KÖSTER
Waterproofing Systems

KÖSTER NB 4000

Technical Data Sheet W 236 025

Issued: 2020-10-20

- General construction. Test certificate, PZ no. P-1202/730/20 MPA BS from May 27, 2020; Mineral sealing slurries for building waterproofing acc. the administrative regulation Techn. Baubest. Serial No. C 3.26
- General construction Test certificate, PZ no. P-1202/908/20 MPA BS of October 7, 2020; flexible polymer-modified thick film coating (FPD) for building waterproofing acc. the administrative regulation Techn. Baubest. Serial No.C 3.26
- MPA test report (1202/543 / 20b) - Pan from April 22nd, 2020 Test according to testing principles for mineral waterproofing slurries and flexible polymer-modified thick film coatings (PG-MDS / FPD)
- MPA test report (1202/543 / 20c) - Pan from April 22, 2020 Crack bridging at normal and low temperatures according to DIN EN 14891: 2012-07
- Test report Dr. Joachim Kemski, No. 2019121601d, tight against radon with a dry film thickness of 3 mm

Two component, crack bridging, mineral thick film waterproofing. Quickly rainproof, can be plastered over

CE 0761	**KÖSTER BAUCHEMIE AG Dieselstraße 1-10, 26607 Aurich 20 W 236 EN 14891 CM O1 Liquid applied waterproof cementitious product with improved crack bridging capabilities at low temperatures for use under tiles and flagging for interior and exterior use (adhered with materials classed C2 according to EN 12004)**
Initial tensile bond strength	≥ 0.5 N/mm²
Tensile bond strength after contact with water	≥ 0.5 N/mm²
Tensile bond strength after heat aging	≥ 0.5 N/mm²
Tensile bond strength after freeze / thaw cycling	≥ 0.5 N/mm²
Tensile bond strength after contact with lime water	≥ 0.5 N/mm²
Watertightness	Waterproof and under ≤ 20 g weight increase
Crack-bridging under standard conditions	≥ 0.75 mm
Crack-bridging at low temperatures - 5 °C	≥ 0.75 mm

Features

KÖSTER NB 4000 is a fast an multi-functional polymer modified mineral coating, for waterproofing of building structures inside and outside. This special product combines the properties and advantages of a polymer modified bitumen thick film sealant (PMBC) and a flexible mineral waterproofing slurry into to the same product.
It is resistant to rain soon after application and can be exposed to pressurized water after 24 hours. It is viscoplastic and crack bridging. KÖSTER NB 4000 is free of bitumen, UV stable, and can be used for adhering insulation boards.
It can be applied to slightly moist substrates, can be painted and stuccoed over with foundation base plasters. KÖSTER NB 4000 can be filled with kiln-dried quartz sand to create fillets and fill surface roughness.

Advantages:

- Bitumen and solvent-free material
- Very fast curing even at very low temperatures (from + 2 °C)
- Very early rain proof (2h)
- Compatible with old bituminous or mineral waterproofing systems
- Can be applied as a mortar, sprayed, rolled and brushed
- Applicable on dry or slightly damp surfaces
- Paintable and coatable with foundation renders and facade plasters
- Crack bridging up to 3.5 mm
- Insulation boards can be installed after approx. 4 h
- Usable on horizontal or vertical surfaces
- Resistant to pressurized water after 24 hours
- UV resistant/ stable
- Can be used under cement screeds
- Can be used under tiles on wet rooms
- Slightly vapor permeable

Technical Data

Color	dark grey
Solids	approx. 90 % by weight
Density (+ 20 °C)	1.1 g / cm³
Application temperature	+ 2 °C to + 30 °C
Working time	approx. 45 min.
Rain resistant after	approx. 2 hours
Bondig of insulation boards	approx. 4 hours
Backfill	approx. 16 hours
Radon-proof	already by 3 mm DFT
Resistant to water pressure	after 24 hrs. (10 m water column)
Crack bridging:	
PG-FDP (24 hs., + 4 °C)	> 2.0 mm at 4.0 mm DFT
PG-MDS (24 hrs.)	> 0.4 mm at 3.2 mm DFT
DIN EN 14891 (Std. climate)	> 3.5 mm at 2.0 mm DFT
DIN EN 14891 (- 5 °C)	> 1.7 mm at 2.2 mm DFT

