



## KÖSTER MS-Flexfolie

Technical Data Sheet W 200

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-MPA Braunschweig, March 30th, 2023, general building authority test certificate (abP)(P-1204/065/23 MPA BS), for use as an external building waterproofing for construction joints, crack induced cross sections, and transitions to components made of concrete with high water penetration resistance in accordance with the administrative regulation Technical Building Regulations running No. C 3.30  
 -MPA Braunschweig, general construction supervision. Test certificate (abP)(P-1204/064/23 MPA BS), liquid plastic for waterproofing buildings in accordance with the administrative regulation Technical Building Regulations serial no. C 3.28  
 - MPA Braunschweig, October 17th, 2019 Test for usability of the liquid polymer for waterproofing construction elements in accordance with serial No. C 3.28  
 - MPA Braunschweig, October 21st, 2019 Test for usability of the liquid polymer for waterproofing construction elements in contact with soil against water pressure, in the transition to water impermeable elements acc. serial No. C 3.25  
 - MPA Braunschweig, Fire behavior acc. DIN EN ISO 11925-2:2011-02 with classification report K2301/355/19-MPA BS  
 - Research Report: Accelerated cyclical weathering according to the ASTM G154  
 - kiwa GmbH Polymerinstitut, test report P 13386, "Tests of the waterproofing system (LARWK) KÖSTER MS-Flexfolie in accordance with the guideline for European Technical Approval for liquid-applied roof waterproofing EAD 030350-00-0042", June 1<sup>st</sup>, 2022

### Very easy to apply, one component, fast curing, highly elastic, UV resistant waterproofing with very good adhesion to numerous substrates

 1119	<b>KÖSTER YAPI KİMYASALLARI</b> <b>GEBKİM Kimya İhtisas OSB</b> <b>Atatürk Bulvarı No:6 (41455)</b> <b>DILOVASI / KOCAELİ</b> <b>22</b> <b>EAD 030350-00-0402</b> <b>Liquid-applied roof</b> <b>waterproofing based on silane-</b> <b>modified polymers (SMP)</b>
Reaction to fire Release of dangerous substances Water vapor permeability Resistance to mechanical damage (compressible and solid substrates)  Watertightness Roof slope Loading capacity  Lowest surface temperature Highest surface temperature Service life Resistance to plant roots Resistance to wind loads  Effects of day joints Resistance to mechanical damage (Perforation)  Resistance to fatigue movement  Slipperiness Resistance to UV radiation in presence of moisture Resistance to thermal aging Resistance to water aging	D-d1, d0 S/W 2 $\mu = 980$ (average) M&S (Temperate and extreme climate); TL 4 (extreme low temperature); TH 4 (extreme high temperature) 0,1 bar / 24 h (watertight) S1-S4 (slope < 5 % to > 30 %) P3 (normal, for insulation material with bitumen); P4 (Special for concrete) TL 5 (- 30 °C) TH 4 (+ 90 °C) W2 (10 years) NPĐ 0,7 MPa (concrete); 0,6 MPa (concrete after water storage); 0,2 MPa (bituminous membrane on insulation) Concrete(24 h, 0,7 MPa) I4 (dynamic perforation test); L4 (static perforation test on concrete); L3 (static perforation test on bitumen) Initial - 10 °C (no cracking), 100 days, + 80 °C; thermal aging (- 10 °C, no cracking) NPĐ 400 MJ / m <sup>2</sup> (no visual changes)  100 Tage, + 80 °C (no change) 90 Tage, + 80 °C (no change)

 1020	<b>KÖSTER YAPI KİMYASALLARI</b> <b>GEBKİM Kimya İhtisas OSB</b> <b>Atatürk Bulvarı No:6 (41455)</b> <b>DILOVASI / KOCAELİ</b> <b>16</b> <b>EN 1504-2</b> <b>Regulation of moisture balance,</b> <b>Coating (C) 2.2</b>
Water vapor permeability Capillary absorption and permeability to water Adhesion strength  Response to fire Dangerous materials	Class 1 W <sup>0.5</sup>  Crack bridging system or flexible systems without traffic load $\geq 0.8$ N/mm <sup>2</sup> D-s 1,d0 Materials 5.3 appropriate

#### Features

KÖSTER MS-Flexfolie is an eco-friendly, premium single component, liquid applied, elastic, crack bridging waterproofing material, based on MS Polymer technology. It is characterized by excellent adhesion to a wide variety of building materials and can be applied on dry or slightly moist substrates. It is liquid applied and therefore seamless, which greatly eases application to complicated architectural details. It is characterized by a high UV resistance and stability and it is suitable for indoor and outdoor application. The coat is fast curing and quickly resistant to rain.

The KÖSTER MS-Flexfolie is free of solvents and therefore does not suffer from solvent evaporation in the curing process, that leads to shrinkage and consequent cracking.

The KÖSTER MS-Flexfolie is free of isocyanate, which in contact with moisture, releases carbon dioxide resulting in bubble formation and voids that lead to cohesive failures overtime. This allows it to be used on slightly moist substrates, unlike regular solvent base PU coats.

