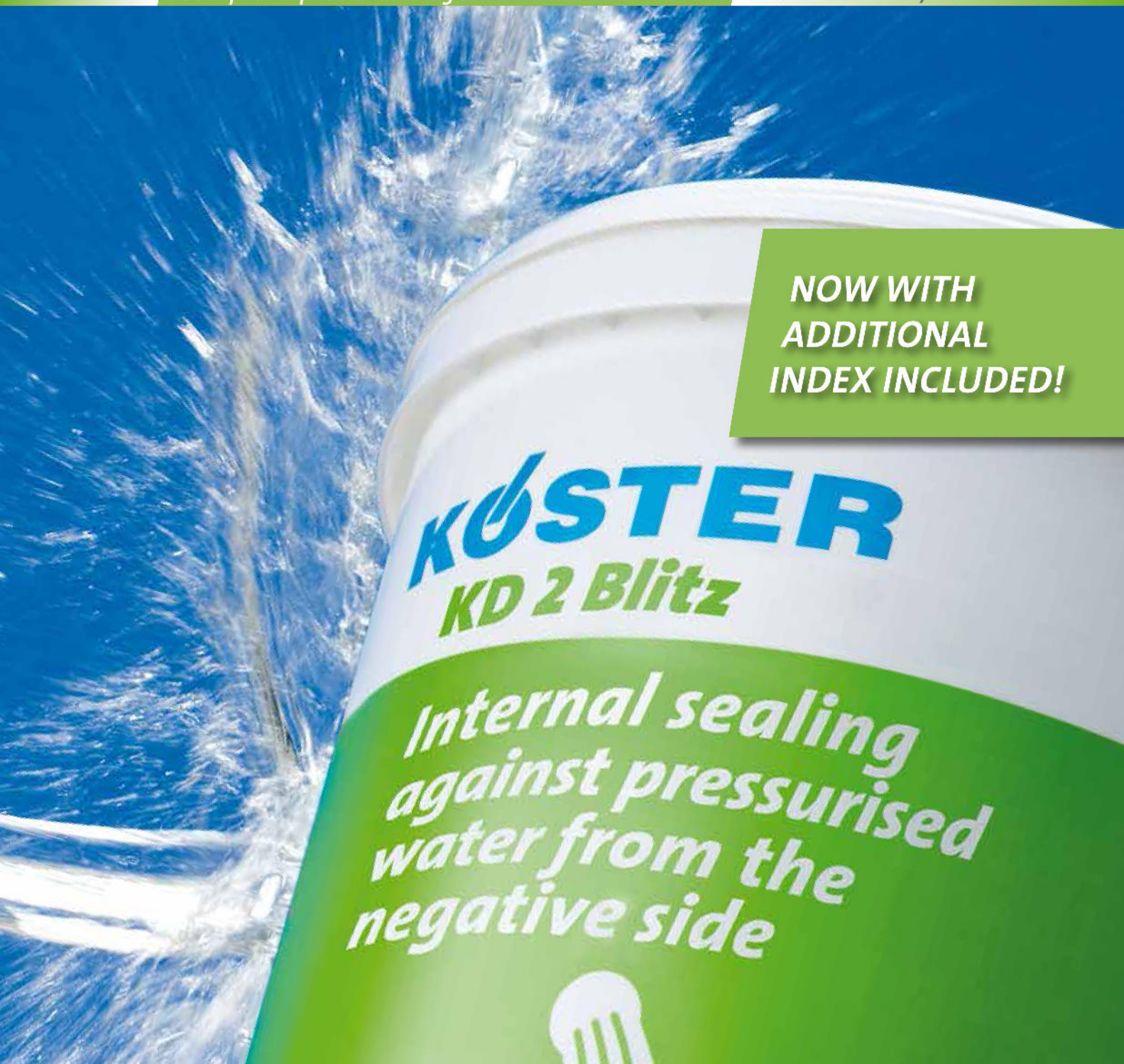
# THE GREEN PAGES OF CONSTRUCTION CHEMICALS

KÖSTER Waterproofing Systems

Complete product range

Edition 2016 / 2017




**NOW WITH ADDITIONAL INDEX INCLUDED!**

# Editorial

EDITORIAL

*Since 1982, the KÖSTER BAUCHEMIE AG has been specializing in high quality waterproofing systems. With extensive experience at home in Germany and abroad, KÖSTER is constantly developing new ideas to best serve our customers with the most innovative solutions on the market. The "Green Pages of Construction Chemicals" is our most important communication tool and is an essential reference for many architects, engineers, and applicators in their daily work. That is why we constantly strive to provide you with the most up-to-date information.*

*The Green Pages of Construction Chemicals present our large number of materials and systems, in an easy to follow format. The catalogue is grouped by the various fields of application, such as Waterproofing, Coatings, Injection Systems or Roofing, of which each is highlighted in a different color. Within the chapters, the products are listed by order of the respective type of product such as Primers (1), Main Products (2), Top Coats (3) , Broadcast Media (4), Mortars/Fillers (5) and so on. The product groups consist of all the necessary KÖSTER products for the particular use including associated products, spare parts, and tools. At the end of each chapter typical solutions with the respective KÖSTER products are graphically shown and explained. Thus finding the optimal and complete waterproofing solution for each project, from basement to roof, is made simpler. As always, our consultants are available for assistance at any time – please don't hesitate to contact us.*

*Visit our website www.koster.eu for further information and to find your local sales representative!*

