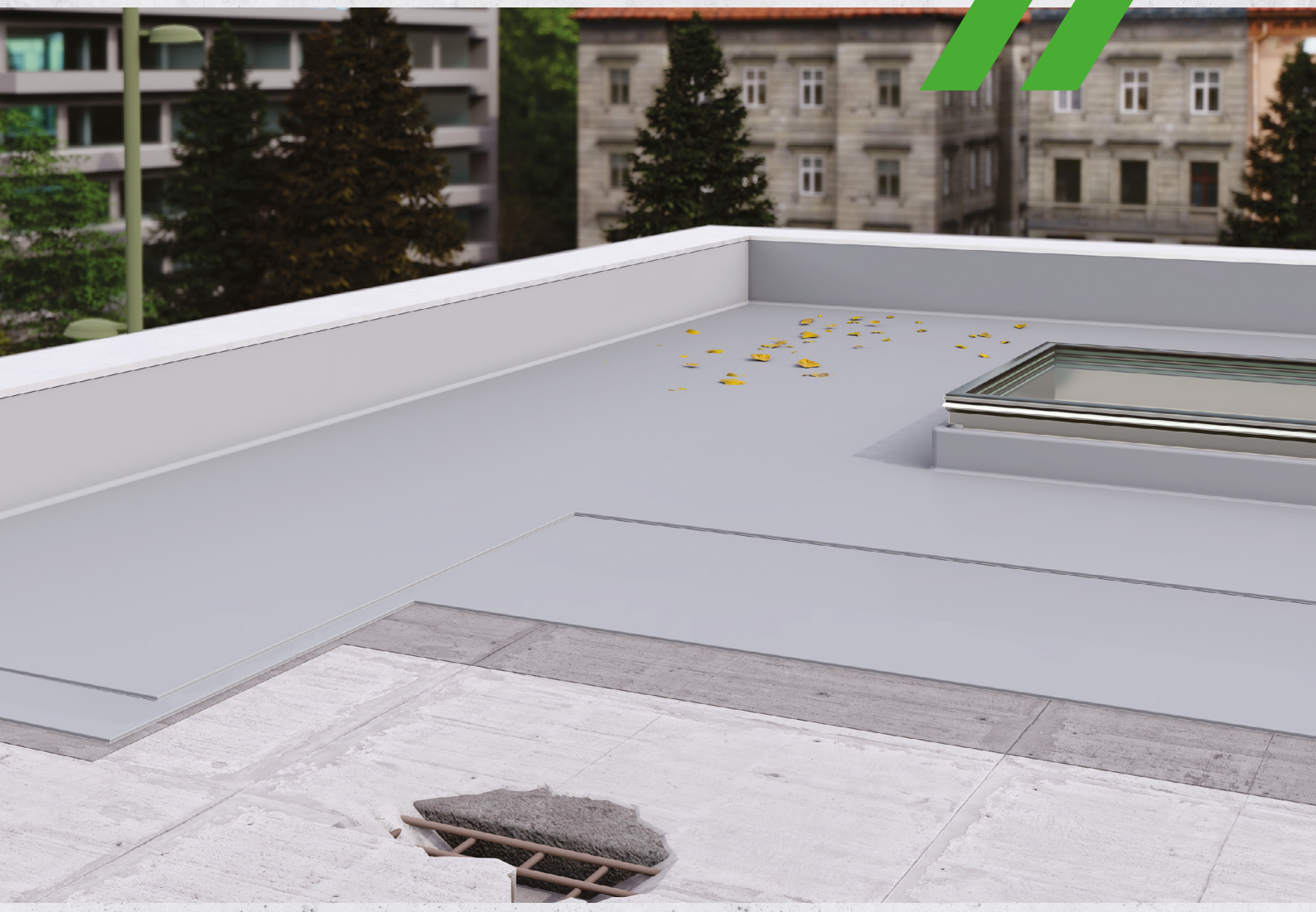
MS W 204 22.V1

KÖSTER

Method Statement

Positive side waterproofing with KÖSTER MS-Flexfolie



KÖSTER BAUCHEMIE AG // Dieselstraße 1-10 · D-26607 Aurich · Tel. 04941/9709-0 · info@koester.eu · www.koester.eu

Table of Contents

KÖSTER
Waterproofing Systems

Table of Contents

KÖSTER
Waterproofing Systems

Table of Contents

KÖSTER
Waterproofing Systems

1 General information

1.1 Scope

This method statement is intended for use by developers, contractors and applicators as a general guideline for the application of the waterproofing product KÖSTER MS-Flexfolie.

While this document describes the tools, equipment, materials and process for preparing and installing the waterproofing product, it must be used and referred to, in combination with the technical data sheet available for the product and its components.

1.2 Manufacturer

KÖSTER BAUCHEMIE AG
Dieselstraße 1-10 Tel. 04941/9709-0
D-26607 Aurich Fax 04941/9709-40

info@koester.eu www.koester.eu

KÖSTER
Waterproofing Systems

1.3 Definitions

MS Polymer
Solvent- and isocyanate-free modified-silane polymer used in the production of adhesives and sealants. They exhibit good adhesion to a variety of different substrates, good temperature and high UV resistance. In addition, they are capable of compensating for mechanical stresses and can be overpainted.

Crack-bridging
Crack-bridging waterproofing means that a waterproofing system remains intact even though the substrate has cracked. Often "crack–bridging" is confused with "elastic". An elastic material may be far from waterproof when stretched. An elastic material may also be waterproof under normal circumstances, but not once water pressure is applied.

