

# Schlüter®-DITRA 25

## Underlayment

Uncoupling, waterproofing and vapour pressure equalisation

# 6.1

Product data sheet

### Application and Function

**Schlüter®-DITRA 25** is a polyethylene membrane with a grid structure of square cavities, each cut back in a dovetail configuration and an anchoring fleece laminated to its underside. Designed for tile and natural stone installations, Schlüter®-DITRA 25 serves as a waterproofing membrane, a vapour pressure equalisation layer to accommodate construction moisture occurring within the substrate and an uncoupling layer for problematic substrates.

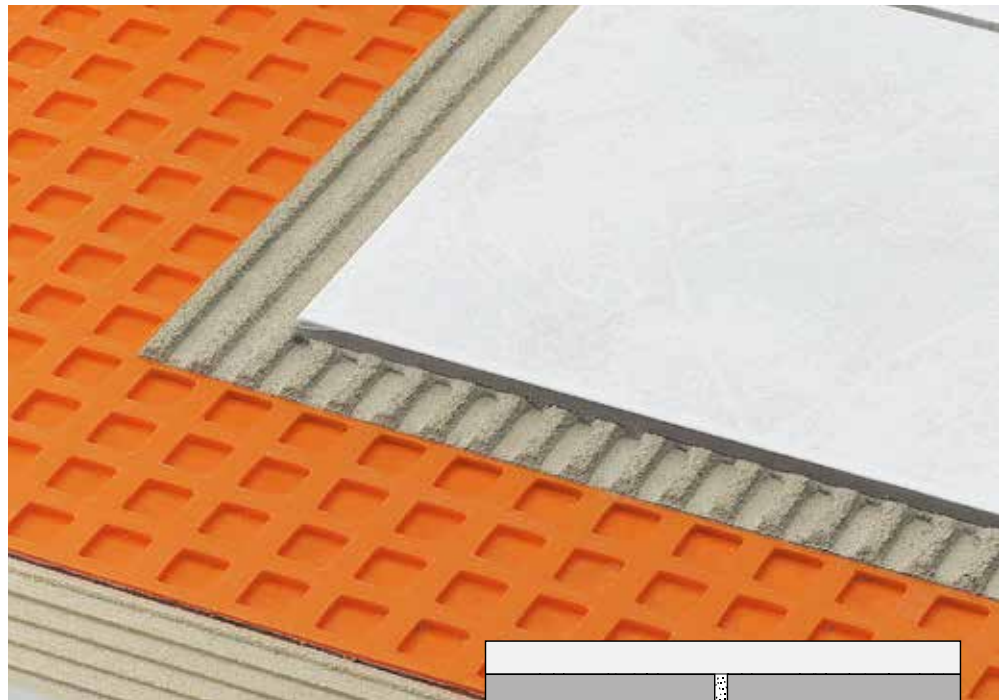
The substrate must be even and load bearing. To bond Schlüter®-DITRA 25, use a bonding adhesive that is appropriate for the substrate. Apply the adhesive using a 3 x 3 mm or 4 x 4 mm notched trowel. The anchoring fleece on the underside of Schlüter®-DITRA 25 must be fully engaged in the adhesive to provide a mechanical bond to the substrate. Please observe the open time of the bonding adhesive.

Using the thin-bed method and following all applicable industry standards, set the tile or stone covering directly on the Schlüter®-DITRA 25 in such a way that the tile adhesive becomes mechanically anchored in the square, cut back cavities of the Schlüter®-DITRA 25 matting.

#### Summary of functions

##### a) Uncoupling

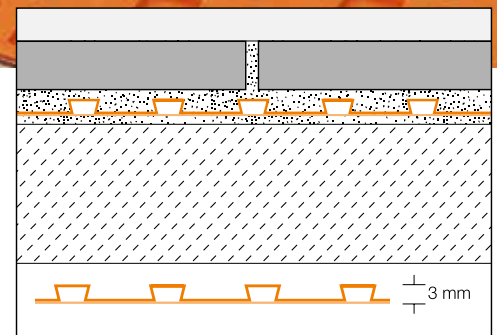
Schlüter®-DITRA 25 uncouples the floor covering from the substrate and neutralises the tensions between the substrate and the tile covering that result from the varying deformations of the materials. Likewise, stress cracks in the substrate are bridged and are, therefore, not transferred to the surface covering.



