

Schlüter®-DITRA-DRAIN

Drainage for floor assemblies

Thin bed drainage, ventilation, uncoupling

6.2

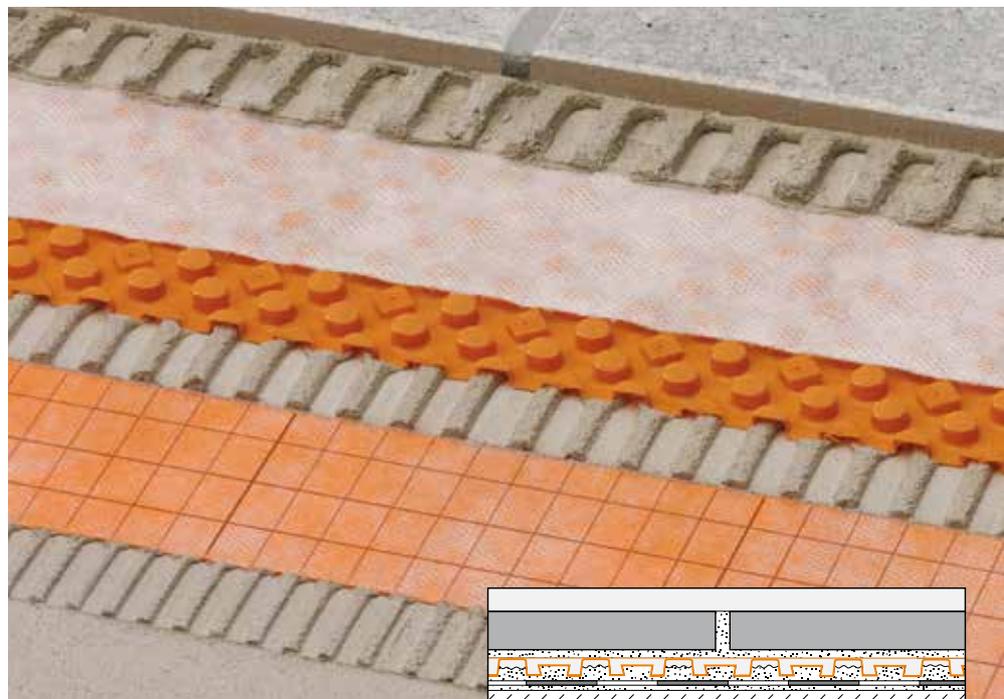
Product data sheet

Application and Function

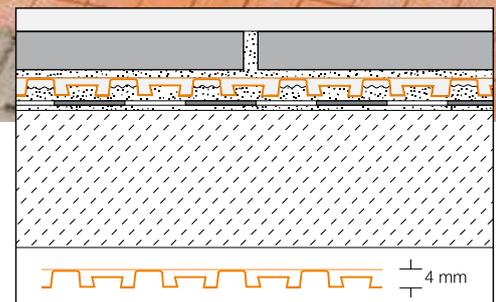
Schlüter-DITRA-DRAIN is a safe and permanently effective passive capillary drainage system for floor assemblies. The material is installed in exterior areas into thin bed adhesive over a sloped waterproofing assembly, such as Schlüter-KERDI or other suitable proprietary waterproofing systems.

Schlüter-DITRA-DRAIN 4 consists of a closed polyethylene foil that on one side features approx. 4 mm high, truncated conical studs with a laminated filter webbing. Some of these studs are shaped as approximately 2 mm high inverted truncated pyramids, which form square undercut chambers on the underside.

