

Complete product range

The Green Pages of Construction Chemicals

Edition 2020 / 2021



EDITORIAL

The KÖSTER BAUCHEMIE AG specializes in the manufacture and development of high-quality waterproofing systems. In its first chapter, our catalog "Green Pages of Construction Chemicals" deals with different types of waterproofing systems in detail; including basements, tanking, and area waterproofing.

In the case of integral waterproofing in new construction, additives are mixed with the concrete. In the case of positive/negative side waterproofing vertical injection of masonry can be used to repair structures.

Construction is a constant battle against water. KÖSTER products supply engineers and applicators with the most innovative solutions on the market for their daily challenges. We offer diverse professional waterproofing systems covering the variety of fields of application in construction and design.

In construction waterproofing, the problem goes further than simply stopping liquid water. Water vapor diffusion is a common problem with concrete floors, and the KÖSTER VAP systems provide a solution. Waterproofing against aggressive mediums such as acids in sewage systems require optimal solutions. These are presented together with the suitable products under the CT (Coatings) section.

The Green Pages catalogue includes all of our most important systems and is conveniently sorted by fields of application, and serves as a reference book for ideal solutions. Whether you are working on new construction structural waterproofing or concrete protection and repair, you can find the optimal solution quickly and easily.

As always, our consultants are available for assistance so please don't hesitate to contact us. Simply visit our website www.koster.eu for further information and to find your local sales representative!

With best regards from Aurich,

Dr. Dieter Köster

KÖSTER BAUCHEMIE AG



The fastest way to your waterproofing products – the KÖSTER distribution channel

A one-stop-shop for product guidance and delivery service

KÖSTER systems and products stand out due to their exceptionally easy and user-friendly application. Nonetheless, technical solutions require technical explanations. That's why we offer comprehensive trainings and technical consultation in order to ensure appropriate application. Our distribution network is based on a worldwide system of experienced technical consultants who serve as your first contact for technical questions and the delivery of our products – if required, even directly to your construction site.

How to reach your contact person

If you are not yet a KÖSTER customer, please contact our international department for more information – everything necessary will be arranged immediately. Alternatively, all relevant information and contact details of the technical consultant in charge of your area are available on the internet:

 info@koster.eu

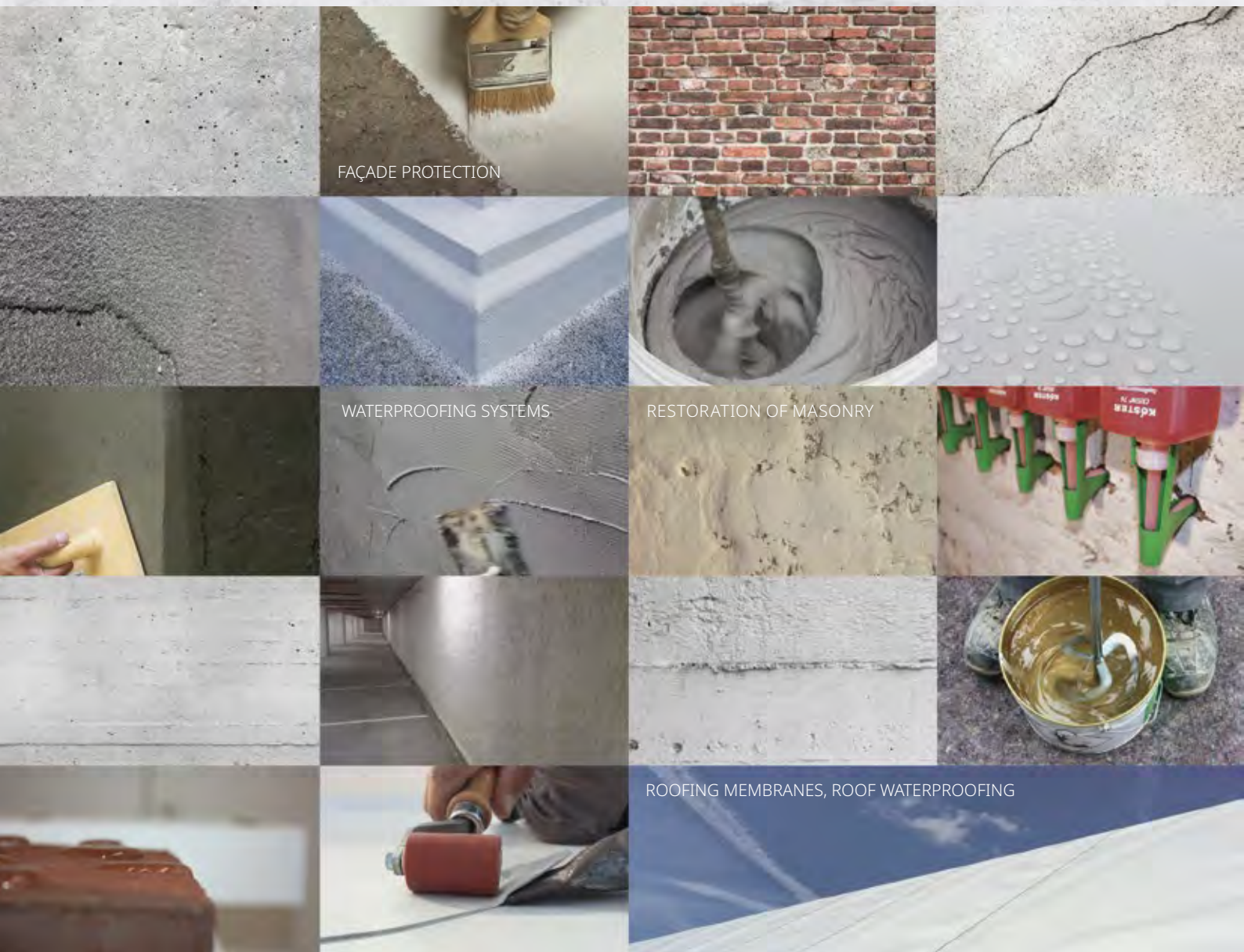
 www.koster.eu

Content



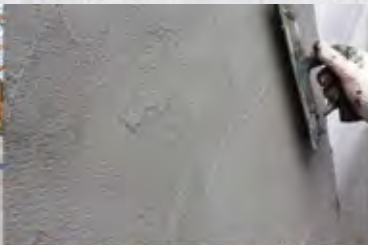
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Fields of Application





COATINGS



CONCRETE PROTECTION AND REPAIR



WET ROOM WATERPROOFING



JOINT SEALING



SELF LEVELING UNDERLAYMENTS



INJECTION SYSTEMS



KÖSTER BAUCHEMIE AG

More than 35 years of waterproofing experience

KÖSTER BAUCHEMIE AG has specialized in waterproofing products and systems for decades. These systems protect and preserve buildings and structures worldwide.

Whether it is the restoration of historic buildings, waterproofing new buildings, restoration of masonry, waterproofing of wet basements, roofs or façades: with our comprehensive product range we have the optimal solution.



Effective waterproofing systems around the world

KÖSTER waterproofing systems and products are applied worldwide. With production facilities at our headquarters in Germany and subsidiaries in Bulgaria, China, Croatia, India, Japan, the Netherlands, Poland, Portugal, Turkey, the UK and the USA KÖSTER products are sold around the world.. A large network of agencies and distribution centers in Germany, Europe and overseas guarantees that KÖSTER products are where they are needed shortly after they are ordered.

Environmentally friendly products of the highest quality

The KÖSTER BAUCHEMIE AG invests a lot of time and effort in the research and development of new waterproofing systems and products. As a responsible manufacturer, KÖSTER BAUCHEMIE AG places great value on preserving the environment by developing and producing environmentally friendly products through resource saving production.

Test certificates and regular monitoring by third party laboratories confirm the high quality of KÖSTER waterproofing systems.



Our experienced technical consultants support architects, building owners and applicators with advice and practical help.



Every product reflects state of the art technology and is subject to stringent quality controls.

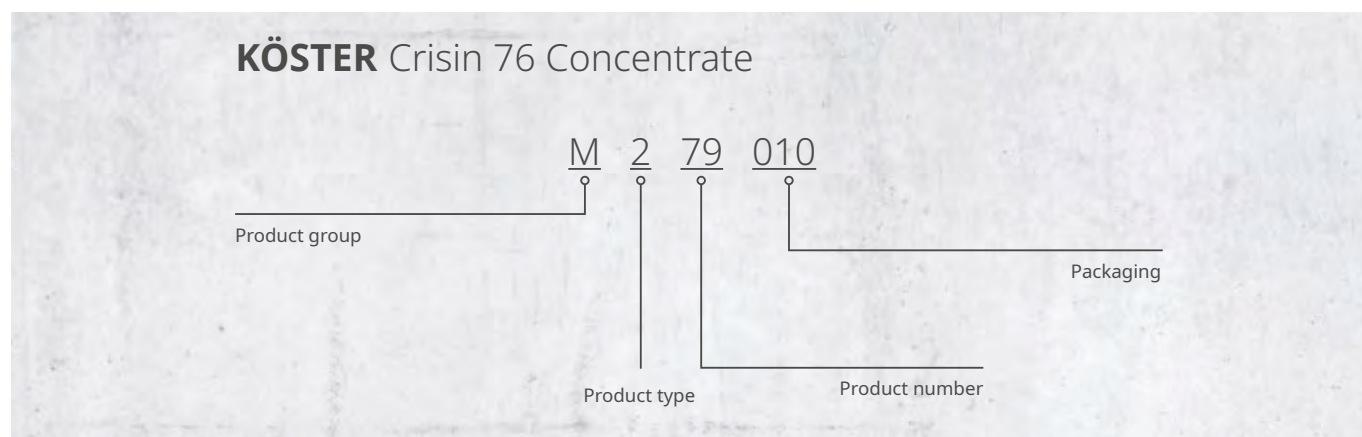
Your reliable partner in construction

The distribution of our products via technical consultants ensures that applicators receive the support they need in order to apply our products effectively and properly. Waterproofing systems from KÖSTER – you can rely on them!

From professionals for professionals: Products from KÖSTER BAUCHEMIE AG have been developed and produced to prove their value at all times during professional applications – optimized for on-site use and easy to apply with short, time saving application and curing times.



The article number system explained in brief:



Article numbers are sorted according to field of application. As a result, product groups include complete systems for the respective field of application. For example, the product group "IN" (injection) not only includes injection resins but also associated injection packers, injection pumps, spare parts and tools. This makes finding products easy. Additionally, the Green Pages are no longer split into two parts with the first half covering fields of application and the second half composed of product descriptions. Instead, product descriptions and an overview of corresponding fields of application have been combined together and are separated by section. For instance, the first section, waterproofing, distinguished by a capital "W", features all waterproofing products followed by fields of application in waterproofing such as external/ internal basement waterproofing and the waterproofing of tanks and pipes. The article numbers have the following structure:

[M 279 010 \(KÖSTER Crisin 76 Concentrate\)](#)

The M stands for "Masonry" and represents the field of application restoration of masonry and anti-mold systems. A complete list of all fields of application is listed on the first page.

[M 279 010 \(KÖSTER Crisin 76 Concentrate\)](#)

The first number (in the example "2") indicates the type of product:

- | | |
|--------------------------------------------------------|-------------------------------|
| 1. Primers / substrate preparation | 6. Plaster / Anti-mold boards |
| 2. Main products: Coating / paint / injection material | 7. Additives |
| 3. Finish / sealer | 8. Waterproofing membranes |
| 4. Broadcast / reinforcement | 9. Tools / accessories |
| 5. Mortars / sealing pastes | |

[M 279 010 \(KÖSTER Crisin 76 Concentrate\)](#)

The following two numbers (in the example "79") indicate the product number in each category.

[M 279 010 \(KÖSTER Crisin 76 Concentrate\)](#)

The last three numbers indicate the delivery form. For example, "010" means 10 l, or 10 kg, respectively.

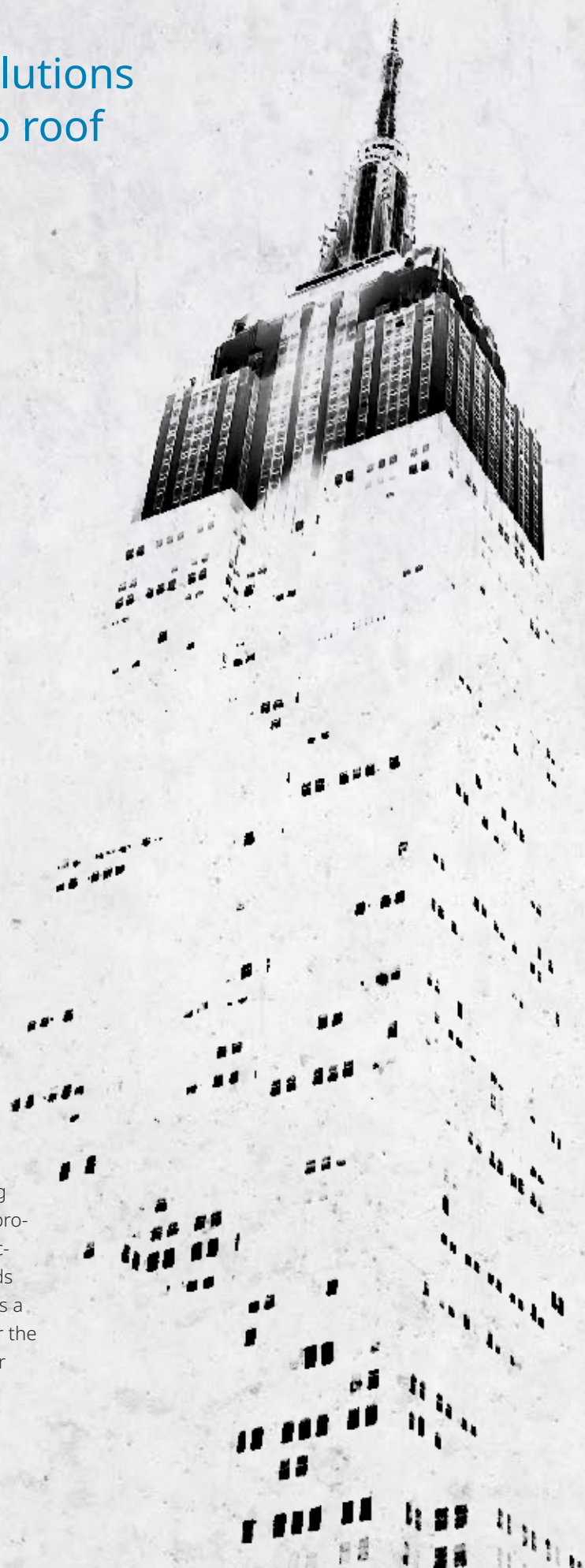
An additional letter at the end indicates a further specification. For example, W 210 008 B (KÖSTER 21 B component).

In the case of roofing membranes, the article number is completely comprised from the product description:

The article number for the roofing membrane KÖSTER TPO 1.8 – 2.10m is RT 818 210 (Roofing TPO / "8" = waterproofing membrane / 18 = 1.8 / 210 = 2.10 m width). The standard color is light grey. Other colors are indicated by an additional letter (for example: RT 818 210 W stands for white).

Waterproofing solutions from basement to roof

We have been developing and producing waterproofing systems since 1982 that protect and preserve valuable building structures, meeting with the highest standards all along the way. In short, where water is a problem, we are there with a solution for the owners, engineers, architects, and all our clients.





Waterproofing Systems

Basement, tank, and area waterproofing



KÖSTER Bitumen Primer

W 110 010
10 l bucket

Solvent containing dust-binding bitumen primer. Suitable for KÖSTER KSK cold applied self adhesive waterproofing membranes and polymer modified bitumen thick film sealants. Suitable as bonding agent for old bitumen.

Consumption: approx. 150 - 200 ml/m²



KÖSTER KSK Primer BL

W 120 015
15 kg bucket

Solvent-free primer for the application of KÖSTER KSK waterproofing membranes and KÖSTER Polymer Modified Bitumen Coatings above 5 °C. Strongly adhesive, based on emulsified bitumen with a high synthetic content..

Consumption: approx. 250 - 400 g / m²



KÖSTER Bitumen Emulsion

W 190 030
30 kg hobbock

Solvent-free, low viscosity bitumen emulsion with excellent adhesive properties. It can be used as a primer for KÖSTER KSK Membranes or KÖSTER Polymer Modified Bitumen Coatings or waterproofing, for example in concrete protection and damp-proofing of structures.

Consumption: approx. 200 - 300 g/m² per coating



KÖSTER MS-Flexfolie

W 200 008
2 x 4 kg tubular bags

W 200 025
25 kg bucket

KÖSTER MS-Flexfolie is a single component, solvent free, highly 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. Due to its UV stability it is suitable for indoor and outdoor use. KÖSTER MS-Flexfolie does not contain isocyanates, is quickly resistant to rain as well as occasional foot traffic, aging, hydrolysis, UV-rays, salts, and frost.

Consumption: approx. 1.5 – 2.5 kg / m²



KÖSTER 21

A multi purpose waterproofing product with excellent adhesion to dry and moist substrates. KÖSTER 21 is a 2 component, solvent-free, liquid applied, elastic and crack bridging material. It is liquid applied and therefore seamless, which greatly eases application to complicated architectural details. Due to its UV stability it is suitable for indoor and outdoor use. The white color reflects sunlight and reduces building surface temperatures. The fast curing coating is highly flexible, resistant to occasional foot traffic, aging, hydrolysis, UV-rays, frost, and salt. KÖSTER 21 seals against synthetic oils and aliphatic hydrocarbons with high boiling points (up to 2 bar).



Article No.: W 210 020

Consumption: 2.5 - 3.0 kg / m²

Packaging: 20 kg Combipackage;
1 x 8 kg Powder;
2 x 6 kg Liquid



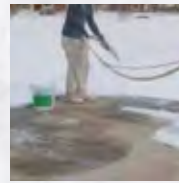
Liquid roof waterproofing



Waterproofing balconies/terraces



Waterproofing on bitumen



Foundation waterproofing

KÖSTER KD 1 Base

W 211 007
7.5 kg bucket

W 211 015
15 kg bucket

Fast setting, mineral sealing slurry with high resistance against aggressive ground moisture and pressurized water. Used in combination with KÖSTER KD 2 Blitz Powder and KÖSTER KD 3 Sealer for the negative side waterproofing of mineral surfaces such as in internal basement waterproofing. The KÖSTER KD System stops flowing water and forms a permanent waterproofing layer on masonry and concrete.

Consumption: Approx. 1.5 - 2.5 kg/m²



KÖSTER KD System

W 219 018
7.5 kg KD 1; 7.5 kg KD 2; 3 kg KD 3

System package for the negative side waterproofing of mineral surfaces against pressurized water such as in internal basement waterproofing. The KÖSTER KD System stops flowing water and forms a permanent waterproofing layer on masonry and concrete. All components of the KÖSTER KD System combined in one package.

Consumption: KÖSTER KD 1 Base: approx. 1.5 - 2.5 kg / m²; KÖSTER KD 2 Blitz Powder: approx. 1.0 - 2.0 kg / m²; KÖSTER KD 3 Sealer: approx. 0.5 kg / m²



KÖSTER NB 2 White

W 222 025
25 kg bag

White mineral coating for the waterproofing of mineral substrates. Waterproofing layers made of KÖSTER NB 2 are resistant to pressurized water, and possess a high pressure and abrasion resistance. For area waterproofing of new construction and restoration, for internal and external basement waterproofing.

Consumption: Approx. 3 - 5 kg / m²



KÖSTER NB 1 Grey

Watertight mineral waterproofing with subsequently crystallizing agents. Suitable for positive side and negative side waterproofing. A waterproofing made of KÖSTER NB 1 Grey possesses excellent pressure and abrasion resistance, as well as chemical and sulphate resistance. Approved by the building authorities and tested in accordance with the potable water guidelines. For area waterproofing in new construction and restoration, e.g. waterproofing of basements and tanks.



Article No.: W 221 025
Consumption: Approx. 2 - 4 kg / m²
Packaging: 25 kg bag



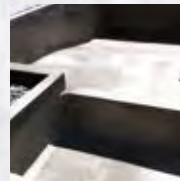
Internal basement waterproofing



Civil engineering or urban planning



Infrastructure



Water tanks

KÖSTER NB Elastic Grey

W 233 033

33 kg: powder - 25 kg bag, liquid - carton (2 x 4 kg foil bags)

For abrasion resistant waterproofing of concrete and masonry structures which are in danger of cracking. KÖSTER NB Elastic Grey is a 2-component system, bridges cracks up to 2 mm and is resistant to pressurized water. It is suitable for the waterproofing of balconies, terraces and crack bridging waterproofing of concrete elements, also under tiles. Radonproof.



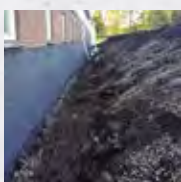
Consumption: Approx. 3.6 - 4.5 kg / m²

KÖSTER NB 4000

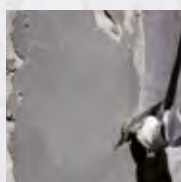
A polymer modified mineral coating for waterproofing building structures inside and outside. It is resistant to rain soon after its application and can be exposed to pressurized water after 24 hours of curing time. KÖSTER NB 4000 is elastic and crack bridging and suitable for waterproofing in areas such as basements, foundation slabs, masonry, and the repair of defective waterproofing layers.



Article No.: W 236 025
Consumption: Approx. 2.4 - 4.8 kg / m²
Packaging: 25 kg combipackage; 2 x 7.2 kg powder component, 2 x 5.3 kg liquid component



External basement waterproofing



Moist substrates



Precast concrete production



Base waterproofing

KÖSTER KBE Liquid Film

W 245 006
6 kg bucket
W 245 024
24 kg bucket

Solvent-free, highly elastic bitumen / rubber based sealing compound. For high quality external waterproofing of construction members in ground contact, such as basements. Also suitable for waterproofing under protective screed (so called sandwich waterproofing), crack bridging waterproofing of concrete floors, flat roofs and much more. Elongation: > 900 %.

Consumption: Waterproofing: Approx. 1.0 kg / m² / mm per coat; Primer: Approx. 250 g / m² undiluted in one coat; Seam sealing: Approx. 1.0 kg / m² / mm layer thickness.



KÖSTER Bikuthan 2C

W 250 028
28 l hobbock; liquid component
25 l; powder component 3.75 kg

Solvent-free, crack-bridging, stable, two-component, polymer modified bitumen thick film sealant with polystyrene light fillers in accordance with DIN EN 18533. Approved by the building authorities. For waterproofing construction members in ground contact such as basements.

Consumption: Approx. 4.5 - 5.7 l / m²



KÖSTER Bikuthan 1C

W 251 030
30 l hobbock

Single component, solvent-free, stable, elastic, polymer modified bitumen thick film sealant with polystyrene light fillers. Suitable for spray application. Resistant against pressurized water, bridges cracks up to 5 mm. For waterproofing construction members in ground contact such as basements.

Consumption: Approx. 4.5 - 6.8 l / m²



KÖSTER Deuxan 2C

Two-component, compression-resistant, elastic, polymer modified, fibrated bitumen thick film sealant (PMBC) for the secure waterproofing of buildings in accordance with DIN 18533, such as basements. Resistant to pressurized water, approved by the building authorities. Radonproof.



External basement waterproofing



Floor slab waterproofing



Waterproofing against Radon



Can be spray applied

Article No.:

W 252 032

Consumption:

Approx. 4 - 6 kg / m²

Packaging:

32 kg hobbock; liquid component 24 kg, powder component 8 kg

KÖSTER Deuxan Professional

W 256 032
32 kg hobbock; liquid component
24 kg, powder component 8 kg

Two-component, compression-resistant, elastic, fibrated, polymer modified bitumen thick film sealant for the secure waterproofing of buildings in accordance with DIN EN 18533, such as basements. Specially designed for spray application and therefore suitable for professionals.

Consumption: Approx. 4 - 6 kg / m²



KÖSTER KD 3 Sealer

W 313 006
6 kg jerrycan
W 313 012
12 kg jerrycan

Low viscosity silicifying liquid. The active ingredients penetrate deeply into the substrate and form water insoluble compounds. The pores are plugged and permanently waterproofed through continuing crystallization. Used in combination with KÖSTER KD 1 Base and KÖSTER KD 2 Blitz Powder for the negative side waterproofing of mineral surfaces such as for internal basement waterproofing. The KÖSTER KD System stops flowing water and forms a permanent waterproofing layer on masonry and concrete.

Consumption: Approx. 0.5 kg / m²



KÖSTER Glass Fiber Mesh

W 411 033
33 cm x 100 m, 100 m roll
W 411 100
100 cm x 100 m, 100 m² roll

Highly tear resistant mesh for the reinforcement of waterproofing layers especially in the case of pressurized water, areas in danger of cracking as well as connections, wall / floor junctions and fillets. Resistant to dislocation, alkalis, plasticizer-free.

Particularly suitable for: KÖSTER KBE Liquid Film, KÖSTER Bikuthan 1C and KÖSTER Bikuthan 2C, KÖSTER Deuxan 2C and KÖSTER Deuxan Professional, KÖSTER BD 50 and KÖSTER Elastic Roof, KÖSTER NB Elastic, KÖSTER 21.



KÖSTER Superfleece

W 412 010
50 m roll, width 10 cm

High strength polyester nonwoven reinforcement fabric for liquid waterproofing products such as KÖSTER MS-Flexfolie, KÖSTER Deuxan, KÖSTER Bikuthan, KÖSTER KBE, 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. 10 cm and 105 cm wide, 50 m roll.

Consumption: 1 m per linear m



KÖSTER KD 2 Blitz Powder

Highly reactive powder with an extremely short setting time. Active leakages can be stopped within a few seconds simply by using the dry powder. Used in combination with KÖSTER KD 1 Base and KÖSTER KD 3 Sealer for the negative side waterproofing of mineral surfaces such as for internal basement waterproofing. The KÖSTER KD System stops flowing water and forms a permanent waterproofing layer on masonry and concrete.



Article No.: W 512 007

Consumption: Approx. 1 - 2 kg / m²

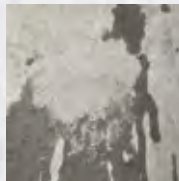
Packaging: 7,5 kg bucket
W 512 015: 15 kg bucket



Active leaks...



...stopped...



...in seconds!

KÖSTER Repair Mortar

W 530 025
25 kg bag

Hydrophobic, pressurized water resistant mortar with special bonding agents suitable for fillets, repairs and as a barrier-plaster. When mixed with KÖSTER SB Bonding Emulsion it becomes a PCC Mortar.

Consumption: Approx. 1.8 kg / l void



KÖSTER Repair Mortar Plus

W 532 025
25 kg bag

Slightly expanding, hydrophobic, fast setting repair mortar which is resistant to pressurized water. When mixed with KÖSTER SB Bonding Emulsion it becomes a PCC Mortar.

Consumption: Approx. 1.8 kg / l void; approx. 2.5 kg per meter of fillet



KÖSTER WP Mortar

W 534 025
25 kg bag

Watertight, trowel applicable, fast setting mineral mortar for reprofiling surfaces and resistant to pressurized water when applied in a layer thickness of 4 mm. It cures quickly and is characterized by high pressure and abrasion resistance, high chemical resistance, and resistant against salts in the substrate.

Consumption: Approx. 1.8 kg / l void, 18 kg / m² per cm layer thickness



KÖSTER Waterstop

W 540 015
15 kg bucket

Fast setting, slightly expanding plug and repair mortar. A strong-bond between existing substrate and the mortar is achieved. Suitable to permanently plug active water leakages.

Consumption: Approx. 2 kg / l void



KÖSTER SB Bonding Emulsion

W 710 005
5 kg jerrycan
W 710 010
10 kg jerrycan

Multi-purpose liquid plasticizing dispersion for use with all cement based mortars, plasters and sealing slurries. Solvent free, plasticizer and filler free. The product provides a plastifying effect, increases the elasticity and reduces the water absorption of mineral systems. It is waterproof after full cure. Typical field of application: as an additive for waterproofing with NB 1 Grey.

Consumption: Replaces 10 - 33% of mixing water



KÖSTER NB 1 Flex

W 721 008
8 kg jerrycan

Ready-mixed liquid for KÖSTER NB sealing slurries. The latex based dispersion KÖSTER NB 1 Flex has a plastifying effect, improves the adhesion to the substrate and prevents the premature drying out of the fresh slurry.

Consumption: Approx. 8 kg for 25 kg NB 1 Grey and NB 2 White



KÖSTER Fix-Tape 10 ALU

W 810 015 AL
10 m roll

Self-adhesive sealing tape for the waterproofing of areas such as wall / floor junctions, wall and roof penetrations or for the repair of leaking gutters and downspouts.

KÖSTER Fix-Tape 10 ALU is 1 mm thick, rubber / bitumen based with an aluminium foil laminated on the top-side.

1 mm x 150 mm.



KÖSTER Butyl Fix-Tape Fleece

W 815 015 F
10 m roll

Cold applied self-adhesive tape for sealing the upper edges of KÖSTER KSK sealing membranes. KÖSTER Butyl Fix-Tape Fleece can be plastered over.

KÖSTER Butyl Fix-Tape Fleece is 1.5 mm thick with a separating backing paper on the bottom side. The material is highly tear resistant, immediately waterproof and can be plastered over due to its fleece-laminated upper side. Priming before application of the KÖSTER Butyl Fix-Tape Fleece is not necessary.

1,5 mm x 150 mm.



KÖSTER Fix-Tape 15 SY

W 815 020
20 m roll

Cold applied self adhesive rubber / bitumen based waterproofing tape for sealing facade areas and windproofing window connections. Applicable between + 5 °C and + 30 °C. Highly flexible, crack bridging immediately water and rainproof. Double laminated with a highly tear resistant polyethylene foil. Material thickness 1.5 mm, available in 200 mm width.



Width: 200 mm.

KÖSTER KSK ALU 15

W 815 096 AL
1.5 mm x 0.96 m x 20 m, 19.2 m²
roll

Cold applied self-adhesive rubber / bitumen sealing membrane for the waterproofing of small, weather exposed areas such as roofs, garages or balconies. Applicable between + 12 °C and + 35 °C.

KÖSTER KSK ALU 15 is laminated with a reinforced aluminium foil on the top side. It does not require hot air or propane gas welding for its application, is vapor tight, waterproof, weather and UV resistant.



1.5 mm x 0.96 m x 20 m, 19.2 m²

KÖSTER KSK SY 15

W 815 105
1.5 mm x 1.05 m x 20 m, 21 m² roll

Cold applied self-adhesive rubber / bitumen waterproofing membrane according to the DIN EN 18533. Suitable for application from + 5 °C to + 30 °C. Fields of application include basements, foundation plates, balconies, terraces or on polystyrene elements. KÖSTER KSK SY 15 membranes do not require hot air or propane gas welding for application. It is highly flexible, immediately waterproof, crack bridging and resistant to driving rain. Suitable for application even on cold substrates. Radonproof. With a double laminated, highly tear-resistant polyethylene foil on top.

1.5 mm x 1.05 m x 20 m, 21 m².
Consumption: 1.05 m² / m²



radonproof

Good to know: Waterproofing against Radon

The European Guideline regarding radiation protection stipulates that a reference level of 300 Bq / m³ air caused by the noble gas Radon must not be exceeded. Increased concentration of radioactivity can entail severe health issues. Therefore, proofing buildings against Radon is an important measure to ensure respective protection. Products like **KÖSTER NB 4000**, **KÖSTER Deuxan 2C**, and **KÖSTER KSK SY 15** prevent the noble gas to diffuse through the soil into the structure, where it would negatively affect the air. Restoration measures with these products will meet the specifications made by law and prevent health risks.

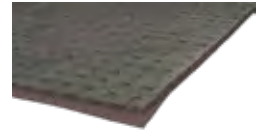


KÖSTER SD Protection and Drainage Sheet 3-400

W 901 030
roll

Green HD-PE based notched protection board which combines 3 functions in one product: (1) mechanical protection of the waterproofing layer (e.g. when backfilling the construction pit) according to the DIN EN 18533, (2) decoupling of the waterproofing layer from any ground movement, (3) the hollow core leads seepage and backwater safely to the drainage.

2 m x 15 m, 30 m².



KÖSTER SD Protection and Drainage Sheet 3-250

W 903 030
roll

Black HD-PE based notched protection board which combines 3 functions in one product: (1) mechanical protection of the waterproofing layer (e.g. when backfilling the construction pit) according to DIN 18195, (2) decoupling of the waterproofing layer from any ground movement, (3) the hollow core leads seepage and backwater safely to the drainage.

2 m x 15 m, 30 m².



KÖSTER Brush for Liquids

W 912 001
piece

Special brush for the application of liquid materials, e.g. KÖSTER Dachflex, KÖSTER KD 3, etc.



KÖSTER NB 1 Brush for Slurries

W 913 001
piece

Special brush with waved bristles for the application of materials with a paste-like consistency, e. g. KÖSTER NB Sealing Slurries, KÖSTER KD 1, etc.



KÖSTER SD Edge Profile

W 970 001
piece

Finishing profile for protection and drainage sheets. (black, t: 12 mm, l: 2 m, 11 holes, profile height: 82 mm).



KÖSTER SD Fixing Element

W 971 001
100 piece

Steel nails and mounting heads for the fixing of protection and drainage sheets.



KÖSTER Peristaltic Pump

W 978 001
piece

Electrical pump for spraying liquid and pasty, mineral-, water-, or bitumen based materials such as 1 and 2 component polymer modified bitumen thick film sealants, elastic and rigid waterproofing slurries, liquid membranes, and mortars.



KÖSTER Service Box

W 979 001
piece

Set of spare parts for the KÖSTER Peristaltic Pump.



Good to know:

Protecting the waterproofing layer

Backfilling of the construction pit and settlement of the ground over time are frequent sources of damage to the waterproofing layer. Usually the material used to backfill the construction pit does not consist of clean sand but contains coarse aggregates. During backfilling, these aggregates can be pushed into the waterproofing layer and damage it. As a result, the installation of a protective layer is essential. Protective layers ideally combine three functions: mechanical protection, drainage, and a decoupling or gliding layer. The KÖSTER SD Sheet 3-400 consists of three layers. The mechanical protection is provided by the main layer, a HDPE dimple sheet. Facing the soil, a fleece is attached to the dimples of the dimple sheet in order to maintain the drainage function. The third layer on the backside of the dimple sheet facing the waterproofing layer is a LDPE foil. This gliding layer between dimple sheet and waterproofing layer prevents damages due to backfilling or settling of the ground.



Waterproofing Membranes for building waterproofing and use in the drinking water sector

KÖSTER TPO Aqua

RT 815 150 U (1.5 mm)
RT 820 150 U (2.0 mm)

Waterproofing membrane for drinking water containers. KÖSTER TPO Aqua complies with hygienic requirements for potable water surroundings according to the German DVGW Worksheet W 270 and the KTW guideline. The TPO based membrane is highly tear resistant and provides very high flexibility, so that even large cracks are securely bridged. The membrane is installed by mechanical fastening, requiring little or no substrate preparation. Overlaps are connected by hot air welding. CE Mark according to EN 13967. Fields of application: Drinking water reservoirs, tanks, water retention structures, fish ponds, etc., building waterproofing according to DIN 18531-18535.



