PROFILE OF INNOVATION

Schlüter®-DITRA

Installation membrane

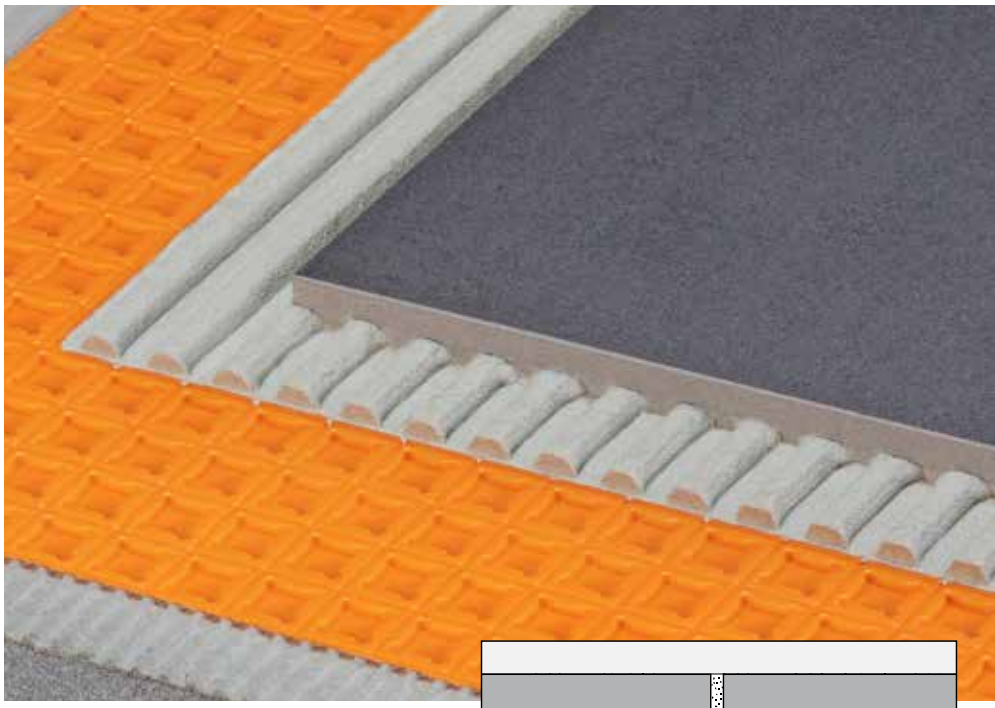
Uncoupling, waterproofing, vapour pressure equalisation

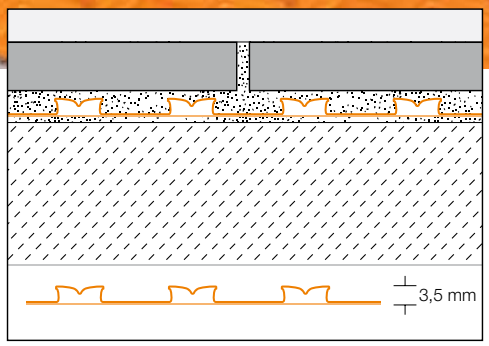
6.1

Product data sheet

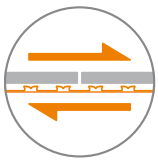
Application and function

Schlüter-DITRA is a polypropylene membrane with EasyCut gridlines as well as square, dovetailed EasyFill recesses and an anchoring fleece laminated to the underside. In conjunction with tile coverings, Schlüter-DITRA provides waterproofing, vapour pressure equalisation for underside moisture and uncoupling for problematic substrates. The substrate must be level and load-bearing. DITRA is installed in cementitious tile adhesive tile adhesive that is suitable for the substrate, using a notched trowel (recommended size: 3 x 3 mm or 4 x 4 mm). The anchoring fleece on the underside of DITRA is fully embedded and the fabric bonds with the adhesive. The curing time of the adhesive must be observed.
The tile covering is installed directly over DITRA in accordance with the applicable regulations, using the thin-bed method. The cementitious tile adhesive bonds with the square, dovetailed recesses of the DITRA membrane.