Elasticity
This is the ability of a material to resist an external influence upon it and return to its original size when this influence is removed.

Thixotropic
Reversible behavior of certain gels that liquefy when they are shaken, stirred or otherwise disturbed and reset after being allowed to stand.

Hydrolysis
Is the chemical breakdown of substances by water and depends on the chemistry, solubility, pH and the oxidation–reduction potential of compound.

Eco-friendly
The Eco-friendly expression is considered a sustainable and marketing term referring to goods that claim reduced, minimal, or no harm upon the environment.

Positive Side Waterproofing
Positive Side Waterproofing means that the waterproofing layer is applied to the side of the construction element which is in direct contact to the water.

2 System description

2.1 System 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 provides a high UV resistance and stability, allowing it for indoor and outdoor application. The coat is fast curing and quickly resistant to rain. KÖSTER MS-Flexfolie is free of solvents and therefore does not suffer from solvent evaporation in the curing process, which leads to shrinkage and consequent cracking. 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 over time. This allows it to be used on slightly moist substrates, unlike regular solvent-based PU coats.

2.2 Characteristics/Advantages

- Ready to use material (single component)
- Seamless waterproofing coat with simple application
- Thixotropic consistency for slope and vertical areas
- Adhesion to multiple substrates
- Excellent weather and UV resistance
- Eco-friendly product
- Multiple surface application
- Resistant to hydrolysis, salts, and frost
- Silicone, water and bitumen free material
- Solvent- and isocyanate-free material
- 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 other chemicals

2.3 Performance comparison with PU and Acrylic

Property	KÖSTER MS-Flexfolie	Polyurethane*	Acrylic
Environmental friendliness	++	-	++
UV resistance	++	-	+
Weathering resistance	++	+	+
Discoloration resistance	++	-	-
Elasticity	++	+	-
Durability	++	+	-
Non-bubbling	+	-	+
Adhesion to different substrates	++	-	++
Extreme temperatures application	++	++	-
Elasticity at negative tempertures	++	+	-
Mechanical properties/stability	+	++	+
Heat resistance	++	++	-

++ High/+ Medium/- Low *Aromatic solvent based PU

2.4 Main products and components

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.

See online

KÖSTER PU Primer 120
One component PU primer for non-porous surfaces. It promotes the adhesion of polyurethane sealants to non-porous surfaces, such as rigid PVC, aluminium, glass and glazed tiles. The primer also cleans the surface from grease and activates the surface.

See online

KÖSTER Superfleece
High strength polyester nonwoven reinforcement fabric for liquid waterproofing products such as KÖSTER MS-Flexfolie, KÖSTER KBE Liquid Film, KÖSTER Dachflex and KÖSTER BD 50. To reinforce waterproofing in corners and other areas prone to cracking and to connect to gutters, gullies, and similar custom details.

See online

KÖSTER Repair Mortar Plus
Slightly expanding, hydrophobic, fast setting repair mortar resistant to pressurized water.

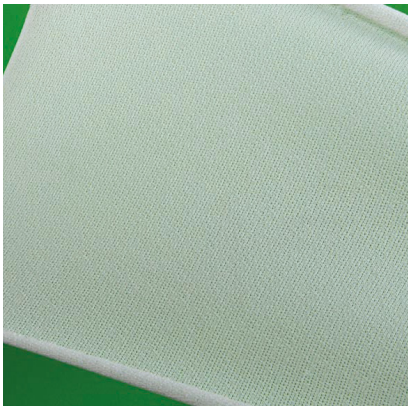
See online

KÖSTER CT 121
Solvent free primer for use on mineral based substrates before the application of KÖSTER MS-Flexfolie, KÖSTER Epoxy coatings and other flooring products.

See online

KÖSTER TPO Primer for MS-Flexfolie
One-component, solvent-based primer to improve adhesion when using KÖSTER MS-Flexfolie on KÖSTER TPO and ECB roofing and waterproofing membranes.

See online



KÖSTER Flex Fabric
Highly flexible, tear-resistant polyester fabric for the reinforcement of thin-layer waterproofing, especially in areas prone to cracking, penetrations or wall/floor connections. Finely woven, synthetic.

See online

2.5 Associated products

KÖSTER Repair Mortar NC

See online

KÖSTER KB-Pox Thickening Agent

See online

KÖSTER PUR Cleaner

See online

KÖSTER PU Primer 120

See online

2.6 Associated literature

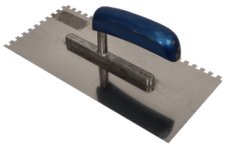
- Technical Data Sheet
- Product Flyer: KÖSTER MS-Flexfolie
- System brochure: KÖSTER MS-Flexfolie
- Product Declaration of Performance for KÖSTER MS-Flexfolie
- KÖSTER MS-Flexfolie: Installation instructions for use with KÖSTER TPO membranes

3 Tools and Equipment

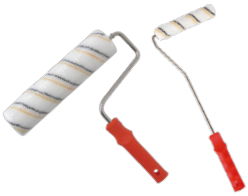
3.1 Tools

Brush

Rounded trowel



Notched Trowel



Roller (150 mm, 250 mm)

3.2 Cleaning

Clean all tools immediately after use with KÖSTER PUR Cleaner.

4 Environmental, health and safety

4.1 Personal Protection Equipment (PPE)

The following is a short overview of Personal Protective Equipment and serves only as a guideline. Contractors and Employers are responsible for meeting the occupational safety guidelines in their countries, states, and localities.

