

Drainage systems

TECEdrainpoint S

TECE

TECHNICAL GUIDELINES

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Introduction

The standard for point drainage:

Innovation with a system – resistant, robust, universal. For the first time, TECE is offering a completely newly developed and innovative drain range made of plastic.

The most important product features

The universal flange

Just one flange for all applications – as a result, both liquid and strip composite seals and clamped flange connections are possible.

The advantage: There is no longer any distinction between planning and ordering.

Direct thin-bed sealing without an extension piece

With the universal flange of the new TECEdrainpoint S drains, DN 50 – and now also DN 70 and DN 100 drains – can be installed directly in the thin-bed seal, without an additional raising element.

Universality

Regardless of whether you use DN 50 extra-flat or DN 100 vertical drains, there is now just one size for all extension pieces, raising elements and grate frames. Grates with dimensions 100×100 mm and 150×150 mm also fit all drains.

Always the right drain

Whether just a low assembly height is available, or whether you need a high drainage capacity, you will always find the right drain in the TECEdrainpoint S range. For example, the TECEdrainpoint S DN 70 with an installation height of 98 mm is currently one of the flattest DN 70 floor drains available on the market.

Innovation

The removable, two-stage membrane odour trap reliably prevents unpleasant odours from escaping, and can work as a foam barrier if necessary.

Cleaning and maintenance

All odour traps can be removed at any time, including after installation.



Planning

Sealing

Components and structural elements are constantly subjected to moisture. In the interior area, many "wet and humid rooms" are affected by this: bathrooms, washrooms and kitchens in the private sector, commercial kitchens, washing facilities and production rooms in the commercial and industrial sector, and swimming pools, sports facilities and showers in the public sector. Moisture can penetrate into the components, causing structural alterations and changes in building chemicals, for example deterioration of thermal insulation or formation of mould. This can destroy the components and cause residents to develop health problems.

For this reason, the state of the Federal Republic of Germany has prescribed building regulations – the State Building Code – to protect components and structural elements against moisture and damp.

Adequate safeguard measures were originally regulated by DIN 18195, 1-10 "Waterproofing of buildings". However, this did not contain any detailed specifications about composite seals currently in use today. So ZDB also published the "Composite sealing" bulletin.

A new series of standards has been in force since July 2017. Only part 1 remains from the previous DIN 18195 standard, and this only regulates the terms used for the new series of standards DIN 18531 - 18535. The water-proofing of indoor areas is regulated in this series of standards by standard DIN 18534.

DIN 18534 "Waterproofing for indoor applications" consists of the following parts:

- Part 1: Requirements and principles for design and execution
- Part 2: Waterproofing with waterproofing materials in sheet form
- Part 3: Waterproofing with liquid-applied waterproofing materials in conjunction with tiles and paving (AIV-F)
- Part 4: Waterproofing with mastic asphalt or asphalt mastic
- Part 5: Waterproofing with waterproofing materials in sheet form in conjunction with tiles and paving
- Part 6: Waterproofing with waterproofing materials in panel-shaped form in conjunction with tiles or paving

Parts 5 and 6 of DIN 18534 are currently still being drafted, the white paper for these parts will follow at a later stage.

Parts 1, 3 and 5 are relevant to the area of TECE drainage products.

In addition to the regulations mentioned, the product-specific TECE installation instructions should also be observed.

The main contents of the standards DIN 18534-1:2017-07 and DIN 18534-3:2017-07 are described and explained below.

TECEdrainpoint S – Planning

Water action classes according to DIN 18534-1

In DIN 18534, the "moisture stress classes" known from the ZDB "Composite seals" bulletin have been replaced by "water action classes". Water action classes can be broken down as follows:

Water action classes	Water action	Stress	Application examples ^{*/**}	Waterproofing materials (DIN 18534-3, E DIN 18534-5)
WO-I	low	Areas exposed to infrequent splashing	Wall areas above washstands in bathrooms and sinks in domestic kitchens	Polymer dispersions (wall and floor)
			Floor areas without drainage in domestic spaces, e.g. in kitchens, utility rooms, guest	Mineral sealing slurries (crack-bridging)
			tollets	Reaction resin
				 Sheet-form waterproofing mate- rials in conjunction with tiles and paving (E DIN 18534-5)
W1-I	moderate	Areas exposed to frequent splashing or to infrequent action	 Walls above bathtubs and in showers in bathrooms 	 Polymer dispersions (wall and floor)
		of domestic water, without higher loads due to water	 Floor areas with drainage in domestic spaces 	 Mineral sealing slurries (crack-bridging)
accumulation	accumulation	Floor areas with/without drainage in bath-	Reaction resin	
			rooms	 Sheet-form waterproofing mate- rials in conjunction with tiles and paving (E DIN 18534-5)
W2-I	high	Areas exposed to frequent	Wall areas of showers in sports/commercial	Polymer dispersions (wall)
		splashing and/or to the action	facilities***	Mineral sealing slurries
		the floor occasionally through	Floor areas with drains and/or channels	(crack-bridging)
		water accumulation	Floor areas in spaces with walk-in showers	Reaction resin
			 Wall and floor areas in sports/commercial facilities*** 	 Sheet-form waterproofing mate- rials in conjunction with tiles and paving (E DIN 18534-5)
W3-I	extremely	Areas exposed to regular or pro-	Areas around swimming pools	Mineral sealing slurries
high	high	high longed splashing and/or to the action of domestic water and/ or water from intensive cleaning	Areas in showers and shower facilities in	(crack-bridging)
			sports/commercial facilities***	Reaction resin
		processes, intensified due to water accumulation	Areas in commercial facilities (commercial kitchens, launderettes, breweries, etc.)	

