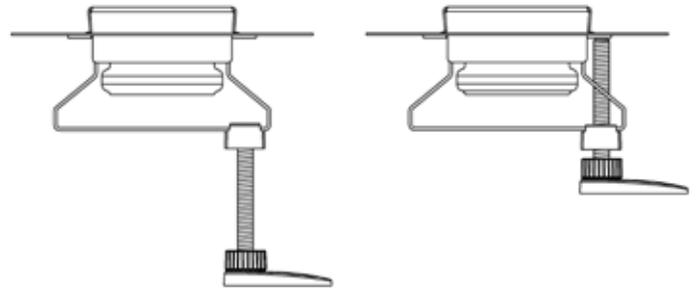
Clean the channel body – do not use aggressive cleaning agents



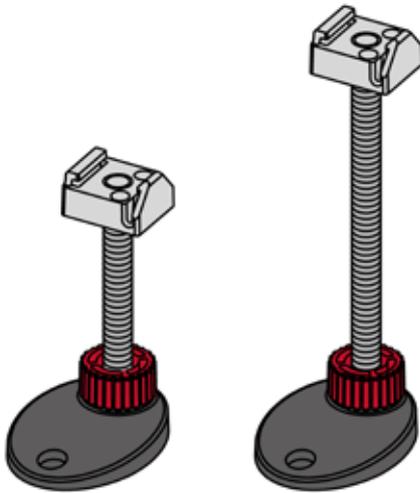
Clean the outlet pipe with a small manual pipe cleaning cable

Simple height adjustment

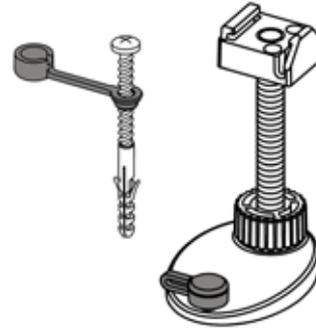
The assembly feet facilitate installation of the TECEdrainline. Using just one screw on each foot, the Drainline can be easily and quickly matched to the required floor level. The clip mechanism is an additional advantage. Simply clip the feet onto the two brackets of the channel and align the channel. 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)



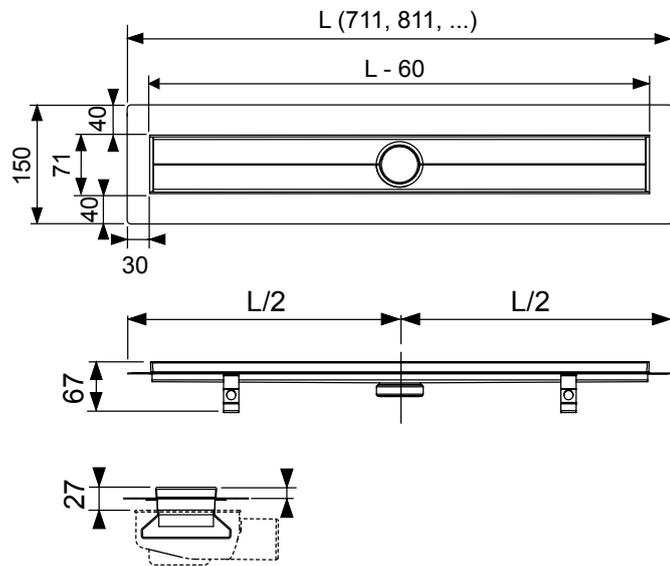
Sound-absorbing element on assembly foot

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

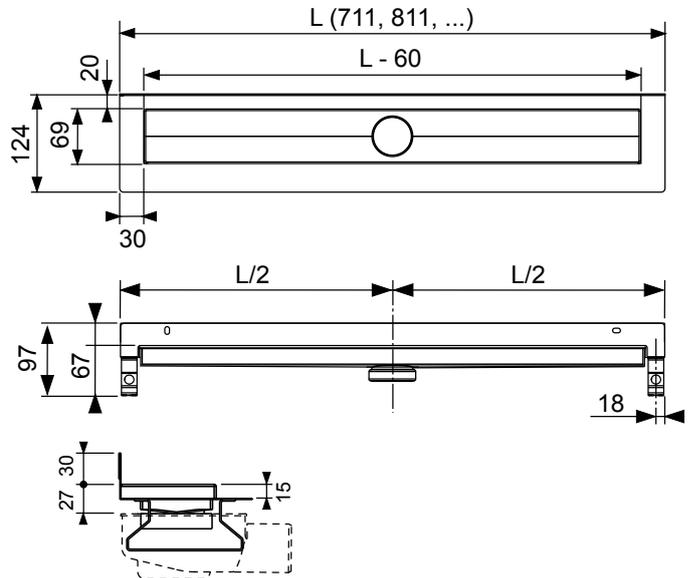
Please order separately: Design grate or tileable channel, drain, assembly feet (optional) Drainbase sound insulation mat (optional), for adherence to installation noise level according to DIN 4109 and VDI 4100 sound protection levels (SS) I to III.

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.

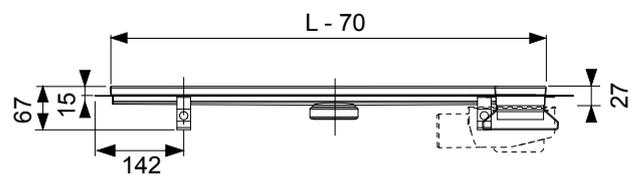
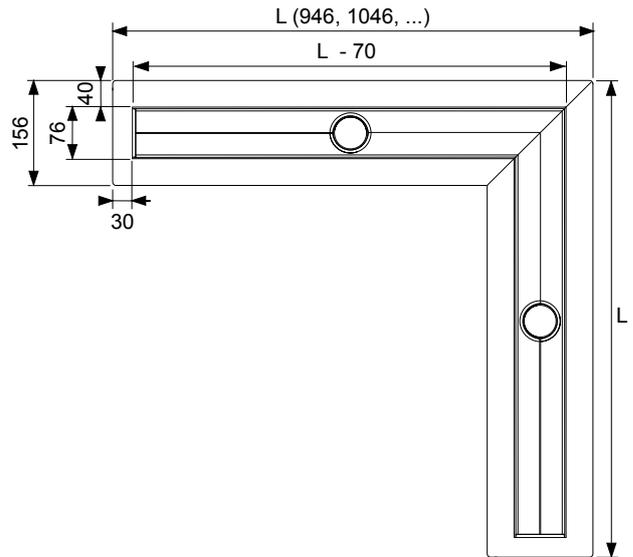
Please order separately: Design grate or tileable channel, drain, assembly feet (optional) Drainbase sound insulation mat (optional), for adherence to installation noise level according to DIN 4109 and VDI 4100 sound protection levels (SSt) I to III.

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.

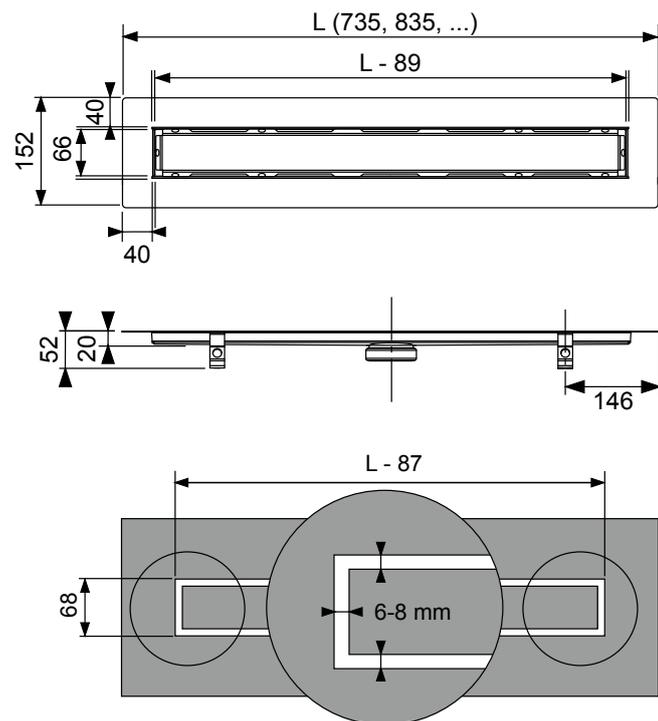
Order number	Nominal length	Total length L	Visible dim. after installation L - 70 mm
610900	900 x 900 mm	944 x 944 mm	874 x 874 mm
611000	1,000 x 1,000 mm	1,044 x 1,044 mm	974 x 974 mm
611200	1,200 x 1,200 mm	1,244 x 1,244 mm	1,174 x 1,174 mm

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.

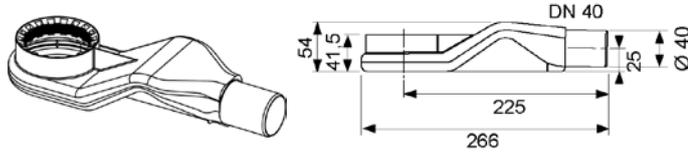
Consisting of:

- 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**



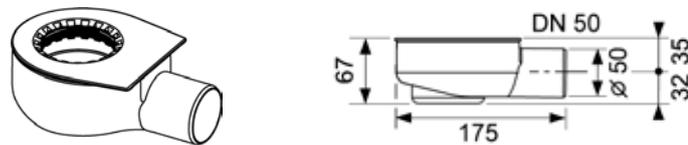
Extra-low drain for TECEDrainline shower channel to create rotatable fitting with the channel body and side connection to DN 40 wastewater pipe, with removable siphon immersion pipe.

- 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**



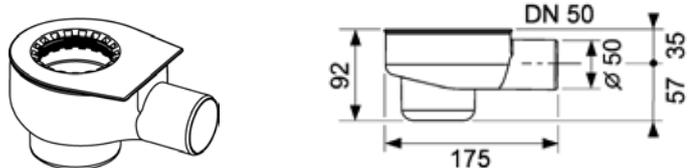
Low drain for TECEDrainline shower channel to create rotatable fitting on the channel body and side connection to DN 50 wastewater pipe, with removable siphon immersion pipe

- 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**



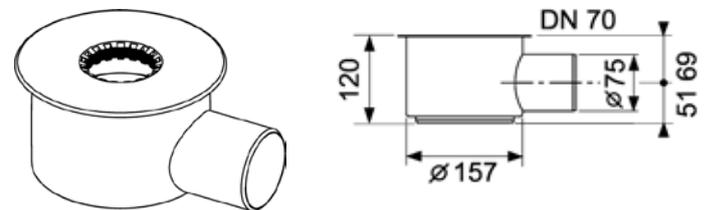
Standard drain for TECEDrainline shower channel for rotatable fitting to the channel body and side connection to DN 50 wastewater pipe, with removable siphon immersion pipe

“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**



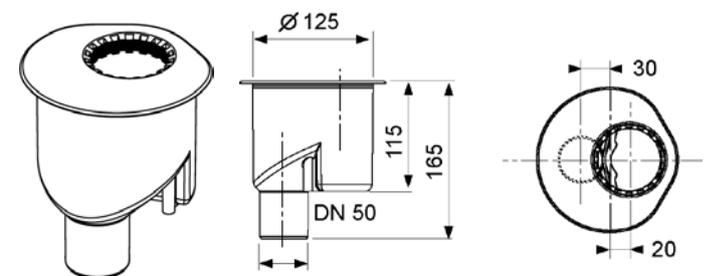
Large drain for TECEDrainline shower channel to create rotatable fitting with the channel body and side connection to DN 70 wastewater pipe, with removable siphon immersion pipe.

- 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

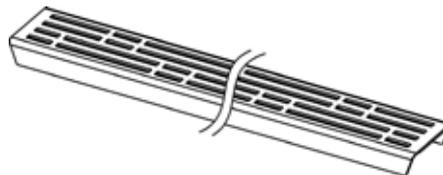
Drainage capacity of TECEdrainline floor drains according to DIN EN 1253-1 in l/s at 10 mm (highest value) and 20 mm (lowest value) accumulation height above grate.

Design covers, straight

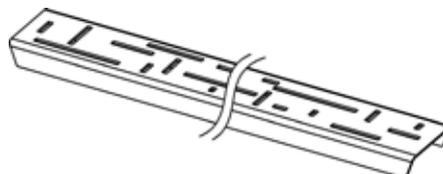
Design grate for TECEdrainline shower channel made of polished or brushed stainless steel for fitting into the channel body, load class K3 – test load 300 kg. Different designs.

The “quadratum” design of the brushed version has been proven to also be suitable for the public barefoot area.

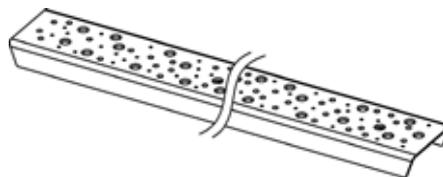
The grate has achieved the highest slip resistance class C according to DIN 51097.



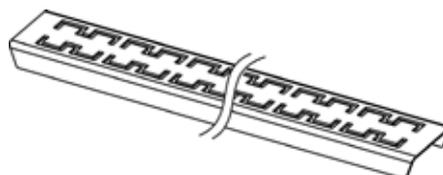
Design grate - “basic” design



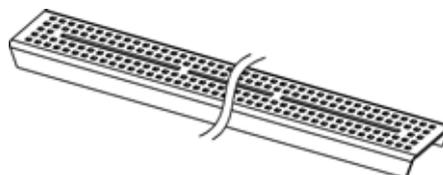
Design grate - “lines” design



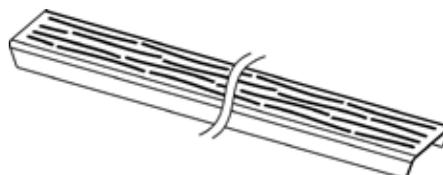
Design grate - “drops” design



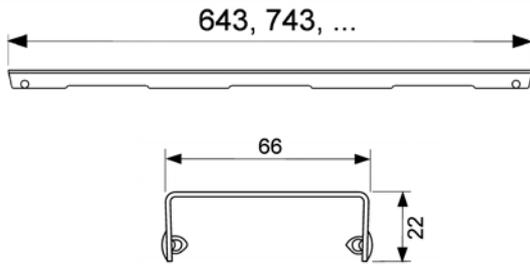
Design grate - “royal” design



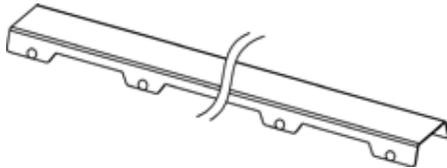
Design grate - “quadratum” design



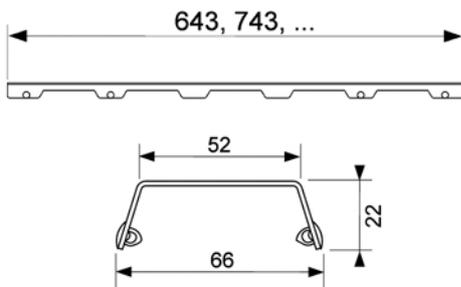
Design grate - “organic” design



Design grate dimensions



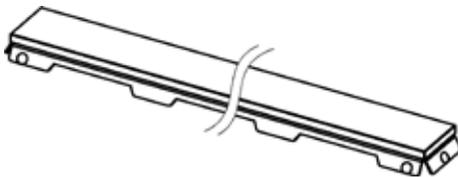
Design grate - "steel II" design



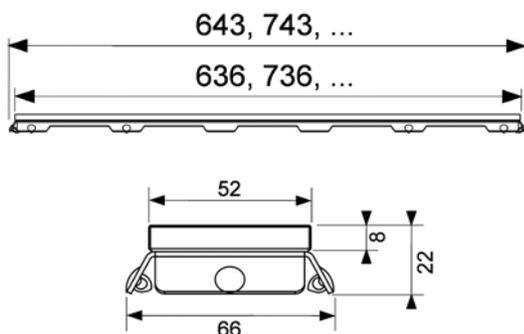
Dimensions of "steel II" design grate

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).



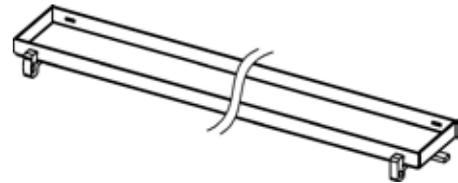
Glass cover



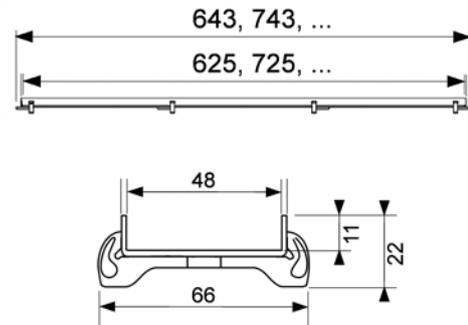
Glass cover dimensions

Tileable channel, straight

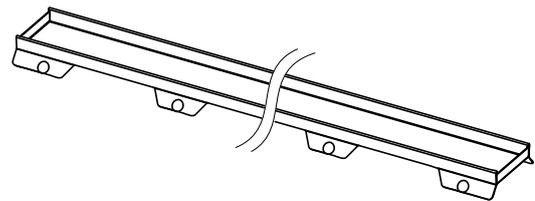
Tileable channel for TECEdrainline shower channel, for fitting into the channel body, made of stainless steel with polished visible edges. Maximum test load 300 kg based on load class K3, for on-site attachment of tiles with flexible adhesive, e.g. silicon or epoxy resin adhesive; Note: check the adhesive to ensure tile compatibility. Design version = "plate" and "plate II".



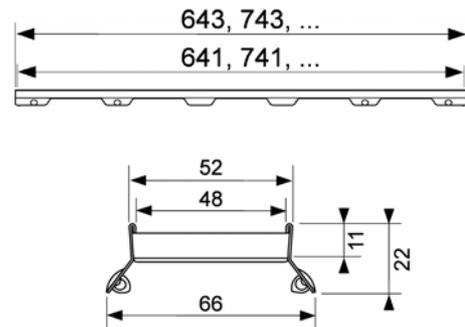
"plate" tileable channel



Dimensions of "plate" tileable channel



"plate II" tileable channel

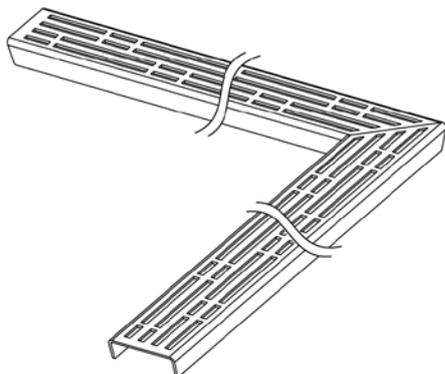


Dimensions of "plate II" tileable channel

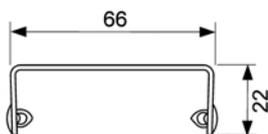
TECEdrainline – Range and technical data

Design covers for angled channel

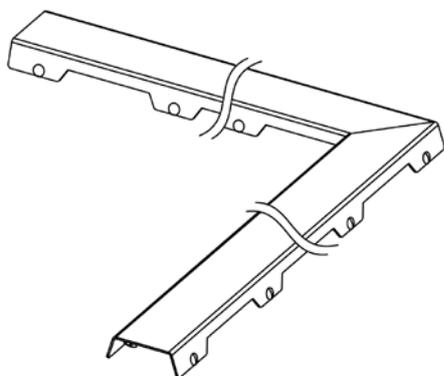
Design grate for TECEdrainline angled channel made of polished stainless steel for fitting into the channel body, load class K3 – test load 300 kg, in two parts. “basic” and “steel II” design versions:



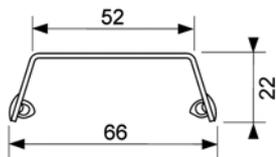
Design grate - “basic” design



Dimensions of “basic” design grate



Design grate - “steel II” design

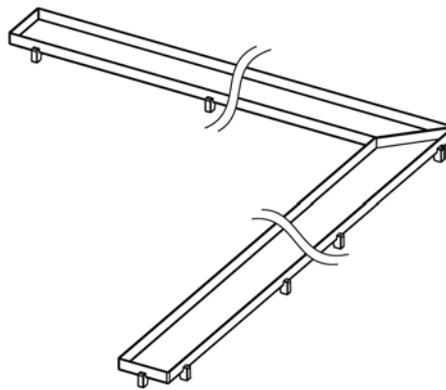


Dimensions of “steel II” design grate

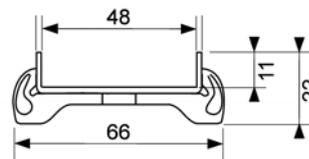
Tileable channel for angled channel

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:

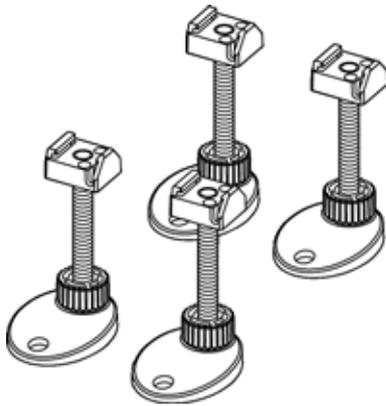
- 92–139 mm (for “extra-flat”, “flat” and “standard” drain)
- 137–184 mm (for “Max” drain)

Consisting of:

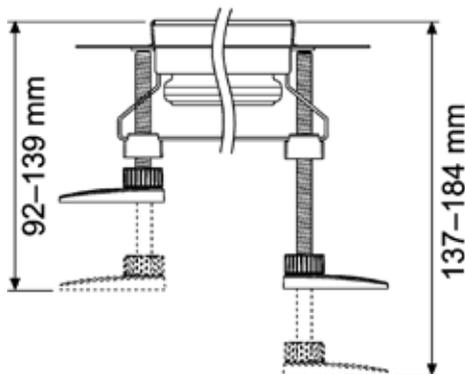
- Four assembly feet including sound-proofing elements
- Mounting materials

Order number 660003 (92–139 mm)

Order number 660004 (137–184 mm)



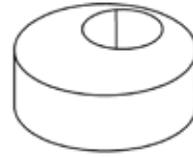
Assembly feet



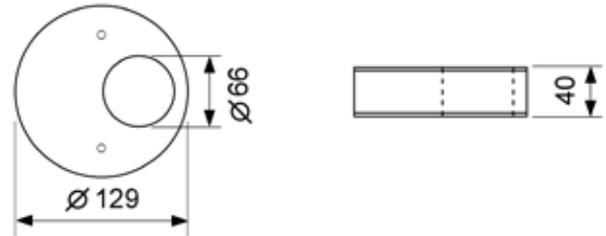
Assembly feet adjustment range: 6 600 03 (left) and 6 600 04 (right)

Fire protection set

TECEdrainline fire protection set FireStop EI 120 DN 50



Fire protection set



Dimensions of fire protection set

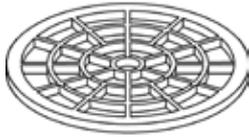
Fire protection set for direct installation on the TECEdrainline DN 50 vertical drain for highly fire resistant partitioning of ceiling bushings in solid ceilings up to 120 min. Classification in accordance with DIN EN 13501 for fire resistance class EI 120.

- 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: \varnothing 130 mm (\varnothing min = 129 mm, \varnothing 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

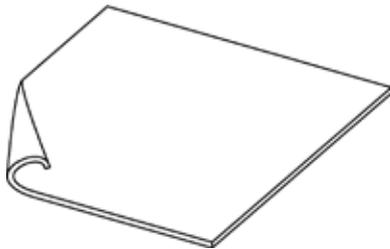
For placing on the immersion pipe of the TECEdrainline channel body, made of stainless steel.

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.

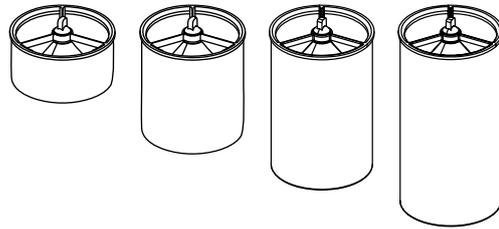
Installation noise level with normal shower setting: 22 dB(A) with TECEdrainline. Made from recycled, sturdy rubber granules bound with PUR elastomer.

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)

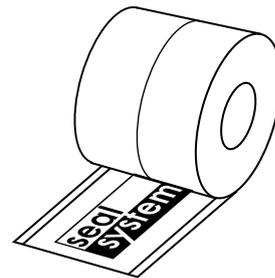
Order number 660015 (for “extra-flat” drain)

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

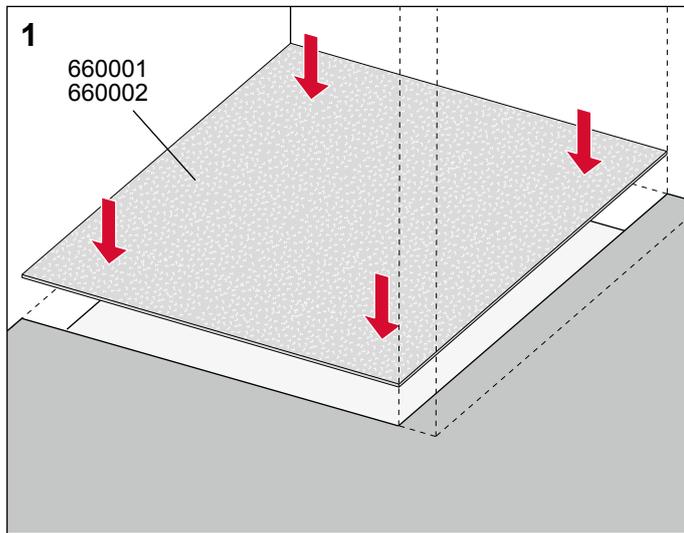
Order no. 660019

Installation instructions

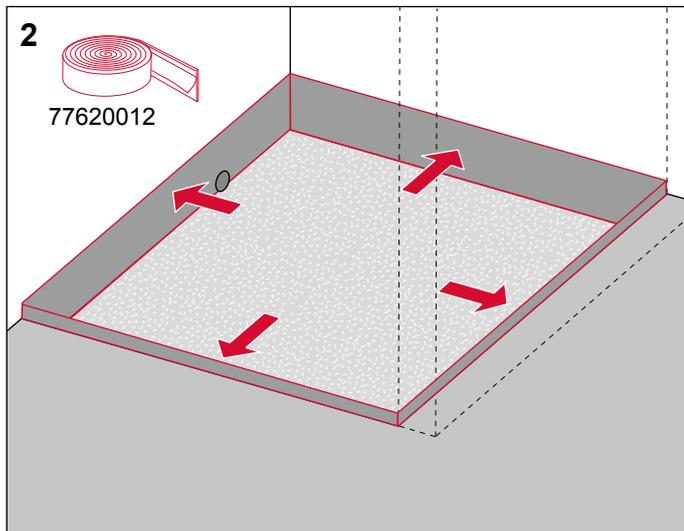
Installation of the various TECE shower channels is illustrated here with a horizontal drain. For the specific features when using a vertical or extra-flat drain, refer to the corresponding installation instructions for these drains.

Installation instructions for shower channel, straight

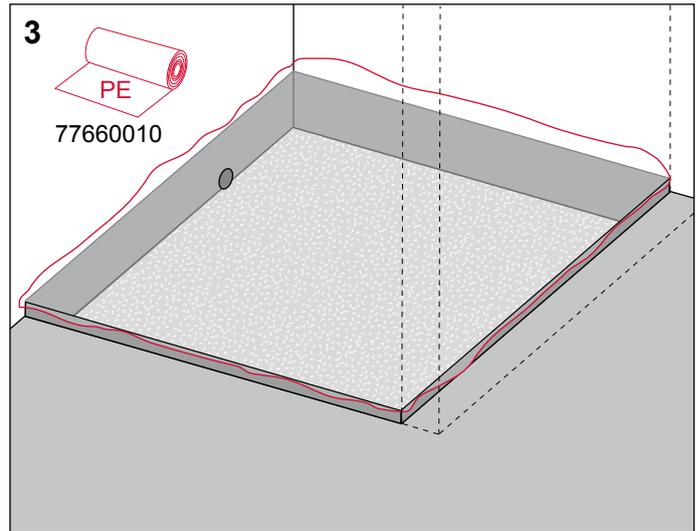
When installing the TECEdrainline, the steps involved can differ depending on the position of the installation. A distinction is made between an installation in the middle of the room (A) and an installation close to the wall (B).



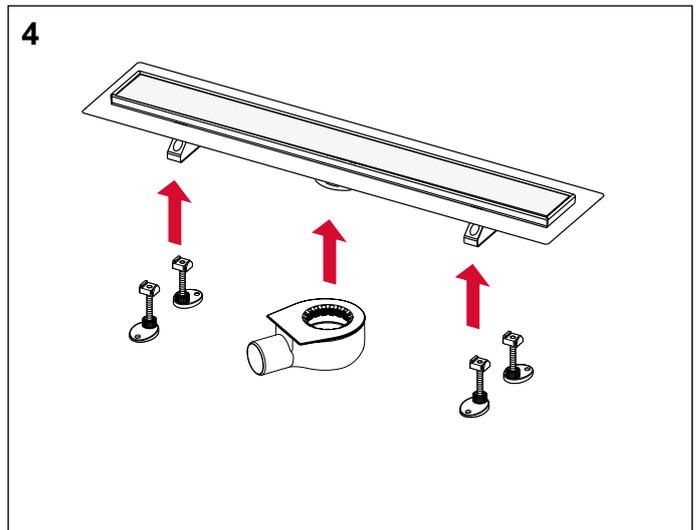
Optional: Cut the drainline sound-proofing mat and place in position so that it covers the whole surface of the shower area.