Eye protection

Employers must be sure that their employees wear appropriate eye and face protection and that the selected form of protection is appropriate to the work being performed and properly fits each worker exposed to the hazard.

Head protection

Employers must ensure that their employees wear head protection if any of the following apply: Objects might fall from above and strike them on the head; they might bump their heads against fixed objects, such as exposed pipes or beams; or there is a possibility of accidental head contact with electrical hazards.

Foot and Leg Protection

Employees who face possible foot or leg injuries from falling or rolling objects or from crushing or penetrating materials should wear protective footwear.

Hand Protection

When selecting gloves to protect against exposure hazards, always check with the manufacturer or review the manufacturer's product literature to determine the gloves' effectiveness against specific workplace chemicals and conditions. Gloves commonly used are: Coated fabric gloves and Chemical - and Liquid - Resistant Gloves

Hearing protection

Suitable hearing protection must be provided for the job environment.

4.2 Material safety & First Aid

Every KÖSTER product is labeled with specific information and symbols as to the related dangers. Please consult the respective Material Safety Data Sheet for specifics.

If inhaled:
Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. Medical treatment necessary. Remove person to fresh air and keep comfortable for breathing.

In case of contact with eyes:
Rinse immediately carefully and thoroughly with eye-bath or water. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

After ingestion:
Rinse mouth immediately and drink plenty of water. Rinse mouth thoroughly with water. Do NOT induce vomiting.

After contact with skin:
After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water. Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice. Remove contaminated, saturated clothing. Rinse skin with water or shower. Wash contaminated clothing before use.

4.3 Waste disposal

Disposal recommendations
Dispose of waste according to applicable legislation.

Contaminated packaging
Wash with plenty of water. Completely emptied packages can be recycled.

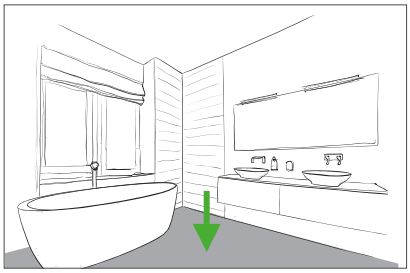
5 Fields of application

5.1 General examples

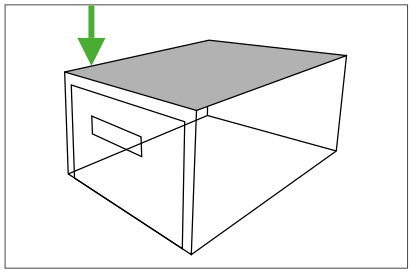
- Waterproofing of exposed flat roofs
- Waterproofing of exposed terraces
- Waterproofing of balconies and terraces under tiles
- Waterproofing of flowerbeds and planter boxes
- Sealing of connections, pipes and feedthroughs
- Sealing of chimney connections, roof lights, gutters, edge and corner details
- Waterproofing of wet and damp rooms under tiles (e.g. kitchens, bathrooms, garages)
- Custom use for connections between different building materials
- Details and connections to KÖSTER TPO, ECB roofing and waterproofing membranes