*With best regards from Aurich,*

*Johann J. 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:.*

**Email: info@koster.eu**

**Website: www.koster.eu**

# Content

CONTENT

# KÖSTER: More than 30 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.*

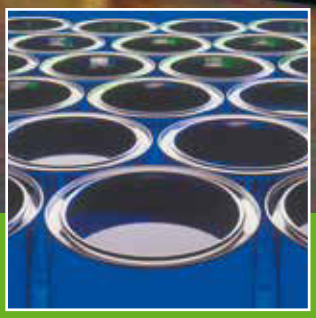
*Whether the subject is the restoration of historic buildings, waterproofing new buildings, restoration of masonry, waterproofing of wet basements, roofs or façades: with our comprehensive product range, we have the optimal solution.*


## Efficient and effective waterproofing – systems around the globe

*KÖSTER waterproofing systems and products are applied worldwide. The headquarters with the main production facilities in Aurich, Germany and subsidiaries in Bulgaria, China, Croatia, India, Japan, the Netherlands, Poland, Portugal, Turkey, the UK and the USA supply the sales channels worldwide. 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.*

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.*

## *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, the 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.*

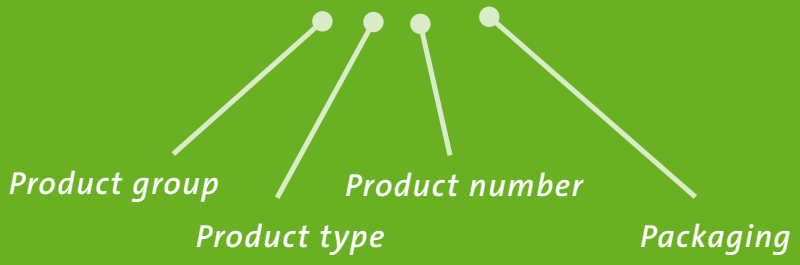

## *Your reliable partner in construction*

*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 material systems from KÖSTER – you can rely on them!*

*From professionals for professionals: Products from the 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:*

***M 279 010 (KÖSTER Crisin 76 Concentrate)***




*The 2016/2017 edition of the Green Pages features a new article number system. Article numbers are now 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 even easier.*

*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 following page.*

***M 279 010 (KÖSTER Crisin 76 Concentrate)***

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

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

***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 ltr, 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).*

# Range of products

**W** ***Waterproofing systems***
*Basement, tank, and area waterproofing (page 8-34)*

**M** ***Masonry*** *(page 35-46)*

**IN** ***Injection systems***
*Crack injection and crack repair systems (page 47-63)*

**C** ***Concrete protection and repair***
*Concrete and mortar additives (page 64-71)*

**SL** ***Self leveling underlayments***
*Self leveling mineral underlayments, floor patching materials, corresponding primers (page 72-76)*

**CT** ***Coatings***
*Floor and corrosion protection coatings, moisture control systems (page 77-89)*

**J** ***Joint sealing***
*Joint sealants, joint tapes (page 90-97)*

**B** ***Wet room waterproofing*** *(page 98-101)*

**P** ***Façade protection and paints*** *(page 102-105)*

**R** ***Roofing membranes, roof waterproofing*** *(page 106-114)*

**X** ***Accessories*** *(page 115-118)*

# W Waterproofing System
## Basement, tank, and area waterproofing

W

| | | Article No. | Packaging |
|---|---|---|---|
| **KÖSTER Bitumen Primer**  | *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.*<br><br>*Consumption: Approx. 150 - 200 ml / m²* | *W 110 010* | *10 l* |
| **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.*<br><br>*Consumption: Approx. 0.1 - 0.25 kg / m² depending on substrate, strongly absorbent substrates may require more.* | *M 111 001*<br>*M 111 010* | *1 kg*<br>*10 kg* |
| **KÖSTER KSK Primer BL**  | *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.*<br><br>*Consumption: Approx. 0.25 - 0.4 kg / m²* | *W 120 015* | *15 kg* |
| **KÖSTER Bitumen Emulsion**  | *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 external basement waterproofing.*<br><br>*Consumption: Approx. 200 - 300 g / m² per coating* | *W 190 030* | *30 kg* |

## GOOD TO KNOW: Cleaning the surface

*All coating residues, form work release oil and any other contaminants which might adversely affect the bonding have to be removed. The surface must be stripped down to its base structure (removal of residues and efflorescence). Depending on the case high pressure water jetting or sandblasting may be required.*

## 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. 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). CE certification according to DIN EN 1504-2.*

| Consumption | Article No. | Packaging |
|---|---|---|
| Approx. 2.5 - 3.0 kg / m² | W 210 020 | 20 kg |

Liquid roof waterproofing

Waterproofing balconies/terraces

Waterproofing on bitumen

Foundation waterproofing

| | Article No. | Packaging |
|---|---|---|
| **KÖSTER KD 1 Base** | W 211 006<br>W 211 015 | 6 kg<br>15 kg |

*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 211 + W 512 + W 313**

| | | |
|---|---|---|
| **KÖSTER KD System** | W 219 036 | Package |

*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 CFR 1** | W 220 023 | 23 kg |

*Hot-applied, highly elastic rubber-bitumen sealing compound for waterproofing against pressurized water up to 50 bar. It can also be used as a hot-applied joint grout. Ductility up to 2000 %. For waterproofing all mineral, wooden and metal substrates.*

*Consumption: Approx. 1 kg / m²; per mm layer thickness*

## KÖSTER NB 1 Grey

### *Crystallizing mineral waterproofing against pressurized water (> 13 bar).*

*A sulphate-resistant waterproofing slurry suitable for positive and negative side waterproofing. A waterproofing made of KÖSTER NB 1 Grey possesses excellent pressure and abrasion resistance. Fields of application: Area waterproofing in new construction and restoration, e.g. waterproofing of basements and tanks. For the waterproofing of drinking water environments (tested according to DVGW and KTW guidelines). CE certification.*