##### b) Waterproofing

Schlüter®-DITRA 25 is a waterproof polyethylene membrane with a relatively high vapour diffusion density. Provided the mat joints and the connections to walls and built-in elements are properly installed, Schlüter®-DITRA 25 can be used to create a certified bonded waterproofing assembly with the tile covering. Schlüter®-DITRA 25 features the national technical approval (abP) required in Germany and bears the Ü mark. Moisture exposure class according to abP: 0 - B0 as well as A and C.

Schlüter®-DITRA 25 has the required European Technical Assessment (ETA) as specified in ETAG 022 (bonded waterproofing assemblies) and bears CE marking. Exclusively use system-approved thin-bed adhesives for areas that require CE conform-





ity or compliance with the general certificate of national technical approval (abP). Please contact us at the address shown in this data sheet for further information about suitable thin-bed adhesives and the corresponding test certificates.

Therefore, Schlüter®-DITRA 25 protects the substrate against damage due to moisture penetration and aggressive substances.

#### c) Equalisation of vapour pressure

The interconnected air channels between the cavities on the underside of the Schlüter®-DITRA 25 matting remain open. This allows moisture in the substrate to evaporate, therefore neutralising vapour pressure.

#### d) Load distribution (load impact)

Tiles that are installed in floor coverings with Schlüter®-DITRA 25 should have a minimum size of 5 x 5 cm and be at least 5.5 mm thick. The bottom of the square cavities in Schlüter®-DITRA 25, which are filled with thin-bed adhesive, directly transfer the load impact on the tile covering to the substrate. As a consequence, tile coverings installed on top of Schlüter®-DITRA 25 are highly load resistant. If high traffic loads are expected (e.g. in industrial locations), the tiles selected for the installation must be of the corresponding thickness and pressure stability. The requirements of the mandatory guideline "Ceramic Floor Coverings With High Impact Resistance," published by the German Construction Industry Association (ZDB) must be followed.

In areas with high impact loads, the tiles must be fully embedded in the thin-bed adhesive. The contact surface of Schlüter®-DITRA 25 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 is capable of distributing the loads. Ceramic tile coverings should not be exposed to the direct impact of hard objects.

#### e) Adhesive properties

Due to the bonding of the anchoring fleece into the thin-bed adhesive on the underside and the mechanical anchoring of the adhesive in the cut back cavities, Schlüter®-DITRA 25 achieves a good adhesion of the tile covering to the substrate (laboratory test values:  $\sim 0.2\text{N/mm}^2$ ). Consequently, Schlüter®-DITRA 25 can be used for wall and floor coverings. Anchor plugs may be used with wall coverings if necessary.

## Material

Schlüter®-DITRA 25 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. Polyethylene is not permanently UV stable. Prolonged exposure to intensive sunlight should be avoided when storing the material.

## Material properties and areas of application

Schlüter®-DITRA 25 is flexible, bridges cracks and will not rot. In addition, it is highly resistant to watery solutions, salts, acids and alkalis, as well as many organic solvents, alcohols and oils.

Its resistance to specific stresses must be examined separately on the basis of the expected concentration, temperature and exposure time. The vapour diffusion density is relatively high. The material is physiologically safe.

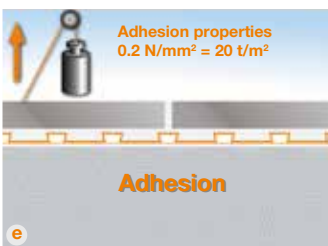
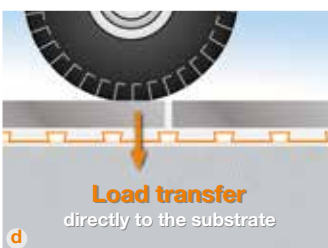
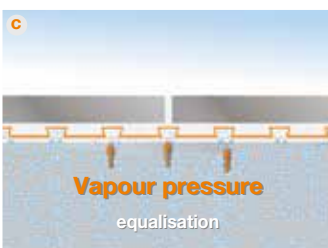
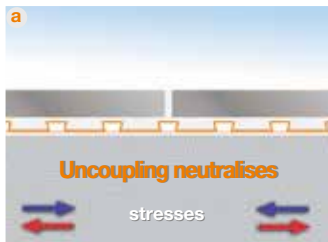
Schlüter®-DITRA 25 is used with a great variety of applications. Its suitability for specific chemical or mechanical conditions must be evaluated for each individual case. The instructions below provide some general guidelines.

Coverings constructed with Schlüter®-DITRA 25 may have a certain hollow sound when they are walked upon with hard shoes or tapped with a hard object.

