

6.1 Schlüter®-DITRA



UNIVERSAL MAT FOR TILE AND STONE

WATERPROOFING, UNCOUPLING, VAPOUR PRESSURE EQUALISATION

Application and Function

Schlüter®-DITRA is a polyethylene membrane with a grid structure of square cavities, each cut back in a dovetail configuration, with an anchoring fleece laminated to its underside. Designed for ceramic tile and natural stone installation, Schlüter®-DITRA serves as a waterproofing membrane and as a vapour pressure equalisation layer to accommodate moisture occurring at the underside. It also acts as an uncoupling layer for problematic substrates.

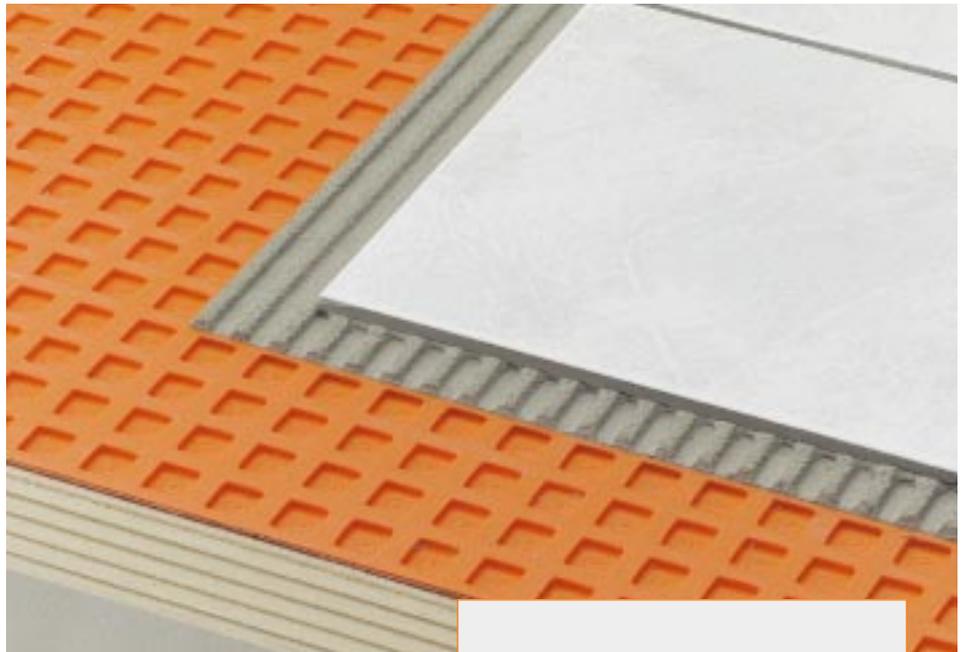
To bond Schlüter®-DITRA, use a bonding adhesive that is appropriate for the substrate. Apply using a 3 mm x 3 mm notched trowel. The anchoring fleece on the underside of Schlüter®-DITRA must be fully engaged in the adhesive to provide a mechanical bond to the substrate. Using the thin-bed method, set the tile covering directly onto Schlüter®-DITRA in such a way that the tile adhesive becomes mechanically anchored in the cut-back cavities of the Schlüter®-DITRA matting.

Schlüter®-DITRA is also suited as a support matting for covering materials such as, e.g. plaster or screed.

Summary of Functions

a) Waterproofing

Schlüter®-DITRA is a polyethylene waterproofing membrane with a very high vapour diffusion density. Provided the joints, wall/floor connections, and connections to building fixtures are properly installed, Schlüter®-DITRA creates a waterproofing layer for installations not exposed to constant water pressure. Thus, Schlüter®-DITRA protects the substrate against damage due to moisture penetration and aggressive or harmful substances.