Width: 1,50 m

KÖSTER ECB 1.5 U S
KÖSTER ECB 2.0 U S

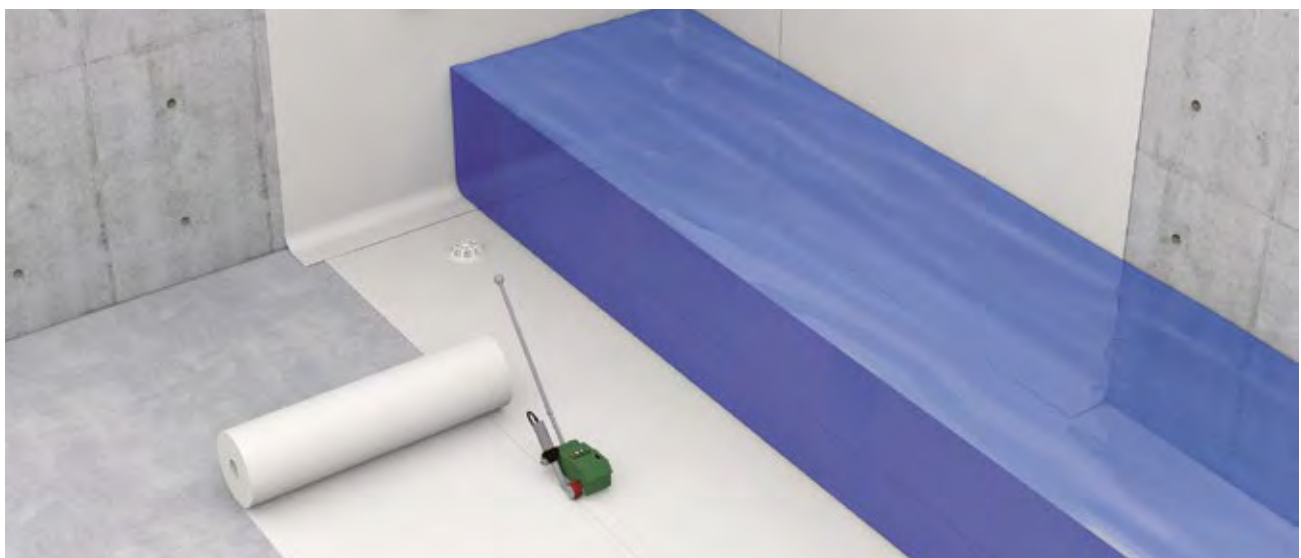
RE 815 210 U S (2.10 m)
RE 820 210 U S (2.10 m)

KÖSTER ECB Membranes are made of a mixture of Ethylene Copolymer and a special bitumen. KÖSTER ECB U S Membranes are especially designed for the waterproofing of below ground building structures and are delivered with an aluminium foil signal layer laminated on top.

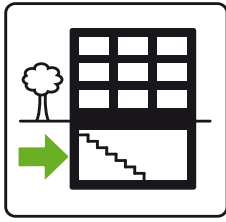


KÖSTER ECB 1.5 U S:
Thickness: 1.5 mm; Width: 2.10 m

KÖSTER ECB 2.0 U S:
Thickness: 2.0 mm; Width: 2.10 m



External basement waterproofing



Wet basements can not be fully used and might endanger the integrity of the whole building. We offer a number of different methods for making basements permanently waterproof. From the outside the entire external wall is protected from water penetration by treating with polymermodified thick film sealants, mineral sealing slurries or a cold self-adhesive waterproofing membrane. In repair cases the external waterproofing can be installed even from the inside of the basement. This method is called "curtain injection"

External basement waterproofing with bitumen based waterproofing systems

Primer

(M 110) KÖSTER Polysil TG 500

Waterproofing pipe penetrations

(J 250) KÖSTER KB-Flex 200

Preparing wall/floor junctions

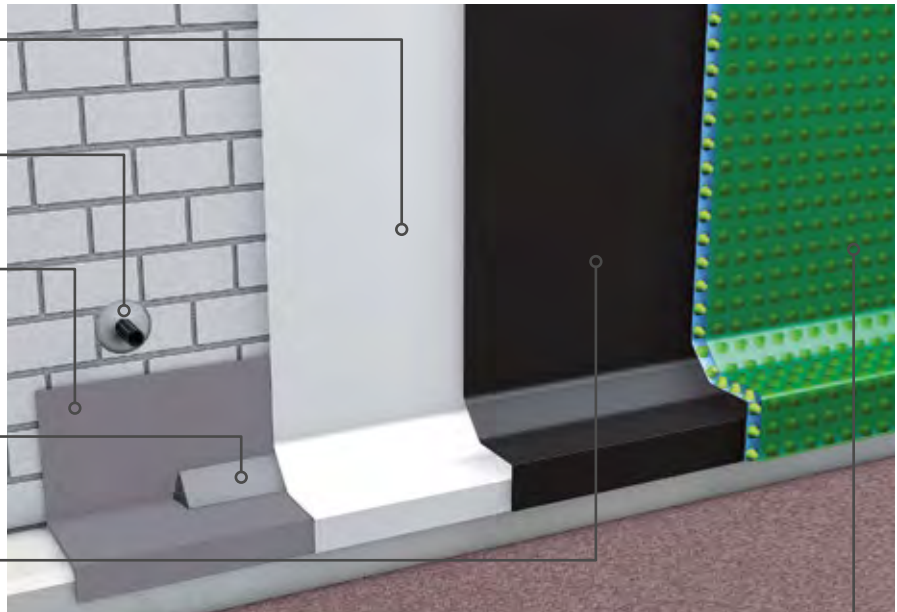
(W 221) KÖSTER NB 1 Grey Additive
(W 721) KÖSTER NB 1 Flex

Installing fillets

(W 532) KÖSTER Repair Mortar Plus

Waterproofing layer

(W 252) KÖSTER Deuxan 2C Reinforcement layer
(W 411) KÖSTER Glass Fiber Mesh



System example: Waterproofing according to DIN EN 18 533

Protection of the waterproofing layer

(W 901) KÖSTER SD Protection and Drainage Sheet 3-400

The use of bituminous products belongs to the standard solutions for the positive side waterproofing of basements. The systems are applied in a paste-like form and are therefore seamless. They are easy and safe to use and have crack bridging properties. On clean, solid, stable, gypsum free mineral substrates KÖSTER Polysil TG 500 is applied as a primer. This immobilizes salts present in the substrate and the substrate is solidified. When preparing to waterproof on top of old bituminous coatings KÖSTER Bitumen Primer is used.

Pipe and cable penetrations are sealed with the permanently plastic putty KÖSTER KB-Flex 200 and protected by a layer of KÖSTER KB-Fix 5. Alternatively these areas can be connected with a fillet of the respective thick film sealant or fitted with flanges.

To protect against water creeping behind the lower waterproofing connections KÖSTER NB 1 Grey mixed with KÖSTER NB 1 Flex is applied

first. To prevent stresses in the waterproofing, rounded fillets are installed in the wall / floor junctions.

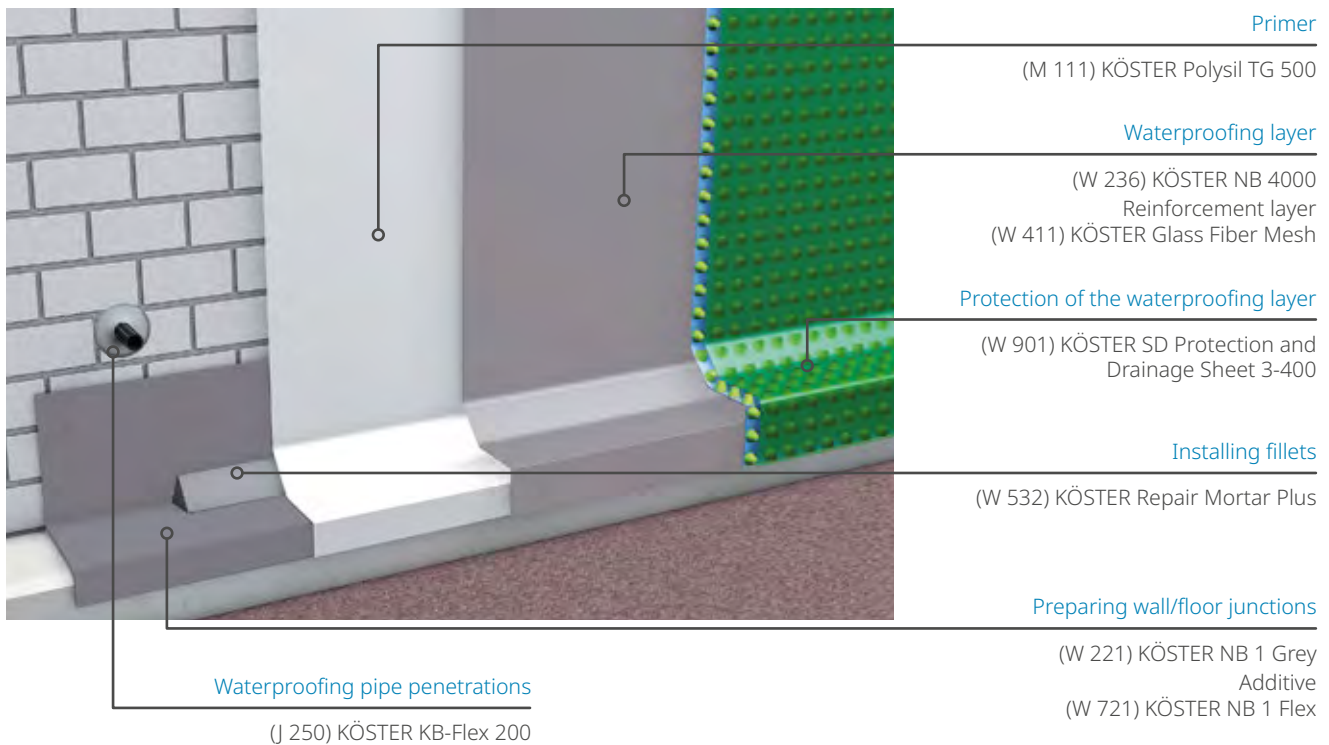
The actual area waterproofing is achieved using KÖSTER Deuxan 2C in two layers applied by trowel. KÖSTER Deuxan Professional can be spray applied. For greater ease of manual application use KÖSTER Bikuthan 1C or 2C. The addition of KÖSTER Glass Fiber Mesh is recommended in all thick film sealants and all applications. This allows for a better control of the coating thickness and safely absorbs movement in the building.

Before backfilling the positive side waterproofing is to be protected from mechanical damages and settling with KÖSTER SD Protection and Drainage Sheet.

Always adhere to the specifications in the respective Technical Guidelines.

External basement waterproofing with mineral based waterproofing systems

System example: Waterproofing according to DIN EN 18 533



Mineral sealing slurries are especially robust waterproofing systems with extremely good adhesion to mineral surfaces. They are not affected by moist surfaces and become an integral part of the building structure on which they were applied. Mineral sealing slurries are paste-like and are applied seamlessly to the building element being waterproofed. They are easy and safe to apply and can be installed as rigid or crack bridging systems.

On clean, solid, stable, gypsum free mineral substrates KÖSTER Polysil TG 500 is applied as a primer. This immobilizes salts present in the substrate and the substrate is solidified.

Pipe penetrations are waterproofed using KÖSTER KB-Flex 200 and sealed with KÖSTER KB-Fix 5. Alternatively these areas are to be attached to the waterproofing using proper sleeves or flanges.

The actual area waterproofing is achieved using KÖSTER NB 4000 in two layers. The installation of KÖSTER Glass Fibre Mesh is recommended between the KÖSTER NB 4000 layers to achieve an especially visco-plastic waterproofing layer. In areas especially in danger of water creeping behind the waterproofing such as wall-floor junctions, a substrate preparation with KÖSTER NB 1 Grey mixed with KÖSTER NB 1 Flex is applied. To avoid stresses in the elastic waterproofing, rounded fillets made of KÖSTER Repair Mortar are installed in interior corners.

Before backfilling the waterproofing is protected from mechanical damages and settling with KÖSTER SD Protection and Drainage Sheet.

Always adhere to the specifications in the respective Technical Guidelines.

External basement waterproofing with cold self-adhesive waterproofing membranes

Primer

(W 120) KÖSTER KSK Primer BL

Preparing wall/floor junctions

(W 221) KÖSTER NB 1 Grey Additive
(W 721) KÖSTER NB 1 Flex

Joint sealing

(J 270) KÖSTER Quellband

Installing fillets

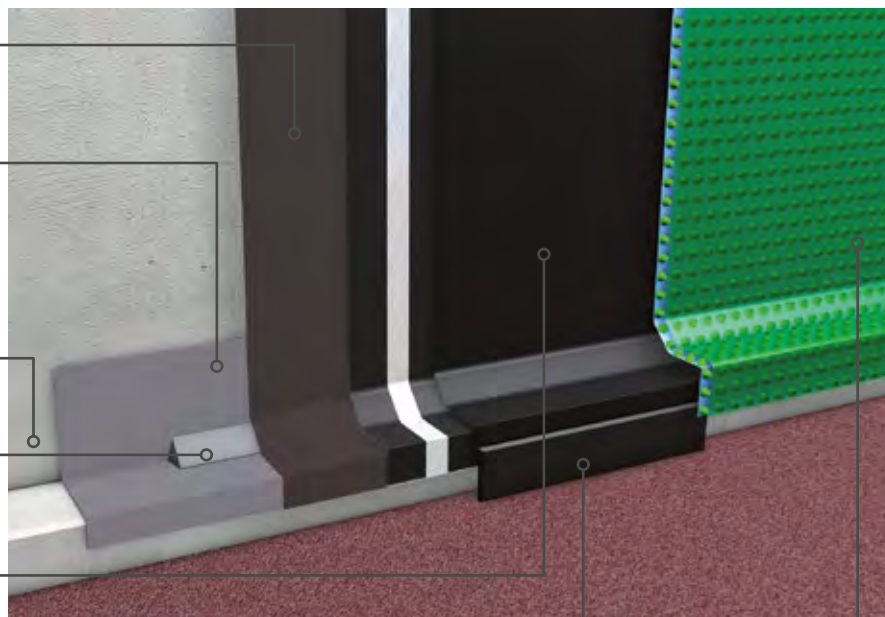
(W 532) KÖSTER Repair Mortar Plus

Waterproofing layer

(W 815) KÖSTER KSK SY 15

Waterproofing membrane ending

(W 245) KÖSTER KBE Liquid Film



Protection of the waterproofing layer

(W 901) KÖSTER SD Protection and Drainage Sheet 3-400

Fast, clean, and easy: Exterior basement waterproofing with KÖSTER KSK cold applied, self adhesive waterproofing membranes. No drying time, instantly watertight, with a tight control of consumption. Apply a primer coat of KÖSTER KBE Liquid Film on clean, solid substrates. Pipe penetrations are sealed using flanges cut to size from KÖSTER KSK Membranes. In areas especially in danger of water creeping behind the waterproofing such as wall-floor junctions, a substrate preparation with KÖSTER NB 1 Grey mixed with KÖSTER NB 1 Flex is applied. To avoid stresses in the elastic waterproofing, rounded fillets made of KÖSTER Repair Mortar are installed in interior corners.

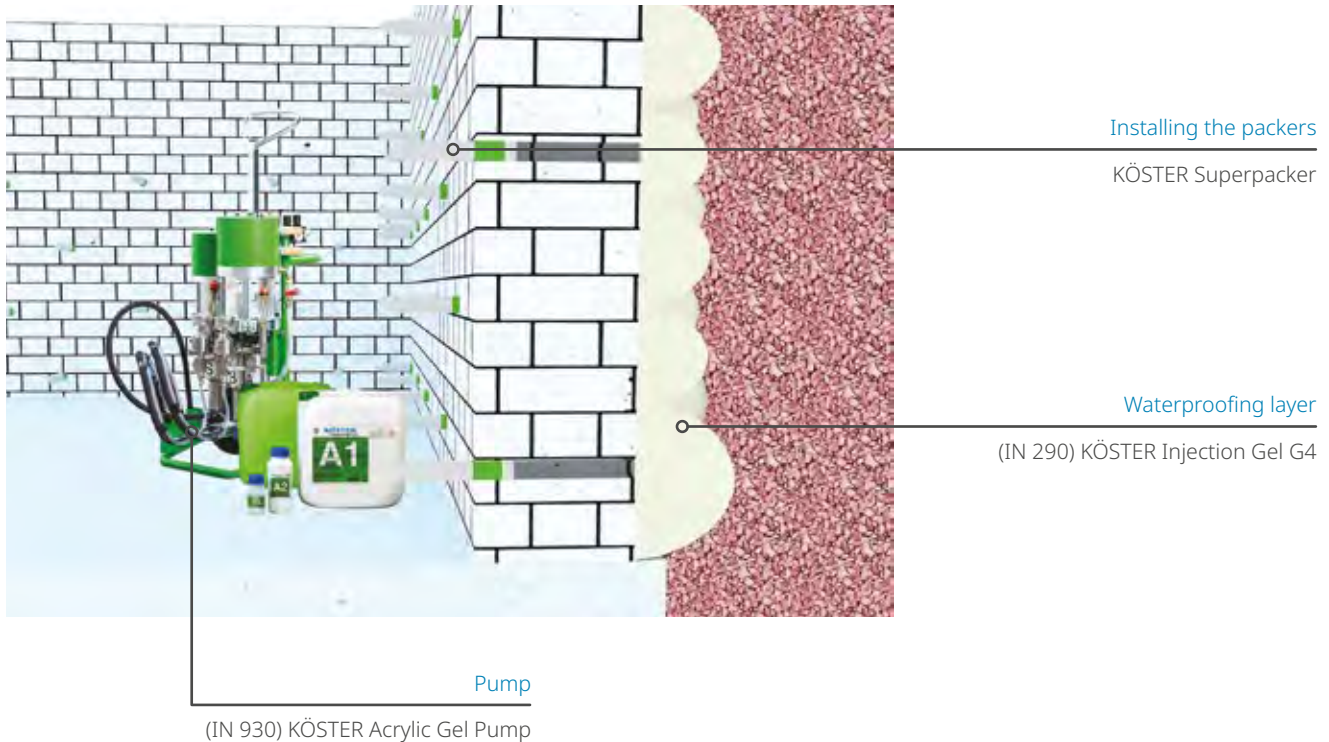
The actual area waterproofing is generally done with KÖSTER KSK SY 15. It is applied crease

free to the substrate. The membranes are overlapped 10 cm. Corners and connections are made according to the directions on the packaging and according to the Technical Guidelines, and these areas are covered with KÖSTER KBE Liquid Film. On vertical areas the top edge is mechanically fastened and these fasteners are also coated with KÖSTER KBE Liquid Film. In the case the overlapped edges, corner details, and mechanical fasteners are coated with KÖSTER BS 1 Bitumen Paste.

Before backfilling the waterproofing is protected from mechanical damage and settling with KÖSTER SD Protection and Drainage Sheet.

Always adhere to the specifications in the respective Technical Guidelines.

External basement waterproofing with curtain injection



Exterior basement waterproofing from inside the building? In the case of renovation it is not always possible to expose the exterior walls through excavation. For example, where the area to be excavated is built upon, traffic concerns impede the excavation, or the economic cost of excavation is deemed too high. In this case you would first think of an internal (negative side) basement waterproofing, but in some cases, such as in historical buildings or buildings with special architectural requirements, this may not be desirable.

In these cases a curtain injection with KÖSTER Injection Gel G4 is possible: The resin is injected through the wall from the inside to the outside. The resin reacts with water and binds it resulting in a waterproof, elastic solid. The injection is

carried out with a special two-component pump, KÖSTER Acrylic Gel Pump, and through patented KÖSTER Distributor Lances. The injection material is dispersed on the exterior wall and in a short time reacts to a waterproofing layer.

An alternative method is injecting KÖSTER Injection Gel G4 into the building member itself. This so-called "area injection" is possible in porous or hollow building materials. In this case the KÖSTER Injection Gel G4 also reacts with any water present to form a waterproof, elastic solid.

Always adhere to the specifications in the respective Technical Guidelines.

Waterproofing of pile heads

Reinforcement layer

(W 411) KÖSTER Glass Fiber Mesh

Gliding layer

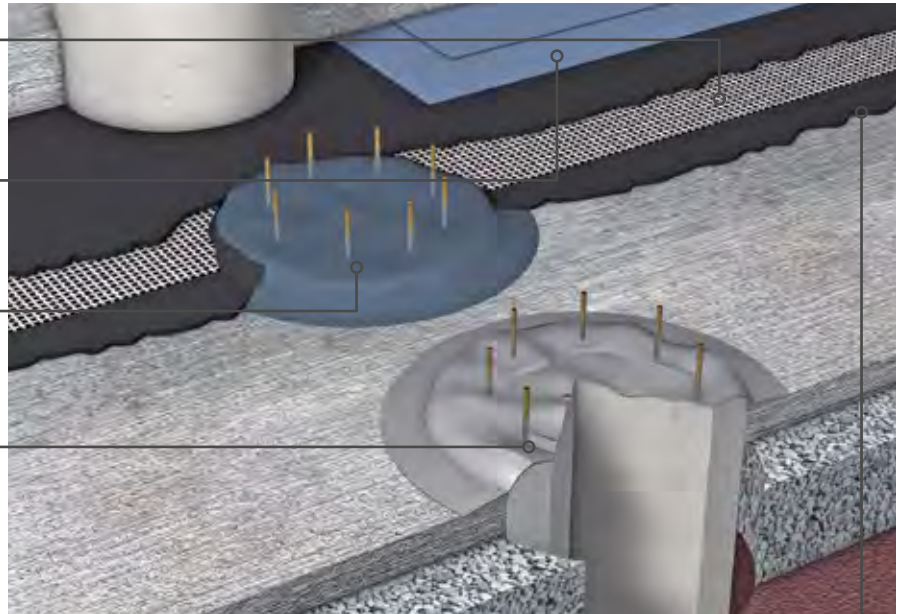
Customary PE foil

Waterproofing of pile heads

(W 221) KÖSTER NB 1 Grey

Reprofiling

(W 530) KÖSTER Repair Mortar



Waterproofing layer

(W 252) KÖSTER Deuxan 2C

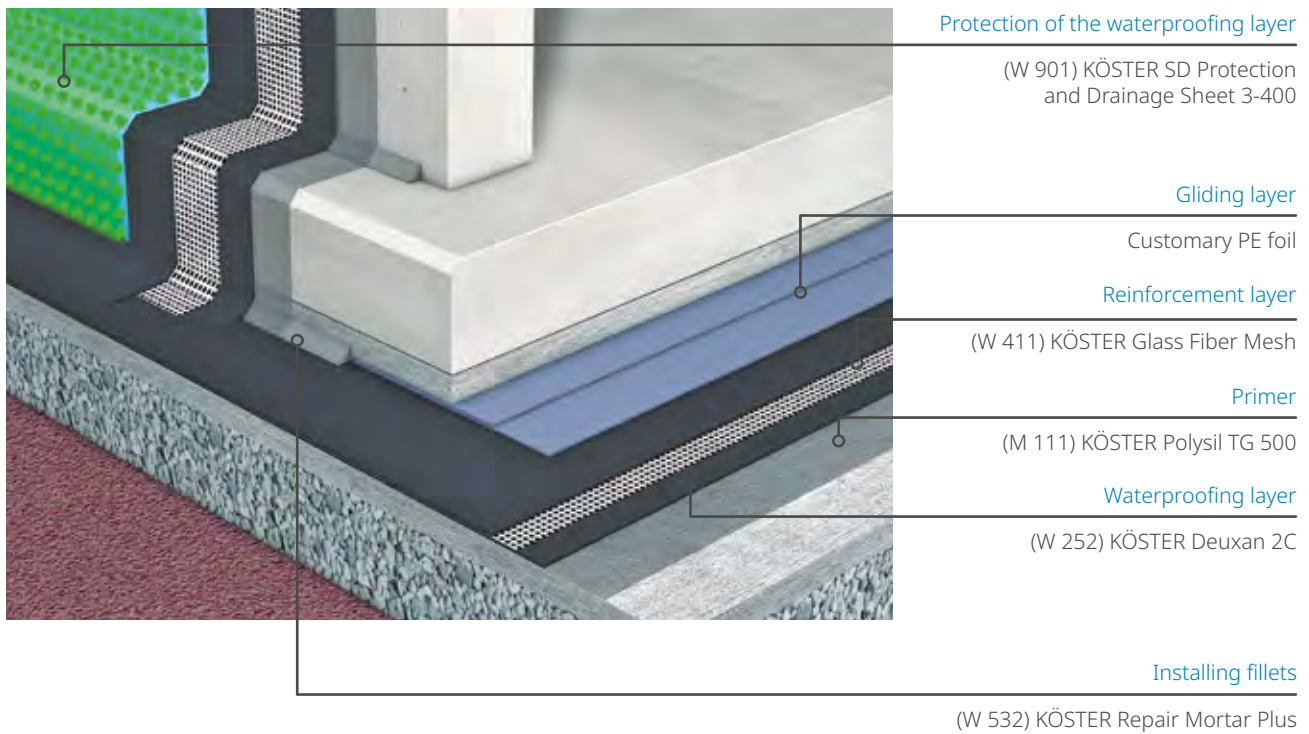
Damage in existing buildings is often caused by leaking pile foundations. Water can enter the building through the construction joints or it makes its way along the reinforcement steel. The waterproofing of pile heads has to withstand heavy loads from the whole building and it needs to be easily connected to the area waterproofing.

At first all non load bearing materials and separating substances have to be removed from the surface of the pile head. After that, the surface has to be levelled and reprofiled with KÖSTER Repair Mortar or KÖSTER Repair Mortar R4. This reprofiling must also include the installation of a fillet adjacent to the pile head. KÖSTER NB 1 Grey is used to waterproof the pile head.

The waterproofing on top of the blinding layer is made with KÖSTER Deuxan 2C. Embed KÖSTER Glass Fiber Mesh into the fresh first layer. Before pouring the concrete for the floor slab a gliding layer consisting of two layers of customary PE-Foil is applied between the waterproofing and the concrete. Protect the waterproofing layer from mechanical damage when continuing with the application.

Always adhere to the specifications in the respective Technical Guidelines.

Waterproofing under the foundation plate



A complete waterproofing system in new construction includes waterproofing the floor slab. Compared to the application on top of the concrete slab the installation of the waterproofing layer underneath the foundation plate keeps the foundation dry and the concrete provides a better thermal insulation.

First a primer such as KÖSTER Polysil TG 500 is applied to the clean, sound and solid substrate. KÖSTER Polysil TG 500 is a standard primer that locks existing salts into the substrate, hardens the substrate and provides a better bond between the waterproofing and the substrate.

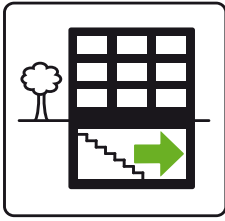
The main area waterproofing made of KÖSTER Deuxan 2C is applied in two layers with KÖSTER Glass Fiber Mesh embedded in the fresh first layer. It is generally recommended to embed the KÖSTER Glass Fiber Mesh between layers as it

provides an easy control of the layer thickness and absorbs the forces created by movement in the building.

Before pouring the foundation plate, PE-Foil is installed in two layers to act as a gliding layer between the waterproofing material and the concrete. The waterproofing layer needs to be protected, e.g. by a layer of unreinforced concrete. The vertical waterproofing is connected to the side waterproofing layer underneath the foundation plate. A fillet made from KÖSTER Deuxan 2C (leg length 2 cm) is to be installed in the connection area or KÖSTER WP Mortar (leg length 5 cm).

Always adhere to the specifications in the respective Technical Guidelines.

Internal basement waterproofing



In a repair situation, the basement can be waterproofed from the inside without excavating the soil around the building. This means that the basement is permanently waterproofed without the necessity of doing any sort of earthwork. This type of waterproofing is possible with the KÖSTER systems even when the wall has active leakages.

Internal basement waterproofing on foundation plate with mineral systems

Self-leveling underlayment

(SL 281) KÖSTER SL

Waterproofing layer

(W 221) KÖSTER NB 1 Grey
Additive
(W 721) KÖSTER NB 1 Flex

Horizontal barriers for walls

(W 221) KÖSTER NB 1 Grey
Additive
(W 721) KÖSTER NB 1 Flex

Installing fillets

(W 532) KÖSTER Repair Mortar Plus

Primer

(M 111) KÖSTER Polysil TG 500



Mineral waterproofing systems have the advantage of excellent bonding properties of the waterproofing material to mineral substrates, the bond between the individual waterproofing layers is excellent too. The longevity of such systems is ideally the lifetime of the building.

To avoid moisture rising through the wall due to capillary action, it is necessary to install a horizontal barrier beneath the wall made from KÖSTER NB 1 Grey (mixed with KÖSTER NB 1 Flex) or the crack bridging material KÖSTER NB Elastic.

To harden the substrate the bottom slab is primed with KÖSTER Polysil TG 500. At the wall floor junction a fillet made from KÖSTER Repair

Mortar Plus is installed to prevent stresses in the subsequent waterproofing layers.

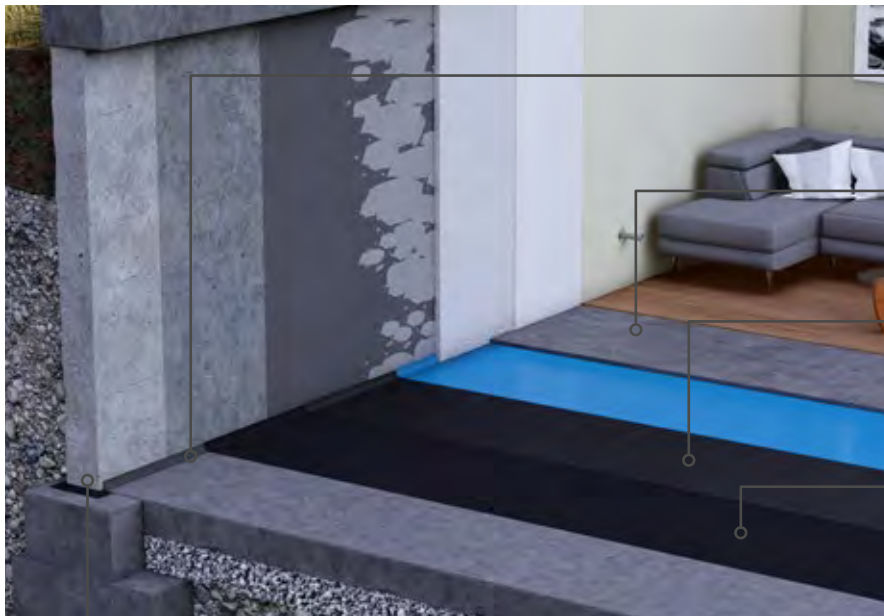
The area waterproofing is normally achieved with KÖSTER NB 1 Grey mixed with KÖSTER NB 1 Flex. In case of pressurized water the waterproofing needs to be done with the KÖSTER KD System. KÖSTER SL Premium is ideal for protecting the surface.

Alternatively the crack bridging waterproofing products KÖSTER NB Elastic Grey can be used to waterproof the floor slab.

Always adhere to the specifications in the respective Technical Guidelines.

Internal basement waterproofing on the foundation plate with cold-adhesive waterproofing membranes

System example



Installing fillets

(W 532) KÖSTER Repair Mortar Plus

Self-levelling underlayment

KÖSTER SL

Waterproofing layer

(W 815) KÖSTER KSK SY 15

Primer

(W 120) KÖSTER KSK Primer BL

Horizontal barriers for walls

(W 815) KÖSTER Fix-Band 15 SY

Fast, easy application without long waiting times: Waterproofing of the floor slab with KÖSTER KSK cold applied, self adhesive waterproofing membranes.

To avoid rising moisture, it is necessary to install a horizontal barrier underneath the wall with KÖSTER Fix-Tape 10 SY. At the wall floor junction a fillet made from KÖSTER Repair Mortar plus has to be installed to prevent stresses in the subsequent waterproofing layers.

The priming is done with solvent free materials such as KÖSTER Primer BL or KÖSTER KBE, or

KÖSTER Bitumen Primer. As a standard the primed surface of the floor slab is waterproofed with the cold applied, self adhesive waterproofing membrane KÖSTER KSK SY 15. Overlap the joints 10 cm.

The applied KÖSTER KSK Membranes have to be protected from mechanical damage as work continues. It also needs to be connected to the vertical waterproofing of the adjacent walls.

Always adhere to the specifications in the respective Technical Guidelines.

Internal basement waterproofing in case of ground moisture, non pressurised and pressurised water

System example

Waterproofing layer

(W 221) KÖSTER NB 1 grau
Additive
(W 721) KÖSTER NB 1 Flex

Primer

(M 111) KÖSTER Polysil TG 500

Leveling the surface

(W 534) KÖSTER WP Mortar

Installing fillets

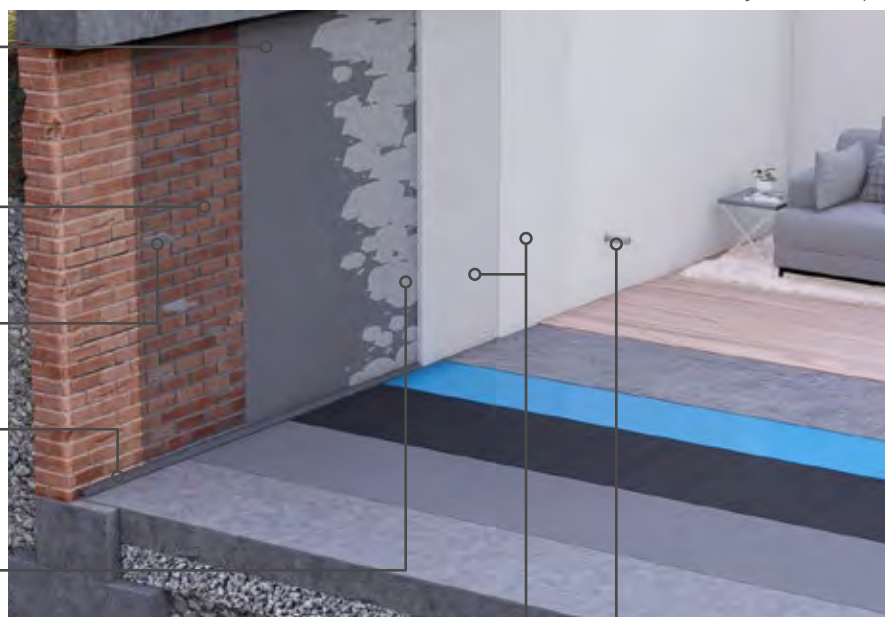
(W 532) KÖSTER Repair Mortar Plus

Plaster Key

(M 154) KÖSTER Restoration
Plaster Key

Plaster

(M 662) KÖSTER Restoration
Plaster White



Waterproofing pipe penetrations

(J 250) KÖSTER KB-Flex 200
(C 515) KÖSTER KB-Fix 5

Retroactive waterproofing in existing buildings needs to be done with mineral waterproofing systems. They have excellent bonding characteristics to mineral surfaces and also won't detach from wet and moist substrates.

The material is applied to substrates that have to be sound and solid as well as free from bond inhibiting agents. Older plaster coats have to be removed and joints raked out and all loose particles have to be removed. As primer, KÖSTER Polysil TG 500 is used. It hardens the substrate as well as reduces the mobility of salts. Masonry repair and the installation of a fillet at the wall-floor junction is done with KÖSTER Repair Mortar Plus.

KÖSTER NB 1 Grey is used as the waterproofing layer. To harden the material, KÖSTER Polysil TG 500 is sprayed on top of the slurry. To get a lighter surface finish use KÖSTER NB 2 White for the final coating.

Pipe penetrations are waterproofed using KÖSTER KB-Flex 200 and sealed with KÖSTER KB-Fix 5.

In the case of damage to basement walls caused by moisture generally KÖSTER

Restoration Plaster should be applied. KÖSTER Restoration Plasters are specially designed for the restoration of masonry with high salt and moisture contents. KÖSTER Restoration Plasters help to dry out the wall and absorb remaining salts. They don't contain lime or gypsum, are open to water vapor diffusion and create a healthy and comfortable room climate.

Before the application of the main plaster coat, a plaster key made from the chosen KÖSTER Restoration Plaster mixed with KÖSTER SB-Bonding Emulsion is applied to provide a larger surface area and ensure an optimal bond to the substrate. KÖSTER Restoration Plasters are available in different varieties (grey, white, fast and light). KÖSTER Restoration Plaster White is often used in older buildings without subsequent painting. KÖSTER Fine Plaster creates a very smooth surface and can be applied when desired to meet architectural goals. KÖSTER Restoration Plasters can only be painted over with breathable (open to vapor diffusion) paints such as KÖSTER Silicon Paint White or KÖSTER MF1.

Always adhere to the specifications in the respective Technical Guidelines.

Internal basement waterproofing in case of flowing water



A very difficult situation: The basement waterproofing has to be done from the inside but the water is actively entering the building. Often the only solution is the KÖSTER KD-System.

KÖSTER KD 2 Blitz powder is applied directly by hand to the active leakage. The powder reacts within a few seconds and forms a waterproof mortar. When the active leakages are stopped the waterproofing layer of KÖSTER KD 1 Base, KÖSTER KD Blitz powder and KÖSTER KD 3 Sealer can be applied.

The material is applied to substrates that have to be sound and solid as well as free of bond inhibiting agents. Older plaster coats have to be removed and joints raked out and all loose particles have to be removed. Generally the substrate is primed by prewetting. Repairs and the installation of the fillet at the wall-floor junction are done with KÖSTER Repair Mortar Plus.