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 WO-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 WO-I and W1-I, moisture-sensitive substrates are permitted under the composite seal. These are, for example, calcium sulphate-bound screeds or gypsum wall panels. In classes W2-I and W3-I, only substrates which are insensitive to moisture are permitted. These are mostly substrates on a cement-based compound such as concrete, cement screed or fibre cement boards.

Connecting composite seals to floor drains and to shower channels and profiles

Floor drains, shower channels and profiles represent penetrations in the surface sealing (composite seal). Special attention is required to ensure that these constructional details remain permanently waterproof. Planners must coordinate the work carried out by the different trades (fitters, screed and tile layers). This includes realistically specifying the water action classes, and deciding on the right materials and products to use for substrates, the composite seal, drains and channels. Then there is the constructive design which must be flawlessly implemented.

Particularly the combination of the composite seal with drain/channel and the required sealing sleeve/sealing tape and adhesive must function perfectly together in the respective combination. As this perfect function in the respective combination is so important, TECE offers its drainage products greater security and clarity with its Seal System.

Seal System – a certified composite seal



The Seal System project was brought into being to change the confusing and uncertain situation regarding the use of composite seals on floor drains and shower channels. To this end, the Seal System sealing tape and Seal System

sealing sleeve were developed as a first step. They form the connection elements between the composite seal and the drainage solution (channel/floor drain).

Extremely comprehensive combination tests were then carried out on composite seal products with TECEdrainline shower channels and TECEdrainpoint S floor drains. The functional safety (tightness) of the connection of the composite seal with the TECE drainage product was tested. The tests were carried out by KIWA TBU, an independent testing institution, based on the testing principles required by the building inspectorate (PG-AIV-F/-B) in Germany. More than 50 composite sealing products from well-known manufacturers were successfully tested and certified. The tested and certified safety can be recognised from the Seal System quality seal. "Seal System - certified composite seal" stands for the tightness of the connection of drainage solutions and composite seals, and for a certificate which brings designers, tradespeople and end users security and clarity.

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

Seal System is available for the TECEdrainline shower channel, the TECEdrainprofile shower profile and for the TECEdrainpoint S plastic drain range. Information about the components and installation of other TECE products can be found in the corresponding chapters.

The TECEdrainpoint S Seal System consists of the following components:

- 1. TECEdrainpoint S drain
- 2. Seal System sealing sleeve
- 3. one of the 50 tested and certified sealing products

TECEdrainpoint S – Planning

Example of one Seal System seal of a TECEdrainpoint S drain with a certified sealing product.



1 screed

- 2 universal flange protective film
- 3 first coat of composite seal
- 4 Seal System sealing sleeve
- 5 second coat of composite seal

A certificate is available for each composite seal product which has passed the test (www.sealsystem.net).

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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 S 1-K
Ardex GmbH	Ardex S 7
	Ardex 8 + 9
	Ardal Flexdicht
Bostik GmbH (Ardal tile technology)	Ardalon 2K plus
	Botact DF 9
Botament Systembaustoffe GmbH	Botact MD 1
& CO. KG	Botact MD 28
Fermacell GmbH	Fermacell liquid foil
	Ceresit CL 51
Henkel AG & Co. KGaA (Ceresit)	Ceresit CL 50
	Ceresit CR 72
Harmonn Otto Crohill (Otto Chomia)	Ottoflex liquid foil
Hermann Ollo GmbH (Ollo Chemie)	Ottoflex slurry seal
Kemper System GmbH & Co. KG	Kemperol 022
	Okamul DF
Kincol Pouchamia CmbH & Co. KC	Servoflex DMS 1K Plus SuperTec
	Servoflex DMS 1K – fast setting
	SuperTec
	Mapegum WPS
Mapei GmbH	Mapelastic
	Monolastic Ultra
	PCI Lastogum
PCI Augsburg GmbH	PCI Seccoral 1K
	PCI Pecilastic W
	Flex sealing sheet
Ramsauer GmbH & Co. KG	Flex sealing slurry
	Flex 2K sealing slurry
	Rywalit Lastodicht
	Rywalit DS 99 X
Rywa GmbH & Co. KG	Rywalit DS 01 X
	Rywalit sealing foil sealing mem-
	brane

Seal System certificate (example)

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Manufacturer	Seal System certified product	
	Weber.tec 822, liquid membrane	
	Weber.tec 824, flexible sealing	
Saint Gobain Weber GmbH	slurry 1-K	
	Weber.tec Superflex D2 tiles, flexible	
	sealing slurry 2-K	
Sakret Trockenbaustoffe Europa	Alternative seal AA	
GmbH & Co. KG	Property waterproofing	
	Saniflex	
	Aquafin 1K flex	
Schomburg GmbH	Aquafin RS 300	
	Aquafin 2K	
	Aquafin 2K/M	
	Schönox HA	
SCHONOX GMDH	Schönox 2K DS Rapid	
	Sopro FDF	
	Sopro DSF 423	
	Sopro DSF 523	
Sopro Bauchemie GmbH	Sopro DSF 623	
	Sopro TDS 823	
	Sopro AEB 640	

Seal System tested and certified composite sealing products

Drains

The technical requirements for drains for buildings are regulated in DIN EN 1253. Among other things, the standard defines specifications for minimum drainage capacities, water seal depths for odour traps, and loading capacities for grates.