Concrete flat roofs/roof terraces

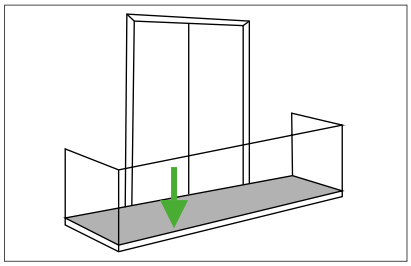
Wet and damp rooms



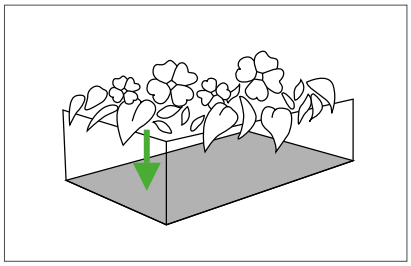
Garage roofs



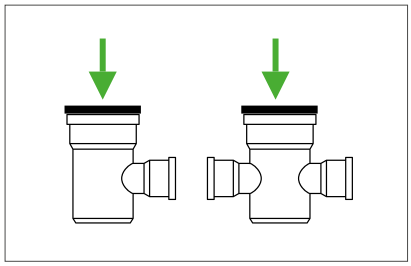
Balconies/terraces



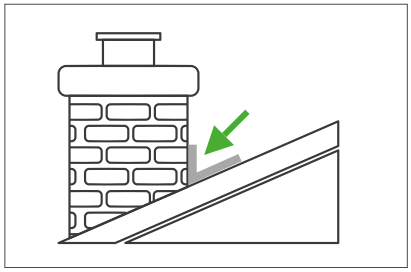
Flowerbeds/planter boxes



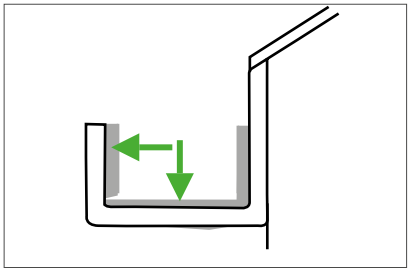
Connections, pipes, feedthroughs



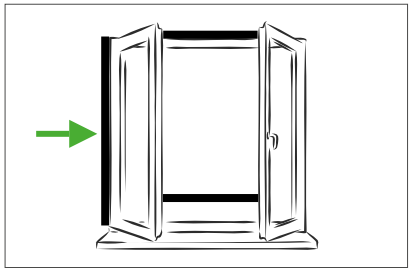
Chimney connections/roof lights



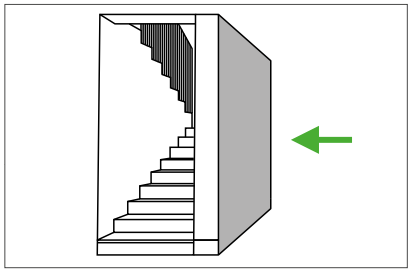
Gutter, edge and corner details



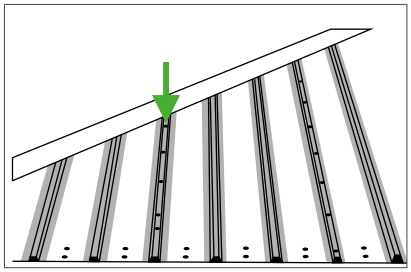
Connections in door/window frames



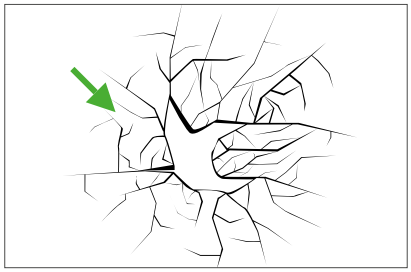
Vertical areas



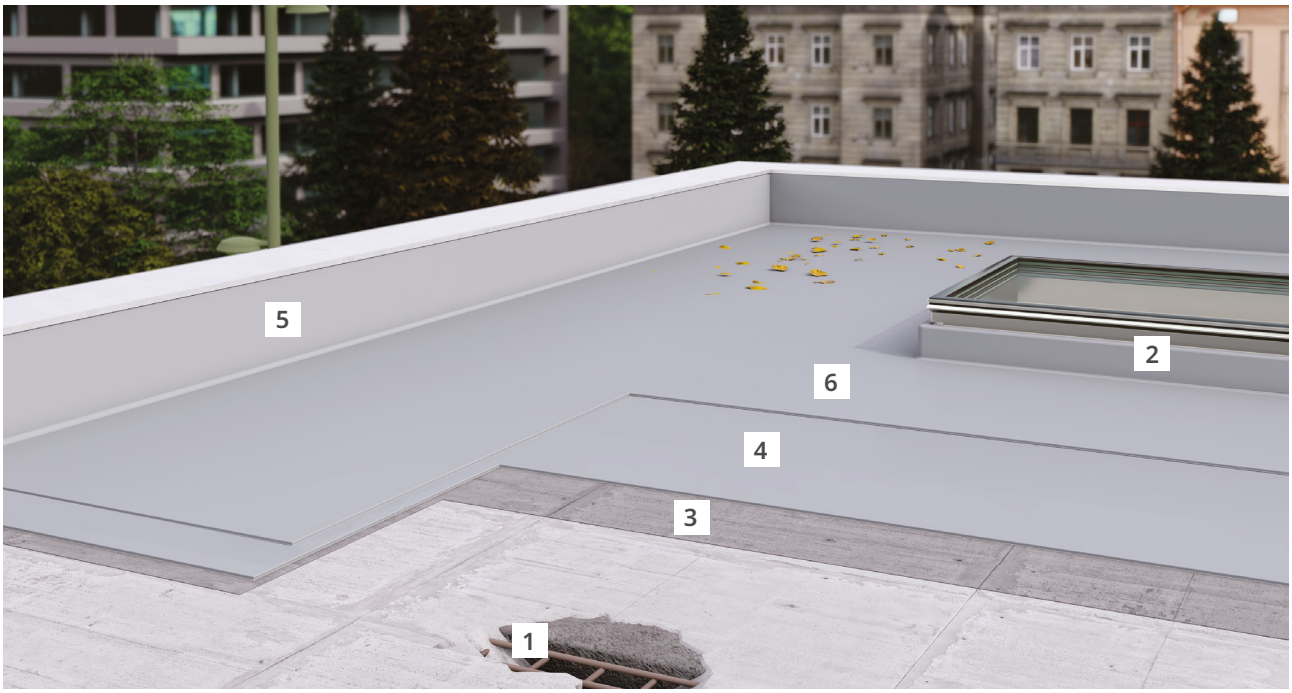
Joints between metal roof panels



Repair of old metal roofs and waterproofing membranes



5.2 Example: Waterproofing of exposed flat roofs and terraces



1. Concrete Repair	KÖSTER Betomor Multi A KÖSTER Repair Mortar Plus
2. Installing fillets	KÖSTER WP Mortar
3. Primer	KÖSTER CT 121
4. Waterproofing layer (first layer)	KÖSTER MS-Flexfolie
5. Waterproofing wall/floor junctions	KÖSTER Superfleece
6. Waterproofing layer (second layer)	KÖSTER MS-Flexfolie

Installation process:

Concrete repair is done using KÖSTER Betomor Multi A or KÖSTER Repair Mortar Plus. Install fillets using KÖSTER WP Mortar. After at least 24 hours, KÖSTER MS-Flexfolie can be applied.

In order to avoid the risk of blistering, KÖSTER CT 121 primer must be applied prior to the waterproofing coat. Apply the first coat of the KÖSTER MS-Flexfolie. This special product is a convenient ready to use material (1 component) for a seamless waterproofing coat with simple application and a thixotropic consistency for horizontal and vertical areas.

Install a reinforcement layer using the KÖSTER Superfleece on wall/floor junctions.

Apply a second waterproofing layer using KÖSTER MS-Flexfolie.

6 Substrate preparation

6.1 Project site conditions

6.1.1 Application temperature

The waterproofing system should be applied at temperatures between +5 °C and +35 °C. Do not apply the material in direct sunlight with temperatures over +35 °C.