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

Internal basement waterproofing

Civil engineering or urban planning

Infrastructure

Water tanks

| | Article No. | Packaging |
|---|---|---|

## KÖSTER NB 2 White

*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: 3 - 5 kg / m²*

*W 222 025* — *25 kg*

## KÖSTER NB 1 Fast

*Fast setting, deep crystallizing mineral surface coating which is resistant against pressurized water. It is suitable for the fast positive or negative side waterproofing of masonry and concrete, for example in basements or water tanks.*

*Consumption: 1.5 - 4.0 kg / m²*

*W 223 025* — *25 kg*

## KÖSTER NB Elastic Grey

*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*

*W 233 033* — *33 kg*

| | Article No. | Packaging |
|---|---|---|

## KÖSTER NB Elastic White

*For abrasion resistant waterproofing of visible concrete and masronry structures which are in danger of cracking. KÖSTER NB Elastic White is a white, 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 the crack bridging waterproofing of concrete elements, also under tiles. Radonproof.*

*Consumption: Approx. 3.6 - 4.5 kg / m²*

*W 234 033* — *33 kg*

## KÖSTER NB 4000

***Bitumen free, polymer modified, mineral hybrid coating for the internal and external waterproofing of building structures.***

*NB 4000 cures reliably and quickly also in difficult ambient conditions. The material can be applied from + 2° C upwards, is resistant to rain after approx. 2 hours and can be exposed to pressurized water after 24 hours of curing time. KÖSTER NB 4000 is elastic, crack bridging and suitable for slightly moist and bituminous substrates. Fields of application: basements, foundation plates, masonry and the repair of mineral waterproofing layers.*

| Consumption | Article No. | Packaging |
|---|---|---|
| *Approx. 3,1 - 4,2 kg / m²* | *W 236 020* | *20 kg* |

*External basement waterproofing*

*Moist substrates*

*Precast concrete production*

*Base waterproofing*

## KÖSTER KBE Liquid Film

*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: 1 - 2.5 kg / m²*

*W 245 006* — *6 kg*
*W 245 024* — *24 kg*

## KÖSTER Bikuthan 2C

*Solvent-free, crack-bridging, stable, two-component, polymer modified bitumen thick film sealant with polystyrene light fillers in accordance with DIN 18 195. Approved by the building authorities. For waterproofing construction members in ground contact such as basements.*

*Consumption: 4 - 6 l / m²*

*W 250 028* — *28 l*
*W 250 504* — *18x28 l*

| | Article No. | Packaging |
|---|---|---|

## KÖSTER Bikuthan 1C

*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: 4 - 6 l / m²*

*W 251 030* — *30 l*

## KÖSTER Deuxan 2C

***Polymer modified, fibrated bitumen thick film sealant (PMBC) for the secure waterproofing of building structures in accordance to DIN 18 195.***

*The material is two-component, crack bridging up to 2mm and resistant to pressurized water. KÖSTER Deuxan 2C is approved by the German building authorities and CE certified according to DIN EN 15814. Radonproof. Fields of application: External basement waterproofing, foundation plates, balconies and terraces, wet room waterproofing.*

| Consumption | Article No. | Packaging |
|---|---|---|
| Approx. 4 - 6 kg / m² | W 252 032 | 32 kg |

External basement waterproofing

Floor slab waterproofing

Waterproofing against Radon

Can be spray applied

## KÖSTER Deuxan Professional

*Two-component, compression-resistant, elastic, fibrated, polymer modified bitumen thick film sealant for the secure waterproofing of buildings in accordance with DIN 18 195, such as basements. Specially designed for spray application and therefore suitable for professionals.*

*Consumption: 4 - 6 kg / m²*

*W 256 032* — *32 kg*

## KÖSTER KD 3 Sealer

*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 crystalization. Used in combination with KÖSTER KD 1 and KÖSTER KD 2 for the negative side waterproofing such as 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*

*W 313 006* — *6 kg*
*W 313 012* — *12 kg*

*KÖSTER KD System: W 211 + W 512 + W 313*

| | Article No. | Packaging |
|---|---|---|

**KÖSTER**
## BE Rainproof

*Protects fresh bitumen coatings against rain. KÖSTER BE Rainproof is a liquid accelerator forming a water-repellent film on bitumen coatings.*

*Consumption: Approx. 0.2 kg / m²*

*W 330 005* — *5 kg*

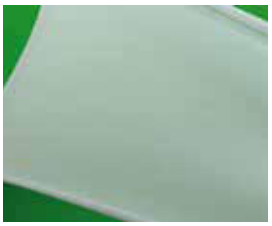
**KÖSTER**
## Glass Fiber Mesh

*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.*

*W 411 033* — *100 m*
*W 411 100* — *100 m²*

**KÖSTER**
## Flex Fabric



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

*Particularly suitable for: KÖSTER Dachflex, KÖSTER BD 50 and KÖSTER NB Elastic Grey, KÖSTER Elastic Roof and KÖSTER 21.*

*W 450 100* — *50 m²*

**KÖSTER**
## BS 1 Bitumen Paste

*Fibrated, solvent containing bitumen sealing compound with a permanent plasticizer. Suitable for the repair of bituminous waterproofing and for sealing the edges of cold applied self-adhesive waterproofing membranes. Fields of application include general repairs of bituminous waterproofings, wall connections, edges of basement waterproofing, or floor waterproofing.*

*Consumption: Approx. 1 l / m² per mm layer thickness*

*W 501 005* — *5 l*

## 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.*

*KÖSTER SD Protection and Drainage Sheet 3 - 400*

## KÖSTER KD 2 Blitz Powder

### *Active leakages can be stopped within a few seconds!*

*Highly reactive powder with an extremely short setting time. Used in combination with KÖSTER KD 1 Base and KÖSTER KD 3 Sealer for the negative side waterproofing of mineral surfaces such as internal basement waterproofing against pressurized water.*

*KÖSTER KD System: W 211 + W 512 + W 313*

| Consumption | Article No. | Packaging |
|---|---|---|
| Approx. 1 - 2 kg / m² | W 512 006 | 6 kg |
| | W 512 015 | 15 kg |

Active leaks ...