Drainage capacities and odour traps

Discharge values for drains with one or more inlets are specified as follows in section 4.8.1 of DIN EN 1253-1:

Nominal value of outflow nozzles		Floor drains	
DN / OD	DN / ID	Flow values	Water level a
32	30	0.4 l/s	20 mm
40	40	0.6 l/s	20 mm
50	50	0.8 l/s	20 mm
75	70	0.8 l/s	20 mm
110	100	1.4 l/s	20 mm

Drainage capacity (inflow over grating) – minimum discharge value for drains

Odour traps should prevent channel gases from entering the building. To this end, DIN EN 1253 calls for odour traps with a water seal depth of at least 50 mm. An odour trap may only be omitted in certain cases in outdoor areas. Adhering to the required drainage capacity and water seal depth entails certain constructive installation heights for floor drains.

The necessary floor projection heights, as is the case with most old properties, are often not available. The TECE range disposes of flatter drains for such cases. The parties involved in the project should draw up written agreements with regard to its use.

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.
К 3	< 300 kg (3 kN)	Areas without vehicle traffic such as flats, commercial buildings and certain public buildings. For example, bathrooms in dwell- ings, 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 \bf{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 touchfree. In the case of touch-free fittings, a temperature lim-

iter must be provided. The water discharge temperature should be limited in this case to 45 $^{\circ}\text{C}.$

Movement areas:

A movement area must be designed in front of each of the items of sanitary equipment such as toilet bowls, washstands, baths and in the shower zone. A minimum area of 1.20 m x 1.20 m is sufficient for this (\mathbf{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 are is designed level with the floor;
- the gradient required for drainage is maximum 2 %.

Fire protection

FireStop fire protection set for vertical drain DN 50

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

Inside the fire protection sleeve there are special gypsum plates fortified with additives. On the outside and in the nozzle area there are adhesive strips made of intumescent material based on expandable graphite.



As temperatures rise during a fire, this material foams up to many times its original form. This causes the remaining annular gap towards the core hole on the outside of the fire protection sleeve to close.



In the socket area, the outflow nozzle including the pushed-on HT pipe sleeve becomes crushed.

Note:

The use of an HT pipe as a connection to the drain is mandatory, otherwise partitioning in the event of a fire cannot be guaranteed.

The water seal in the outflow (trap) ensures that no smoke or gas can escape into the room being protected. Together, this creates a tested, highly fire-resistant pipe closure system (or firewall).

The usual mortar mix/filling of the remainder of the hole is not required with the TECE fire protection set.

Installation

Various points must be taken into account when planning a floor drain. Firstly, the question arises as to its purpose: Is the drain intended to be used in the bathroom as a shower drain or as an emergency/additional drain? Is the drain intended to be used as a cellar drain or outdoors as a patio drain? Depending on the application, there are, of course, special requirements such as sealing, fire protection requirements, protection from drying out and protection from ice formation.

In addition to these basic requirements, certain other design-related points must also be considered. These could be points such as positioning, installation heights, drainage capacity or incline (both of the drain line and of the screed or rather the floor covering).

Build-up and incline

For a floor drain to work smoothly, achieving the right incline is a fundamental prerequisite. Regardless of the direction, the incline must always lead to the drain and must be at least 1 % (1 % corresponds to 1 cm/m). This is easiest to implement if the area to be drained is relatively small, and the drain is in the centre of this area. In this case, it is sufficient if the tiles are evenly cut and this continues from the four corners of the drain to the area to be drained. This central position can also be regarded as standard in bathroom drainage.

However, the situation becomes more problematic when the shower area is not in a central position, or when the area to be drained is larger, or does not have a simple geometric shape. A decentralised position in a small area can be tackled by adapting the tile cutting, however, in the case of larger areas, this is often no longer sufficient and the situation can only be resolved by using several drains. However, in the process, careful thought must be given when deciding which area will be drained by which drain, and when ensuring that there will be no "dead spaces" where water could remain standing.

TECEdrainpoint S – Advantages

Modular system

The TECEdrainpoint S range has a completely modular design. This small yet clearly organised range is suitable for innumerable areas of application. You can customise your "own" drain set out of the individual modular components. Choose from drains, drain tops, grates and accessories to meet your requirements. Everything fits together and can be combined any way you wish.

Universal flange

TECEdrainpoint S plastic drains are equipped with a universal flange. The flange is suitable for both liquid and strip composite seals and also for sealing with a clamped flange connection.

Therefore, the range is compact and easy to mount. Regardless which installation situation or sealing is required – the right drain is always available.

Hygiene

The odour trap on TECEdrainpoint S drains can be easily removed at any time. It consists of an inlet part and a beaker and can therefore be taken apart and cleaned. Any dirt that has entered the drain is therefore caught in the odour trap beaker and can be removed easily.

Membrane odour trap

Another innovation is the two-stage membrane odour trap for retrofitting. This has two functions: Firstly, it has a membrane that opens as soon as water runs into the drain, and closes again afterwards to retain any odours. Secondly, it has a low water seal and is therefore twice as reliable. The membrane odour trap can also be used as a foam barrier, e.g. in rooms with multiple showers, or as a vermin barrier in patio drains without a beaker.

Sealing

Two sealing methods are possible (see also figure below) with TECEdrainpoint S plastic drains:

- (A) Liquid or strip composite seal using the Seal System sealing sleeve (PE/PP) or
- (B) Connection of bitumen strips, for example, with cut-tosize sealing foil (EPDM) as a clamped flange connection



TECEdrainpoint S – Installation examples

Installation examples

TECEdrainpoint plastic drains bring together several application scenarios in a single drain system. They can be used as bathroom, floor, patio or cellar drains. Suitable drain bodies, drain tops and accessories are available for each of these scenarios.