6.1.2 Substrate temperature - Dew point

At the dew point, water condenses on the surface to be coated, therefore, coating may take place when the surface temperature is +3 °C above the dew point.

6.1.3 Moisture content in substrate

The maximum moisture content should not exceed 5 %. Concrete substrates must have minimum 28 days of curing. Installation on copper, EPDM, PVC-P (soft PVC) membranes and on permanently wet areas is not possible.

6.1.4 Relative humidity

Relative humidity should not exceed 95 % as it may affect the final results and curing process.

6.1.5 Rain and frost

The waterproofing coating must not be exposed to mist, rain, intense heat, snow, frost and strong wind during the application.

6.2 Substrate requirements

The mineral substrate can be dry or slightly damp, but must be clean, sound and solid as well as free of bonding inhibiting agents such as grease or oil. Remove all bond breaking substances such as old coats, laitance, loose particles, dust, formwork, release oil, etc. The substrate must also be free of silicate sealer, waxes, and silicate curing compounds as well as all forms of gypsum. Concrete substrates must have a minimum 28 days of curing.

6.3 Substrate quality testing

6.3.1 Scratch test

Scratch the substrate with a nail or something similar. If particles come off the surface or if the fingernail can penetrate the substrate, remove the entire weak or sinter layer.

6.3.2 Wipe test

Wipe with your hand over the substrate. If no particles become detached and if the hand remains clean, then the substrate is acceptable.

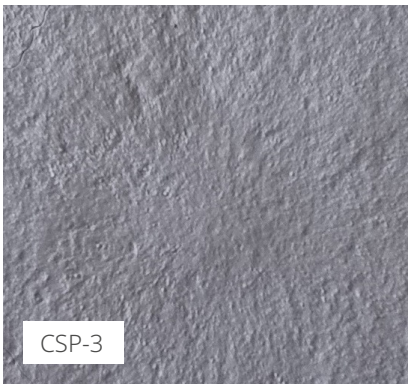
6.3.3 Water test

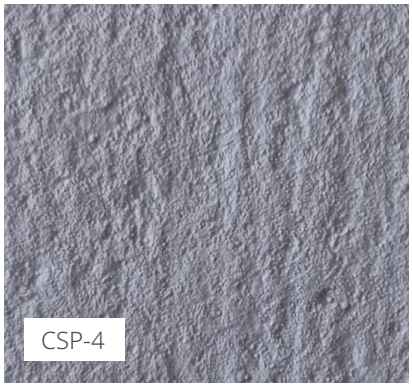
After lightly spraying the surface with water, it can be determined whether there are still separating substances (e.g., formwork oils) on the surface or how strong the absorbency of the substrate is.

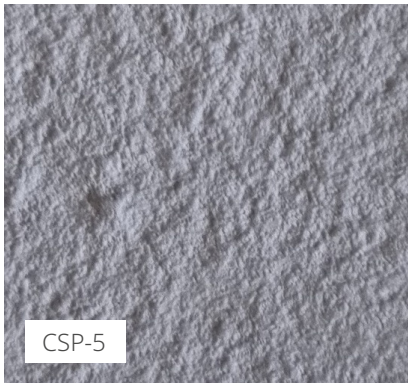
6.4 Preparation

6.4.1 Concrete surfaces

Concrete surfaces must be prepared to have an open pore surface free of laitance. The surface roughness must present a structure corresponding to a Concrete Surface Profile CSP-3, CSP-4 or CSP-5 according to the guidelines by the International Concrete Repair Institute (ICRI). The surface must then be intensively cleaned prior to the installation. Corners and surface repairs shall be made of KÖSTER Repair Mortar Plus approx. 24 hours prior to the application of KÖSTER MS-Flexfolie.







Grinding
Suitable for creating a CSP-1 to CSP-3.

High-pressure water blasting
(at least 350 bar)
Suitable for creating a CSP-3 to CSP-10. In case there is formwork release oil on the surface, apply a suited detergent to the surface before cleaning with the water jet.

Sandblasting or **shotblasting**
Suitable for creating a CSP-2 to CSP-8.

6.4.2 Masonry

Masonry walls must be mechanically cleaned and freed from efflorescence prior to the application of the waterproofing system. Uneven brick or block work must be first rendered flush with KÖSTER Repair Mortar Plus enhanced with KÖSTER SB-Bonding Emulsion.

6.4.3 Steel substrates

Steel substrates must be cleaned and free from dust, oil, grease and any other pollutants.

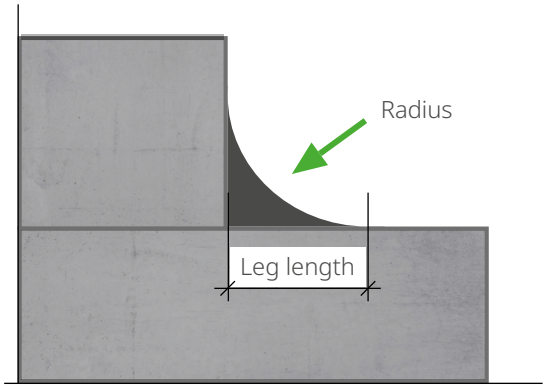
6.5 Levelling and repairing the surface

Honeycombed areas, cavities, recesses and chipped out areas, as well as all holes or irregularities deeper 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 liquid applied waterproofing system KÖSTER MS-Flexfolie.