... stopped ...

... in seconds!

| | Article No. | Packaging |
|---|---|---|
| **KÖSTER Repair Mortar** | W 530 025 | 25 kg |

*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*

| | Article No. | Packaging |
|---|---|---|
| **KÖSTER Repair Mortar Plus** | W 532 025 | 25 kg |

*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*

| | Article No. | Packaging |
|---|---|---|
| **KÖSTER WP Mortar** | W 534 025 | 25 kg |

*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. Drinking water certified.*

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

| | | Article No. | Packaging |
|---|---|---|---|
| **KÖSTER Waterstop**  | *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.*<br><br>*Consumption: Approx. 2 kg/l void* | *W 540 015* | *15 kg* |
| **KÖSTER SB Bonding Emulsion**  | *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.*<br><br>*Consumption: 10 - 25% of mixing water* | *W 710 005*<br>*W 710 010*<br>*W 710 030* | *5 kg*<br>*10 kg*<br>*30 kg* |
| **KÖSTER NB 1 Flex**  | *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.*<br><br>*Consumption: Approx. 8 kg for 25 kg KÖSTER NB 1 Grey and KÖSTER NB 2 White* | *W 721 008* | *8 kg* |
| **KÖSTER Fix-Tape 10 Alu**  | *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.*<br><br>*KÖSTER Fix-Tape 10 ALU is 1 mm thick, rubber / bitumen based with an aluminium foil laminated on the top-side.* | *W 810 015 AL* | *10 m* |
| **KÖSTER Fix-Tape 15 DS**  | *Double sided cold applied self-adhesive synthetic / bitumen sealing membrane for the creation of custom detail waterproofing solution.*<br><br>*The KÖSTER KSK DS 15 membrane does not require hot air or propane gas welding for its application. Due to its great flexibility it allows simple application even to difficult details.* | *W 815 001 DS*<br>*W 815 004 DS*<br>*W 815 020 DS* | *20 m*<br>*20 m*<br>*20 m* |

| | | Article No. | Packaging |
|---|---|---|---|
| KÖSTER **Butyl Fix-Tape Fleece** | *Cold applied self-adhesive tape for sealing the upper edges of KÖSTER KSK sealing membranes. KÖSTER Butyl Fix-Tape Fleece can be plastered over.*<br><br>*KÖSTER Butyl Fix-Tape Fleece 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.* | *W 815 015 F* | *10 m* |
| KÖSTER **KSK ALU 15** | *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.*<br><br>*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.* | *W 815 096 AL* | *19.2 m²* |
| KÖSTER **Fix-Tape 15 SY** | *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.* | *W 815 020* | *20 m* |
| KÖSTER **KSK SY 15** | *Cold applied self-adhesive rubber / bitumen waterproofing membrane according to DIN 18 195. 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.* | *W 815 105* | *21 m²* |
| KÖSTER **Protection and Drainage Sheet 3-400** | *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 DIN 18195, (2) decoupling of the waterproofing layer from any ground movement, (3) the hollow core leads seepage and backwater safely to the drainage.* | *W 901 030* | *30 m²* |

| | | Article No. | Packaging |
|---|---|---|---|
| KÖSTER **Protection and Drainage Sheet 3-250**  | *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.* | *W 903 030* | *30 m²* |
| KÖSTER **Rubber Hand Roller**  | *For the safe application of KÖSTER KSK waterproofing membranes.* | *W 911 001* | *Piece* |
| KÖSTER **Brush for Liquids**  | *Special brush for the application of liquid materials, e.g. KÖSTER Dachflex, KÖSTER KD 3, etc.* | *W 912 001* | *Piece* |
| KÖSTER **Brush for Slurries**  | *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.* | *W 913 001* | *Piece* |
| KÖSTER **SD Edge Profile**  | *Finishing profile for protection and drainage sheets. (black, t: 12 mm, l: 2 m, 11 holes, profile height: 82 mm).* | *W 970 001* | *Piece* |

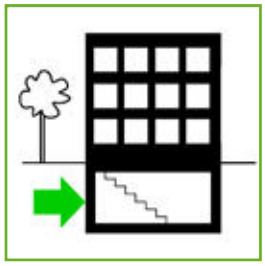
| | | Article No. | Packaging |
|---|---|---|---|
| KÖSTER SD Fixing Element | *Steel nails and mounting heads for the fixing of protection and drainage sheets.* | W 971 001 | 100 pieces per package |

| | | | |
|---|---|---|---|
| KÖSTER Peristaltic Pump | *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.* | W 978 001 | Piece |

| | | | |
|---|---|---|---|
| KÖSTER Service Box | *Set of spare parts for the KÖSTER Peristaltic Pump.* | W 979 001 | Piece |

| | | | |
|---|---|---|---|
| KÖSTER Roofing Nails | *For mechanically fixing cold applied self-adhesive waterproofing membranes.* | W 981 001 | 400 pieces per package |