## Note

The thin-bed adhesive and the covering materials selected for use with Schlüter®-DITRA 25 must be suitable for the corresponding application and must meet the requirements of the site. Materials used in exterior applications must be waterproof as well as resistant to frost and weather.

Schlüter®-DITRA 25 should be used primarily as a waterproofing layer when installing cover materials that are sensitive to moisture (e.g. natural stone or synthetic resin panels) or if moisture is expected to build up on the underside (e.g. in the case of green screed). When Schlüter®-DITRA 25 is installed in exterior applications, special protective measures may be required; e.g. shielding the installation from direct sunlight. The use of rapid setting thin-bed adhesives may be an advantage for certain projects.





Schlüter®-DITRA 25 should be covered with protective running boards if the transport of material makes it necessary to walk over the matting.

### Movement joints

Schlüter®-DITRA 25 must be separated at existing movement joints. If Schlüter®-DITRA 25 is used as a waterproofing layer, the joints between the sheets must be covered with Schlüter®-KERDI-FLEX band. Movement joints must be continued in the tile covering, as specified by the applicable industry standards. In all other cases, large area floor assemblies installed over Schlüter®-DITRA 25 must be subdivided into smaller fields with the help of movement joints. The distance between such control joints in exterior applications (balconies and terraces) should not exceed three metres. Depending on the construction of the substrate, field sizes may need to be smaller. Please refer to our Schlüter®-DILEX profile range. Install the corresponding profiles such as Schlüter®-DILEX-BT or Schlüter®-DILEX-KSBT over expansion joints in accordance with the expected movements. It must be assured that no tension can build at the edge of coverings, e.g. at upright construction elements or floor to wall transitions. The edge profiles and connective joints have to meet the requirements of the corresponding construction standards and must be suitable to prevent the build up of tensions. Please refer to our Schlüter®-DILEX profile range.

### Substrates for Schlüter®-DITRA 25

Substrates on which Schlüter®-DITRA 25 is to be installed must always be checked 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. Any unevenness or height and slope differences in the substrate must be levelled prior to the application of Schlüter®-DITRA 25.

### Concrete

Concrete is subject to lengthy deformation processes due to shrinkage. Concrete and pre-stressed concrete may build up tension because of deflection.

Thanks to the installation of Schlüter®-DITRA 25, the tensions occurring (in the floor and wall area) between the concrete and the tile covering are absorbed.

### Mortar screeds

With Schlüter®-DITRA 25, tiles can be installed on green cementitious screeds as soon as they are ready to bear weight. According to the applicable standards, mortar screeds must cure a minimum of 28 days prior to the installation of tile and their residual moisture content must be below 2% (percentage by volume). In particular, floating screeds and heated screeds tend to change shape or develop cracks after installation, e.g. due to load stresses or temperature changes.

Schlüter®-DITRA 25 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 be walked upon, (depth of screed does need to be considered and additional drying time should be allowed in some instances, please contact us for advice).

Cracks and curling forming in the screed over time will be neutralised by DITRA 25 and will not be transferred to the tile covering.

### Gypsum based screeds

According to the applicable standards, the residual moisture of gypsum based screeds should not exceed 0.5% (percentage by volume) prior to the installation of tiles. With the application of Schlüter®-DITRA 25, tile coverings can be installed as soon as the residual moisture is below 2.0% (percentage by volume).

If required, the screed surface may need to be pre treated (sanding, priming) in accordance with the applicable industry standards and manufacturers' recommendations.

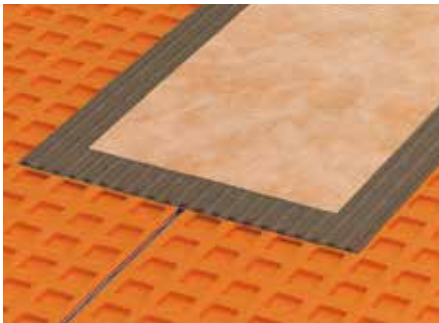
Schlüter®-DITRA 25 can be applied using thin-bed tile adhesives that are suitable for the substrate. Schlüter®-DITRA 25 protects the screed against moisture penetration from the surface. Gypsum based screeds are sensitive to moisture and must be protected from additional moisture penetration, especially on the underside.

### Radiant heated screeds

Schlüter®-DITRA 25 may be used over heated screeds as described in the sections on mortar screeds and gypsum based screeds. With Schlüter®-DITRA 25, tiles can be heated seven days after installation.