6.6 Preparing fillets

On interior corners and wall/floor junctions, a fillet must be installed to reduce stress concentrations in the walls, and therefore in the coating.

Install fillets (leg length of approx. 4 – 6 cm) made from KÖSTER Repair Mortar Plus at least 24 hours before applying the first coat of the KÖSTER MS-Flexfolie.



6.7 Priming the surface

6.7.1 Non-absorbent, plastic and metal substrates

The surface must be roughened with a scouring pad (e.g., Scotch Brite) and cleaned with alcohol. As a primer, KÖSTER PU Primer 120 is thinly and evenly applied with a lint-free cloth before applying the KÖSTER MS-Flexfolie. Non-absorbant surfaces such as PVC-U profiles or various plastics like PE, PP, FRP or even metals can be covered with KÖSTER MS-Flexfolie.

6.7.2 Mineral substrates (except gypsum)

In order to avoid the risk of blistering, KÖSTER CT 121 primer must be applied 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. Immediately afterwards, the surface is broadcast to rejection with Quartz Sand with a grading curve of 0.4 - 0.8 mm consumption approx. 0.4 kg/m^2. After broadcasting, the loose sand has to be removed with a vacuum.

6.7.3 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. Softening of the material is not also excluded and the mechanical and the elastic properties of the KÖSTER MS-Flexfolie might be severley affected.

6.7.4 On KÖSTER TPO Membranes

KÖSTER TPO Primer for KÖSTER MS-Flexfolie must be applied on the membrane using an abrasive scrubber (e.g. Scotch Brite). After a few minutes that the primer has dried out, apply the material to avoid contamination of the area.

6.8 Crack repair

One of the most significant advantages of the KÖSTER MS-Flexfolie is the crack-bridging ability, therefore it is highly recommended to use in covering cracks, whether small cracks (smaller than 0.5 mm) or large cracks (up to 5 mm).

Cracks larger than 0.5 mm should be treated accordingly either by filling or injecting with cementitious repair mortar prior to the installation of the waterproofing coating. Cracks smaller than 0.5 mm are to be first cleaned from dust, loose particles and all contaminations. Prime the crack with KÖSTER CT121, applied by brush and allow it 2-3 hours to dry.

After preparing the crack and priming it, apply the first layer of KÖSTER MS-Flexfolie on top the primer, then adhere the KÖSTER Superfleece 10 cm wide, centered over the crack while it is still fresh. Slightly press it and fully cover it with a second coat of the KÖSTER MS-Flexfolie. Allow 6 to 8 hours to cure before starting the application of the area waterproofing.

7 Application/Installation instructions

7.1 Applying KÖSTER MS-Flexfolie

KÖSTER MS-Flexfolie is a one-component, highly elastic, easy-to-apply waterproofing product. Based on MS polymer technology, it combines unique characteristics resulting in a multi-purpose waterproofing and repair material that can be applied in different areas. It has excellent adhesion to various substrates. Additionally, due to its UV stability, it is suitable for indoor and outdoor use. KÖSTER MS-Flexfolie gives a seamless waterproofing layer. It can be applied with a brush, roller, trowel, or other customary tools.

7.1.1 Brush application

Applying by brush mostly suitable on crack repairs, small areas, and transitions to other materials and details. Apply a generous coat of material on substrate. In case of reinforcement, embed the KÖSTER Superfleece in the first layer. After the KÖSTER Superfleece has been covered and the material has been cured, the second layer for the waterproofing area can be applied.

7.1.2 Nylon roller application

Applying by nylon roller is mostly suitable on large areas, and transitions to other materials and details. Apply a generous coat of the material on the substrate. In case of reinforcement, embed the KÖSTER Superfleece in the fresh coat. After the KÖSTER Superfleece has adhered to the first coat, the second layer for the waterproofing area can be applied. Make sure there is no air entrapped in the KÖSTER Superfleece. If overlaps of superfleece are needed, they should be approx. 10 cm.

7.1.3 Trowel application

KÖSTER MS-Flexfolie can be applied by toothed trowel for special areas. Apply a primary coat of the KÖSTER MS-Flexfolie on the substrate and in case of reinforcement needed, embed the KÖSTER Superfleece in the fresh first coat then cover it with a second coat.

7.2 Applying KÖSTER MS-Flexfolie on cracks

One of the most significant advantages of the KÖSTER MS-Flexfolie is the crack-bridging ability, therefore it is highly recommended to use it for covering cracks, whether small cracks (smaller than 0.5 mm) or large cracks (up to 5 mm). Cracks larger than 0.5 mm should be treated accordingly either by filling or injecting with cementatious repair mortar 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 and allow 2-3 hours to dry. Then, apply a layer of KÖSTER MS-Flexfolie and on top install the 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 hours to cure before starting the application of the area waterproofing.

7.3 Surface details

7.3.1 Corners and wall/floor junctions

It is highly recommended to reinforce corners and wall/floor junctions using the KÖSTER Superfleece, prior to any waterproofing application. All substrates must be sound, clean, free of dust, oil and any loose particles.

Apply the KÖSTER CT 121 primer first to the corner then broadcast with quartz sand (0.4 - 0.8 mm). Install the first layer of KÖSTER MS-Flexfolie with the help of a brush or roller. Adhere the KÖSTER Superfleece strip with a width of 10 cm into the fresh KÖSTER MS-Flexfolie without creating any creases or bubbles and press it down with a roller.

