KÖSTER

Waterproofing Systems

Damp and Wet Room Waterproofing with the KÖSTER BD System

Waterproofing under tiles

A complete and robust waterproofing is a crucial prerequisite for the long-term usability of damp and wet rooms. Most tiles are inherently waterproof, but many grouting materials are not. For this reason, it is very important to keep the substrate dry and damage-free with the help of a waterproofing layer under the tiles.

In the current DIN 18534: 2017-07, "Waterproofing for indoor applications", the requirements as well as planning and execution principles are defined and established. The waterproofing is applied to the walls and floors of damp and wet rooms, for example under ceramic coverings that serve as trafficked surfaces.

General requirements

The DIN 18534 requires that the substrates on which the waterproofing system is applied onto can, under normal circumstances, withstand at least the stresses caused by the movement of the building components. In addition, the waterproofing must not only withstand being exposed to water and temperature fluctuations but also withstand the alkalinity of concrete and mortar. Depending on the individual water exposure classes, this includes different types of surfaces with different exposure times to spray, service water, or ponding water.

DIN 18 534 - Waterproofing for indoor applications

Water exposure classes

The water exposure classes are subdivided according to the standard into the areas W0-I to W3-I:

W0-I low

Areas with infrequent exposure to water spray

- Wall surfaces above sinks in bathrooms and sinks in domestic kitchens
- Floor areas in homes without drainage such as kitchens, utility rooms, and guest toilets

W1-I moderate

Areas with frequent exposure to water spray or infrequent exposure to service water, without intensification due to ponding water

- Wall surfaces above bathtubs, in showers and bathrooms
- Floor areas in the home with a drain
- Floor areas in bathrooms with or without a drain without high water impact from the shower area

W2-I high

Areas with frequent exposure to spray water and / or industrial water especially on the floor, occasionally intensified by ponding water

- Wall surfaces of showers in sports / commercial facilities
- Floor areas with drains and / or gutters
- Floor areas in rooms with floor-level showers
- Wall or floor surfaces of sports facilities / commercial sites

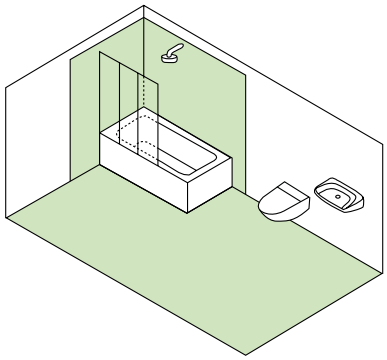
W3-I very high

Areas with very frequent exposure to splash water and / or industrial water and / or water from intensive cleaning processes intensified by ponding water

- Areas in the vicinity of swimming pools
- Areas of showers and shower facilities in sports facilities / commercial sites
- Areas in commercial sites (commercial kitchens, laundries, breweries, etc.)

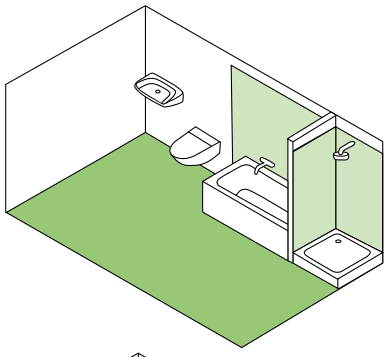
Depending on the expected water exposure, different water exposure classes can be assigned to an application. It can be advisable to assign a higher exposure class to adjacent rooms that are not protected due to insufficient spatial distance or structural measures such as shower partitions.