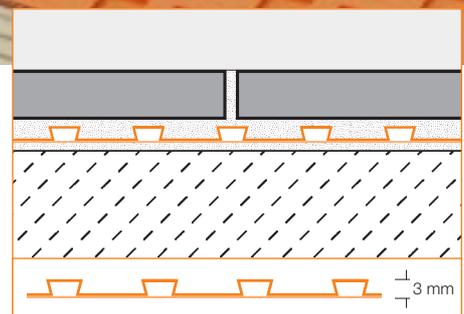


b) Equalisation of vapour pressure

The interconnected air channels between the cavities on the underside of the Schlüter®-DITRA matting remain open, allowing moisture in the substrate to evaporate, thus neutralising vapour pressure.

c) Uncoupling (separation)

Schlüter®-DITRA uncouples the floor covering from the substrate and prevents the transfer of stresses to the tiled surface. Thus, stresses caused by deformation of the substrate are neutralised. Likewise, stress cracks in the substrate are bridged and are, therefore, not transferred to the surface covering.





Material

Schlüter®-DITRA is a polyethylene sheet with a grid structure of square cavities, each cut back in a dovetail configuration. An anchoring fleece is laminated to the underside. The rib height is approximately 3 mm.

Material Properties and Areas of Application:

Schlüter®-DITRA is flexible and bridges cracks. In addition, it does not rot. It is highly resistant to solutions containing salts, acids, and alkalis, as well as many organic solvents, alcohol and oils. Its resistance to specific stresses can be provided if concentration, temperature, and exposure time are known. Its imperviousness to steam is very high. The material is physiologically safe. It must be verified that substrates, which are to receive the Schlüter®-DITRA, are clean, even, and load bearing. Contact-inhibiting surfaces must be removed prior to the application of Schlüter®-DITRA.

Notation

The contact surface of Schlüter®-DITRA amounts to approximately 50% of the total surface. This can reduce the load-bearing capacity in case of point loads. For high point loads, select a tile thickness that can distribute the loads. The tile dimensions should be at least 5 cm x 5 cm.

For the installation of moisture-sensitive covering materials (natural stone, epoxy agglomerates) over substrates where moisture is to be expected, e.g., green concrete, DITRA is to be installed as a waterproof membrane. For exterior applications of Schlüter®-DITRA, special protective measures may be required, e.g., shade cover. The use of rapid-set adhesives may be advantageous for certain applications. Generally, only water-, weather-, and frost-resistant dry-set adhesives are to be used on exterior applications.

Suitable substrates for Schlüter®-DITRA:

Concrete

Concrete is subject to deformation due to shrinkage. The time period over which this occurs is 6 to 12 months. Schlüter®-DITRA absorbs inherent stresses between the concrete and tile covering so that the tile can be installed as soon as the concrete is hard enough to walk upon. For wall applications, Schlüter®-DITRA can also be used as a support matting for plaster or similar.

Mortar screeds / Radiant heated screeds

As a rule, mortar screeds must cure a minimum of 28 days prior to the installation of tile so that deformation due to shrinkage subsides. Floating screeds and, in particular, heated screeds tend to change shape or develop cracks even later, e.g. due to load stresses or temperature changes.

Tile can be installed using Schlüter®-DITRA immediately after the screed can be walked upon. Seven days subsequent to installation, the radiant heated floor can be raised gradually by + 5° C per day.

Gypsum-based screeds

As a general rule, when installing tile over gypsum screeds, the residual moisture should not exceed 0.5% (percentage by volume). In addition, this substrate generally requires specific pre-treatment, as well as a special tile adhesive.

Using Schlüter®-DITRA and provided the substrate is sufficiently load bearing, the tile covering can be installed without measuring the residual moisture.

Schlüter®-DITRA can be applied using dry-set mortar or other tile adhesive suitable for the substrate.



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Masonry

Masonry consisting of brick, stone, limestone, cement block, lightweight concrete, or similar is generally a suitable substrate for Schlüter®-DITRA. Uneven areas must be levelled in advance. Particularly in renovations or additions, different materials (mixed masonry) may be encountered. At the transitions, differential movement can cause cracks. With Schlüter®-DITRA, stresses and cracks do not transfer to the tile covering.