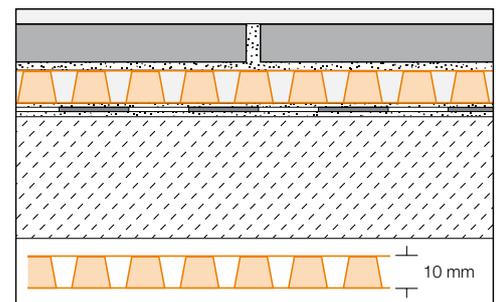
These facilitate the bonding of the thin bed mortar, which is applied with a notched 6 mm x 6 mm trowel on the bonded waterproofing assembly for fully embedding Schlüter-DITRA-DRAIN. The closely adjoining studs in the form of truncated cones are able to absorb high compressive forces (up to approx. 50 t/m²). The undercut design of the truncated pyramid studs allows for excellent bonding with the substrate. Schlüter-DITRA-DRAIN 4 is particularly suited for interior areas and small exterior areas. Schlüter-DITRA-DRAIN 8 consists of an impact resistant polyethylene foil with a special truncated stud structure on one side and polypropylene filter webbing laminated on both sides. The laminated filter webbing on the underside facilitates the bonding of the thin bed mortar, which is applied with a notched trowel (recommended: 3 x 3 mm or 4 x 4 mm) on the bonded waterproofing assembly for fully embedding Schlüter-DITRA-DRAIN 8. The compressive yield strength is up to 15 t/m².



Schlüter-DITRA-DRAIN 8 was specifically developed for outdoor applications. The closed polyethylene membranes Schlüter-DITRA-DRAIN 4 and 8 form an additional protective layer for waterproofing assemblies.



Schlüter®-DITRA-DRAIN 4



Schlüter®-DITRA-DRAIN 8



Summary of applications and functions

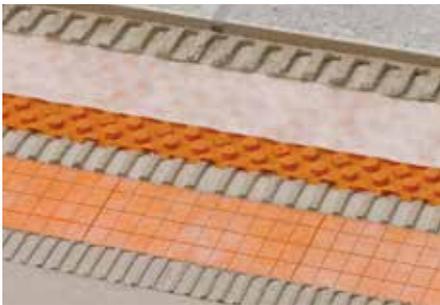
a) Drainage and ventilation

The ventilation allows for fast drying of the thin bed adhesive. The passive capillary drainage effectively drains the water off without pressure and prevents it from seeping back into the covering layer.

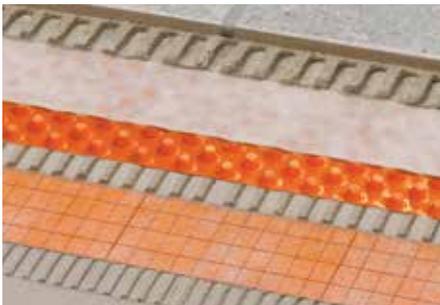
b) Uncoupling

Schlüter-DITRA-DRAIN uncouples the covering from the substrate and neutralises the differential movement stresses between the substrate and the tile. The material effectively bridges tension cracks from the substrate and ensures that they are not transferred to the tile covering.

If the installation substrate does not require a waterproofing assembly, e.g. in the case of a drained screed or a slab on aggregate, Schlüter-DITRA-DRAIN may also be adhered directly to the substrate for drainage, ventilation and uncoupling.



Schlüter®-DITRA-DRAIN 4



Schlüter®-DITRA-DRAIN 8

Material

Schlüter-DITRA-DRAIN 4 consists of an impact resistant polyethylene foil with a special stud structure on one side and polypropylene filter webbing laminated on the upper side. The compressive yield strength of Schlüter-DITRA-DRAIN 4 is up to 50 t/m². Schlüter-DITRA-DRAIN 8 consists of an impact resistant polyethylene foil with a special truncated stud structure on one side and polypropylene filter webbing laminated on both sides. The compressive yield strength of Schlüter-DITRA-DRAIN 8 is up to 15 t/m². The material of Schlüter-DITRA-DRAIN is dimensionally stable up to a temperature range of + 80° C.

The functionality and material properties are guaranteed to last. The material is non-ageing and rot-proof. Cutting waste is not classified as hazardous waste. Polyethylene is not UV stable in the long term; the product should not be stored in places with prolonged exposure to direct sunlight.

Note:

The thin bed adhesive and the covering materials used in conjunction with Schlüter-DITRA-DRAIN must be suitable for the corresponding application and meet the applicable requirements. In outdoor areas, such materials must be waterproof, frost-proof and weather resistant.