KÖSTER KD 1 Base is applied as the waterproofing layer and is brushed onto the substrate. KÖSTER KD 2 Blitz Powder is rubbed onto the still wet surface, immediately creating a dry waterproofed layer. To harden and to strengthen this layer the third part of the system, KÖSTER KD 3 Sealer, is applied. To waterproof the Basement completely another two layers of KÖSTER KD 1 Base is applied over the first. Pipe penetrations are waterproofed with KÖSTER KB-Flex 200 Sealing Paste and plugged with KÖSTER KB-Fix 5.

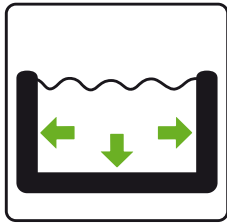
In the case of damage to basement walls caused by moisture generally KÖSTER Restoration Plaster should be applied. KÖSTER Restoration Plasters are specially designed for the restoration of masonry with high salt and moisture contents. KÖSTER Restoration Plasters help to dry out the wall and absorb remaining salts. They don't contain lime or gypsum, are open to water vapor diffusion and create a healthy and comfortable room climate.

Before the application of the main plaster coat, a plaster key made from the chosen KÖSTER Restoration Plaster mixed with KÖSTER SB-Bonding Emulsion is applied to provide a larger surface area and ensure an optimal bond to the substrate.

KÖSTER Restoration Plasters are available in different varieties (grey, white, fast and light). KÖSTER Restoration Plaster White is often used in older buildings without subsequent painting. KÖSTER Fine Plaster creates a very smooth surface and can be applied when desired to meet architectural goals. KÖSTER Restoration Plasters can only be painted over with breathable (open to vapor diffusion) paints such as KÖSTER Silicon Paint White or KÖSTER MF1.

Always adhere to the specifications in the respective Technical Guidelines.

Waterproofing of pipes, manholes and sewage areas



Leaking sewage pipes in wastewater treatment plants lead to considerable damage which is often discovered very late. When restoring such damage it is important to mitigate the different types of damages with waterproofing systems which are specifically adapted to the need. The damage analysis reveals if locally limited waterproofing of the leakage is sufficient or if the entire area has to be protected from chemical attack.

Waterproofing tanks and pipes in sewage systems

Waterproofing layer

(C 590) KÖSTER Sewer and Shaft Mortar

Waterproofing masonry

(W 221) KÖSTER NB 1 Grey
Additive
(W 721) KÖSTER NB 1 Flex

Stopping active leakages

(W 512) KÖSTER KD 2 Blitz Powder

Crack injection

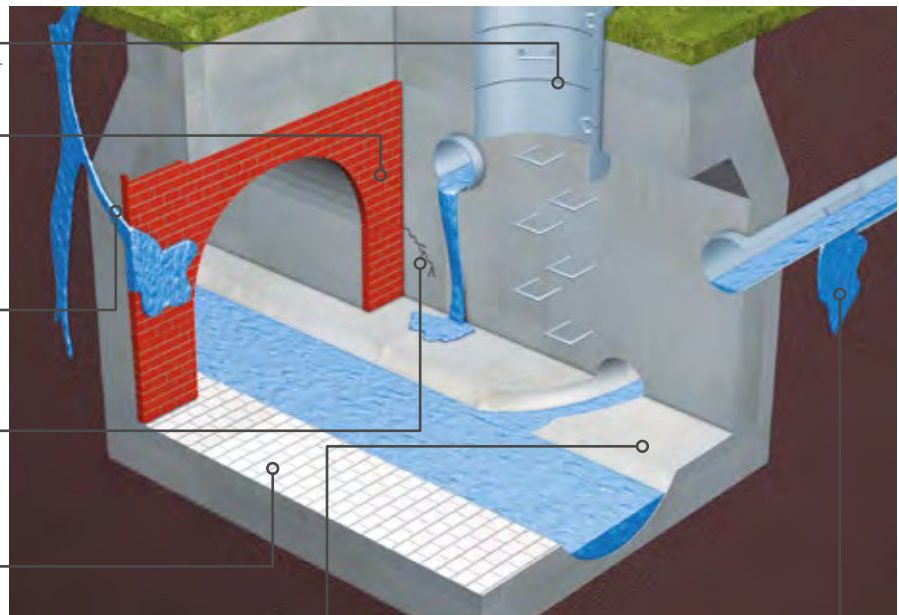
(IN 290) KÖSTER Injection Gel G4

Acid protection

(C 280) KÖSTER PSM

Heavy duty surface protection

(C 590) KÖSTER Sewer and Shaft Mortar



Waterproofing pipe couplings

(IN 290) KÖSTER Injection Gel G4

Water treatment facilities like sewage treatment plants, sewers and shafts or sewage water tanks made from concrete or masonry are exposed to a variety of stresses. The restoration of such facilities entails waterproofing, concrete repair and concrete protection as well as protection against acids and abrasion. For this a wide range of materials are used.

KÖSTER Waterstop can be used to quickly waterproof small active leakages. The fast setting plug mortar swells slightly and closes the leakage instantly.

Areas with insufficient air circulation like sewer systems develop high concentrations of hydrogen sulfide which leads to the creation of sulphuric acid on the surface of the construction members. Sulphuric acid is very aggressive, especially against concrete. KÖSTER NB 1 Grey can be used for waterproofing on the positive and the negative side. KÖSTER PSM is used for protection against acids. As an alternative, acid resistant tiles can be used which are bonded to the substrate and grouted with KÖSTER PSM. In this manner an acid and abrasion resistant surface is achieved.

The standard waterproofing for masonry is KÖSTER NB 1 Grey. In case of active leaks the KÖSTER KD System is applied.

For restoring concrete or masonry damaged by acids, the substrate is to be mechanically cleaned until a solid, unburdened substrate is achieved. The substrate is then primed with KÖSTER Polysil TG 500. Reprofiling is done with KÖSTER Sewer and Shaft Mortar. On top of the reprofiling KÖSTER PSM is applied as acid protection.

Shafts made from masonry and concrete must also be mechanically cleaned until a solid, unburdened substrate is achieved. Reprofiling and leveling is done with KÖSTER Sewer and Shaft Mortar, which has been especially developed for this field of application. It bonds very well to damp substrates, can be applied easily and sets quickly. KÖSTER Sewer and Shaft Mortar can to a certain degree even be applied under flowing water.

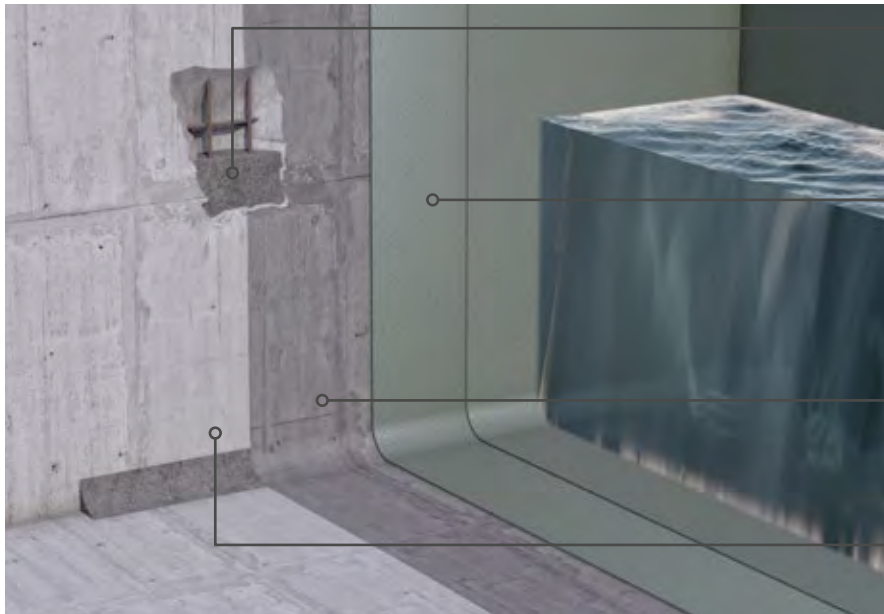
Pipe connections are often a source of leaks in sewer systems. Retroactive waterproofing is sometimes difficult due to significant water pressure from the inside and the outside.

KÖSTER Injection Gel G4 is an ideal injection material for such cases. Together with the mixed components and the surrounding soil it forms an elastic waterproofing layer around the leakage. In this way pipe connections or defective pipes can be sealed quickly and permanently. Elastic waterproofing of cracks is achieved with KÖSTER 2 IN 1. The material is injected in two steps: First in order to stop the

water from flowing and secondly to close the crack elastically and permanently. In case of strong water ingress KÖSTER IN 1 is used due to its faster reaction time. In order to seal the crack permanently the same crack has to be injected with the elastic resin KÖSTER IN 2 afterwards.

Always adhere to the specifications in the respective Technical Guidelines.

Waterproofing (drinking) water tanks



Concrete repair

(C 536) KÖSTER Repair Mortar R4

Waterproofing layer

(W 221) KÖSTER NB 1 Grey

Primer

(M 111) KÖSTER Polysil TG 500

Installing fillets

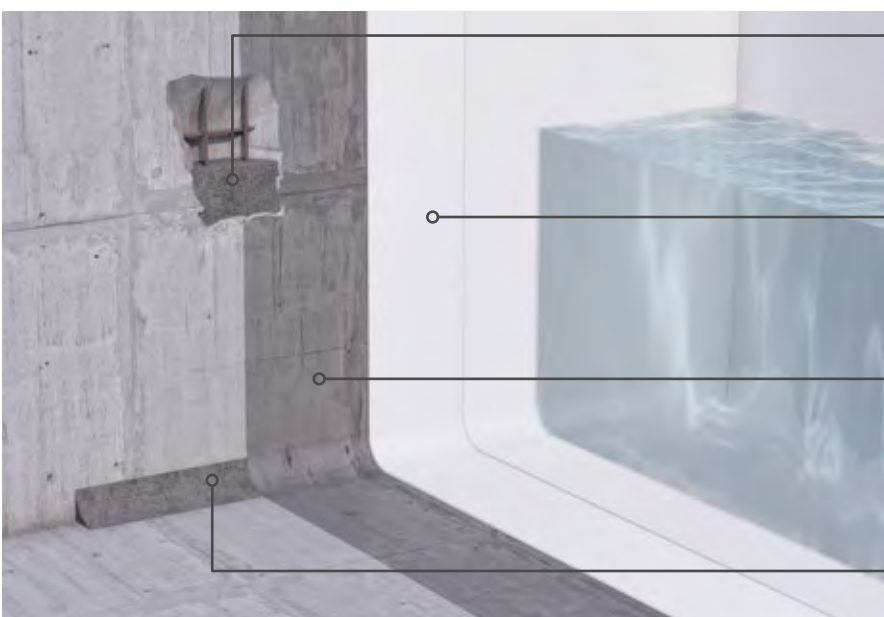
(W 532) KÖSTER Repair Mortar Plus

Concrete water tanks are waterproofed from the inside using KÖSTER NB 1 Grey. KÖSTER NB 1 Grey is certified for use in drinking water environments. The waterproofing is applied onto solid and prepared concrete substrates.

Smaller areas are repaired with KÖSTER Sewer and Shaft Mortar. Larger areas can be restored and reprofiled with KÖSTER Repair Mortar.

For waterproofing as well as for concrete repair, KÖSTER Polysil TG 500 is used as a primer in order to harden the concrete and prepare the substrate for the repair mortar.

Always adhere to the specifications in the respective Technical Guidelines.



Concrete repair

(C 536) KÖSTER Repair Mortar R4

Waterproofing layer

(W 210) KÖSTER 21

Primer

(M 111) KÖSTER Polysil TG 500

Installing fillets

(W 532) KÖSTER Repair Mortar Plus

Waterproofing water tanks with TPO membranes

Mechanical fastening

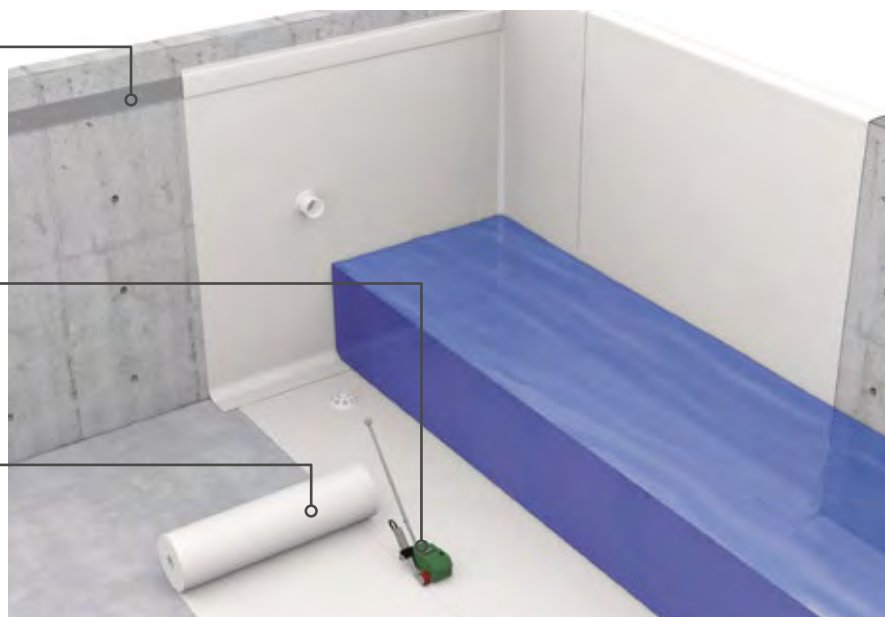
(RT 910) KÖSTER Metal Composite Sheet light grey

Accessories

Leister Automatic Welder Uniroof E 40

KÖSTER TPO Membrane

(RT 815) KÖSTER TPO Aqua 1.5



Waterproofing for drinking water storage structures and tanks must not only remain watertight for many years, but must also meet all sanitary requirements. KÖSTER TPO Aqua is a homogenous thermoplastic polyolefin waterproofing membrane for drinking water structures. KÖSTER TPO Aqua complies with the hygienic requirements for potable water surroundings according to the German DVGW Worksheet W 270 and the KTW guideline.

The membrane is mechanically fastened which leads to low preparation requirements on the substrate. The substrate must be as smooth as possible and free of edges, depressions, and other defects that can mechanically damage the membrane. Edges must be ground and depressions and holes filled and leveled with KÖSTER Repair Mortar. Soil substrates must be excavated down to a solid layer and mechanically compacted. In interior corners on concrete, masonry, or other mineral substrates

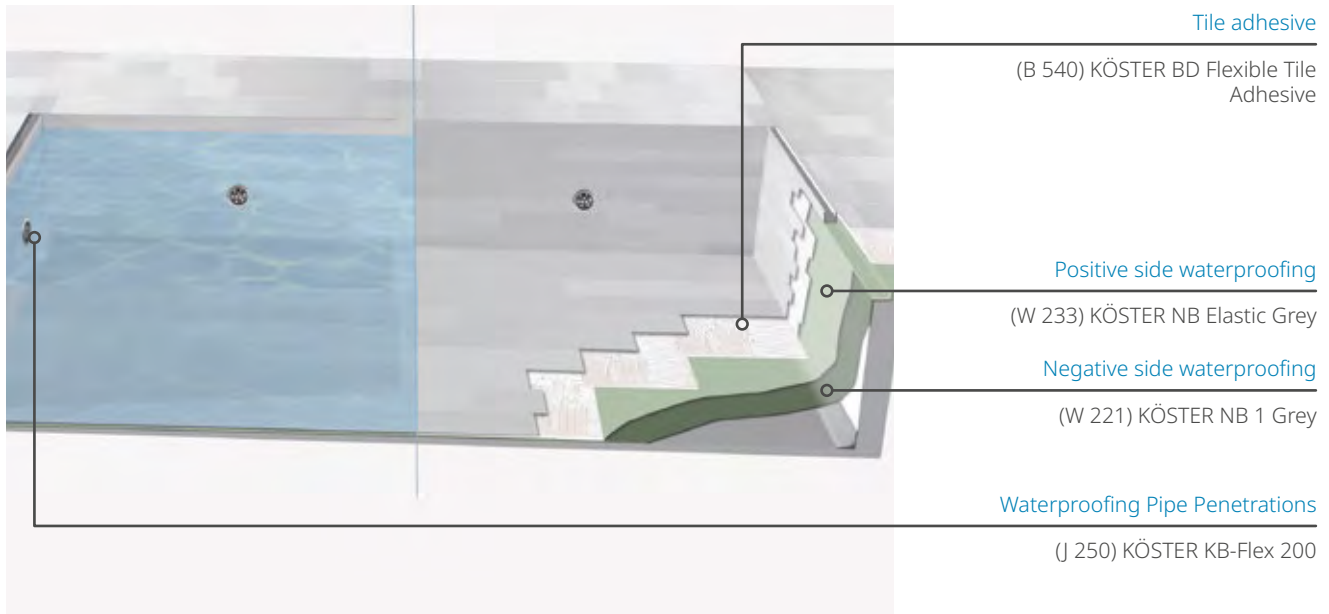
and structures, install a fillet made of KÖSTER Repair Mortar Plus on the wall-floor junction approx. 24 hours prior to the application. For extra mechanical protection of the membrane, a geotextile mat (approx. 500 g/m²) can be installed on the bottom of the reservoir before installing the KÖSTER TPO Aqua.

Overlaps are connected by hot air welding, which creates a homogenous, durable connection.

For large areas, the Leister Automatic Welder Varimat V2 hot air machine is used. Details and non-accessible areas are welded with the Leister Hot-Air Hand Tool with a 40 mm nozzle.

Details such as terminations, penetrations, and flashings are job-site specific and require special care. Always adhere to the specifications in the respective Technical Guidelines.

Waterproofing swimming pools



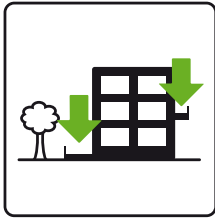
Swimming pools can present a special challenge for waterproofing in that water pressure can affect the outside as well as the inside of the construction. When swimming pools are built directly in the ground, water pressure builds from the inside to the outside just like in a regular water tank. However, if there is no water in the pool due to maintenance or time of year, water pressure from ground moisture surrounding the pool will build from the outside to the inside as similar with a basement. That is why KÖSTER recommends to waterproof swimming pools with a combination of positive and negative side waterproofing. The substrate has to be clean and sound. Damaged areas as well as cracks and holes are

to be repaired with KÖSTER WP Mortar beforehand. Weak or salt contaminated substrates are to be treated with KÖSTER Polysil TG 500. Rounded fillets are installed using KÖSTER WP Mortar in 90-degree inside corners. Edges are rounded off. A negative side waterproofing is applied with two layers

of the cementitious slurry KÖSTER NB 1 Grey. The material penetrates into the mineral substrate and becomes an integral part of the construction, protecting against negative and positive water pressure. Afterwards, two-layers of KÖSTER NB Elastic Grey are applied. KÖSTER NB Elastic Grey is a light colored, waterproof, elastic, crack bridging coating with excellent adhesion to all mineral substrates. The material protects against movements up to 2 mm within the construction. KÖSTER NB Elastic Grey can also be used with a flexible tile adhesive such as KÖSTER BD Flexible Tile Adhesive and subsequently directly tiled over. Pipe and cable penetrations, such as drains and other outflows, can be safely and permanently sealed against water ingress with the flexible plastic sealing compound KÖSTER KB-Flex 200.

Always adhere to the specifications in the respective Technical Guidelines.

Waterproofing balconies and terraces



This field poses the highest demands on waterproofing. It must be able to resist the weather, be waterproof and provide a certain structural stability. Also, outside the movements of the construction members are usually comparably large so that it is necessary to use waterproofing systems with high crack bridging capabilities.

Waterproofing layer

(W 236) KÖSTER NB 4000

Reinforcement layer

(W 450) KÖSTER Flex Fabric

Primer

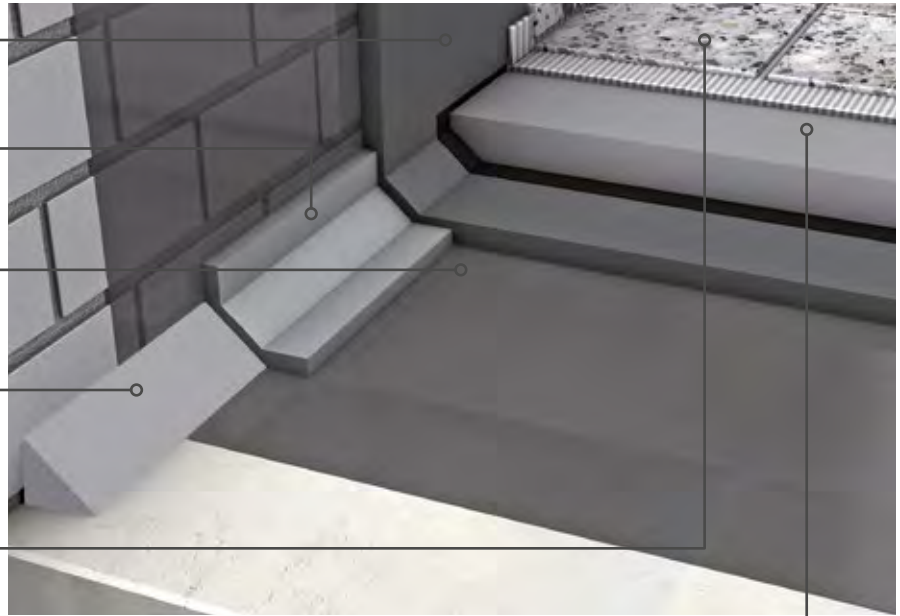
(M 111) KÖSTER Polysil TG 500

Installing fillets

(W 532) KÖSTER Repair Mortar Plus

Surface / Covering

Protective screed



Balconies and terraces are constantly exposed to rain, splash water and high temperature fluctuations. Therefore the waterproofing should always be crack bridging.

KÖSTER offers a variety of systems that can be used in these cases. When waterproofing with KÖSTER NB 4000, the prepared clean concrete substrate needs to be primed with KÖSTER Polysil TG 500. KÖSTER Repair Mortar Plus is used for installing fillets at wall connections, which prevent damages to the waterproofing through movements between balconies/terraces and walls.

Afterwards, the waterproofing system KÖSTER NB 4000 is applied in two layers and brought up the wall at least 15 cm. KÖSTER NB 4000 can be plastered and painted over. The waterproofing system is crack bridging and provides sufficient compressive strength. Depending on the project requirements, a drainage layer (e.g. KÖSTER SD Protection and Drainage Sheet 3-400) or a protective screed can be applied. The protective screed will permanently protect the waterproofing layer from mechanical damage and provide a sloped surface to channel water off the area. With KÖSTER Construction Resin, the sloped screed can be used as a single grain mortar using coarse grain, and therefore, serve as a drainage and protective layer at the same time.

Depending on the customer's requirements, a decorative layer, a covering (e.g. wood or loosely laid panels), or tiles can be applied onto the protective screed.

The system combines the following advantages:

- The waterproofing system and top surface area are completely separated; thus, the waterproofing layer is permanently protected
- The waterproofing allows water vapor diffusion, and can, therefore, be applied onto moist substrates without causing osmotic blistering
- KÖSTER NB 4000 can be plastered over, so that a decorative connection from waterproofing layer to wall can be made
- The system is crack-bridging
- Variable floor coverings and coatings can be used
- When replacing the floor covering, the waterproofing system does not need to be replaced.

Always adhere to the specifications in the respective Technical Guidelines.



Restoration of Masonry



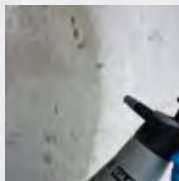
KÖSTER Polysil TG 500

A primer for mineral substrates before waterproofing with cementitious waterproofing slurries. In case of masonry restoration the product is used during substrate preparation for restoration plaster systems in order to harden the substrate and immobilize salts.

KÖSTER Polysil TG 500 is a low viscous, substrate solidifying, hydrophobizing combination product on a polymer / silicate basis for the protection of mineral substrates. On salt containing and moist substrates, it causes a reduction of the pore volume and thereby prevents the renewed formation of salt efflorescence.



Masonry primer



Concrete primer



Prevents salt efflorescence



Strengthens substrate



Article No.: M 111 001

Consumption: Approx. 0.1 - 0.25 kg/m² depending on substrate, strongly absorbent substrates may require more

Packaging: 1 kg bottle (M 110 001)
10 kg Jerrycan (M 110 010)

KÖSTER Restoration Plaster Key

M 154 025

25 kg bag

Fast, coarse plaster key with polymer additives for the substrate preparation of KÖSTER Restoration Plasters. Very good bonding also on very moist and highly salt burdened substrates.

Consumption: Approx. 4 - 6 kg / m²



KÖSTER Hydrosilicate Adhesive SK

M 170 020

20 kg bag

Der KÖSTER Hydrosilikatkleber SK ist ein Mörtel zur Verklebung der KÖSTER Hydrosilikatplatten. Ebenfalls wird der KÖSTER Hydrosilikatkleber SK zur Verklebung der Plattenstöße und zur Abspachtelung der verbauten Platten eingesetzt.

Consumption: Approx. 3 kg / m² (depending on the substrate); Approx. 1.7 kg / m² as spackle per mm layer thickness



**KÖSTER Mautrol
Liquid Sealant**

M 241 012
12 kg Jerrycan

Very thin fluid, deeply penetrating silicifying concentrate for waterproofing against rising damp (wicking moisture) in masonry. It reacts to water insoluble and water-repelling compounds which also have a solidifying and strengthening effect on the building material. Together with KÖSTER NB 1 Grey and KÖSTER Restoration Plasters it is suitable for the restoration of masonry.

Consumption: Approx. 0.1 kg/m per cm wall thickness per m wall



M

KÖSTER Mautrol 2C

M 261 039
Combi package Comp. A 36 kg jerrycan Comp. B 3.5 kg jerrycan

M 261 262
Combi package Comp. A 240 kg drum Comp. B 22 kg jerrycan

Can be applied in strongly moisture penetrated construction members for waterproofing against rising damp (wicking moisture) without previous drying. The material is applied by pressurized injection. Together with KÖSTER Restoration Plasters, it is suitable for the restoration of masonry.

KÖSTER Mautrol 2C is a two-component, solvent-free, low viscous injection fluid by siliconates and esters and has a strengthening and solidifying effect on masonry.

Consumption: Approx. 0.15 kg/m per cm wall thickness



KÖSTER Mautrol Flex 2C

M 262 020
20 kg combipackaging Comp. A 10 kg jerrycan Comp. B 10 kg jerrycan

2-component, solvent-free, acrylic based injection liquid against rising damp (wicking moisture). Suitable for application even in very damp construction members without prior drying.

Consumption: Approx. 0.2 kg/m per cm wall thickness



KÖSTER Crisin Cream

M 278 010
10 l bucket
M 278 310
310 ml cartridge
M 278 600
12 x 600 ml tubular bags

Injection cream based on resin / silane against rising damp (wicking moisture). KÖSTER Crisin Cream is resistant against any moisture / salt content.

Consumption:
12 cm wall thickness: approx. 140 ml / m; 36 cm wall thickness: approx. 510 ml / m



KÖSTER Crisin 76 Concentrate

Very low viscosity synthetic resin for waterproofing against rising damp (wicking moisture) even in case of high moisture and salt contents in the masonry. Due to its very low density and its surface tension which is considerably lower than that of water, KÖSTER Crisin 76 Concentrate displaces water from the capillaries. After full cure, KÖSTER Crisin 76 Concentrate remains elastic and does not rot. Density: 0.91 g/cm³, viscosity 15 mPa·s. KÖSTER Crisin 76 Concentrate is resistant to all aggressive media which are usually encountered in masonry such as acids, alkalis and salts, during application as well as after full cure. Together with KÖSTER Restoration Plasters it is suitable for the restoration of masonry.



Article No.: M 279 005

Consumption: Guide value: 0.04 l / m per cm wall thickness

Packaging: 5 l Jerrycan (M 279 005)
10 l Jerrycan (M 279 010)
30 l Jerrycan (M 279 030)
200 ml cartridge (M 279 200)



Simple installation



Also for thick walls



Successful over 25 years



Very low density

KÖSTER Fine Plaster

M 655 025

25 kg bag

Finely textured thin layer plaster for smooth decorative surfaces on Restoration Plasters and mineral based substrates. It can be applied in layer thicknesses from 2 – 5 mm and is felt-floatable. KÖSTER Fine Plaster is hydrophobic, water, weather, and frost resistant. The surface is finely structured, closed, and can be finished with paint or wallpaper.

Consumption: Approx. 1.4 kg / m² per mm layer thickness



KÖSTER Restoration Plaster Grey

M 661 025

25 kg bag

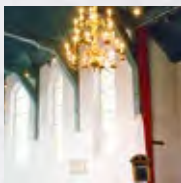
Diffusion-open, salt-resistant restoration plaster. It can be applied manually or by machine. Very high porosity and hydrophobic properties. Prevents or reduces the formation of condensate. Free of light fillers. CE-Certification according to DIN EN 998-1.

Consumption: Approx. 12 kg/m² per cm layer thickness



KÖSTER Restoration Plaster White

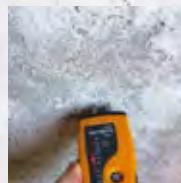
Diffusion-open, salt-resistant, high compressive strength, white restoration plaster with very high porosity and hydrophobicity. It prevents or reduces the formation of condensate. It can be applied manually or by machine.



Suitable for historical objects



On damp masonry



On salt burdened substrates



For external use as well

Article No.:

M 662 025

Consumption:

Approx. 12 kg / m²; per cm layer thickness

Packaging:

25 kg bag

KÖSTER Restoration Plaster White/Fast

M 663 025

25 kg bag

White, fast setting restoration plaster. Diffusion-open, high compressive strength, water-repellent and ready for smoothing after 30 - 60 minutes. Prevents or reduces the formation of condensate. Free of light fillers. It is mainly used for small area waterproofing and restoration projects where a fast succession of work steps is necessary. CE-Certification according to DIN EN 998-1..

Consumption: Approx. 12 kg / m² per cm layer thickness



KÖSTER Restoration Plaster White/Light

M 664 020

20 kg bag

White, water-repellent, hydrophobic, salt-resistant restoration plaster open to water vapor diffusion with a low specific gravity, high porosity, and good pumpability. Prevents or reduces the formation of condensate. CE-Certification according to DIN EN 998-1.

Consumption: Approx. 8 kg / m² per cm layer thickness



KÖSTER Restoration Plaster Grey/Light

M 666 020

20 kg bag

Grey, light, salt-resistant restoration plaster for the repair of moisture and salt burdened substrates with very good pumpability. Due to its porosity and hydrophobicity it allows the masonry to dry and desalinate while protecting the substrate from damage caused by salt crystallization.

Consumption: Approx. 8 kg / m² per cm layer thickness



KÖSTER Hydrosilicate Tapered Board

M 670 001

piece

The KÖSTER Hydrosilicate Tapered Board is a specially designed board that prevents thermal bridges between the external and the internal walls or the ceiling. It is delivered in the size 500 x 380 x 60 to 20 mm.

Consumption: 2 Boards / m



KÖSTER Hydrosilicate Board

M 670 025

15 pcs. (3.30 m²) per package (580 x 380 x 25 mm)

M 670 050

12 pcs. (2.64 m²) per package (580 x 380 x 50 mm)

Hydrophobic, fiber free, breathable, mineral based boards for the renovation of mold infested mineral based interior building materials. KÖSTER Hydrosilicate boards have a high resistance to aging, are insulative and non-flammable. KÖSTER Hydrosilicate boards are free of synthetic additives, regulate moisture, reduce condensate formation, and promote a healthy indoor climate.

Consumption: 4.54 Boards / m²



KÖSTER Suction Angle

M 930 001

piece

Plastic angle for the pressureless and material saving installation of horizontal barriers against rising damp (wicking moisture) with the KÖSTER Suction Angle System. Re-usable.



KÖSTER Installation Tool for Capillary Rods

M 931 001

piece

Assembly tool for an easy and fast installation of KÖSTER Capillary Rods.



KÖSTER Extension for Crisin Cream Cartridge

M 932 100

piece

Length: 400 mm



KÖSTER Drill Hole Cleaner

M 933 001

piece

For cleaning drill holes before inserting the KÖSTER Capillary Rods.



KÖSTER Capillary Rods

M 963 045
Length: 45 cm
M 963 090
Length: 90 cm

For targeted installation of horizontal barriers against rising damp (wicking moisture) with the KÖSTER Suction Angle System.
The patented KÖSTER Capillary Rod releases the injection liquid evenly and directly to the masonry, effectively bridging cracks and voids. No material is wasted in cavities.



KÖSTER Protimeter

M 999 001
piece

For evaluating the surface moisture of construction members.

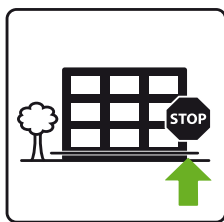


Good to know:
Salt in masonry

Without a functioning horizontal barrier, water containing various salts can be transported into and through a wall through capillary action. These can have different sources such as de-icing salt, fertilizer, or even from the brick itself. When the salt containing water evaporates in the surface area of the wall, the salt remains in the wall or on its surface, leading to an increase of salt concentration. The salt crystallizes on the surface or in the pores of the building material. This process is characterized by directed growth, an increase in volume and high strength of the crystals. When salt crystals form in the pores of a building material over a longer period of time, a high crystallization pressure builds up. This eventually leads to the destruction of the pore. Once this process has proceeded far enough, the surface of the construction material becomes brittle and starts to fall off. We recommend KÖSTER Crisin 76 Concentrate, KÖSTER Polysil TG 500 and KÖSTER Restoration Plasters as the ideal system components to protect and repair masonry from salt damage.



Horizontal barriers and restoration of masonry



Rising moisture in masonry over a longer period of time can lead to considerable damages. An indication of these damages is salt efflorescence, flaking plaster, moist wallpaper and the formation of mold which can be harmful. KÖSTER horizontal barriers stop rising moisture in new construction and existing buildings to protect the valuable building substance.

Horizontal barriers beneath rising walls (New Construction)

Horizontal barriers for walls

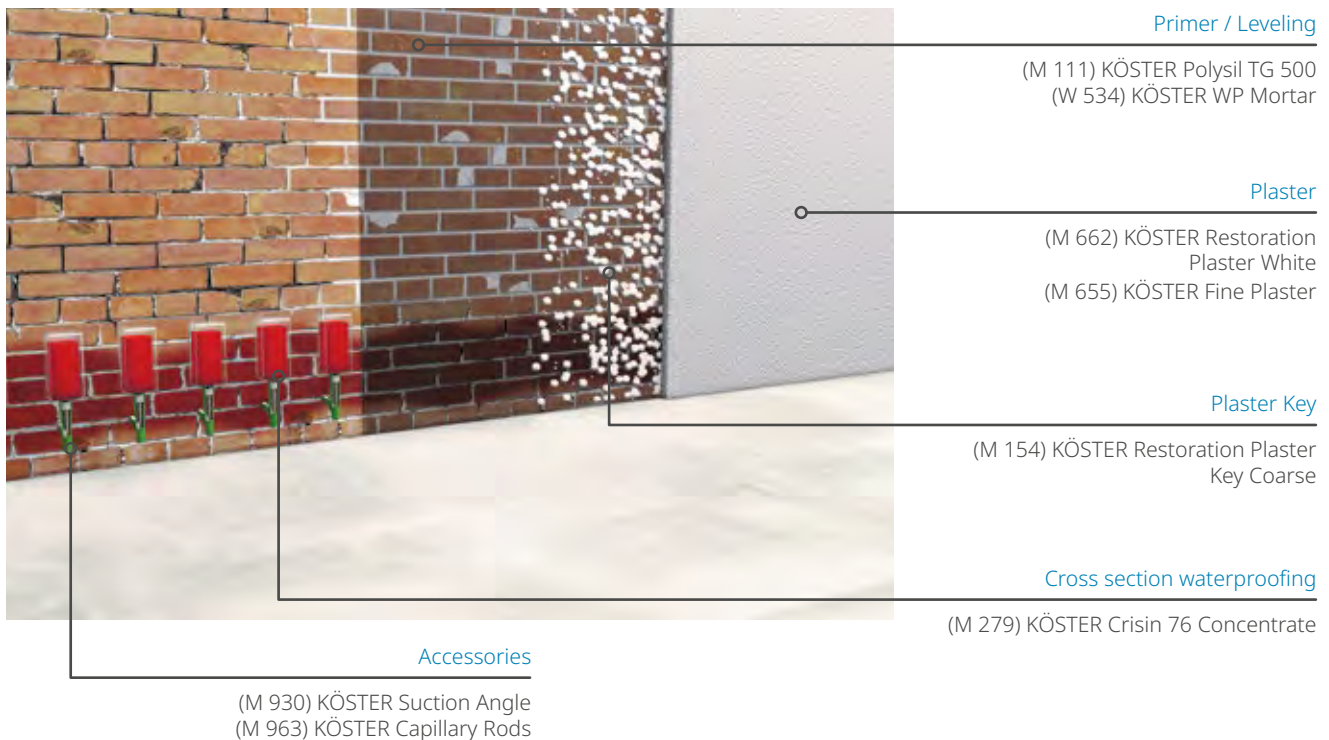
(W 810) KÖSTER Fix-Tape 15 SY



A horizontal waterproofing beneath walls in new construction is required to avoid rising moisture due to capillary action in masonry or concrete. For this application many KÖSTER products can be used. KÖSTER Fix-Tape 15 SY is a self adhesive waterproofing tape which is easy and fast to apply.