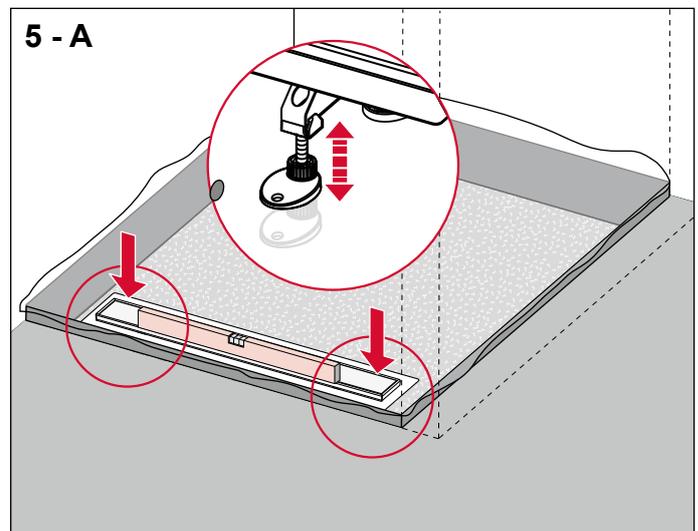
Add edge insulation strips on all sides.



Lay the PE sheet.

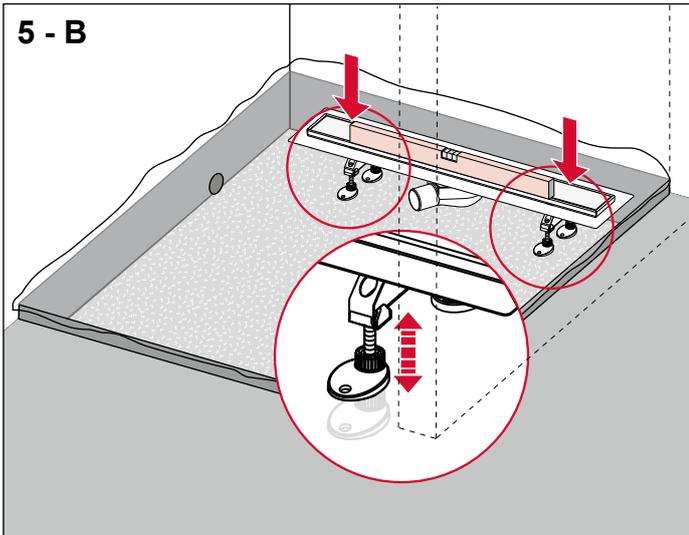


Mount the drain and click on the assembly feet if applicable.



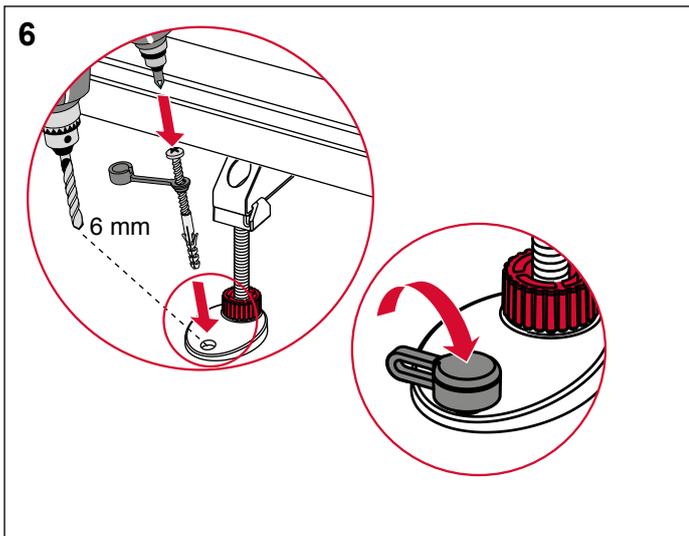
(A = positioning in the middle of the room)
Use the adjustable assembly feet to align the shower channel horizontally, if necessary pack the drain body.

TECEdrainline - Installation instructions

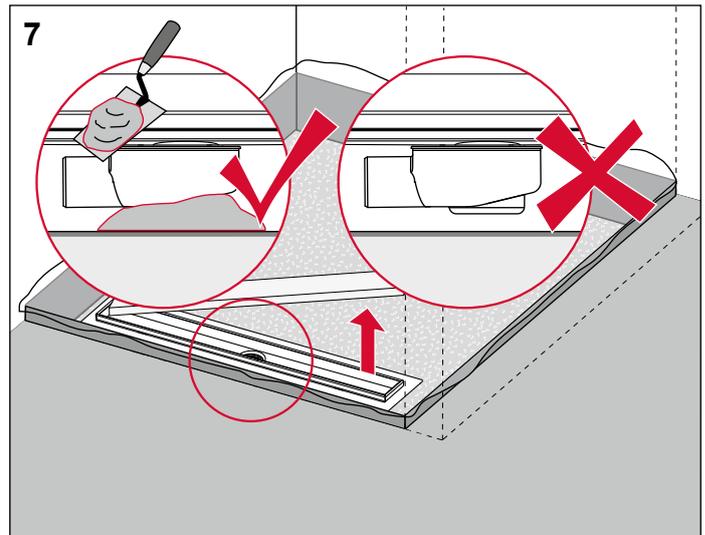


(B = positioning against the wall)

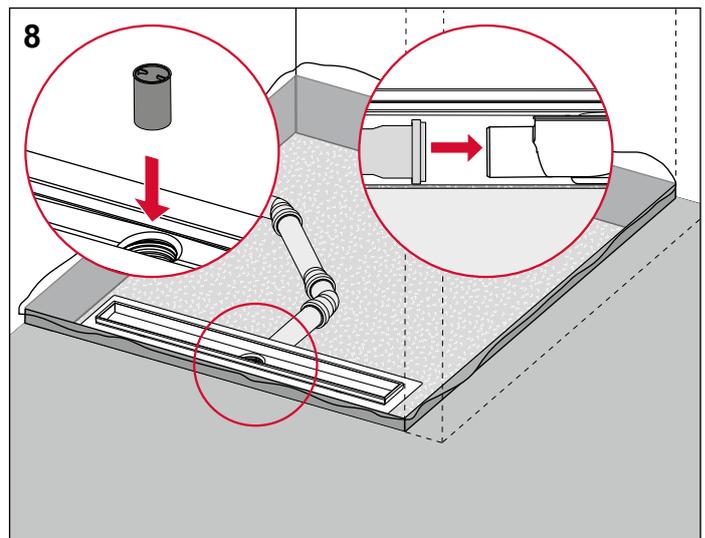
Use the adjustable assembly feet to raise the shower channel to the required height and align horizontally, if necessary pack the drain body.



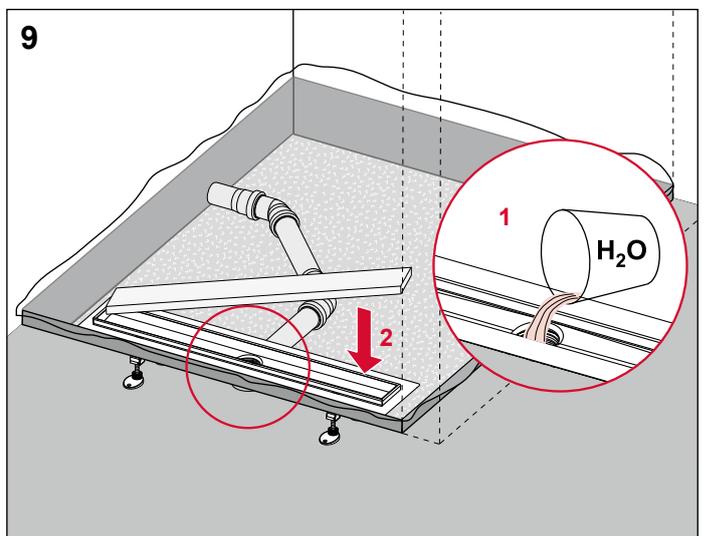
Fasten the assembly feet and press sound insulation caps onto the bolt heads.



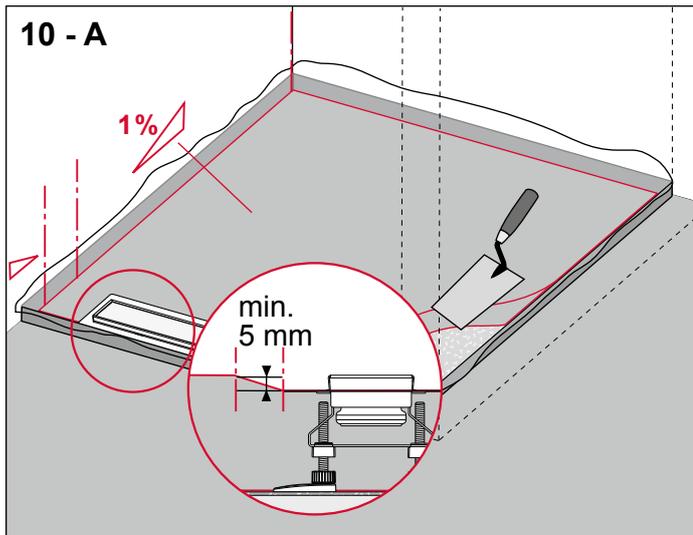
Pack the drain body if it is not lying flat. Remove the protective cover and push in the immersion pipe up to the stop.



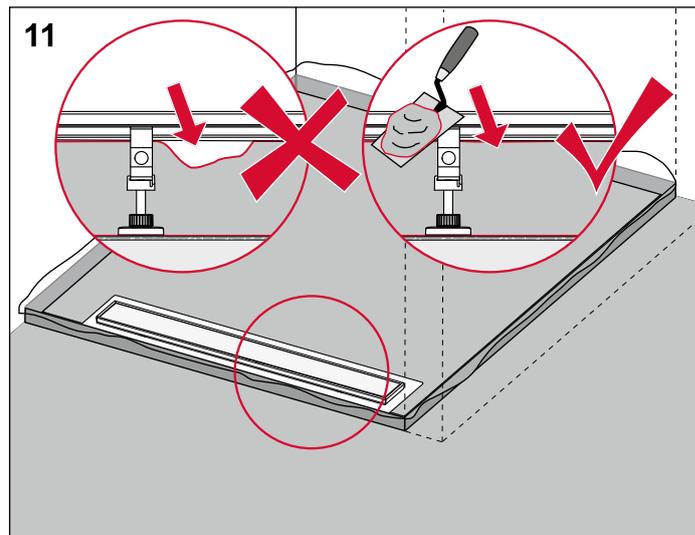
Attach the wastewater pipe to the outlet socket.



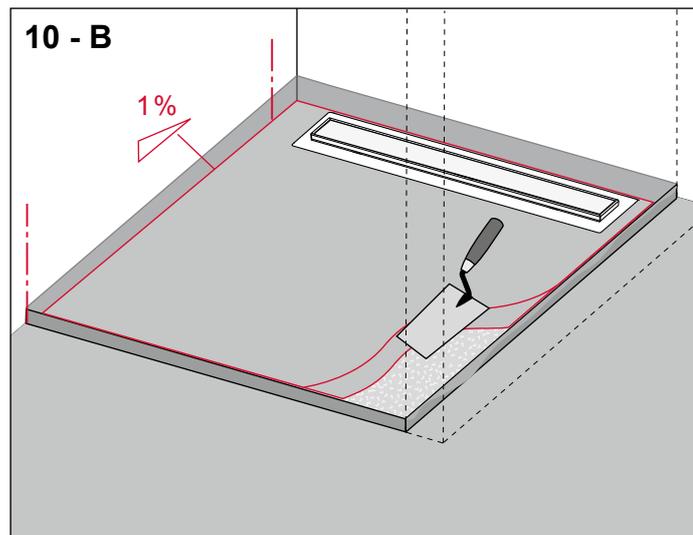
Test for leaks and then place the protective cover back in the channel.



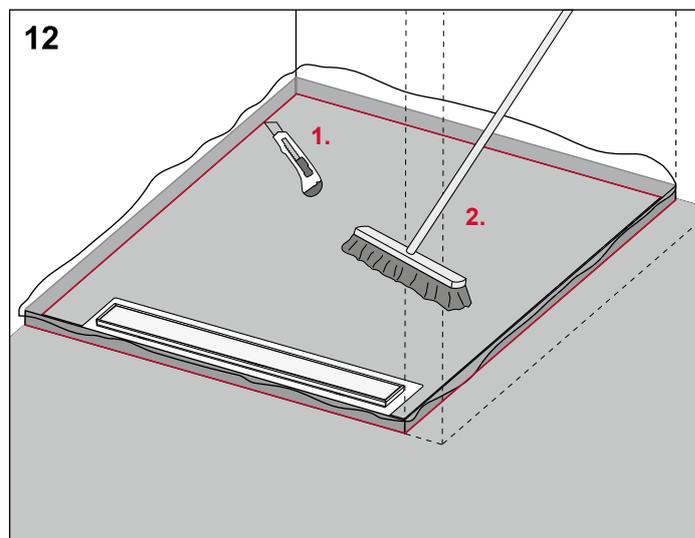
(A = positioning in the middle of the room)
 Apply the screed and fully incorporate the channel into the screed up to flange height, making sure that there are no cavities. Include an incline of 1%. When installing in the middle of the room, include a reverse gradient of at least 5 mm.



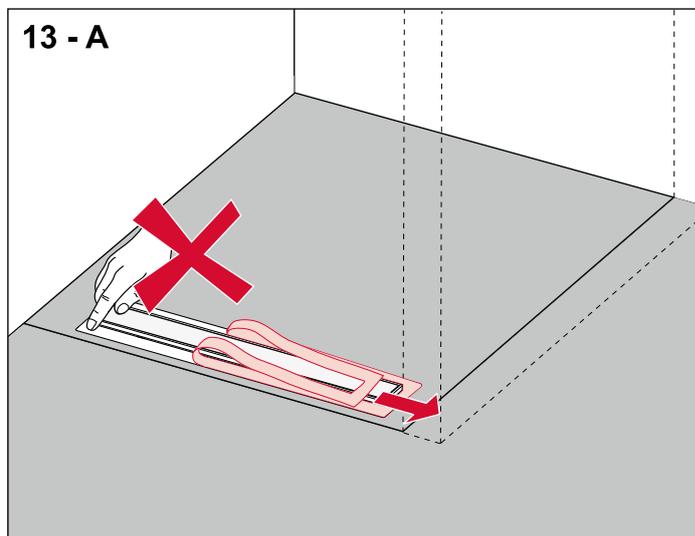
Make sure that there are no cavities between the screed and the channel or drain.



(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%.

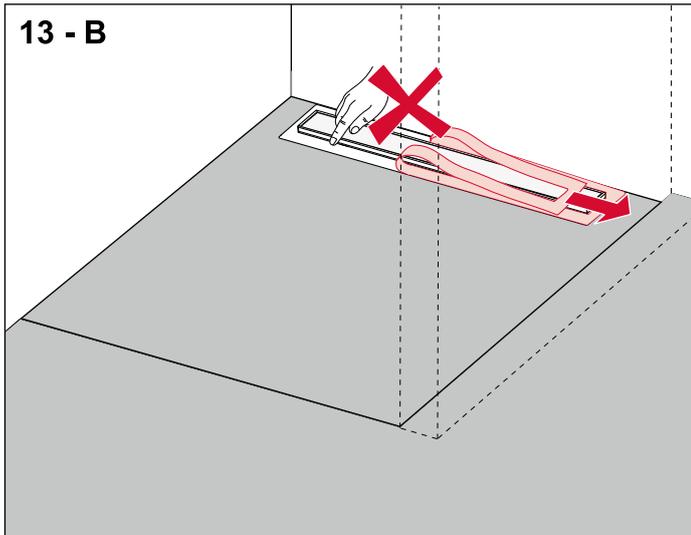


Remove the edge insulation strips and PE sheet above the screed. Clean the screed surface.

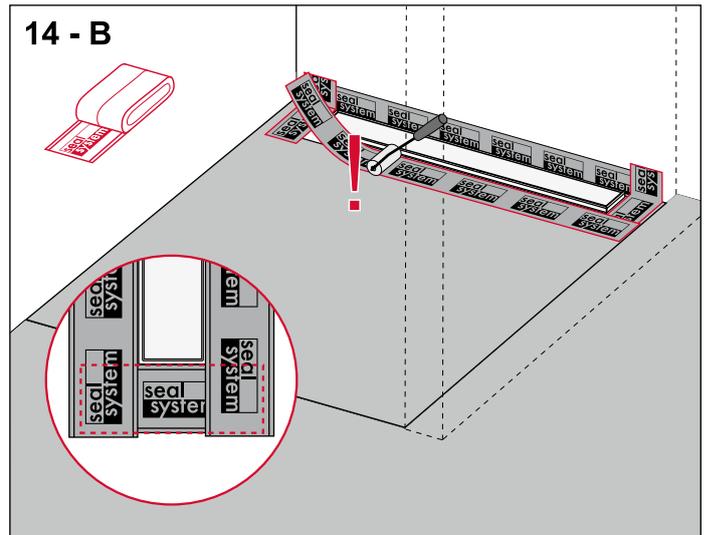


Completely remove the protective sheet from the channel flange. Do not touch the flange any more or let it get dirty.

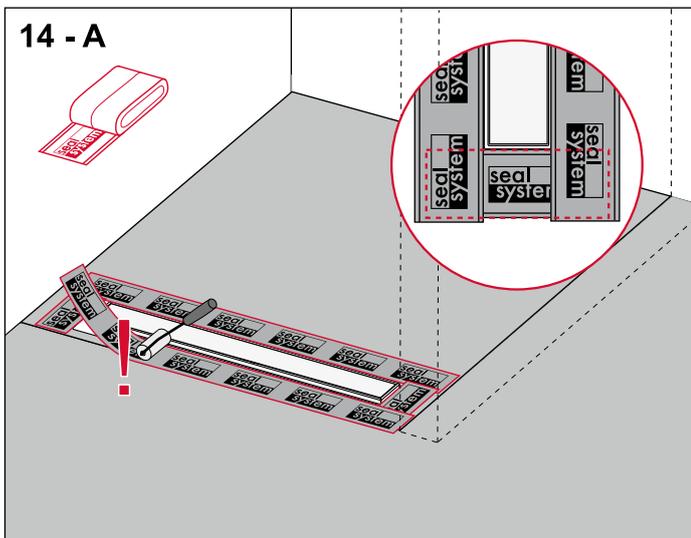
TECEdrainline - Installation instructions



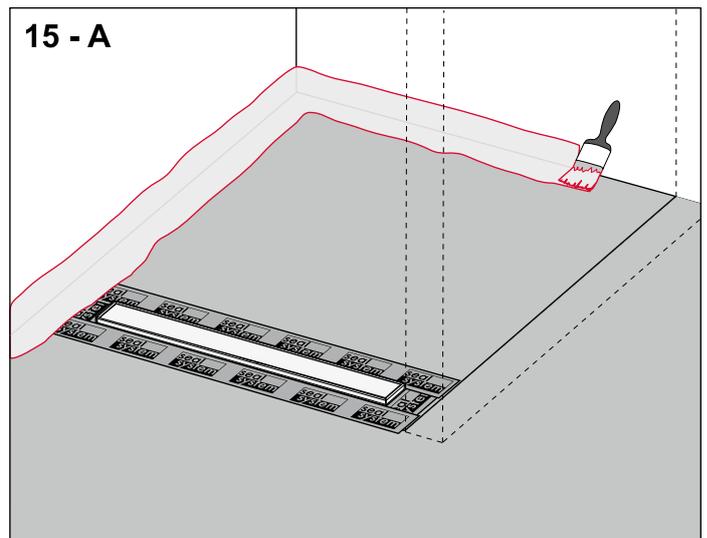
13 - B
Completely remove the protective sheet from the channel flange. Do not touch the flange any more or let it get dirty.



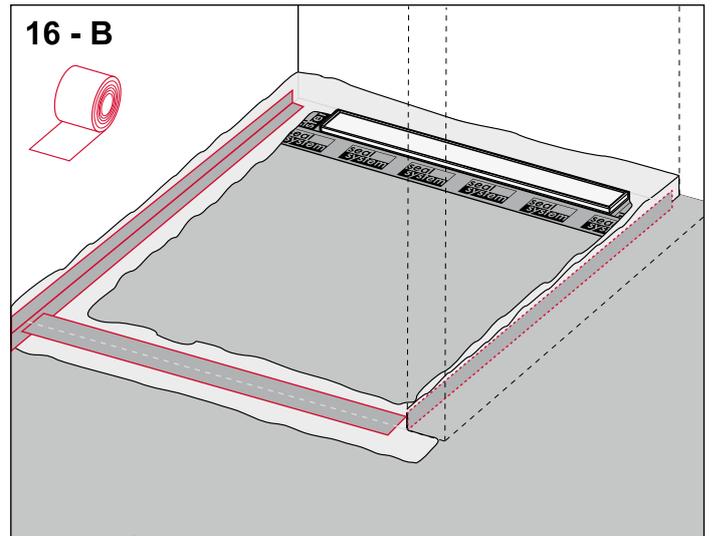
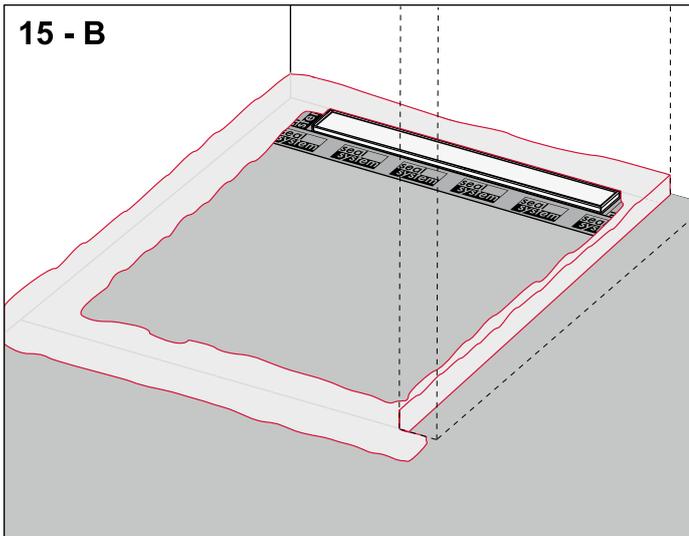
14 - B
Cut the Seal System sealing tape to length, remove the protective film and fold the tape, overlapping it over the channel flange and screed as illustrated, then stick it down, pressing with a roller and making sure that there are no air bubbles.



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.

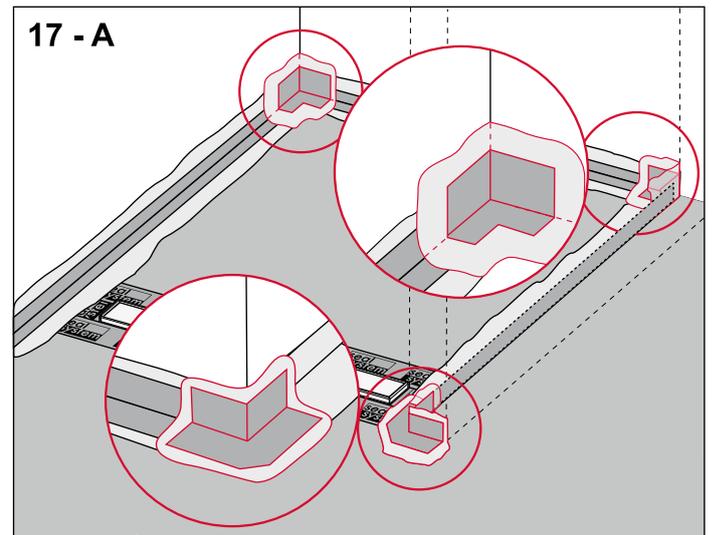
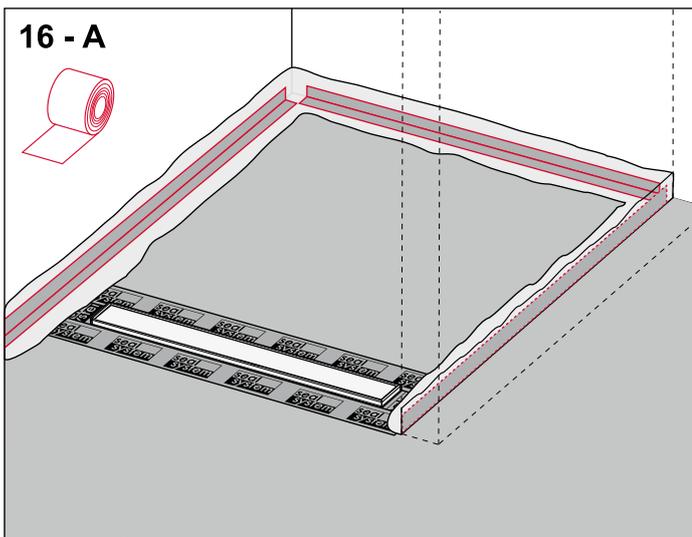


15 - A
Apply a coat of composite seal to the transitions between the wall and the screed. Observe manufacturer's instructions when creating the composite seal (figs. 15-A to 22).



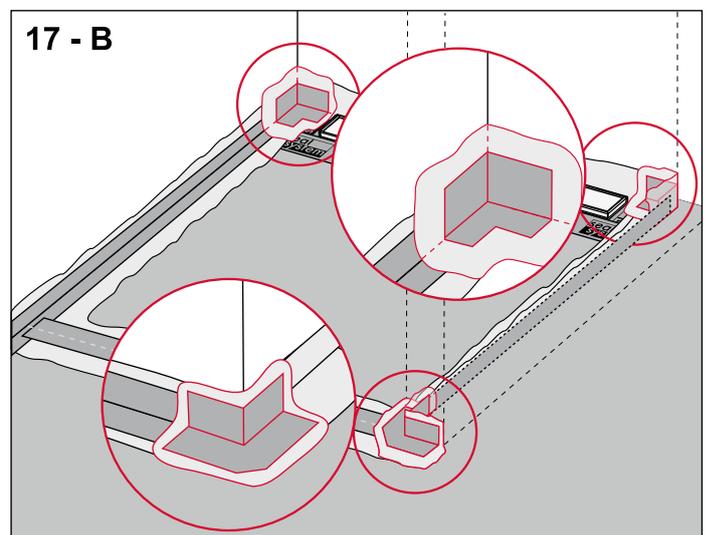
Apply a coat of composite seal to the transitions between the wall and the screed. Observe manufacturer's instructions when creating the composite seal (figs. 15-A to 22).

Fold the sealing tape and fit it directly into the connection in the fresh composite seal, making sure that there are no air bubbles.



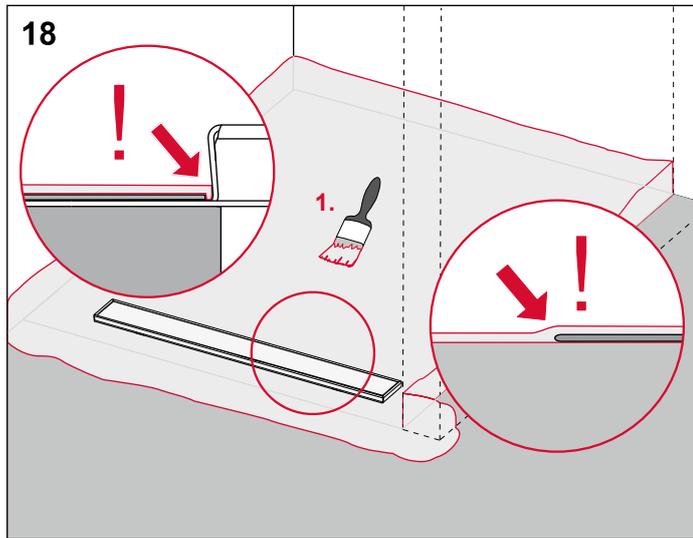
Fold the sealing tape and fit it directly into the connection in the fresh composite seal, making sure that there are no air bubbles.

Apply the composite seal to the corners and fold and fit the corner seals, making sure that there are no air bubbles.