Shower drain

In principle, a shower drain is incorporated into the screed. For this, it is fixed to the bare floor and connected to the wastewater pipe, then the screed is applied in such a way that it completely encompasses the drain. When the screed dries, the floor area and drain must be sealed; in the case of floor-level shower areas without a fixed shower screen, the entire room must also be sealed. After sealing, the tile or floor covering can be applied.



Installation in the bathroom/shower area with a composite seal

Patio drain

A floor drain to be installed on a patio, balcony or in another outdoor area should not have an odour trap with a water seal. Otherwise, during the winter, there is the risk that the water in the drain could cause frost damage. With TECEdrainpoint S plastic drains, there is the option of using a membrane odour trap without a beaker. This provides protection against any channel gases while at the same time acting as a vermin barrier.

Installation in the cellar

In most cases, a cellar drain is used to drain away water which is not planned or of a regular nature. Such drains are mostly located near technical devices such as in utility rooms or boiler rooms. They are intended to drain away water which, for example, leaks out of these devices in the event of damage.

As tiles are rarely used in cellars, cellar drains are generally not sealed with a composite seal. A cellar seal is generally implemented according to DIN 18195 or without any seal at all.

If the cellar is provided with building waterproofing in accordance with DIN 18195, it makes sense, of course, to incorporate the cellar drain into this sealing layer. In this case, the drain should already be embedded in the unfinished floor. Cellar waterproofing is generally achieved by applying bitumen membrane sheets which can be welded to the unfinished floor with a torch. EPDM sealing foil is used to connect the TECEdrainpoint S cellar drain to such a membrane sheet. It is first attached to the floor drain using the compression ring set. The sealing sheet is then shaped to fit the membrane sheet with a hot-air fan.



Installation in the cellar area, sealing using clamped flange sealing

Range and technical data

The TECEdrainpoint S plastic drain range has a modular design and and consists of six complete drains, a drain modular system and various accessories.

Drain sets

The six drain sets each consist of a drain base body, a drain top and a cover. All drain sets have a drain socket in nominal width DN 50 drains. There are five horizontal versions (3 x extra-flat and 2 x standard) and one vertical version.



Drain set S 50

Floor drain set, horizontal, extra-flat DN 50



Consisting of:

- Drain body DN 50, horizontal, extra-flat, made of plastic (PP)
- With retaining edge
- With removable odour trap
- Drainage capacity 0.81–1.12 l/s*
- Reduced water seal depth = 30 mm
- Drain top with grate frame made of plastic (ABS) and O-ring seal
- TECEdrainpoint S design grate made of drawn stainless steel, material 1.4301 (304), dimension 100 x 100 mm, polished surface, load class K3 (load of up to 300 kg)
 Order no. 3601050

Drain set S 110

Floor drain set, horizontal, extra-flat DN 50



Consisting of:

- Drain body DN 50, horizontal, extra-flat with universal flange, made of plastic (PP)
- With universal flange to connect composite seals or clamped flange connections
- With ball joint
- With lateral inflow DN 40 incl. closure plug
- With removable odour trap
- Drainage capacity 0.61–1.12 l/s*
- Reduced water seal depth = 30 mm
- Drain top with grate frame made of plastic (ABS) and O-ring seal
- TECEdrainpoint S design grate made of drawn stainless steel, material 1.4301 (304), dimension 100 x 100 mm, polished surface, load class K3 (load of up to 300 kg) Order no. 3601100

FECEdrainpoint

Drain set S 112

Floor drain set, horizontal, extra-flat with universal flange, DN 50, stainless steel grate frame with stainless steel grate and membrane odour trap



Consisting of:

- Drain body DN 50, horizontal, extra-flat, made of plastic (PP)
- With universal flange to connect composite seals or clamped flange connections
- With ball joint
- With lateral inflow DN 40 incl. closure plug
- with removable membrane odour trap
- Drainage capacity 0.62-0.98 l/s*
- reduced water seal depth = 20 mm
- Drain top made of plastic (ABS) and O-ring seal
- Grate frame made of drawn stainless steel, material 1.4301 (304), for grate dimension 100 x 100 mm
- TECEdrainpoint S design grate made of drawn stainless steel, material 1.4301 (304), dimension 100 x 100 mm, polished surface, load class K3 (load of up to 300 kg)
 Order no. 3601102

Drain set S 120

Floor drain set, horizontal, standard with universal flange, DN 50, tested to DIN EN 1253



Consisting of:

- Drain body DN 50, horizontal, standard, made of plastic (PP)
- with universal flange to connect composite seals or clamped flange connections
- with ball joint
- with lateral inflow DN 40 incl. closure plug
- with removable odour trap
- Drainage capacity 0.8-1.17 I/s*
- Water seal depth = 50 mm in keeping with standard DIN EN 1253

- Drain top with grate frame made of plastic (ABS) and O-ring seal
- TECEdrainpoint S design grate made of drawn stainless steel, material 1.4301 (304), dimension 100 x 100 mm, polished surface, load class K3 (load of up to 300 kg)
 Order no. 3601200

Drain set S 122

Floor drain set, horizontal, standard with universal flange, DN 50, stainless steel grate frame with stainless steel grate and membrane odour trap, tested to DIN EN 1253



Consisting of:

- Drain body DN 50, horizontal, standard, made of plastic (PP)
- With universal flange to connect composite seals or clamped flange connections
- with ball joint
- with lateral inflow DN 40 incl. closure plug
- with removable membrane odour trap
- Drainage capacity 0.97-1.17 I/s*
- Water seal depth = 50 mm in keeping with standard DIN EN 1253
- Drain top made of plastic (ABS) and O-ring seal
- Grate frame made of drawn stainless steel, material 1.4301 (304), for grate dimension 100 x 100 mm
- TECEdrainpoint S design grate made of drawn stainless steel, material 1.4301 (304), dimension 100 x 100 mm, polished surface, load class K3 (load of up to 300 kg)
 Order no. 3601202

TECEdrainpoint S – Range and technical data

Drain set S 130

Floor drain set, vertical with universal flange, DN 50, tested to DIN EN 1253 $\,$



Consisting of:

- Drain body DN 50, vertical, made of plastic (PP)
- With universal flange to connect composite seals or clamped flange connections
- With removable odour trap
- Drainage capacity 1.36-1.52 l/s*
- Water seal depth = 50 mm in keeping with standard DIN EN 1253
- Drain top with grate frame made of plastic (ABS) and O-ring seal
- TECEdrainpoint design grate made of drawn stainless steel, material 1.4301 (304), dimension 100 x 100 mm, polished surface, load class K3 (load of up to 300 kg)
 Order no. 3601300

Modular system

With TECEdrainpoint modules, a complete drain can always be produced from three basic components – drain body, drain top and cover:

- 8 drain bodies from DN 50 horizontal extra-flat to DN 100 vertical,
- Drain tops with grate frames made of plastic, stainless steel or tileable, □ 100 or 150 mm,
- Stainless steel design grate, 100 x 100 mm or 142 x 142 mm, "loose" or screw-down.

The fact that the elements can be freely combined reduces storage costs and simplifies ordering.

Alternatively, there are six complete drain sets for the most common drain combinations.



TECEdrainpoint S – The modular system with method

The following components are available as an option:

- Raising element with universal flange
- Extension



Drains

Drain DN 50 extra-flat

Floor drain DN 50 horizontal extra-flat made of plastic (PP)



- With universal flange to connect composite seals or clamped flange connections
- with ball joint
- with lateral inflow DN 40 incl. closure plug
- with removable odour trap
- Drainage capacity 0.61-1.15 l/s*
- reduced water seal depth = 30 mm Order no. 3601400

Drain DN 50, patio, extra-flat

Floor drain as patio or balcony drain DN 50, horizontal extra-flat made of plastic (PP)



- With universal flange to connect composite seals or clamped flange connections
- Without odour trap
- Drainage capacity 1.33-2.02 l/s* Order number 360 14 01

Drain DN 50 standard

Floor drain DN 50 horizontal, standard made of plastic (PP) tested to DIN EN 1253



- With universal flange to connect composite seals or clamped flange connections
- with ball joint
- with lateral inflow DN 40 incl. closure plug
- with removable odour trap
- Drainage capacity 0.8-1.2 l/s*
- Water seal depth = 50 mm in keeping with standard DIN EN 1253

Order no. 3601500

Drain DN 50 vertical

Floor drain DN 50 vertical made of plastic (PP) tested to DIN EN 1253



- With universal flange to connect composite seals or clamped flange connections
- With removable odour trap
- Drainage capacity 1.36-1.64 l/s*
- Water seal depth = 50 mm in keeping with standard DIN EN 1253

Order no. 3601600

Drain DN 70

Floor drain DN 70 horizontal made of plastic (PP) tested to DIN EN 1253



- with universal flange to connect composite seals or clamped flange connections
- with lateral inflow DN 50 incl. closure plug
- with removable odour trap
- Drainage capacity 1.24-1.64 l/s*
- Water seal depth = 50 mm in keeping with standard DIN EN 1253

Order no. 3603500

Drain DN 70 vertical

Floor drain DN 70, vertical made of plastic (PP) tested to DIN EN 1253



- with universal flange to connect composite seals or clamped flange connections
- with removable odour trap
- Drainage capacity 1.49-2.07 l/s*
- Water seal depth = 50 mm in keeping with standard DIN EN 1253

Drain DN 100

Floor drain DN 100, horizontal, made of plastic (PP) tested to DIN EN 1253



- with universal flange to connect composite seals or clamped flange connections
- with lateral inflow DN 50 incl. closure plug
- with removable odour trap
- Drainage capacity 1.22-1.75 l/s*
- Water seal depth = 50 mm in keeping with standard DIN EN 1253

Order no. 3607500

Drain DN 100 vertical

Floor drain DN 100 vertical made of plastic (PP) tested to DIN EN 1253



- with universal flange to connect composite seals or clamped flange connections
- with removable odour trap
- Drainage capacity 1.1-1.62 l/s*
- Water seal depth = 50 mm in keeping with standard DIN EN 1253

Order no. 3607600

The following adapters are available for transition to a PVC wastewater pipe:

Dimensions	Order no.
DN 40/DN 40	3690000
DN 50/DN 40	3690001
DN 50/DN 50	3690002
DN 50/2"	669012

Fire protection set

Fire protection set FireStop El 120 DN 50

Fire protection set for direct installation at the TECEdrainpoint S DN 50 drain vertical for highly fire-resistant partitioning of ceiling bushings in solid ceilings for up to 120 minutes. Classification in accordance with DIN EN 13501 for fire resistance class El 120.