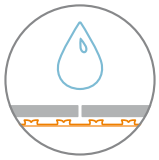




Summary of functions:



a) Uncoupling
Schlüter-DITRA uncouples the covering from the substrate and neutralises stresses between the substrate and the tile covering that result from various deformations. It also bridges tension cracks from the substrate and prevents them from affecting the tile covering.



b) Waterproofing
Schlüter-DITRA is a waterproof polypropylene membrane with a relatively high water vapour diffusion seal. With properly installed abutting joints and carefully sealed transitions to walls and structural elements, DITRA creates a certified bonded waterproofing assembly with the tile covering.

CE

The waterproofing system DITRA has a European Technical Assessment (ETA) in accordance with EAD 030436-00-0503, a certificate of technical approval for the German market (abP) and bears a CE mark. Schlüter-DITRA can be installed in accordance with the waterproofing standards DIN 18531-5* and DIN 18534 applicable in Germany. Water exposure classes:
W0-I to W3-I*.

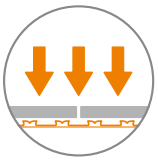
** With abP and/or based on ETA according to EAD 030436-00-0503.*

The Technical Department is available to provide information on use and installation on request.

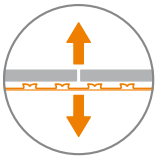
DITRA has a European Technical Assessment (ETA) in accordance with EAD 030436-00-0503 and bears a CE mark.

System-certified cementitious tile adhesive must be used in areas that require CE-compliance or assemblies according to abP (certificate of technical approval). Please contact us at the address listed in this data sheet for further information about cementitious tile adhesives and the corresponding certificates of technical approval.
The waterproofing system DITRA effectively protects the sub-structure from damage caused by permeating moisture or aggressive substances.

c) Vapour pressure equalisation
The air channels of Schlüter-DITRA, which remain open on the underside, also enable vapour pressure equalisation in case of moisture impact from below.



d) Load distribution (load induction)
Tiles installed over DITRA in floor areas should have a minimum size of 5 x 5 cm and a thickness of at least 5.5 mm. The adhesive-filled, square recesses of Schlüter-DITRA transfer mechanical stresses impacting the tile covering directly to the substrate. That makes tile coverings installed on DITRA especially durable. The tiles for the corresponding application area must be sufficiently thick and have adequate compressive stability to withstand high traffic loads (e.g. in commercial areas) or large point loads (such as concert pianos, forklifts, or shelf systems). The information and tile thicknesses specified in the ZDB information sheet "Ceramic floor coverings with high mechanical stress resistance", valid in Germany, must be observed.
Tiles in high-stress areas must be solidly embedded in the tile adhesive. The impact of hard objects must be avoided on ceramic coverings.



e) Bonded assembly
Based on the fleece fabric bond in the cementitious tile adhesive on the substrate, and through mechanical anchoring of the cementitious tile adhesive in the square, dovetailed recesses, Schlüter-DITRA creates a strong bond between the tile assembly and the substrate. That makes Schlüter-DITRA suitable for wall and floor installation. Additional anchoring wall plugs may be used as needed for the attachment of wall coverings.

Material

Schlüter-DITRA is a polypropylene membrane with square dovetailed recesses in EasyFill design and imprinted EasyCut gridlines. A fleece fabric is laminated on the underside. The material thickness measured across the stud structure is approx. 3.5 mm. Polypropylene is not UV-stable in the long term; the product should not be stored in places with prolonged exposure to direct sunlight.

Material properties and areas of application

Schlüter-DITRA is non-rotting, stretchable and crack-bridging. In addition, it is largely resistant to the effects of aqueous solutions, salts, acids and alkalis, many organic solvents, alcohols and oils.
Product resistance to special local conditions must be verified separately based on the anticipated concentration, temperature and length of exposure. The product has a relatively high water vapour diffusion seal. The material is non toxic and physiologically harmless.
Schlüter-DITRA can be used in a wide variety of application areas. Product suitability must be verified in applications exposed to chemical or mechanical stresses. The information provided below is intended as a general guideline.
Depending on the system, stepping on coverings installed over DITRA with hard shoes or tapping them with a hard object may produce a hollow sound.