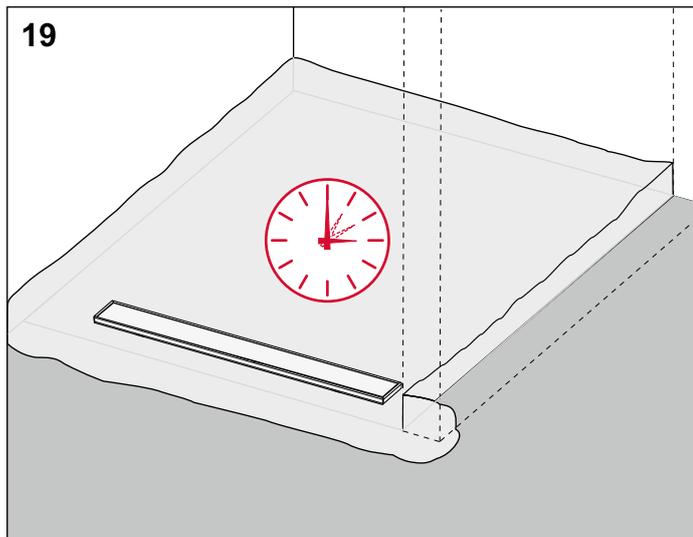


TECEdrainline - Installation instructions

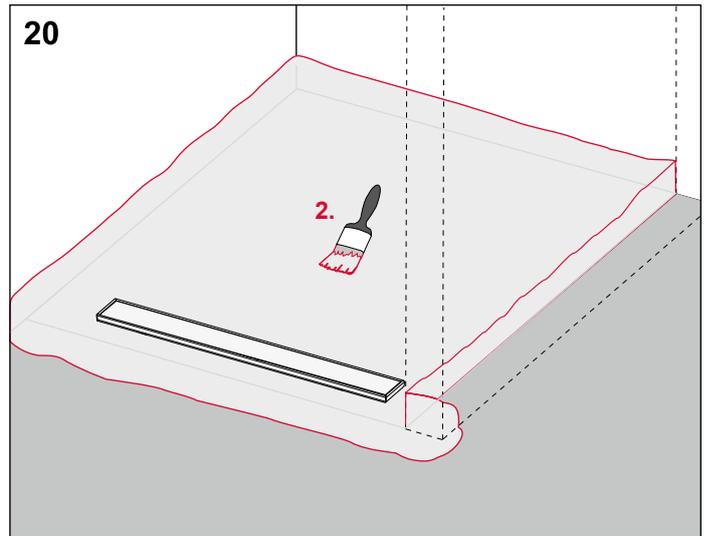
Apply the composite seal to the corners and fold and fit the corner seals, making sure that there are no air bubbles.



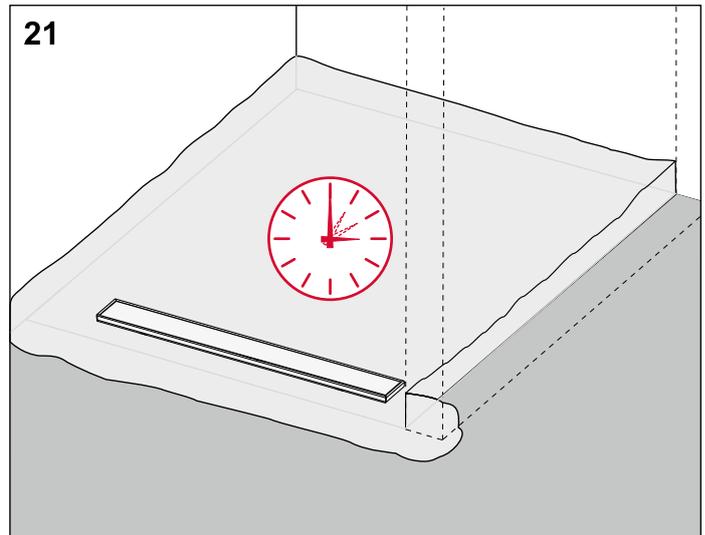
Apply the first coat of composite seal spotlessly over the entire area. When doing so, fully integrate the Seal System sealing tape.



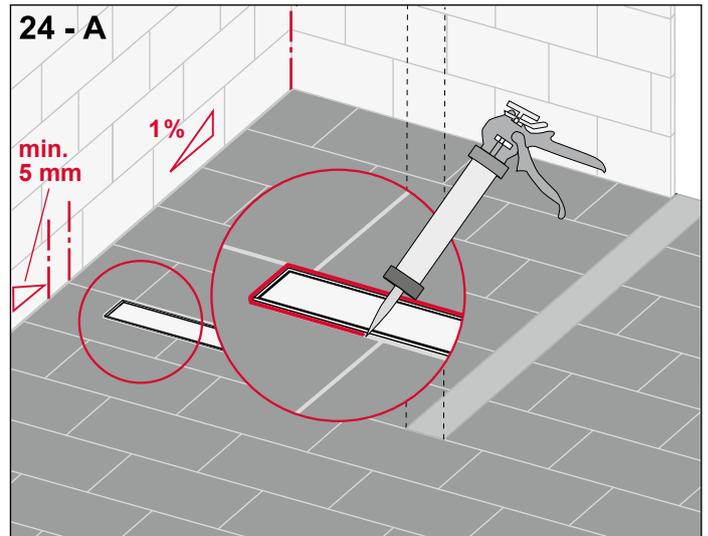
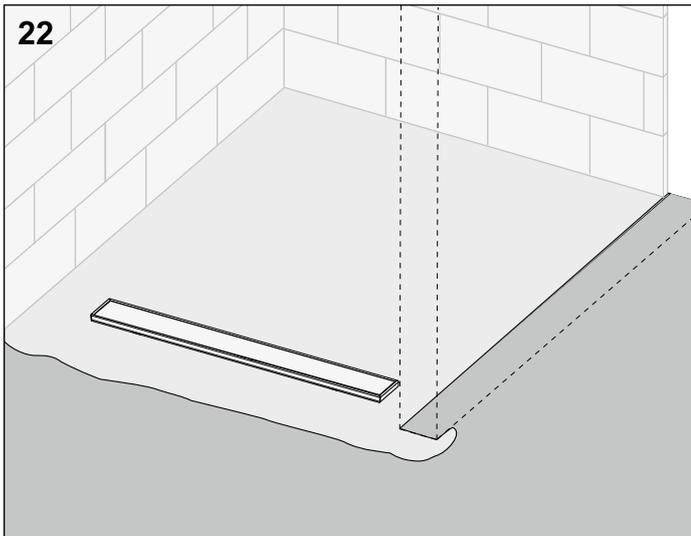
Allow the composite seal to harden, observe the specified drying time.



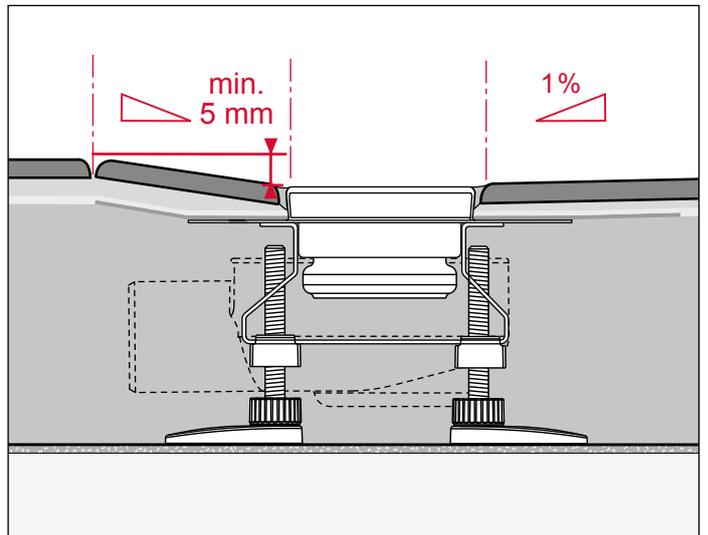
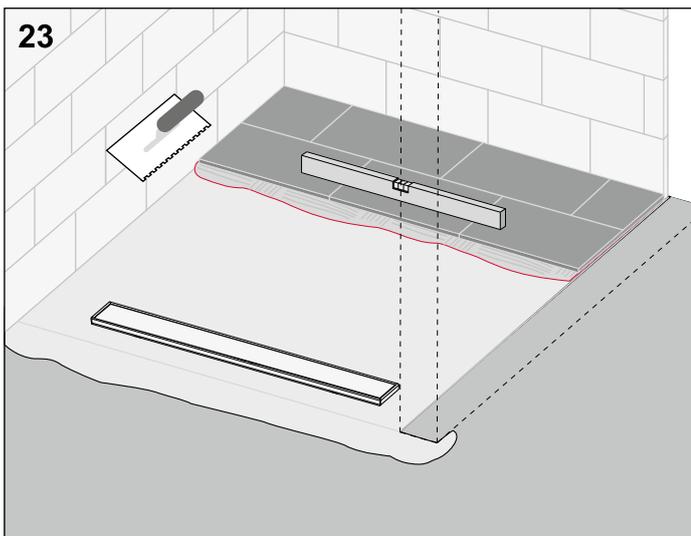
Apply the second coat of composite seal spotlessly over the entire area.



Allow the composite seal to harden, observe the specified drying time.



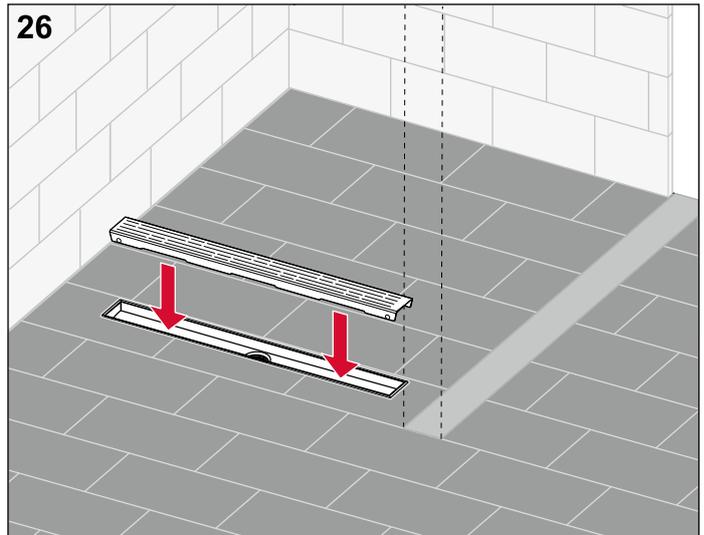
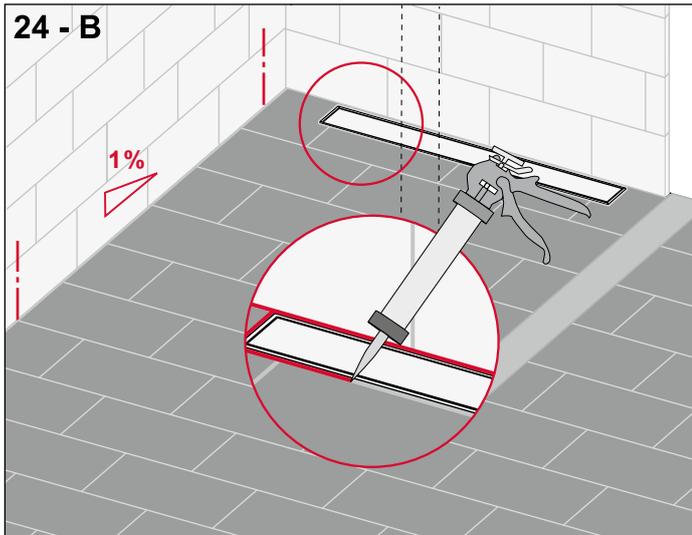
If necessary, also seal the wall areas with composite seal, following the manufacturer's instructions, and apply the tiles or natural stone covering.



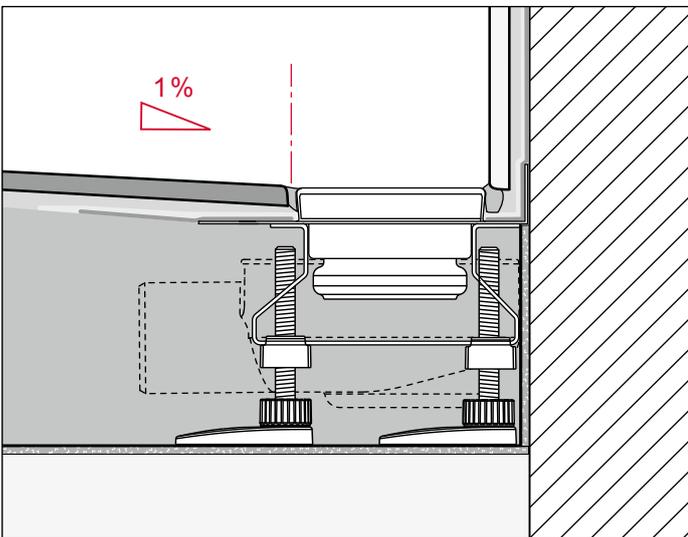
(A = positioning in the middle of the room)
Seal the joint between the stainless steel channel and tiles or natural stone with permanently flexible material. Check the incline and reverse gradient.

Apply tile adhesive and tiles or natural stone. Observe the necessary 1% incline to the channel.

TECEdrainline - Installation instructions

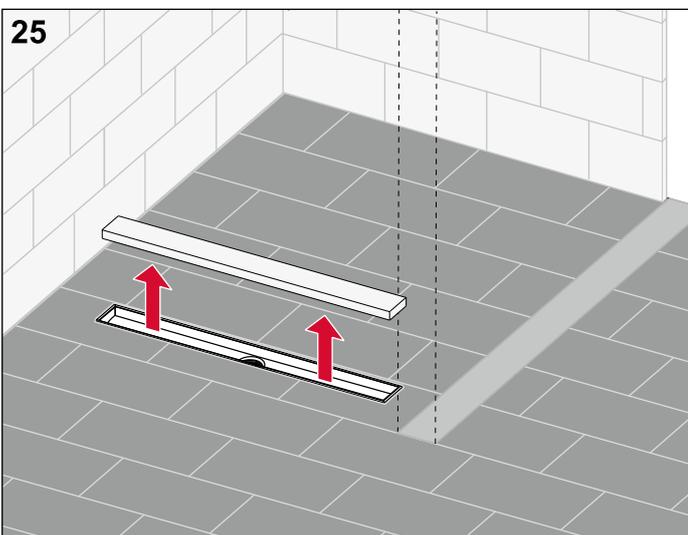


Insert the channel cover. Lay the cover flush with the floor in the shower channel.



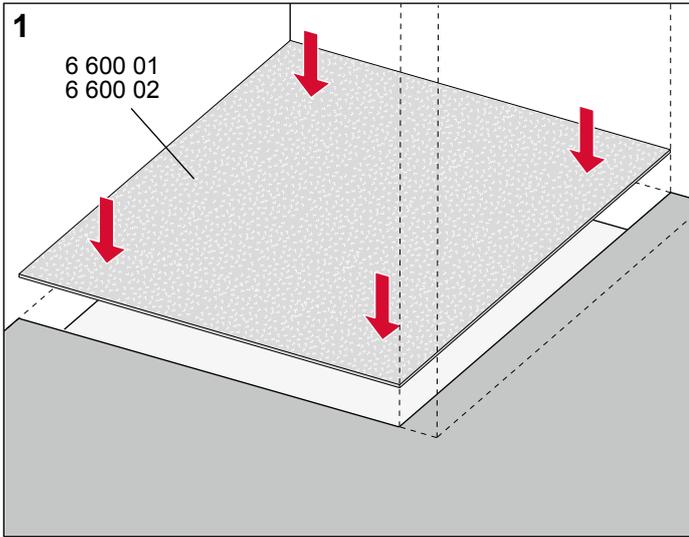
(B = position at the wall)

Seal the joint between the stainless steel channel and tiles or natural stone with permanently flexible material, check the incline.

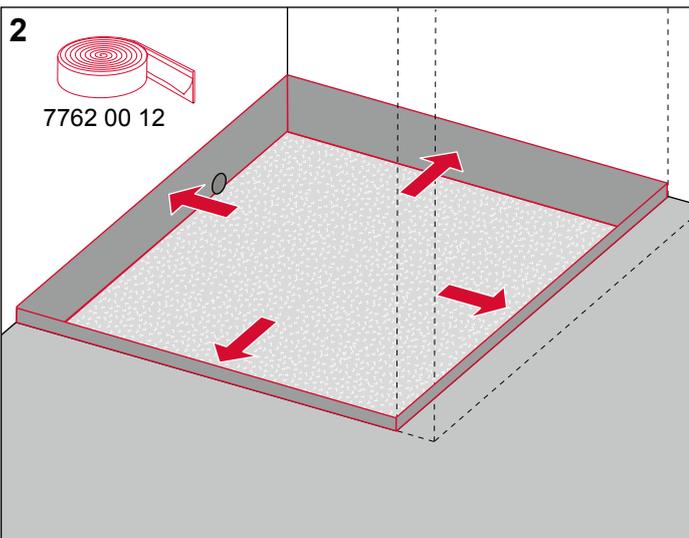


Remove the protective cover and clean the channel.

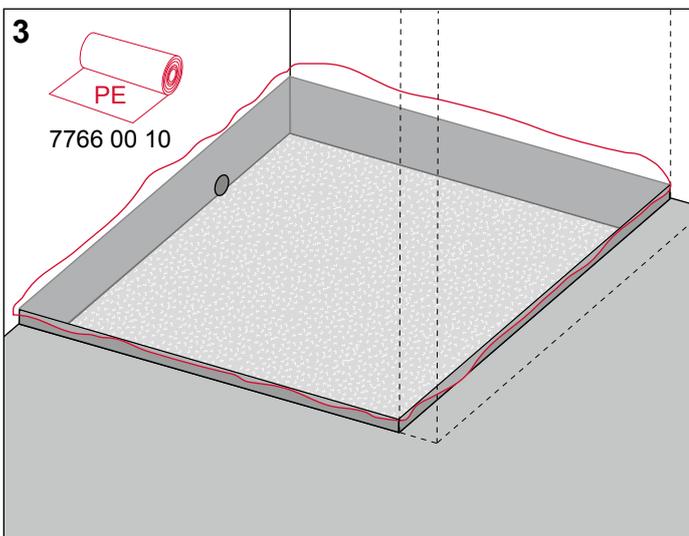
Installation instructions for shower channel with wall upstand



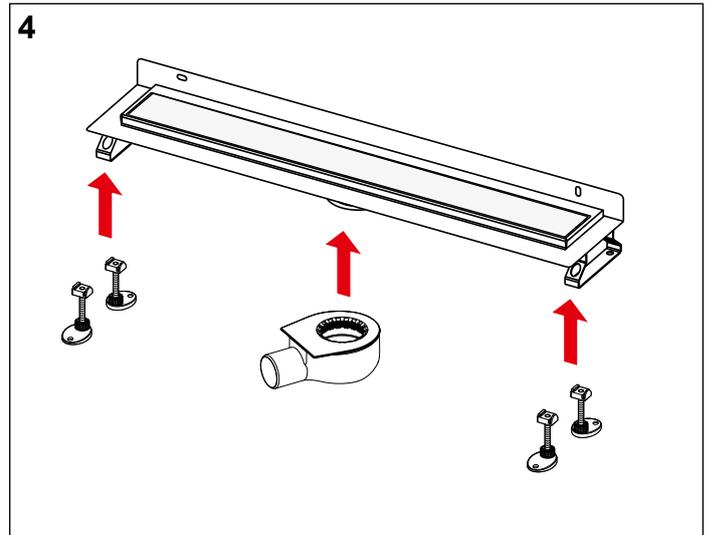
Optional: Cut the drainline sound-proofing mat and place in position so that it covers the whole surface of the shower area.



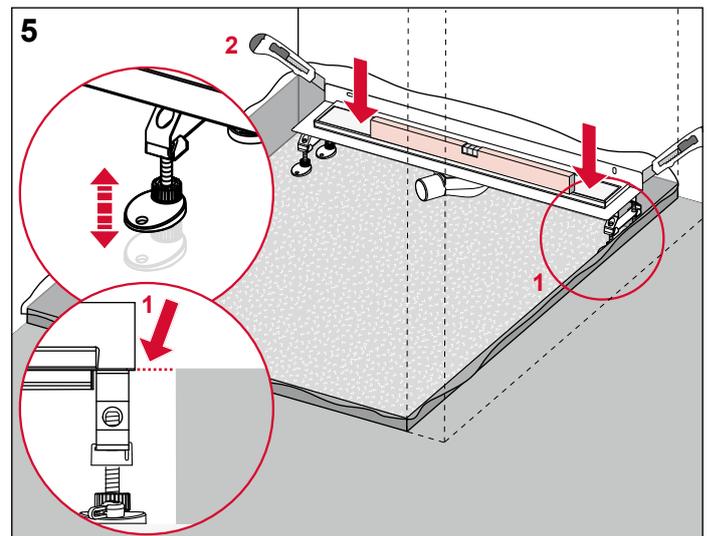
Add edge insulation strips on all sides.



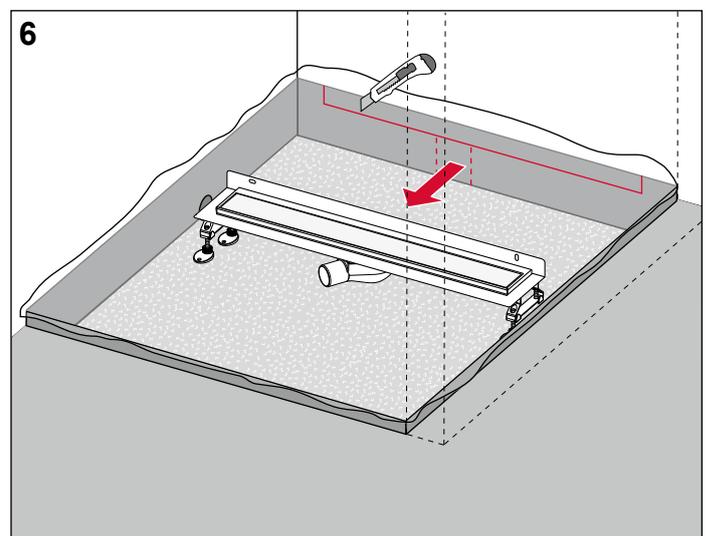
Lay the PE sheet.



Mount the drain and click on the assembly feet if applicable.

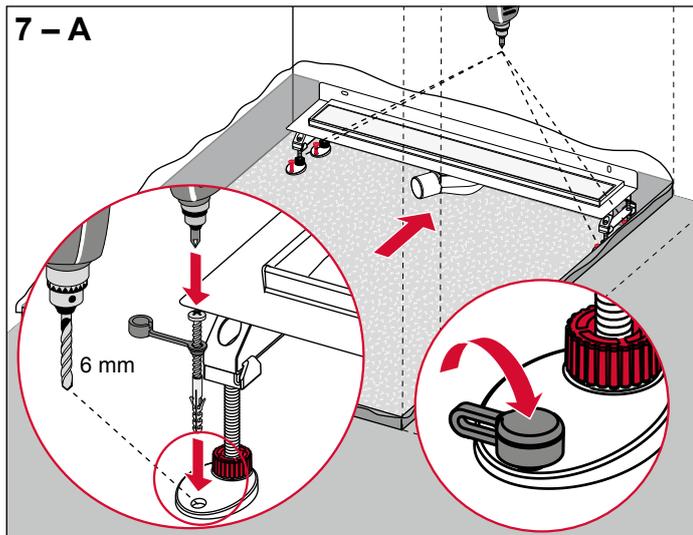


Use the adjustable assembly feet to raise the channel to the required height and align horizontally, if necessary pack the drain body.

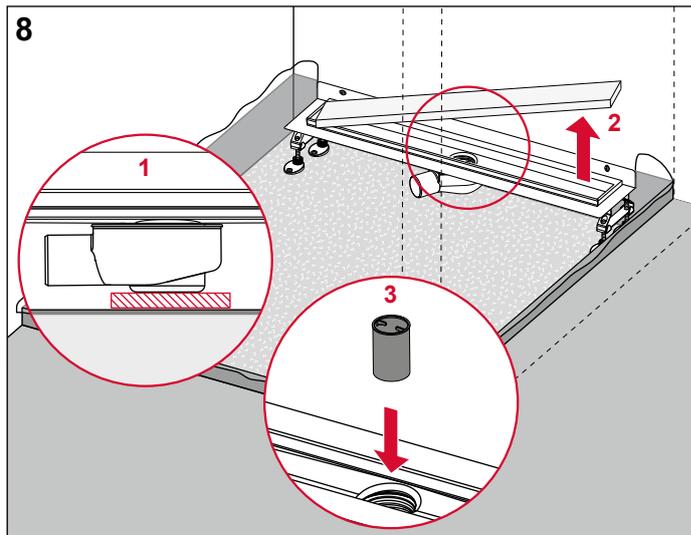


Remove the edge insulation strips above the horizontal shower flange.

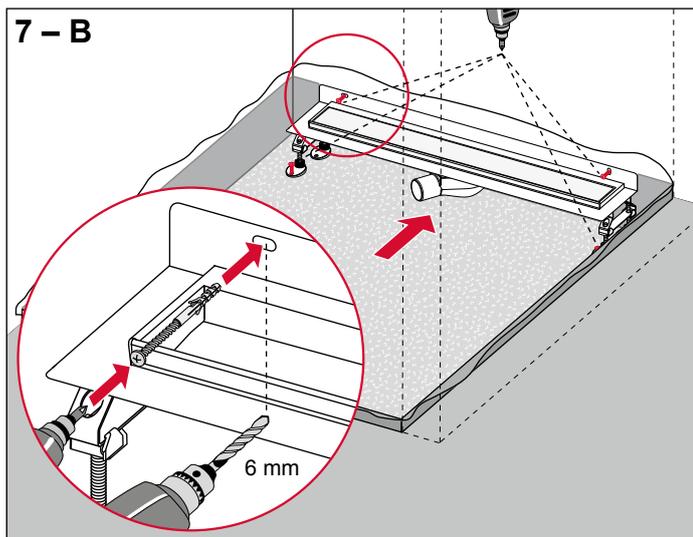
TECEdrainline - Installation instructions



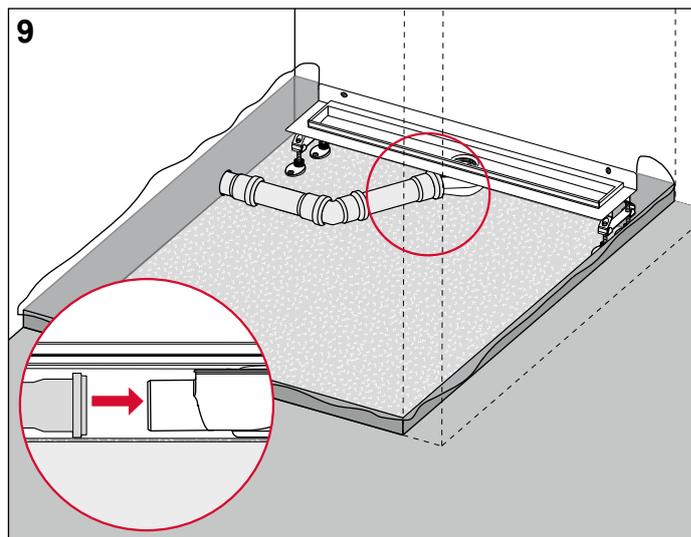
Place the channel at the wall. Either attach the assembly feet as shown here, and press the sound insulation caps on to the bolt heads, or ...



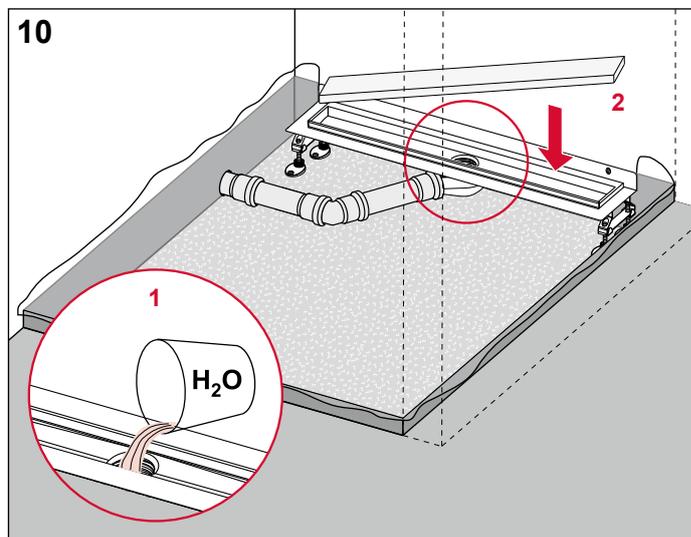
Completely pack the drain body. Remove the protective cover sheet and insert the immersion pipe.



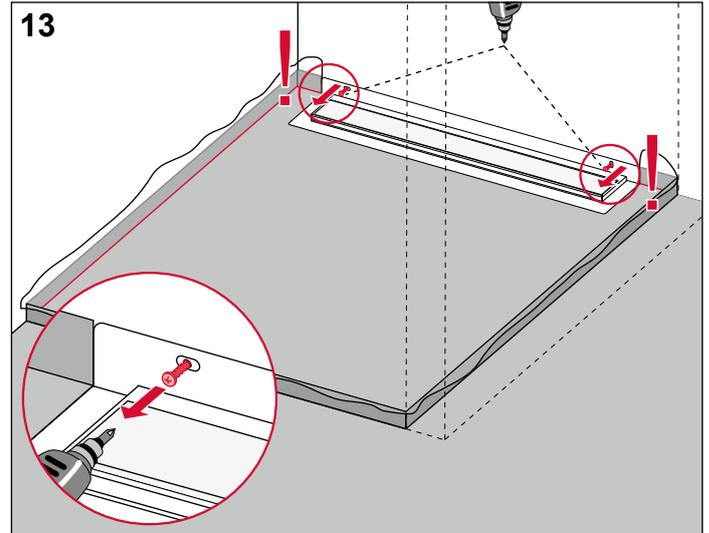
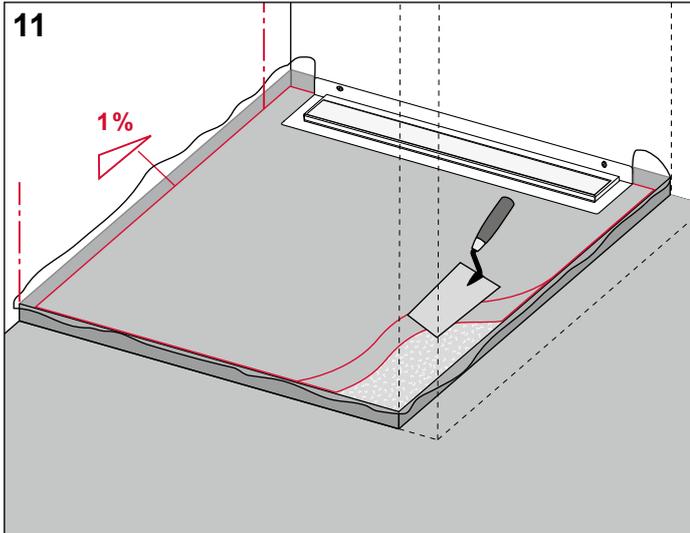
... Attach the channel to the wall. Remove the wall attachment screws again after the screed has hardened.