The ZDB information sheet "Tiled assemblies in outside areas" states: "Natural stone and concrete pavers may vary in colour due to differences in the drying process." This covering specific occurrence cannot be completely ruled out for the covering assembly described in this product data sheet. We recommend pointing this out to the homeowner or developer when selecting the covering materials. The product creates a layer of air between the covering and the substrate, which separates the layers. The covering material must be selected in the appropriate thickness to withstand the expected compressive forces. As a rule, the impact of hard objects must be avoided on tile and stone coverings. For residential areas and moderate commercial use, the minimum tile size for use with Schlüter-DITRA-DRAIN 4 is 5 x 5 cm, with a minimum thickness of 5 mm. Schlüter-DITRA-DRAIN 8 supports a minimum size of 10 x 10 cm with a minimum thickness of 8 mm. For application areas in private homes or with moderate commercial use, the selected tiles should be at least 5 x 5 cm in size and 8 mm thick.

Due to the special characteristics of the system, coverings installed over Schlüter-DITRA-DRAIN may have a hollow sound when they are walked upon with hard shoes or tapped with a hard object.

Due to the differing expansion coefficients of the covering and the grout material, microfine cracks in the joints cannot be completely ruled out.

Application areas/substrates for Schlüter®-DITRA-DRAIN

General notes

Substrates on which Schlüter-DITRA-DRAIN is to be installed must always be reviewed for their suitability to make sure they are level, load-bearing, clean and compatible with the materials to be used. Remove all surface components that may weaken the bond. Uneven or sloping areas must be levelled prior to the installation of Schlüter-DITRA-DRAIN.



Interior areas

Schlüter-DITRA-DRAIN 4 is exclusively designed for use in interior areas.

Cement screeds

In accordance with the applicable regulations, cement screeds must be at least 28 days old and have a residual moisture level below 2 CM% before tiles can be installed. Nevertheless, floating screeds and heated screeds are particularly prone to curling and cracking at a later time, e.g. because of weight loads and temperature fluctuations.

With Schlüter-DITRA-DRAIN 4, tiles can be installed on freshly installed cement screeds as soon as they are ready to bear weight.

Any subsequent cracking and curling of the screed will be neutralised by Schlüter-DITRA-DRAIN 4 and will not be transferred to the tile covering.

Calcium sulphate screeds

According to the applicable regulations, calcium sulphate screeds (anhydrite screeds) must have a residual moisture level of max. 0.5 CM% before tiles can be installed. With Schlüter-DITRA-DRAIN 4, the tile installation can begin as soon as the residual moisture level drops below 2 CM%.

If necessary, prepare the screed surface in accordance with technical regulations and manufacturer instructions (sanding, priming). Schlüter-DITRA-DRAIN 4 can be adhered with dry-set mortars or other suitable thin-set mortars. Schlüter-DITRA-DRAIN 4 protects the screed against the penetration of moisture at the surface. Calcium sulphate screeds are sensitive to moisture, which makes it necessary to protect the screed from further water exposure such as substrate moisture.

Heated screeds

Observe the above instructions (cement, calcium sulphate) when installing Schlüter-DITRA-DRAIN 4 over heated screeds. With Schlüter-DITRA-DRAIN 4, the covering assembly is ready to heat as early as 7 days after completion. Starting from 25 °C, increase the supply temperature by a maximum of 5 °C a day to reach an operating temperature of max. 40 °C

Note:

For water-based floor heating systems, please refer to our ceramic thermal comfort floor Schlüter-BEKOTEC-THERM.

Schlüter-DITRA-HEAT is a special uncoupling membrane developed for attaching the heating cables associated with electrical floor/wall heating systems; see product data sheet 6.4.

Dry screeds

Following the professional installation of the dry screed elements according to manufacturer instructions, any tile size can be used with Schlüter-DITRA-DRAIN 4.

Synthetic coverings and coatings

All surfaces must be weight-bearing and, if necessary, pre-treated, to allow for proper bonding of a suitable adhesive for permanent attachment of the Schlüter-DITRA-DRAIN 4 anchoring fleece. The suitability of the adhesive for the substrate and for Schlüter-DITRA-DRAIN 4 must be verified in advance.