#### Advantages

- Ready to use material (1 component)
- Seamless waterproofing coat with simple application
- Thixotropic consistency for slope and vertical areas
- Adhesion to multiple substrates
- Excellent weather and UV resistance

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- Eco-friendly product
- Multiple surface application
- Excellent for small repairs as well as new areas of all sizes
- Maintains its properties on temperatures between - 30 °C to + 80 °C
- Resistant to oils, seawater, detergents and several chemicals
- Resistant to hydrolysis, salts, and frost
- Solvent, silicone, water and bitumen free
- Solvent free material
  - Worker and workplace safe, does not produce toxic fumes
  - No shrinkage due to solvent escape during curing
  - No cracking due to shrinkage process on curing
  - Can be applied in higher thicknesses than solvent based coats
- Isocyanate free material
  - Worker and workplace safe, does not produce toxic fumes
  - Does not react with moisture to form carbon dioxide
  - Allows application on slightly moist substrates
  - Does not form bubbles and voids that lead to cohesive failure

### Technical Data

Color	grey (approx. RAL 7040)
Density	1,45 to 1.5 g / cm <sup>3</sup>
Viscosity	26.000 mPa·s
Consistency	Liquid
Adhesion to concrete	2,0 N/mm <sup>2</sup>
Tensile strength (+ 23 °C)	2,0 N/mm <sup>2</sup>
Elongation at break (DIN 52455)	500 %
Crack bridging	2,0 mm
Capillary water absorption (EN 1062-3)	0,004 kg/m <sup>2</sup> ·h <sup>0,5</sup>
Shore A hardness	30-35
UV / Weathering Resistance (ASTM G154)	unchanged after 5000 h
Number of layers	min. 2 layers
Application Temperature	+ 5 °C - + 35 °C
Service temperature	- 30 °C to + 80 °C
Drying time between first- and second-layer	min. 8 hours – max. 24 hours
Complete curing (+ 23 °C)	24 - 48 hours
Recommended application thickness	1 to 2 mm

### Fields of Application

KÖSTER MS-Flexfolie is a waterproofing material for the positive side waterproofing for different situations. Due to its excellent adhesion to most substrates (including masonry, concrete, screed, PVC-U (hard PVC), PP, PE, FRP, plastics, and metal(except copper)) and high elasticity, it is an excellent repair material as well as a complete waterproofing coat for big areas.

- Waterproofing of Exposed Flat Roofs
- Waterproofing of Exposed Terraces
- Waterproofing of wet and damp rooms under tiles (e.g. kitchens, bathrooms, garages)
- Waterproofing of Balconies and Terraces under tiles
- Waterproofing of Flowerbeds and Planter Boxes
- Sealing of connections, pipes and feedthroughs
- Sealing of chimney connections, roof lights, gutters, edge and corner details
- Custom use for connections between different building materials
- Details and connections to KÖSTER TPO membranes

### Substrate

Substrates must be free of loose particles or other bond inhibiting substances. Soiled substrates must be cleaned down to a solid layer. Always choose to remove old paints, oils, fats, organic substances by grinding. Clean off dust completely. Maximum moisture content should not exceed 5%. Concrete substrates must have minimum 28 days of curing. Installation on copper, EPDM, and on permanently wet areas is not possible. Soft PVC Membranes (PVC-P and PVC-C) are offered in a wide variety of chemical formulations. Many of these formulations are not compatible with KÖSTER MS-Flexfolie and KÖSTER cannot therefore warrant any application on these substrates. Use and responsibility for this type of application rests solely on the applicator. Adhesion tests should be carried out before any decisions are made. The best guaranteed, long-lasting solution for these substrates is to completely renovate the roof with a suitable KÖSTER TPO Waterproofing Membrane.

Minimum substrate compressive strength of 25 MPa (N/mm<sup>2</sup>) and cohesive bond strength at least 1.5MPa (N/mm<sup>2</sup>). On interior corners and wall-floor junctions, install a fillet made of KÖSTER Repair Mortar Plus approx. 24 hours prior to the application of KÖSTER MS-Flexfolie. Exterior corners must be broken and rounded.

### Cracks repair

Cracks bigger than 0,5 mm should be treated prior to the installation of the waterproofing coating. Cracks smaller than 0.5 mm are to be cleaned from all contaminations. Prime the crack with KÖSTER CT 121 (or KÖSTER KB-Pox 002 for specific markets) and allow 2-3 hours to dry. Then, apply a layer of KÖSTER MS-Flexfolie and on top the reinforcement polyester mesh KÖSTER Superfleece 10 cm wide, centered over the crack while still wet. Slightly press it and fully cover it with KÖSTER MS-Flexfolie. Allow 6 to 8 h to cure before starting the application of the area waterproofing.