Classification of the areas to be waterproofed according to water exposure classes



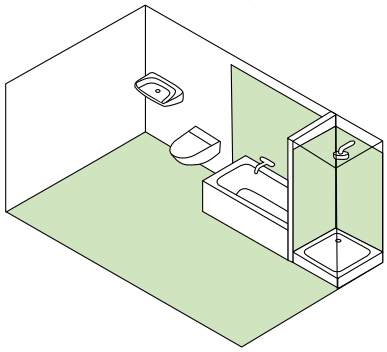
Domestic bathroom with bathtub with shower head and shower enclosure

W0-I	W1-I	W2-I	W3-I



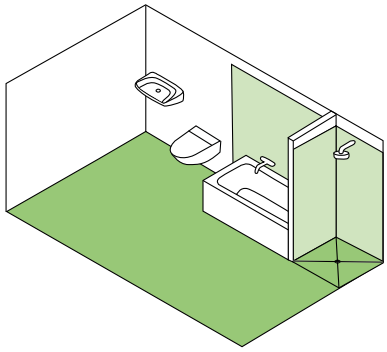
Domestic bathroom with a bathtub without a shower head and a shower tray without a shower partition

W0-I	W1-I	W2-I	W3-I



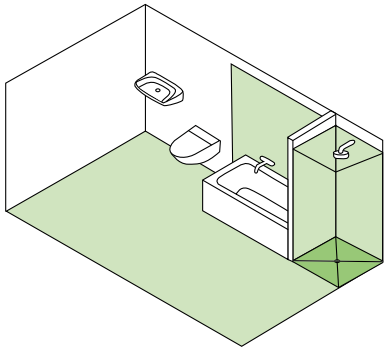
Domestic bathroom with a bathtub without a shower head and a shower tray with a shower partition

W0-I	W1-I	W2-I	W3-I



Domestic bathroom with a bathtub without a shower head and a floor-level shower without a shower partition

W0-I	W1-I	W2-I	W3-I

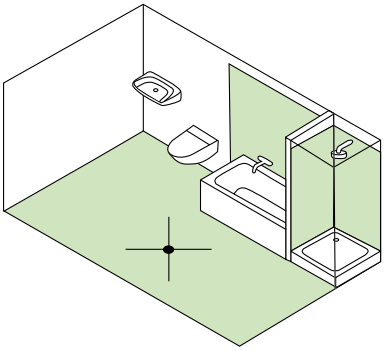


Domestic bathroom with a bathtub without a shower head and a floor-level shower with a shower enclosure

W0-I	W1-I	W2-I	W3-I

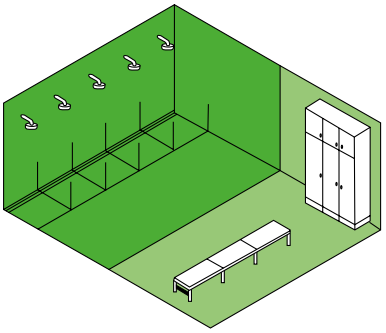
Domestic bathroom with bathtub without shower head and with shower tray with shower partition; Floor drain in the room