Note

The cementitious tile adhesive and the covering material used in conjunction with DITRA must be suitable for the respective application area and meet the corresponding requirements. In outdoor areas, these materials must be waterproof and resistant to frost and weather.
DITRA should be installed as a waterproofing assembly if the covering materials to be installed are sensitive to moisture (e.g. natural stone or resin-bonded pavers) or if moisture is present on the underside (e.g. from green screeds). Special protective measures such as shading against direct sunlight may be necessary for outdoor installations of DITRA.

The use of rapid setting tile adhesives may be an advantage for certain projects. It is recommended to set out running boards to protect DITRA from mechanical stresses caused by material transport.

Notes on movement joints:

Separate the Schlüter-DITRA membrane over existing movement joints. If DITRA is used for waterproofing, the abutting joints must be covered with Schlüter-KERDI-FLEX.
Continue the movement joints in the tile covering as specified by the applicable standards. Otherwise, divide large coverings installed over DITRA into sections, using movement joints according to the applicable regulations. The dimensions of such sections should not exceed a side length of 3 m in outdoor areas (balconies and terraces). Smaller sections may be required depending on the substructure. We recommend using the profiles of the Schlüter-DILEX family. Arrange profiles such as Schlüter-DILEX-BT or DILEX-KSBT over existing expansion joints depending on the anticipated structural movements.
It is important to prevent stress build-up at the edges of the covering, for instance at upright structural components or at floor-wall transitions. Perimeter movement joints and connection joints must be constructed according to the applicable technical regulations and have sufficient dimensions to prevent stress build-up. We recommend using the profiles of the Schlüter-DILEX family.

Substrates for Schlüter®-DITRA:

Always check the substrates on which DITRA is to be installed to make sure they are level, rigid, load-bearing, clean and compatible with the materials to be used. Remove all surface components that may weaken the bond. Any levelling, height adjustment or slope compensation must be carried out before installing DITRA.

Concrete

Concrete undergoes long-term structural deformation due to shrinkage. In addition, tension can build up in concrete and prestressed concrete due to deflection. Since DITRA absorbs the resulting tensions between the concrete and the tile covering (in wall and floor areas), tiles can be installed as soon as the concrete is ready to bear weight.

Schlüter®-DILEX-BWB on Schlüter®-DITRA

Schlüter®-DILEX-EK on Schlüter®-DITRA

Schlüter®-DILEX-AKWS on Schlüter®-DITRA

Cement screeds

In accordance with the applicable regulations, cement screeds must have cured for at least 28 days prior to tile installation and have a moisture content below 2 CM %. Floating and heated screeds have a particular tendency to buckle and crack even later, e.g. due to mechanical stresses and temperature fluctuations.
With DITRA, tiles can be installed on green cement screeds as soon as they are ready to bear weight.
DITRA will neutralise cracks and screed deformations developing later and will prevent them from affecting the tile covering.

Gypsum based screeds

According to the applicable rules, gypsum based (anhydrite) screed may not have a residual moisture level of more than 0.5 CM % at the time of tile installation. In contrast, tile installation is permissible from a residual moisture level of 2 CM % with DITRA.
If necessary, the screed surface must be treated (grinding, priming) as specified by the applicable technical regulations and manufacturer instructions. DITRA can be installed with dry-setting or other suitable cementitious tile adhesives. It protects the screed surface against permeating moisture. Because gypsum based screeds are susceptible to moisture, the screed must be protected against humidity, e.g. moisture seepage on the underside.

Heated screeds

DITRA can be used on heated screeds, provided the above notes (cement, gypsum based screeds) are followed. Covering assemblies created with DITRA are ready for heating only 7 days after completion. Starting from a temperature of 25 degrees C, the supply temperature can be increased by no more than 5 degrees C a day to a usage temperature of max. 40 degrees C. The interconnected air channels of the DITRA membrane quickly and evenly distribute the heat below the tiles.