Fields of Application

- Waterproofing of numerous building structures inside and outside always from the positive side
- Multi-purpose waterproofing material for restoration of buildings
- For repair and restoration of old bituminous or mineral waterproofing layers
- For quick-dry waterproofing requirements, especially on temperatures from 2 ° C to 20 ° C
- Waterproofing under ceramic tiles in indoor and outdoor areas according to loading class W4-E
- Horizontal barrier under masonry walls / used as DPC system
- Used as Polymer Modified Sealing Slurry
- For the adhesion of insulation boards on retaining walls from the positive side
- Repair product used to make a scratch coat or fillet mortar by filling it with kiln dried silica sand

Substrate

The substrate can be dry or slightly moist. It must be clean, free of oil

The information contained in this technical data sheet is based on the results of our research and on our practical experience in the field. All given test data are average values which have been obtained under defined conditions. The proper and thereby effective and successful application of our products is not subject to our control. The installer is responsible for the correct application under consideration of the specific conditions of the construction site and for the final results of the construction process. This may require adjustments to the recommendations given here for standard cases. Specifications made by our employees or representatives which exceed the specifications contained in this technical guideline require written confirmation. The valid standards for testing and installation, technical guidelines, and acknowledged rules of technology have to be adhered to at all times. The warranty can and is therefore only applied to the quality of our products within the scope of our terms and conditions, not however, for their effective and successful application. This guideline has been technically revised; all previous versions are invalid.

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and grease, and free of loose particles. Soft (for example aerated concrete), strongly salt contaminated and absorbent substrates must be prepared with KÖSTER Polysil TG 500 (consumption 100 - 130 g / m², for strongly absorbent substrates up to 250 g / m² possible). Existing fillets should be checked for their functionality and, if necessary, recreated. Edges are to be chamfered.

Damaged concrete or plaster areas as well as cracks and holes with a depth of more than 5 mm are to be repaired with KÖSTER WP Mortar or KÖSTER NB 4000 filled with quartz sand. Defects, blowholes, holes smaller than 5 mm, and old bituminous substrates are prepared with an unfilled scratch coat which will also reduce the likelihood of bubbling.

Scratch coats are made from 2 parts of KÖSTER NB 4000 and 1 part Quartz Sand CT 483 (0.06 - 0.36 mm).

Application
Mixing
Fill the liquid component into a mixing vessel which is large enough to accommodate the liquid and the powder component. Add the powder component to the liquid component in portions while continually mixing with a double paddle slow rotating electrical mixer. Mix both components intensively until a homogeneous, paste-like, lump-free consistency is reached. Minimum mixing time is 3 minutes.

Application
KÖSTER NB 4000 is applied in 2 coats by trowel or sprayed with the KÖSTER peristaltic pump, max. hose length 10 m. The second coat is to be applied as soon as can be done so without damaging the first coat. The layers must be free of defects, even and in the recommended layer thickness. The actual dry layer thickness must not be less than the recommended minimum and must not exceed it by more than 100 %. Areas prone to or in danger of cracking should have KÖSTER Glass Fiber Mesh imbedded in the fresh first layer. The area waterproofing of the wall must be overlapped at least 10 cm onto the front of the floor slab or the foundation. The external waterproofing must be connected to the existing horizontal waterproofing in all areas. Protect the fresh coating from rain and frost, from exposure to water, as well as strong sunlight until the coating has fully cured. The KÖSTER NB 4000 formulation has been specifically optimized for cooler, damp weather, for fast rain resistance, and early curing. In dry, sunny, windy and warm climates, the surface may quickly form a skin. In these cases, the material should be smoothed as soon as it is applied and should not be reworked. Do not add water. If a longer pot life is desired, such as when working in warm or sunny conditions, a retarding agent can be provided by KÖSTER upon request. Provide a mechanical protection (for example KÖSTER SD Protection and Drainage Sheet) before backfilling.