W0-I	W1-I	W2-I	W3-I



Row showers in a sports or commercial facility

W0-I	W1-I	W2-I	W3-I

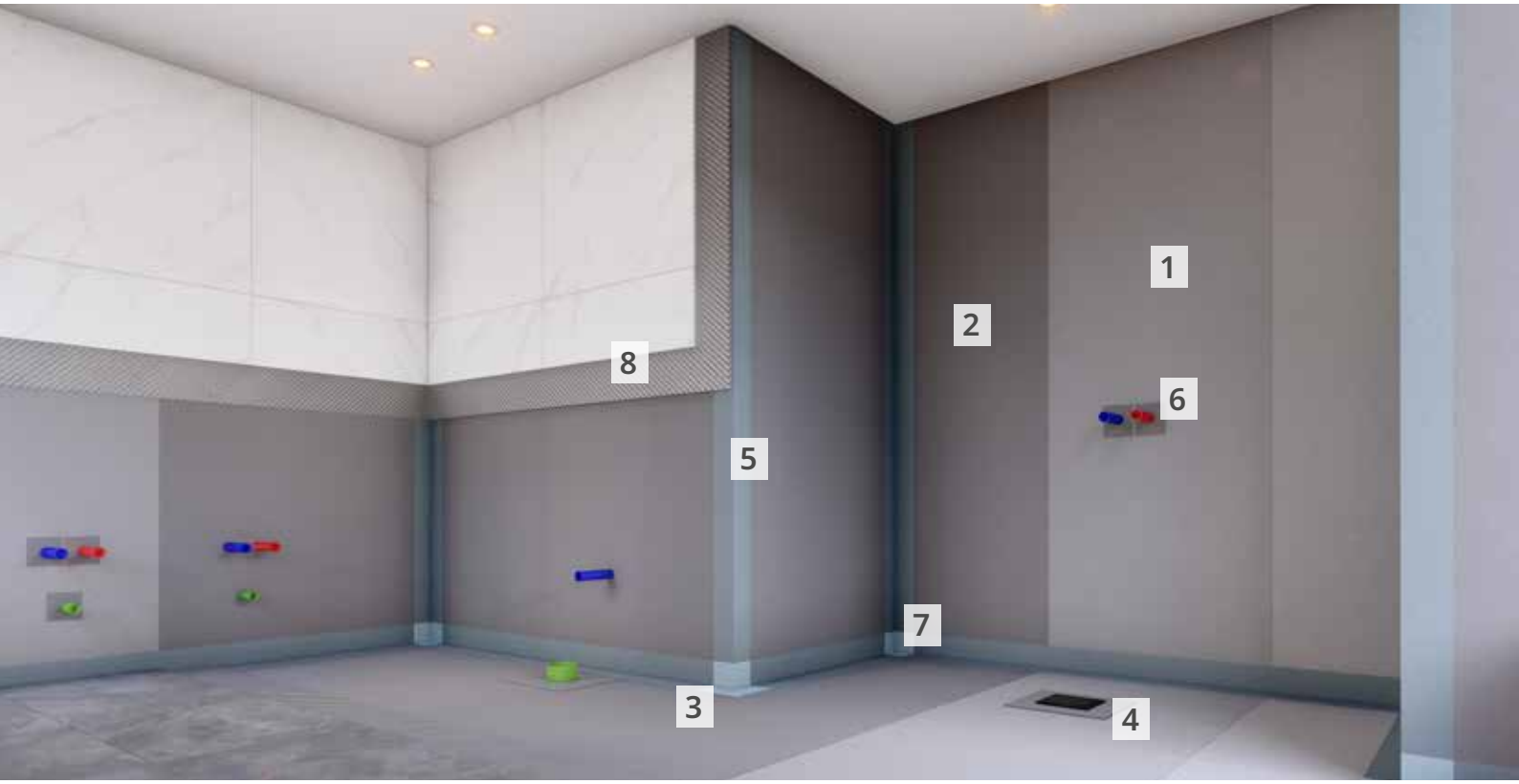


Allocation of the building materials according to the current DIN 18 534-2

Waterproofing design	Water exposure class	Crack bridging class	Layers	Thickness	Product
Cold self-adhesive bitumen membrane with HDPE carrier layer (KSK)	W0-I to W2-I	R0-I to R3-I	1	according to type	KÖSTER KSK SY 15
	W0-I to W3-I	R0-I to R3-I	2		

Allocation of the building materials according to the current DIN 18 534-3

Waterproofing design		Water exposure class	Crack bridging class	Minimum dry film thickness (dmin)	Product
with polymer dispersion (DM)	on walls	W0-I to W2-I	R1-I	0.5 mm	KÖSTER BD 50
	on floors	W0-I to W1-I			
with crack-bridging mineral waterproofing slurry (CM)	on walls and on floors	W0-I to W3-I		2.0 mm	KÖSTER NB Elastic Grey KÖSTER NB 4000
with reactive resins (RM)				1.0 mm	e.g. EP Systems



KÖSTER products for waterproofing under tiles

1 KÖSTER BD 50 Primer

Deep penetrating primer for creating adhesive bridges to the substrate. Consumption: approx. 50 – 150 g / m² depending on the substrate.