A European Technical Approval (ETA-11/0437) exists for the fire protection set.





Set consists of fire protection sleeve, 2 cross-recessed screws, identification plate and 150 mm DN 50 PP-HT pipe to DIN EN 1451.

Required core hole:

Diameter 120 mm (min = 119 mm, max = 123 mm)

Application area:

Solid ceilings from 150 mm to 325 mm ceiling thickness

No grouting or filling of the gap is necessary. Order no. 3690050

Drain tops

TECEdrainpoint S tileable drain top, 100 mm, "frameless" Set consisting of tileable drain top and frameless tile base, 100 x 100 mm made of stainless steel.





- Outer diameter = 110 mm
- Height adjustment = none, height 1 mm (suitable for all tile/natural stone thicknesses)
- Grate frame made of drawn stainless steel, material 1.4301 (304)
- Frameless tile base made of stainless steel, material 1.4301 (304), dimension 82 x 82 mm, polished surface, load class K3 (load of up to 300 kg)
 Order no. 3660016

Order no. 3660016

TECEdrainpoint S grate frame stainless steel, 150 mm, design "plate"

Set consisting of drain top with stainless steel grate frame and "plate" tileable channel 142 x 142 mm



- Drain top made of plastic (ABS)
- O-ring seal
- Outer diameter = 110 mm
- Height adjustment = 23 to 118 mm
- Grate frame made of drawn stainless steel, material 1.4301 (304)
- "plate" tileable channel made of stainless steel, material 1.4301 (304), dimension 142 x 142 mm, polished surface, load class K3 (load of up to 300 kg)
 Order no. 3660011

TECEdrainpoint S grate frame, plastic, 100 mm, incl. design grate

Set consisting of drain top with grate frame (plastic) and TECEdrainpoint design grate 100×100 mm



- Drain top with grate frame made of plastic (ABS)
- O-ring seal
- Outer diameter = 110 mm
- Height adjustment = 8 to 92 mm
- TECEdrainpoint design grate made of drawn stainless steel, material 1.4301 (304), dimension 100 x 100 mm polished surface, load class K3 (load up to 300 kg)
 Order no. 3660001

TECEdrainpoint S grate frame, stainless steel, 100 mm, incl. design grate

Set consisting of drain top with grate frame (stainless steel) and TECEdrainpoint design grate $100 \times 100 \text{ mm}$



- Drain top made of plastic (ABS)
- O-ring seal
- Outer diameter = 110 mm
- Height adjustment = 7 to 89 mm
- Grate frame made of drawn stainless steel, material 1.4301 (304)
- TECEdrainpoint design grate made of drawn stainless steel, material 1.4301 (304), dimension 100 x 100 mm polished surface, load class K3 (load up to 300 kg)
 Order no. 3660002

TECEdrainpoint S grate frame, stainless steel, 100 mm, incl. design grate, screw-down

Set consisting of drain top with grate frame (stainless steel) and TECEdrainpoint S design grate $100 \times 100 \text{ mm}$





- Drain top made of plastic (ABS)
- O-ring seal
- Outer diameter = 110 mm
- Height adjustment = 7 to 89 mm
- Grate frame made of drawn stainless steel, material 1.4301 (304)
- TECEdrainpoint design grate made of drawn stainless steel, material 1.4301 (304), dimension 100 x 100 mm, polished surface, load class K3 (load up to 300 kg)
- 2 stainless steel countersunk screws and self-cutting threaded bushes

Order no. 3660009

TECEdrainpoint S grate frame plastic, 150 mm, incl. design grate

Set consisting of drain top with grate frame (plastic) and TECEdrainpoint design grate 142×142 mm



- Drain top with grate frame made of plastic (ABS)
- O-ring seal
- Outer diameter = 110 mm
- Height adjustment = 12 to 92 mm
- TECEdrainpoint design grate made of drawn stainless steel, material 1.4301 (304), dimension 142 x 142 mm, polished surface, load class K3 (load up to 300 kg)
 Order no. 3660003

TECEdrainpoint S grate frame stainless steel, 150 mm, incl. design grate

Set consisting of drain top with grate frame (stainless steel) and TECEdrainpoint design grate 142×142 mm



- Drain top made of plastic (ABS)
- O-ring seal
- Outer diameter = 110 mm
- Height adjustment = 9 to 104 mm
- Grate frame made of drawn stainless steel, material 1.4301 (304)
- TECEdrainpoint design grate made of drawn stainless steel, material 1.4301 (304), dimension 142 x 142 mm, polished surface, load class K3 (load up to 300 kg)
 Order no. 3660004

TECEdrainpoint S grate frame, stainless steel, 150 mm, incl. design grate, screw-down

Set consisting of drain top with grate frame (stainless steel) and TECEdrainpoint S design grate 142 x 142 mm.



- Drain top made of plastic (ABS)
- O-ring seal
- Outer diameter = 110 mm
- Height adjustment = 9 to 104 mm
- Grate frame made of drawn stainless steel, material
 1.4301 (304)
- TECEdrainpoint design grate made of drawn stainless steel, material 1.4301 (304), dimension 142 x 142 mm, polished surface, load class K3 (load up to 300 kg)
- 2 stainless steel countersunk screws and self-cutting threaded bushes

Order no. 3660010

TECEdrainpoint S – Range and technical data

TECEdrainpoint S grate frame, stainless steel, 100 mm incl. design grate, "quadratum"

Set consisting of drain top with stainless steel grate frame and design grate "guadratum" 100 x 100 mm.