# External basement waterproofing



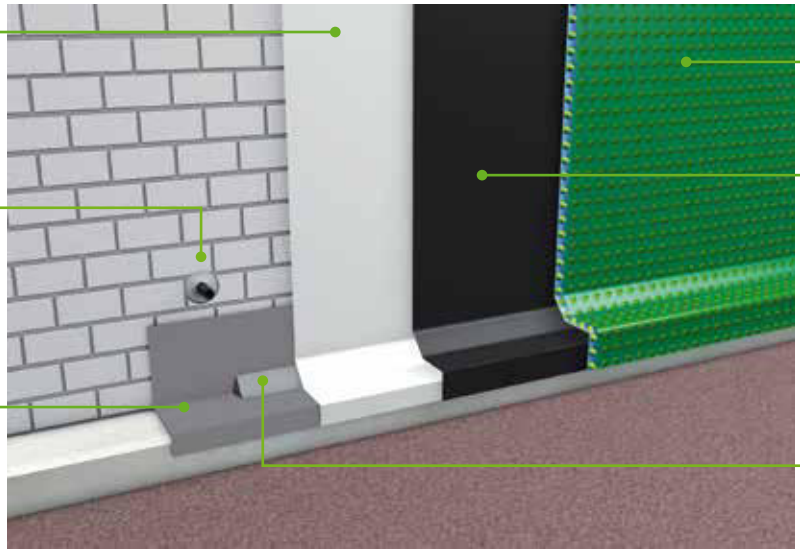
*Wet basements can not be fully used and might endanger the integrity of the whole building. We offer a number of different methods for making basements permanently waterproof. From the outside the entire external wall is protected from water penetration by treating with polymer-modified thick film sealants, 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 System

**Primer**
**(M 111) KÖSTER Polysil TG 500**
**Alternative**
**(W 110) KÖSTER Bitumen Primer**

**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**



**Protection of the waterproofing layer**
**(W 901) KÖSTER Protection and Drainage Sheet 3-400**

**Waterproofing layer**
**(W 252) KÖSTER Deuxan 2C**
**Alternatives**
**(W 256) KÖSTER Deuxan Professional**
**(W 250) KÖSTER Bikuthan 2C**
**(W 251) KÖSTER Bikuthan 1C**
**(W 245) KÖSTER KBE Liquid Film**
**Reinforcement layer**
**(W 411) KÖSTER Glass Fiber Mesh**
**Installing fillets**
**(W 534) KÖSTER WP Mortar**

*The use of bituminous products is a standard solution 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.*

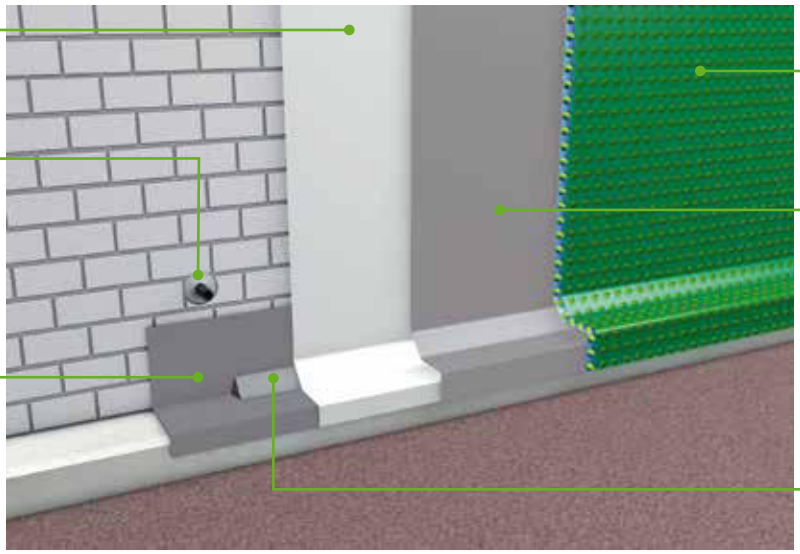
*To protect against water creeping behind the lower waterproofing connections KÖSTER NB 1 Grey mixed with KÖSTER NB 1 Flex is applied first. To prevent stresses in the waterproofing, rounded fillets are installed in the wall / floor junctions.*

*The actual area waterproofing is achieved using KÖSTER Deuxan 2C in two layers applied by trowel. KÖSTER Deuxan Professional can be spray applied. To make manual application easier, 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 better control of the coating thickness and safely absorbs movement in the building.*

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

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

## External basement waterproofing with mineral based waterproofing System




*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 system.*

*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.*

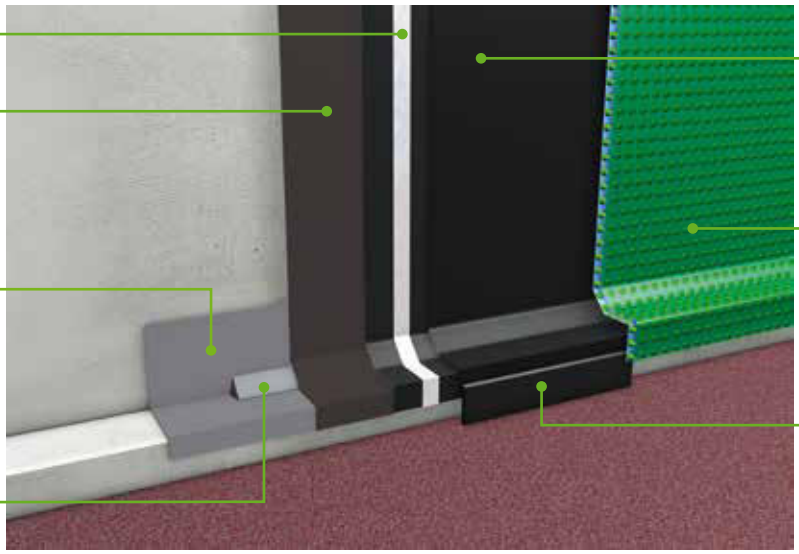
*Pipe penetrations are waterproofed using KÖSTER KB-Flex 200 and sealed with KÖSTER KB-Fix 5. Alternatively these areas can be attached to the waterproofing using proper sleeves or flanges.*