Plywood panels

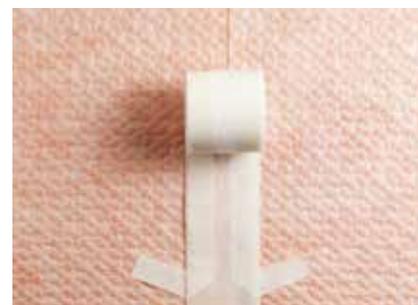
These materials are heavily affected by moisture (or major fluctuations in humidity). It is therefore recommended to use plywood materials with special impregnation to prevent the absorption of moisture. The thickness of the panels should be selected to ensure adequate impact resistance in conjunction with suitable support structure. Plywood panels must be sufficiently attached with screw connections. All seams should either be tongue-and-groove connections or covered with adhesive. Edge joints of approx. 10 mm must be kept open at the transitions to adjoining building components. Schlüter-DITRA-DRAIN 4 neutralises the stresses in the tile covering and also prevents the penetration of moisture.

Hardwood floors

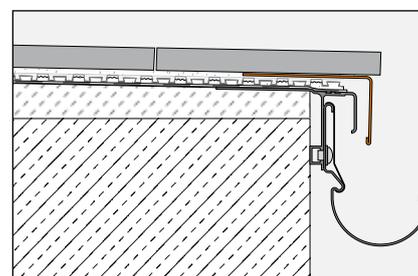
The direct installation of ceramic coverings over hardwood floors is generally feasible, provided the floorboards have tongue-and-groove connections, are sufficiently load-bearing, and are tightly screwed down. The wooden substrate should have reached a balanced moisture level before Schlüter-DITRA-DRAIN 4 is installed. Experts recommend the installation of an additional layer of plywood. Uneven floors must be levelled with suitable measures.

Mastic asphalt

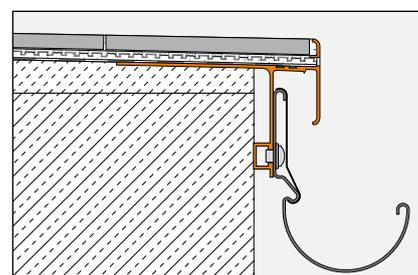
Schlüter-DITRA-DRAIN 4 enables the installation of ceramic tile coverings on standard weight-bearing, unheated mastic asphalt screeds in indoor areas. Surfaces must be sanded and allow for proper bonding of the thin-set mortar to adhere Schlüter-DITRA-DRAIN 4.



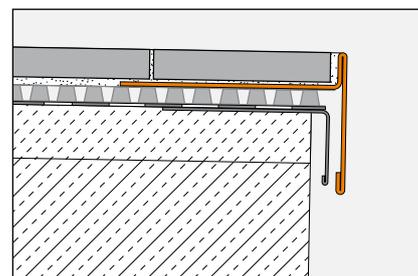
Schlüter®-DITRA-DRAIN-STU



Schlüter®-BARA-RW



Schlüter®-BARA-RTKE



Schlüter®-BARA-RT



Outdoor areas

In outdoor areas, Schlüter-DITRA-DRAIN 8 is particularly suited for stairs and larger balcony and terrace areas with extended drainage paths. Schlüter-DITRA-DRAIN 4 may be used for smaller areas with drainage paths or sloped stretches up to approx. 3 m.

If the installation substrate does not require a waterproofing assembly, e.g. in case of a drainage screed or direct installation over open soil, Schlüter-DITRA-DRAIN can also be adhered directly to the substrate with thin-set mortar for drainage/subaeration and uncoupling.

Balconies / terraces

As an uncoupling and drainage membrane, Schlüter-DITRA-DRAIN neutralises the stresses between the substrate and the tile covering that are caused by frequent, major temperature changes on balconies. Moreover, Schlüter-DITRA-DRAIN protects the bonded waterproofing assembly and enables fast curing of the thin-set mortar by providing subaeration for the covering. The bonded waterproofing assembly – e.g. Schlüter-KERDI 200 (see product data sheet 8.1) – must have a sufficient slope of 1.5 to 2%.