Gypsum plaster / Plaster block

When tested, the gypsum substrate should be considered dry according to accepted guidelines. It may be required that the surface be pretreated with a primer. Schlüter®-DITRA is applied with dry-set mortar or other tile adhesive suitable for the substrate.

Balconies / Balcony renovations

Schlüter®-DITRA, in conjunction with the tile covering, can be used to waterproof balconies. Stresses, which frequently occur on balconies between the substrate and the tile covering (due primarily to temperature changes), are neutralised by Schlüter®-DITRA. For renovations, the existing surface assembly can generally remain, provided it is sufficiently sloped and load bearing. Prior to the application of Schlüter®-DITRA over existing and cracked tile floors, the loose tiles must be removed and the remaining cavities filled using an appropriate adhesive.

Synthetic flooring and surface coatings

Fundamentally, the surface must be load bearing and prepared in such a way that a suitable tile adhesive will adhere to it and anchor the fleece on the underside of the Schlüter®-DITRA matting.

Plywood and particle board

These materials are particularly affected by moisture. Even strong fluctuations in humidity can cause deformation. Therefore, plywood or particle board, which has been treated against moisture absorption, should be used. In principle, plywood or particle board can be used as a substrate on both walls and floors. Choose a board thickness that, in combination with the existing substructure, will produce a stable substrate. Anchor the substrate by placing screws at appropriate intervals. Butt joints must be tongue and groove and they must be glued.

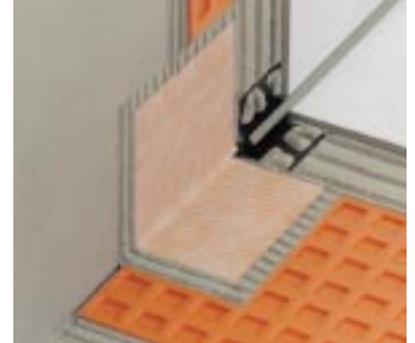
A distance of approximately 10 mm to adjacent structures must be kept. Schlüter®-DITRA neutralises stresses that occur between the substrate and the tile covering and prevents moisture penetration.

Structural plank flooring

A proven method is the addition of a plywood or particle board layer. Uneven floors must be levelled using an appropriate compound.

Bituminous screed

Schlüter®-DITRA allows ceramic floor coverings to be laid on load-bearing bituminous substrates e.g. bituminous screeds in interior and exterior applications. Contact-inhibiting surfaces must be removed using appropriate blasting techniques. Generally, dry-set mortars with appropriate additives are suitable for adhering Schlüter®-DITRA.





Waterproofing with Schlüter®-DITRA

By carefully sealing the mat joints and connections, Schlüter®-DITRA can be used for waterproofing in applications not exposed to constant water pressure.

Therefore, wet areas classified as Exposure Group I to IV in the German Building Code (ZDB data sheet) can be waterproofed.

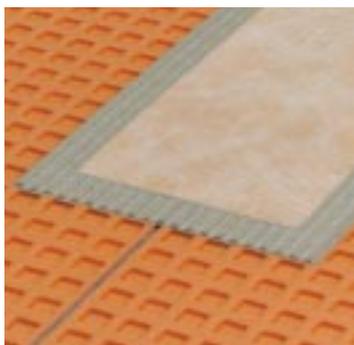
For sealing Schlüter®-DITRA, apply a dry-set adhesive and solidly adhere the 12.5 cm wide Schlüter®-KERDI Band. For floor/wall connections, adhere the Schlüter®-KERDI Band in the appropriate width (18.5 cm or 25 cm) using a dry-set adhesive. Firmly embed the Schlüter®-KERDI Band in the adhesive in such a way that it adheres to the DITRA on the floor and directly to the wall substrate. Overlap the sealing tapes at least 5 cm. If large amounts of water are anticipated, a suitable waterproof adhesive can be used to adhere the Schlüter®-KERDI Band.