*The actual area waterproofing is achieved using KÖSTER NB Elastic Grey or KÖSTER NB Elastic White in two layers. The installation of KÖSTER Flex Fabric is recommended between the KÖSTER NB Elastic layers to achieve an especially visco-plastic waterproofing layer. In areas particularly 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 Data Sheets.*

## External basement waterproofing with cold self-adhesive waterproofing membranes



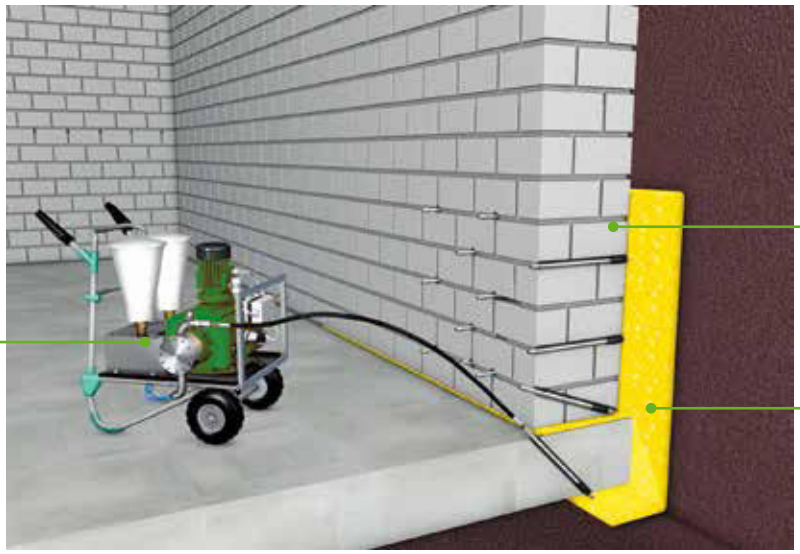

*Exterior basement waterproofing with KÖSTER KSK cold applied, self-adhesive waterproofing membranes is fast, clean, and easy. No drying time, instantly watertight, with a tight control of consumption. Apply a primer coat of KÖSTER KBE Liquid Film on clean, solid substrates. In temperatures down to –10 °C use water-free KÖSTER KSK Primer SP. 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 Data Sheets, 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 temperatures down to –10 °C use KÖSTER KSK AW 15 instead of KÖSTER KSK SY 15. In this 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 Data Sheets.*

## External basement waterproofing with curtain injection



**Pump**

**(IN 928) KÖSTER Gel Pump**

**Installing the packers**

**(IN 927) KÖSTER Distributor Lance**

**Alternatives**

**(IN 923) KÖSTER Injection Lance**

**(IN 924) KÖSTER Impact Packer 18 plus**

**Waterproofing layer**

**(IN 285) KÖSTER PUR Gel**

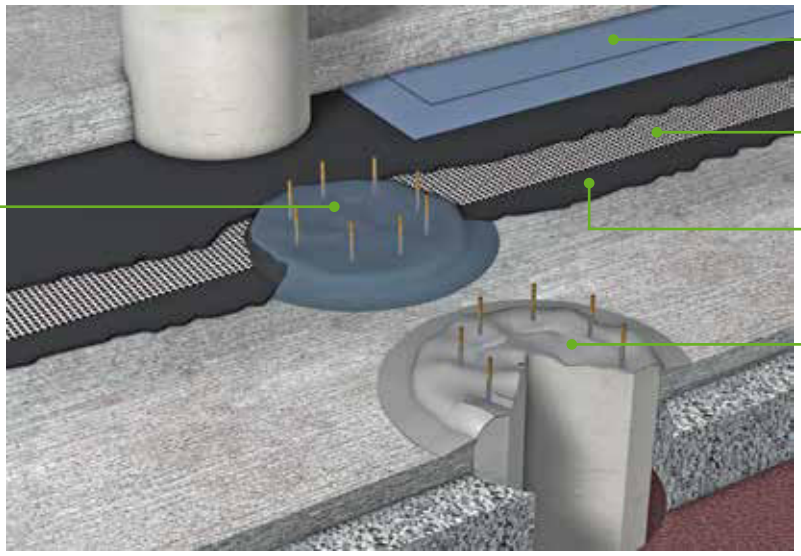
*Exterior basement waterproofing from inside the building? In the case of renovation it is not always possible to expose the exterior walls through excavation. For example, where the area to be excavated is built upon, traffic concerns impede the excavation, or the economic cost of excavation is deemed 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 PUR Gel 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 Gel Pump, and through patented KÖSTER Distributor Lances. The injection material is dispersed on the exterior wall and in a short time reacts to create a waterproofing layer. An alternative method is injecting KÖSTER PUR Gel into the building member itself. This so-called "area injection" is possible in porous or hollow building materials. In this case the KÖSTER PUR Gel also reacts with any water present to form a waterproof, elastic solid.*