Always adhere to the specifications in the respective Technical Guidelines.

Horizontal barriers with pressureless injection



Rising (or “wicking”) moisture is among the most frequently encountered causes of damage in masonry walls. The results are clearly identifiable through the spalling of plaster, damaged joints and bricks, and also through salt efflorescence and algae growth. Damage from rising moisture can be avoided by the installation of a horizontal barrier.

The easiest and most successful KÖSTER system to install a horizontal barrier in existing walls is the KÖSTER Suction Angle System with KÖSTER Crisin 76 Concentrate. KÖSTER Crisin 76 Concentrate is a very thin fluid resin which penetrates into the smallest capillaries in the building material, stops the capillary action permanently and also has a hydrophobizing effect.

Boreholes are drilled regularly spaced depending on the wall thickness. KÖSTER Crisin 76 Concentrate is injected without pressure into the wall via the KÖSTER Suction Angle and the KÖSTER Capillary Rod which acts as a wick. The pressureless system uses the same capillary action which is the cause for rising damp. Thereby rising moisture is stopped with the aid of its cause. The big advantage of the KÖSTER Capillary Rod is that it doesn't waste material in cracks or voids. Only where the rod touches the wall of the borehole will the material be released.

In some cases such as in less moist walls KÖSTER Mautrol Liquid Sealant can also be applied. Before the application an analyses of the moisture content and the salt content must be carried out.

In cases where damage is caused by rising moisture the old plaster has to be removed from the wall. After the installation of the horizontal barrier the application of KÖSTER Restoration Plaster is required. KÖSTER Restoration Plaster allows the masonry to dry without damage. KÖSTER Restoration plasters are open to vapor diffusion and are hydrophobic. Salts remaining in the wall are absorbed by the KÖSTER Restoration Plasters so that salt doesn't effloresce to the surface and doesn't cause damage to the plaster or paint.

KÖSTER Restoration Plasters are available in different varieties (grey, white, fast and light). KÖSTER Restoration Plaster 2 White is often used in older buildings without subsequent painting. KÖSTER Fine Plaster creates a smooth decorative surface and can be applied when desired to meet architectural goals. KÖSTER Restoration Plasters can only be painted over with breathable (open to vapor diffusion) paint such as KÖSTER Silicon Paint White.

Always adhere to the specifications in the respective Technical Guidelines.

Horizontal barriers with pressure injection for voidless masonry

Plaster

(M 655) KÖSTER Fine Plaster
(M 662) KÖSTER Restoration Plaster White

Primer / Leveling

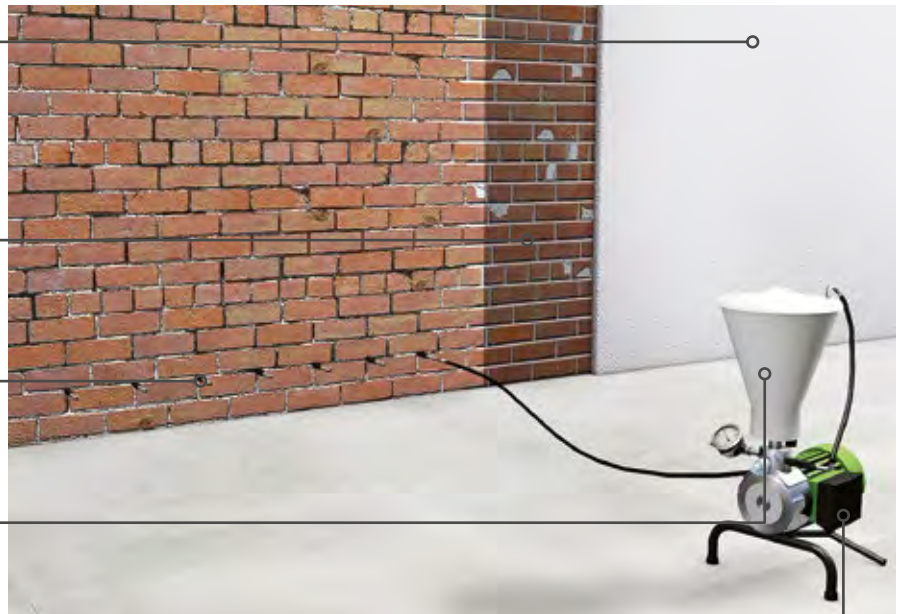
(M 111) KÖSTER Polysil TG 500
(W 530) KÖSTER Repair Mortar

Installing the packers

(IN 914) KÖSTER Superpacker
13 x 85 mm CH

Horizontal barrier via injection

(M 279) KÖSTER Crisin 76 Concentrate



Pump

(IN 929) KÖSTER 1C Injection Pump

Fast and effective: The installation of a horizontal barrier via pressurized injection. When it is possible to ensure that the wall is free of cracks or voids, the horizontal barrier can be installed with a pressurized injection system. Cracks and voids which become apparent during the drilling process can be filled. After filling, the borehole is re-drilled.

Suitable injection liquids for this kind of application are KÖSTER Crisin 76 Concentrate, KÖSTER Mautrol 2C and KÖSTER Mautrol Flex 2C. Two component materials have a faster setting time which causes a quicker blockage of the capillaries.

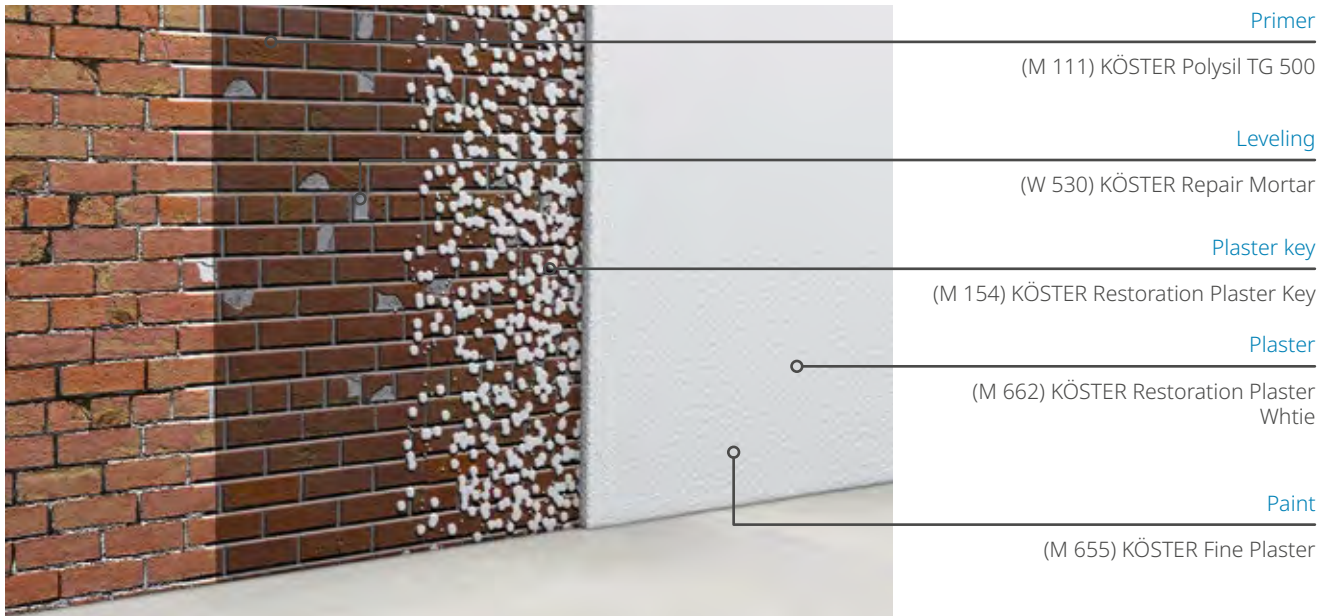
In cases where damage is caused by rising moisture the old plaster has to be removed from the wall. After the installation of a horizontal barrier the application of KÖSTER Restoration Plaster is required. KÖSTER Restoration Plaster allows the masonry to dry without damage.

KÖSTER Restoration plasters are open to vapor diffusion and are hydrophobic. Salts remaining in the wall are absorbed by the KÖSTER Restoration Plasters so the salt doesn't effloresce to the surface and doesn't cause damage to the plaster or paint.

KÖSTER Restoration Plasters are available in different varieties (grey, white, fast and light). KÖSTER Restoration Plaster 2 White is often used in older buildings without subsequent painting. KÖSTER Fine Plaster creates a smooth decorative surface and can be applied when desired to meet architectural goals. KÖSTER Restoration Plasters can only be painted over with breathable (open to vapor diffusion) paint such as KÖSTER Silicon Paint White.

Always adhere to the specifications in the respective Technical Guidelines.

Restoration of masonry with restoration plasters



When masonry is just slightly moist often a restoration with KÖSTER Restoration Plasters is enough to dry the wall and stop damage from occurring. In this case the old plaster has to be removed from the wall and the joints raked out. All loose particles have to be removed to provide a stable and absorptive, openpored surface. Priming with KÖSTER Polysil TG 500 optimally prepares the masonry for the application of KÖSTER Restoration Plaster. KÖSTER Polysil TG 500 hardens the substrate as well as reduces the mobility of salts. Masonry repairs are carried out with KÖSTER WP Mortar.

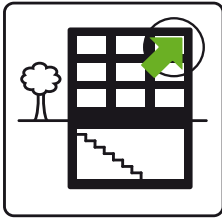
Before the application of the main plaster coat, KÖSTER Restoration Plaster Key Coarse is applied to provide a larger surface area and to ensure an optimal bond to the substrate. KÖSTER Restoration Plaster allows the masonry to dry without damage. KÖSTER Restoration plasters are open to vapor diffusion and are

hydrophobic. Salts remaining in the wall are absorbed by the KÖSTER Restoration Plasters so that salt doesn't effloresce to the surface and doesn't cause damage to the plaster or paint.

KÖSTER Restoration Plasters are available in different varieties (grey, white, fast and light). KÖSTER Restoration Plaster White is often used in older buildings without subsequent painting. KÖSTER Fine Plaster creates a smooth decorative surface and can be applied when desired to meet architectural goals. KÖSTER Restoration Plasters can only be painted over with breathable (open to vapor diffusion) paint such as KÖSTER Silicon Paint White.

Always adhere to the specifications in the respective Technical Guidelines.

Mold control



Mold in living areas caused by moisture penetration and thermal bridges results in extensive health damage because the mold releases its spores into the air which is then inhaled by the inhabitants. A special Anti Mold System – which functions on a purely physical basis and which is free of fungicidal toxins provides a permanent protection because mold can not grow on this coating.

Hydrosilicate system for mold remediation and prevention on interior surfaces

Paint

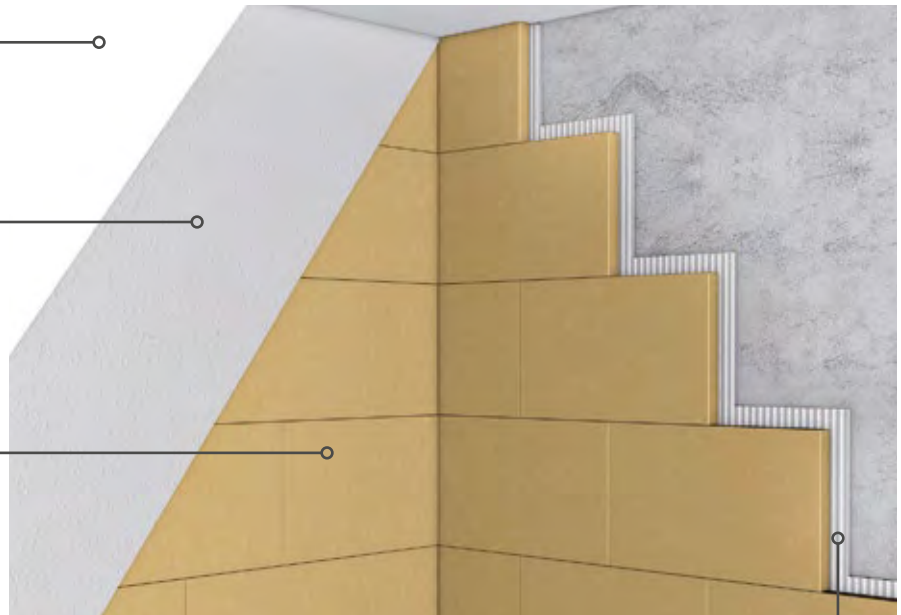
(P 262) KÖSTER Acrylic Paint

Spackle

(M 170) KÖSTER Hydrosilicate Adhesive SK

Boards

(M 670) KÖSTER Hydrosilicate Tapered Board
(M 670) KÖSTER Hydrosilicate Board



Adhesive

(M 170) KÖSTER Hydrosilicate Adhesive SK

Due to health reasons alone, living and storage spaces should be free of mold. The KÖSTER Hydrosilicate Board System fights mold without the use of toxins. Based on a pure physical functionality, KÖSTER Hydrosilicate Boards stops mold in its tracks. Due to its thermal insulating effect, it acts as a moisture control, helps reduce the formation of condensation, and provides a pleasant living environment. The presence of high alkalinity and a permanent dry surface prevent the undesirable growth of mold.

Old wall coverings and bond inhibiting substances such as wallpaper, gypsum residues, paint or insulation must be completely removed. Absorbent substrates are primed with KÖSTER Polysil TG 500. Irregularities and holes in the surface smaller than 5 mm can be levelled with KÖSTER Hydrosilicate Adhesive SK. Larger surface defects can be repaired using KÖSTER

Repair Mortar mixed with 20% KÖSTER SB Bonding Emulsion added to the mixing water.

Apply the system only after the substrate leveling has completely cured. For gluing, KÖSTER Hydrosilicate Adhesive SK is fully and completely applied to the substrate. The KÖSTER Hydrosilicate Boards are cut to the desired size using a hand saw and are pressed to the wall. After the boards have been installed, bead of KÖSTER Hydrosilicate Adhesive SK is applied along edges of the boards to make sure that the joints are fully filled. Subsequently, the whole area is plastered with a layer of KÖSTER Hydrosilicate Adhesive SK.

All successive paints must be open to vapor diffusion, such as KÖSTER Silicone Paint White. Always adhere to the specifications in the respective Technical Data Sheets.



Injection Systems

Crack injection and crack repair systems

IN //

KÖSTER IN 1

- IN 110 001
1 kg combipackage
- IN 110 005
5.5 kg combipackage
- IN 110 027
27.5 kg combipackage

Water activated hydrophobic PU injection foam. The material only reacts when it comes in contact with water and immediately forms a stiff, waterproof polyurethane foam. Volume expansion up to 30 times. Free of solvents and fillers, resistant to hydrolysis.

Fields of application: waterproofing water-bearing cracks in concrete and masonry.

Consumption: Approx. 0.1 kg/l void



KÖSTER 2 IN 1

Broadly applicable solvent-free PU injection resin for dry and water bearing cracks. The specialty: KÖSTER 2 IN 1 forms an elastic foam when coming into contact with water which pushes the water out of the crack. If no water is present the material forms an elastic solid body resin and permanently seals the crack.

Fields of application: Waterproofing of water bearing and permanently sealing dry cracks in masonry and concrete.



Article No.: IN 201 001

Consumption: Approx. 0.1 kg / l void (foam), approx. 1.1 kg / l void (solid resin)

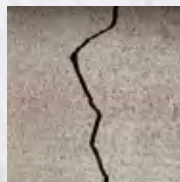
Packing: 1 kg combipackage (IN 201 001)
5 kg combipackage (IN 201 005)
25 kg combipackage (IN 201 025)



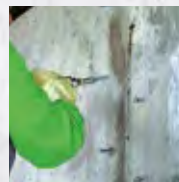
For water bearing cracks



Forms foam in wet cracks



For dry cracks



Forms resin in dry cracks

KÖSTER IN 2

- IN 220 001
1 kg combipackage
- IN 220 008
8 kg combipackage
- IN 220 040
40 kg combipackage

Elastic PU injection resin. For permanently waterproofing cracks and joints. It is designed to withstand continuous contraction and expansion and is therefore ideal for the repair of moving cracks. Also suitable for slightly damp cracks. Viscosity approx. 200 mPa.s.

Fields of application: In combination with KÖSTER IN 1 for the permanent, elastic sealing of water bearing cracks and joints. Without pre-injection for the sealing of dry cracks, joints and voids. KÖSTER IN 2 is used in cases where future movements of the building structure can not be excluded.

Consumption: Approx. 1.1 kg/l void



KÖSTER KB-Pox IN

Solvent free, 2 component low viscous epoxy injection resin for crack injection. Due to its high rate of penetration into porous substrates and its excellent adhesion to concrete, stone, masonry and metal, KÖSTER KB-Pox IN permanently seals and bridges cracks and as well as joints and restores structural integrity. The material does not contain any fillers or softeners and thereby sedimentation is avoided.

Fields of application: Suitable for the restoration of structural bonding in cracks and joints. Without pre-injection KÖSTER KB-Pox IN can be used for filling and closing dry, damp and wet cracks, joints and voids.



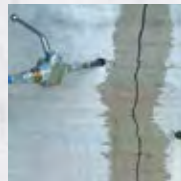
Article No.: IN 231 001
Consumption: Approx. 1 kg / l void
Packing: 1 kg combipackage (IN 231 001)
 6 kg combipackage (IN 231 006)



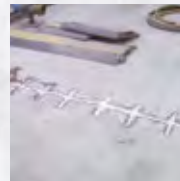
Penetrates into very fine cracks



Suitable for moist cracks



Suitable for wet cracks



Crack stitching

KÖSTER IN 4

IN 240 010

10 kg combipackage

Solvent free, flexible, extremely low viscosity polyurethane for elastically sealing very fine cracks and construction joints in building structures. KÖSTER IN 4 is permanently elastic and flexible at low temperatures.

Fields of application: waterproofing of fine cracks, construction joints, hose injection, or for solidifying porous building structures.

Consumption: Approx. 1.1 kg/l void



KÖSTER IN 5

IN 250 010

10 kg combipackage

2-component elastic PU injection resin, specially suitable for hose injection. For permanently and elastically sealing dry, moist and waterbearing cracks and joints in concrete. Very low viscosity (at + 25 °C approx. 70 mPa · s). Mixing ratio 1 : 1 by volume. Fields of application: pressurized injection, waterproofing of fine cracks, hose injection or for solidifying porous building structures. CE-Certification according to DIN EN 1504-5.

Consumption: Approx. 1.1 kg / l void



KÖSTER IN 7

IN 270 005

5.5 kg combipackage

IN 270 027

27.5 kg combipackage

Viscoplastic, water activated PU injection foam. Reacts only when in contact with water and spontaneously forms a compact, viscoplastic, waterproof polyurethane foam which is able to follow crack movements. Volume expansion up to 30 times. Free of solvents and fillers, resistant to hydrolysis.

Fields of application: Single-step waterproofing of water bearing cracks without the subsequent injection of a solid body resin.

Consumption: Approx. 0.1 kg/l void



KÖSTER PUR Gel

IN 285 002

2.5 kg jerrycan

IN 285 025

25 kg jerrycan

IN 285 210

210 kg drum

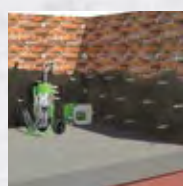
Water activated polyurethane gel for area injections as well as for waterproofing expansion and dilation joints KÖSTER PUR Gel reacts with water and can bind up to ten times its own weight in water. Oakum soaked in KÖSTER PUR Gel can be an elegant method for solving difficult active water ingress problems in pipes, joints, and cavities. It is often used where large amounts of free water must be bound.

Consumption: Depends on the field of application.

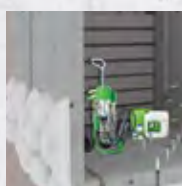


KÖSTER Injection Gel G4

Low viscosity acrylic gel for curtain injection and area injection of masonry. Water based, elastic gel with a very low starting viscosity after initial mixing. It is capable of binding water during gelation. The swelling ability after full curing allows a 40% uptake of additional water into the gel structure. Due to the low starting viscosity it can be injected into fine substrate pores. Drinking water certification.



Masonry injection



Curtain injection



Injection equipment



Specialized applications

Article No.:

IN 290 021

Consumption:

Depends on the field of application.

Packing:

Component A1: 20 kg;
Component A2: 1 kg;
Component B: 0.4 kg

KÖSTER Injection Gel S4

IN 294 001 A2: 1 kg

IN 294 010 B: 10 kg

IN 294 020 A1: 20 kg

IN 294 020 B+: 20 kg

IN 294 021: Set: A1: 20 kg;

A2: 1 kg; B: 0,4 kg

IN 294 400 B: 400 g

Reaction time adjustable acrylic gel for curtain injection and dilatation joint waterproofing (special case of the injection group: void injections). Due to the low viscosity it can be injected into very fine pored structures (like soil) using a multi-stage injection technique fitted to the reaction-time curve of the material (Curtain Injection). Can be used with the B + component to add high flank adhesion to concrete surfaces (dilatation joint waterproofing). Yields after reaction time a viscoelastic product that is very suitable for moving joints. Can take up water after reaction (swelling).

Consumption: Depends on the field of application



KÖSTER Micro Grout 1C

IN 295 024

24 kg bag

Injection grout for the restoration of structural strength in cracks or voids in masonry and concrete. KÖSTER Micro Grout 1C possesses a high compressive strength, is shrink free, and does not show sedimentation during its pot life. Fields of application include crack injection also in overhead areas, filling of voids, as well as the grouting of masonry anchors.

Consumption: Approx. 1.6 kg / l void



KÖSTER Injection Barrier

IN 501 025

25 kg bag

Mortar for full area injection barrier when injecting KÖSTER Injection Gel G4. Mixed with KÖSTER Mortar Boost.

Consumption: Approx. 1.8 kg / mm / m²



KÖSTER PUR Cleaner

IN 900 010

10 l jerrycan

Cleaning agent for the removal of fresh polyurethane. Suitable for cleaning tools, e. g. the KÖSTER 1C Injection Pump after injecting KÖSTER Injection Resins. Based on special solvents.

Consumption: as needed



KÖSTER Masonry Packer 13 mm x 85 mm CH

IN 901 001

piece

KÖSTER masonry packer is particularly suitable for pressure injections into masonry. It provides a high and homogeneous contact pressure to the borehole. Four fins and two ridges on the rubber gasket prevent rotation during tightening and facilitate the optimal fixation of the packer in the borehole. It has a firmly mounted cone-head fitting for pressure injection and is galvanised.



KÖSTER Masonry Packer 13 mm x 115 mm CH

IN 902 001

piece

KÖSTER masonry packer is particularly suitable for pressure injections into masonry. It provides a high and homogeneous contact pressure to the borehole. Four fins and two ridges on the rubber gasket prevent rotation during tightening and facilitate the optimal fixation of the packer in the borehole. It has a firmly mounted cone-head fitting for pressure injection and is galvanised.



KÖSTER Impact Packer 12 mm x 70 mm

IN 903 001

piece

Plastic packer with cone-head fitting and non-return valve for low-pressure injection used in horizontal barriers with KÖSTER Mautrol 2C or KÖSTER Mautrol Flex 2C.



KÖSTER Drive in aid for Impact Packer 12

IN 907 001

piece

Plastic cylinder for installing impact packers.



KÖSTER Lamella Impact Packer Adapter

IN 908 001

piece

Adapter for connecting KÖSTER Lamella Impact Packers.



KÖSTER Lamella Impact Packer

IN 909 001

piece

IN 910 001

Non-Return Valve for Lamella Packer (1 piece)

A modular impact packer for the injection of grouts, gel, and injection resins. Depending on the application it can be expanded with a slip-on non-return valve. Drillhole diameter 18 mm. Patented.



KÖSTER Drive in aid for Lamella Packer

IN 911 001

piece

Plastic cylinder for installing KÖSTER Lamella Packer.



KÖSTER Superpacker*

IN 912 001

10 mm x 85 mm

IN 913 001

10 mm x 115 mm

IN 914 001

13 mm x 85 mm

IN 915 001

13 mm x 115 mm

IN 916 001

13 mm x 85 mm

IN 917 001

13 mm x 115 mm

The KÖSTER Superpacker is particularly suitable for pressure injections.

The KÖSTER Superpacker provides a very high contact pressure to the borehole due to the cone-shaped center of the tightening mechanism. Four fins and two ridges on the rubber gasket prevent rotation during tightening and facilitate the optimal fixation of the packer in the borehole. It has a firmly mounted cone-head fitting for pressure injection and is galvanised.



KÖSTER One-Day-Site Packer*

- IN 918 001
13 mm x 90 mm
- IN 919 001
13 mm x 120 mm
- IN 921 001
13 mm x 90 mm
- IN 922 001
13 mm x 120 mm

The KÖSTER ONE-DAY-SITE Packer allows injection work to be completed in one day.

The screw packer for pressure injection has a firmly mounted pan-head fitting and two non-return valves. Immediately after injecting, that part of the port which protrudes from the wall can be unscrewed and removed. The central part of the port stays in the wall sealing the borehole so that no injection material can flow out of the borehole even under high pressure. The borehole can then be closed immediately after injection.



IN

Optional: All packers can also be delivered with loosely mounted cone-head fittings or pan-head fittings.

Good to know:
Analysing Crack Movements

Moving cracks are cracks where one of the flanks of the crack or both change their location. To analyze if a crack moves or not, a very simple and secure method can be used: a gypsum mark serves as a crack monitor. A bone-shaped layer of gypsum with a thickness of 10 mm is applied to the cracked surface. Gypsum marks have to be numbered and dated. Moreover, the position and state of the installed gypsum marks are to be documented with drawings or photographs at regular intervals over a certain period of time. The gypsum marks are frequently checked. If the mark is unbroken, the crack did not move. If the crack has moved, the gypsum mark will have cracked right over the crack in the substrate. A moving crack can be sealed either elastically (in the case of waterproofing or aesthetic repair) or rigidly (in the case that restoration of the structural strength is required). When closing moving cracks rigidly, the appearance of a new crack close to the old crack must be prevented e.g. by eliminating the cause of the movement.



KÖSTER PUR Gel Pump

Electrical 2C injection pump with stageless adjustable mixing ratio (gel : water). Operating pressure is approx. 15 bar. The maximum delivery rate is approx. 2.5 l / min.



Curtain injection



Surface injection



Water-bearing joints



Adjustable mixing ratio

Article No.: IN 928 001

Packing: Piece



KÖSTER Water Hose for PUR Gel Pump

IN 928 002

piece

Length: 5 m



KÖSTER Gel Hose for PUR Gel Pump

IN 928 003

piece

Length: 5 m



KÖSTER Manometer for PUR Gel Pump

IN 928 004

piece



KÖSTER Mix head for PUR Gel Pump

IN 928 005

piece



KÖSTER Injection Whip for Gel Pumps

IN 928 006

piece

For KÖSTER Acrylic Gel Pump and KÖSTER PUR Gel Pump.

Length: 250 mm



KÖSTER Slide Coupling for pan-head fitting

IN 928 007

piece



KÖSTER Swivel Joint

IN 928 008

piece

Connection between injection whip and slide coupling.

Length 30 mm



KÖSTER 1C Injection Pump

Electrical 1C injection pump for injecting of cracks and voids. It is suitable for the injection of all KÖSTER injection materials (foams and resins). Operating pressure can be adjusted from 0 - 200 bar. The maximum delivery rate is approx. 2.2 l / min.



0-200 bar adjustable pressure



Suitable for foams



Suitable for resins



6 l container capacity

Article No.:

IN 929 001

Packing:

Piece



KÖSTER HD Injection Hose for 1C Injection Pump

IN 929 002

piece

Length: 5 m



KÖSTER Ball Valve for 1C Injection Pump

IN 929 003

piece



KÖSTER Manometer for 1C Injection Pump

IN 929 004

piece



KÖSTER Material Hopper for 1C Injection Pump

IN 929 005

piece

6l material hopper with sieve for the KÖSTER 1C Injection Pump.



KÖSTER Coarse Sieve for 1C Injection Pump

IN 929 006

piece

Coarse sieve for the material hopper of the KÖSTER 1C Injection Pump.



KÖSTER Fine Sieve for 1C Injection Pump

IN 929 007

piece

Fine sieve for the material hopper of the KÖSTER 1C Injection Pump.



KÖSTER Acrylic Gel Pump

IN 930 001

piece

Pneumatic pump made of stainless steel for the application of KÖSTER Injection Gel G4. Mixing ratio 1: 1
Capacity: Max. 11 ltrs. per minute. Working pressure: 20 - 200 bar.



KÖSTER Material Hose

IN 930 002

piece

Length: 2 m



KÖSTER Gel Packer (Base)

IN 931 001

piece

Impact packers for gel injection using flat-head fitting and non-return valves. With connection threads for an extension pipe. 18 mm x 115 mm.



KÖSTER Gel Packer (End piece)

IN 932 001

piece

Patented end piece for gel packers with four sideways facing outlets for curtain injection (German patent 599 10 808.8, European patent No. 0 980 935). With connection threads for the KÖSTER Gel Packer Extension Pipe.



KÖSTER Gel Packer extension pipe

IN 933 001

piece

Extension pipe for KÖSTER Gel Packers.
Length: 800 mm.



KÖSTER Drive-in Aid for Gel Packers

IN 935 001

piece

Drive-in aid for the KÖSTER Gel Packer.



KÖSTER Cutting Device for Gel Packers

IN 936 001
piece

Cutting device for reducing the length of KÖSTER Gel Packer Extension Pipes as well as KÖSTER Capillary Rods.



KÖSTER Loka Handpump

IN 952 001
piece

Manual membrane pump for the pumping and injection of grouts.



KÖSTER Hand Pump without manometer

IN 953 001
piece

For small injection projects or areas which are difficult to access. Operating pressure 10 bar max., output approx. 2 cm³ per pass.



KÖSTER Hand Pump with manometer

IN 953 002
piece

For small injection projects or areas which are difficult to access. Operating pressure 10 bar max., output approx. 2 cm³ per pass.



KÖSTER Injection Whip for Hand Pump

IN 953 003
300 mm, piece
IN 953 004
500 mm, piece

Available length: 300 mm or 500 mm. Threaded connection M10 outside



KÖSTER Grip Head

IN 953 005
piece

with 4 jaws for cone-head fittings.



KÖSTER Cleaning Brush

IN 959 001

piece

Conical round brush for cleaning voids at cable and pathway penetrations.



KÖSTER Resin Stirrer 100 mm

IN 988 001

Resin Stirrer 100 mm

IN 988 002

Replacement disc 100 mm

Special mixer for resins. Reduces air enclosures ent-
rainment. Replaceable stirring disc. Shaft 12 mm Ø for
chuck

large version: hex head, stirrer diameter: 11 mm,
stirrer length: approx. 48 cm, diameter stirring disc:
10 cm



KÖSTER Resin Stirrer 75 mm

IN 989 001

Resin Stirrer 75 mm

IN 989 002

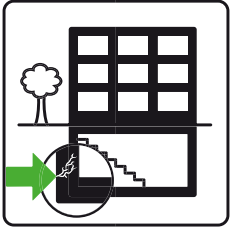
Replacement disc 75 mm

Special mixer for resins. Reduces air enclosures ent-
rainment. Replaceable stirring disc. Shaft 12 mm Ø for
chuck

small version: hex head, stirrer diameter: 9 mm, stirrer
length: approx. 28 cm, diameter stirring disc: 7.5 cm



Crack Injection and Crack Repair Systems



Cracks in the building substance are structurally weak points. Additionally, penetrating water may cause damage and may reduce the usage and lifetime of the building. An elastic sealing or structural-bonding of the crack is required. In order to achieve this, the crack is filled over its entire course with a polyurethane injection resin via pressure injection.

Elastic and structural crack injection by pressure injection on dry or wet cracks



Injection resin (elastic)

(IN 201) KÖSTER 2 IN 1

Injection resin (structural)

(IN 231) KÖSTER KB-Pox IN

Injection packers

KÖSTER Superpacker

Pump

(IN 929) KÖSTER 1C Injection Pump

Dry or wet cracks are sealed permanently with KÖSTER injection materials.

KÖSTER 2 IN 1 is the standard material for waterproofing cracks. The material forms a foam when it comes in contact with water and stops it by reacting with the water or displacing it. A second injection using the same material permanently and elastically waterproofs the crack.

KÖSTER KB Pox IN can be used for structural re-bonding in dry or wet cracks.

KÖSTER IN 5 is a very low viscous polyurethane injection resin with a very long pot life. It is especially suitable for injection into very small and fine cracks.

KÖSTER Micro Grout 1C is a mineral injection material which is ideal to fill voids and cracks of medium width. The material has excellent adhesion properties even to damp substrates. It also possesses a very high compressive strength after curing.

All KÖSTER injection resins are installed with the KÖSTER 1C Injection Pump via injection valves

called "Packers" into the crack. Depending on the application, different packers are available. KÖSTER Impact Packers 12 mm are installed very quickly and are recommended for low to medium pressure.

The KÖSTER Superpackers are used for all applications injecting with low and high pressure. KÖSTER One Day Site Packers have an extra one-way return valve. The bottom portion of the packer prevents the injection material from flowing back out of the wall so that the upper part of the packer can be removed directly after injection and the borehole stays pressure sealed. The drill hole can be sealed immediately after the injection works.

KÖSTER Micro Grout 1C develops an excellent bond to wet substrates and has a high final compressive strength.

Always adhere to the specifications in the respective Technical Guidelines.

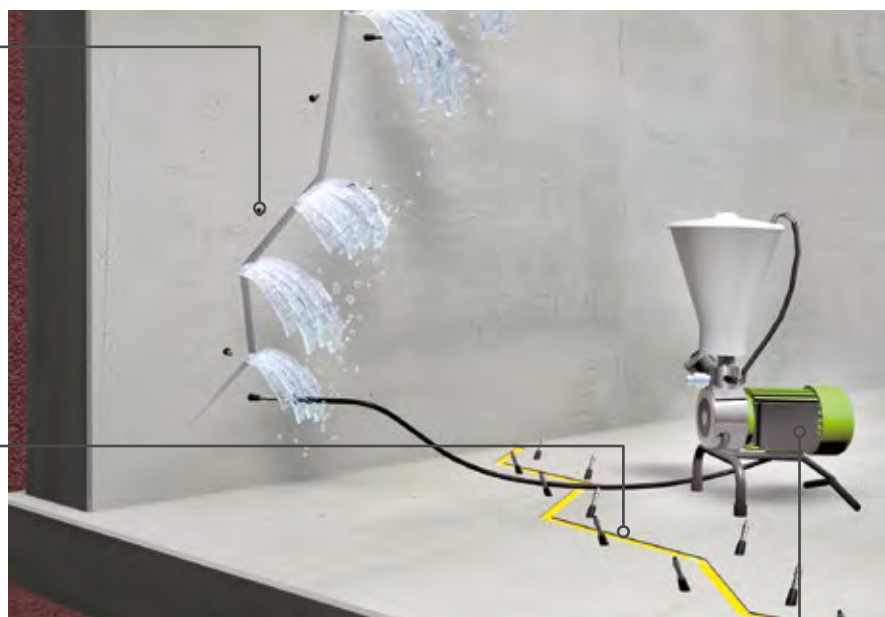
Pressure injection of water bearing cracks

Injection packers

KÖSTER Superpacker

Injection resin

(IN 110) KÖSTER IN 1
Permanent seal with
(IN 220) KÖSTER IN 2



Pump

(IN 929) KÖSTER 1C Injection Pump

In case of water actively leaking from a crack a combination of KÖSTER IN 1 (very fast foaming after contact with water) and KÖSTER IN 2 (used for permanently sealing the crack) is applied.

KÖSTER IN 7 is also a very fast foaming injection resin which creates a permanently elastic seal. KÖSTER IN 7 needs to have contact with water to build foam and for curing.

All KÖSTER injection resins are installed with the KÖSTER 1C Injection Pump via injection valves called "Packers" into the crack. Depending on the application, different packers are available.