The existing covering assembly may be directly used as a substrate for renovation projects if the old covering is adequately weight-bearing and has the necessary slope. Otherwise, remove any loose or insufficiently attached parts and level defective areas and absent sloping with a suitable ready-mixed mortar prior to installing the bonded waterproofing assembly.

Staircases

Schlüter-DITRA-DRAIN 8 is suitable as an uncoupling and drainage membrane on staircases in outdoor areas to reduce stresses between the substrate and the tile covering and to channel accumulating water in the drainage area. Moreover, Schlüter-DITRA-DRAIN 8 protects the bonded waterproofing assembly Schlüter-KERDI 200 (see product data sheet 8.1) and enables fast curing of the thin-set mortar by providing subaeration for the covering. The bonded waterproofing assembly must have sufficient slope in the stair step area.

Carefully check that the Schlüter-DITRA-DRAIN 8 membrane adhered to the riser does not protrude over the surface of the stair step so any accumulating water can drain off completely. Cover any abutting seams with the seaming tape Schlüter-DITRA-DRAIN-STU. Drainage water accumulating at the foot of the stairs must be able to seep out of Schlüter-DITRA-DRAIN 8 into a drainage space or flow into a drain. In the exposed edge area of the staircase, a 5 cm wide strip of 9 mm Schlüter-KERDI-BOARD (see product data sheet 12.1) can be installed in the drainage area together with a tile strip as a water barrier or splash guard on the covering, using the sealing adhesive Schlüter-KERDI-COLL-L (see product data sheet 8.4).

We recommend using the corresponding stair-nosing profiles (e.g. Schlüter-TREP-E) at the front of the steps to protect the edges of thinner covering material and to improve anti-slip properties.

Roof terraces

In accordance with the applicable technical regulations for roof structures, the surfaces of roof terraces over residential/commercial or other spaces as well as roof-covered surfaces have to be designed as a flat roof.

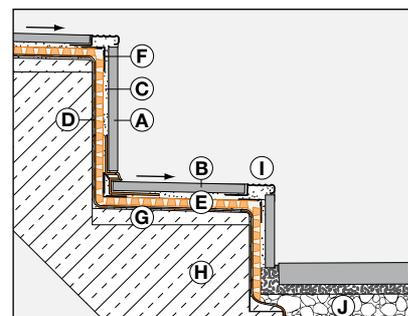
In the case of heat-insulated residential and commercial spaces (as well as spaces with expected temperature differences to the outside), a vapour barrier as well as ceiling insulation are required for compliance with building codes. National standards and/or the applicable technical data sheets have to be

observed. A drainage membrane (e.g. Schlüter-TROBA or Schlüter-TROBA-PLUS, see product data sheet 7.1 or 7.2) must be installed above the top waterproofing layer, followed by a screed layer on top as a load-distribution layer. Schlüter-DITRA-DRAIN is adhered to the surface of the screed for uncoupling and subaeration of the tile covering and to protect the screed against moisture. The uncoupling membrane Schlüter-DITRA-DRAIN neutralises the stresses between the substrate and the tile covering that are caused by frequent, major temperature changes on terraces.

Movement joints

Schlüter-DITRA-DRAIN must be separated above existing movement joints. Movement joints must be incorporated into the tile covering in accordance with the applicable regulations and standards. In outdoor areas (balconies and terraces), the length of the individual fields should not exceed 3 m. Smaller fields may be necessary, depending on the substructure and the expected temperature fluctuations.

A	Riser made of tile or natural stone
B	Step made of tile or natural stone
C	Adhesive
D	Schlüter®-KERDI bonded waterproofing assembly
E	Schlüter®-DITRA-DRAIN 8 bonded drainage assembly
F	Schlüter®-DITRA-DRAIN-STU seam covering
G	Sloped screed
H	Reinforced concrete staircase
I	Schlüter®-TREP-E (example)
J	Anti-capillary layer



Außentreppe mit Verbunddrainage Schlüter®-DITRA-DRAIN 8



Suitable edge joints must be formed at connections to upright building elements or walls to reduce the build up of stresses. The edge joints and connection joints must meet the applicable professional regulations. The frequency must be sufficient to reduce the build up of tensions. The use of the various profile types of the Schlüter-DILEX series is recommended for constructing movement joints and edge joints.