Note:

For floor heating systems, please refer to our ceramic thermal comfort floor system Schlüter-BEKOTEC-THERM.
Schlüter-DITRA is also recommended for uncoupling floor heating systems comprising thin electric heating mats. In those cases, Schlüter-DITRA can be installed above or below the heating mat. However, an installation above the heating mat achieves better uncoupling effects. Please

note that the bedding above the mat should not exceed 10 mm.
Schlüter-DITRA-HEAT was developed specifically as an uncoupling mat designed to attach the matching system heating cables for electric floor/wall heating systems. Further details can be found in product data sheet 6.4.

Screed boards and composite panels

After the proper installation of dry screed elements according to manufacturer instructions, any tile format may be chosen to install with DITRA.

Masonry / mixed substrates

Masonry structures built with bricks, sand lime bricks, cement blocks, aerated concrete or similar materials is generally a suitable substrate for DITRA. The surface must be levelled in advance. In restoration and remodeling projects, substrates frequently consist of mixed materials, which have a tendency to crack at the interfaces with other materials due to different deformation rates. DITRA protects the tile covering from the resulting tensions and cracks.

Gypsum plaster / bricks

Gypsum substrates should be completely dry in accordance with the relevant regulations. The surface may need to be pretreated with a primer. DITRA can be installed with dry-setting or other suitable thin-bed tile adhesives.

Balconies / terraces

As an uncoupling mat, Schlüter-DITRA neutralises the tensions between the substrate and tile covering that can be caused on balconies by frequent, significant temperature fluctuations. In addition, DITRA can serve as the sole waterproofing assembly in conjunction with the tile covering in cantilevered balconies and terraces built directly over the ground, which are only used for residential purposes (observe notes on waterproofing). In that case, the substrate (concrete, screed) must have a sufficient slope.
If previous coverings are sufficiently weight bearing and have the necessary slope, the existing assembly may be used as the substrate in renovation projects. Otherwise, loose or insufficiently bonded parts must be removed prior to installing DITRA and any flaws or inadequate slope must be corrected with a suitable ready-mix mortar.
The use of Schlüter-DITRA-DRAIN is recommended for coverings with dimensions over 30 x 30 cm (see also product data sheet 6.2).

Roof terraces

Roof terraces situated above residential/utility spaces and other areas as well as the roof spaces must first be installed as a flat roof in in accordance with the applicable building regulations for roof assemblies.
In case of heat-insulated residential or utility spaces (and rooms with anticipated temperature differences to the outdoor space), a standard-compliant vapour barrier and top waterproofing layer are required. The provisions of any applicable national standards and/or relevant codes must be observed. A drainage (Schlüter-TROBA or Schlüter-TROBA-PLUS) must be arranged over the top waterproofing assembly. This is topped with a screed as the load distribution layer. DITRA is installed on the screed surface to uncouple the tile covering and protect the screed from moisture. As an uncoupling mat, Schlüter-DITRA neutralises the tensions between the substrate and tile covering that can be caused on terraces by frequent, significant temperature fluctuations.
The use of DITRA-DRAIN is recommended for coverings with dimensions over 30 x 30 cm (see also product data sheet 6.2).

Vinyl coverings and coatings

All surfaces must be load bearing and pre-treated or suitable for bonding with an appropriate adhesive, in which the DITRA anchoring fleece can be embedded. The compatibility of the adhesive with the substrate and with DITRA must be verified in advance.

Plywood, Chipboard and compressed wood panels

These materials undergo significant deformation based on the influence of moisture (or fluctuations in humidity). It is therefore recommended to use chipboard and compressed wood panels with special water-repellent treatment. Such panels can generally be used as a floor and wall substrate in interior spaces. Refer to local regulations if these are acceptable. However, they have to be thick enough to be sufficiently stable in conjunction with a suitable support assembly. The structure should be fastened with closely spaced screws. Abutments must have a tongue and groove connection and be fully sealed. Perimeter movement joints of about 10 mm have to be maintained at

the transition to upright building structures. Schlüter-DITRA neutralises any tensions with the tile covering and also prevents permeating moisture.