Starting at 77 °F (25 °C), the radiant heated floor temperature can be raised gradually by +9 °F (+5 °C) per day, to a maximum of





104 °F (40 °C). The air channels of Schlüter®-DITRA 25 allow for a quick and even distribution of heat below the tile covering.

**Note:**

For radiant heated floors, we recommend our system Schlüter®-BEKOTEC-THERM, the ceramic thermal comfort floor.

Schlüter®-DITRA 25 is also recommended for uncoupling of radiant heated floors consisting of thin electric heating mats. Schlüter®-DITRA 25 may be installed either above or below the heating mat. However, the uncoupling function is more effective if Schlüter®-DITRA 25 is installed above the heating mat.

Schlüter®-DITRA-HEAT is a special uncoupling membrane that was developed for attachment of the matching system heating cables of electrical floor/wall heating systems. Further information can be found in product data sheet 6.4.

**Dry screed elements**

Following the professional installation of the dry screed material according to manufacturer instructions, the maximum tile size can be freely chosen with the use of Schlüter®-DITRA 25.

**Masonry / mixed substrates**

Masonry consisting of brick, stone, limestone, cement block, lightweight concrete, or similar is generally a suitable substrate for Schlüter®-DITRA 25. Uneven areas must be levelled in advance. Particularly in refurbishments or extensions, different materials (mixed masonry) may be encountered. At the transitions, movement can cause cracks. With Schlüter®-DITRA 25, stresses and cracks do not transfer to the tile covering.

**Stucco / plaster**

Plaster substrates should be examined in accordance with the applicable building codes to ensure they are dry. The surface may need to be pre-treated with a primer. Schlüter®-DITRA 25 can be applied using thin-bed tile adhesives that are suitable for the substrate.

**Balconies / terraces**

As an uncoupling membrane, Schlüter®-DITRA 25 neutralises the stresses between the substrate and the tile covering that are caused by the frequent and extensive temperature changes occurring on balconies. Moreover, Schlüter®-DITRA 25 can serve

as the sole waterproofing membrane in tile assemblies for cantilevered balconies and terraces that are built directly on the ground (note instructions for waterproofing). The substrate (concrete, screed) must be sufficiently sloped.

For refurbishments, the existing surface assembly can generally remain, provided it is sufficiently sloped and load bearing. Prior to the application of Schlüter®-DITRA 25 over existing and cracked tile floors, the loose tiles must be removed and the remaining cavities filled using an appropriate adhesive. The preparations also include ensuring a proper slope in the substrate.

We recommend Schlüter®-DITRA-DRAIN (see product data sheet 6.2) for coverings with side lengths exceeding 30 x 30 cm.

**Rooftop terraces**

In the case of roof terraces over residential/commercial or other spaces as well as roof-covered surfaces, the surface needs to be designed as a flat roof, following the applicable technical rules for roof structures. In the case of heat-insulated residential and commercial spaces (as well as spaces with expected temperature differences from the outside), a vapor barrier as well as ceiling insulation is required in a standard-confirming assembly. National standards and/or the applicable technical data sheets need to be observed if applicable.

A drainage system such as Schlüter®-TROBA or Schlüter®-TROBA-PLUS must be installed over this top insulation layer. This is then topped with screed to act as a load distribution layer. Schlüter®-DITRA 25 is installed over this screed as an uncoupling layer with the tile covering and as a moisture barrier for the screed. Otherwise, any loose or insufficiently attached parts must be removed and defects and missing sloping leveled with a suitable suitable self-levelling compound prior to adhering Schlüter® DITRA 25.

We recommend Schlüter®-DITRA-DRAIN (see product data sheet 6.2) for coverings with side lengths exceeding 30 x 30 cm.

**Synthetic flooring and surface coatings**

In principle, 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 25 matting. The compatibility of the adhesive for the substrate and Schlüter®-DITRA 25 must be verified ahead of time.



### Plywood and chipboard

These materials are particularly prone to deformation under the influence of moisture (or significant changes in atmospheric humidity). The plywood and chipboard panels used in construction should therefore be exterior grade. In principle, plywood can be used as backing materials for Schlüter®-DITRA 25 on both floors and walls in interior applications. The thickness of the panels must be sufficient to ensure stability in conjunction with a suitable supporting construction. Attach the panels with screws set at the required minimum spacing. The joints must feature tongue and groove connections and should be secured with additional adhesive. Movement joints of at least 10 mm must be left at the transition to other construction parts. Schlüter®-DITRA 25 neutralises the stress occurring in the tile covering and prevents the penetration of moisture.