Installation

1. Always check the substrates on which Schlüter-DITRA-DRAIN is to be installed for evenness, load bearing capacity, bond strength and compatibility of materials. Remove all surface components that may weaken the bond. Repairs of uneven spots or adjustments in height and slope must be carried out before installing the waterproofing mat and Schlüter-DITRA-DRAIN.
The waterproofing layer must be sufficiently sloped to allow for proper drainage.
2. To install Schlüter-DITRA-DRAIN 4, apply a standard dry set mortar to the substrate described above with a 6 mm x 6 mm notched trowel, using the thin set method. A 3 x 3 mm or 4 x 4 mm trowel is recommended for Schlüter-DITRA-DRAIN 8. The selected thin bed adhesive for adhering Schlüter-DITRA-DRAIN must be suitable for the substrate. If using covering materials with a lateral length ≥ 30 cm, we recommend a water-binding tile adhesive for rapid curing and drying.
3. Schlüter-DITRA-DRAIN is cut to size, embedded in the applied adhesive and immediately pressed into the thin bed adhesive with a float or a roller. When working with Schlüter-DITRA-DRAIN 4, ensure that the inverted truncated pyramid shaped chambers are completely filled with adhesive after installation. Observe the curing times of all materials. It is best to align Schlüter-DITRA-DRAIN with light tension at the time of embedding the material.
The individual sheets are installed with tightly abutting joints. The lateral fleece edge overlaps the joints.
The self adhesive joint sealing tape Schlüter-DITRA-DRAIN-STU is available for cut edges without fleece overlap.
4. It is recommended to use walking boards (especially in the centre of the assembly for material transport) to protect the installed Schlüter-DITRA-DRAIN mat from damage or to prevent it from peeling off the substrate.
Protective measures may also be required if the material is exposed to direct sunlight or precipitation in outdoor areas.
5. The tile or natural stone covering can immediately be installed after adhering Schlüter-DITRA-DRAIN. The covering materials must be fully embedded in the adhesive.
Select the notch size of the trowel to match the tile format. The curing times of the thin-bed adhesive are to be observed. The dry set adhesive and the covering materials installed in outdoor areas must be waterproof and weather resistant.
6. Once the covering is ready to bear weight, a suitable grout may be used.
7. In outdoor areas, the open drainage space at the edges must be covered with a profile such as Schlüter-BARA-RT or an angled plate without closing off the drainage channel.
8. Please observe the instructions regarding intermediate, perimeter and connection movement joints within this data sheet and other professional standards.

Note:

We recommend the use of our Schlüter-BARA and Schlüter-DILEX profiles for edges, movement joints and wall connections.



Product Overview

Schlüter®-DITRA-DRAIN 4

Length = m	10	25
Width = 1 m	•	•

Schlüter®-DITRA-DRAIN 8

Length = m	12.5
Width = 1 m	•

Schlüter®-DITRA-DRAIN-STU

Length = m	5	30
Width = 90 mm	•	•

Text template for tenders:

Supply

_____ square metres of Schlüter-DITRA-DRAIN 4 as a drainage system and uncoupling mat, consisting of a polyethylene mat with a stud structure of 4 mm high, pressure resistant and closely adjoining truncated cones, as well as 2 mm high inverted truncated pyramids with a laminated, waterproof fleece fabric, for installation over an existing substrate, consisting of

■ a sloped waterproofing assembly to be supplied and professionally installed while observing the manufacturer's instructions.

Material: _____/m²

Labour: _____/m²

Total: _____/m²

Text template for tenders:

Supply

_____ square metres of Schlüter-DITRA-DRAIN 8 as an area drainage and uncoupling membrane consisting of polyethylene, in the form of an 8 mm thick studded foil with impact-resistant truncated cones in a close pattern and a laminated water permeable fleece webbing laminated on both sides, to be supplied and professionally installed over an existing substrate, consisting of

■ a sloped waterproofing assembly to be supplied and professionally installed while observing the manufacturer's instructions.

Material: _____/m²

Labour: _____/m²

Total: _____/m²