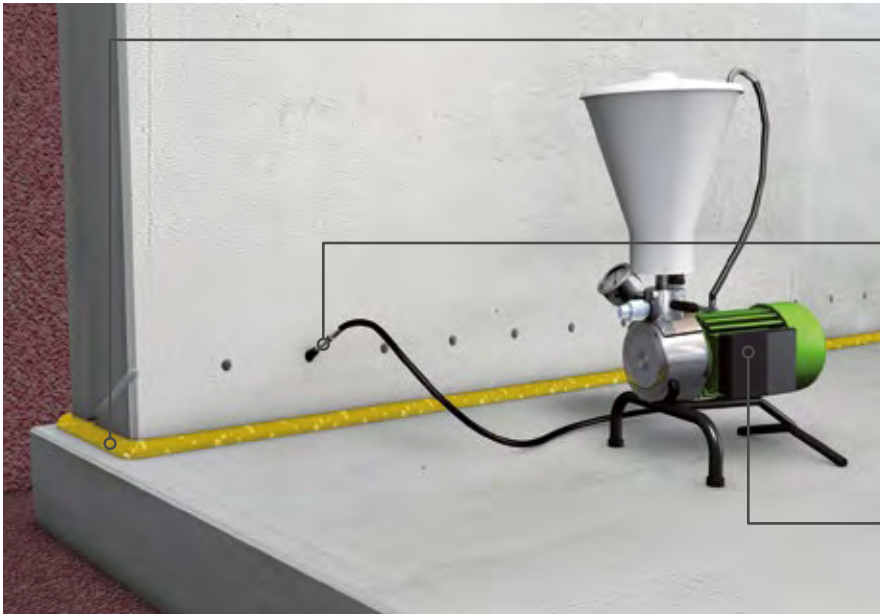
KÖSTER Impact Packers 12 mm are installed very quickly and are recommended for low to medium pressure.

KÖSTER Packers and KÖSTER Superpackers are used for all applications from low to high pressure.

KÖSTER One Day Site Packers have an extra valve so that the upper part of the packer can be removed directly after injection and the hole plugged. The borehole stays pressure sealed.

Always adhere to the specifications in the respective Technical Guidelines.

Waterproofing of construction joints in the wall/floor junction



Injection resin

(IN 201) KÖSTER 2 IN 1

Injection packers

KÖSTER Superpacker

Pump

(IN 929) KÖSTER 1C Injection Pump

IN

For retroactive waterproofing of the wall/floor junction the boreholes have to be drilled transecting the construction joint. The borehole should be drilled approximately into the middle of the construction joint.

In case of flowing water or when it is not certain if the crack is dry or wet KÖSTER 2 IN 1

is injected. It is injected twice 10 – 20 minutes apart to ensure that the joint is permanently and elastically sealed.

Always adhere to the specifications in the respective Technical Guidelines.

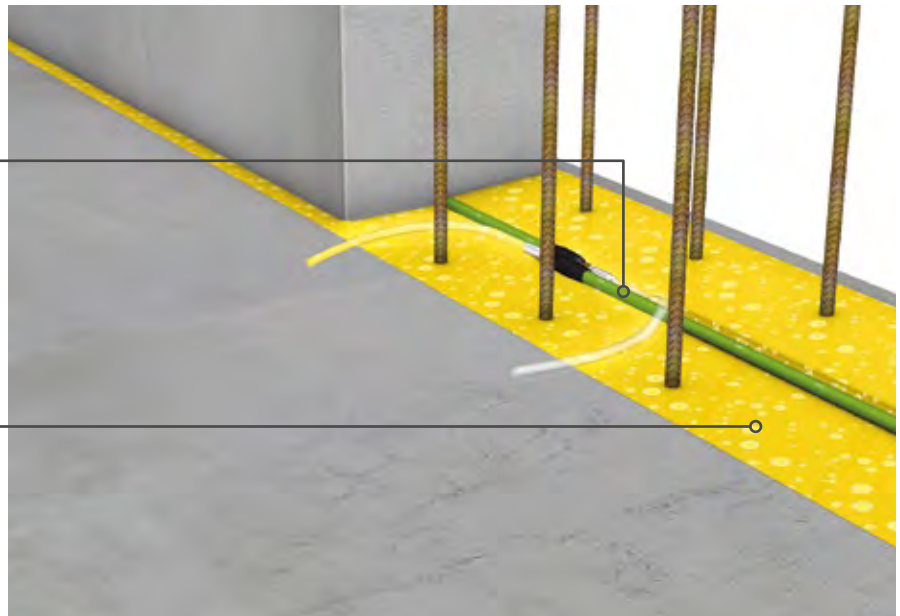
Construction joint injection via an injection hose

Injection hose

Customary injection hose

Injection resin

(IN 250) KÖSTER IN 5



Construction joints, especially in the wall-floor junction, when installed underneath ground level always need particular attention when it comes to waterproofing. Defects in this area are not uncommon. Before pouring the concrete for the rising wall, the injection hose is installed in the construction joint. Injection hoses are perforated or slotted. After the concrete has cured an elastically curing resin is pressure injected into the injection hose. The joint is now permanently elastically sealed and waterproofed.

For the application via injection hose KÖSTER IN 5 is the product of choice. It has a low viscosity and a long pot life. These two aspects are very important for the application so the product has enough time to enter the small and fine voids and doesn't start to react during the injection.

Always adhere to the specifications in the respective Technical Guidelines.

Vertical and horizontal curtain injection



Injection Gel

(IN 290) KÖSTER Injection Gel G4

Injection packer

KÖSTER Superpacker

Pump

(IN 930) KÖSTER Acrylic Gel Pump

IN

The subsequent waterproofing of building components which are not accessible due to neighboring construction or other considerations (such as tunnels, underground parking garages, elevator shafts, or concrete base slabs), is commonly carried out through the waterproofing method referred to as curtain injection. The graphic above shows an elevator shaft being subsequently waterproofed through horizontal curtain injection (underneath the concrete base slab) and through vertical curtain injection (through the walls).

A quadratic, surface-centered grid of standard packers have been drilled into the building component. KÖSTER Injection Gel G4 is injected in numerous phases through the drill holes and results in hemispherical areas of waterproofing on the positive (outer) side of the wall, separa-

ting the building component from ground water. For this particular field of application KÖSTER Injection Gel G4 has received a general construction approval from the Deutschen Institut für Bautechnik (German Institute for Structural Engineering).

Curtain injection of building components with perforated bricks, bricks with finger holes, aerated concrete blocks, or double-wall constructions require the use of special impact packers. These injection lances, also known as very long packers, can bridge cavities within the wall and discharge the injection material into the ground on the outer side of the building component.

Always adhere to the specifications in the respective Technical Guidelines.

Masonry injection

Filling the boreholes

(C 515) KÖSTER KB-Fix 5

Pump

(IN 903) KÖSTER Acrylic Gel Pump

Injection barrier

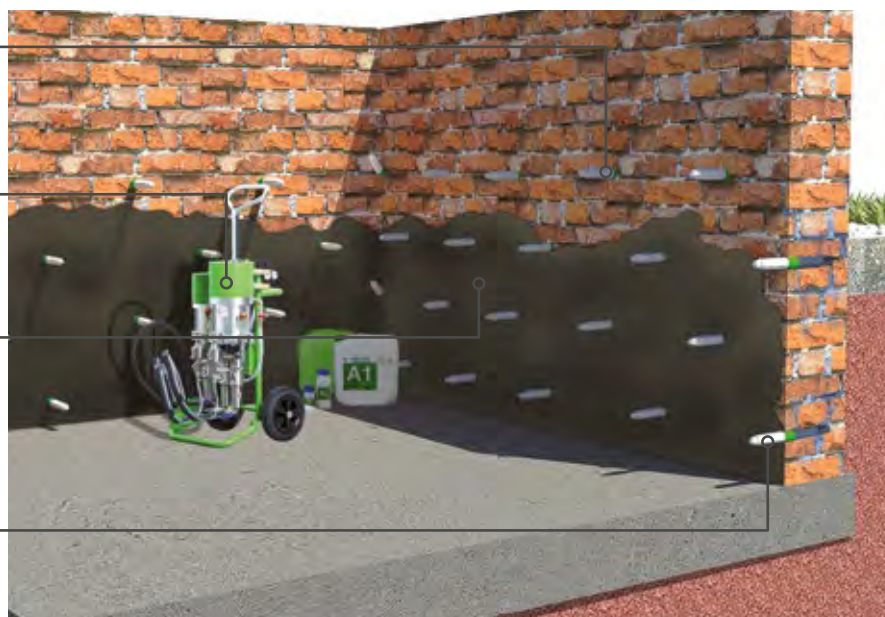
(IN 501) KÖSTER Injection barrier

Additive

(C 791) KÖSTER M Plus+

Injection packer

KÖSTER Superpacker



Vertical masonry injection (also known as area injection) is a standard method for the subsequent waterproofing of brick building elements in which excavation is not economical or possible. Boreholes are drilled horizontally on the inside of the building component and angularly at wall-floor connections and wall corners. The drilling depths are determined according to the wall thickness and can amount to 50% to 90% of the wall thickness. The drill holes must be drilled in such a way that at least one joint is crossed. The holes are drilled in a grid horizontally and vertically with every second row offset. Packers are spaced according to the masonry type at hand. The diameter of the drill holes depends on the chosen packers.

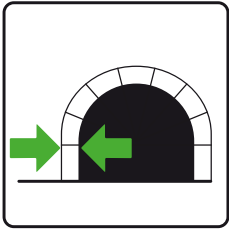
KÖSTER Superpackers are inserted into the drill holes. In most cases, it is necessary to install an injection barrier, for example with KÖSTER In-

jection Barrier and KÖSTER M Plus+, in order to prevent the loss of injection material due to uncontrolled outflow. In cases of exposed masonry where the appearance must be maintained (such as in historical vaults), KÖSTER Repair Mortar NC can be used for touch ups where needed without significantly altering the appearance of the masonry instead of installing a complete injection barrier.

KÖSTER Injection Gel G4 is injected in multiple phases until a pressure resistance is achieved. Afterwards the packer holes are filled with KÖSTER KB-Fix 5. For a decorative and functional surface design, KÖSTER Restoration Plasters can be applied over the KÖSTER Injection Barrier.

Always adhere to the specifications in the respective Technical Guidelines.

Tunnel waterproofing



Tunnel waterproofing requires specialized waterproofing materials which can vary depending on the type of tunnel elements and construction methods involved. Special parameters such as abnormally high water pressure and infrastructure conditions must be taken into consideration during restoration planning. Additionally, other structural concerns such as chemical/mechanical stresses must be taken into account and considered during the selection of appropriate products. The following application methods are listed according to type and condition of the building component.

Tubbing Tunnel Construction



Curtain injection

(IN 290) KÖSTER Injektion Gel G4

Crack injection

(IN 110) KÖSTER IN 1
(IN 220) KÖSTER IN 2
(IN 231) KÖSTER KB-Pox IN

Injection packer

KÖSTER Superpacker

Pump

(IN 930) KÖSTER Acrylic Gel Pump

Tunnels consisting of tubbing elements which are built with a tunneling shield or Tunnel Boring Machine (TBM) represent the most advanced method used in tunnel construction. However, despite heavy reinforcement, cracks can appear on the concrete surface due to high pressure from hydraulic stresses on the tubbing elements. In order to prevent moisture damage due to water penetration and subsequent corrosion of the reinforcement, these cracks are sealed with standardized injection methods. Since the cracks can be assumed to be static, crack-bridging as well as structural rebonding products are suitable.

Another common problem in tunnel construction is the partial failure of the outer seal and consequent leakage through the tubbing element joints. Very often curtain injection behind the tubbing element is the chosen method of repair. A grid of drill holes are drilled through the tubbing element and are injected with an injection gel. The injection material solidifies the adjacent layers of earth and waterproofs the building component from the backside.

Always adhere to the specifications in the respective Technical Guidelines.

Masonry Tunnel Construction

Pump

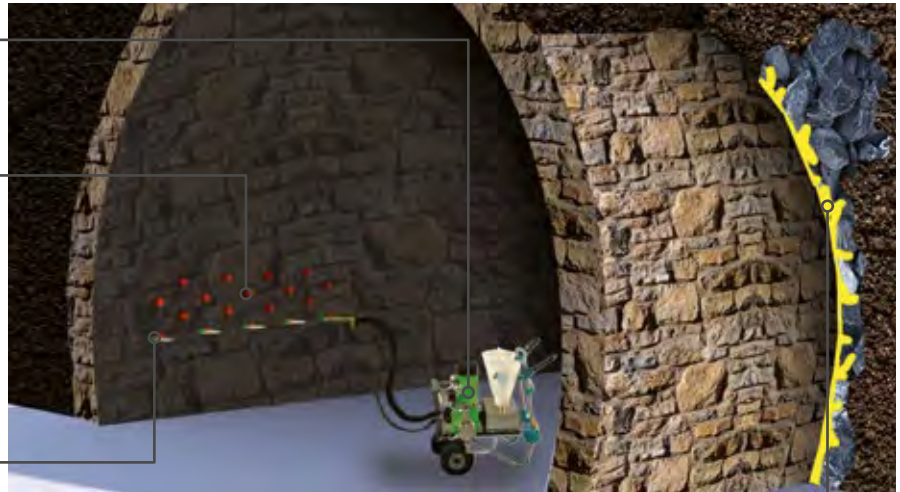
(IN 930) KÖSTER Acrylic Gel Pump

Area injection

(IN 290) KÖSTER Injektion Gel G4
Additive
(IN 501) KÖSTER Verdämmörtel
(C 791) KÖSTER M Plus+

Injection packer

KÖSTER Superpacker



Void filling

(IN 290) KÖSTER Injektion Gel G4
(IN 294) KÖSTER Injektion Gel S4
(IN 285) KÖSTER PUR Gel

Similar to standard masonry structures, masonry tunnels built with natural stone or brick can also be injected. The injection material is injected with the designated pressure through a grid of drill holes. The goal is to waterproof the water bearing areas in the building element in order to later apply negative side waterproofing.

Hollow spaces behind masonry components require special attention. Here air-filled joints as well as large voids which are more or less filled with water-saturated material (such as earth, sand, gravel, or rubble) can be found. In many cases, it is important to ensure that no structural bonding with the surrounding rock layers takes place.

Negative Side Waterproofing

Surface leveling

(W 534) KÖSTER WP Mortar

Negative side waterproofing

(W 512) KÖSTER KD 2 Blitz Powder
(W 221) KÖSTER NB 1 grey

Pump

(W 978) KÖSTER Peristaltic Pump



Several waterproofing systems can be applied to the negative pressure inner side. KÖSTER KD 2 Blitz Powder and KÖSTER Waterstop can be applied to stop small leaks. Joints can be repaired

with KÖSTER Repair Mortar or KÖSTER Repair Mortar Plus and KÖSTER NB 1 Grey can even be applied on surfaces as negative side waterproofing.

Waterproofing tunnels built in mining technique



Surface waterproofing

(W 219) KÖSTER KD System
(W 221) KÖSTER NB 1 grey
(W 721) KÖSTER NB 1 Flex

Stopping active leakages

(W 512) KÖSTER KD 2 Blitz Powder

Crack injection

(IN 270) KÖSTER IN 7

Accessories

(IN 929) KÖSTER 1C Injection Pump
KÖSTER Superpacker

IN

The method for waterproofing tunnels with KÖSTER products is based on a combination of negative side waterproofing and a liquid applied crack bridging waterproofing compound. The waterproofing layers cannot be infiltrated and the water will not move laterally between the layers as with membranes. The system does not need drainage. No water is being drained off the surrounding soil so the water table is not affected.

This system is suitable for tunnels built with shotcrete according to the New Austrian Tunnel Construction Method. Flowing water is stopped by injecting KÖSTER IN 7. Small leakages or whole walls which are being penetrated by water can be sealed with KÖSTER KD 2 Blitz Powder. To waterproof the entire surface from the negative side KÖSTER NB 1 Grey is applied to the dry and solid substrate. Active leaks are waterproofed with the KÖSTER KD System. This is followed

by three layers of KÖSTER NB 4000 by spray application. Finally the system is covered with a reinforced shotcrete lining.

The waterproofing is sandwiched between two concrete layers. This avoids water ingress and cracks larger than the crack-bridging system will only leak when it goes through both the inner and the outer concrete shell. In that unlikely case the crack can easily be detected and waterproofed with minimal effort.

Always adhere to the specifications in the respective Technical Guidelines. Also observe the local guidelines and standards.



Concrete Protection and Repair



KÖSTER Z 1

C 155 001

1 kg can

KÖSTER Z 1 is a polymer modified special slurry for the mineral corrosion protection of steel reinforcement.

Consumption: Approx. 800 g / m² (per coat)



KÖSTER Z 2

C 255 001

1 kg can

KÖSTER Z2 is a polymer modified special slurry for the mineral corrosion protection of steel reinforcement. KÖSTER Z2 is pigmented red and allows a visual control of the application.

Consumption: Approx. 800 g / m² (per coat)



KÖSTER PSM

C 280 030

30.75 kg combipackage: powder component: 24 kg bag, silicate component: 5.5 kg jerrycan, polymer component: 1.25 kg jerrycan

Three-component, highly chemical resistant, silicate and polymer-based special mineral mortar for waterproofing horizontal and vertical areas which require very high acid resistance in the range of pH 0 – 8. Suitable for dry substrates, easy to apply.

Consumption: Approx. 1.9 kg / m² per mm layer thickness



KÖSTER PSM 2S+

C 380 010

10 kg jerrycan

One-component, chemically and thermally resistant coating for mineral surfaces in power plant construction.

Consumption: Approx. 50 g / m²



C

KÖSTER Betomor Multi A

Shrink-free, fast curing multi purpose mortar for concrete restoration. In particular suitable for the protection of exposed reinforcement steel: It unites corrosion protection, coarse mortar, fine filler and bonding bridge in one product. For layer thicknesses from 0 – 60 mm.



Corrosion protection (coating)



Coarse mortar



Fine filler



Balcony restoration

Article No.:

C 500 015

Consumption:

Approx. 1.3 kg / l void;
or approx. 1,3 kg / m²
per mm layer thickness

Packaging:

15 kg bucket (C 500 015)
25 kg bucket (C 500 025)

KÖSTER C-Coat

C 510 025

25 kg bag

For the repair and maintenance of concrete surfaces. Waterproof and tension free after full cure. Synthetically modified, waterproof fine filler for the smoothing of concrete surfaces.

Consumption: Approx. 1.7 kg/m² per mm layer thickness



KÖSTER KB-Fix 1

C 511 015

15 kg bucket

Waterproof, weatherproof, fast curing mortar with high compressive strength (sets after approx. 1 minute) for fast installations as well as for small repairs of masonry and concrete. Free of soda and chlorides.

Consumption: Approx. 1.8 kg/l void



KÖSTER KB-Fix 5

C 515 015

15 kg bucket

Waterproof, weatherproof, fast curing mortar with high compressive strength (sets after approx. 5 minutes) for fast installations as well as for small repairs of masonry and concrete. Free of soda and chlorides.

Consumption: Approx. 1.8 kg/l void



KÖSTER Turbo Mortar F

C 516 025

25 kg bag

KÖSTER Turbo Mortar F is a repair, concrete replacement, and re-profiling mortar with an exceptional strength development: the mortar can be mechanically stressed already after 60 minutes. The consistency can be regulated for vertical or horizontal application. A distinguishing feature of KÖSTER Turbo Mortar F is its low shrinkage. With the addition of KÖSTER Turbo additives, the mortar characteristics can be optimized for individual jobsite requirements.

Consumption: Approx. 1.9 kg / l void



KÖSTER Turbo Mortar M

C 517 025

25 kg bag

KÖSTER Turbo Mortar M is a fiber reinforced repair, concrete replacement, and re-profiling mortar with high chemical and mechanical resistance. KÖSTER Turbo Mortar M can be mechanically stressed after 60 minutes. The consistency can be regulated for vertical or horizontal application. A distinguishing feature of KÖSTER Turbo Mortar M is its low shrinkage. With the addition of KÖSTER Turbo additives, the mortar characteristics can be optimized for individual jobsite requirements.

Consumption: Approx. 1.9 kg / l void



KÖSTER Repair Mortar NC

Suitable for large reprofiling and repair works, has excellent workability characteristics and adhesion to old and new mineral building substrates. KÖSTER Repair Mortar NC is characterized by high chemical and mechanical resistance and compressive strength. Fiber reinforced. Also suitable as substrate preparation for corrosion protection with KÖSTER PSM, e. g. in industrial chimneys, sewer systems, or other concrete structures which are exposed to low pH environments.



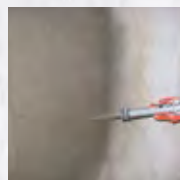
Restoration of support beams



Bridge restoration



Large surface restoration



Spray application

Article No.: C 535 025

Consumption: Approx. 1.9 kg/l void as repair mortar; approx. 19 kg/m²; per cm of layer thickness of the plaster

Packaging: 25 kg bag (C 535 025)

KÖSTER Repair Mortar R4

C 536 025

25 kg bag

Concrete repair mortar with high chemical and mechanical resistance, tested and approved according to DIN EN 1504.

Consumption: Approx. 1.9 kg / l void



KÖSTER Sewer and Shaft Mortar

C 590 025

25 kg bag

Water tight, fast curing and fast setting restoration mortar specially designed for sewers and shafts. KÖSTER Sewer and Shaft Mortar develops a high compressive strength, is fiber reinforced, very easy to apply and workable even under flowing water. Approved for drinking water applications.

Consumption: Approx. 1.8kg/l void as repair mortar; Approx. 18kg/m²; per cm layer thickness



KÖSTER Turbo Binding Agent

C 716 025

25 kg bag

KÖSTER Turbo Binding Agent is a special cement based on calcium sulfoaluminate clinker. Mortars made with KÖSTER Turbo Binding Agent develop a very high early strength and in the process exhibit very low shrinkage. They can be quickly worked over and have an early loading capacity. During production approximately 30% less CO₂ is released as compared to a pure portland cement.

Consumption: Approx. 1.9 kg / l void



KÖSTER Turbo Super Plasticizer

C 717 065

65 g bag

Additive for the KÖSTER Turbo System. For the adjustment of the mortar consistency of the KÖSTER Turbo System to individual requirements on the construction site.

Consumption: One pack per 25 kg KÖSTER Turbo F / M



KÖSTER Turbo Retarding Agent

C 718 025

25 g bag

Additive for the KÖSTER Turbo System. For slowing the setting time of KÖSTER Turbo Mortars to meet individual jobsite requirements. Each bag will increase the pot life of 25 kg of KÖSTER Turbo Mortar by approximately 20 minutes. Use a maximum of 3 bags of KÖSTER Retarding Agent for each 25 kg of KÖSTER Turbo Mortar.

Consumption: One pack per 25 kg KÖSTER Turbo F / M



KÖSTER BDM

C 731 000
1.000 kg
C 731 030
30 kg jerrycan

Crystallizing, chloride free sealing agent for the integral waterproofing of concrete elements. KÖSTER BDM combines all three important characteristics for integral waterproofing. It crystallizes, blocks capillaries and makes the concrete waterrepellent. This reduces the water absorbency of the concrete, increases its compressive strength and resistance against chemical attack. It is free of corrosive ingredients and is non-sensitive to mechanical damage to the surface.



Consumption: 2 % (mass) of cement content

KÖSTER Mortar Boost

C 791 010
10 kg jerrycan

Synthetic liquid for KÖSTER Turbo Mortar systems and other cementitious mortars or concrete. KÖSTER Mortar Boost is free of solvents, plasticizers and fillers. The material increases the density, the compressive and bending strength, and reduces water absorption. Due to the synthetic additive, cured mortars and plasters become considerably more resistant to frost, salts and other aggressive substances.



Consumption: For cementitious bonding bridges: approx. 200 g / m². As a mortar additive approx. 0.2 kg per liter of mortar.

KÖSTER Mortar Accelerator

C 792 750
750 g

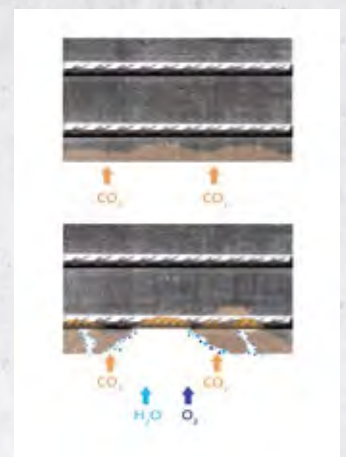
Accelerator for Portland cement based mortars. Accelerates the hardening of mortars, for example for work in low temperatures.



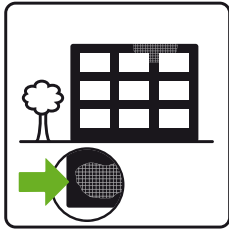
Consumption: 1% - 5% of the cement content by weight

**Good to know:
Carbonation**

Carbonation of concrete is a chemical reaction which occurs near the surface of concrete. Calcium hydroxide Ca(OH)₂ is formed during cement hydration. This provides healthy concrete its alkaline environment with a pH value of > 12.6 and leads to the formation of a passivation layer. This layer formed of iron hydroxide Fe(OH)₂ protects reinforcement steel from corrosion. Carbonation occurs when calcium hydroxide Ca(OH)₂ reacts with carbon dioxide CO₂ in the air to form calcium carbonate CaCO₃. The continuous consumption of Ca(OH)₂ leads to a drop in pH levels causing the passivation layer that usually covers and protects reinforcement steel from corrosion to become unstable. As a result, carbonation leads to corrosion and the formation of rust. On the other hand, carbonation results in a decrease of the porosity and increases the compressive strength of concrete. Carbonation occurs in concrete whenever carbon dioxide is present and is not harmful to concrete or cement stone.



Concrete protection and repair



Damages to construction members made of concrete require treatment in order to restore the original characteristics. Exposed steel reinforcement must be protected from corrosion. The original structure is restored using mineral products.

Concrete repair

Surface leveling and smoothing

(SL 252) KÖSTER Swellable Grout

Concrete repair (large areas)

(C 536) KÖSTER Repair Mortar R4
(C 155) KÖSTER Z1
(C 255) KÖSTER Z2

Concrete repair

(C 500) KÖSTER Betomor Multi A

Repair of structural cracks

(IN 231) KÖSTER KB-Pox IN



Concrete surface protection

(P 241) KÖSTER Iperlan

In case of small concrete repairs and maintenance a fast and easy solution is to apply the multi-talent KÖSTER Betomor Multi A. KÖSTER Betomor Multi A is a material for corrosion protection and concrete replacement. An additional corrosion protection is not required. KÖSTER Betomor Multi A replaces the bonding agent, the repair mortar and the spackle. The material is applied onto the prepared, stable substrate which must also be free of separating agents and rust.

For reprofiling and concrete replacement in larger areas, KÖSTER Repair Mortar R4 is applied. It is suitable for trowel application and can be spray applied as well. The mortar is applied onto the prepared, stable substrate which must also be free of bond inhibiting agents. Rein-

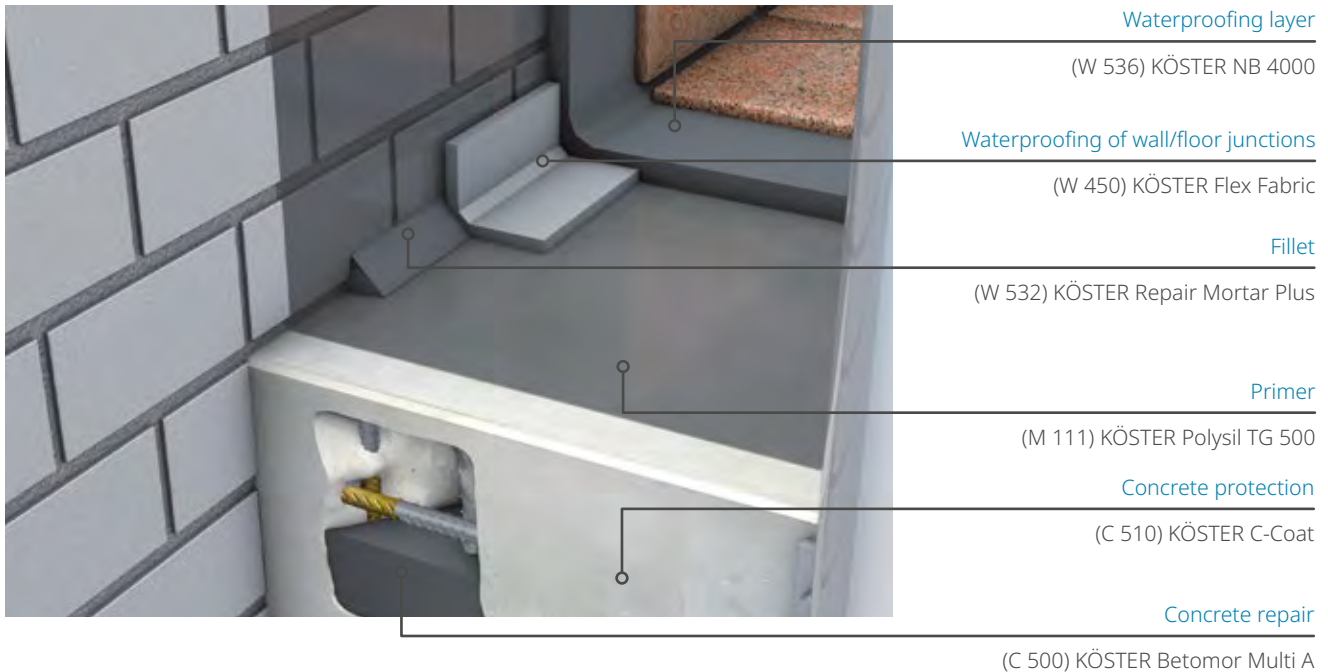
forcement steel has to be cleaned, as corrosion protection and bonding agent KÖSTER Z1 / Z2 is applied.

Non water bearing cracks are sealed with KÖSTER KB-Pox IN or KÖSTER IN 3. This injection resin has excellent bonding characteristics to concrete crack flanks and is used for the structural bonding of building elements.

Repair and maintenance of concrete surfaces is done with KÖSTER C-Coat. KÖSTER C-Coat is a high quality spackle for leveling and smoothing concrete surfaces.

Always adhere to the specifications in the respective Technical Guidelines.

Concrete repair of balconies and terraces



Maintenance of concrete, e.g. repair of balconies and terraces normally requires corrosion protection for the reinforcement steel, a bonding agent, repair mortar and a spackle. KÖSTER Betomor Multi A fulfills all of these requirements in one product. The advantage is that only one product is needed for the renovation. This provides an easier calculation of the required amount and logistics. Concrete repair of building elements can be quickly and easily done with KÖSTER Betomor Multi A. Maintenance of concrete surfaces is done with KÖSTER C-Coat. KÖSTER C-Coat is a high quality spackle for leveling and smoothing of concrete surfaces.

KÖSTER Silicon Paint White is an optimal decorative paint coating for concrete surfaces

The crack bridging waterproofing material KÖSTER NB 4000 is applied as the waterproofing layer on balconies and terraces. The material is resistant to foot traffic or can be covered with tiles. In the wall-floor junction and in areas in danger of cracking KÖSTER Glass Fiber Mesh is embedded between the two waterproofing layers. Fillets are made with KÖSTER Repair Mortar Plus.

Always adhere to the specifications in the respective Technical Guidelines.

Waterproofing sewers and shafts

Primer

(M 111) KÖSTER Polysil TG 500

Leveling the substrate

(C 590) KÖSTER Sewer and Shaft Mortar

Surface protection against abrasion and chemicals

(C 590) KÖSTER Sewer and Shaft Mortar



Resistance to mechanical and chemical stresses often plays an important role in sewage pipes and shafts. Surface protection must be able to withstand high and low pH values as well as abrasive wear in order to ensure a long service life. For this purpose, KÖSTER Sewer and Shaft Mortar was developed. After thorough surface preparation (e.g. by high-pressure water) has led to a stable substrate and efflorescence has been removed, KÖSTER Polysil TG 500 can be applied

as a primer. Afterwards, KÖSTER Sewer and Shaft Mortar is applied in a layer thickness of 4-30 mm. KÖSTER Sewer and Shaft Mortar is fiber reinforced and develops a high compressive strength as well as excellent chemical resistance. It can be applied below the waterline even under flowing water.

Always adhere to the specifications in the respective Technical Guidelines.



Self leveling underlayments

Self leveling mineral underlayments, floorpatching materials, corresponding primers

SL //

KÖSTER VAP I 06

SL 131 009

9.5 kg jerrycan

Ideal and necessary for priming cured KÖSTER VAP I Systems for the subsequent installation of all cementitious self-leveling underlayments. KÖSTER VAP I 06 Primer is a unique, water based, single component material for priming absorbent and non-absorbent substrates. Suitable as a primer under terrazzo, marble, and ceramic tiles.

Consumption: Approx. 50 – 100 g / m² (depending on substrate characteristics)



KÖSTER SL Primer

SL 189 005

5 kg jerrycan

A transparent curing, low viscosity primer with a slightly sticky surface. KÖSTER SL Primer reduces the absorbency of mineral surfaces such as concrete and screed and equalizes differential absorbency rates in the substrate. It reduces the bubbling effect when working with KÖSTER self leveling floor products. KÖSTER SL Primer is solvent, plasticizer, and filler free, water resistant, it will not be washed or rained away after curing.

Consumption: Approx. 50 – 150 g / m², dependent on substrate characteristics



KÖSTER VGM fast

SL 251 025

25 kg bag

Fast curing grout mortar with high final compressive and flexural strength and very high slump flow for all construction and repair applications. Ready to receive traffic after 3 hours. Fields of application include road surfaces, warehouse ramps, man holes, or as a grout for installations and anchor holes.

Consumption: Approx. 1.9 kg / l void



KÖSTER Swellable Grout

SL 252 025

25 kg bag

KÖSTER Swellable Grout is a fine-grained, normal setting grout mortar, formulated with a moderately expanding component. It provides a good flow spread, is pourable, and has a pot life of at least 45 mins. KÖSTER Swellable Grout is resistant to de-icing and other harmful salts as well as oils and lubricants.

Consumption: 1.9 kg / l void



KÖSTER SL Premium

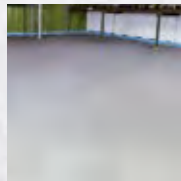
KÖSTER SL Premium is a high quality, fast setting underlayment that hardens tension free and provides a smooth, level surface ready to receive subsequent flooring systems. It hardens within hours to a smooth, strong, and multifunctional leveling layer. It may be applied onto a variety of substrates. KÖSTER SL Premium can be applied in layer thicknesses between 5 and 15 mm, can be feathered out to 2 mm, and installed in depressions up to 30 mm.



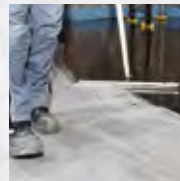
Primer:
KÖSTER SL Primer or
KÖSTER VAP I 06



Easy application



Very robust



Coating after
24 hours

Article No.: SL 280 025
Consumption: Approx. 1.5 kg / m² / mm layer thickness
Packaging: 25 kg bag

SL

KÖSTER SL

SL 281 025
25 kg bag

A high quality, fast setting mineral underlayment that hardens tension free to a smooth, level surface ready to receive subsequent flooring systems. It hardens within hours to a smooth, strong, and multifunctional leveling layer. KÖSTER SL is easy to mix and spread, is pour- and pumpable, and is self leveling and highly flowable during application. KÖSTER SL can be used for area covering from 5 to 25 mm, be feathered out to 2 mm, and can fill depressions up to 25 mm. KÖSTER SL hardens crack free and has a high surface strength and a very good adhesion to the substrate.

Consumption: Approx. 1.5 kg powder / m² / mm layer thickness



KÖSTER SL Flex

SL 284 025
25 kg bag

KÖSTER SL Flex is a high quality, fast setting, mineral based underlayment with excellent bonding characteristics also on smooth and dense substrates. KÖSTER SL Flex is applicable to a wide variety of substrates (especially wooden substrates) and hardens hydraulically and tension free within a few hours. It hardens to a level, high strength surface that allows for a change in building use, such as carpet or tiles on top of old wooden floors.

Consumption: Approx. 1.6 kg powder / m² / mm layer thickness



KÖSTER SL Protect

SL 286 025

25 kg bag

KÖSTER SL Protect is a mineral based self-leveling underlayment with high resistance to chemical and mechanical stresses. It is an early loadable, directly useable leveling layer over uneven or coarse concrete and cementitious screeds. Due to its high chemical resistance it is used to protect against light and medium corrosion and serves as a slowly reacting sacrificial layer in areas of high chemical stress. KÖSTER SL Protect is further used for fast repairs and protection in agricultural, industrial, business, workshop, production facilities, and private use buildings.