2 KÖSTER BD 50

KÖSTER BD 50 is a ready-for-use, solvent-free and easy to apply sealing compound for waterproofing wall and floor surfaces in the KÖSTER BD System under tiles in damp and wet rooms. Consumption: 1.2 kg / m²

3 KÖSTER BD Outside Corner

Elastic pre-formed piece for waterproofing external corners in the KÖSTER BD System under ceramic coverings.
Width: 6 cm, side length: 7.5 cm,
thickness: 0.6 mm.

4 KÖSTER BD Floor Sleeve

Elastic floor sleeve for waterproofing floor drains in the KÖSTER BD System under ceramic coverings.
Dimensions: 35 cm x 35 cm, thickness: 0.6 mm

5 KÖSTER BD Flex Tape K 120

Thin elastomeric joint sealing tape for connecting area waterproofing in areas at risk of cracking in the KÖSTER BD System under ceramic coverings. Delivery form: 10 m roll, 0.6 mm x 120 mm, 50 m roll, 0.6 mm x 120 mm.

6 KÖSTER BD Wall Sleeve

Elastic Waterproofing Sleeve for waterproofing pipe penetrations in the KÖSTER BD System under ceramic coverings. Dimensions: 12 cm x 12 cm, thickness: 0.6 mm.

7 KÖSTER BD Inside Corner

Elastic pre-formed piece for waterproofing inner corners in the KÖSTER BD System under ceramic coverings. Width: 6 cm, side length: 10.5 cm, thickness: 0.6 mm.

8 KÖSTER BD Flexible Tile Adhesive

One-component, mineral flexible adhesive for all mineral materials in construction. Consumption: approx. 1.7 kg / m² per mm of layer thickness.

KÖSTER BD 50 Contrast

Liquid contrast agent for coloring KÖSTER BD 50 before applying the second coat. Consumption: approx. 100 g / 10 kg KÖSTER BD 50

Advantages of the KÖSTER BD System

- absolutely waterproof
- flexible, crack-bridging system
- waterproofing of joints and pipe penetrations
- easy to apply
- perfect surface for applying tile with tile adhesives
- can also be used with underfloor heating
- good adhesion to the substrate
- connections and repairs are easy to make
- non-flammable
- odorless
- mechanical and chemical resistance (hydrolysis, alkalinity, chemicals)
- scratch-resistant
- liquid waterproofing: no seams

Declaration of Performance according to DIN EN 14891 DM, system 3

The KÖSTER BD System can be used as a „normal liquid-applied, waterproof dispersion product for use under tiles and flaggings indoors and outdoors“.

KÖSTER

LEISTUNGSERKLÄRUNG
gemäß Anhang III der Verordnung(EU) Nr. 305/2011
geändert durch die delegierte Verordnung (EU) Nr. 574/2014

Nr. B 290

1. Eindeutiger Kenncode des Produkttyps:

DIN EN 14891 DM

2. Typen-, Chargen oder Seriennummer oder eine anderes Zeichen zur Identifikation des Bauproduktes gem. Artikel 11 Absatz 4:

Chargennnimmer: Siehe Verpackung des Produktes

3. Verwendungszweck:

Normales flüssig zu verarbeitendes wasserundurchlässiges Dispersionsprodukt für die Anwendung unter Fliesen und Plattenbelägen im Innen- und Außenbereich

4. Hersteller:

KÖSTER BAUCHEMIE AG
Dieselstraße 1 - 10
26607 Aurich

5. Systeme zur Bewertung und Überprüfung der Leistungsbeständigkeit:

System 3

6. Harmonisierte Norm:

DIN EN 14891:2012

7. Notifizierte Stellen:

Installation of the KÖSTER BD System

1 **Application of the KÖSTER BD 50 Primer**
KÖSTER BD 50 Primer is applied to the substrate with a brush or roller. The consumption varies depending on the type of substrate, between 50 – 150 g / m². For more detailed information on other substrates, please refer to the Technical Data Sheet.