Apply the second layer of KÖSTER MS-Flexfolie “fresh in fresh”. A total layer thickness of at least 2 mm including the reinforcement layer must be achieved. The fleece reinforcement must be completely covered with KÖSTER MS-Flexfolie and the KÖSTER MS-Flexfolie extended a minimum of 5 cm beyond the fleece. Make sure there is no air entrapped in the KÖSTER Superfleece. If overlaps of the KÖSTER Superfleece are needed, they should be approx. 10 cm.

For inside and outside corners, first apply a coat of the KÖSTER MS-Flexfolie. It is recommended to secure the corners by adhering a circle patch using the KÖSTER Superfleece with approx. diameter of 8 cm as shown in the figure to the fresh coat of the KÖSTER MS-Flexfolie. Apply the second layer of KÖSTER MS-Flexfolie “fresh in fresh”.

7.3.2 Around pipeline

Small diameter pipelines

Prepare a 20 x 20 cm square cut piece of the KÖSTER Superfleece, then cut a hole in the fleece with a diameter 2 cm smaller than the diameter of the pipe. Prepare a fleece strip with a width of 15 cm and a length that exceeds the pipe perimeter by 5 cm. Make sure that the pipe is clean and free of dust, oil, or any other contaminants.

Now start applying the first coat of the KÖSTER MS-Flexfolie on the neck around the pipeline and for a distance of 15 cm away from the connecting substrate.

While the coat is still fresh, adhere first the square-cut piece of the KÖSTER Superfleece through the pipe neck. Press firmly to make sure that the piece fully adheres to the substrate. Make sure that there is no air entrapped underneath the fleece.

Then adhere the round strip in the fresh coat around the pipe neck, making sure that the overlap with the square piece on the horizontal surface is at least 2 cm.

Then apply the second coat of the KÖSTER MS-Flexfolie on the square part and the round strip. The KÖSTER Superfleece must be totally covered and the coating protruding at least 5 cm from the sides of the fleece.

Large diameter pipelines

Prepare a strip from the KÖSTER Superfleece with a width of 30 cm and a length that exceeds the pipe perimeter of minimum 5 cm, then make the special tailor-made cuff on one side of the strip of approx. 15 cm (as shown in the figure) to allow it to wrap the pipe easily without causing any crease in the fleece.

Now start applying the first coat of the KÖSTER MS-Flexfolie on the neck around the pipeline and for a distance of 15 cm away from the connecting substrate.

Now adhere the special tailor-made cuff prepared with the KÖSTER Superfleece on the fresh first coat of the KÖSTER MS-Flexfolie. Make sure to press it firmly to the pipe. Make sure that there is no air entrapped underneath the fleece.

Then apply the second coat of the KÖSTER MS-Flexfolie on the fleece. The KÖSTER Superfleece must be totally covered and the coating protrudes 5 cm at least from the sides of the fleece.

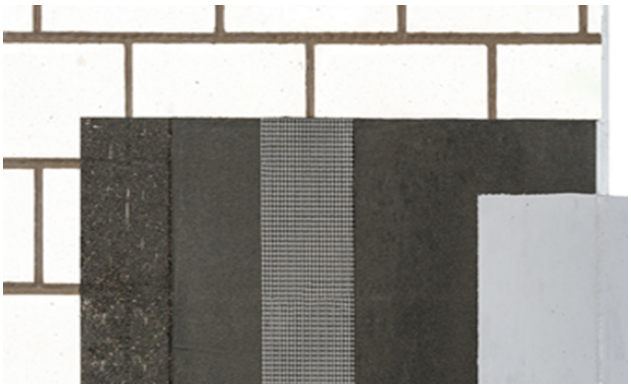
7.3.3 Sealing joints and rivets in steel roofs

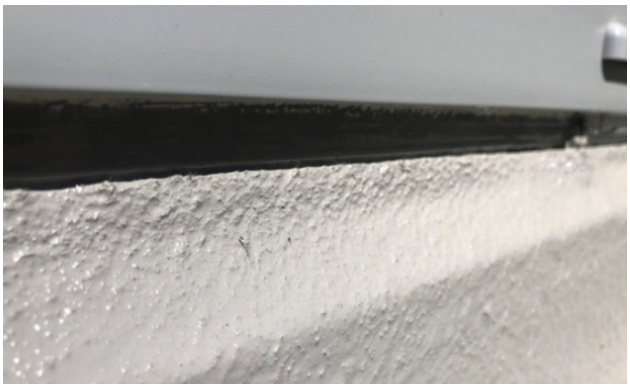
Apply a first coat of KÖSTER MS-Flexfolie. Immediately adhere a longitudinal strip with a width of 10 cm using the KÖSTER Superfleece to cover each row of rivets, embedded in KÖSTER MS-Flexfolie before the coat dries out.

Apply the second coat of KÖSTER MS-Flexfolie “fresh in fresh”. A total layer thickness of at least 2 mm including the reinforcement layer must be achieved. The fleece reinforcement must be completely covered with KÖSTER MS-Flexfolie and the KÖSTER MS-Flexfolie extended a minimum of 5 cm beyond the fleece. Make sure there is no air entrapped in the KÖSTER Superfleece.

7.3.4 Connections between doors/windows and walls

Apply a first coat of KÖSTER MS-Flexfolie. Immediately adhere a longitudinal strip covering the corners and the edges of the doors and windows using the KÖSTER Superfleece embedded in KÖSTER MS-Flexfolie before the coat dries out. Apply the second coat, to cover the KÖSTER Superfleece. Make sure there is no air entrapped.