Attach the wastewater pipe to the outlet socket.

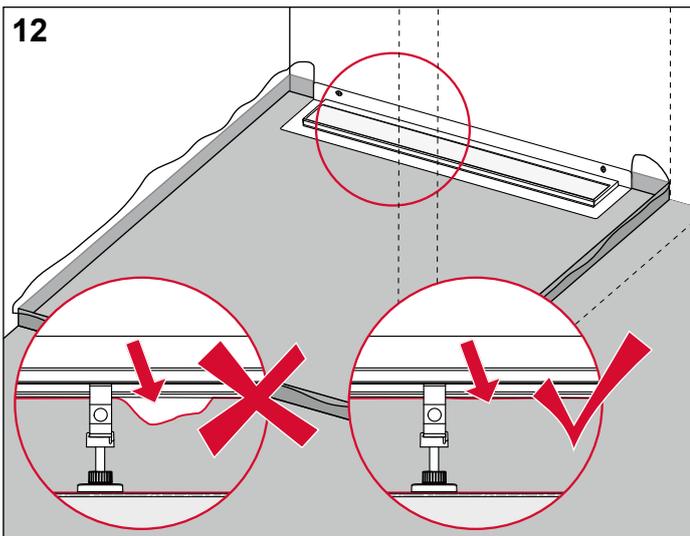


Test for leaks and then place the protective cover back in the channel.

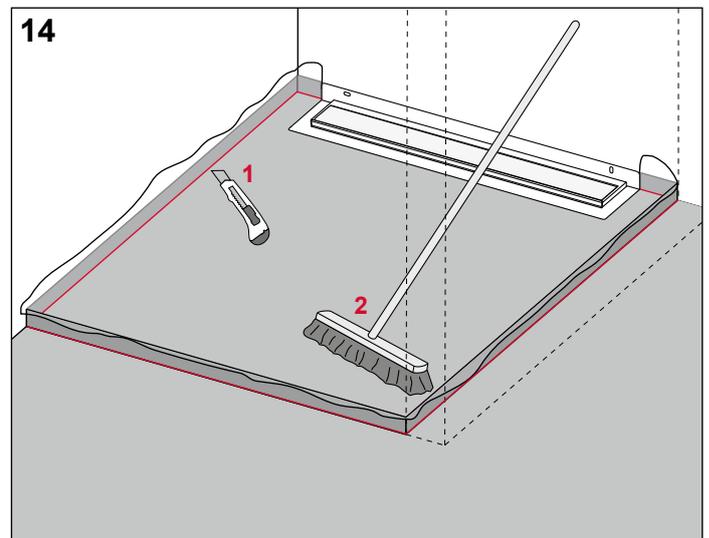


Apply the screed and fully incorporate the channel into the screed up to flange height, making sure that there are no cavities. Include an incline of 1%.

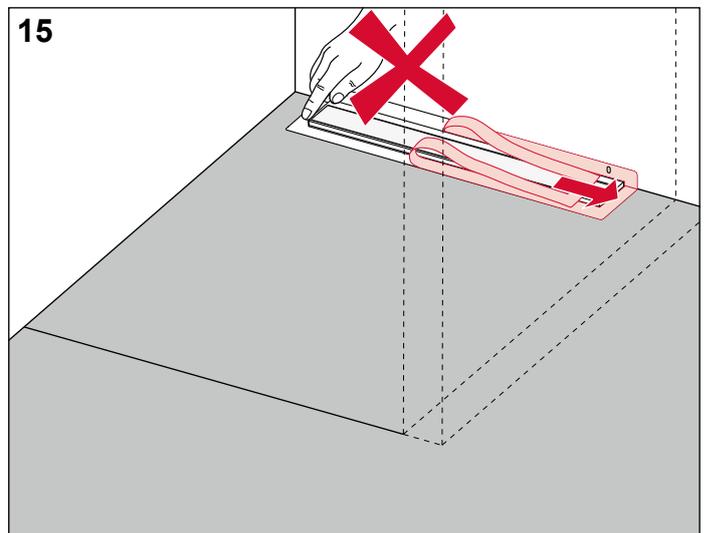
After the screed has hardened, remove the screws from the wall again (where used).



Make sure that there are no cavities between the screed and the channel or drain.

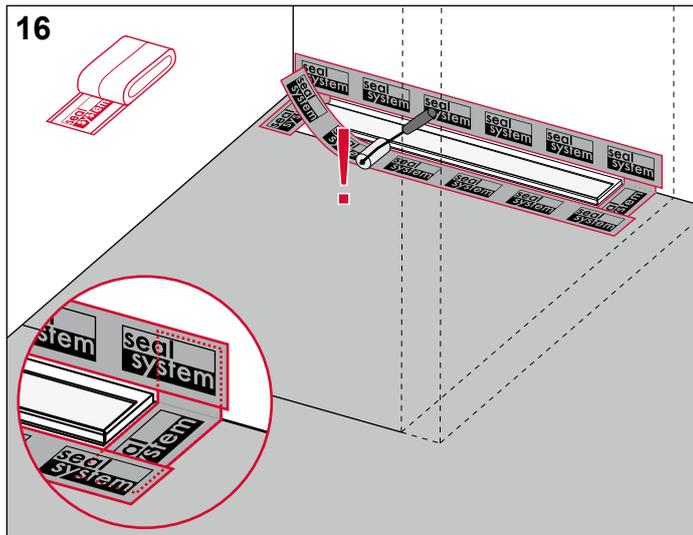


Remove the edge insulation strips and PE sheet above the screed. Clean the screed surface.

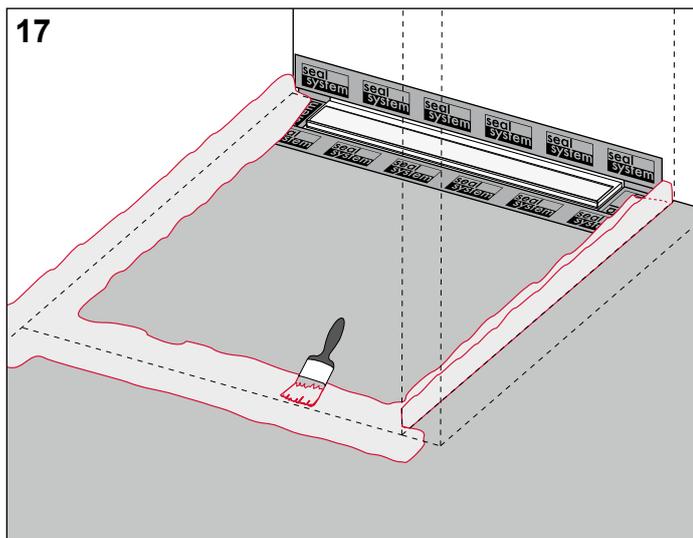


Completely remove the protective sheet from the channel flange. Do not touch the flange any more or let it get dirty.

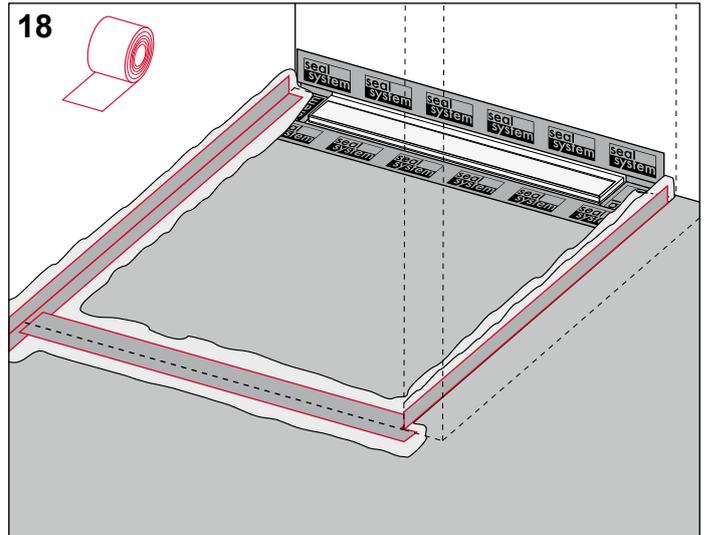
TECEdrainline - Installation instructions



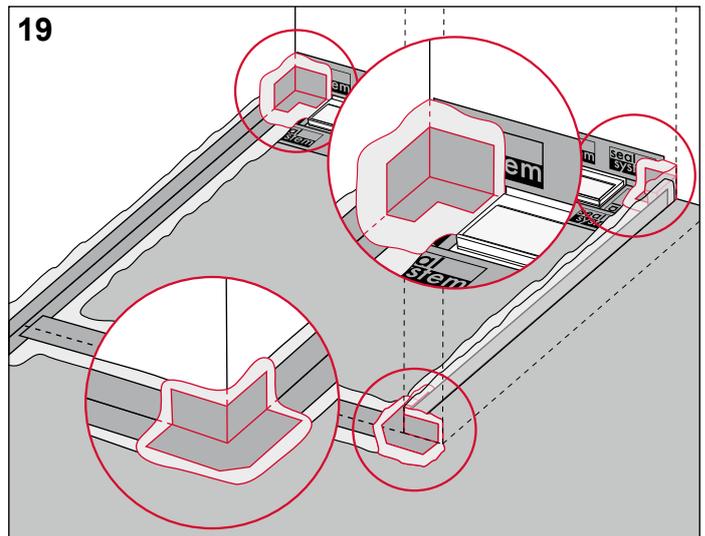
Cut the Seal System sealing tape to length, remove the protective film and fold the tape, overlapping it over the channel flange and screed as illustrated, then stick it down, pressing with a roller and making sure that there are no air bubbles.



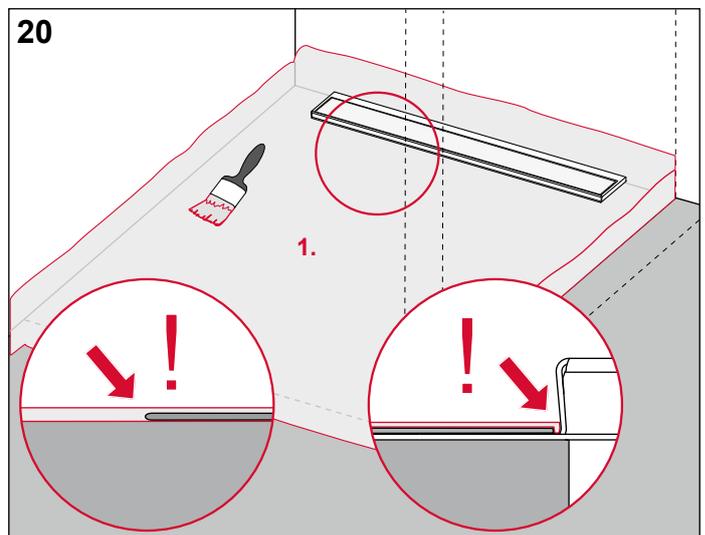
Apply a coat of composite seal to the transitions between the wall and the screed. Observe the manufacturer's instructions when creating the composite seal (figs. 17 to 23).



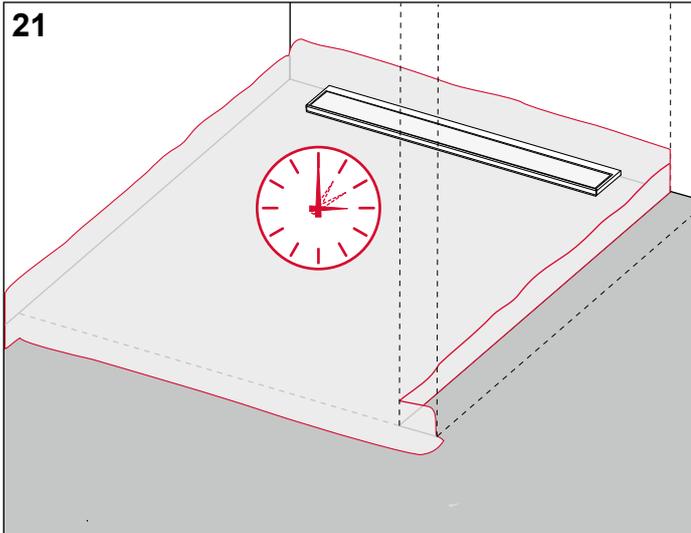
Fold the sealing tape and fit it directly into the fresh composite seal, making sure that there are no air bubbles.



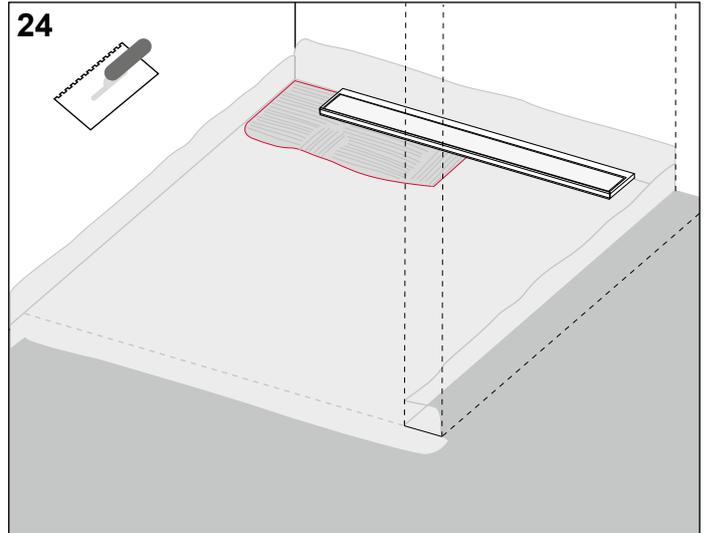
Apply the composite seal to the corners and fold and fit the corner seals, making sure that there are no air bubbles.



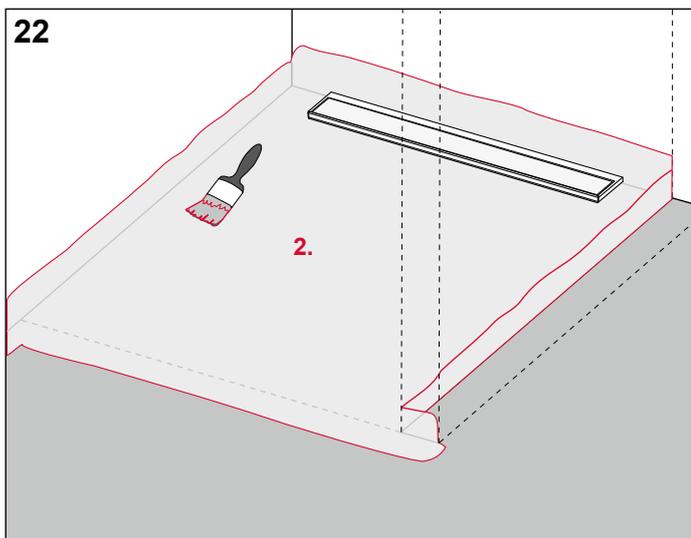
Apply the first coat of composite seal spotlessly over the entire area. In doing so, fully integrate the Seal System sealing tape.



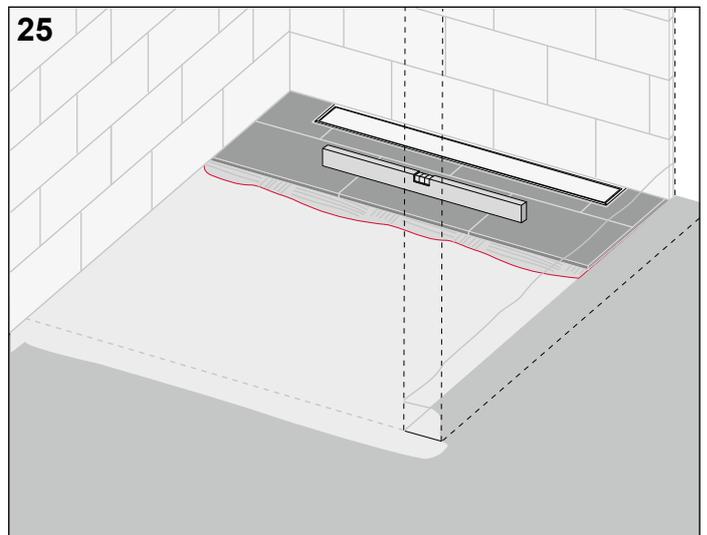
Allow the composite seal to harden, observe the specified drying time.



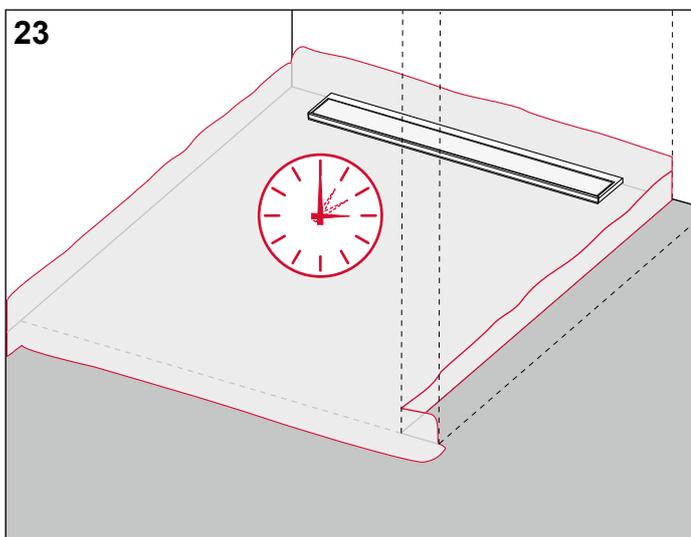
Apply the tile adhesive.



Apply the second coat of composite seal spotlessly over the entire area.

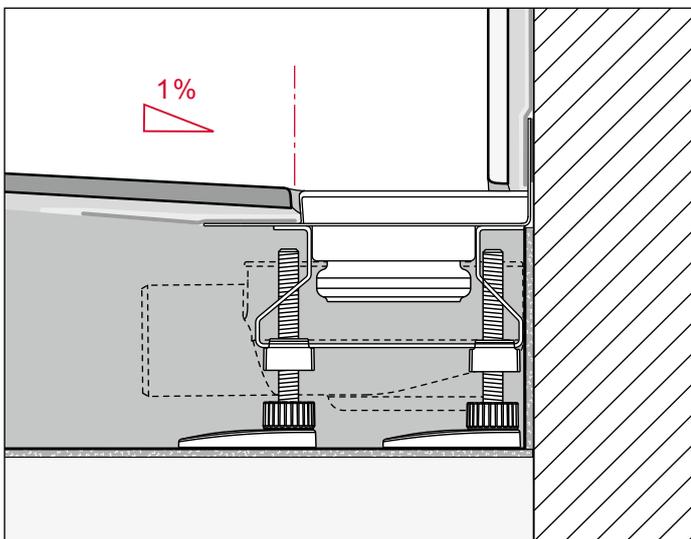
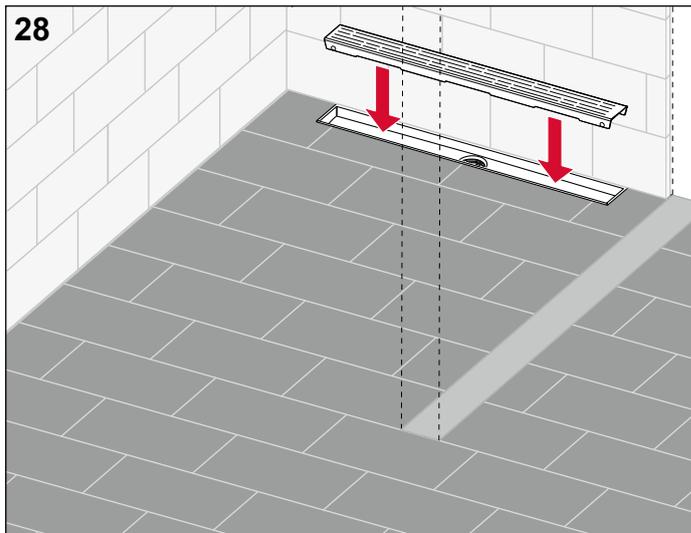
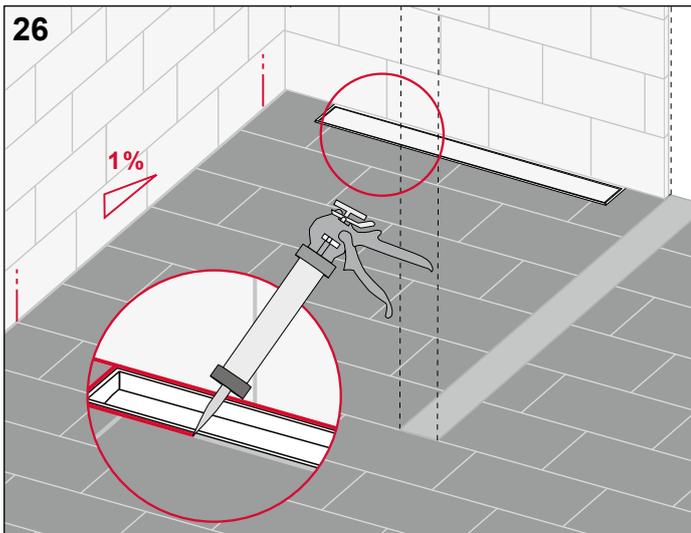


If necessary, also seal the wall areas with composite seal, following the manufacturer's instructions, and apply the tiles or natural stone covering.

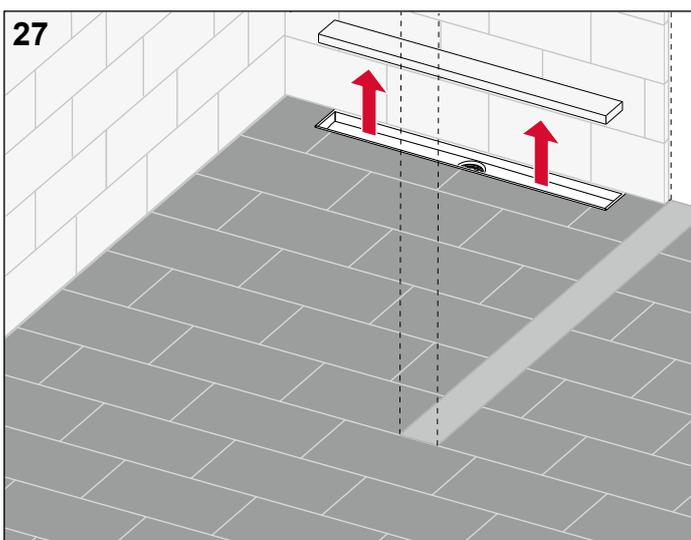


Allow the composite seal to harden, observe the specified drying time.

TECEdrainline - Installation instructions

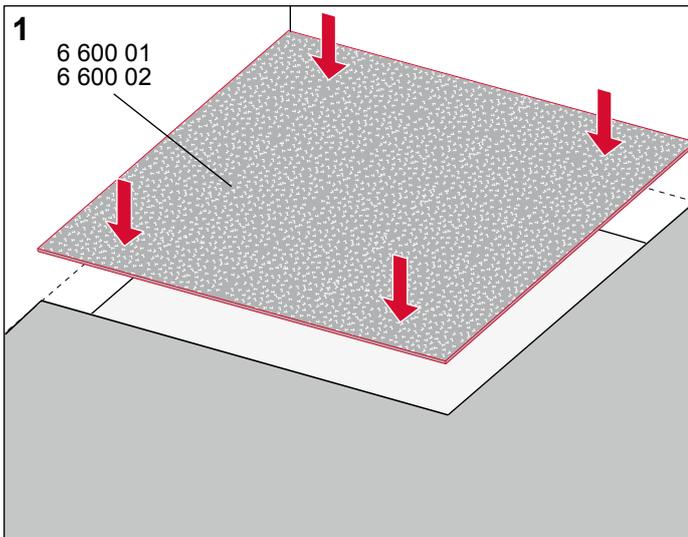


Insert the channel cover. Lay the cover flush with the floor in the shower channel.

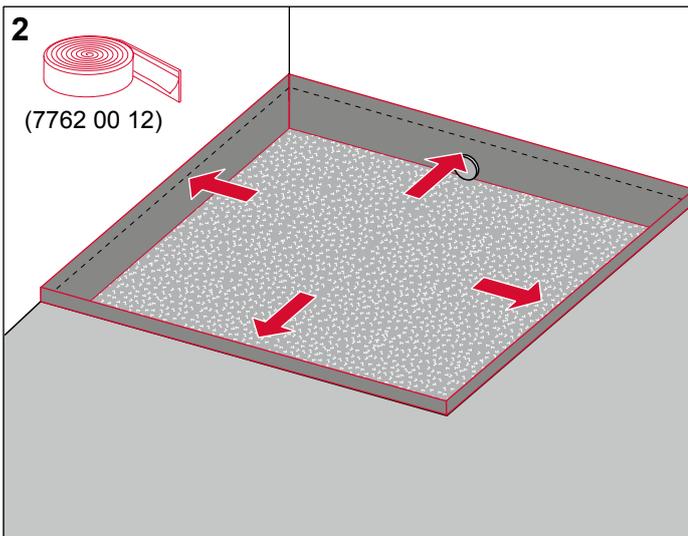


Remove the protective cover and clean the channel.

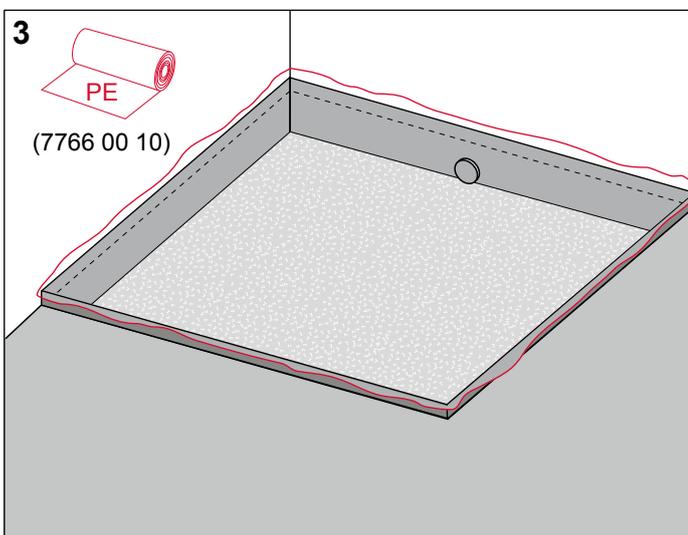
Installation instructions for the angled channel



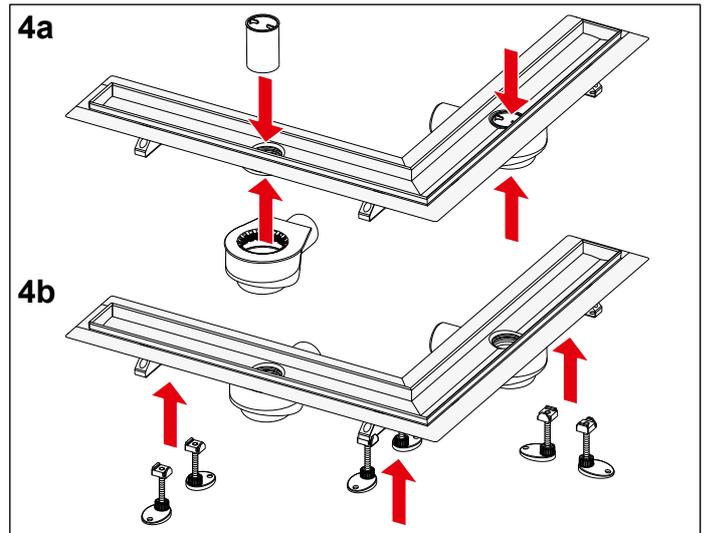
Optional: Cut the drainline sound-proofing mat and place in position so that it covers the whole surface of the shower area.