Consumption: Approx. 1.9 kg / m² / mm layer thickness



KÖSTER SL Turbo

SL 595 025

25 kg bag

Highly flowable, fast setting mineral leveling compound.

Consumption: Approx. 1.8 kg / m² / mm layer thickness



KÖSTER SL Flow Test Board

SL 900 001

piece

Flow test board for self levelling mortars (test cylinder included).

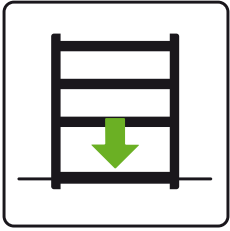


Good to know: Nonporous Substrates

Wood surfaces, tiles, marble, ceramic, mastic asphalt, steel, or synthetic resin coatings (such as the KÖSTER VAP I 2000 System) are nonporous substrates. That is why KÖSTER developed KÖSTER VAP I 06 Primer in order to provide maximum adhesion between nonporous substrates such as KÖSTER VAP I 2000 and the cementitious leveling compounds. As a result, even old tile or wooden surfaces can be installed quickly and cost effectively.



Self leveling underlayments



Whether installing flooring systems and coatings in new or existing buildings, substrates generally must first be leveled. The goal is to provide a level and highly resilient surface suitable for a broad variety of flooring systems

Fast-setting self leveling underlayment on mineral and non-absorbent substrates



Floor coating

(SL 280) KÖSTER SL Premium

Primer

(SL 189) KÖSTER SL Primer
(SL 131) KÖSTER VAP I 06

Whether installing flooring systems and coatings in new or existing buildings, substrates generally must first be levelled. The goal is to provide a level and highly resilient surface suitable for a broad variety of flooring systems. In order to achieve excellent bonding to the following underlayment, the prepared substrate is primed with KÖSTER SL Primer. KÖSTER SL Primer works as a bonding agent to provide a homogeneous absorbency and bind residual dust. It thereby guarantees a consistent and damage free substrate. KÖSTER SL Primer cures rapidly and is thus quickly recoatable. The leveling is then carried out with KÖSTER SL Premium in one working step in layer thicknesses between 2 and 15 mm; in depressions up to 30 mm. KÖSTER SL Premium is a high quality, selfleveling underlayment for the repair of concrete and existing coated

floors. The material is characterized by a high compressive strength and cures with almost no shrinkage, thus preventing cracking. Due to its excellent flowability KÖSTER SL Premium is very easy and safe to work with. Additionally, KÖSTER SL Premium is suitable for non-absorbent substrates, e. g. on floors that have been protected with KÖSTER VAP I 2000 for moisture control, on existing epoxy coatings or even tiles. As a bonding agent, KÖSTER VAP I 06 Primer is used. KÖSTER SL Premium allows for an early use after application: After 3-4 hours foot traffic is allowed, tiles can be installed after 5 hours, and after 24 hours curing time the material is even trafficable with soft tires.

Always adhere to the specifications in the respective Technical Data Sheets

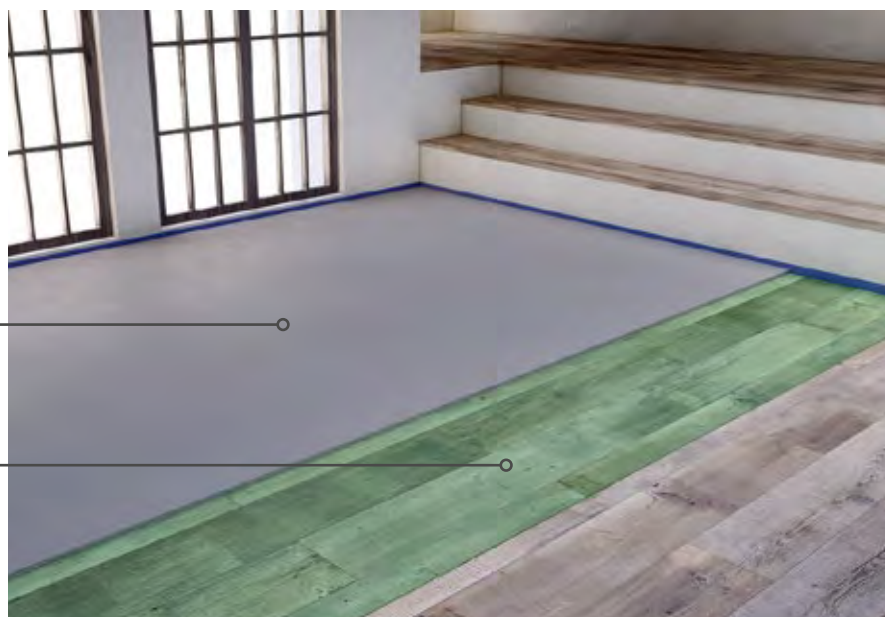
Self leveling underlayment on wooden substrates

Floor coating

(SL 284) KÖSTER SL Flex

Primer

(SL 131) KÖSTER VAP I 06



Hardwood floors are often found in older buildings and present a difficult substrate for additional flooring surfaces during renovation. KÖSTER SL Flex is a mineral based underlayment for application to a wide variety of substrates including concrete floors, screeds, asphalt, steel, tile, or wooden floors. The material is flexible enough to accommodate the movements of the wooden surface as well as high localized pressure resulting from furniture or dropped items. Before installation the substrate has to be free of dust and bonding inhibiting substances. When applying over tongue and groove wooden floors, cleaning agent and care product residues such as wax must be completely removed,

if necessary sanded off. Painted areas must be sanded and subsequently vacuumed. Floor boards must be firmly attached to the joists with screws. Open or wide joints between the boards, defects, and hollows have to be filled with an acrylic jointing compound. The prepared wooden surface is then primed with KÖSTER VAP I 06 Primer. KÖSTER SL Flex stabilizes the substrate due to its high flexural strength. As a result, the substrate warps and bends less, allowing for the installation of rigid flooring materials such as tile.

Always adhere to the specifications in the respective Technical Data Sheets



Coatings

Floor and corrosion protection coatings, moisture control systems

CT 

KÖSTER CT 121

CT 121 025

25 kg combipackage; component A 16.66 kg; component B 8.34 kg

KÖSTER CT 121 is a solvent-free moisture tolerant epoxy primer used for priming of mineral surfaces before the application of KÖSTER CT 221. It is a part of the the KÖSTER OS 8 System.

Consumption: 400 g / m² (0.4 mm layer thickness)



KÖSTER CT 127 1C Silane Primer

CT 127 005

5 kg jerrycan

One component primer for KÖSTER CT 227 1C Silane and surface coating. Can be painted, roller or spray applied.

Consumption: 400-500 g/m² as primer, 100-800 g/m² as finish coat, depending on the broadcast



KÖSTER LF-BM

CT 160 001

1 kg combipackage

CT 160 006

6 kg combipackage

CT 160 025

25 kg combipackage

Broadly applicable bonding agent with excellent adhesion to all mineral substrates. KÖSTER LF-BM is a 2 component, solventfree, low viscous epoxy resin. Mechanically highly resistant, mixed with dried silica sand also suitable as a mortar. Fields of application include as a primer for mineral substrates, together with silica sand as mortar / putty / levelling compound, casting resin for the fixing of masonry anchors, metal posts, etc.

Consumption: Approx. 0.3 - 0.5 kg/m² as primer; as mortar additive according to formulation



KÖSTER Construction Resin

CT 165 025

25 kg combipackage

KÖSTER Construction Resin is a solvent free universal epoxy binding agent which bonds excellently to all mineral substrates. It can be filled with kiln dried silica sand.

Consumption: 300 – 500 g / m² total consumption



KÖSTER ESD 175

CT 175 008

8 kg combipackage

KÖSTER ESD 175 is a water based epoxy dispersion for priming floors to be coated with KÖSTER ESD 275. The KÖSTER ESD System creates an ESD protected area according to the norms DIN EN 61340 and DIN EN 61340-1, supplementary sheet.

Consumption: Approx. 100 g / m²



KÖSTER CT 215
Universal Floor

CT 215
10 kg combipackage

Broadly applicable, scratch resistant sealant for wall and floor surfaces against light to medium mechanical stresses.

Consumption: 1.5 kg / m² / mm



new

KÖSTER CT 221

CT 221 025
25 kg combipackage

KÖSTER CT 221 is a rigid, highly mechanically resistant and chemically resistant top coat which is used to protect concrete not at risk of cracking. The coating is self leveling and part of the OS 8 system.

Consumption: 1.5 kg / m² per mm layer thickness, as top coat for the OS 8 System: Approx.. 0,8 kg / m²



CT

KÖSTER CT 225
Bridge Deck Coating

CT 225 020
20 kg metal pail combipackage

Priming and coating epoxy resin for concrete road sections, bridge decks, and civil engineering structures for overworking with mastic asphalt according to ZTV-ING (part 7)

Consumption:
Primer: Approx. 400 to 500 g / m² depending on porosity of the substrate.
Top coat: Approx. 500 g / m² per layer.



new

KÖSTER CT 227 1C Silane

CT 227 015
15 kg metal pail

One component floor covering for light to medium exposure.

Consumption: Approx. 400 – 500 g / m²



KÖSTER CT 228 Flex

CT 228
6 kg combipackage

2-component, viscoplastic, brushable, rollable and sprayable epoxy resin for heavy-duty corrosion protection of concrete and steel surfaces

Consumption: Concrete: min. 1.2 kg / m² / mm;
Steel: 650 g / m² (500 µm)



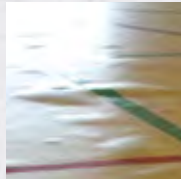
KÖSTER VAP I 2000

Vapor barrier for priming unsealed interior concrete floors, e.g. against osmotic action under vapor tight flooring. Fields of application: under epoxy, polyurethane or vapor tight flooring e.g. in gyms, industrial halls or sales rooms.

KÖSTER VAP I 2000 is a 2-component, low viscous, solvent-free, transparent special resin.



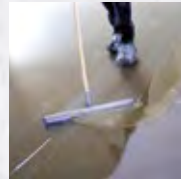
For unsealed concrete floors



Prevents osmotic blistering



Applicable to concrete after 7 days



Recoatable after 12 hrs.

Article No: CT 230 002

Consumption: Ca. 450 g / m²

Packaging: 2.95 kg combipackage (CT 230 002)
10.13 kg combipackage (CT 230 010)
25.32 kg combipackage (CT 230 025)

KÖSTER VAP I 2000 FS

CT 233 002
2.95 kg combipackage

CT 233 010
10 kg combipackage

Fast setting vapor barrier. Specially designed for use as a negative side, fluid applied vapor barrier. The material reduces Moisture Vapor Emission Rates (MVER) and alkalinity to levels acceptable for most resilient and epoxy flooring systems. KÖSTER VAP I 2000 FS (Fast Set) has a perm rating of 0.05 (ASTM E96 wet) and will cure in as little as 4 hours (depending on ambient conditions) and allows for fast tracking of flooring projects.

This unique formulation is a 100% solids, 2-component, transparent, low viscous, solvent free (low VOC) special resin. Suitable for use with sheet vinyl, VCT, rubber, wood, ceramic, sports, solid backed carpeting, epoxy, ESD and almost all other types of finished flooring.

Consumption: Approx. 0.450 kg / m²



KÖSTER VAP I 2000 UFS

CT 234 002
2.95 kg combipackage

CT 234 010
10 kg combipackage

Fast setting vapor barrier for priming unsealed interior concrete floors under vapor tight flooring. Curing time 2-3 hours. The material reduces Moisture Vapor Emission Rates (MVER) and alkalinity to levels acceptable for most resilient or epoxy flooring systems as well as other vapor tight floorings such as sheet vinyl, VCT, rubber, wood, ceramic, sports, solid backed carpeting, epoxy, ESD and almost all other types of finished flooring.

Consumption: Approx. 500 g / m²



KÖSTER UC 100

CT 251 026
26.1 kg combipackage

Self-leveling floor coating with high chemical resistance and high abrasion resistance. Food safe and resistant against temperature shocks. Three component polyurethane cement floor coating. KÖSTER UC 100 is applied in a layer thickness between 3 and 9 mm.

Consumption: 1.53 kg / mm / m²



KÖSTER UC 300

CT 253 010
10 kg combipackage

Primer and top coat in one product. KÖSTER UC 300 is solvent free and ready to use. When mixed with KÖSTER UC Pigment Paste, it can be used as a decorative top coating for KÖSTER UC 100.

Consumption: 600 - 800 g / m² (depending on surface roughness)



KÖSTER LF-VL

CT 271 006
6.7 kg combipackage
CT 271 026
26.8 kg combipackage

Decorative coating for industrial floors. It is a solvent free, self-leveling product with high abrasion resistance. The color is pebble grey on the basis of RAL 7032, other colors are available on request.

Consumption: 2.6 kg / m² (2 mm total layer thickness)



KÖSTER ESD 275

CT 275 026
26 kg combipackage

KÖSTER ESD 275 is a rigid, solvent free, self leveling surface coating for floor areas which are to be protected by an ESD zone. The KÖSTER ESD System creates an ESD protected floor for areas that have to be protected from static discharge such as electronic areas, in the automobile industry, and laboratories, and areas that have to be protected against mechanical and chemical stresses. The KÖSTER ESD System fulfils the norms DIN EN 61340 parts 1 and 5, and is therefore also qualified as personal grounding protection.

Consumption: 1.5 kg / m² / mm layer thickness



KÖSTER PS Flex

CT 276 010
10 kg combipackage

Multi-purpose, three component, abrasion resistant elastic floor coating with very good bonding characteristics to all mineral substrates. KÖSTER PS Flex is UV resistant, self leveling, and resistant to high mechanical stresses and stresses caused by diluted acids, alkalis, and salt solutions.

Consumption: Total consumption 1.8 kg/m² - 2.3 kg/m²



KÖSTER CMC

CT 280 005
5.3 kg combipackage

Epoxy mortar with very good adhesion to all mineral substrates and to stainless steel. Solvent free. KÖSTER CMC resists high mechanical and chemical stresses and is therefore used as a protective coating for heavy duty corrosion protection.

Consumption: 1.7 kg / m² / 1 mm per layer thickness



CT

KÖSTER Corrosion Protection

CT 283 006

6 kg combipackage

KÖSTER Corrosion Protection is a 2 component, solvent free, epoxy based protective coating with excellent adhesion to steel. It can be used as a surface protection in facilities which are exposed to elevated chemical and mechanical stresses

Consumption: Approx. 650 g / m² (Stainless steel, 2 layer application, 0.5 mm layer thickness) or approx. 130 g / m² (100 µm) as primer for KÖSTER CT 228 Flex



KÖSTER Bridge Coat

CT 284 005

5.4 kg combipackage

CT 284 013

13.5 kg combipackage

KÖSTER Bridge Coat is a low viscosity epoxy sealant for waterproofing concrete areas and other civil engineering structures. It is resistant to high mechanical stresses.

Consumption: 200 g / m² total consumption applied in 2 coats



KÖSTER TS transparent

CT 320 006

6 kg combipackage

Surface sealant for concrete or for broadcasted coatings such as KÖSTER CT 215 Universal Floor, KÖSTER LF-VL and the KÖSTER BTG System. KÖSTER KÖSTER TS transparent distinguishes itself through high chemical, mechanical, and ultraviolet resistance. Due to its fast curing time the surface can be opened for traffic after 24 hours.

Consumption: Ca. 0.1 kg / m² - 0.2 kg / m²



KÖSTER Anti-Slip Granulate 20

CT 411 200

200 g

KÖSTER Anti-Slip Granulate 20 is a chemical resistant polymer granulate, which increases slip resistance of water-based and solvent free top coatings. Varying the dosage will alter the grade of slip resistance

Consumption: 2% to 2.5%, depending on required anti-slip category (see System Data Sheet)



KÖSTER Color-Chips

CT 429 005

5 kg carton

CT 429 010

10 kg carton

UV and chemically resistant decorative colored chips for broadcasting into the surface of KÖSTER LF-VL, KÖSTER CT 215 Universal Floor and for use with the KÖSTER BTG System. 2 mm, light grey, other colors on request.

Consumption: Minimum 50 g / m² as a decorative, non-covering surface decoration. Approx. 300 g / m² when broadcasting to rejection.



KÖSTER UC Pigment Paste

CT 451 450

310 ml / 450 g cartridge

Pigment paste for coloring KÖSTER UC floor coatings. Provides a very high coverage, even in low amounts. Other colors available on request.

Consumption: One cartridge per KÖSTER UC kit



KÖSTER ESD 475

CT 475 025

25 m roll

Self adhesive, conductive acrylic adhesive.

0.06 mm total thickness, 9 mm wide, and 25 m long.



KÖSTER ESD 476

CT 476 001

piece

Ground connection for the KÖSTER ESD System with 1m adhesive copper tape



Quartz Sand

CT 481 025: 0.35–1.50mm

CT 482 025: 0.20–0.80 mm

CT 483 025: 0.06–0.36 mm

CT 484 025: 0.18–0.50 mm

CT 485 025: 0.7–1.2 mm

CT 486 025: 1.0–2.0 mm

CT 487 025: 2.0–3.0 mm

CT 488 025: 0.4–0.8 mm

each: 25 kg bag

Kiln dried quartz sand.



KÖSTER Filler fine

CT 710 020

20 kg bucket

KÖSTER Filler Fine is a special, solvent free, mineral filler, which can be added into water-based and solvent free reaction resin systems during the application. It improves the floor coating's resistance against mechanical stresses, particularly with high layer thicknesses.

Consumption: Approx. 1.0 kg per 1.0 kg KÖSTER CT 215 Universal Floor



CT

KÖSTER KB-Pox Thickening Agent

CT 764 008

8 kg bag

KÖSTER Thickening Agent increases the viscosity of KÖSTER epoxy resins and stabilizes them on sloped and vertical surfaces.

Consumption: 1% to 6%, depending on the application



KÖSTER Screed Anchor 6 mm x 70 mm

CT 910 100

100 pieces

Screed anchor (6 mm x 70 mm) for force transmitting filling of cracks in screed substrate.



KÖSTER Spiked Roller

CT 914 001

piece

For de-airing floor coatings.

Width: 80 cm.



KÖSTER Gauging rake

CT 915 001

piece

For the even installation of e.g. KÖSTER SL Products in the desired layer thickness of 5 - 30 mm. Continuously adjustable, changeable steel sheet and gliding vats made of hardened steel.

Width: 80 cm.



KÖSTER Resin Roller 250 mm

CT 916 001

piece

CT 916 002

piece (cover only)

Short nap roller for applying thin coatings and sealers.



KÖSTER Resin Roller 150 mm

CT 917 001

piece

CT 917 002

piece (cover only)

Short nap roller for applying thin coatings and sealers.



KÖSTER Squeegee

CT 918 001
Complete set, Squeegee,
teeth 2 mm

CT 918 002
Complete set, Squeegee,
teeth 5 mm

CT 918 003
Complete set, Squeegee,
teeth 8 mm

CT 919 001
Squeegee Replacement Blade,
teeth 2 mm

CT 919 002
Squeegee Replacement Blade,
teeth 5 mm

CT 919 003
Squeegee Replacement Blade,
teeth 8 mm

For the application of resin based primers. Complete set. Replacement blades available.

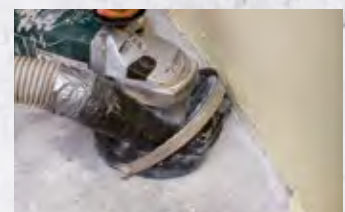


CT

Good to know:

Substrate preparation

Concrete substrates to receive KÖSTER VAP I 2000 systems must be clean, absorbent, free of dust, oil and grease. Surfaces must be free of adhesives, coatings, curing compounds, concrete sealers, efflorescence, and other materials or contaminants that may act as a bond breaker. The surface must be roughened by sand or ideally by shot blasting to an ICRI Concrete Surface Profile (CSP) 3 to 4. Grinding is permitted only in areas inaccessible to shot blasting or for edging purposes. Upon completion of the shot blasting and grinding, the concrete slab must be vacuumed free of all dust, dirt and debris prior to the installation of KÖSTER VAP I 2000 systems. Do not use sweeping compounds as they may contain oil.



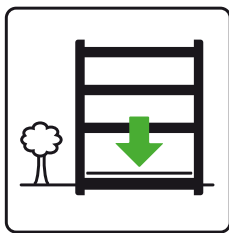
Good to know:

Dew point for coatings

Coatings made out of reaction resins should not be applied below the dew point or at temperatures below + 5 °C. In order to avoid defects due to the formation of condensation, a thermometer (to measure the air temperature), a hygrometer (to measure the relative humidity) and a contact thermometer (to measure the surface temperature of the substrate to be coated) should be available on site. This table is available for download at any coating product page online at www.koester.eu. These measuring devices should be robust and accurate. They can be obtained through optician and laboratory supply stores. The dew point is found by first measuring the temperature of the substrate with an IR thermometer. Next, air temperature and relative humidity are measured. The dew point temperature is then found in the dew point table at the intersection of the measured air temperature and measured relative humidity. If this temperature is at least 3 °C above the dew point temperature taken from the below table and if the air and object temperature are above + 5 °C, then the work can be carried out safely. If the temperature of the substrate (measured with the contact thermometer) lies close to the dew point or below it, then no coating works should be carried out because the danger of condensation forming is high. This also applies during the coating curing time.



Floor coatings



Floor coatings, for example on garages, industrial floors or canteen kitchens is not only important for their visual appearance. These floors can be permanently protected against mechanical damage and the penetration of liquids with colored protective coatings.

Floor coatings which are exposed to moderate stresses

Surface protection (Wall)

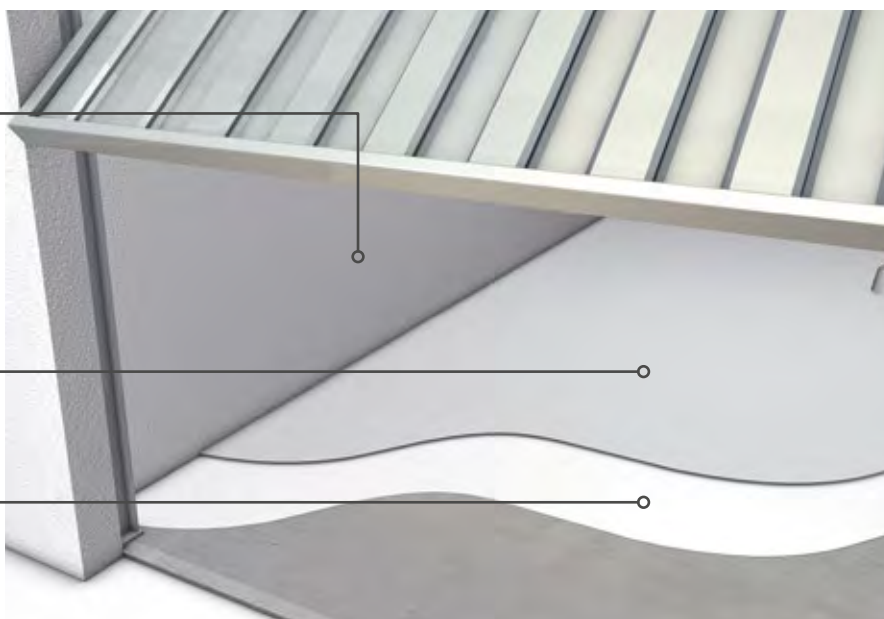
(P 260) KÖSTER Silicone Paint White
(P 262) KÖSTER Acrylic Paint

Floor coating

(CT 215) KÖSTER CT 215 Universal Floor

Primer

(CT 215) KÖSTER CT 215 Universal Floor



Concrete floors exposed to moderate stresses are ideally and easily coated with the decorative floor sealant KÖSTER CT 215 Universal Floor. The coating is applied in two layers onto the prepared and cleaned concrete surface.

The surface protection of walls is easily done with KÖSTER Silicone Paint White.

Always adhere to the specifications in the respective Technical Guidelines.

Floor coatings which are exposed to heavy stresses



Top Coat

(CT 271) KÖSTER LF-VL

Slip resistance (optional)

KÖSTER Quartz Sand

Floor coating

(CT 271) KÖSTER LF-VL

Primer

(CT 121) KÖSTER CT 212
(CT 230) KÖSTER VAP I 2000

Floors in industry and production facilities are subjected to a multitude of stresses, especially mechanical stresses through forklift traffic, machines, or shocks through falling objects.

Concrete floors subjected to such stresses are covered with the self-leveling industrial floor coating KÖSTER LF-VL.

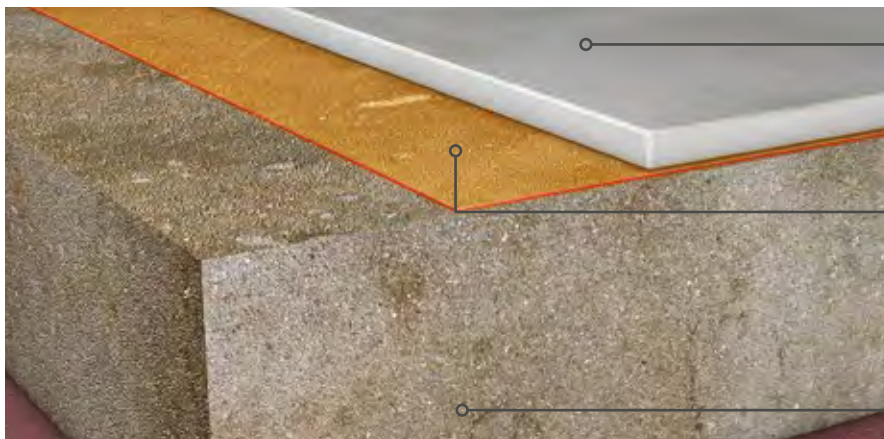
The substrate must be prepared, dry, clean, and freed of all bond inhibiting substances. It is then primed with KÖSTER LF-BM (when moisture is

present in or below the slab with KÖSTER VAP I 2000) and finally coated with KÖSTER LF-VL.

The top layer can also be adjusted for various slip resistance classifications by broadcasting with kiln dried silica sand or various top coats.

Additionally the complete system can be installed with low emission materials according to the AgBB guidelines and can therefore be installed in critical interiors such as schools or hospitals.

Moisture Mitigation System



Floor coating

(CT 271) KÖSTER LF-VL
Alternative
(CT 276) KÖSTER PS Flex

Vapour barrier

(CT 230) KÖSTER VAP I 2000
Alternative
(CT 233) KÖSTER VAP I 2000 FS
(CT 234) KÖSTER VAP I 2000 UFS

Moist concrete with high alkalinity

Moisture penetration through concrete slabs can cause severe problems for subsequent flooring systems. High concentrations of moisture and alkalinity (levels determined through testing) can lead to the deterioration of flooring adhesives and delamination of coatings by osmotic action. Even with relatively low moisture emissions (MVER), elevated alkalinity can compromise even the toughest flooring system adhesives. To avoid this problem the concrete slab should be primed with a material that will tightly bond to the concrete under these very adverse conditions.

KÖSTER VAP I 2000 is a special material which

fulfils all of these functions; The KÖSTER VAP I 2000 vapor reduction system is applied to shot blasted, solid concrete substrates that are free of bond inhibiting substances. After curing, a covering layer (i.e. KÖSTER LF-VL) or any other type of final flooring may be applied.

If an underlayment is required use KÖSTER SL Premium together with KÖSTER VAP I 06 Primer on top of the moisture mitigation system.

Always adhere to the specifications in the respective Technical Guidelines.

Robust, decorative surface coating: KÖSTER BTG System (Balconies, Terraces, Commercial areas)

Surface Sealant

(CT 320) KÖSTER TS transparent

Decorative broadcast

(CT 429) KÖSTER Color Chips

Floor Coating

(CT 210) KÖSTER EM-VS



Underlayment

(SL 281) KÖSTER SL

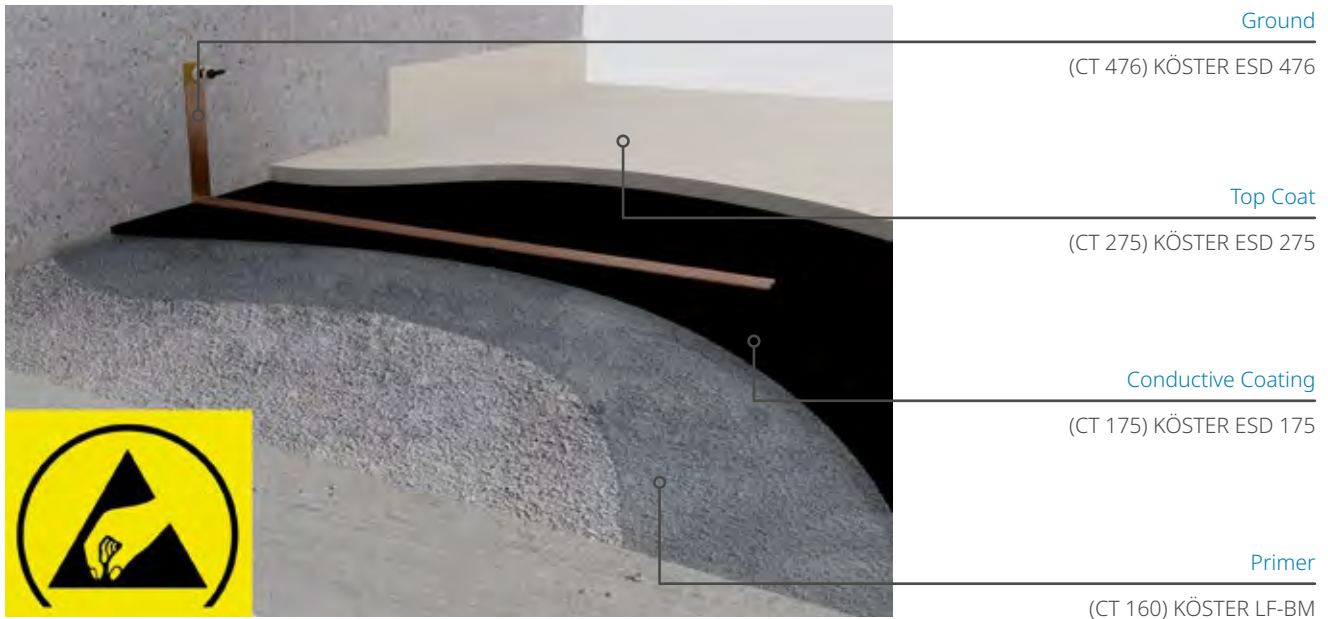
The KÖSTER BTG System is a visually appealing floor coating system for concrete and screed floors.

It is comprised of KÖSTER EM-VS (resin coating), KÖSTER Color Chips (colored enhancement) and KÖSTER TS Transparent (transparent surface sealant). The BTG System protects balconies, terraces, laboratories, offices, and other commercial areas including living spaces against erosion, weathering, and other chemicals. The system stands out due its slip resistance and its ease of cleaning. The epoxy resin sealant, KÖSTER EM-VS, is applied to a prepared substrate in two coats. In order to achieve a slip resistant and decorative colored finish, the coating is then

broadcasted with KÖSTER Color Chips. Lastly, TS Transparent is applied as a transparent final layer. TS Transparent is a high performing surface sealant made out of modern sustainable materials. Due to its good ultraviolet resistance, it can be used both in inside and outside areas. It provides the BTG System with a matte finish and a high-quality surface. In cases where moisture can be trapped behind the coating such as non-waterproofed floor slabs or balconies, KÖSTER VAP I 2000 should be applied to protect against moisture and water vapor.

Always adhere to the specifications in the respective Technical Data Sheets.

ESD Flooring System (electrostatic discharge)



In areas where electronics are manufactured or in areas that can be electrostatically charged by people or machines, the floor must have a sufficiently high electrostatic dissipation to eliminate the risk of damage. For this ESD protection areas are required, (ESD : Electrostatic Discharge) where special ESD coatings are installed.

The KÖSTER ESD System has a structure that provides maximum protection against unwanted electrical charges. The product system consists of the conductive layer KÖSTER ESD 175, which is a solvent free epoxy resin dispersion that is simply applied with a roller. After only two hours it is cured and can be connected to the building grounding.

KÖSTER ESD 275 is applied as the top coat. After cure it not only protects the concrete from chemical and mechanical stresses, it also maintains the high electrostatic dissipation required for an ESD protected area. The KÖSTER ESD System has been tested according to the DIN EN 61340-4 by the KIWA Polymer Institute Ltd. The excellent test results allow the KÖSTER ESD System to be used in rooms with very high requirements.

Always adhere to the specifications in the respective Technical Guidelines.

Parking garages and trafficked surfaces with high mechanical stresses

Top Coat

(CT 221) KÖSTER CT 221

Broadcast

(CT 488) KÖSTER Quartz Sand

Primer

(CT 121) KÖSTER CT 121
(CT 483) KÖSTER Quartz Sand

Substrate

Concrete



Parking garages and trafficked areas have especially high requirements on coatings. The KÖSTER OS 8 System is a highly resistant, easy to apply solution.

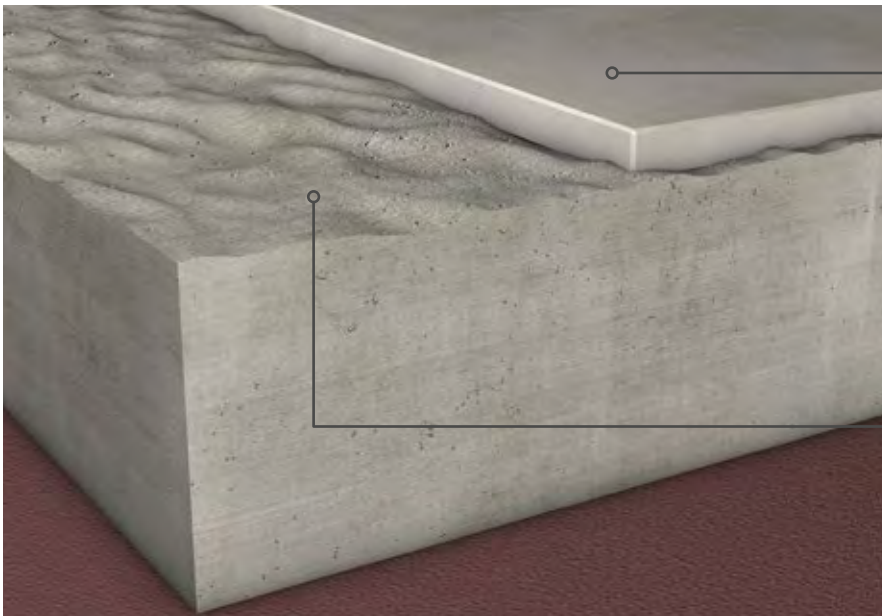
Surface preparation is critical and should result in a clean, dry surface free of all bond-inhibiting materials. KÖSTER CT 121 mixed with Quartz Sand 0.06 - 0.36 mm (1:1) is used as a primer and applied with a standard trowel. Immediately afterwards, the primed surface is spread with a roller and subsequently broadcasted with Quartz Sand 0.4 - 0.8 mm. Through the broadcast with

quartz sand a very high mechanical resistance is attained as well as a high slip resistance.

After excess Quartz Sand has been removed, the top coat consisting of the solvent-free KÖSTER CT 221 is applied. The KÖSTER OS 8 system has been tested according to the DIN EN 1504-2 guideline and fulfills the supplementary standard DIN V 18026.

Always adhere to the specifications in the respective Technical Guidelines.

Hygienic protective coating for the food production industry



Floor coating and underlayment

(CT 251) KÖSTER UC 100
(CT 253) KÖSTER UC 300

Substrate

Surface preparation with shotblasting

CT

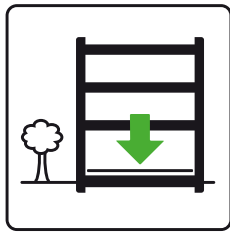
KÖSTER UC combines properties of mineral floor leveling materials (leveling and repair of mineral substrates) and reactive resin coatings (protection against penetrating substances and damage as well as decorative design) in one product. It is based on a polymer binder (polyurethane) and mineral fillers. KÖSTER UC Systems can therefore be used in a wide variety of fields of application with high demands on the coating such as in the food production industry (production, kitchens) as well as in chemical and pharmaceutical industries. KÖSTER UC can be installed in new construction projects (retail) and in the renovation of production areas which must be quickly open to traffic.