Connections to fixed building elements can be made using the Schlüter®-KERDI Band. A suitable adhesive or an epoxy adhesive that will adhere to the fixed building element shall be applied to the adhesion surface area. Embed the Schlüter®-KERDI Band in the fresh adhesive, ensuring full coverage. The residual width shall be bonded completely to Schlüter®-DITRA using dry-set mortar. When anticipating large amounts of water, an impervious adhesive (e.g. epoxy mortar) can be used to adhere the Schlüter®-KERDI Band.

Schlüter®-DITRA must be cut over existing expansion or structural joints and the joints covered with Schlüter®-KERDI-FLEX. Schlüter®-KERDI-FLEX is also used at flexible edge or corner transitions.

Floor drains:

Schlüter®-KERDI-DRAIN is a special floor drain, specifically developed to allow connections to a bonded waterproofing layer. This allows Schlüter®-DITRA to be applied easily and quickly.



Installation

1. The substrate must be even, load bearing, and free of contact-inhibiting material.
2. The type of bonding adhesive used to apply Schlüter®-DITRA depends on the type of substrate. The adhesive must bond to the substrate and mechanically anchor the fleece on the underside of the Schlüter®-DITRA. For most substrates, a dry-set adhesive is suitable.
3. Apply the bonding adhesive to the substrate using a 3 mm x 3 mm notched trowel.
4. Individual courses of Schlüter®-DITRA are cut to size. Solidly embed the anchoring fleece on the underside of Schlüter®-DITRA into the adhesive so that its entire surface is bonded. Work Schlüter®-DITRA into the adhesive, in one direction, using a float or screed trowel. When initially positioning Schlüter®-DITRA, it is advisable to align it precisely (lift one end, pull lightly, and place the stretched membrane). Application is made easier with a second person. The side edges and ends of individual strips are cut straight and butted together.
5. Once installed, the matting must be protected against heavy mechanical loads to avoid loosening it from the substrate or other damage. It is advisable to place running boards to protect the Schlüter®-DITRA.
6. Immediately after the DITRA matting is installed, the tiles can be laid on top using the thin-bed method. It is advisable to apply the tile adhesive in a single process using a notched trowel. Install the tiles, ensuring full coverage. Match the notch size of the trowel to the type and format of the tile. Please observe the open time of the adhesive.
7. Schlüter®-DITRA is cut above existing expansion joints. If Schlüter®-DITRA is used as a waterproof membrane, Schlüter®-KERDI-FLEX is adhered over the joints. According to the applicable standards, movement joints are to be carried over to the tile coverings. Large surfaces are to be divided into smaller fields in accordance with applicable standards. We recommend the Schlüter®-DILEX profile series. Depending on the expected movement, appropriate movement profiles such as Schlüter®-DILEX-BT or Schlüter®-DILEX-KSBT are to be incorporated above structural joints.



Product overview:

Schlüter®-DITRA

Length = m	5	30
Width = 1 m	•	•

Schlüter®-KERDI-KEBA (Band)

(A) Thickness = 0.1 mm

Length = m	5	30
Width = 8.5 cm	•	•
Width = 12.5 cm	•	•
Width = 15 cm	•	•
Width = 18.5 cm	•	•
Width = 25 cm	•	•

Schlüter®-KERDI-FLEX

(B) Thickness = 0.3 mm

Length = m	5	30
Width = 12.5 cm	•	•
Width = 25 cm	•	•

Schlüter®-KERDI-KM (Pipe collar)