2 **Prepare the KÖSTER BD 50**
First, KÖSTER BD 50 is stirred in the bucket for approximately one minute using a slowly rotating electric mixer (below 400 rpm).

Installation of the KÖSTER BD Inside Corner

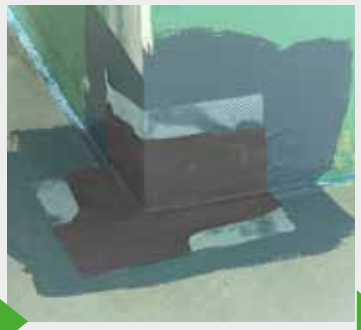
The corner is first prepared with a layer of KÖSTER BD 50, which should cover approx. 10 cm of the wall and 10 cm of the floor.

The KÖSTER BD Inside Corner is embedded in the still fresh layer of KÖSTER BD 50.

The fabric edges of the KÖSTER BD Inside Corner are overworked so that the fabric is completely covered with KÖSTER BD 50.

Installation of the KÖSTER BD Outside Corner

The corner is first prepared with a layer of KÖSTER BD 50, which should cover approx. 10 cm of the wall and 10 cm of the floor.



The KÖSTER BD Outside Corner is embedded in the still fresh layer of KÖSTER BD 50.

The fabric edges of the KÖSTER BD Outside Corner are overworked so that the fabric is completely covered with KÖSTER BD 50.

Installation of the KÖSTER BD Wall Sleeve

The KÖSTER BD Wall Sleeve is pulled over the end of the pipe.

The area around the pipe penetration is prepared with a layer of KÖSTER BD 50. The KÖSTER BD Wall Sleeve is embedded in the still fresh layer of KÖSTER BD 50.

The fabric edges of the KÖSTER BD Wall Sleeve are overworked so that the fabric is completely covered with KÖSTER BD 50.

Installation of the KÖSTER BD Floor Sleeve

The KÖSTER BD Floor Sleeve is positioned above the floor drain.

A hole in the shape and size of the floor drain is cut in the KÖSTER BD Floor Sleeve. Please note that the KÖSTER BD Floor Sleeve should overlap approx. 3 mm inwards into the floor drain.

The surface onto which the KÖSTER BD Floor Sleeve is to be applied must be prepared with a layer of KÖSTER BD 50.

The KÖSTER BD Floor Sleeve is embedded in the still fresh layer of KÖSTER BD 50. The fabric edges of the KÖSTER BD Floor Sleeve are overworked so that the fabric is completely covered with KÖSTER BD 50.

Installation of the KÖSTER BD Flex Tape K 120

The area along the wall-floor transition is prepared with a layer of KÖSTER BD 50, which should cover approx. 10 cm of the wall and 10 cm of the floor.

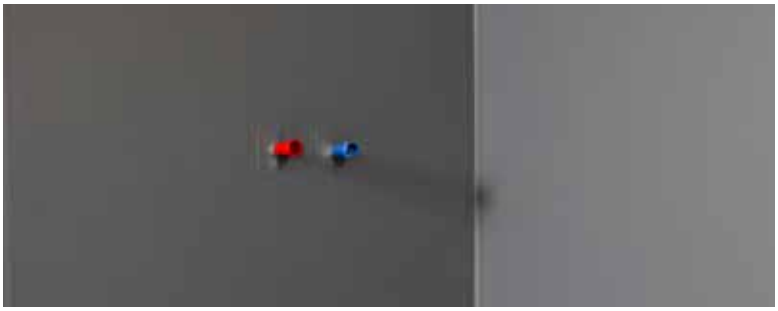
The KÖSTER BD Flex Tape K 120 is embedded into the still fresh layer of KÖSTER BD 50.

The fabric edges of the KÖSTER BD Flex Tape K 120 are overworked so that the fabric is completely covered with KÖSTER BD 50.

The KÖSTER BD Flex Tape K 120 forms a crack-bridging connection of the area waterproofing from wall to floor. It is installed in wall / floor junctions and over inside and outside corners.