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

## Waterproofing of pile heads



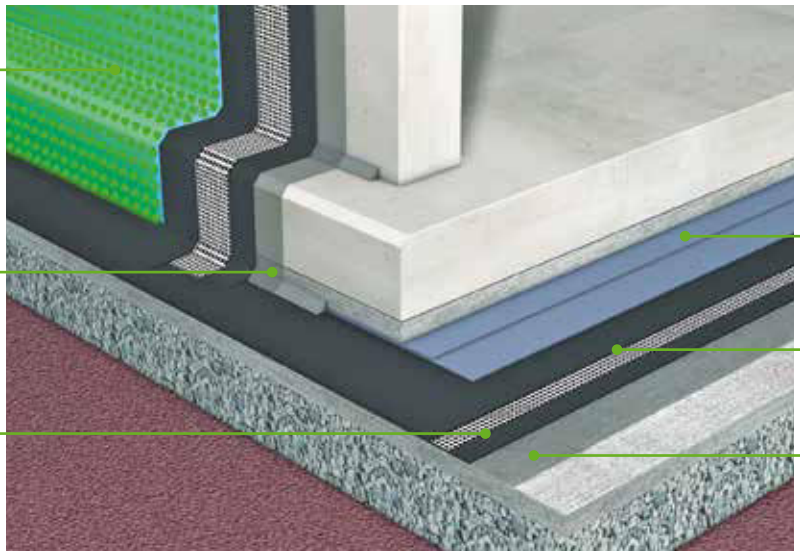

*Damage in existing buildings is often caused by leaking pile foundations. Water can enter the building through the construction joints or it makes its way along the reinforcement steel. The waterproofing of pile heads must withstand heavy loads from the whole building and be easily connected to the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

*Initially 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. This re-profiling 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 Data Sheets.*

## Waterproofing under the foundation plate




*A complete waterproofing system in a 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 allows for easy control of the layer thickness and absorbs the forces created by movement in the building.*

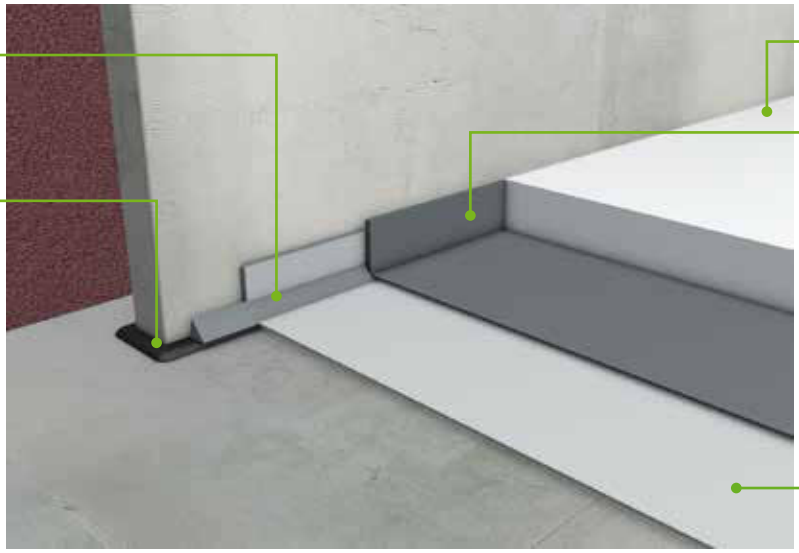
*Before pouring the foundation plate, PE-Foil is installed in two layers to act as a gliding layer between the waterproofing material and the concrete. The waterproofing layer needs to be protected, e.g. by a layer of unreinforced concrete. The vertical waterproofing is connected to the side waterproofing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

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

# 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 KÖSTER Systems even when the wall has active leakages. Subsequently a diffusion open restoration plaster is applied after successful waterproofing.*

## Internal basement waterproofing on foundation plate with mineral system




*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.*

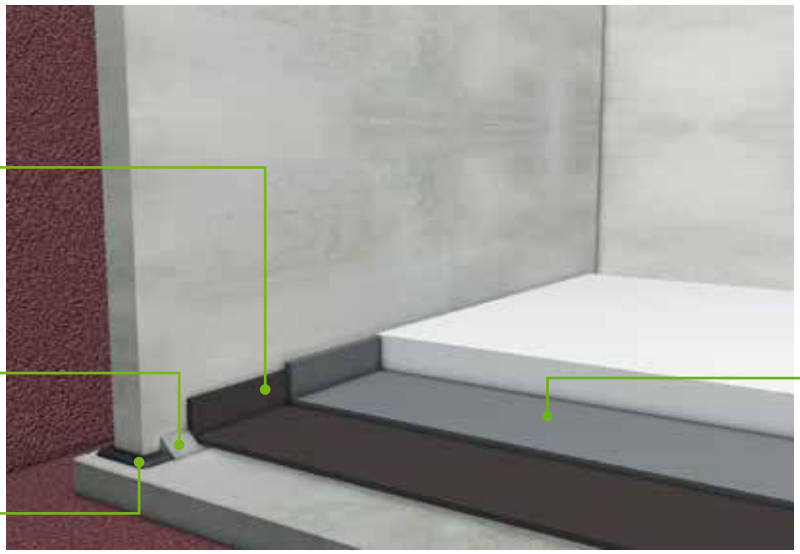
*To harden the substrate the bottom slab is primed with KÖSTER Polysil TG 500. At the wall floor junction a fillet made from KÖSTER Repair Mortar plus is installed to prevent stresses in the subsequent waterproofing layers.*

*The area waterproofing is normally achieved with KÖSTER NB 1 Grey mixed with KÖSTER NB 1 Flex. For an extra fast application KÖSTER NB 1 "Fast" is the product of choice. In cases 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, KÖSTER NB Elastic White or KÖSTER NB Elastic 1C White can be used to waterproof the floor slab.*