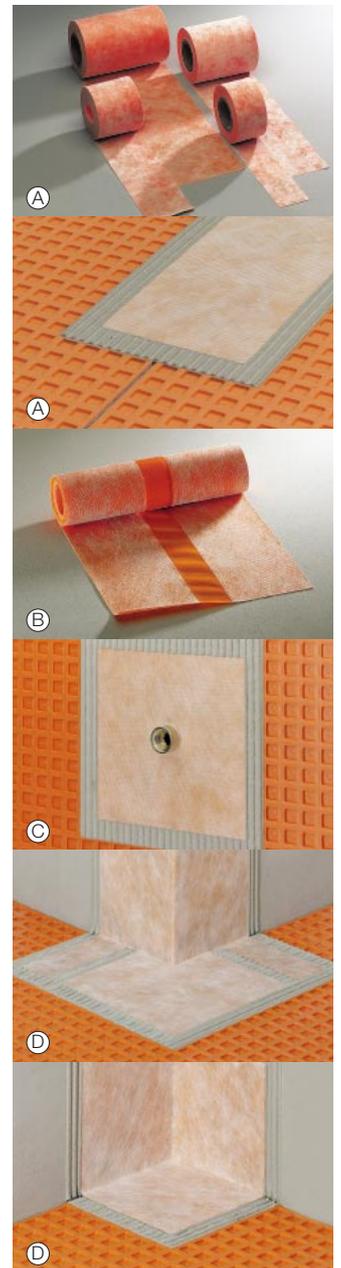
(C) Thickness = 0,1 mm

Dim. 17 x 17 / Hole 22 mm	
KM 5117 / 22	Set = 5 pieces

Schlüter®-KERDI-KERECK (pre-cut sections of KERDI for corners)

(D) Thickness = 0,1 mm

Internal Corner	KERECK 5 I
(25 x 25 cm)	Set = 5 pieces
External Corner	KERECK 5 A
(17 x 17 cm)	Set = 5 pieces





Text template for tenders:

Accurately bond in accordance with the manufacturer's specifications

_____ m² Schlüter®-DITRA as

- uncoupling matting
- waterproofing and uncoupling matting for tile consisting of a crack-bridging polyethylene membrane with a grid structure of square cavities, each cut back in a dove-tail configuration, and an anchoring fleece laminated to its underside, to an existing, even and load-bearing substrate on the
 - floor, consisting of _____
 - wall, consisting of _____
- with a suitable
- tile adhesive, as suggested by the supplier.
- tile adhesive, Type _____

Connections to pipes and floor drains:

- are to be included in unit prices;
- are to be charged as extra.

Material: _____/m²

Labour: _____/m²

Total: _____/m²



Text template for tenders:

Accurately bond in a professional manner and according to the manufacturer's specifications

_____ running metres of Schlüter®-KERDI-KEBA as a polyethylene waterproofing strip, covered on both sides with fleece material for the sealing of

- butt joints
- floor/wall connections
- connections

to fixed installation parts of the Schlüter®-DITRA waterproofing membrane.

Internal and external corners

- are to be included in unit prices;
- are to be charged as extra.

Width of the KERDI-KEBA:

- 8,5 cm 12.5 cm 15 cm
- 18.5 cm 25 cm

Material: _____/m

Labour: _____/m

Total: _____/m

Text template for tenders:

Bond in a professional manner and according to the manufacturer's specifications

_____ running metres of Schlüter®-KERDI-FLEX as a highly flexible polyethylene waterproofing strip, covered on both sides with fleece fabric and an approximately 30 mm wide fleece-free central zone to serve as sealing of

- flexible butt joints
- flexible floor/wall connections
- flexible connections of Schlüter®-DITRA waterproofing membrane to building elements.

Width of KERDI-FLEX:

- 12.5 cm 25 cm

Material: _____/m

Labour: _____/m

Total: _____/m

Text template for tenders:

Supply and bond in a professional manner and according to the manufacturer's specifications

_____ pieces of Schlüter®-KERDI-KM as a polyethylene pipe sleeve, covered on both sides with fleece fabric.

Material: _____/Piece

Labour: _____/Piece

Total: _____/Piece