Application of KÖSTER BD 50

1 KÖSTER BD 50 is applied with a brush or roller. Waterproofing layers are always applied in at least two layers. The total consumption is approx. 1.2 kg/m². The waiting time between the individual layers is at least 3 hours.



2 The addition of KÖSTER BD Contrast makes it easier to visually inspect the second waterproofing layer in relation to the first waterproofing layer. This is required in accordance with DIN 18534-3: 2017-07, § 8.1. After applying the second layer, the waterproofing must dry for at least 20 hours before further work can be carried out. The finished waterproofing should be visually inspected for defects before tiling.

Applying tiles with KÖSTER BD Flexible Tile Adhesive

The powder component is mixed with 7 – 7.5 liters of potable water in a clean mixing container. Continually mix with a slowly rotating mechanical stirrer while adding the powder.

After the waterproofing is completely cured, the KÖSTER BD Flexible Tile Adhesive is applied with a notched trowel. The consumption depends on the tile size used. Detailed information can be found in the Technical Data Sheet.

Press the pre-wetted tile into the fresh adhesive.

Damp or wet room waterproofing with the KÖSTER BD System.

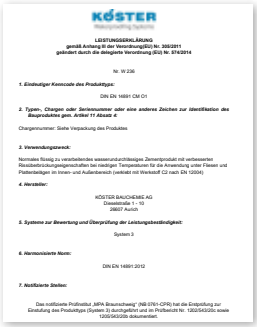
Damp room waterproofing with mineral systems, KÖSTER NB 4000 or KÖSTER Elastic Grey

Crack-bridging mineral waterproofing

In addition to polymer dispersions such as KÖSTER BD 50, the DIN 18 534 also allows crack-bridging mineral sealing slurries such as KÖSTER NB 4000 and KÖSTER NB Elastic Grey. These products are also applied to the sound and stable substrate and ceramic tiles are applied directly on top. Any joints in the substrate must be reflected in the ceramic covering. The use of these building materials requires a minimum dry layer thickness of 2 mm and applies to water exposure classes W0-I to W3-I on walls and floors.

Declaration of Performance according to DIN EN 14891, system 3

According to the DIN EN 14891, KÖSTER NB 4000 and KÖSTER NB Elastic Grey can be used as „liquid-applied, waterprooof products in combination with ceramic tiles and floor coverings“.



KÖSTER

LEISTUNGSERKLÄRUNG
gemäß Anhang III der Verordnung(EU) Nr. 305/2011
geändert durch die delegierte Verordnung (EU) Nr. 574/2014

Nr. W 236

1. Eindeutiger Kenncode des Produkttyps:

DIN EN 14891 CM O1

2. Typen-, Chargen oder Seriennummer oder eine anderes Zeichen zur Identifikation des Bauproduktes gem. Artikel 11 Absatz 4:

Chargennummer: Siehe Verpackung des Produktes

3. Verwendungszweck:

Normales flüssig zu verarbeitendes wasserundurchlässiges Zementprodukt mit verbesserten Rissüberbrückungseigenschaften bei niedriger Temperaturen für die Anwendung unter Fliesen und Plattenbelägen im Innen- und Außenbereich (verklebt mit Werkstoff C2 nach EN 12004)