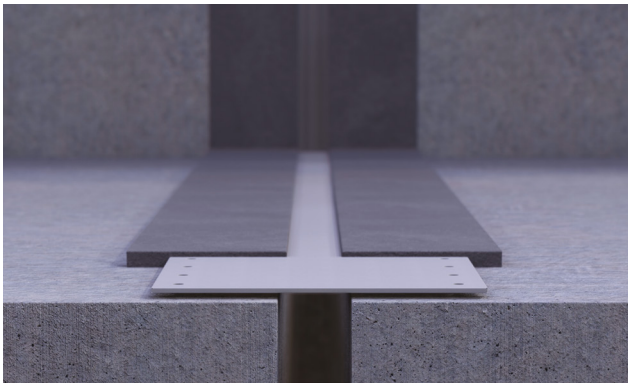
7.4 Moving joints

If dilation joints ≥ 35 mm are present in the structure, these should be sealed with the KÖSTER Joint Tape 20/30 before starting with the application of the KÖSTER MS-Flexfolie.

KÖSTER KB-Pox Adhesive is applied to the prepared substrate on both sides of the joint so that both sides of the KÖSTER Joint Tape 20/30 are embedded into the adhesive at least 40 - 50 mm. The layer thickness of the KÖSTER KB-Pox Adhesive should be approx. 1 - 2 mm.
The KÖSTER Joint Tape 20/30 is then immediately embedded into the fresh adhesive and pressed into the adhesive using a hand roller or a similar suited tool. Make sure that the tape has complete contact to the adhesive.

The KÖSTER Joint Tape 20/30 can be installed in the middle with a slightly concave form (omega profile) to allow for greater displacements of the joint.

24 hours after the installation of the KÖSTER Joint Tape 20/23, apply the KÖSTER MS-Flexfolie on top of both sides of the adhesive, the joint tape remains free in the middle.



8 General consumption guidelines

Approx. 1.5 – 2.5 kg/m²

Waterproofing Coat: 2 x KÖSTER MS-Flexfolie
(consumption approx. 1.5 kg/m² for each 1 mm thickness)

Do not exceed layer consumption by more than 100 %.

9 Quality Control

9.1 Adhesion test

In the case of unknown or critical substrates, an adhesion test should be carried out before starting the waterproofing. For this purpose, depending on the substrate, a primer is selected (KÖSTER TPO Primer for KÖSTER MS-Flexfolie or KÖSTER PU Primer 120).

The primer is applied to a cleaned, dry area of the surface and, after drying, KÖSTER MS-Flexfolie is applied with an approx. 5 cm wide strip of KÖSTER Superfleece to a roughened surface. One end of the strip is left freely exposed.

After a curing time of at least 2 days at 15 - 20 °C (longer at lower temperatures), the adhesive strength is tested and assessed by peeling it off by hand. The specimen must be fully cured prior to the peel strength test. Pulling the sample too early could lead to incorrect results. It is not necessary that the sample can only be pulled off the substrate with destruction, since the force that is achieved when pulling off by hand is significantly higher than the adhesive strength required for a functional waterproofing. When pulling off the hardened sample, a clear resistance should be felt, this is usually completely sufficient for an applicable waterproofing.

9.2 Quality control for layer thickness

The layer thickness is controlled with the KÖSTER Wet Layer Thickness Gauge. All measurements should be documented properly. In areas with penetrations, more measurements should be taken.

The stepped side of the KÖSTER Wet Layer Thickness Gauge is pressed into the fresh waterproofing. After pulling out the gauge, the layer thickness can be verified.

20 tests for every 100 m² should be done.

10 General notes

10.1 Material storage

- Store the material frost free at room temperatures between +15 °C and +25 °C.
- Protect the material against moisture and direct sunlight.
- Storable in originally sealed containers for at least 12 months
- Products should always remain stored in their original and unopened containers with the original labels and batch number tags.
- After partial use, bags must be immediately closed and turned upside down once to seal the bag and prevent entrapped air from curing the material.

10.2 Packaging

2 x 4 kg tubular bags

25 kg bucket

10.3 Important considerations

- Application temperature: +5 °C to +35 °C
- Service temperature: -30 °C to +80 °C
- Drying time between first and second layer: Min. 8 hours, max. 24 hours
- Complete curing: 24 to 48 hours
- Recommended application thickness: Min. 1 - 2 mm

10.4 Limitations

- Do not apply KÖSTER MS-Flexfolie on very damp substrates or on substrates which 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.
- Low temperatures retard the curing process, high temperatures speed curing.
- No gaps caused by substrate imperfections are accepted.
- High humidity may affect the final results.

11 Certifications

- **MPA Braunschweig, Fire behavior acc. DIN EN ISO 11925-2:2011-02, October 17th, 2019**
  Usability of the liquid polymer for waterproofing construction elements in accordance with serial No. C 3.28
- **MPA Braunschweig, classification of reaction to fire in acc. EN 13501-1:2007+A1:2009, October 21st, 2019**
  Usability of the liquid polymer for waterproofing construction elements in contact with soil against water pressure, in the transition to water impermeable elements according to serial No. C 3.25 ERA
- **MPA Braunschweig, Fire behavior acc. DIN EN ISO 11925-2:2011-02 with classification report K2301/355/19-MPA**
  Usability of the liquid polymer for waterproofing construction elements
- **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 1st, 2022

12 Legal disclaimer

This method statement reflects general cases with standard parameters. It is not suitable as a step-by-step guide for all and each waterproofing projects as the conditions on site at the moment of the application cannot be foreseen. It is solely the applicator's responsibility to decide on the actual procedure considering the specific situation on the construction site. In any case, KÖSTER's Terms of business are valid and can be viewed under www.koester.eu