- Drain top made of plastic (ABS)
- O-ring seal
- Outer diameter = 110 mm
- Height adjustment = 7 to 89 mm
- · Grate frame made of drawn stainless steel, material 1.4301 (304)
- "quadratum" design grate made of stainless steel, material 1.4301 (304), dimension 100 x 100 mm, polished surface, load class K3 (load to 300 kg)

Order no. 3660007

TECEdrainpoint S grate frame stainless steel, 150 mm, incl. design grate

Set consisting of drain top with stainless steel grate frame and design grate "quadratum" 142 x 142 mm.



Consisting of:

- Drain top made of plastic (ABS)
- O-ring seal

FECEdrain

- Outer diameter = 110 mm
- Height adjustment = 9 to 104 mm
- · Grate frame made of drawn stainless steel, material 1.4301 (304)
- "quadratum" design grate made of stainless steel, material 1.4301 (304), dimension 142 x 142 mm, polished surface, load class K3 (load to 300 kg)

Order no. 3660008

Accessories

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TECEdrainpoint S raising element with universal flange

Drain top made of plastic with universal flange made of plastic (PP) for composite seals and clamped flange connections



- · With universal flange to connect composite seals or clamped flange connections
- Incl. O-ring seal
- Outer diameter = 110 mm
- Height adjustment = 12 to 95 mm
- Order no. 3660005

TECEdrainpoint S extension

Drain top extension made of plastic (ABS)



- with O-ring seal
- Outer diameter = 110 mm
- Height adjustment = 4 to 85 mm
- Order no. 3660006

TECEdrainpoint S design grate stainless steel 100 x 100 mm, screw-down

Design grate TECEdrainpoint 100 x 100 mm made of drawn stainless steel, material 1.4301 (304), screw-down



- Dimension = 100 x 100 mm (outer dimensions)
- Polished surface
- Load class K3 (load to 300 kg)
- · Incl. 2 stainless steel countersunk screws and self-cutting threaded bushes

Order no. 3665000

TECEdrainpoint S design grate stainless steel 142 x 142 mm, screw-down

Design grate TECEdrainpoint 142 x 142 mm made of drawn stainless steel, material 1.4301 (304), screw-down



- Dimension = 142 x 142 mm (outer dimensions)
- Polished surface
- Load class K3 (load to 300 kg)
- Incl. 2 stainless steel countersunk screws and self-cutting threaded bushes

Order no. 3665001

TECEdrainpoint S design grate stainless steel 100 x 100 $\ensuremath{\mathsf{mm}}$

Design grate TECEdrainpoint 100 x 100 mm made of drawn stainless steel, material 1.4301 (304)





142

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- Dimension = 100 x 100 mm (outer dimensions)
- Polished surface
- Load class K3 (load to 300 kg) Order no. 3665002

TECEdrainpoint S design grate stainless steel $142 \ x \ 142 \ mm$

Design grate TECEdrainpoint 142 x 142 mm made of drawn stainless steel, material 1.4301 (304)



- Dimension = 142 x 142 mm (outer dimensions)
- Polished surface
- Load class K3 (load to 300 kg)
- Order no. 3665003

TECEdrainpoint S design grate "quadratum" stainless steel 100 x 100 mm

made of stainless steel, material 1.4301 (304)



- Dimension = 100 x 100 mm (outer dimensions)
- Polished surface
- Load class K3 (load to 300 kg)

Order no. 3665006

TECEdrainpoint S design grate "quadratum" stainless steel 142 x 142 mm

made of stainless steel, material 1.4301 (304)





- Dimension = 142 x 142 mm (outer dimensions)
- Polished surface
- Load class K3 (load to 300 kg)
 Order no. 3665009

TECEdrainpoint S stainless steel compression ring incl. screws and seal

Compression sealing ring set for clamped flange connections



- Compression ring made of stainless steel, material 1.4301 (304) with pre-drilled hole circle
- Sealing ring made of cellular rubber
- 6 stainless steel screws

Order no. 3690003

TECEdrainpoint S Seal System sealing sleeve for compos- TECEdrainpoint S odour trap extra-flat ite seals

Seal System sealing sleeve to create a tested and certified connection of the TECEdrainpoint S drains of the composite seal



- PP fleece (top and underside) and inner waterproof PE foil
- Dimension = 480 x 480 mm
- Order no. 3690004

TECEdrainpoint S cut-to-size sealing foil EPDM

Seal sleeve for connection of bitumen membrane sheets, polymer bitumen membrane sheets or EPDM sealing strips using hot-air welding, full-area welding or gluing with PU adhesive. The sealing sleeve is fixed to the universal flange with the compression ring set.



- Material: EPDM with insert made of glass cloth, underside with polymer-modified bitumen layer and fine guartz coating
- Dimension = 500 x 500 mm
- Material thickness = 3.1 mm
- Manufacturer: Phoenix Restrix Classic Order no. 3690006

Extra-flat plastic (PP) odour trap



- Reduced water seal depth = 30 mm
- Can be used for horizontal drains DN 50, extra-flat Order no. 3695000

TECEdrainpoint odour trap standard

Standard plastic (PP) odour trap



- Water seal depth = 50 mm in keeping with standard DIN EN 1253
- Can be used for all horizontal and vertical drains DN 50 standard, DN 70 and DN 100 Order no. 3695001

TECEdrainpoint S fire membrane odour trap

Odour trap for TECEdrainpoint S drains made of plastic (PP) with inner sealing lip membrane as a protection against evaporation and a barrier against odour and vermin, water seal and sealing lip membrane provide twostage trap effect



- Available in three versions, for DN 50 extra-flat drains, for DN 50 standard and vertical drains and for DN 100 drains
- Two-stage odour trap Order numbers 3695002, 3695005 and 3695006

TECEdrainpoint S hair trap

made of plastic, for insertion in the TECEdrainpoint S drain



Order no. 3690005

TECEdrainpoint S assembly feet, sound-insulated

to make it easy to adjust height and for fixing during the shell installation phase of Drainpoint S drains with Seal System universal flange



Adjustment range lower edge of feet to upper edge of universal flange: 64 to 165 mm

Consisting of 4 assembly feet incl. sound-proofing element and mounting material Order no. 3690007



Carry out tightness test.