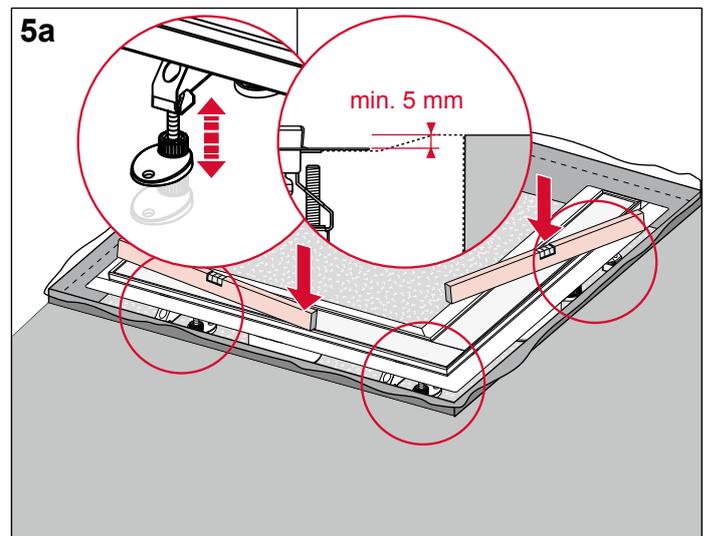
Add edge insulation strips on all sides.



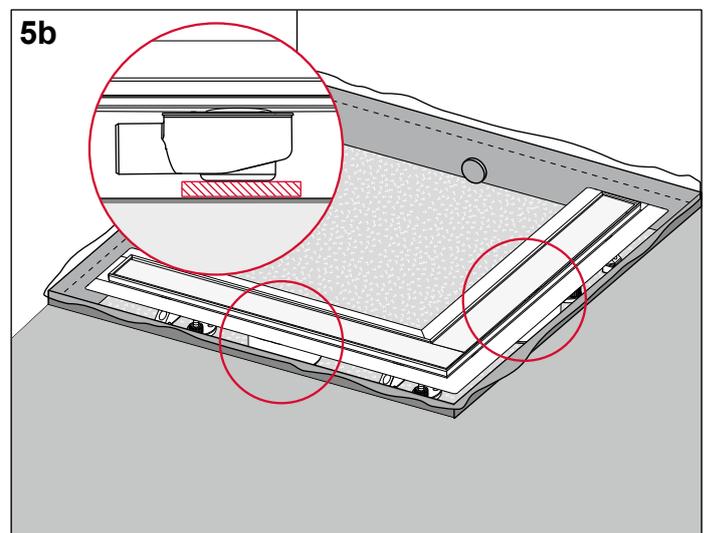
Lay the PE sheet.



Install the drain and immersion pipe, if necessary clip on the assembly feet.

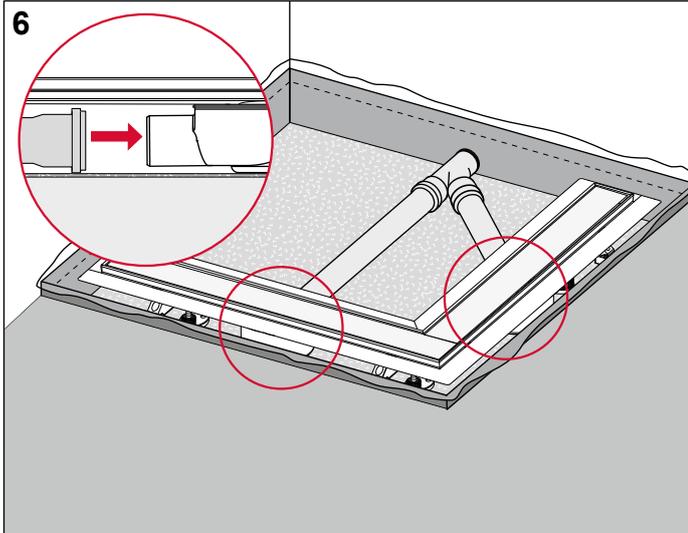


Use the adjustable assembly feet to raise the shower channel to the required position and align horizontally.

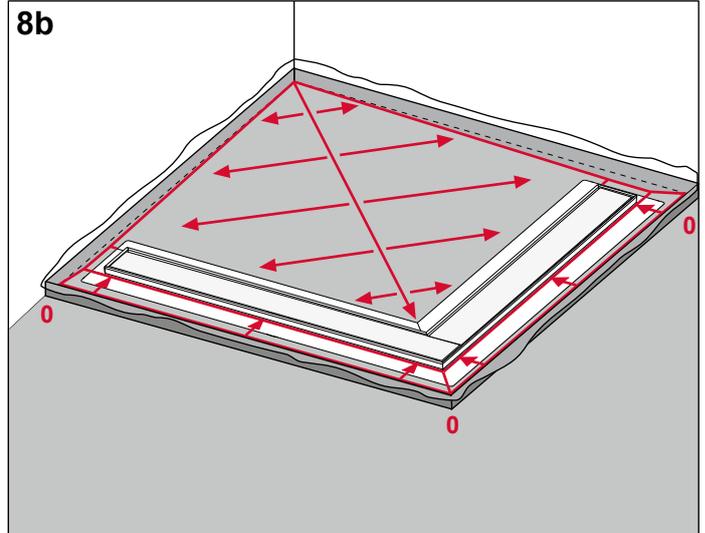


If necessary pack the drain body.

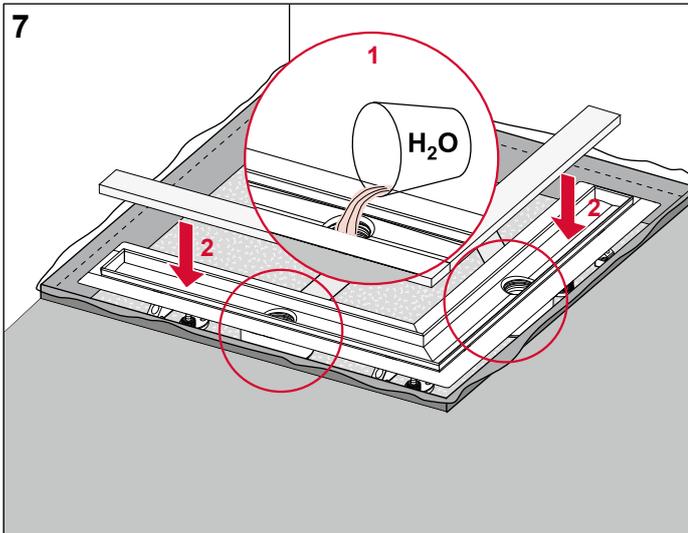
TECEdrainline – Installation instructions



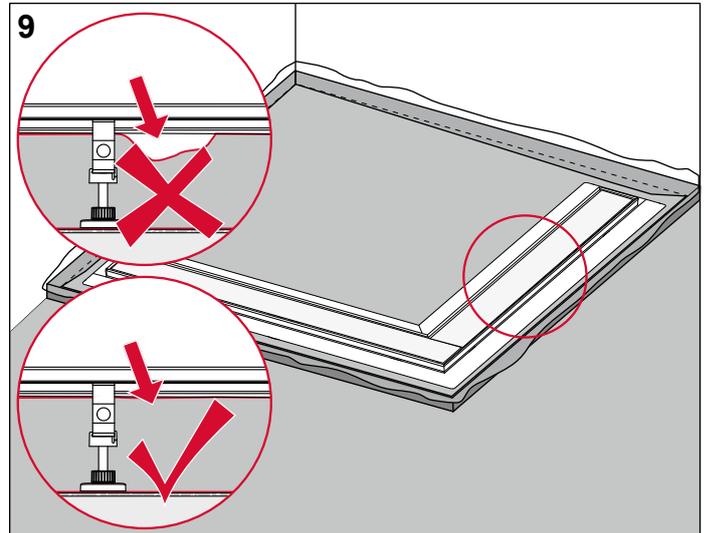
Attach the wastewater pipe to the outflow nozzle.



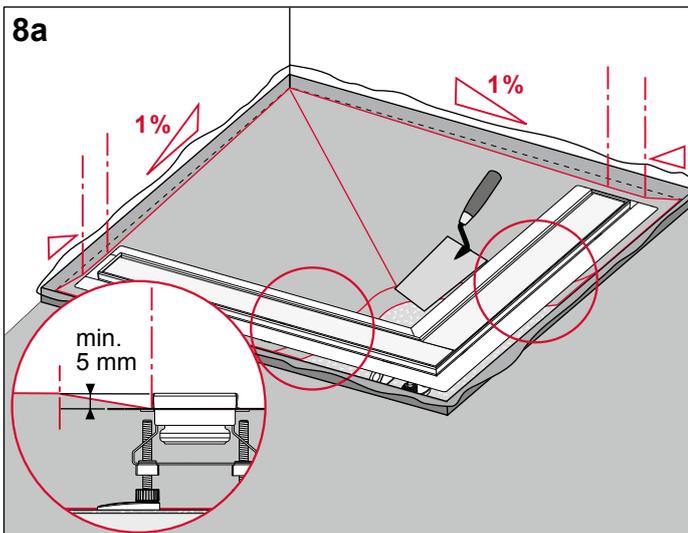
Create the incline as illustrated above.



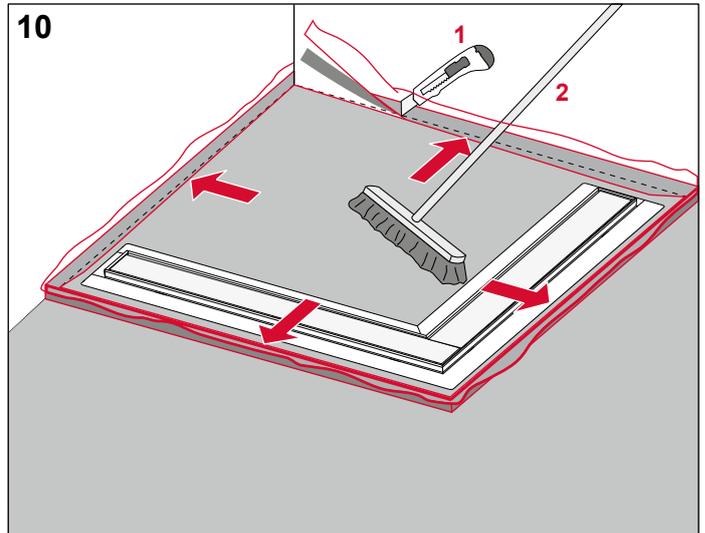
Remove the protective cover, check for leaks and replace the protective cover.



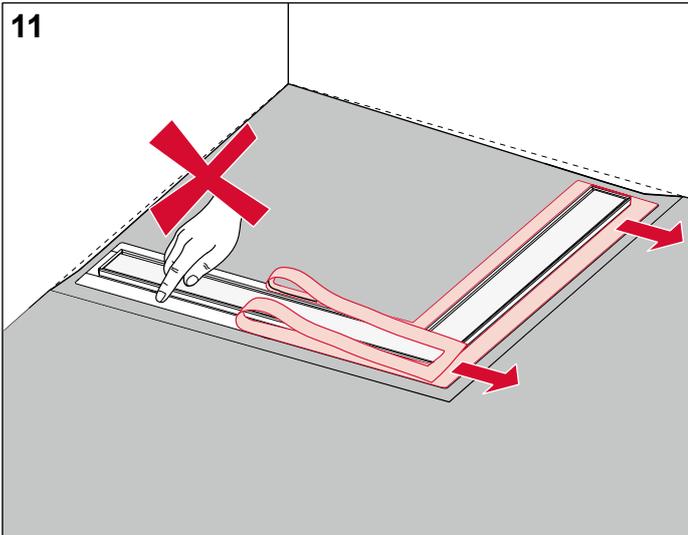
Make sure that there are no cavities between the screed and the channel or drain.



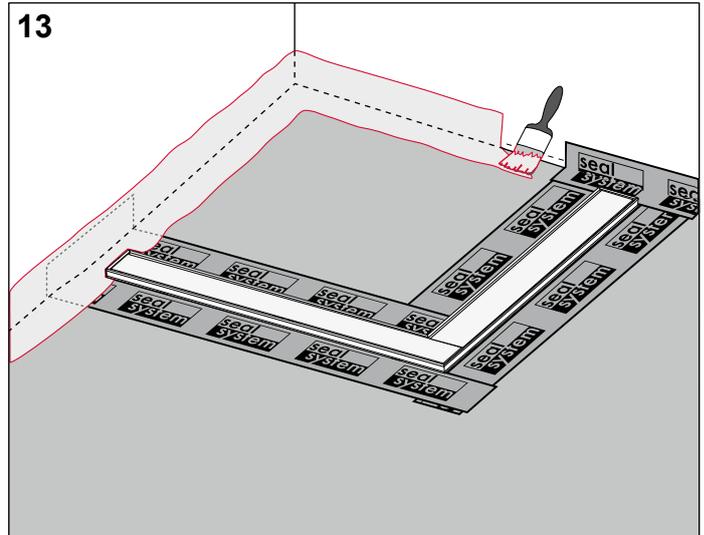
Apply screed with the necessary incline – in the shower zone – of at least one percent to both channels. The reverse gradient should be at least 5 mm.



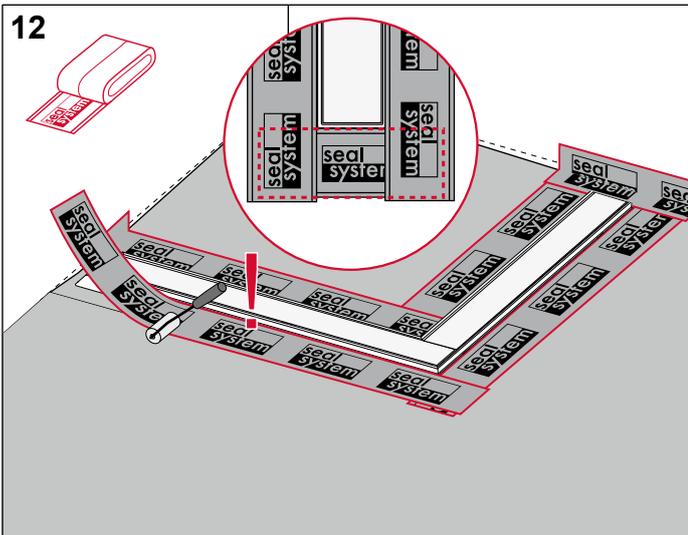
Cut off any protruding edge insulation strips and PE sheet, clean the screed.



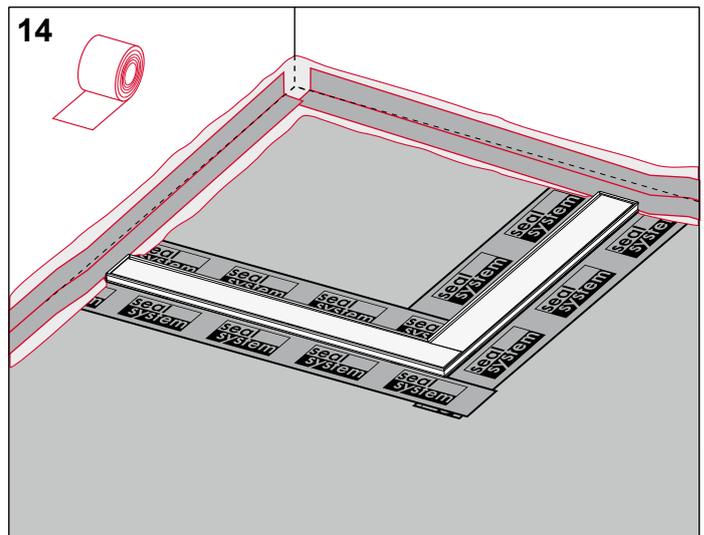
11 Completely remove the protective sheet from the channel flange. Do not touch the flange any more or let it get dirty.



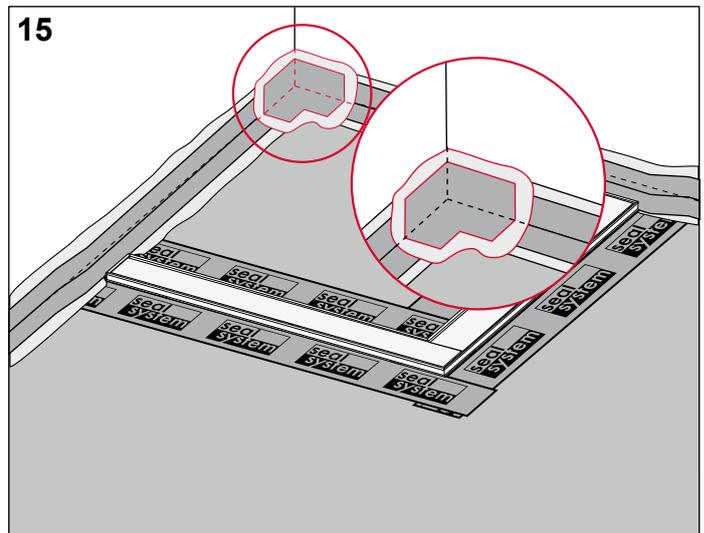
13 Apply a coat of composite seal to the transitions between the wall and the screed. Observe the manufacturer's instructions when creating the composite seal (figs. 13 to 20).



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.



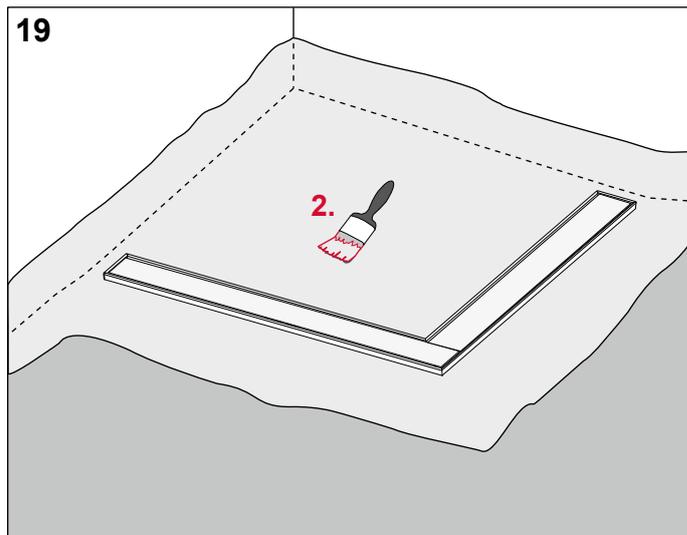
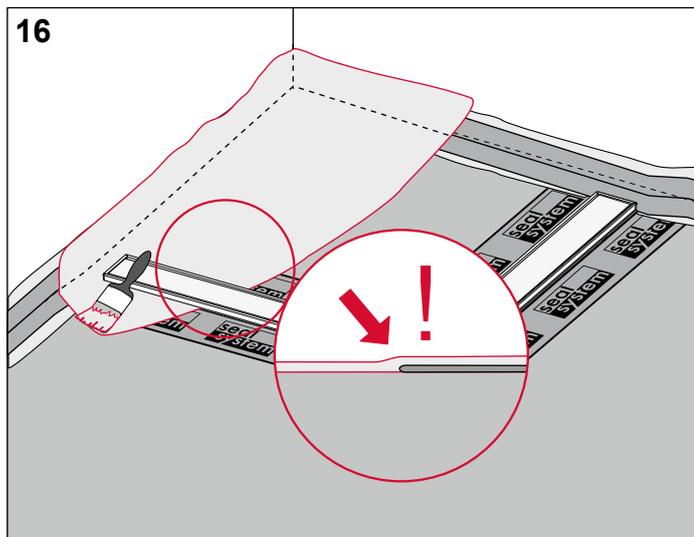
14 Fold the sealing tape and fit it directly into the connection in the fresh composite seal, making sure that there are no air bubbles.



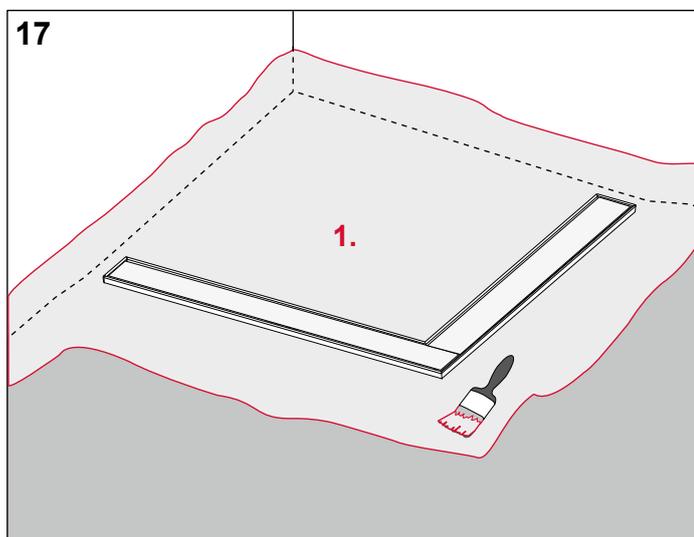
15

TECEdrainline - Installation instructions

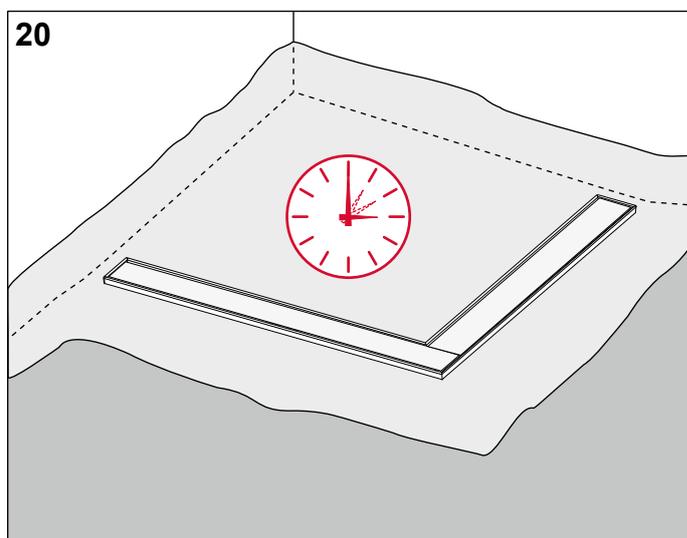
Apply the composite seal to the corners and fold and fit the corner seals, making sure that there are no air bubbles.



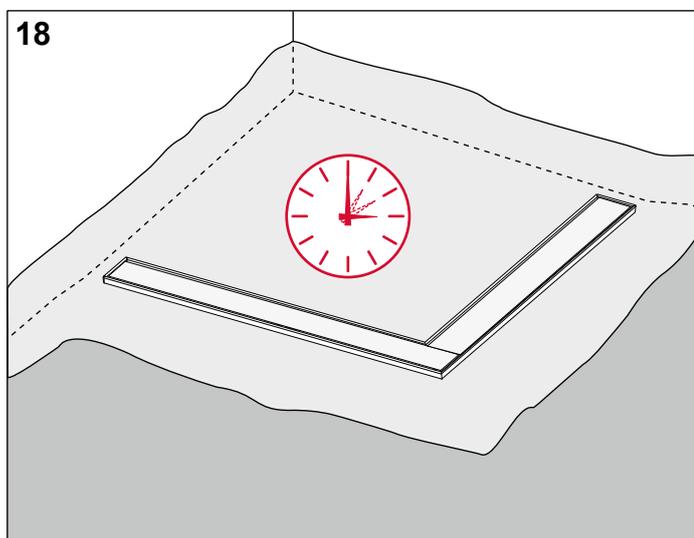
Apply the second coat of composite seal spotlessly over the entire area.



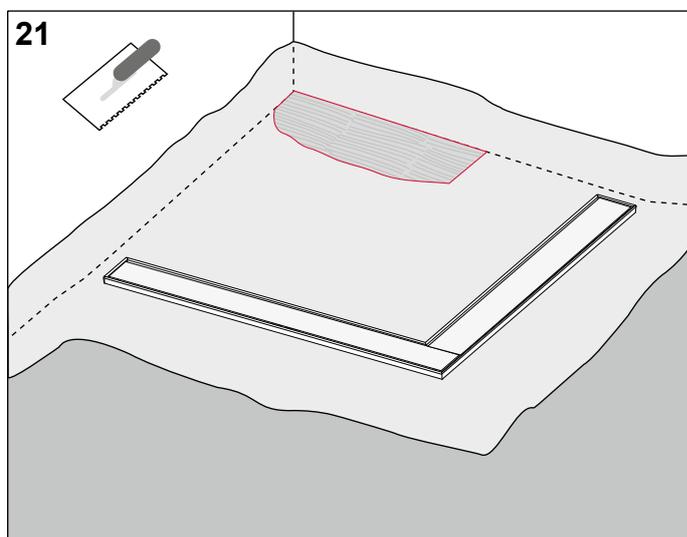
Apply the first coat of composite seal spotlessly over the entire area. In doing so, fully integrate the Seal System sealing tape.



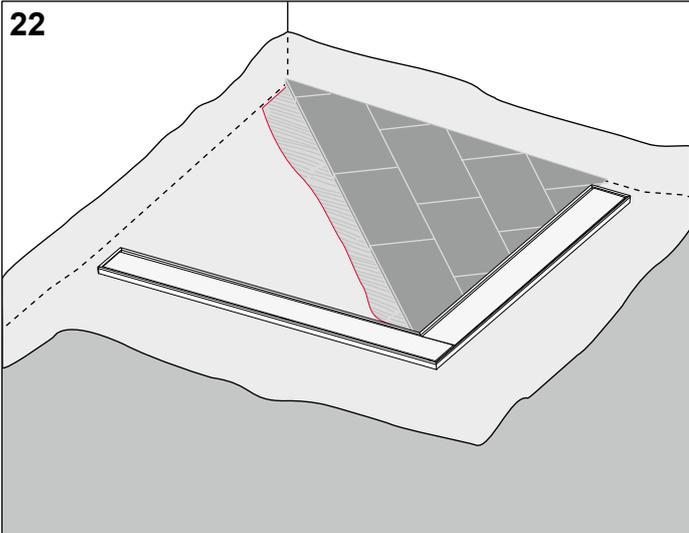
Allow the specified drying time.



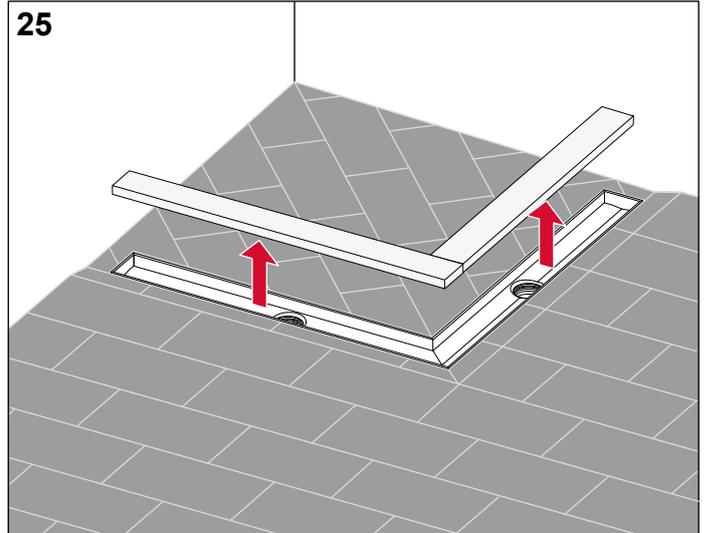
Allow the specified drying time.



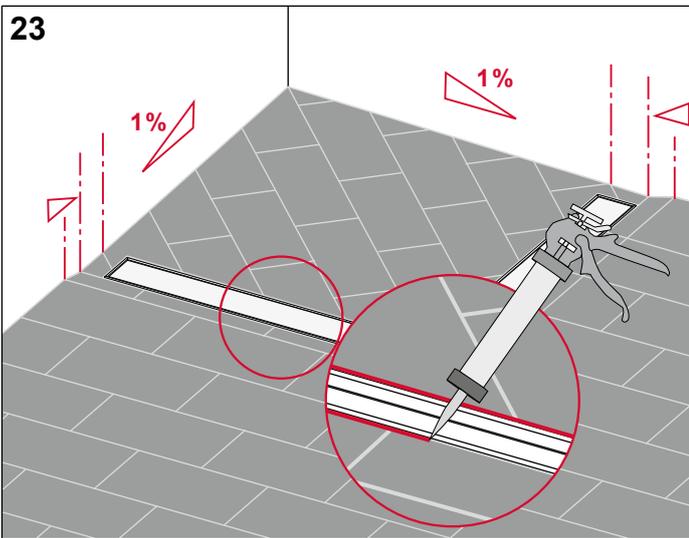
Apply the tile adhesive.



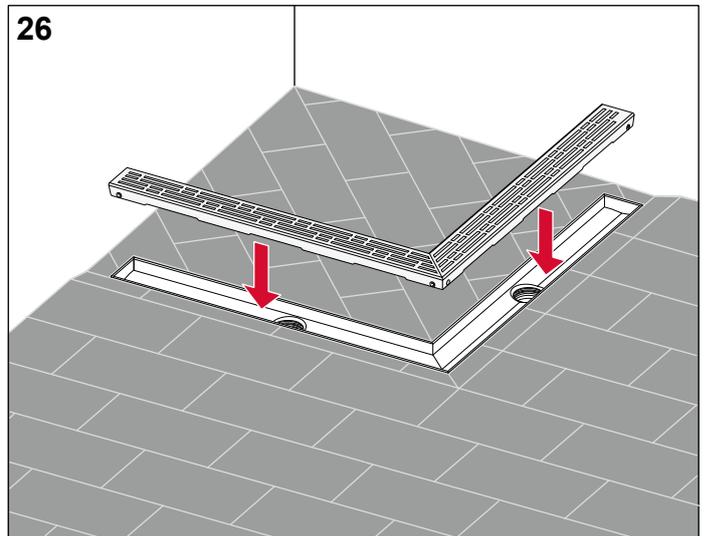
Apply the floor covering (tiles, etc.), allowing for the specified incline in the process.