### Structural plank subflooring

Sufficiently load bearing structural plank subflooring in tongue and groove construction, with the appropriate screws in place, is suited in principle as a substrate for ceramic tiles. The timber substrate should have reached the equilibrium moisture content prior to installing Schlüter®-DITRA 25. However, an additional layer of plywood panels is recommended. Uneven floors must be levelled using an appropriate levelling compound.

### Bituminous screed (paving grade asphalt)

Schlüter®-DITRA 25 allows for the installation of ceramic coverings on standard weight-bearing, unheated mastic asphalt screeds in indoor areas. The surface needs to be sanded or must be suitable to allow for the proper adhesion of the thin-bed tile adhesive for the installation of Schlüter®-DITRA 25.

## Installation

1. The substrate must be free of bond inhibiting components, be load bearing and even. Any unevenness in the substrate must be levelled prior to the application of Schlüter®-DITRA 25.
2. The type of bonding adhesive used to apply Schlüter®-DITRA 25 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 25 matting. Verify

the compatibility of all materials prior to installation.

3. Apply the bonding adhesive to the substrate using a 3 x 3 mm or 4 x 4 mm notched trowel.
4. Individual courses of Schlüter®-DITRA 25 are cut to size. Solidly embed the anchoring fleece on the underside of Schlüter®-DITRA 25 in the adhesive so that its entire surface is bonded and immediately work it into the adhesive using a float or screed trowel. Among other tools, an orbital sander is well-suited for this purpose. Please observe the open time of the bonding adhesive. When initially positioning Schlüter®-DITRA 25, it is advisable to align and position the matting while slightly stretching it. This is best done with an additional helper. Tightly abut the individual membranes.

#### Note:

If Schlüter®-DITRA 25 is only installed as an uncoupling membrane, side edges and ends of individual courses do not need to be sealed with Schlüter®-KERDI-KEBA. Please refer to the instructions for waterproofing if the membrane is to serve as a waterproofing layer.

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 (especially in the centre of material transports) to protect Schlüter®-DITRA 25. Other protective measures, such as shielding of direct sunlight or protection from precipitation in exterior applications, may also be required. Carefully remove any moisture that may have gathered in the indentations of the studs before applying the thin-bed tile adhesive.
6. Immediately after the Schlüter®-DITRA 25 matting is installed, the tiles can be set using the thin-bed method and using a bonding tile adhesive that matches the requirements of the covering. It is recommended to fill the square cavities with the smooth side of the trowel and to establish a regular pattern in the bonding adhesive with the notched side of the trowel in one application. The tiles are fully embedded in the adhesive. Fully embedded installation of tiles in accordance with the applicable professional standards is particularly important for coverings with high traffic loads and in outdoor areas. The notches of the trowel must match the format and thickness of the tiles, so as to achieve solid bedding. Please observe the open





time of the adhesive. The adhesive bed over Schlüter®-DITRA 25 should not exceed 10 mm.

7. For movement joints as control joints, expansion joints, or connection joints please follow the instructions given in this product data sheet as well as the applicable industry regulations.

#### **Waterproofing with Schlüter®-DITRA 25**

Provided the mat joints and the connections to built-in elements and upright structural fixtures are carefully sealed, Schlüter®-DITRA 25 can be used to create a certified bonded waterproofing assembly with the tile covering. Schlüter®-DITRA 25 features the national technical approval (abP) required in Germany and bears the Ü mark. Moisture exposure class according to abP: 0 - B0 as well as A and C.

Schlüter®-DITRA 25 has the required European Technical Assessment (ETA) as specified in ETAG 022 (bonded waterproofing assemblies) and bears CE marking. Exclusively use system-approved thin-bed adhesive for areas that require CE conformity or compliance with the general certificate of national technical approval (abP). Please contact us at the address shown in this data sheet for further information about suitable thin-bed adhesive and the corresponding test certificates.

We recommend the use of our waterproofing membrane Schlüter®-KERDI (see product data sheet 8.1 Schlüter®-KERDI) for applications of Utilisation Class B, "pools." Schlüter®-DITRA 25 therefore protects the substrate from damages due to the penetration of moisture and aggressive substances. The abutting joints are covered with the sealing adhesive Schlüter®-KERDI-COLL-L and Schlüter®-KERDI-KEBA (minimum width: 12.5 cm) is solidly embedded over the joint. For floor to wall transitions, adhere the Schlüter®-KERDI-KEBA in the appropriate width. The sealing band should overlap at least 5 cm.