4. Hersteller:

KÖSTER BAUCHEMIE AG
Dieselstraße 1 - 10
26607 Aurich

5. Systeme zur Bewertung und Überprüfung der Leistungsbeständigkeit:

System 3

6. Harmonisierte Norm:

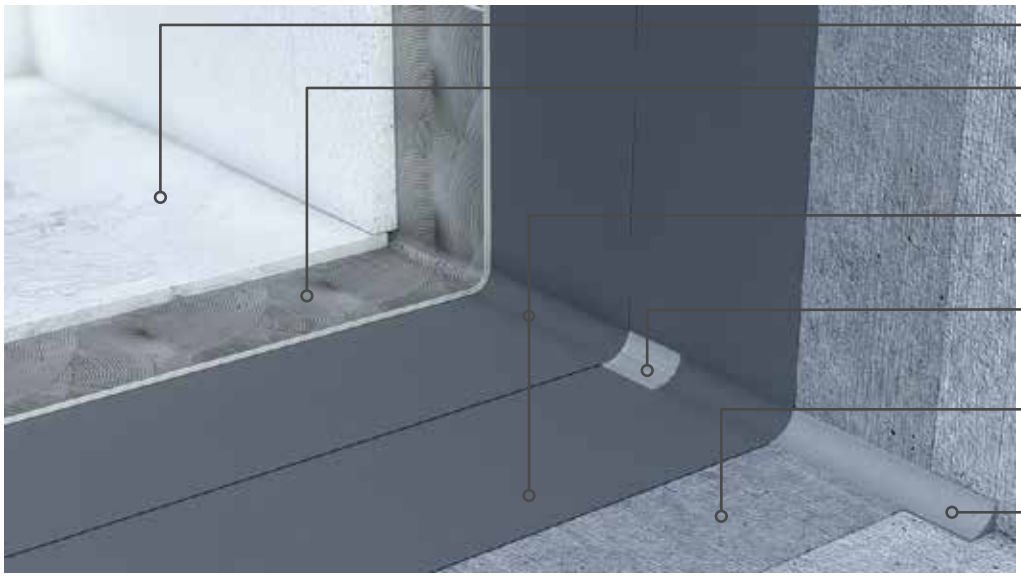
DIN EN 14891:2012

7. Notifizierte Stellen:

Das notifizierte Prüfinstitut „MPA Braunschweig“ (NB 0761-CPR) hat die Erstprüfung zur Einstufung des Produkttyps (System 3) durchgeführt und im Prüfbericht Nr. 1202/543/20c sowie 1205/543/20b dokumentiert.

Key features of KÖSTER NB 4000:

- Combines the good properties of a polymer-modified bitumen thick-film coating (PMBC) and a flexible mineral sealing slurry (MDS).
- The waterproofing allows water vapor diffusion so that it can be applied to damp surfaces and blistering is avoided.
- A large number of different floor coverings or coatings can be used.
- When replacing the trafficked layer, the waterproofing system does not have to be replaced.
- KÖSTER NB 4000 can be plastered over so that a decorative connection to the waterproofing can be made.
- Bitumen-free, resistant to water pressure, viscoplastic, crack-bridging > 2 mm
- For all substrates (load-bearing and customary)
- Easy to apply, creamy and homogenous



Covering / Tiles

Adhesive

(B 540) KÖSTER BD Flexible Tile Adhesive

Surface waterproofing

(W 236) KÖSTER NB 4000

Reinforcement

(W 411) KÖSTER Glass Fiber Mesh

Primer

(M 111) KÖSTER Polysil TG 500

Fillet

(W 532) KÖSTER Repair Mortar Plus

Test reports and certifications KÖSTER NB 4000

- General building authority test certificate (abP) for MDS
- General building authority test certificate (abP) for FPD
- MPA test report crack bridging capability
- Test report: tight against radon at 3 mm DFT
- CE certification according to EN 14891 CM O1

Packaging

25 kg combipackage:
2 x 7.2 kg powder component
2 x 5.3 kg liquid component

Consumption: approx. 2.4 – 4.8 kg/m²

Test reports and certifications KÖSTER NB Elastic Grey

- CE certification according to EN 14891 CM 01
- Testing by MPA Bremen – determination of the carbon dioxide permeability according to DIN EN 1062
- Testing by LPI Ingenieurgesellschaft – acid resistance

Packaging

33 kg combipackage:
1 x 25 kg powder component
2 x 4 kg liquid component
(foil bags)
Consumption: approx. 3.6 – 4.5 kg/m²

We are there for you – worldwide.

Issued: 10/2021

// Contact us

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KÖSTER
Waterproofing Systems

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