In order to ensure a successful application, the substrate must be properly prepared by shot-

blasting. The three-part KÖSTER UC System is made up of: KÖSTER UC 100, a self-leveling urethane cement flooring system for smaller layer thicknesses; KÖSTER UC 200, a trowel applied urethane cement flooring system for higher layer thicknesses; and KÖSTER UC 300, a very thin-layer urethane cement flooring system, which can be used as a primer or top coat, depending on the circumstances. Additionally, KÖSTER UC Pigment Paste can be used to color any of the KÖSTER UC flooring system to meet decorative requirements.

Always adhere to the specifications in the respective Technical Guidelines.

Corrosion protection



Corrosion protection is of primary concern particularly in industry and agriculture sectors where there is a variety of areas with increased safety requirements, for example, such resistance against acids and alkalis. These areas can include a variety of different buildings. In order to guarantee a long service life floors in production areas, warehouses and tanks must all be protected with long-term solutions. KÖSTER not only provides solutions for the effective protection of mineral surfaces but also for steel as well.

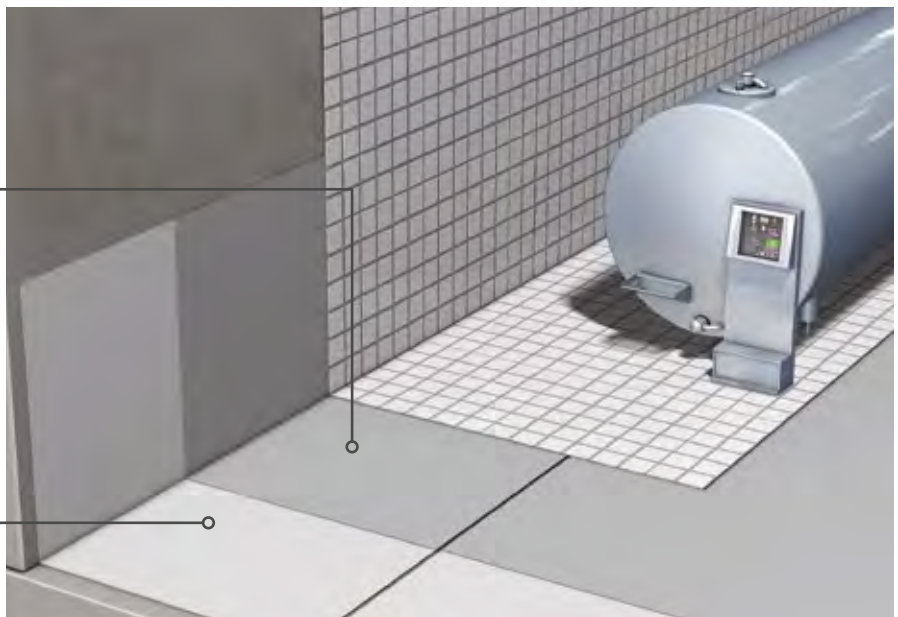
Heavy duty corrosion protection

Heavy duty surface protection

(CT 280) KÖSTER PSM
(CT 380) KÖSTER PSM 2S+

Waterproofing layer

(W 221) KÖSTER NB 1 grey



For the protection of concrete surfaces against acids the first step is to coat the surface with the negative side waterproofing KÖSTER NB 1 Grey. The acid protection itself is made with KÖSTER PSM (suitable for dry substrates and easy to apply) and KÖSTER PSM 2S+ as a sealant.

Always adhere to the specifications in the respective Technical Guidelines.

Corrosion protection of steel



Corrosion protection

(CT 283) KÖSTER Corrosion Protection

Corrosion protection
(crack bridging)

(CT 228) KÖSTER CT 228 Flex

CT

The corrosion protection of steel is usually done with a two layer coating of KÖSTER Corrosion Protection, applied by brush or roller. The substrate preparation is carried out according to DIN EN ISO 12 944-4 (Sa 2 ½, RY5 > 50 µm).

If a crack bridging, flexible coating is required KÖSTER Corrosion Protection is to be coated with two layers of KÖSTER CT 228 Flex.

Always adhere to the specifications in the respective Technical Guidelines.

Because corrosion protection on steel requires experience and should be analyzed case by case, please contact our technical consultants. They will be glad to answer your questions.



Joint Sealings

Joint sealants, joint tapes



KÖSTER KB-Pox Adhesive

J 120 005

5 kg combipackage

High performance adhesive specially designed for fastening KÖSTER Joint Tapes to mineral, wooden and metal substrates. KÖSTER KB-Pox Adhesive develops a high adhesive strength to concrete, mortar, metal, wood and many other building materials. It develops high early strength. Vertical and overhead application is possible.

KÖSTER KB-Pox Adhesive is a 2 component, epoxy based, high performance adhesive. The material is thixotropic, has a pastelike consistency, contains no solvents and has a 100 % solids content.

Consumption: For KÖSTER Joint Tape 20: 1 kg / m, for KÖSTER Joint Tape 30: 1.5 kg / m



KÖSTER PU Primer 120

J 138 250

250 ml can

One component PU primer for non-porous surfaces.

Consumption: Approx. 30 - 50 ml / m²



KÖSTER FS Primer 2C

J 139 200

200 g combipackage

KÖSTER FS Primer 2C is a fast curing, transparent, solvent free two component bonding agent. It is used as a primer for the subsequent application of KÖSTER Joint Sealant FS-H and FS-V.

Consumption: Approx. 10 - 20 g / m



KÖSTER Joint Sealant FS-V

J 231 004 (black)

4 kg combipackage

J 233 004 (grey)

4 kg combipackage

Formstable joint sealant with excellent resistance against mechanical stresses and a high resistance against water, sea water, salt solutions, petroleum and mineral oils. It is rot and root resistant. The rubber-elastic material based on polysulfides is 2-component, elastic and stable.

Fields of application include permanently elastic waterproofing of vertical joints in below grade construction such as foundations, sewage treatment plants, garages, tunnels, etc.

Consumption: Approx. 1.6 kg/l void



KÖSTER Joint Sealant FS-H

J 232 004 (black)
4 kg combipackage

J 234 004 (grey)
4 kg combipackage

Self leveling joint sealant with excellent resistance against mechanical stresses and a high resistance against water, sea water, salt solutions, petroleum and mineral oils. It is rot and root resistant. The rubbery-elastic material based on polysulfides is 2-component, elastic and pourable.

Fields of application include permanently elastic waterproofing of horizontal joints in below grade construction such as foundations, sewage treatment plants, garages, tunnels, etc.

Consumption: Approx. 1.6 kg/l void



KÖSTER PU 907

J 235 600

600 ml tubular bags

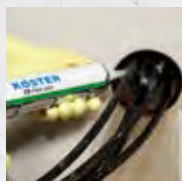
Highly elastic, low modulus polyurethane sealant, with good UV resistance and excellent adhesion to typical construction materials. KÖSTER PU 907 is one component and cures with moisture to form a flexible sealant which can be overpainted after curing is finished. The sealant is non sagging, highly thixotropic, easy smoothing and has good workability.

Consumption: Approx. 1.30 kg/l void



KÖSTER KB-Flex 200

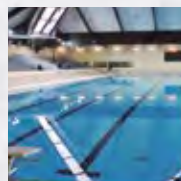
Sealant for pipe and cable penetrations, even in the case of pressurized water. KÖSTER KB-Flex 200 is a 1-component, permanently plastic material and can therefore be directly applied from the cartridge – even in the case of flowing water



Cable penetration



Pipe penetration



Swimming pool installations



Against flowing water

Article No.: J 250 310

Consumption: 1.6 kg / l void

Packaging: 310 ml / 500 g cartridge (J 250 310)

530 ml / 850 g cartridge (J 250 530)

KÖSTER Quellband

J 270 005

6 x 5 m per box

Sodium-bentonite based water swellable joint tape with an alkalinity activated surface coating which stops premature swelling of the tape on the building site.

Consumption: 1 m / m



KÖSTER Joint Tape 20

J 820 020

20 m roll

Thermoplastic tape for sealing expansion and dilatation joints (up to 12 cm) and broad, irregular cracks. KÖSTER Joint Tape 20 is UV resistant, highly elastic and can withstand extreme movements in the joint.

The joint tape system consists of KÖSTER Joint Tape and KÖSTER KB-Pox Adhesive, a high performance adhesive for fastening the joint tape to mineral substrates. 1 mm x 200 mm.

Consumption: Approx. 1 kg of KB-Pox Adhesive per m Joint Tape 20



KÖSTER Joint Tape 30

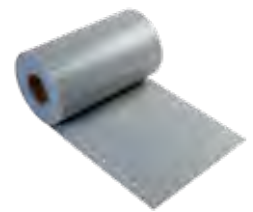
J 830 020

20 m roll

Thermoplastic tape for sealing expansion and dilatation joints (up to 20 cm) and broad, irregular cracks. KÖSTER Joint Tape 30 is UV resistant, highly elastic and can withstand extreme movements in the joint.

The joint tape system consists of KÖSTER Joint Tape and KÖSTER KB-Pox® Adhesive, a high performance adhesive for fastening the joint tape to mineral substrates. 1 mm x 300 mm.

Consumption: Approx. 1.5 kg of KB-Pox Adhesive per m Joint Tape 30



KÖSTER Special Caulking Gun

J 981 001

piece

Cartridge gun for the application of KÖSTER KB-Flex 200 (530 ml / 850 g cartridge).



KÖSTER Connecting Hose and Nozzle for Caulking Gun

J 982 001

Set

Accessories for the application of KÖSTER KB-Flex 200 Sealing Paste with a flexible hose and 45° bend.



KÖSTER Special Caulking Gun without extensions

J 983 001

Stück

Caulking gun for tubular bags (sausages) and cartridges, for example KÖSTER Crisin Cream 600 ml and KÖSTER KB-Flex 200 in 530 ml cartridges.



KÖSTER Caulking Gun

J 989 001

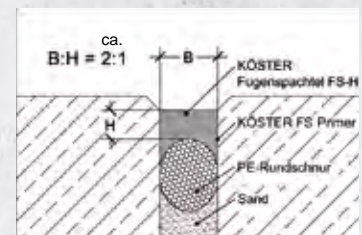
piece

For standard 310 ml cartridges, e. g. KÖSTER KB Flex 200 and KÖSTER Crisin 76 Concentrate.

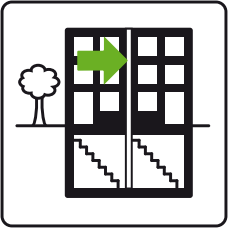


Good to know: Joint sealant application

Joint flanks are beveled before the application of the Joint Sealant. The bevel must be at least 10 mm wide and in a 45° angle. To avoid damages to the Joint Sealant caused by movement in multiple directions, the Joint Sealant should only bond to two joint flanks. For this reason a backing is installed, for example a foam PE backing rod. The Joint Sealant should be installed so that the ratio of joint height : width is 2:1. A detailed table can be found in the Technical Guideline at www.koester.eu. To achieve a clean and orderly application, the sides of the joint are taped. Absorbent substrates are primed once. The joint is filled approximately 2 hours after applying the KÖSTER FS Primer 2C. The Joint Sealant is smoothed, for example with a spackle. The tape should be removed before the Joint Sealant has hardened.

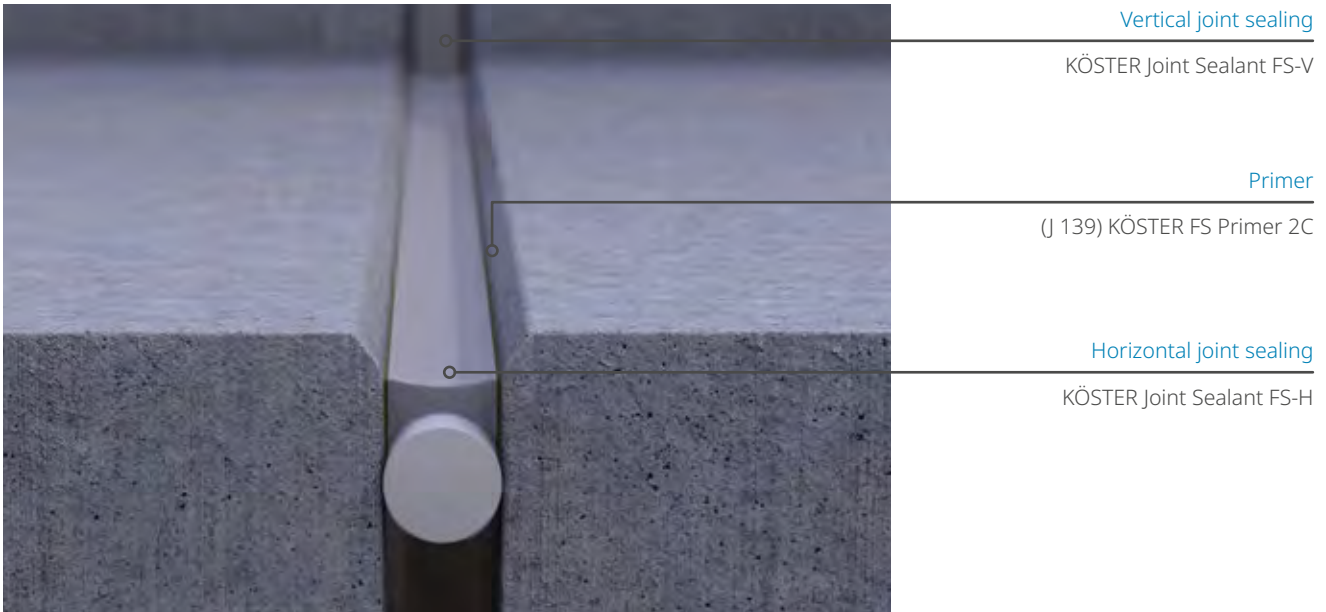


Joint Sealing



Joints in construction members are necessary to accommodate movements in these construction members. Sealing joints in construction members safely means to seal them permanently elastic, form stable and UV-resistant. This allows for future movements of the construction member without causing damages.

Joint sealing on mineral and metal surfaces



Construction joints are exposed to movements caused by thermal or other stresses. To waterproof construction joints permanently an elastic material is required. KÖSTER Joint Sealant FS is a proven joint sealant; it is resistant to mechanical stresses, UV radiation and aging. KÖSTER Joint Sealant FS is also resistant to aggressive chemicals.

Important for permanently waterproofing construction joints is not only to apply a durable material, it also needs to permanently adhere to the joint flanks. The substrate must be stable, clean and dry as well as free of bond inhibiting substances. The substrate is primed with KÖSTER FS Primer 2C.

The optimal absorption of the tension is guaranteed when the KÖSTER Joint Sealant FS is installed only connected to two opposing joint flanks. It allows the material to expand across the construction joint. To separate the joint sealing from the bottom a customary PE-round cord is installed into the joint before applying the material. To avoid damage caused by tension stresses the joint sealant is applied in thicknesses depending on the measurements of the joint. The proportion of the applied sealant should be 1 : 1 to 1 : 2 (height to width of the joint).

Always adhere to the specifications in the respective Technical Guidelines.

Injection of expansion joints

Joint waterproofing

(IN 296) KÖSTER Injection Gel S4

Injection packer

KÖSTER Superpacker



For the injection of expansion joints (pictured here in an underground parking garage ceiling above a support beam) usually a small number of injection packers are sufficient. The placement of these packers is calculated so that existing waterstops are not penetrated. This is particularly important for existing internal or external joint tapes, as well as for floor / floor joint tapes.

In the case of overhead expansion joints (dilation joints), boreholes should be ideally drilled into the top third of the joint. In cases of floor / floor expansion joints, boreholes should be ideally drilled into the lower third of the joint.

KÖSTER Superpackers are inserted into the boreholes. At overhead joints a cementitious barrier such as KÖSTER Injection Barrier may be necessary to seal the joint before injection. For example, by the installation of a fillet, as seen in the graphic above where the support beam and ceiling meet. Additionally, in certain cases a pre-injection with the very fast reacting KÖSTER

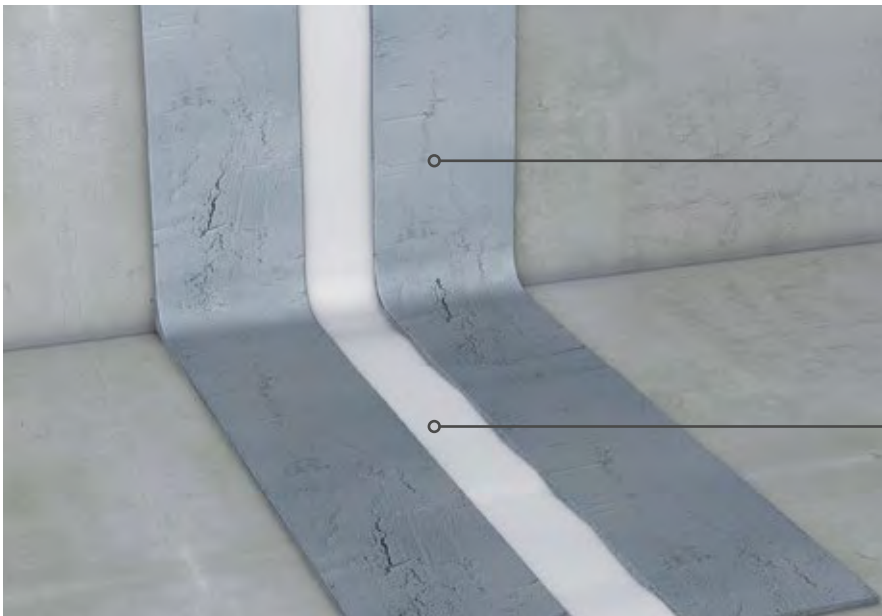
Injection Gel S4 can be advisable. Only enough material to seal any potential outflow areas should be used.

The KÖSTER Injection Gel S4 with the B+ component is a specially designed gel for the injection of joints with very high adhesion to the flanks and a reduced drying tendency when in contact with moving air such as wind.

The injection of joints represents a fairly quick method and minimally invasive way to repair waterproofing. By injecting the joint, it is not necessary to excavate underground parking garages or other underground building components. Moreover, since a low number of packers are sufficient in most cases, the drilling effort is reduced and time is saved.

Always adhere to the specifications in the respective Technical Guidelines.

Joint sealing on dilatation joints and other moving joints



Adhesive

(J 120) KÖSTER KB-Pox Adhesive

Fugenabdichtung

(J 820) KÖSTER Joint Tape 20

Alternative

(J 830) KÖSTER Joint Tape 30

Construction joints wider than 35 mm are waterproofed with KÖSTER Joint Tape 20 (20 cm width) or with KÖSTER Joint Tape 30 (30 cm width).

KÖSTER KB-Pox Adhesive is applied onto the stable and prepared substrate. KÖSTER Joint Tape is bonded to both flanks of the joint with the first layer of adhesive. After that the joint

tape is embedded into a second coat of KÖSTER KB-Pox Adhesive. KÖSTER KB-Pox Adhesive has excellent adhesion to concrete and to the KÖSTER Joint Tape. KÖSTER Joint Tapes are elastic and tear-resistant.

Always adhere to the specifications in the respective Technical Guidelines.

Waterproofing of cable and pipe penetrations

Protection layer

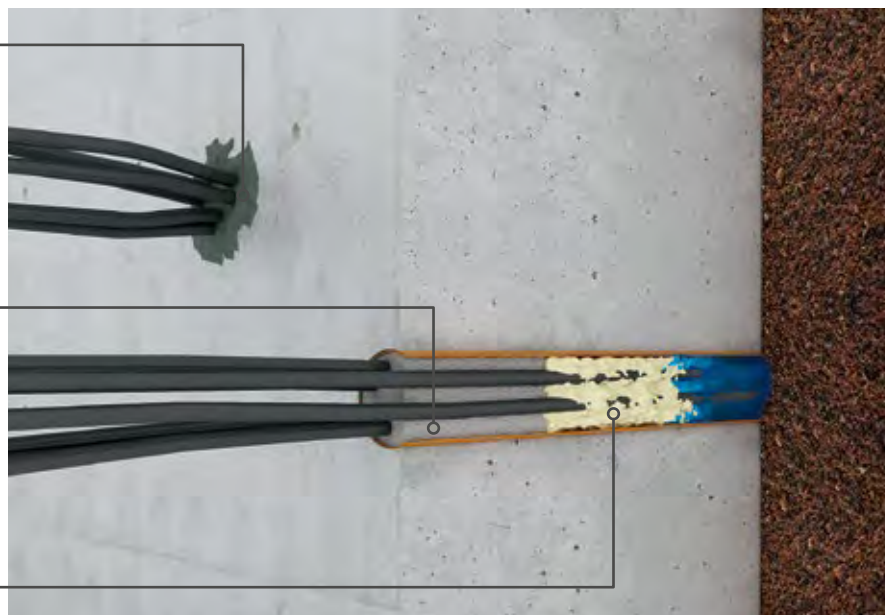
(C 515) KÖSTER KB-Fix 5

Waterproofing

(J 250) KÖSTER KB-Flex 200

Backing

Expanding foam



Cable and pipe penetrations such as electrical, water and data cables, must be permanently and securely waterproofed against penetrating water. Typically, rigid mortars or foams are used, which prevent the installation of other cables.

Using KÖSTER KB-Flex 200, a permanently plastic material, is a robust and easy way to waterproof against penetrating water while allowing the installation of further cables at a later stage. The material accommodates cable movements, does not tear, and is permanently resistant against common substances found in soil and groundwater.

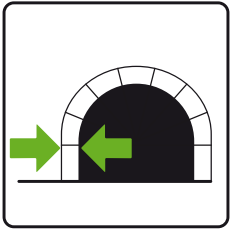
Before applying the material the substrate must be clean and free of loose particles. The substrate can be dry, moist or wet. In cases of pressurized water, a backing is installed in the penetration at a depth corresponding to the

installation depth (1.5:1 / Length x Thickness) using a common PU foam. It is important make sure all voids are filled during installation. Finally the sealing compound is recessed approx. 1 cm from the wall surface as protection against mechanical damage and to secure the position of the cables.

KÖSTER KB-Flex 200 has good adhesion to all commonly used building materials such as concrete, masonry, mortar, plaster, brick, and all other mineral construction materials, as well as ceramic, PVC, polyethylene and polypropylene. A primer is not necessary.

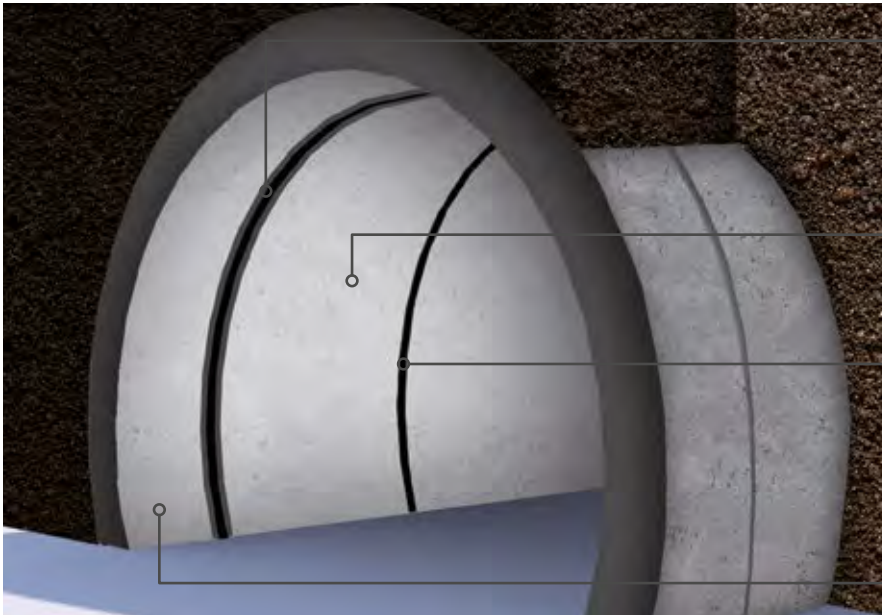
Always adhere to the specifications in the respective Technical Guidelines.

Tunnel waterproofing



Tunnel waterproofing requires specialized waterproofing materials which can vary depending on the type of tunnel elements and construction methods involved. Special parameters such as abnormally high water pressure and infrastructure conditions must be taken into consideration during restoration planning. Additionally, other structural concerns such as chemical/mechanical stresses must be taken into account and considered during the selection of appropriate products.

Joint sealing in tunnel constructions



Joint tape

(J 820) Joint tape 20
Alternative
(J 820) KÖSTER Joint tape 30

Primer

(J 139) KÖSTER FS Primer 2K

Joint sealant

(J 231) KÖSTER Joint Sealant FS-V
black

Adhesive

(J 120) KÖSTER KB-Pox Adhesive

Cold and expansion joints are often affected by leaks during tunnel construction. In some cases, regrouting can be recommended. Joint flanks must be first levelled and repaired with KÖSTER Repair Mortar. The joint flanks must be sound and solid and free of oil and grease. A PE backing rod is installed in the width of the joint and the joint flanks are primed with KÖSTER FS

Primer 2C. After the primer has dried, KÖSTER Joint Sealant FS-V is applied with a caulking gun and is smoothed over.

In cases where the joint cannot be repaired, it is important to prevent penetrating water in order to keep the operational area dry. In such cases, KÖSTER Joint Tapes are recommended.



Bathroom and wet room waterproofing



KÖSTER BD 50 Primer

B 190 005
5 kg jerrycan

Special primer for the KÖSTER BD System on dry or absorbent substrates. Penetrates deeply into the substrate creating an excellent bonding bridge for the subsequent waterproofing.

Consumption: Approx. 0.1 - 0.25 kg / m²; depending on the substrate



KÖSTER BD 50

B 290 010
10 kg bucket

Ready to use, seamless waterproofing for damp and wet rooms. Highly elastic, waterproof acrylic based material. Fields of application include under tiles in showers, bathrooms, kitchens, car washes, etc.

Consumption: Approx. 1.2 kg / m²



KÖSTER BD Flexible Tile Adhesive

B 540 025
25 kg bag

Single component, mineral flexible adhesive for all mineral building materials in construction. In combination with the KÖSTER BD System suitable for waterproofing wet rooms.

Consumption: Approx. 1.7 kg / m²; per mm layer thickness



B

KÖSTER BD Flex Tape K 120

B 931 010
10 m roll
B 931 050
50 m roll

Joint sealing tape for the secure bridging of joints, wall / floor junctions and in areas prone to cracking. Specially designed for the KÖSTER BD System. An elastomer strip with protruding mesh for the secure integration into the area waterproofing.

0.6 mm x 120 mm.



KÖSTER BD Inside Corner

B 932 001
piece

Ready to use, elastic moulded part for the waterproofing of inside corners in the KÖSTER BD System. Made of NBR-rubber with protruding mesh for the secure integration into the area waterproofing.



KÖSTER BD Outside Corner

B 933 001

piece

Ready to use, elastic moulded part for the waterproofing of outside corners in the KÖSTER BD System. Made of NBR-rubber with an protruding mesh for the secure integration into the area waterproofing.



KÖSTER BD Wall Sleeve

B 934 001

piece

Ready to use, elastic moulded part for the waterproofing of pipe penetrations in the KÖSTER BD System. Made of NBR-rubber with an protruding mesh for the secure integration into the area waterproofing.

Measurements: 120 mm x 120 mm.



KÖSTER BD Floor Sleeve

B 935 001

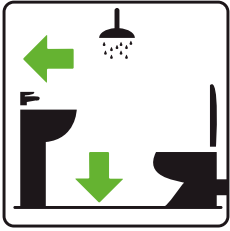
piece

Ready to use, elastic moulded part for the waterproofing of floor drains in the KÖSTER BD System. Made of NBR-rubber with an protruding mesh for the secure integration into the area waterproofing.

Measurements: 350 mm x 350 mm.



Wet room waterproofing



In these sensitive parts of the building, moisture can lead to severe damage to the entire building. Discoloration and tiles which are falling off the substrate are the first visible signs of such damages. Such rooms are waterproofed completely, in order to protect the entire building. The entire wall and floor area are seamlessly waterproofed. The waterproofing layer must be able to bridge possible cracks.



Only a few building elements are so constantly exposed to water as kitchens and bathrooms. In these cases a professional and crack bridging waterproofing material is required. Furthermore it must be stable enough so that tiles can be applied on top of it.

The KÖSTER BD-System is a complete system for waterproofing underneath tiles according to ETAG 022. The dry and stable substrate is primed with KÖSTER BD 50 Primer. As a waterproofing layer KÖSTER BD 50 is applied. In

corners and connection areas the pre-formed waterproofing elements KÖSTER BD Inside Corner, KÖSTER BD Outside Corner, KÖSTER BD Wall Sleeve and the KÖSTER BD Floor Sleeve are embedded into the waterproofing layer. At wall / floor junctions and joints KÖSTER BD Flex Tape K 120 is embedded. In areas where a reinforcement is embedded, movements won't cause damage to the waterproofing material.

Always adhere to the specifications in the respective Technical Guidelines.



Façade protection and paints



KÖSTER Façade Cleaning Cream

P 110 005
5 kg bucket

Liquid, pasty Façade Cleaning Cream. It removes scaling and efflorescence from mineral substrates. It also cleans many other materials and surfaces quickly and effectively. KÖSTER Façade Cleaning Cream is made from natural, renewable raw materials. Due to its creamy consistency the material covers the surface excellently and doesn't drip. The long contact time helps to dissolve tough stains and soiling.

Consumption: Approximately 100 - 250 g/m² depending on the substrate.



KÖSTER Primer P

P 162 000
1.000 kg

Deeply penetrating acrylic primer to reduce absorption and to solidify concrete surfaces.

Consumption: 100 - 200 g / m²



KÖSTER Façade Cream

P 200 005
5 l bucket
P 200 015
15 l bucket

Protection of mineral building structures and façades from water and driving rain. Solvent free, colorless after curing, water repellent, diffusion open hydrophobization cream for brick, clinker, natural stone and mineral plasters.

Consumption: Approx. 0.1 - 0.25 l / m² depending on the surface.



KÖSTER Siloxan

P 240 005
5 l packaging
P 240 010
10 l jerrycan

Façade hydrophobization for the protection of mineral building materials from water and driving rain. Sprayable, colorless after curing and open to water vapor diffusion.

Consumption: Approx. 0.2 - 1.0 l / m², depends on absorbcency of the surface.



KÖSTER Iperlan

P 241 025
25 l hobbock

Highly effective hydrophobizing impregnation agent for concrete in civil engineering construction.

Consumption: Approx. 500 to 600 ml/m² depending on porosity of the substrate.



P

KÖSTER Silicon Paint White

P 260 010

10 l bucket

Ideal for use on restoration plasters. Diffusion open, matt silicone resin paint with a special water repelling effect.

Consumption: Approx. 0.2 l/m² per coat



KÖSTER Acrylic Paint

P 262 015

15 l bucket

High quality, matt, water-thinnable façade paint for a decorative final coating of mineral surfaces. The material is highly resistant, has good coverage, and is suited as a structure-preserving coating. White, can be colored.

Consumption: approx. 0.2 ltr/sqm per layer



KÖSTER MF 1

P 280 012

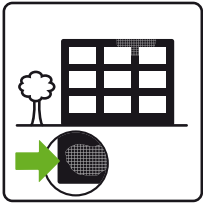
12 kg bucket

White mineral paint suitable for inside and outside areas. KÖSTER MF 1 is delivered in powder form, effective against algae, mold and fungi and free of fungicidal toxins.

Consumption: Approx. 1.6 kg / m² in 2 coats (per coat approx. 0.8 kg / m²)



Façade protection



Climatic influences and the resulting penetration of moisture into the substrate often lead to damages to the façade. In order to protect facades made of mineral building materials, impregnations are used which make the surface water repellent. These hydrophobing agents penetrate deeply into the substrate and dry without leaving residues so that the visual appearance of the façade is not affected by the impregnation.



Surface protection

(P 200) KÖSTER Façade Cream

Cleaner

(P 110) KÖSTER
Façade Cleaning Cream

KÖSTER façade protection systems prevent masonry and concrete from liquid water ingress (rain or splash water, condensate) but at the same time water vapor is still able to escape from the façade. That way long term moisture damage can be avoided.

KÖSTER Façade Cream is a solvent-free pasty hydrophobization material. It is applied as a film

using a roller or brush and penetrates deep into mineral substrates.

KÖSTER Siloxan in contrast is a liquid and can therefore be sprayed onto the façade or alternatively brush applied.

Always adhere to the specifications in the respective Technical Guidelines.

P

Protecting concrete surfaces on bridges and aqueous environments



Surface protection

(P 241) KÖSTER Iperlan



TPO- and ECB Roofing Membranes, Additional Roof Waterproofing



TPO and ECB Roofing Membranes

Product Name	Thickness	Width	Article No.	Length
KÖSTER TPO 1.2	1.2 mm	1.50 m	RT 812 150	30 m

Product Name	Thickness	Width	Article No.	Length
KÖSTER TPO 1.5	1.5 mm	1.50 m, 1.05 m, 0.75 m, 0.525 m, 0.35 m, 0.25 m	RT 815 150	20 m
			RT 815 105	
			RT 815 075	
			RT 815 052	
			RT 815 035	
			RT 815 025	

Product Name	Thickness	Width	Article No.	Length
KÖSTER TPO 1.8	1.8 mm	2.10 m, 1.50 m, 1.05 m, 0.75 m, 0.525 m, 0.35 m, 0.25 m	RT 818 210	20 m
			RT 818 150	
			RT 818 105	
			RT 818 075	
			RT 818 052	
			RT 818 035	
			RT 818 025	

Product Name	Thickness	Width	Article No.	Length
KÖSTER TPO 2.0	2.0 mm	2.10 m, 1.50 m, 1.05 m, 0.75 m, 0.525 m, 0.35 m, 0.25 m	RT 820 210	20 m
			RT 820 150	
			RT 820 105	
			RT 820 075	
			RT 820 052	
			RT 820 035	
			RT 820 025	

KÖSTER TPO Roofing Membranes



KÖSTER TPO Roofing Membranes are particularly characterized by their excellent workability, flexibility, and weldability. The unique polyethylene (PE) based composition guarantees a simple, uncomplicated, safe, and permanent weld.

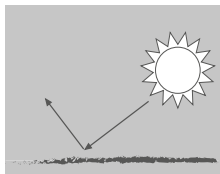
Product Name	Thickness	Width	Article No.	Length
KÖSTER TPO 2.0 F	2.0 mm	1.50, 1.05, 0.525 m	RT 820 150 F	20 m
			RT 820 105 F	
			RT 820 052 F	
KÖSTER TPO 2.0 F FR		1.50, 1.05, 0.525 m	RT 820 150 F FR	
			RT 820 105 F FR	
			RT 820 052 F FR	
KÖSTER TPO 2.0 F W		1.50, 1.05 m	RT 820 150 F W	
			RT 820 105 F W	

KÖSTER TPO F: with polyester fleece backing



KÖSTER TPO F (Fleece) Membranes are the all-rounder among the KÖSTER TPO roofing membranes. They can be used on almost any roof structure. They are mainly installed with KÖSTER 2C PUR Membrane Adhesive. The membrane is bonded permanently to almost any surface via the firmly laminated fleece.

KÖSTER TPO White:
Reflective



Product Name	Thickness	Width	Article No.	Length
KÖSTER TPO 2.0 W	2.0 mm	1.50, 1.05 m	RT 820 150 W	20 m
			RT 820 105 W	

White KÖSTER TPO roofing membrane reflects the sunlight. As a result, the temperature on the roof drops. In addition to the generally lower cooling requirement for the entire building, a lower temperature on the roof surface significantly increases the efficiency of photovoltaic systems. If a building ventilation system is installed on the roof, this effect also transports much cooler air into the building. This is positive for the energy balance and therefore for the environment.

KÖSTER TPO SK: self-adhesive with polyester fleece backing



Product Name	Thickness	Width	Article No.	Length
KÖSTER TPO 1.5 SK FR ●	1.5 mm	1.05 m, 0.525 m	RT 815 SK (FR)	20 m
KÖSTER TPO 1.5 SK FR ●		1.05 m	RT 815 SK (FR) SG	
KÖSTER TPO 2.0 SK FR ●	2.0 mm	1.05 m	RT 820 SK (FR)	

KÖSTER SK self-adhered TPO Membranes are polyolefin-based thermoplastic roofing and waterproofing membranes with centrally embedded glass fiber mesh, special self-adhering fleece laminated underside, and improved flame-resistant properties (FR). The membranes are classified as $B_{roof}(t1)$ and fulfill the requirements for hard roofs and are suitable for direct adhesion to EPS insulation.