Schlüter®-KERDI-KEBA is also suited for sealing joints with existing fixtures such as door frames, window frames and balcony edge profiles of metal, wood or plastic.

Start by applying Schlüter®-KERDI-FIX to the part of the fixture that is to be adhered. The remaining width is fully embedded on Schlüter®-DITRA 25, using the adhesive Schlüter®-KERDI-COLL-L.

The suitability of Schlüter®-KERDI-FIX for the material of the corresponding fixtures must be verified beforehand.

Cut Schlüter®-DITRA 25 above structural and seismic expansion joints, then cover the joint with Schlüter®-KERDI-FLEX.

Schlüter®-KERDI-FLEX can also be used for flexible finishing edges. Alternatively, Schlüter®-KERDI-KEBA may be used, provided a loose fold is left above the joint.

#### **Note regarding floor drains:**

Schlüter®-KERDI-DRAIN and Schlüter®-KERDI-LINE are components that were specifically developed for connection to bonded waterproofing assemblies. Schlüter®-DITRA 25 can be quickly and reliably abutted in these cases with the use of Schlüter®-KERDI collars.



## Product Overview

### Schlüter®-DITRA 25

<b>Length = m</b>	<b>5</b>	<b>30</b>
Width = 1 m	•	•

### Schlüter®-KERDI-KEBA (Band)

(A) Thickness = 0.1 mm

<b>Length = m</b>	<b>5</b>	<b>30</b>
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

<b>Length = m</b>	<b>5</b>	<b>30</b>
Width = 12.5 cm	•	•
Width = 25 cm	•	•

### Schlüter®-KERDI-KM (Pipe collar)

(C) Thickness = 0.1 mm

<b>Dim. Ø 15 cm / Hole Ø 22 mm</b>
KM 5117 / 22 Set = 5 pieces

### Schlüter®-KERDI-KERECK

(D) Thickness = 0.1 mm

<b>Internal Corner</b>	<b>2 Pc.</b>	<b>5 Pc.</b>	<b>10 Pc.</b>
Prefabricated	•		•
Pre cut section		•	
<b>External Corner</b>	<b>2 Pc.</b>	<b>5 Pc.</b>	<b>10 Pc.</b>
Prefabricated	•		•
Pre cut section		•	

### Schlüter®-KERDI-COLL-L

(E)

<b>Sealant adhesive</b>	4.25 kg
	1.85 kg
<b>see product data sheet 8.4</b>	

### Schlüter®-KERDI-FIX (Installation adhesive)

(F) G = grey, BW = brilliant white

<b>Colour</b>	<b>G</b>	<b>BW</b>
Cartridge 290 ml	•	•
Squeezable tube 100 ml	•	
<b>see product data sheet 8.3</b>		

### Schlüter®-KERDI-DRAIN (Floor drains)

(G)

<b>see product data sheet 8.2</b>
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### (H) Schlüter®-KERDI-LINE (linear drainage)

<b>see product data sheet 8.7</b>
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**Text template for tenders:**

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

\_\_\_\_\_ m<sup>2</sup> Schlüter®-DITRA 25 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: \_\_\_\_\_ ...../m<sup>2</sup>

Labour: \_\_\_\_\_ ...../m<sup>2</sup>

Total: \_\_\_\_\_ ...../m<sup>2</sup>

**Text template for tenders:**

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

\_\_\_\_\_ linear metres of Schlüter®-KERDI-FLEX as

a highly flexible seam sealing tape with anchoring fleece laminated on both sides for waterproofing

- flexible butt joints
- flexible floor to wall transitions
- flexible connections of Schlüter®-DITRA 25 waterproofing membrane to building elements.

Width of Schlüter®-KERDI-FLEX:

- 12.5 cm
- 25 cm

Material: \_\_\_\_\_ ...../m

Labour: \_\_\_\_\_ ...../m

Total: \_\_\_\_\_ ...../m

**Text template for tenders:**

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

\_\_\_\_\_ metres of Schlüter®-KERDI-KEBA as a

polyethylene waterproofing strip, covered on both sides with fleece material for the sealing of

- butt joints
- floor to wall transitions
- connections

to fixed installation parts of the Schlüter®-DITRA 25 waterproofing membrane.

Internal and external corners

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

Width of the Schlüter®-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

\_\_\_\_\_ pieces of Schlüter®-KERDI-KM as a

polyethylene pipe sleeve, covered on both sides with fleece fabric.

Material: \_\_\_\_\_ ...../Piece

Labour: \_\_\_\_\_ ...../Piece

Total: \_\_\_\_\_ ...../Piece