Hardwood floors

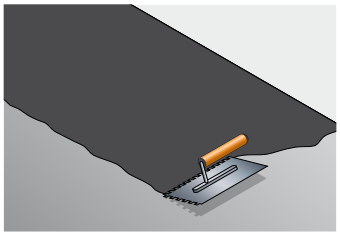
In principle, ceramic coverings can be directly installed on sufficiently weight bearing, screw-fastened hardwood floors with tongue and groove connections. The wooden substrate should have balanced moisture levels before DITRA can be installed. It has proven beneficial to install an additional layer of chipboard or compressed wood panels. Uneven floor surfaces should be levelled with suitable measures beforehand.

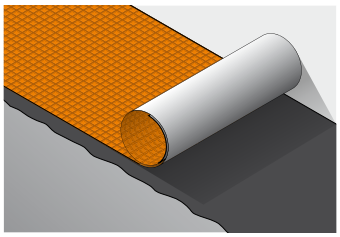
Flooring grade asphalt (bitumen) screeds

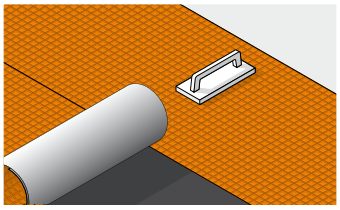
Schlüter-DITRA enables the installation of ceramic coverings over weight bearing, unheated mastic asphalt screeds in indoor areas, provided they were installed in compliance with the relevant standards. Surfaces must be sanded or be suited for sufficient bonding of the thin-bed tile adhesive with DITRA.

Installation

1. The substrate must be free of components that may inhibit bonding, load bearing and levelling. Any necessary levelling work must be completed before installing DITRA.
2. The selection of the adhesive for installing DITRA depends on the substrate. The adhesive must bond with the substrate and mechanically attach to the DITRA anchoring fleece. A dry setting cementitious tile adhesive can be used for most substrates. The adhesive should preferably have a consistency suitable for fluid beds. Review any potential material incompatibilities beforehand.
3. The cementitious tile adhesives hould be applied on the substrate with a notched trowel (recommended size: 3 x 3 mm or 4 x 4 mm; mortar requirement approx. 1.5 kg/m²).
4. Embed the DITRA membranes, which must have been cut to size beforehand, into the installed adhesive, the anchoring fleece facing down, and immediately press them in place with a floater or roller, working in a single direction. Orbital sanders can also be effective tools. The curing time of the adhesive must be observed.
   For efficient installation, precisely align DITRA and keep the material tightly stretched with light tension when placing it on the substrate.
   The EasyCut gridlines of the membrane assists with allowing the membrane to lie flat on the substrate.
   A second helper can make installation easier. The individual mats are installed with closely abutting joints.
   Note: if Schlüter-DITRA is to be used for uncoupling and waterproofing, abutting joints and connections must be sealed with the relevant system components. Further details can be found in the notes on waterproofing.
   The same applies for using Schlüter-DITRA on green substrates in conjunction with coverings that are susceptible to discoloration.
5. To prevent any damage to the installed DITRA-material or detachment from the substrate, it is recommended to protect the area from mechanical stresses, e.g. by setting out running boards (particularly in the centre areas used for material transport). Special protective measures may be necessary for outdoor installations, e.g. to shield against direct sunlight or precipitation. Remove any accumulated water in the recesses indentation before applying the cementitious tile adhesive.
6. Immediately after adhering the DITRA mat, tiles can be installed using a cementitious tile adhesive that meets the requirements of the respective covering. The notch size of the trowel must match the tile format. Observe the curing time of the adhesive. All tiles must be solidly embedded in the adhesive. Full contact according to the applicable professional regulations is especially relevant for coverings exposed to high mechanical stresses and in outdoor areas.
   Note: Fill the square indentations with the smooth side of the notched trowel (mortar requirement approx. 2.0 kg/m²) and then notch the cementitious tile adhesive with the notched side of the trowel in a single action. Depending on the tile size or the conditions on site, it may be more efficient to first fill the indentation with the tile adhesive to be used for the installation. Tile installation can begin once the trowelled surface is ready to bear weight. Note that the substrate must be free for dust for the installation. If applicable vacuum the substrate prior to installation or apply a primer in case of doubt.