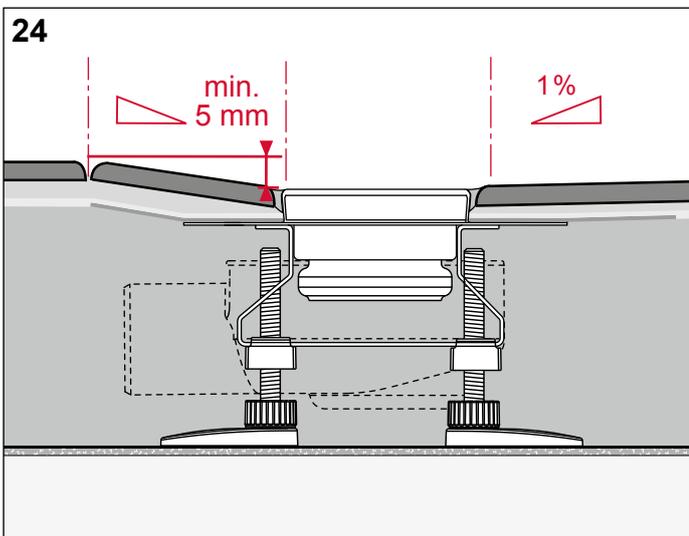
Remove the protective cover, clean the channel.



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).

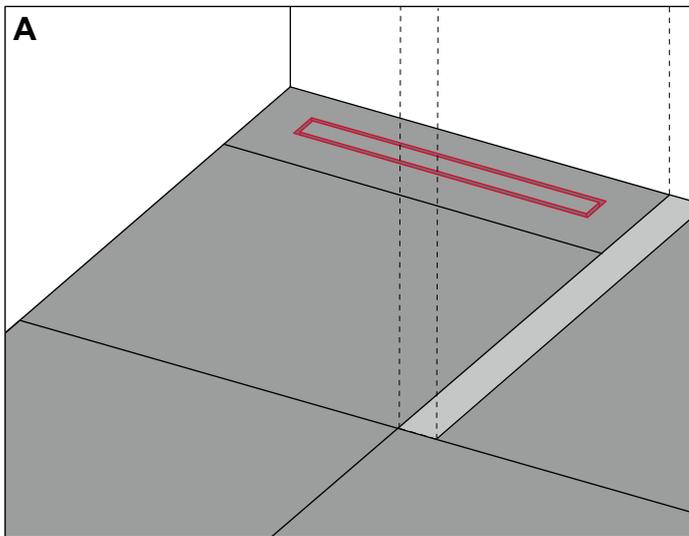


Check the incline and reverse gradient.

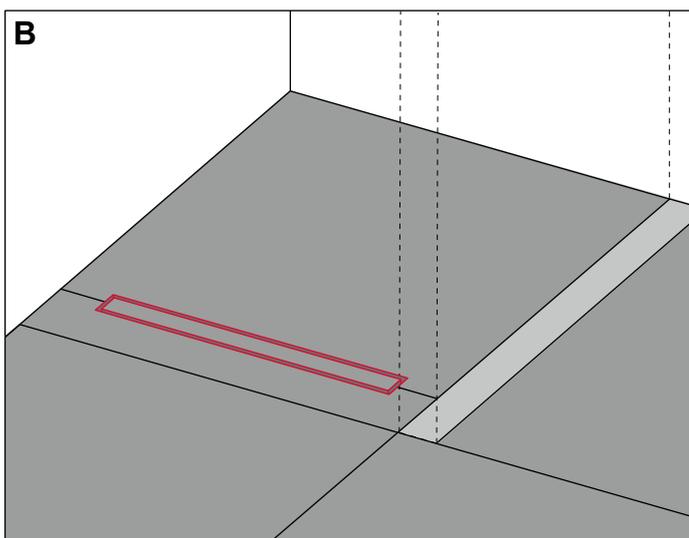
TECEdrainline - Installation instructions

Installation instructions for shower channel for natural stone

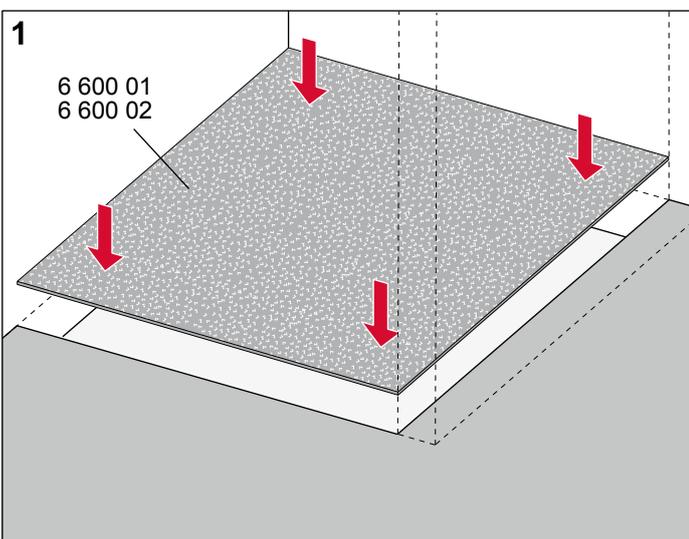
it in position so that it covers the whole surface of the shower area.



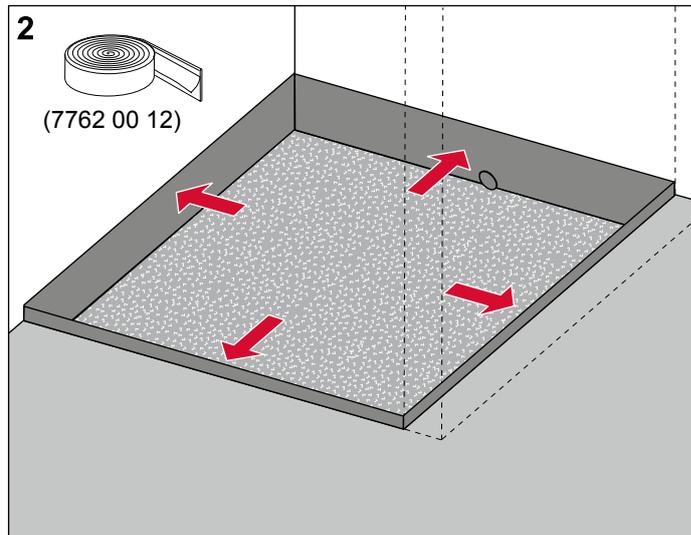
Positioning the shower channel close to the wall (A).



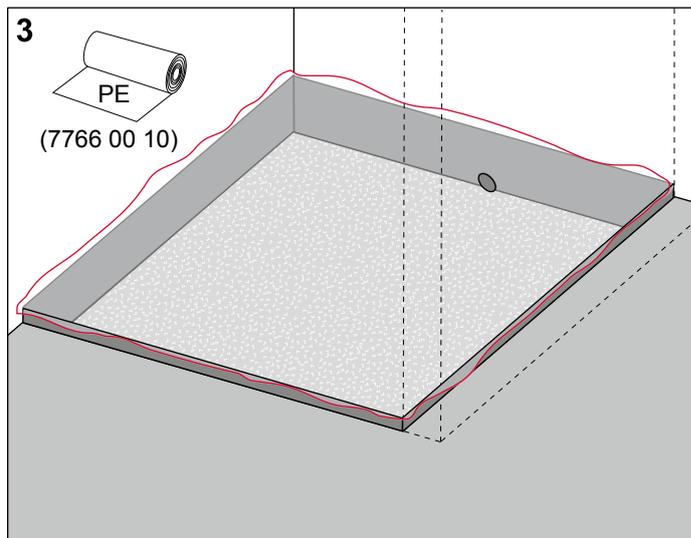
Positioning the shower channel in the middle of the room (B)



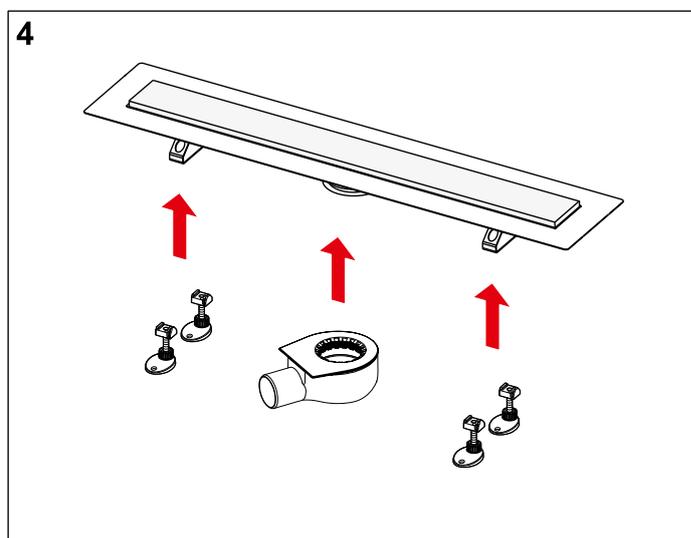
Optional: Cut the Drainbase sound-proofing mat and put 8-50



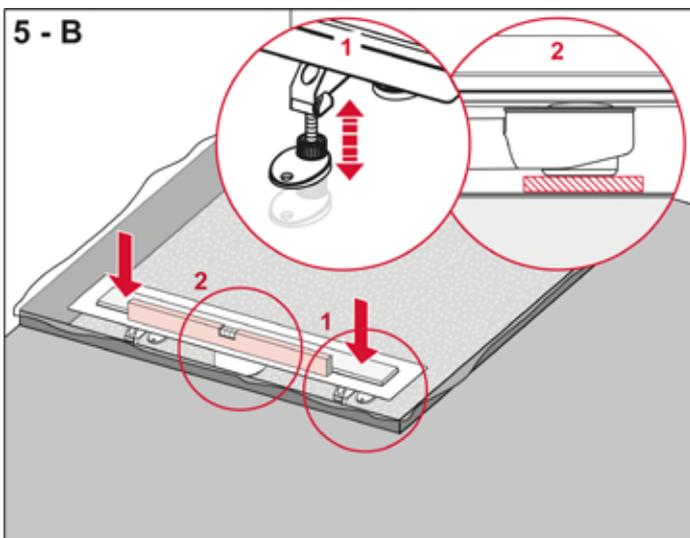
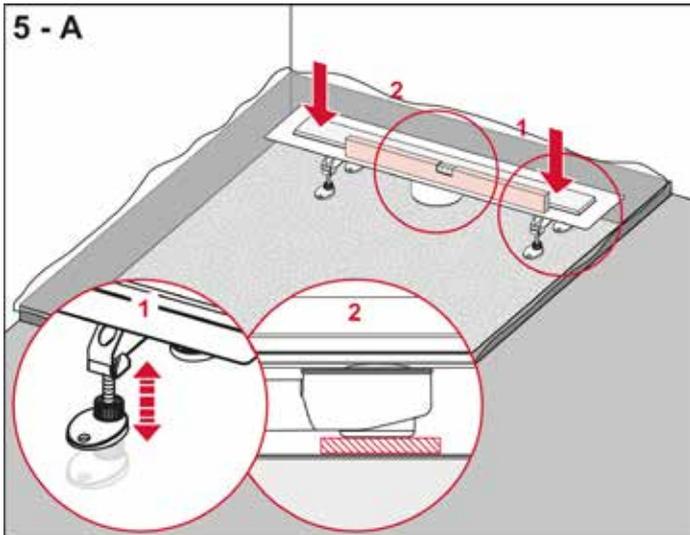
Apply the edge insulation strips.



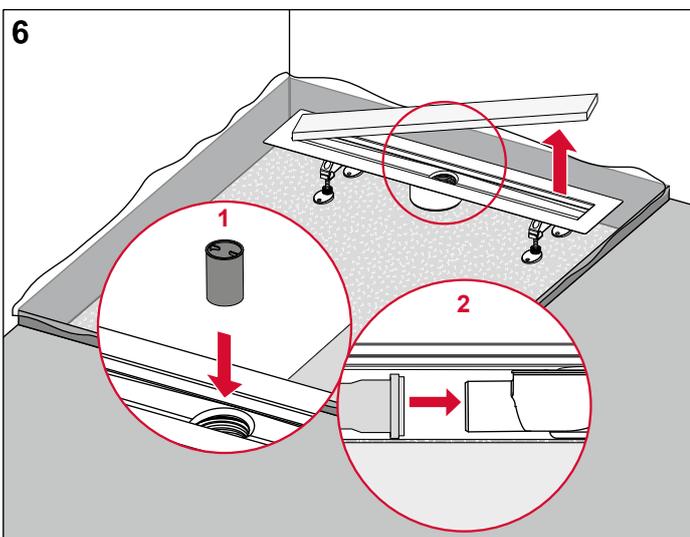
Lay the PE sheet.



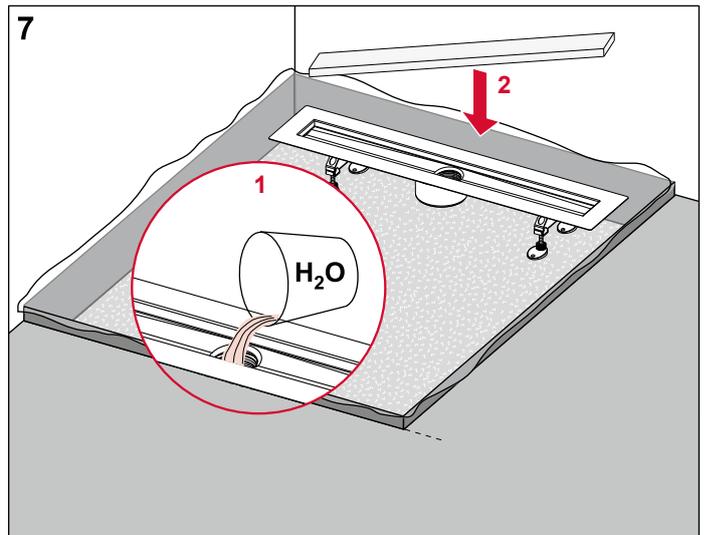
Mount the drain and click on the assembly feet if applicable.



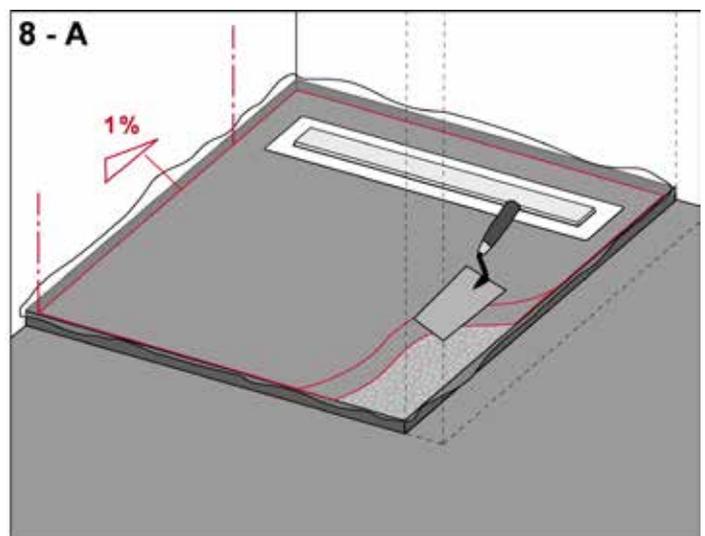
Use the adjustable assembly feet to raise the shower channel to the required position and align horizontally, if necessary, pack the drain body.



Remove the protective cover, insert the immersion pipe and attach the drainage pipe to the outflow nozzle.



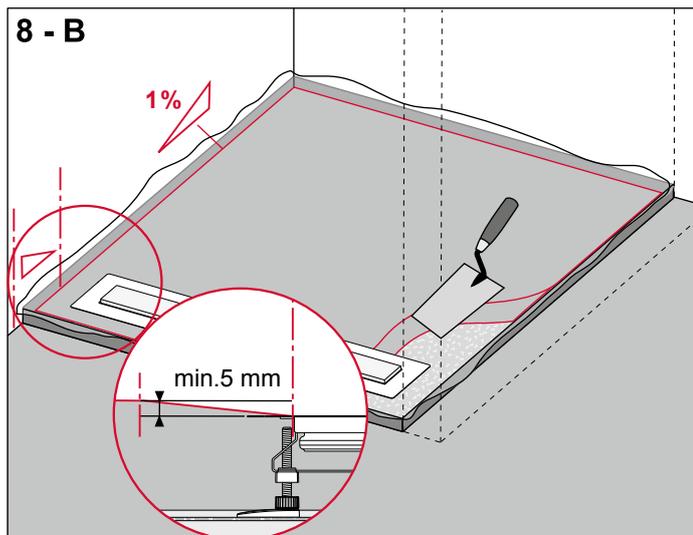
Check for leaks and replace the protective cover.



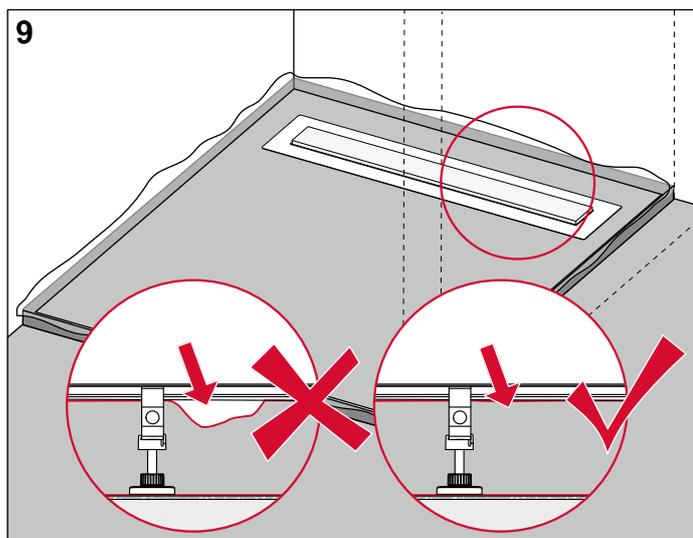
(A = positioning close to the wall)

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%.

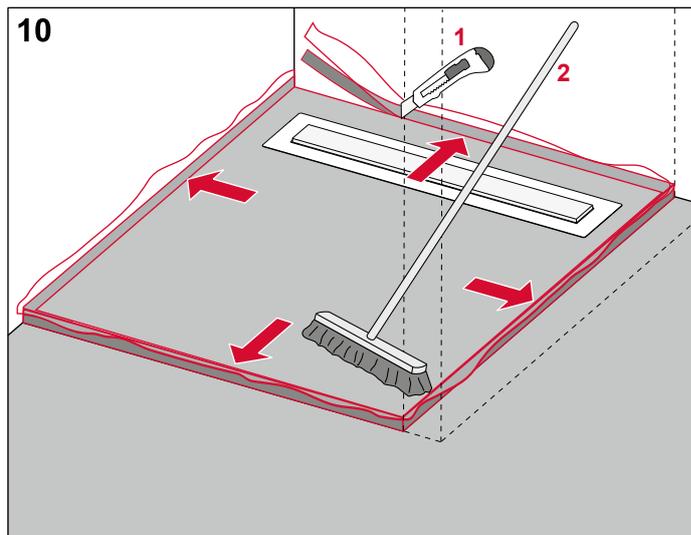
TECEdrainline - Installation instructions



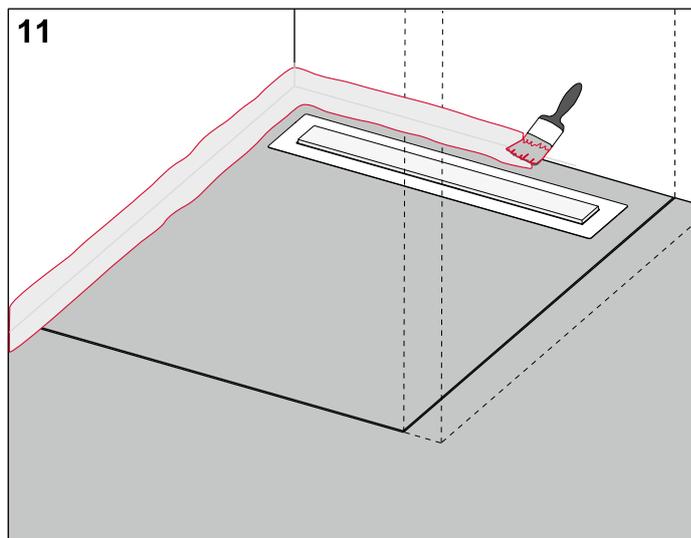
(A = positioning in the middle of the room)
 Apply the screed and fully incorporate the channel into the screed up to flange height, making sure that there are no cavities. Include an incline of 1%. When installing in the middle of the room, include a reverse gradient of at least 5 mm.



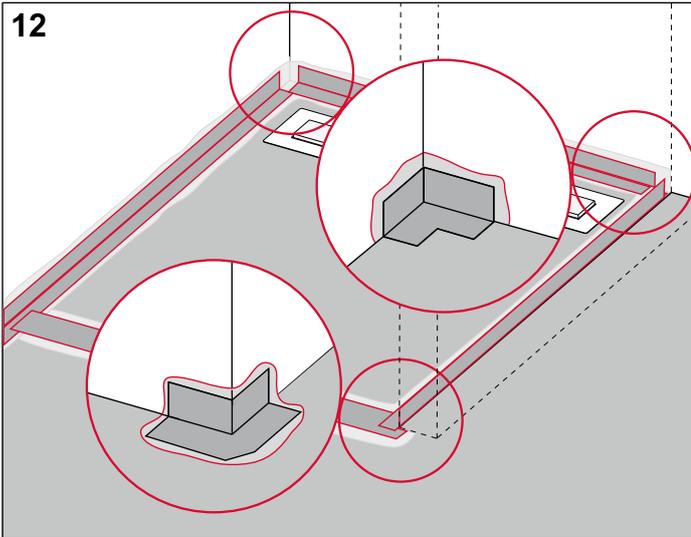
Make sure that there are no cavities between the screed and the channel or drain.



Cut off any protruding edge insulation strips and PE sheet, clean the screed.



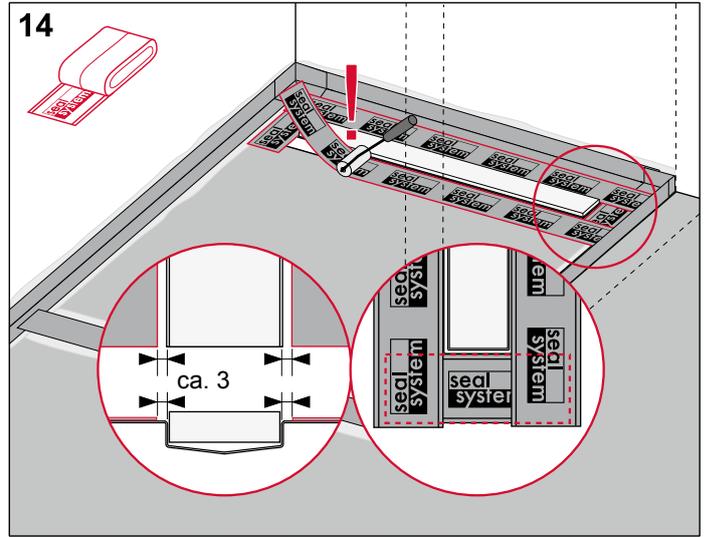
Apply a coat of composite seal to the transitions between the wall and the screed. Observe the manufacturer's instructions when creating the composite seal (figs. 11 to 19).



12

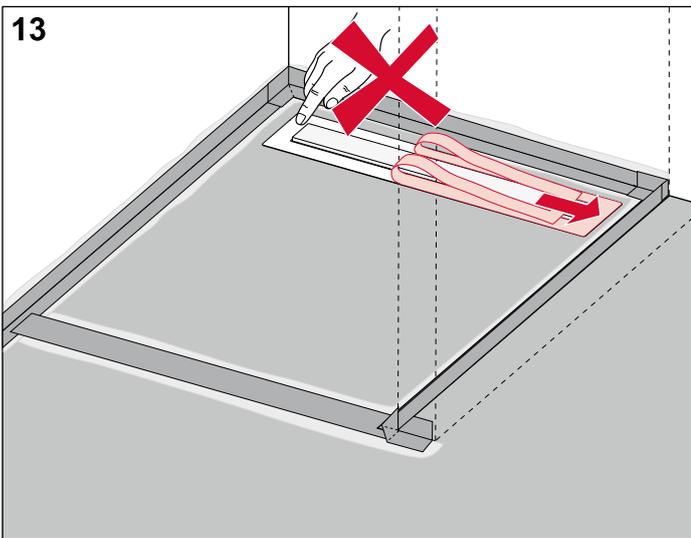
Fold the sealing tape and fit it directly into the connection in the fresh composite seal, making sure that there are no air bubbles.

Apply the composite seal to the corners again and fold and fit the corner seals, making sure that there are no air bubbles.



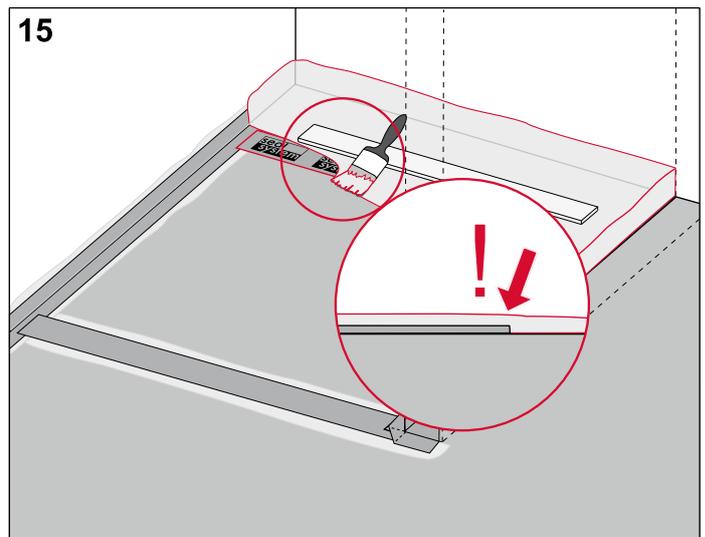
14

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.



13

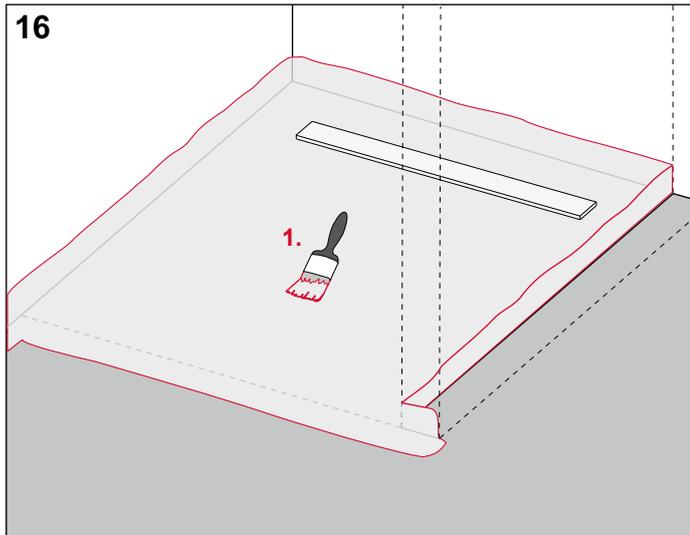
Completely remove the protective sheet from the channel flange. Do not touch the flange any more or let it get dirty.



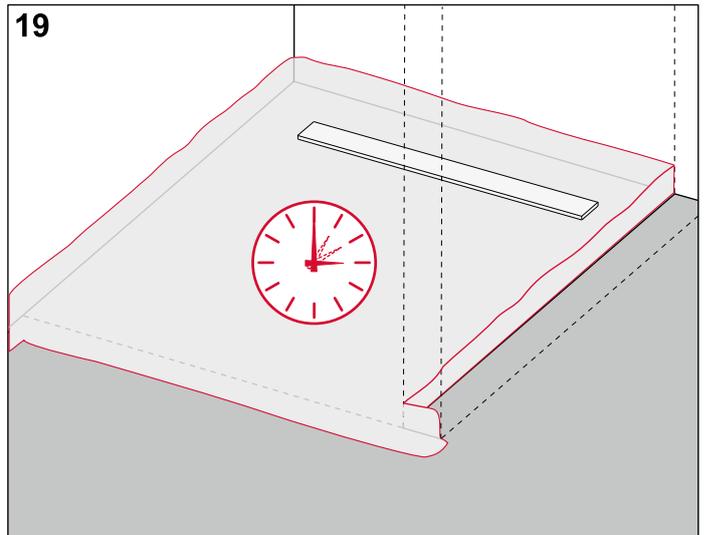
15

Apply the first coat of composite seal. In doing so, completely work in the Seal System sealing tape and corners.