### On concrete and other mineral substrates (except gypsum)

In order to avoid the risk of blistering, KÖSTER CT 121 primer (or KÖSTER KB-Pox 002 for specific markets) must be applied (Consumption 300 - 500 g/m<sup>2</sup>) beforehand when using the KÖSTER MS-Flexfolie. This is then broadcast to rejection with kiln-dried silica sand to increase roughness and improve adhesion of the waterproofing coating.

### On non-absorbent substrates and PVC-U profiles (various plastics e.g. PE, PP, FRP) or metals

The surface must be roughened with a scouring pad (eg. Scotch Brite) and cleaned with alcohol. As a primer, KÖSTER PU 120 is thinly and evenly applied with a lint-free cloth (consumption approx. 30-50gr/m<sup>2</sup>).

### On old bituminous waterproofing membranes:

KÖSTER MS-Flexfolie can also be applied on old bituminous membranes. Nevertheless, bitumen can contain oils that leak during weathering and can lead to discoloration or even detachment of the waterproofing. This may be assessed by installing a test area. Discoloration of the waterproofing caused by old bitumen cannot be excluded.

### On KÖSTER TPO Membranes:

KÖSTER TPO Primer for MS-Flexfolie must be applied on the membrane using an abrasive scrubber (e.g. Scotch Brite), rubbing the membrane with the primer for at least 50 seconds.

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### Application

#### Mixture and tools

- KÖSTER MS Flexfolie is a 1 component ready to use product.
- The material must be well homogenized in the original bucket before using.
- The application can be carried out by using all kinds of brushes and short hair rolls
- Always perform a 1 m<sup>2</sup> test to determine the consumption of the primer and the coat.

**Waterproofing Coat:** 2 x KÖSTER MS Flexfolie (consumption approx. 1.5 kg/m<sup>2</sup> for each 1 mm thickness)

- KÖSTER MS-Flexfolie is applied with a brush, roller, trowel, or other customary tools.
- Fill voids and pours inferior to 5 mm with KÖSTER MS-Flexfolie
- All defects bigger than 5 mm should be previously filled and levelled with KÖSTER Repair Mortar Plus and a minimum 24h curing time of the mortar should be respected before the application of the elastic membrane KÖSTER MS Flexfolie.
- Surface preparation methods for concrete and mortars can be high pressure water, sandblasting, shotblasting or the respective primer, according to the manufacturer instructions and/or the substrate conditions.
- KÖSTER Superfleece can be embedded on top of the first coat on 90° angles, cracks, chimneys, pipes, waterspouts, siphons, cable penetrations. The overlapping should be at least 10 cm.
- KÖSTER Flexfabric is embedded on top of the first coat as an area reinforcement, for flat roofs, balconies and terraces. In normal conditions, the area reinforcement is not mandatory on interior areas.

### Consumption

Approx. 1.5 – 2.5 kg / m<sup>2</sup>

Do not exceed layer consumption by more than 100%. When used as liquid applied waterproofing (FLK), apply 2 mm total layer thickness with reinforcing layer. The installation of reinforcement as well as the application on broadcasted areas requires an increase in consumption by 5 - 10%.

### Cleaning

Clean tools immediately after use with KÖSTER PUR Cleaner. Cured material must be mechanically removed.

### Packaging

W 200 008	2 x 4 kg tubular bags
W 200 025	25 kg bucket

### Storage

Store the material frost free at room temperatures between + 15 °C and + 25 °C. Protect the material against moisture and direct sunlight. Products should always remain stored in their original and unopened containers with the original labels and batch number tags. In originally sealed packages, the material can be stored for a period of 12 months. After opening and partial use close the container again immediately.

### Safety

Wear suitable protective gloves (e.g., nitrile gloves) and protective goggles when working with the material. Observe all governmental, state, and local safety regulations while processing the material.

### Other

- Do not apply KÖSTER MS Flexfolie on very damp substrates or on substrates that are subject to rising damp.

- KÖSTER MS Flexfolie was not developed as a high traffic coat such as a flooring system.
- The final thickness of KÖSTER MS Flexfolie must be at least 1 mm, in order to form a consistent, flexible, continuous, and waterproofing coat.
- No gaps caused by substrate imperfections are accepted.
- Low temperatures retard the curing process and high temperature speed curing.
- High humidity may affect the final results.
- For sloped or vertical surfaces, KÖSTER MS-Flexfolie can be adjusted with KÖSTER KB-Pox Thickening Agent:
  - Inclined surfaces: 2 - 4 wt.%.
    - Wall surfaces (vertical): up to 6 wt.%.

### Related products

KÖSTER CT 121	Prod. code CT 121
KÖSTER KB-Pox Thickening Agent	Prod. code CT 764
KÖSTER KB-Pox IN	Prod. code IN 231
KÖSTER PUR Cleaner	Prod. code IN 900 010
KÖSTER PU Primer 120	Prod. code J 138 250
KÖSTER Superfleece	Prod. code W 412
KÖSTER Flex Fabric	Prod. code W 450 100
KÖSTER Repair Mortar Plus	Prod. code W 532 025

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