Consumption
Approx. 2.4 – 4.8 kg/m²

Explanation of the consumption tables:
W1-E: Soil moisture and non-pressurized water according to DIN 18533: 2017-07
W2.1-E: Moderate exposure to pressurized water (immersion depth ≤ 3 m) according to DIN 18533: 2017-07
W2-B: Tank waterproofing according to DIN 18535: 2017-07 up to ≤ 10 m filling height
W3-E: Non-pressurized water on soil-covered ceilings according to DIN 18533: 2017-07
W4-E: Splash water and soil moisture on the wall base as well as capillary water in and under walls according to DIN 18533: 2017-07
DFT: minimum dry film thickness
WFT: wet film thickness

When used as a Flexible Waterproofing Slurry (FPD):

Water exposure class NS	DFT [mm]	WFT [mm]	consumption [kg / m²]
W1-E	3.0	3.2	ca. 3.6
W2.1-E	4.0	4.2	ca. 4.8
W2-B	4.0	4.2	ca. 4.8
W3-E	3.0	3.2	ca. 3.6
W4-E	2.0	2.1	ca. 2.4

Consumption in accordance with DIN 18533. The Flexible Waterproofing Slurry (FPD) is not yet part of the standard. The information in the leaflet of the Deutsche Bauchemie "Guideline for the Design and Execution of Waterproofing for Earth-Touched Components with Flexible Polymer-Modified Thick Coatings (FPD)" applies when published.

When used as a PMBC:

Water Exposure Class	DFT [mm]	WFT [mm]	Consumption [kg / m²]
W1-E	3.0	3.2	ca. 3.6
W2.1-E	4.0	4.2	ca. 4.8
W3-E	4.0	4.2	ca. 4.8
W4-E	3.0	3.2	ca. 3.6

Consumption according to the DIN 18533.

When used as a MDS:

Water exposure class	TSD [mm]	NSD [mm]	Consumption [kg / m²]
W1-E	2.0	2.1	2.4
W2.1-E	2.5	2.7	3.1
W3-E	2.5	2.7	3.1
W4-E	2.0	2.1	2.4

Consumption according to the DIN 18533.

Further consumptions:
- as insulation board adhesive 3.0 kg / m²
- as filler mixed with quartz sand * approx. 0.8 kg / m²
- as fillet * approx. 0.3 kg / m

*: including kiln-dried quartz sand (see section "Substrate")

Cleaning
Clean tools immediately after use with water.

Packaging

W 236 025	25 kg combipackage; 2 x 7.2 kg powder component, 2 x 5.3 kg liquid component

Storage
Store the material frost free at room temperatures between + 10 °C and + 25 °C. Protect the material against moisture and direct sunlight. Products should always remain stored in their original

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and unopened containers with the original labels and batch number tags. In originally sealed packages, the material can be stored for a period of 9 months.

Safety
Observe all governmental, state, and local safety regulations when processing the material.

Other

- The product color changes from green (fresh) to dark grey (fully cured).
- The light green color indicates that the polymer liquid is fresh and faultless.
- The intensity of the green color in fresh, may slightly vary according to the light exposure (light scattering) on the construction site, and only acts as an optic effect. It does not play any role in the quality or performance of the material.
- Do not use when the temperature is below +2 °C or above +30 °C.
- Do not use if suspected to rain or snow in the next 2h as the fresh coat is sensitive to water and ice.
- Relative humidity should not exceed 95% as it may affect the final results and curing process.
- Do not apply the material in direct sunlight with temperatures over +30 °C.
- KÖSTER NB 4000 was not developed as a high traffic coat such as a flooring system.
- No gaps caused by substrate imperfections are accepted.

Related products

Quartz Sand 0.06 - 0.36 mm	Prod. code CT 483
KÖSTER Polysil TG 500	Prod. code M 111
KÖSTER Glass Fiber Mesh	Prod. code W 411
KÖSTER WP Mortar	Prod. code W 534 025
KÖSTER SD Protection and Drainage Sheet 3-400	Prod. code W 901 030
KÖSTER Peristaltic Pump	Prod. code W 978 001

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