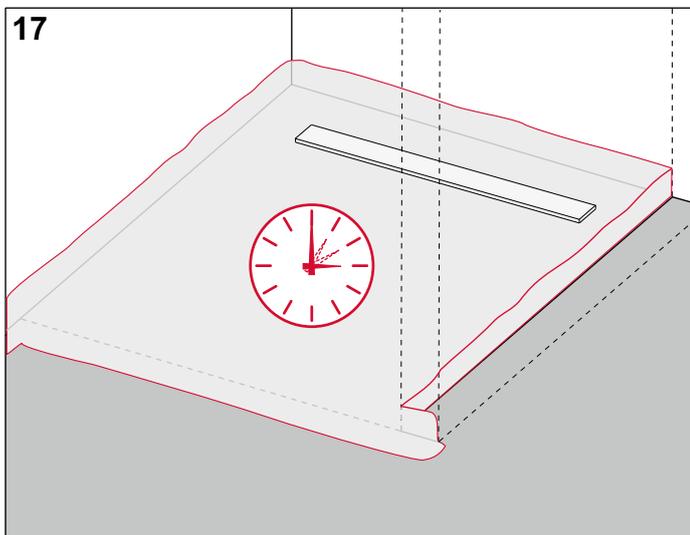
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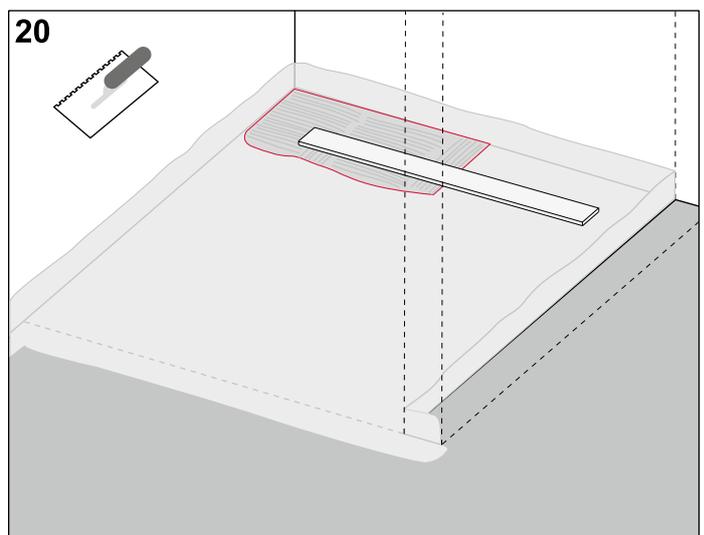
Spotlessly complete the first coat of composite seal.



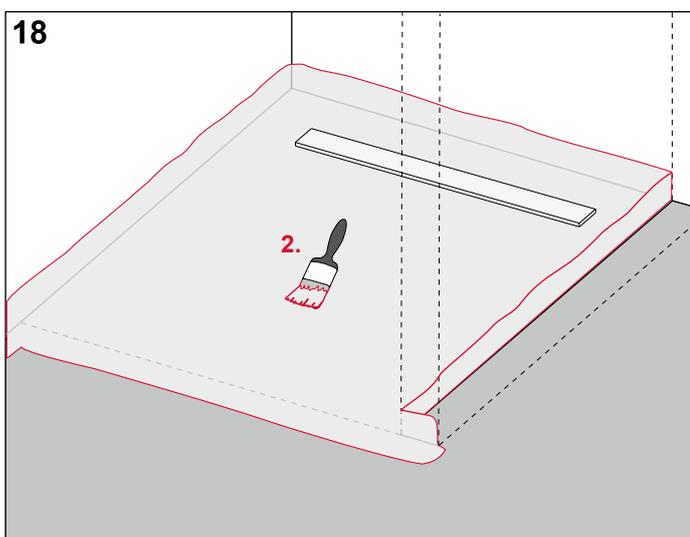
Allow the specified drying time.



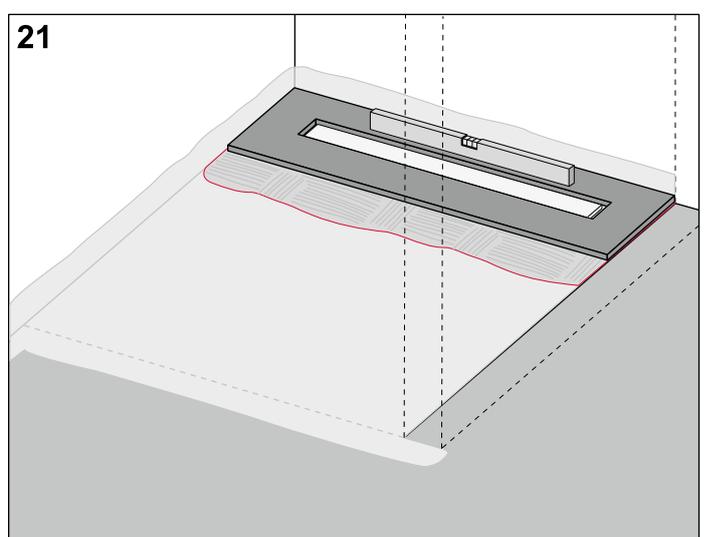
Allow the specified drying time.



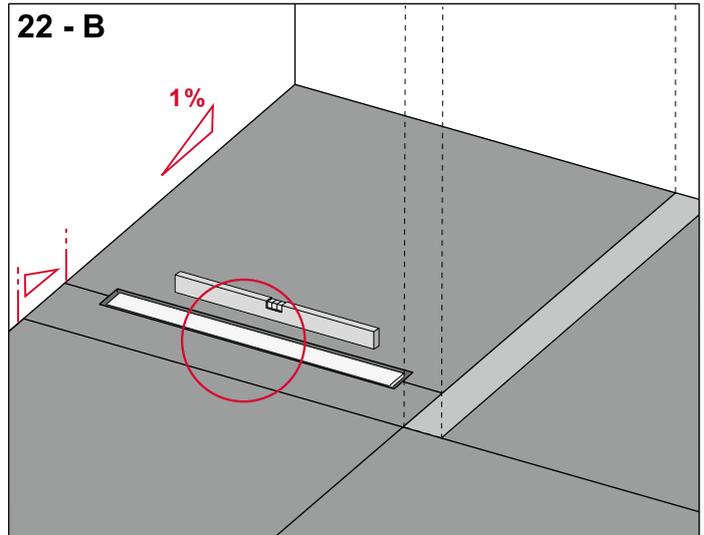
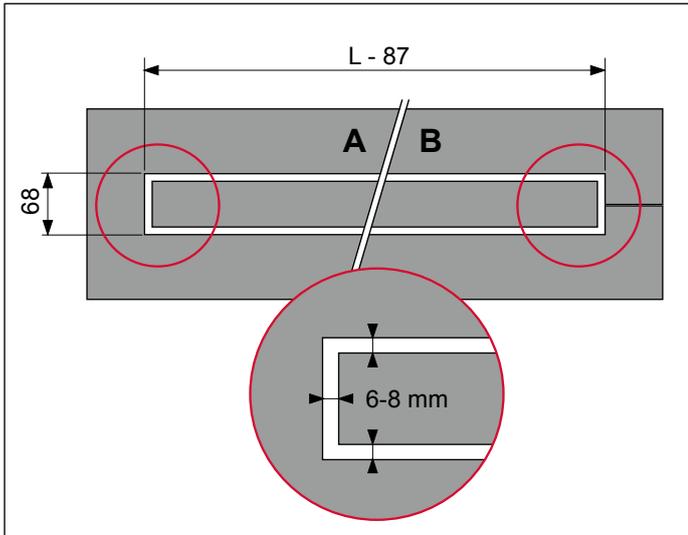
Apply the tile adhesive.



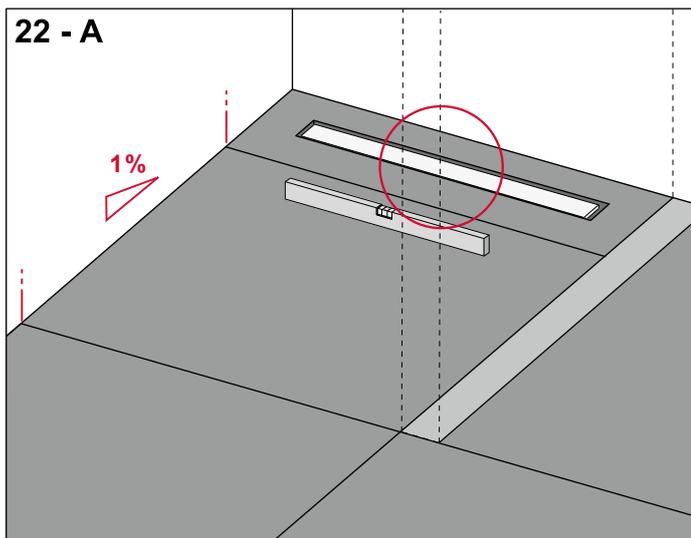
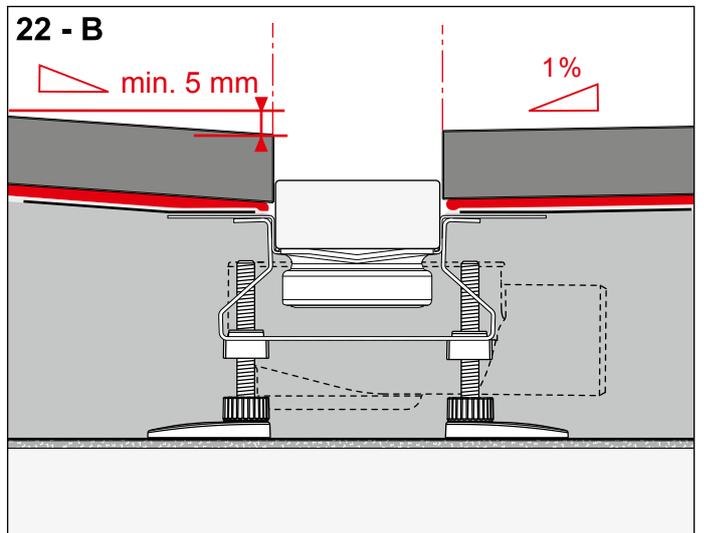
Apply the second coat of composite seal spotlessly over the entire area.



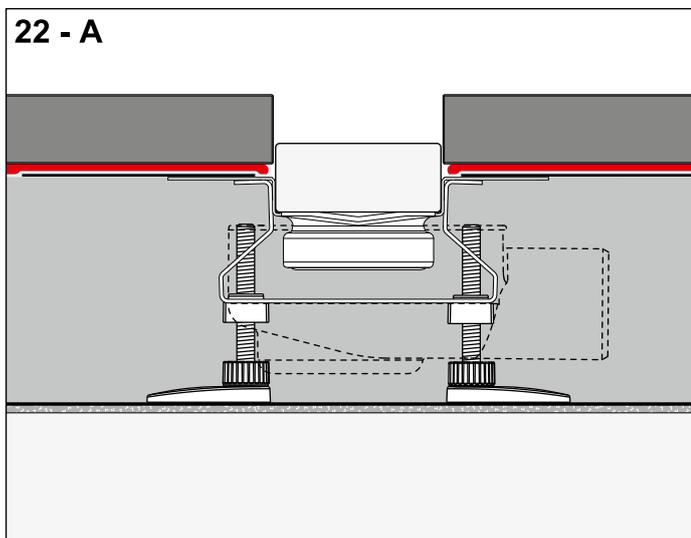
Lay the floor covering (e.g. natural stone slabs) around the shower channel and align horizontally.



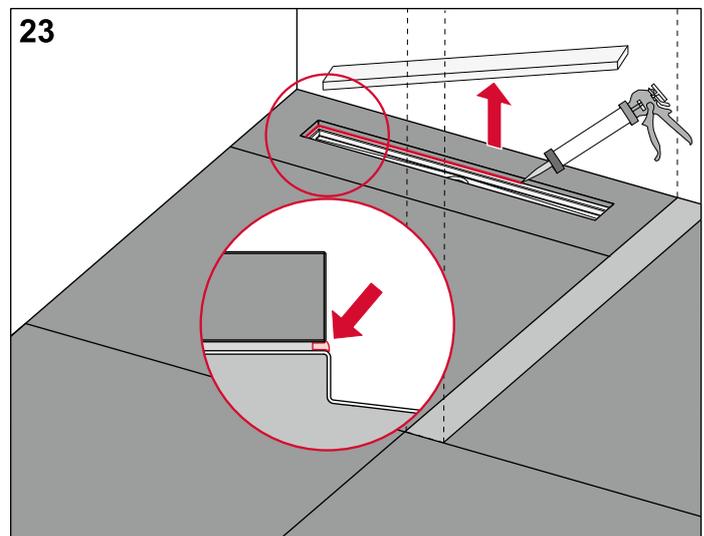
Create the cut-outs in the covering, preferably using a water jet cutter. The gap width must be between 6 and 8 mm.



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.



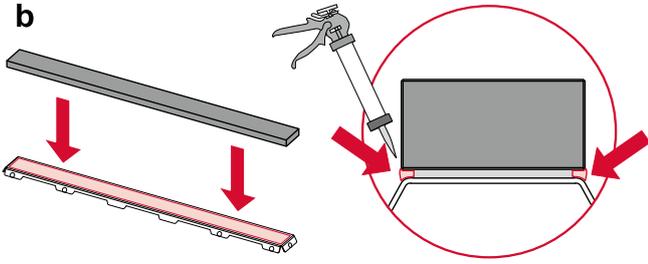
Seal the space between the floor covering and the screed with permanently flexible material.

TECEdrainline – Installation instructions

24 a

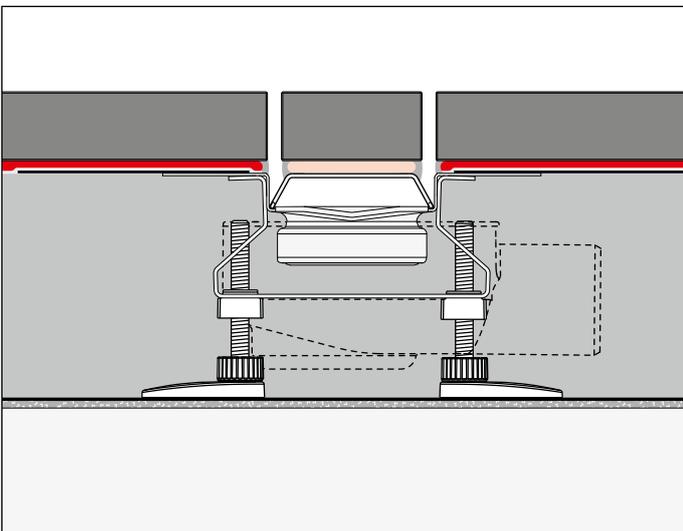
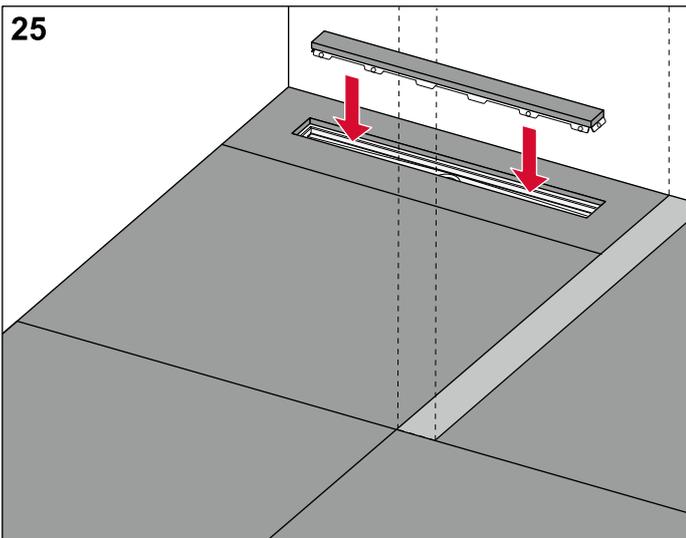


b



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

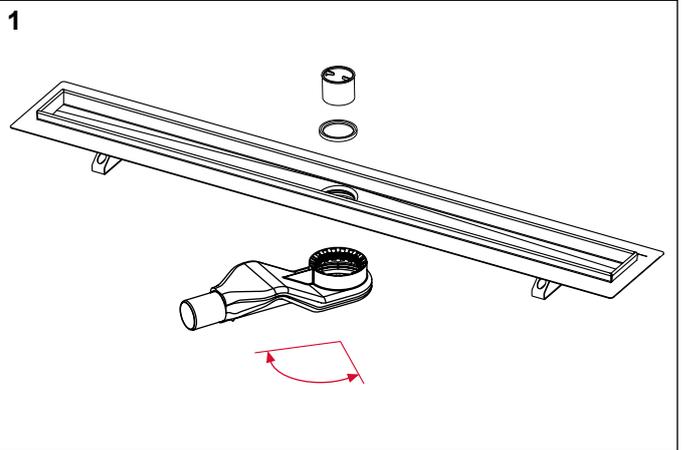


Clean the shower channel, insert the support sheet into it, and check the spacing dimensions.

Installation instructions for "extra-flat" drain

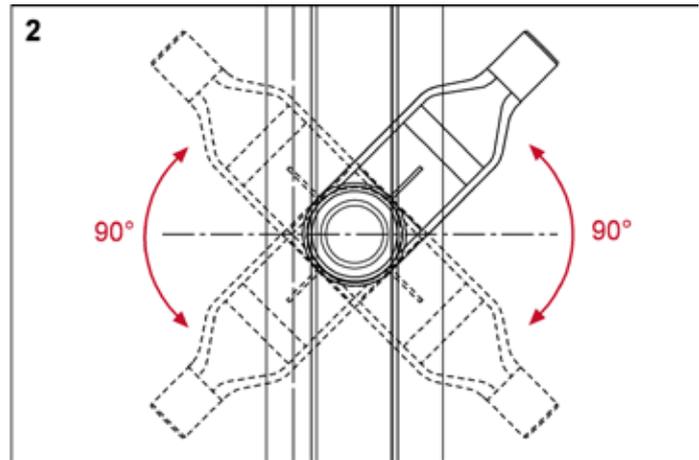
A shower channel using an extra-flat drain is basically installed in the same way as any other horizontal TECEdrainline drain body. However, due to the extra flat design, attention should be paid to certain points.

1



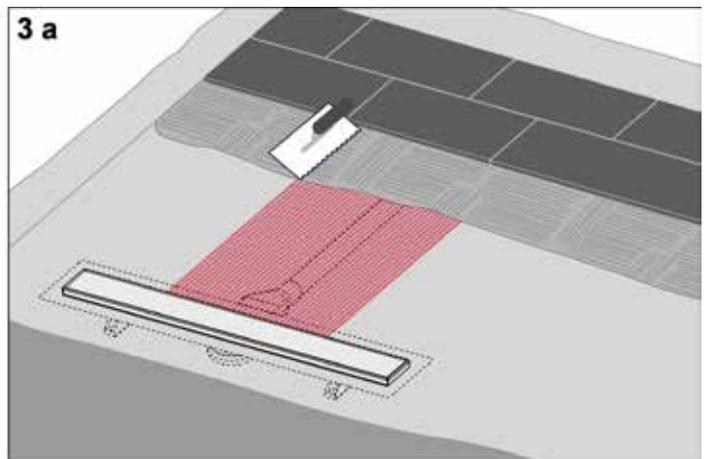
Place the drain on the channel body.

2



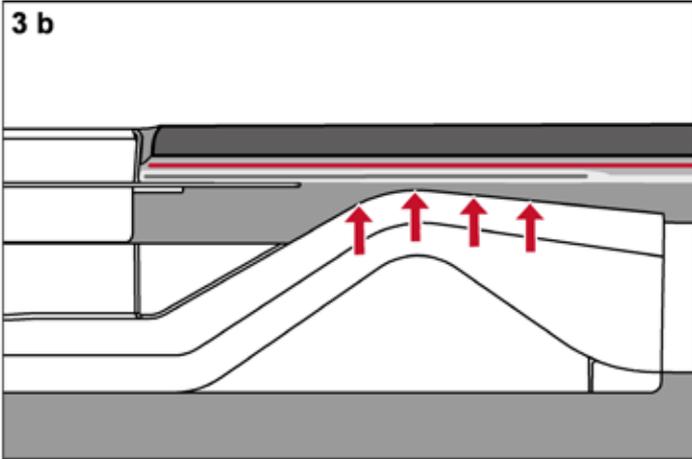
The turning range of the extra-flat drain is approx. 90° to either side of the shower channel.

3 a

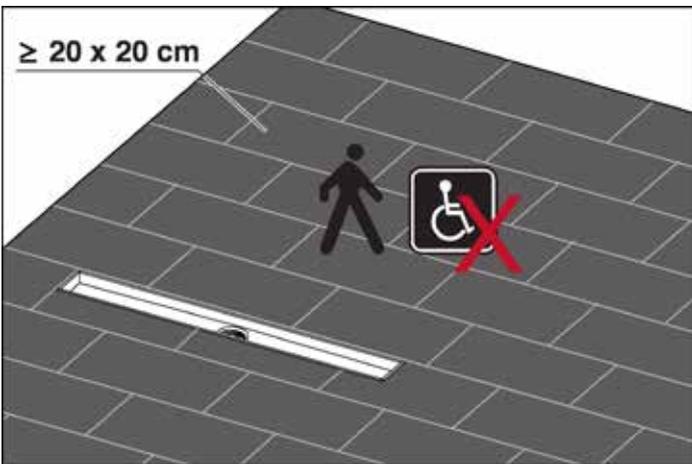


Due to the partially limited screed covering, a sufficiently wide piece of reinforcement fabric must be worked into the area between the drain and the outlet pipe.

3 b

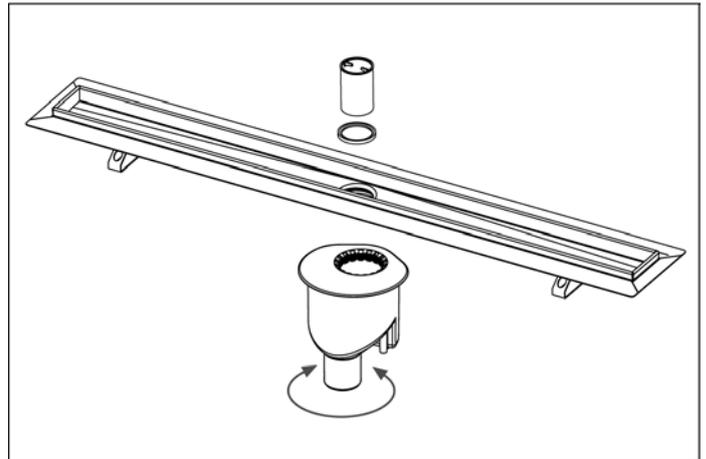
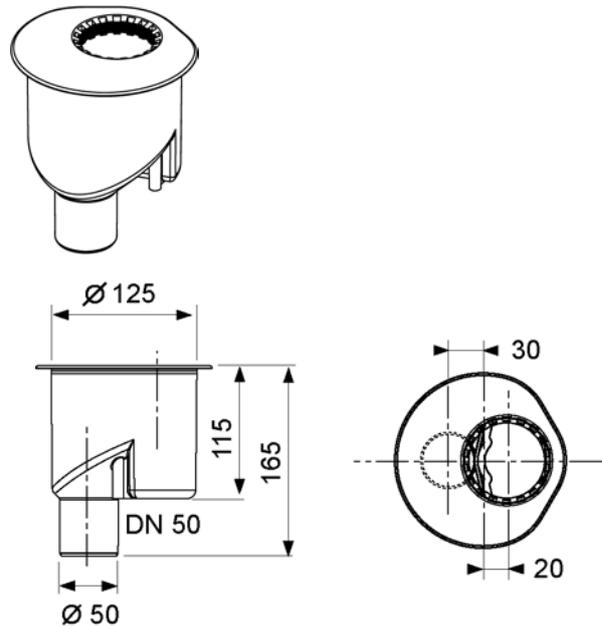


There should be no joints in the marked area above the drain body.

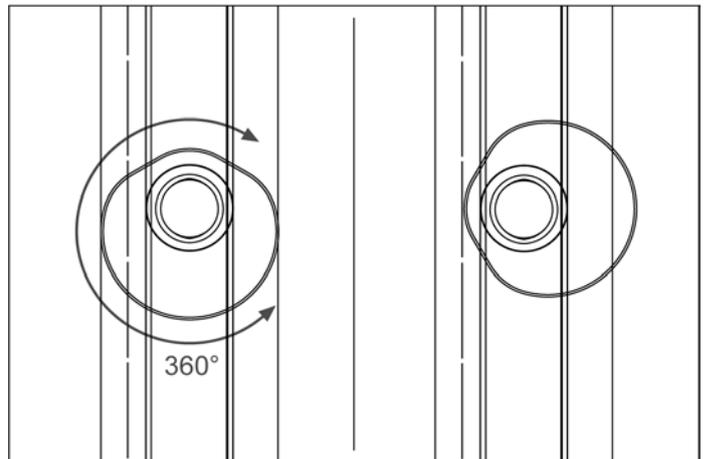


When choosing the floor covering, it should be taken into account that only slabs with an edge length of at least 20 cm should be used. The shower area is not suitable for wheelchairs.

Installation instructions for "vertical" drain

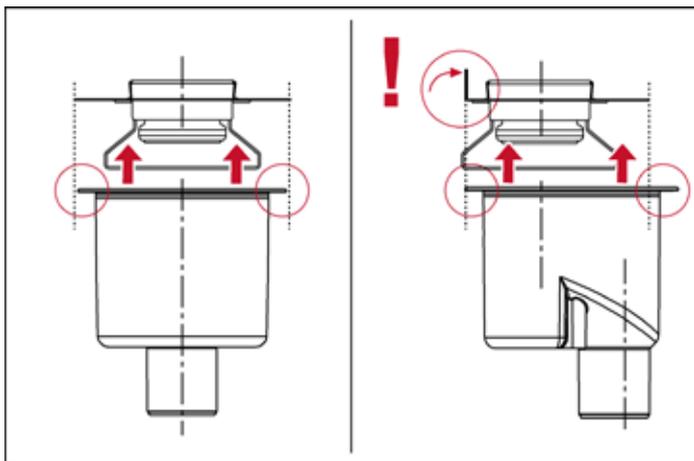


Secure the drain to the shower channel.

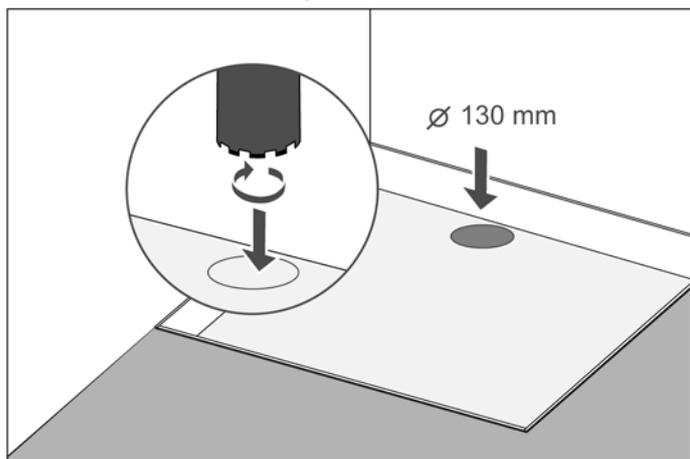


When the installation is close to the wall, the body of the drain can be turned. In this case, there is no need to chisel into the wall.

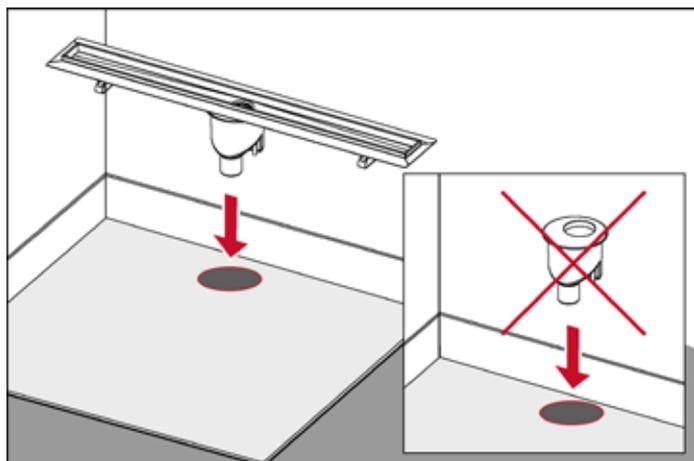
TECEdrainline – Installation instructions



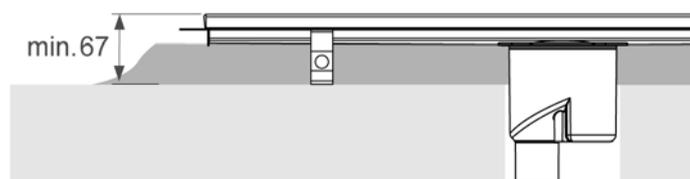
When installing the channel against the wall, the flange must be flush with the edge of the drain.



Drill a core hole with Ø 130 mm.