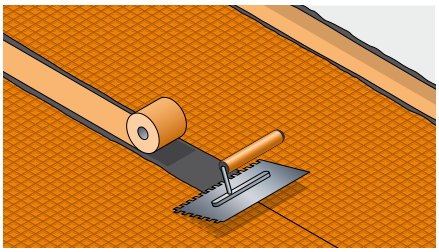
Review any potential material incompatibilities beforehand. If using covering materials with a side length over 30 cm, we recommend a quick-setting tile adhesive with crystalline water binding capacity for fast curing and drying of the mortar.

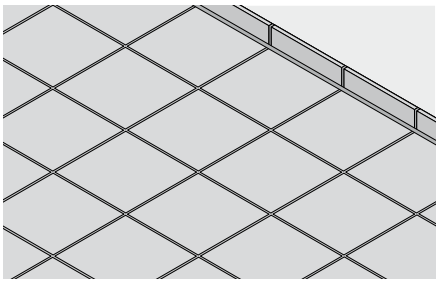
7. Follow the instructions in this data sheet and other relevant technical regulations to install movement joints for perimeter, edge and transition profiles.

Waterproofing with Schlüter®-DITRA

DITRA can be used to create certified waterproofing assemblies with tile coverings, provided the abutting membrane joints and the connections to installed components and upright building structures are carefully sealed. Schlüter-DITRA can be installed in accordance with the waterproofing standards 18531-5 or 18534 applicable in Germany. Water exposure classes: W0-I to W3-I. DITRA also features the national technical approval (abP) required in Germany.
System-certified tile adhesives must be used in areas that require compliance with abP (certificate of technical approval). Please contact us at the address listed in this data sheet for further information about such tile adhesive products and the corresponding certificates of technical approval. We recommend the use of our waterproofing membrane Schlüter-KERDI (see product data sheet 8.1 Schlüter-KERDI) for load class B, "Swimming pools".
Schlüter-DITRA protects the substrate from damage caused by permeating moisture and aggressive substances. For joint sealing, trowel the sealing adhesive Schlüter-KERDI-COLL-L over the abutting joints and fully embed KERDI-KEBA in a minimum width of 12.5 cm over the joint.
To waterproof floor-wall transitions, adhere KERDI-KEBA over DITRA on the floor and directly on the substrate in wall areas in the corresponding width.
The sealing bands should have a coverage of at least 5 cm.
KERDI-KEBA can also be used to create functional connections to fixed structural components such as door and window frames as well as balcony edge profiles made of metal, wood or plastic. The first step is to apply Schlüter-KERDI-FIX to the adhesive surfaces of the structural elements. The remaining width is then adhered to DITRA with KERDI-COLL-L.
The suitability of KERDI-FIX for the respective materials of the structural elements must be verified in advance.
Separate DITRA at existing movement joints or expansion joints and seal the abutting joints with KERDI-FLEX.
KERDI-FLEX should also be used for flexible finishing edges. As an alternative, this can also be done with a sufficient loop of KERDI-KEBA.

Note on floor drains:
Schlüter-KERDI-DRAIN and Schlüter-KERDI-LINE are special drainage systems designed for connection to bonded waterproofing assemblies. Schlüter-DITRA can easily and quickly be combined with these components using pre-fabricated KERDI collars.





Schlüter-DITRA at a glance	
general product properties	
Material	polypropylene
Thickness	3.5 mm
Width	995 mm
Length	5,1 or 30,2 m
Weight	535 g/m²
Storage conditions	not UV-stable in the long term; avoid prolonged exposure to direct sunlight in storage
Adhesive requirement (dry weight) *	
DITRA installation	approx. 1.5 kg/m²
Trowelling over indentations	approx. 1.5 - 2.0 kg/m²
technical properties	
Processing temperature	don't use at temperatures below +5 °C
Resistance to temperature	-30 °C to +70 °C (briefly to +80°C)
Thermal resistance	R= 0.048 m²*k/W
sd value	>100 m
Fire resistance class acc. to EN 13501-1	E
Minimum dimensions	5 x 5 cm
Minimum tile thickness	5.5 mm
Certifications / approvals	
abP	approved
ETA	approved
VOC	A+