KÖSTER TPO Pro:
Sustainable and highly economical

Product Name	Thickness	Width	Article No.	Length
KÖSTER TPO Pro	1.5 mm	1.5 m	RT 815 150 Pro	20 m

This is what sustainability looks like: KÖSTER TPO Pro has the same quality requirements as all KÖSTER TPO Membranes and uses near-to-prime industrial recycled raw materials. These are plastics that were used directly in production or from one-time use in the commercial sector (e.g. wrapping films). This means that this waterproofing membrane protects the environment with every square meter installed.

KÖSTER TPO U: Unreinforced waterproofing membrane

Product Name	Thickness	Width	Article No.	Length
KÖSTER TPO 2.0 U	2.0 mm	0.525 m	RT 820 052 U	20 m

KÖSTER TPO U are unreinforced homogeneous TPO Membranes for the creation of drainage and ventilation flanges and corner reinforcements.

KÖSTER ECB: Reliable waterproofing membrane with bitumen

Product Name	Thickness	Width	Article No.	Length
KÖSTER ECB 2.0	2.0 mm	0.525 m	RE 820 052	20 m
		0.35 m	RE 820 035	
		0.25 m	RE 820 025	
KÖSTER ECB 2.0 U	2.0 mm	0.525 m	RE 820 052 U	20 m

KÖSTER ECB Membranes are made of a combination of a thermoplastic Ethylene copolymer and a special bitumen. The membranes have excellent long-term durability against water and weathering. They have a high elongation and tear strength and are resistant to environmental influences as well as a variety of chemicals. Additionally, due to their tested root resistance, they are ideal as a root barrier for green roofs.



KÖSTER TPO Roofing Membranes can be installed by mechanical fastening, loose laying, or full surface adhesion on flat or green roofs. They stand out due to their excellent application and outstanding mechanical properties as well as through their durability and sustainability. KÖSTER produces both thermoplastic polyolefine (TPO) and ethylene copolymer bitumen membranes. The standard color of KÖSTER TPO Membranes is light grey, for ECB Membranes the standard color is black.

Installation methods



Full surface adhesion



Mechanical fastening

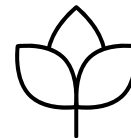


Under ballast / green roofs



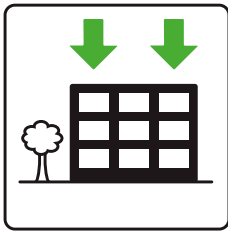
Complex geometries

Our KÖSTER TPO membranes provide the perfect conditions for a top certification for residential and commercial buildings as well as industrial buildings regarding the aspect of sustainable construction. Accordingly, KÖSTER is a member of the Institut für Bauen und Umwelt (IBU). From IBU, KÖSTER receives Environmental Product Declarations (EPD) for the KÖSTER TPO membranes. These EPD contain all required data for an evaluation by certified companies such as DGNB (Deutsche Gesellschaft für Nachhaltiges Bauen), Leed (Leadership in Energy and Environmental Design), and Breeam (Building Research Establishment Environmental Assessment Methodology). With consistent positive evaluations for the extensive lifecycle, lack of plasticizers and excellent recyclability the material regularly gains Gold ratings (or even higher, with the DGNB) for buildings.



In addition to our KÖSTER TPO roofing membranes, we provide a wide range of system accessories. This includes among others molded parts for corners and penetrations, connection sleeves, composite sheets and maintenance mats as well as accessories for drainage and ventilation.

Roof waterproofing



Due to their position, roofs are exposed to considerable temperature and weather related stresses. The formation of cracks due to tension in the waterproofing layer can be the consequence. Safe retroactive waterproofing is required. It is vital to apply products which are characterized by great elasticity and high UV-resistance.

Roof waterproofing with mechanically fastened membranes

Roofing Membrane

(RT 820) KÖSTER TPO 2.0

Alternativen

(RT 815) KÖSTER TPO 1.5

(RT 818) KÖSTER TPO 1.8

(RT 820) KÖSTER ECB 2.0

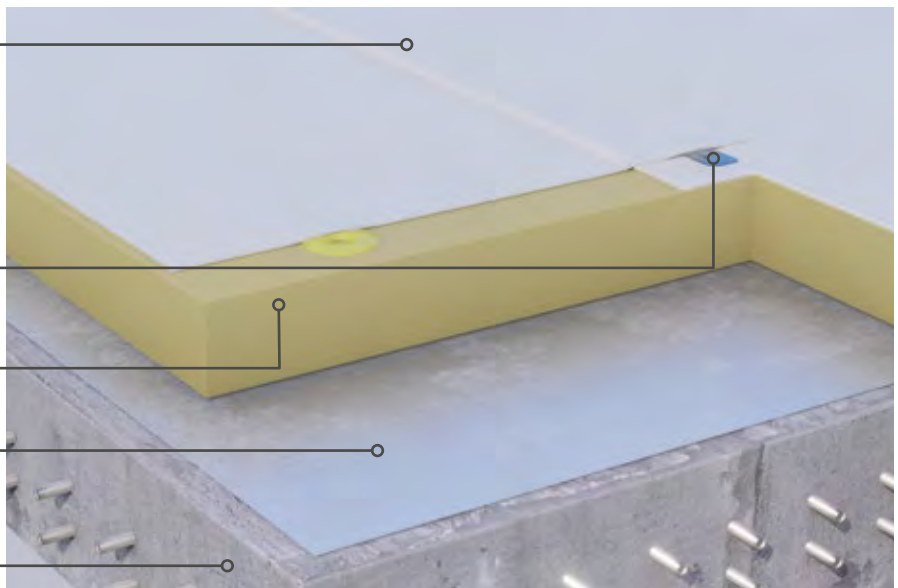
Supporting construction

Insulation

Vapor barrier

(RT 920) KÖSTER Vapor Barrier FR

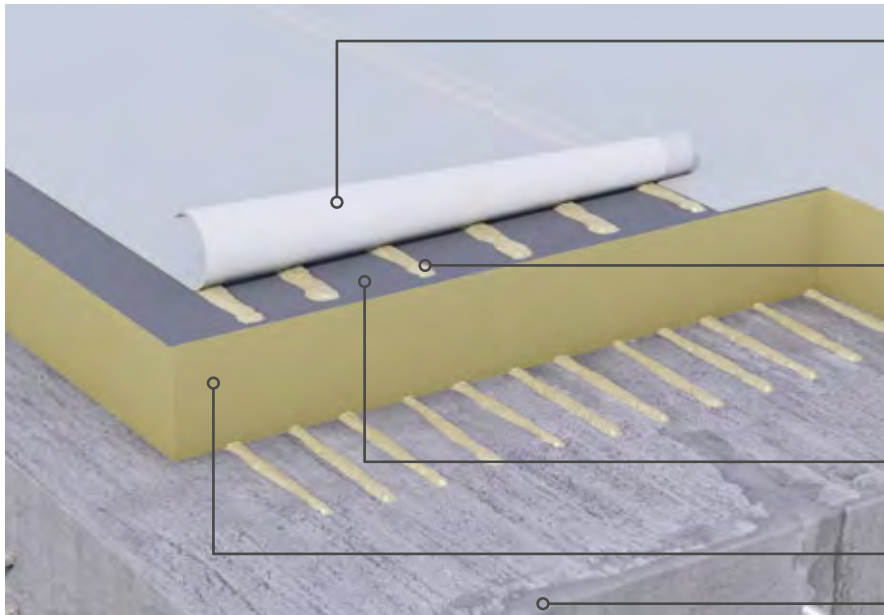
Substructure



The most common method of installing TPO membranes is through mechanical fastening. The membrane is mechanically fastened to the roof structure, which can consist of either wooden sheathing, trapezoidal sheets, or a concrete slab. The membrane is generally fastened through the thermal insulation, which requires special fasteners. Overlapping the membranes prevents the penetration of water into the installation. Due to its great compatibility with various materials such as bitumen, the KÖSTER TPO Membrane is suitable for use in the renovation of roof waterproofing systems as well. For instance, the KÖSTER TPO Membrane can

be directly fastened to the substructure without having to remove the old waterproofing system as long as the substrate is intact and structural aspects do not indicate otherwise. Mechanical fastening allows for a quick installation and provides a high resistance to wind loads without placing an additional load upon the waterproofing system. Thus, the roof structure is comparatively light in weight. Furthermore, mechanical fastening guarantees that the membrane will not slip, even on pitched roofs. Mechanical fastening even makes a green roof on a pitched roof possible.

Roof waterproofing with bonded membranes



Roofing Membrane

(RT 820 FR) KÖSTER TPO 2.0 F (FR)
 Alternatives
 (RT 820 F) KÖSTER TPO 2.0 F
 (RT 820 F W) KÖSTER TPO 2.0 F W

Adhesive

(RT 102) KÖSTER Contact Adhesive
 (RT 101) KÖSTER PUR Membrane Adhesive
 (RT 104) KÖSTER 2C PUR Membrane Adhesive

Substrate preparation

(RT 103) KÖSTER TPO SK Primer

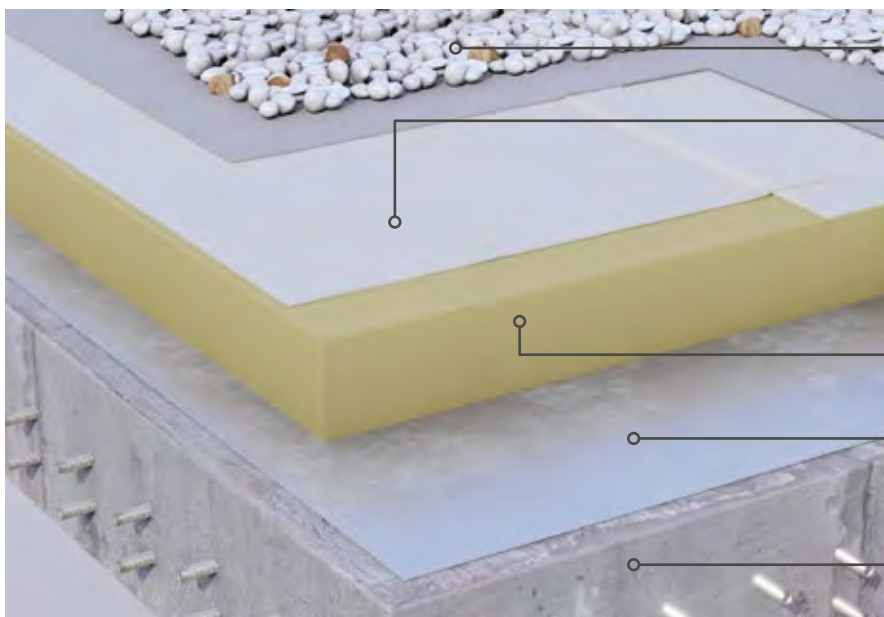
Insulation

Substructure

Full surface adhesion to the substrate offers a time-saving installation. The KÖSTER TPO Membrane features a special fleece coating which increases the bonding of the KÖSTER PUR Membrane Adhesive. This results in a high adhesive strength and creates a perfect bond to the substrate. It is important that the substrate is suitable for a good adhesive bond. If necessary, an adhesive bridge can be applied. In addition, a wind load calculation must be carried out prior to the adhesion of the membrane in order to provide information about the amount

of adhesive required and the alignment of the welding seams. The KÖSTER PUR Membrane Adhesive is applied in strips to the substrate, the fleeced-coated KÖSTER TPO Membrane is unrolled, and the membrane is firmly pressed onto the substrate using a rubber hand roller. This enables the adhesive to be spread evenly and help achieve uniformity of the bond. When distributing the adhesive care must be taken to ensure that no material is applied to an area that is to be welded to another sheet.

Roof waterproofing with loose-laid membranes



Ballast System

Roofing Membrane

(RT 820 FR) KÖSTER TPO 2.0 F (FR)
 Alternatives
 (RT 815 SK FR) KÖSTER TPO 2.0 SK (FR)
 (RT 820 F) KÖSTER TPO 2.0 F
 (RT 820 F W) KÖSTER TPO 2.0 F W

Insulation

Vapor barrier

(RT 920) KÖSTER Vapor Barrier FR

Substructure

A quick and secure way to install KÖSTER TPO Membranes is through loose laying with ballast. Ballast can consist of either gravel, paving slabs, or even green roofs. Ballast helps protect the roofing membrane against wind loads and can accommodate a wide range of architectural

styles. A special advantage of this installation method is that the roofing membrane does not need to be mechanically fastened to the substrate. Due to the weight of the ballast, higher loads must be taken into consideration in the roof load calculation.

Roof waterproofing on green roofs

Ground / Greenery / Landscaping

Protection Layer

Drainage Sheet

(W 901) KÖSTER SD Protection and Drainage Sheet 3-400

Protection Layer

Roofing Membrane

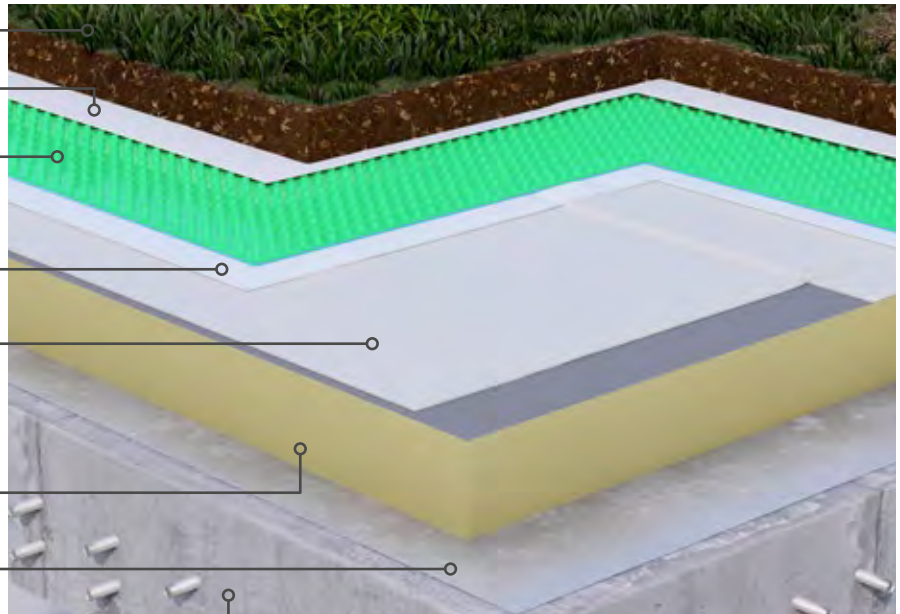
(RT 818) KÖSTER TPO 1.8
(RT 820) KÖSTER TPO 2.0
(RT 820 F FR) KÖSTER TPO 2.0 F (FR)

Insulation

Vapor Barrier

(RT 920) Vapor Barrier FR

Substructure



Roof waterproofing with self-adhered membranes

Roofing Membrane

(RT 815 SK FR) KÖSTER TPO 1.5 SK (FR)

Substrate preparation

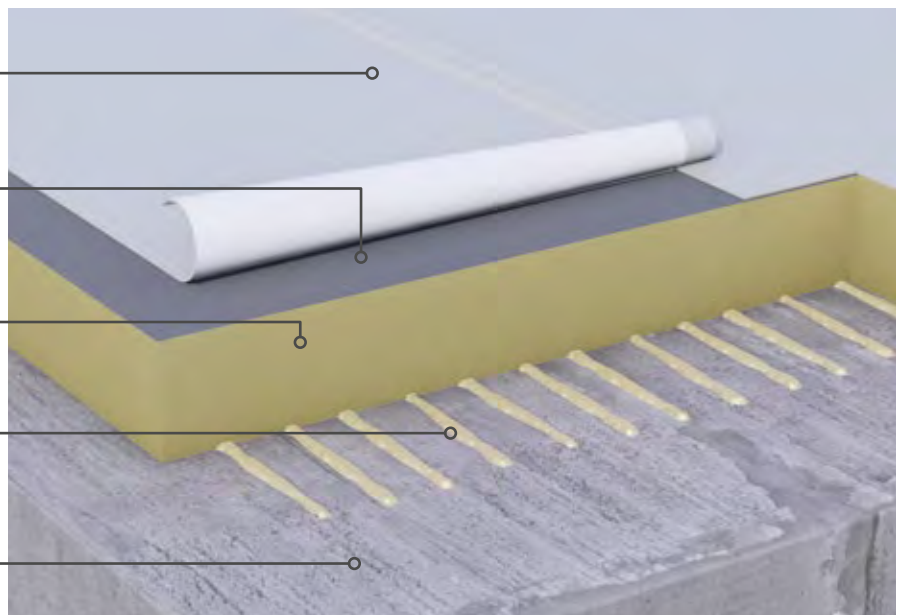
(RT 103) KÖSTER TPO SK Primer

Insulation

Adhesive

(RT 101) KÖSTER PUR Membrane Adhesive

Substructure



The self-adhering layer guarantees immediate, long-term adhesion and provides maximum protection against wind suction forces. The safe and easy welding of the overlaps with a hot air gun complete the installation advantages of the KÖSTER TPO SK (FR) single layer roofing system. Hardly any other material is as well suited for the waterproofing of roofs as thermoplastic polyolefin (TPO).

KÖSTER TPO SK (FR) Roofing Membranes are hail resistant, UV-stable, and have a high cold flexibility down to - 50 °C. Additionally, an embedded

glass fleece provides the membrane with high stability. KÖSTER TPO SK (FR) Roofing Membranes are plasticizer-free and are compatible with all insulation types.

KÖSTER TPO SK (FR) Roofing Membranes are classified as $B_{\text{roof}}(t1)$ and meet the requirements for "hard roofs" in accordance with DIN 4102-7. Moreover, KÖSTER TPO SK (FR) Roofing Membranes are suitable for installation directly over EPS insulation materials.



KÖSTER 21

W 210 020
 20 kg Combipackage;
 1 x 8 kg Powder;
 2 x 6 kg Liquid

Multi purpose waterproofing product with excellent adhesion to dry and moist substrates. KÖSTER 21 is a 2 component, solvent-free, liquid applied, elastic and crack bridging material. It is liquid applied and therefore seamless, which greatly eases application to complicated architectural details. Due to its UV stability it is suitable for indoor and outdoor use. The white color reflects sunlight and reduces building surface temperatures. The fast curing coating is highly flexible, resistant to occasional foot traffic, aging, hydrolysis, UV-rays, frost, and salt.



Consumption: Approx. 2.5 - 3.0 kg / m²

KÖSTER Dachflex

R 260 020
 20 kg bucket

Liquid applied, 1 component synthetic waterproofing for roofs. KÖSTER Dachflex is a foil like coating, waterproof, and water vapor permeable.. The material is highly elastic, quick drying, pasty, solvent-free and is also suitable for the repair of leaky flat roofs.



Consumption: 0.75 - 1.0 kg / m² per coat

KÖSTER KSK ALU Strong

R 817 105 AS
 roll

Cold applied self-adhesive synthetic / bitumen sealing membrane for the waterproofing of small, weather exposed roofs, garages and car ports. Applicable between + 12 °C and + 35 °C.

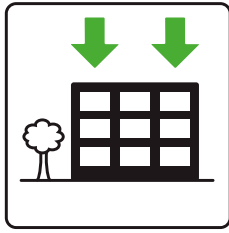
KÖSTER KSK ALU Strong does not require hot air or propane gas welding for its application. It is laminated and with a coarse grain embossed, UV resistant aluminum foil which is coated with a grey protective finish on the top side. For additional reinforcement a highly tear resistant fabric is embedded. Placement of a gravel layer on top of the membrane after installation is not required.

1.7 mm x 1.05 m x 10 m, 10.5 m²



R

Roof waterproofing with liquid membranes



Due to their position, roofs are exposed to considerable temperature and weather related stresses. The formation of cracks due to tension in the waterproofing layer can be the consequence. Safe retroactive waterproofing is required. It is vital to apply products which are characterized by great elasticity and high UV-resistance

Roof waterproofing with mineral base liquid membranes

Waterproofing layer

(W 210) KÖSTER 21

Waterproofing wall / floor junctions

(W 412) KÖSTER Superfleece

Installing fillets

(W 532) KÖSTER Repair Mortar Plus
(W 534) KÖSTER WP Mortar

Reinforcement

(W 450) KÖSTER Flex Fabric
(W 411) KÖSTER Glass Fiber Mesh

Primer

(M111) KÖSTER Polysil TG 500

Concrete Repair

(C 500) KÖSTER Betomor Multi A
(W 530) KÖSTER Repair Mortar
(W 532) KÖSTER Repair Mortar Plus



Roof waterproofing with resin base liquid membranes

Waterproofing layer

(R 260) KÖSTER Dachflex

Waterproofing wall / floor junctions

(W 412) KÖSTER Superfleece

Installing fillets

(W 532) KÖSTER Repair Mortar Plus
(W 534) KÖSTER WP Mortar

Reinforcement

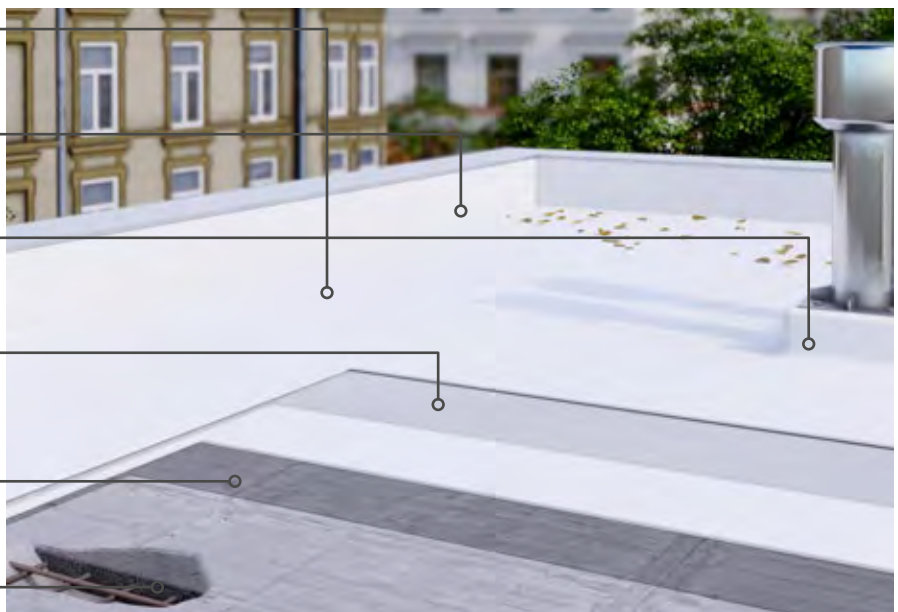
(W 450) KÖSTER Flex Fabric
(W 411) KÖSTER Glass Fiber Mesh

Primer

(M111) KÖSTER Polysil TG 500

Concrete Repair

(C 500) KÖSTER Betomor Multi A
(W 530) KÖSTER Repair Mortar
(W 532) KÖSTER Repair Mortar Plus



Roof waterproofing with MS polymer liquid membranes

Waterproofing layer

(W 200) KÖSTER MS-Flexfolie

Waterproofing wall / floor junctions

(W 412) KÖSTER Superfleece

Installing fillets

(W 532) KÖSTER Repair Mortar Plus
(W 534) KÖSTER WP Mortar

Reinforcement

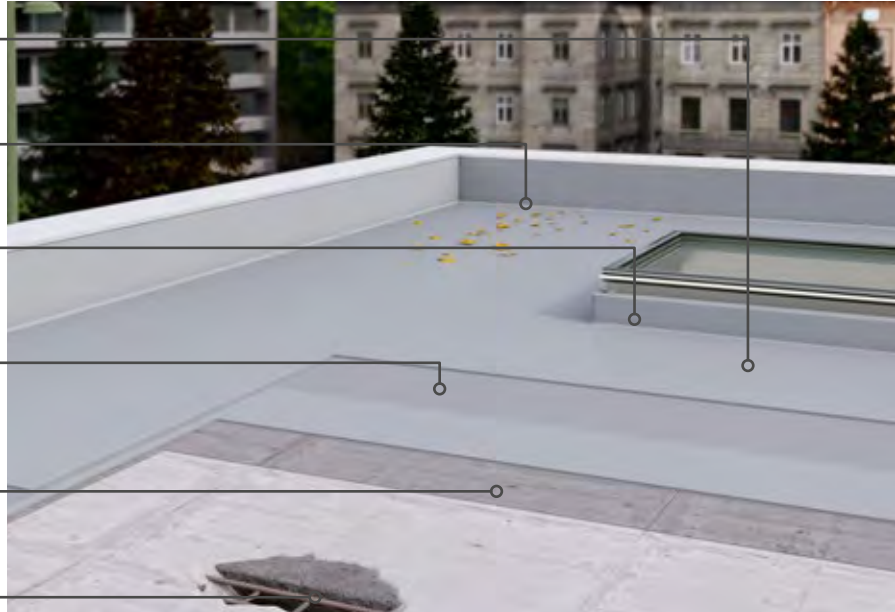
(W 450) KÖSTER Flex Fabric
(W 411) KÖSTER Glass Fiber Mesh

Primer

(M111) KÖSTER Polysil TG 500

Concrete Repair

(C 500) KÖSTER Betomor Multi A
(W 530) KÖSTER Repair Mortar
(W 532) KÖSTER Repair Mortar Plus



Roof waterproofing with cold self-adhesive sealing membranes



Waterproofing layer

(R 817) KÖSTER KSK ALU Strong

Primer

(W 245) KÖSTER KBE Liquid Film

Smaller roofs on non residential buildings can quickly and easily be waterproofed with the cold self-adhesive sealing membrane KÖSTER KSK ALU Strong. The clean and dry substrate is primed with KÖSTER KBE Liquid Film.

KÖSTER KSK ALU Strong is applied onto the dry and primed roof area. Membranes have to

overlap a min. of 10 cm on each side. Connections, penetrations and overlaps are sealed with KÖSTER KBE Liquid Film.

Always adhere to the specifications in the respective Technical Guidelines.



Accessories



KÖSTER Universal Cleaner

X 910 010
10 l jerrycan

Solvent free cleaning agent for bituminous materials and epoxy resins.

Consumption: as needed



KÖSTER Drill Stirrer

X 911 001
piece

Special stirrer for mixing 2-component polymer modified bitumen thick film sealants, e.g. KÖSTER NB 4000, KÖSTER Deuxan 2C and KÖSTER Bikuthan 2C. Round connector Ø 12 mm for chuck.



KÖSTER Ring Spanner

X 916 001
piece

For easy opening and closing of 10 l and 30 l jerrycans.



KÖSTER Diagnosis Case

X 919 001
piece

The KÖSTER Diagnosis case allows for the on site testing of common salts (chlorides, nitrates, sulfates). The case contains all necessary tools for taking samples and sample preparation as well as for the execution of the analysis including a small digital hand scale. Also included with the case are work instructions, a notepad, and a pen for documentation.



KÖSTER Spatula

X 986 001
width: 20 mm, piece
X 987 001
width: 50 mm, piece

For the application of KÖSTER KB-Flex 200 Sealing Paste, etc.



Terms and conditions of business, supply and payment of KÖSTER BAUCHEMIE AG

I. General

1. The following terms and conditions of supply and payment apply to the entire business relationship with our customers. The purchaser accepts them as binding on them in respect of the current contract and also for all future transactions. Any alternative agreement requires our written confirmation. The purchaser asserts no purchase terms of their own. They also do not become part of the contractual terms and conditions by consequence of our non-communication or supply.

II. Quotation and supply

1. Our quotations are non-binding.

2. If we are prevented by a hindrance from fulfilling the contract on time by procurement, manufacturing or supply failures – on our part or on the part of our suppliers – e.g. due to an energy shortage, traffic disruption, strike action or lockout, the supply period is extended accordingly. The purchaser can only withdraw from the contract if, on expiry of the extended term, they set us a final deadline in writing. Withdrawal can only be made if we have not fulfilled within the final deadline and withdrawal is notified in written form.

3. If our fulfillment of the contract is made partially or completely impossible for the reasons stated in paragraph 2, we are released from our supply obligation.

4. We will inform the purchaser immediately of the hindrance under paragraph 2 and the impossibility under paragraph 3.

5. Compensation claims by the purchaser arising from delay or non-fulfillment are excluded, to the extent that malicious intent or gross negligence on our part is not proven.

6. If the purchaser is in default of payment in respect to an earlier supply, we are entitled to withhold supplies without obligation to compensate for any loss caused.

7. We are entitled to make part supply.

III. Prices

1. Invoices are raised at prices applicable at the date of the supply, if no special agreement has been made in this regard. If, in the case of a forward order or a make-and-hold order, only a part of the agreed quantity is accepted during the agreed period, we are entitled, at our discretion, either to invoice the supplied amount at the price applicable to that lot-size or to supply the quantity not called upon and raise an invoice.

2. If, in exceptional circumstances, we agree to a return of goods, we will invoice 20% of the net goods value to cover our costs. Generally, we do not accept the return of non-standard supplies

IV. Payment

1. Our invoices fall due for payment immediately after receipt of the invoice. However, we reserve the right, in individual cases, to agree to other payment terms at the time the contract is entered into. Default arises immediately after receipt of the invoice. In this regard, the invoice is deemed to be received three days after the date of the invoice, unless the recipient proves a later date of receipt.

2. In the case of default of payment on the part of the purchaser, we are entitled to charge default interest after the occurrence of default in accordance with generally agreed terms of business. A charge of EUR 15.00 per payment reminder is raised after the occurrence of default.

3. We reserve the right to decide on the acceptance of cheques and bills of exchange on a case-by-case basis. They are only accepted on account of payment. The credit is made under the normal reservations. For bills of exchange, we charge the normal bank discount and collection charges. We do not undertake any guarantee for the correct timing of encashment or remonstrance.

4. In circumstances where a bill of exchange or cheque is not cashed on time or circumstances arise regarding the purchaser, which, in our view, no longer warrant the granting of credit, we can determine the whole amount due to us as falling due immediately – even if bills of exchange or cheques have been provided in respect of it.

5. Only persons with our written power of collection are entitled to receive payments with the issue of one of our receipt forms.

6. The purchaser can only assert a right of retention, if it relates to the same contractual relationship. The purchaser is only entitled to an offset if we have recognized the opposing amount due or it has been legally recognized.

7. If the purchaser gets into default with an invoice, and the value of this invoice reaches a significant amount for the business relationship, all receivables of this business relationship fall due immediately independent of any acceptance of bills of exchange. We are furthermore entitled to demand prepayment before any future delivery.

8. If the default is not dispelled within an acceptable final deadline, we are entitled to withdraw from the contract or to demand compensation due to non-fulfillment.

This applies in particular to agreed but not delivered follow-up business. In circumstances where information arises regarding the purchaser, which in our view, no longer warrant the granting of credit, we are entitled, apart from before made agreements, to demand prepayment or payment on delivery of the material. The purchaser is entitled to provide security for bills receivable.

V. Retention of title

1. The goods remain our property until the payment of all, including future, amounts due to us arising as a result of our business relationship with the purchaser. This also includes conditional amounts receivable.

2. In the case of a processing or a combining of the goods subject to reservation of title with other items not belonging to us, we are entitled to a co-ownership share in the new item in the amount of the sales price invoiced to the purchaser including value added tax or other sales taxes. The purchaser holds the item in custody for us free of charge.

3. The purchaser may sell the goods subject to retention of title as part of orderly business activities, but only under terms of immediate payment or reservation of title; they are not entitled to provide other entitlements, in particular, the granting of security or a pledge.

4. The purchaser assigns to us the amount from his receivable with all ancillary rights from the onward sale of the goods subject to retention of title that corresponds with our invoice price inclusive of value added tax or other sales taxes.

5. Where the receivables of the purchaser from the onward sale are received into a current account, the purchaser also assigns herewith his receivable from their customer from the current account. The assignment is made at the amount that we invoiced to them for the goods resold subject to retention of title inclusive of value added tax or other sales taxes.

6. Subject to revocation, the purchaser is entitled to collect the receivables assigned to

us. The assignment or pledging of these receivables is only permitted with our written agreement. Where circumstances arise in relation to the purchaser, which in our view, no longer warrant the granting of credit, at our request, the purchaser is to inform the debtors in writing of the assignment, to provide us with all information and make available and send us documentation. For this purpose, the purchaser is to grant us access, where necessary, to their documents in this respect.

7. In the case of the existence of the circumstances stated in para. 6, sentence 3, the purchaser must grant us access to the goods subject to the reservation of title still in their possession, to send us an accurate list of the goods, to separate the goods and release them to us.

8. If the value of this security exceeds the amount of our receivables by more than 20%, we will release the security to that extent, at the request of the purchaser and our discretion.

9. The purchaser is to inform us immediately in writing of the access of third parties to the goods subject to retention of title or the receivables assigned to us and to support us in intervention in every way.

10. The purchaser bears all of the costs for the fulfillment of the aforementioned cooperation obligations in the pursuit of all rights from the retention of title as well as all costs incurred in the preservation and storage of the goods.

VI. Packaging and dispatch

1. Packaging follows normal commercial practices relevant to the goods. Special packaging and replacement packaging is charged at cost price. Supply is made by forward freight from the factory.

VII. Transfer of risk

1. Risk is transferred to the purchaser as soon as the goods leave our factory or warehouse. All supplies, including any returns, travel at the risk of the purchaser.

2. Our supplies are not insured against damage whilst in transport.

VIII. Responsibility for defects and compensation

1. The goods are supplied in the quality and finish as is normal for us at the time of the supply.

2. Our supplies are to be checked for correctness on receipt. Under or incorrect supplies as well as any defects can only be objected to within 14 days following receipt. Delayed notification of defects does not bring about any entitlement against us. This also applies in respect of non-evident defects, if the purchaser is a merchant.

3. Advice from our employees does not release the purchaser from their own examination of the product with regard to its suitability for its intended purpose and from the observation of the processing requirements of the manufacturer. In addition, technical application advice from our employees, processing instructions, consumption quantities etc., are only general guidelines and do not give rise to a contractual legal relationship or an additional obligation from the purchase contract. No liability arises from such activities. Consumption quantities in our technical leaflets are average values based on experience. Over or under consumption on specific objects do not initiate any rights or claims.

4. The guarantee obligation lapses if changes to the goods supplied have been carried out by the other party or if the purchaser does not immediately comply with our request for the return of the goods subject to complaint. It also lapses if the complete settlement of our invoices does not take place within the contractual or agreed period of credit.

5. If the goods supplied by us are faulty and we are notified within the time limit, we will replace the faulty goods without charge. In the absence of a replacement supply, the purchaser can withdraw from the contract. In the case of a complaint on the grounds of quality, a sample is to be submitted for examination, as appropriate.

6. Our guarantee obligation ends with the term as per law of the country to which the product is sold, at maximum five years. Longer guarantee periods are only binding if they have been confirmed by us in writing. In the case of any such extended guarantee, only the entitlement to the replacement of defective materials exists and not the refunding of costs of consequential damage, labor and handling or other compensation claims. To the extent that we grant the recognition of a defect – after the expiry of the guarantee under sentence 1 – we have the discretion of making an additional supply of the same, defect free materials at no cost or refunding the purchase price paid at the time, excluding ancillary costs such as freight.

7. Our liability is unlimited in cases of damages arising from injury to life, body or health and in all cases of damages caused intentionally or by gross negligence. Similarly our liability is unlimited for damages due to fraudulent concealment of a defect, for defects after having been given a guarantee, for damages covered under the German Product Liability Act (Produkthaftungsgesetz) and in all other cases established by law.

8. Claims for defects do not exist upon negligible difference to the agreed condition, upon negligible nuisance of usability, upon natural abrasion or damages which were caused after the transfer of risk due to faulty or negligent handling, inappropriate stocking or transport or which arise from particular outer influences which are not preconditioned by the contract. If the purchaser or a third party carry out any inappropriate modifications no claims arise hence nor for any subsequent consequences.

9. Contribution claims of the purchaser against the supplier do only exist insofar as the purchaser has not made any agreements with their customer that exceed legal defect claims.

10. All other claims, including compensation claims, by the purchaser against us on the grounds of the supply of defective goods are excluded. Nonetheless, should, on any grounds, a recovery of damages come into consideration, the purchase price of the consumed quantity applies as the maximum amount of the claim.

IX. Other compensation claims

All other claims for compensation by the purchaser against us – irrespective of legal grounds – are excluded, to the extent that malicious intent or gross negligence on our part is not proven.

X. Validity

Should any of these individual clauses – irrespective of the cause – not be operable, the validity of the remaining clauses is not affected as a result.

XI. Place of jurisdiction

The place of jurisdiction for all disputes arising in connection with the contractual relationship – including withdrawal – is Aurich, Germany.



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