Attach sealing collar and sealing tape in the transition between the screed and the wall (and if necessary to other screed areas).



Attach corner seal(s), remove protective film from flange.



Apply first sealing coating over complete area.



Insert sealing sleeve in fresh coating and press to remove creases. Allow coating to dry.



Apply second sealing coating over complete area: The sealing sleeve must be completely covered by the damp-proof coating. Allow coating to dry.



Remove protective cover.

TECEdrainpoint S – Installation instructions



Cut the drain top to length.



The drainage of seepage water is ensured without an O-ring.



Insert the cropped drain top.



Apply the floor covering.



Seal the joint with permanently elastic material and install the grate.

TECEdrainpoint S



Installation of drain with clamped flange seal-

Position drain and connect to wastewater pipe. In the case of drains with a vertical socket, a core hole with a diameter of 130 mm is required.



Carry out tightness test.



If a lateral inflow is used, an odour trap is required in the inlet pipe.



Lay the screed.



Once dry, clean the screed.



Apply sealing strips (bitumen/EPDM) in accordance with the manufacturer's instructions.

TECEdrainpoint S – Installation instructions



Remove protective foil from flange.



Insert pins for flange assembly (6 x).



Apply seal and accurately cut the sealing foil (EPDM) to size.



Weld the cut-to-size sealing foil with the sealing strip.







Remove protective cover.



Screw on the compression ring (torque 3 Nm!).



Various drain tops can be used.



Insert the drain top.



The drain top must be cut to length.



The drainage of seepage water is ensured without an O-ring.



Apply the edge insulation strips.

TECEdrainpoint S – Installation instructions



Lay the screed.



Once dry, cut off the excess edge insulation strips and PE foil, clean screed.



Apply the floor covering.



Seal the joint with permanently elastic material and install the grate.

TECEdrainpoint S

Installation of drain without flange



Position the floor drain and connect the wastewater pipe.



Carry out tightness test.



Insert the drain top.



The drain top must be cut to length, the O-ring seal should sit in the lowest groove.



Lay screed or other floor material.



Insert grate.

TECEdrainpoint S – Installation instructions

Installation of the "frameless" tile base

The "frameless" tile base is generally installed directly on a drain with a Seal System universal flange.

For the installation, it is presumed here that the drain is incorporated and connected to the wastewater pipe, and that the seal has been produced properly.



Insert the grate frame with the bare-wall protection into the drain, and align.



Apply the floor covering.



Mount the floor covering without any distance between the bare-wall protection.



Remove the bare-wall protection.



Cut the floor covering (approx. 83 x 83 mm) and bond to the support with flexible adhesive (e.g. silicone or epoxy resin adhesive). After drying, insert the tile base into the grate frame.

Installing the "plate" tileable channel

The tileable channel is generally installed with a drain using a compression sealing ring and an extension piece. For the installation, the drain must be incorporated and connected to the wastewater pipe, and the seal must have been produced properly.



Install the drain top - it must be cut to length.



The drainage of seepage water is ensured without an O-ring.



Apply the edge insulation strips.



Lay the screed.

TECEdrainpoint S – Installation instructions



Once dry, cut off the excess edge insulation strips and PE foil, clean screed.



Apply the floor covering.



Seal the joint with permanently flexible material.



Cut the floor covering (approx. 132 x 132 mm) and bond in the tileable channel with flexible adhesive (e.g. silicone or epoxy resin adhesive).



After drying, insert the tileable channel into the grate frame.

TECEdrainpoint S

Guidelines

DIN 1986: Drainage systems for buildings and property

- Part 3: Rules for operation and maintenance (2004)
- Part 4: Fields of application of sewage pipes and fittings of different materials (2011)
- Part 30: Maintenance (2012)

DIN 1986-100: Drainage systems for buildings and property/Provisions in conjunction with DIN EN 752 and DIN EN 12056 (2008)

DIN 18040 Part 2: Barrier-free construction - Planning guidelines - Dwellings (2011)

DIN 18195 Parts 1 to 10: Waterproofing of buildings (2009–2011)

DIN EN 12056, DIN 1986 and DIN EN 1610 comments: Buildings and drainage systems (2000)

DIN EN 1253, Parts 1 to 3: Gullies for buildings (1999–2003)

DIN 4109 (1989): Sound insulation in buildings; requirements and testing, amendment A1 (2001)

VDI 4100: Sound insulation between rooms in buildings - Dwellings - Assessment and proposals for enhanced sound insulation between rooms (2012)

Model buildings regulations (MBO) (2002)

ZDB bulletin: Composite seals – Instructions for processing liquid-applied waterproofing materials together with coverings and claddings made of tiles and panels for indoor and outdoor areas (2012)

GIPS bulletin 5: Bathrooms and wet rooms in timber and dry wall construction (2006)

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