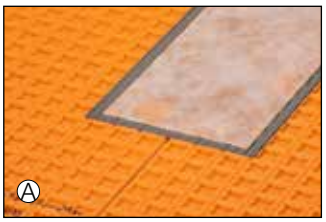
*estimated consumption values for standard thin-set mortars These amounts may vary depending on the utilised product and the conditions at the construction site

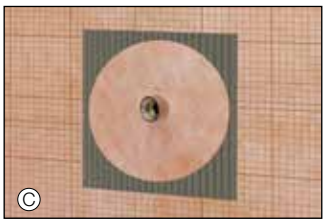
Areas of application for Schlüter®-DITRA

	Load class *	Sample application areas	required breaking strength of covering (DIN EN ISO 10545-4)	maximum compression	Category **
✓	I	Apartment construction, hotel bathroom healthcare rooms	< 1,500 N		EK-W and EK-H
✓	II	Administration, commercial spaces, industrial kitchens, salesrooms, areas used by vehicles with pneumatic tyres	1,500 - 3,000 N	< 2 N/mm²	EK-G
✓	III	Commercial and industrial use, whole-sale, shopping centres areas used by vehicles with super-elas-tic, solid rubber or Vulkollan tyres	3,000 - 5,000 N	2 - 6 N/mm²	EK-M
✓	IV	see group III - areas used by vehicles with polyamide rollers	5,000 - 8,000 N	6 - 20 N/mm²	
✓	V	commercial and industrial use, heavy duty areas, mechanical assembly and warehouses - areas used by vehicles with pneumatic tyres	> 8,000 N	> 20 N/mm²	

* according to the ZDB information sheet "Ceramic floor coverings with high mechanical stress resistance"

** according to the ZDB information sheet "Installing tiles and pavers over uncoupling systems in indoor areas"





Product overview

Ⓐ Schlüter®-DITRA

Length = m	5,1	30,2
Width = 0,995 m	•	•

Ⓐ Schlüter®-KERDI-KEBA (Band)

Thickness: = 0.1 mm

Length = m	5	30
Width = 8.5 cm	•	•
Width = 12.5 cm	•	•
Width = 15.5 cm	•	•
Width = 18.5 cm	•	•
Width = 25.5 cm	•	•

Ⓑ Schlüter®-KERDI-FLEX

Thickness = 0.3 mm

Length = m	5	30
Width = 12.5 cm	•	•
Width = 25.5 cm	•	•

Ⓒ Schlüter®-KERDI-KM /-MV /-PAS (Pipe collars/set)

thickness = 0.1 mm

see product data sheet 8.1

Ⓓ Schlüter®-KERDI-KERECK

thickness = 0,1 mm

Internal corner	2 pc.	10 pc.	50 pc.
pre-fabricated piece 90°	•	•	•
pre-fabricated piece 135°	•		
External corner	**2 pc.**	**10 pc.**	**50 pc.**
pre-fabricated piece	•	•	•

Ⓓ Schlüter®-KERDI-KERECK

thickness = 0,1 mm

Internal corner	5 pc.
pre-cut section	•
External corner	**5 pc.**
pre-cut section	•

Ⓔ Schlüter®-KERDI-COLL-L (sealing adhesive)

Container	4.25 kg
Container	1.85 kg

see product data sheet 8.4

Ⓕ Schlüter®-KERDI-FIX (installation adhesive)

G = grey, BW = brilliant white

Colour	G	BW
Cartridge 290 ml	•	•

see product data sheet 8.3

Schlüter®-KERDI-DRAIN (floor drains) Ⓖ

see product data sheet 8.2

Schlüter®-KERDI-LINE (linear drainage) Ⓗ

see product data sheet 8.7

Schlüter®-KERDI-SHOWER (sloped trays) Ⓘ

see product data sheet 8.6 and 8.8

Schlüter®-KERDI-TS (tub seal) Ⓙ

see product data sheet 8.9

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