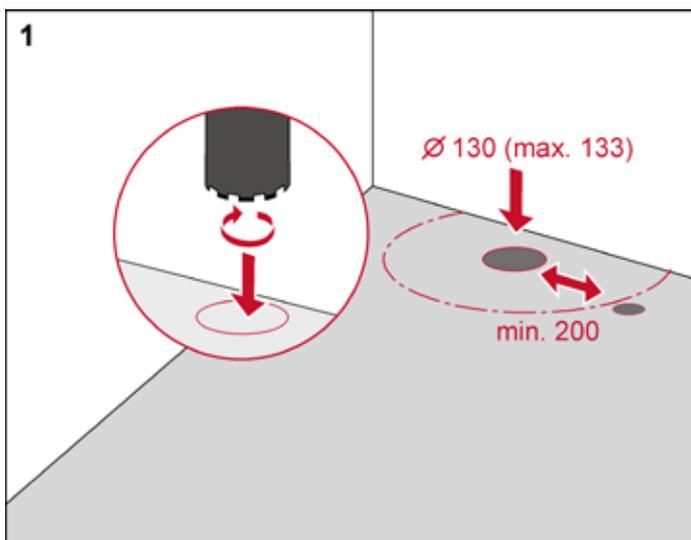
Insert the drain body including the drain channel into the core hole. Check for leaks. The edge of the drain must be packed with screed – make sure that there are no cavities.



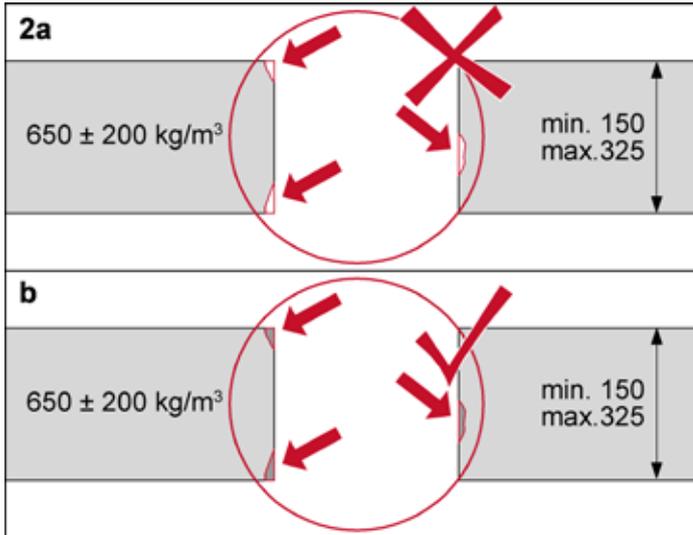
Minimum installation height without assembly feet is 67 mm.

Installation instructions for the fire protection set

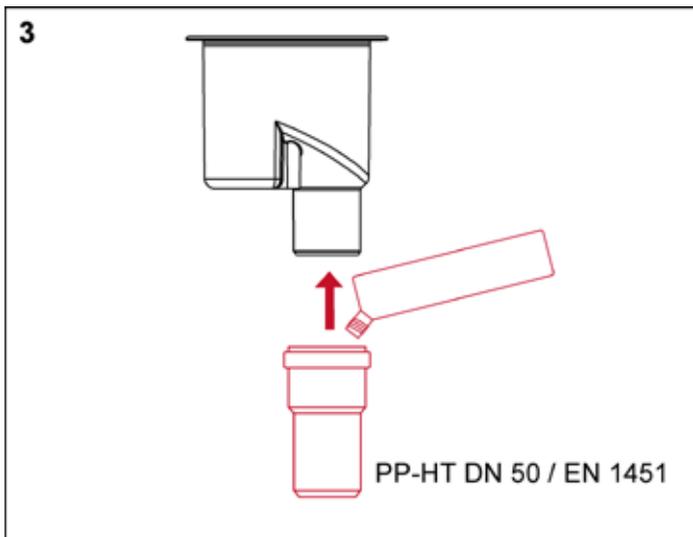
The fire protection set can only be used together with the vertical drain (order number 6 500 03).



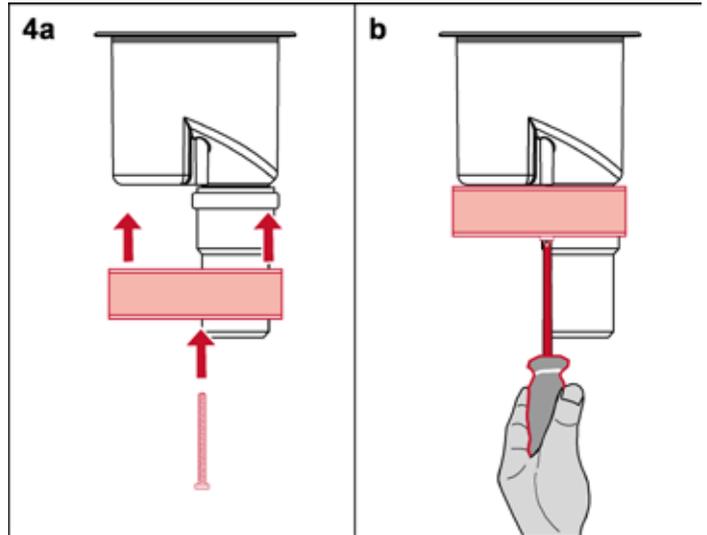
Make a core hole for the drain, diameter 130 mm (max. 133 mm). The distance to the nearest ceiling duct must be at least 200 mm.



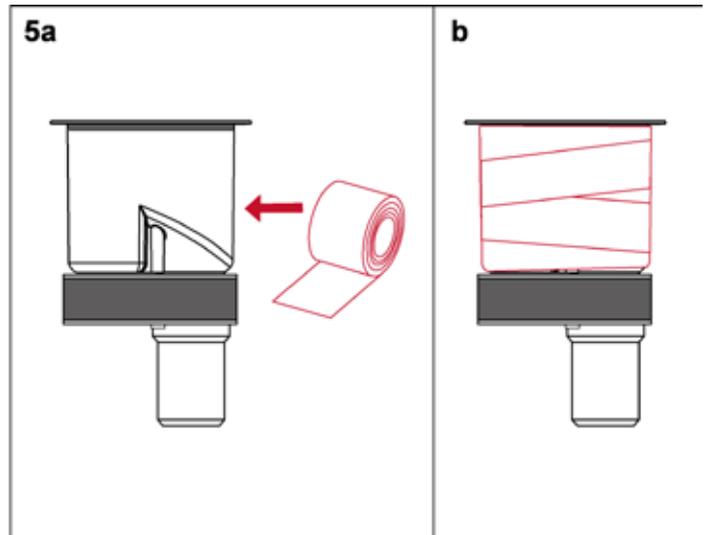
The fire protection set is only permitted for use with solid ceiling constructions with a density of $650 \pm 200 \text{ kg/m}^3$ and a thickness of 150 to 325 mm. Any damages along the drilled hole must be made good using suitable material.



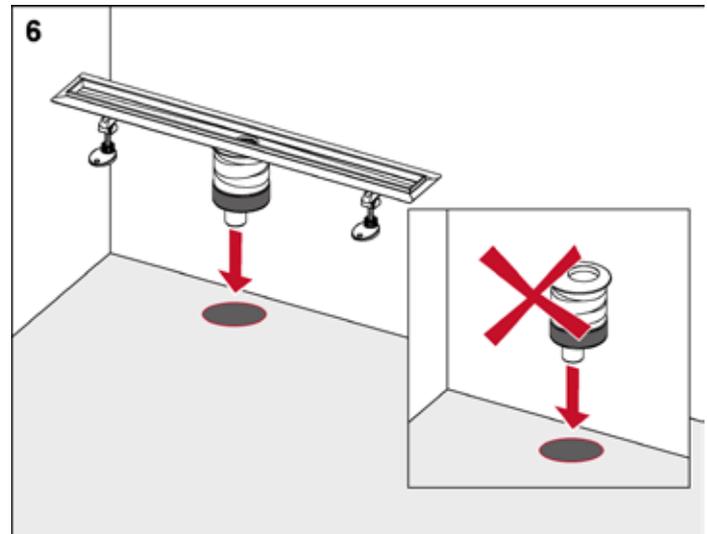
To connect the drain to the wastewater pipe, in the immediate area around the fire protection sleeve, use a PP-HT pipe DN 50 with a wall thickness of 2 mm (according to DIN EN 1451-1: 1999).



Secure the fire protection sleeve to the drain using the two screws supplied.

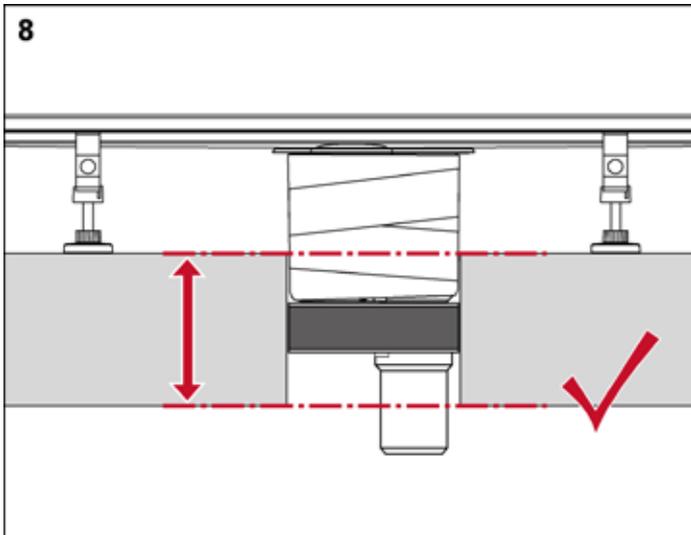
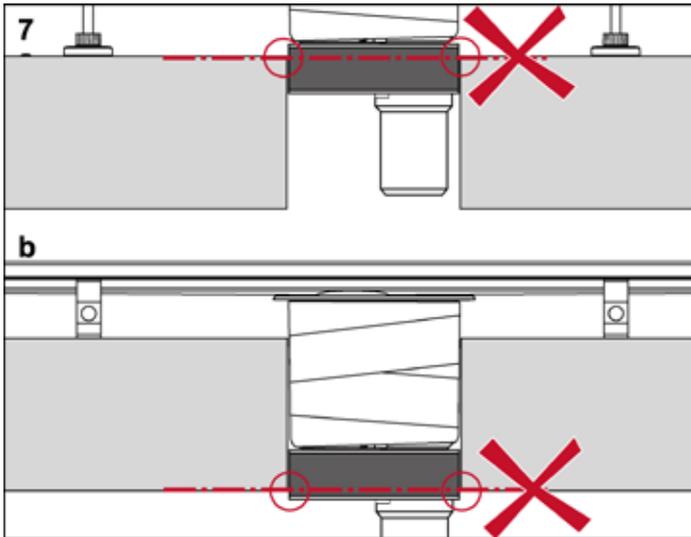


Place a spiral duct, or wrap adhesive binding or other sound insulation material around the drain body - not the sleeve.

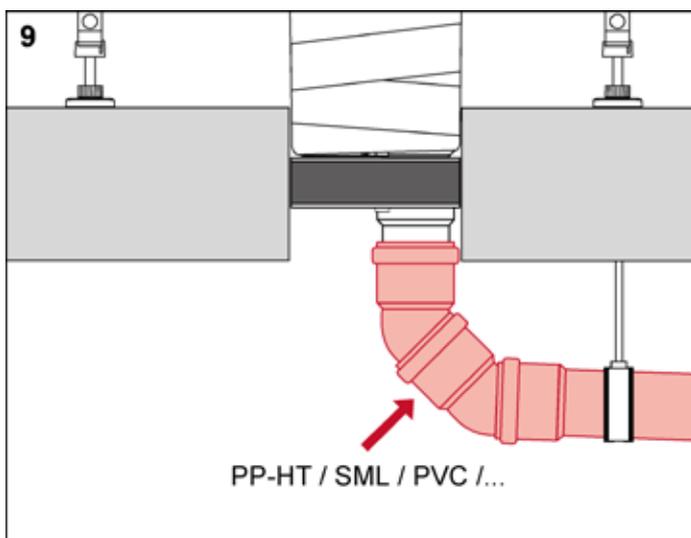


Place the drain on the channel body and move to the required position.

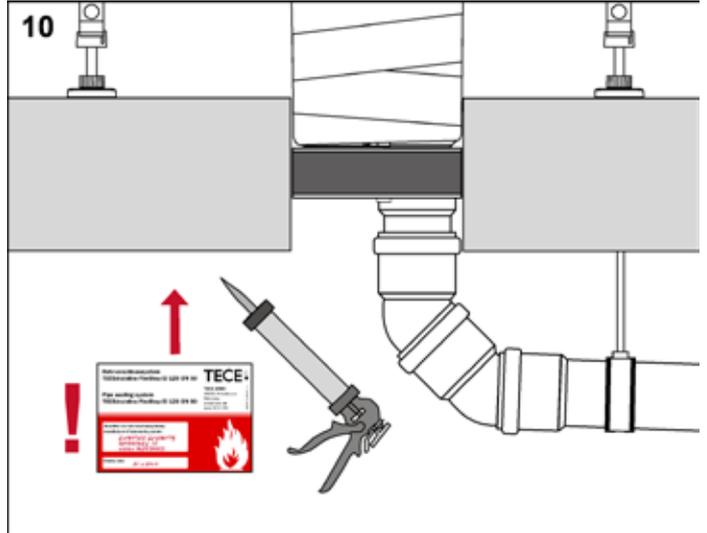
TECEdrainline – Installation instructions



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.

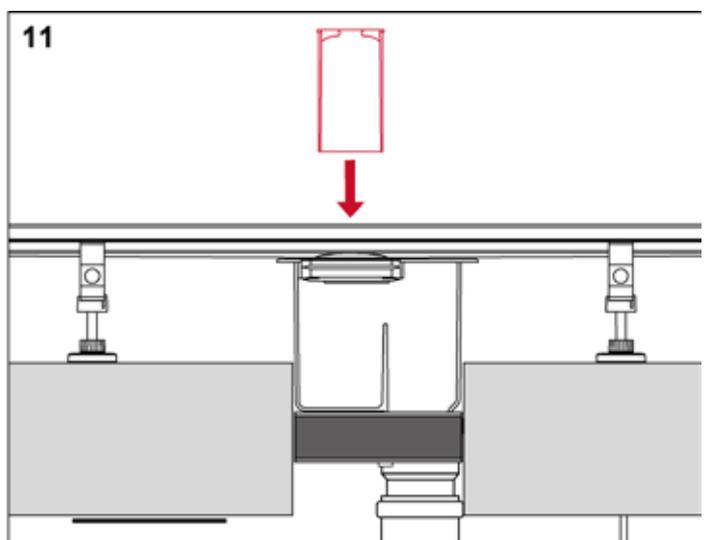


Attach a completed identification plate in a clearly visible and permanent manner – e.g. with silicone – next to the pipe closure system beneath the ceiling.

<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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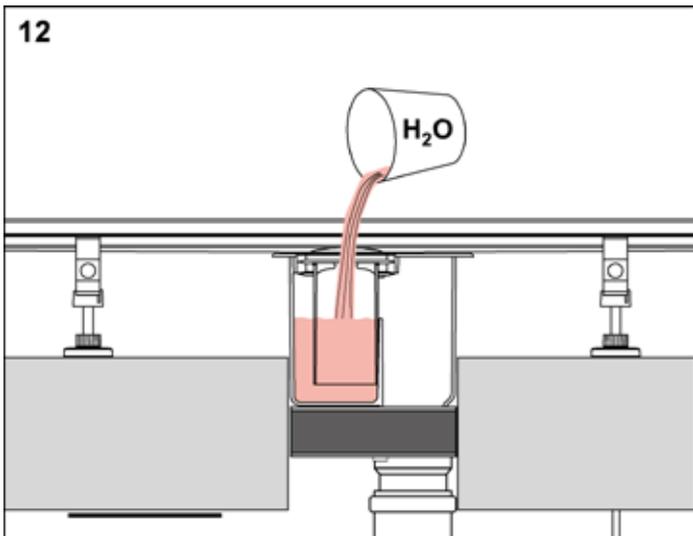
VP263 016 00 a

Enter the date on which the fire protection sleeve was installed next to the name of the fitter on the identification plate.

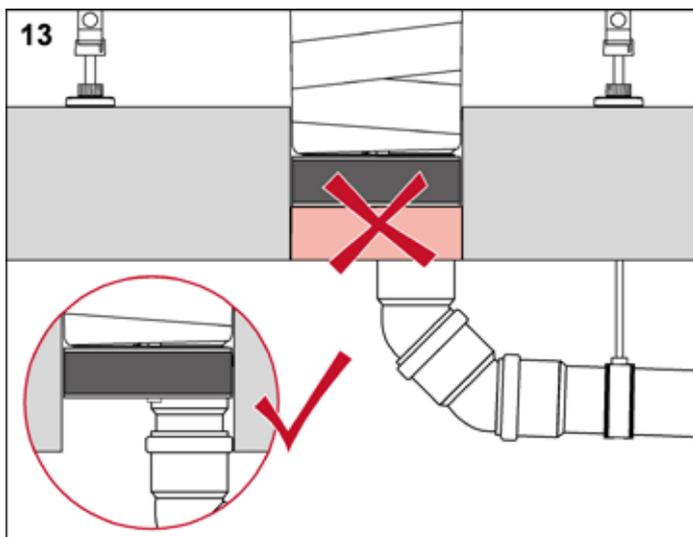


Insert the immersion pipe into the channel body.

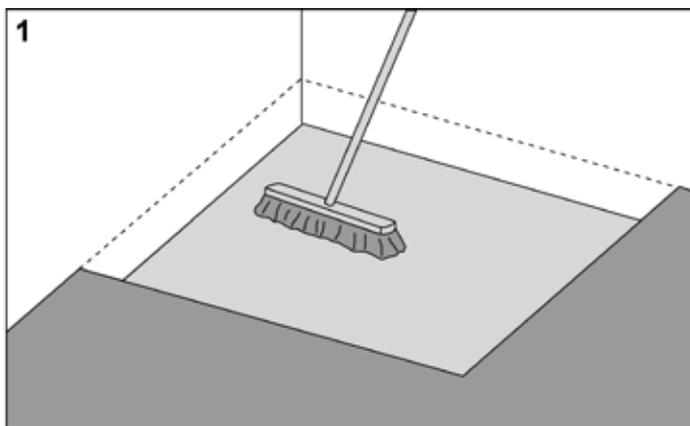
Installation instructions for sound insulation mat



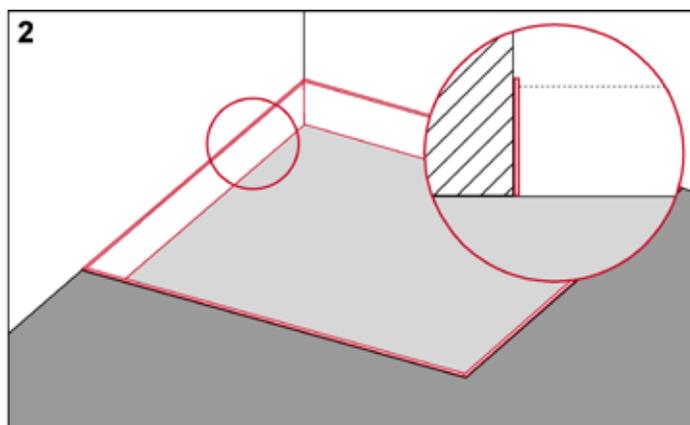
Fill the water trap to prevent penetration of flames and fumes.



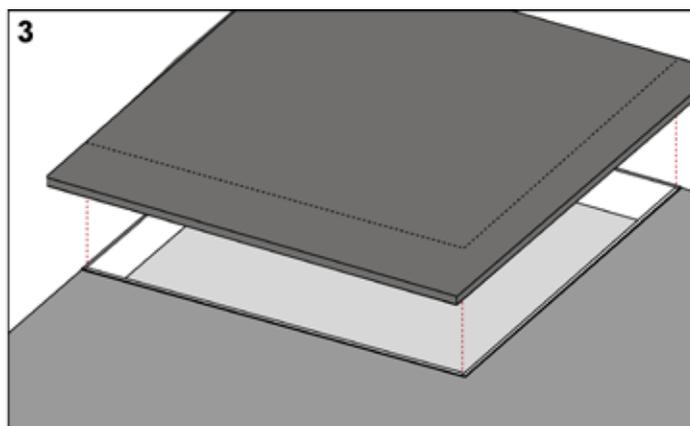
Important: The drilled hole under the fire protection sleeve must not be filled.



Clean the unfinished floor.



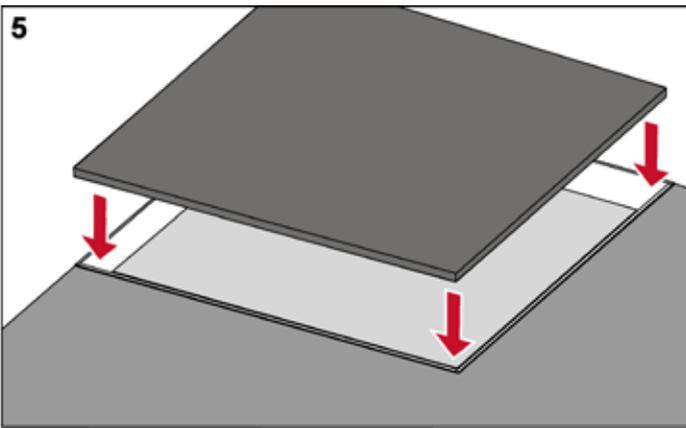
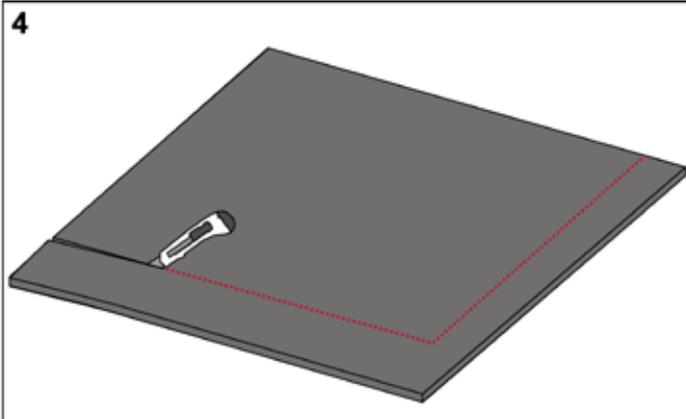
Apply the edge insulation strips along the wall and to the existing screed surfaces.



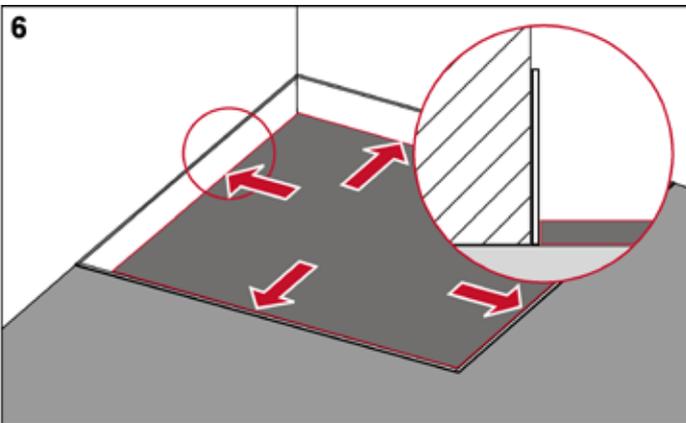
Transfer the required dimensions to the "Drainbase" sound insulation mat.

TECEdrainline – Installation instructions

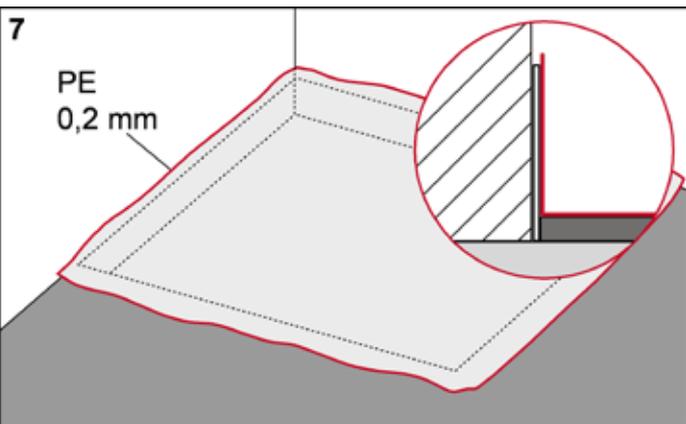
Installation instructions for TECEdrainline assembly feet



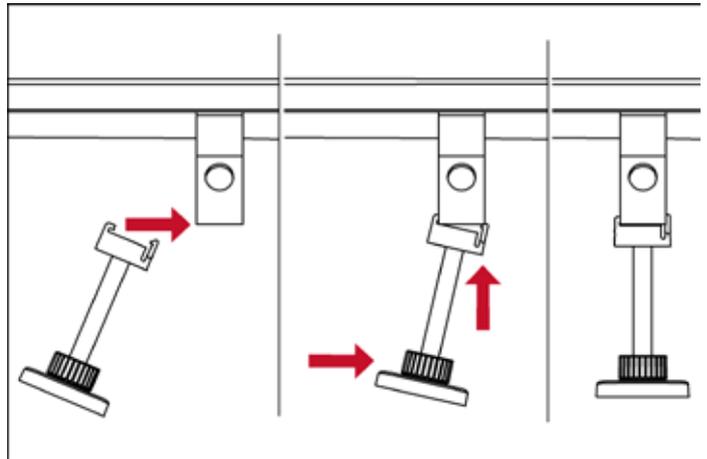
Cut the sound insulation mat to size and lay in place.



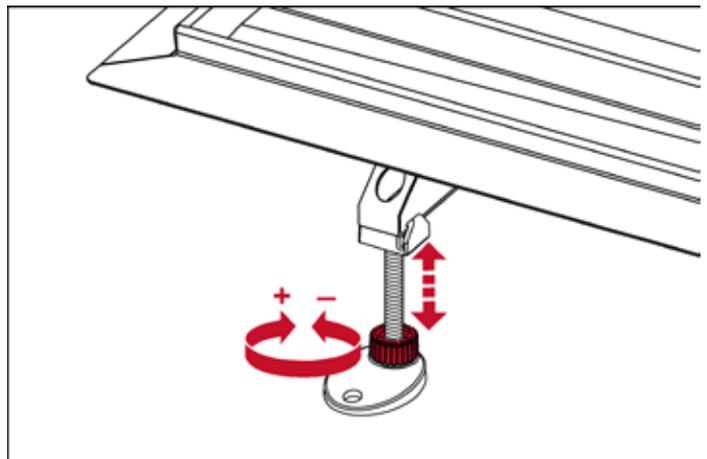
The sound-proofing mat should cover the whole floor surface.



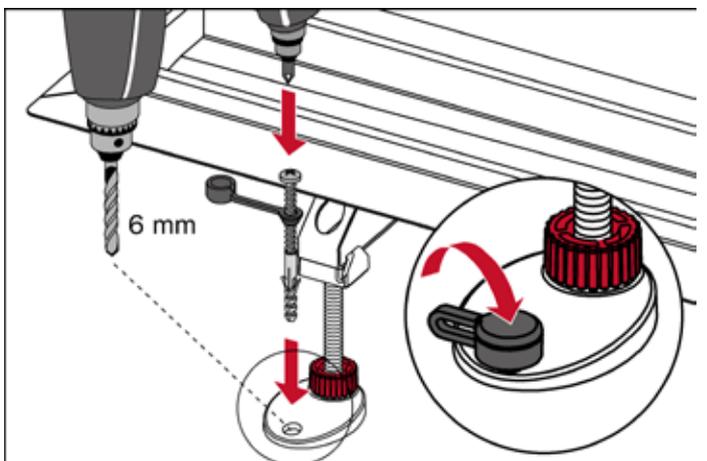
Lay out the PE film as shown.



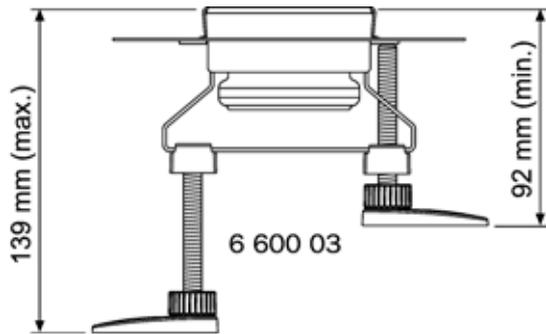
Hook the assembly feet in place, engage the clips and align them.



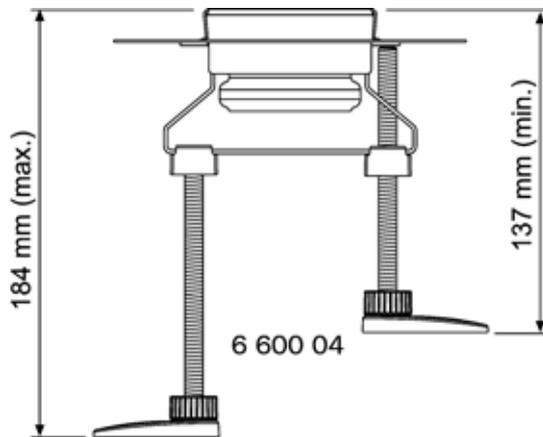
The height of the channel is set by turning the red adjusters on the feet. Check the alignment of the shower channel using a spirit level.



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)

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