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

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



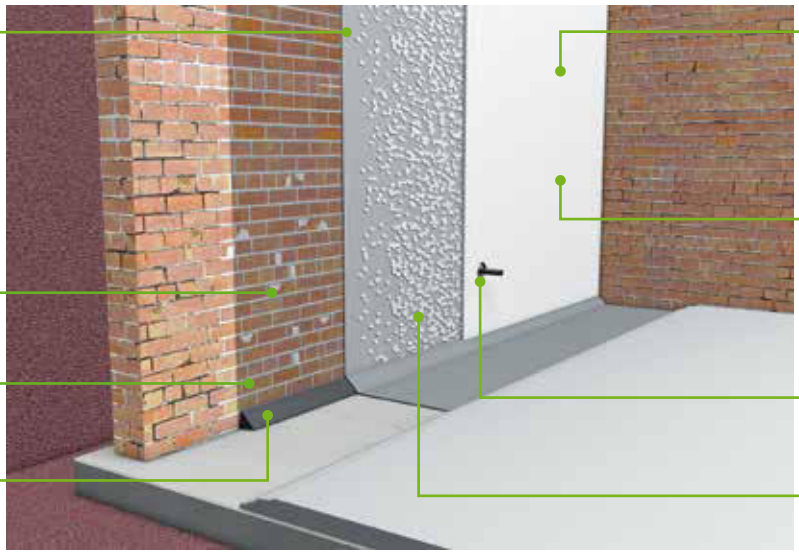

*Fast, easy application without long waiting times can be achieved by waterproofing the floor slab with KÖSTER KSK cold applied, self-adhesive waterproofing membranes.*

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

*The priming is done with the solvent free KÖSTER KSK Primer BL. Standardly 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 Data Sheets.*

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




*Retroactive waterproofing in existing buildings needs to be done with mineral waterproofing System. 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.*

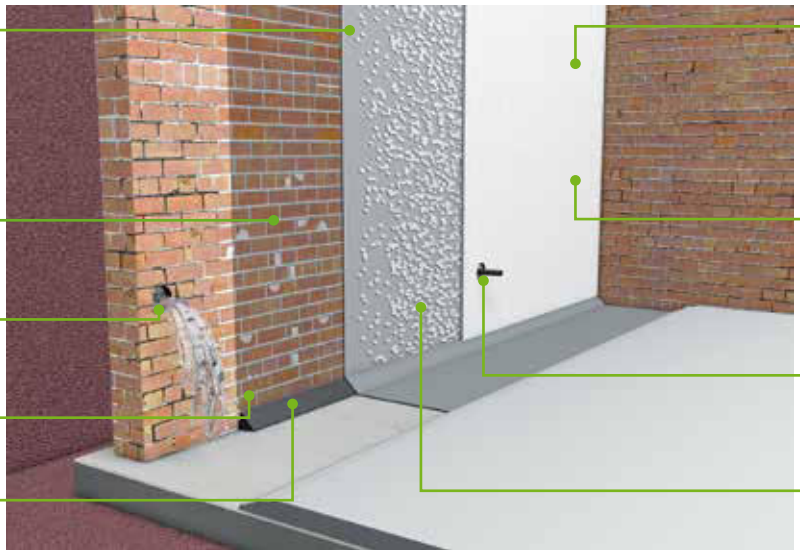
*KÖSTER NB 1 Grey is used as the waterproofing layer. For a faster installation use KÖSTER NB 1 "Fast". To harden the material, KÖSTER Polysil TG 500 is sprayed on top of the slurry. To get a lighter surface finish use KÖSTER NB 2 White for the final coating.*

*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 2 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 Data Sheets.*

## Internal basement waterproofing in case of flowing water




*A very difficult situation as 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 are applied over the first. Pipe penetrations are waterproofed with KÖSTER KB-Flex 200 Sealing Paste and plugged with KÖSTER KB-Fix 5.*

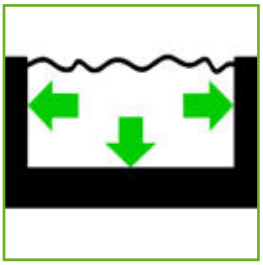
*In the case of damage to basement walls caused by moisture generally KÖSTER Restoration Plaster should be applied. KÖSTER Restoration Plasters are specially designed for the restoration of masonry with high salt and moisture contents. KÖSTER Restoration Plasters help to dry out the wall and absorb remaining 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 2 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.*

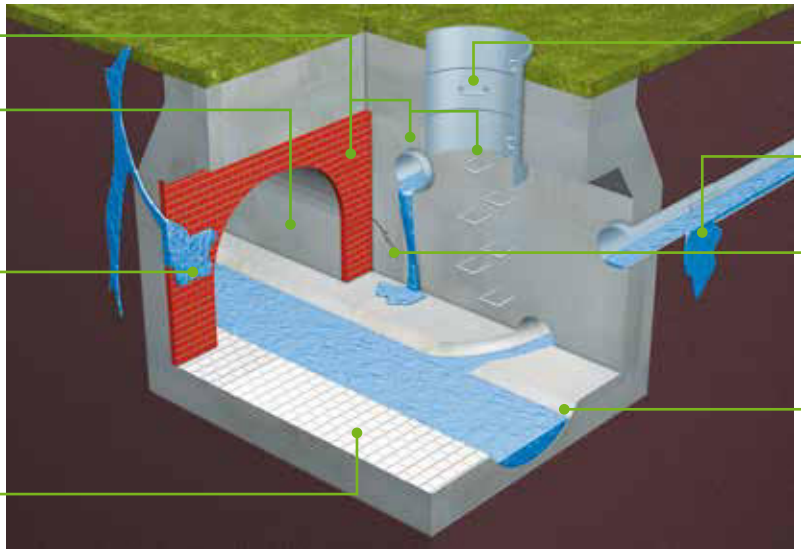
*Always adhere to the specifications in the respective Technical Data Sheets.*

# Waterproofing tanks and pipes



*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




*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.*

*KÖSTER NB 1 Grey can be used for waterproofing on the positive and the negative side. KÖSTER Silicate Mortar is used for protection against acids. As an alternative, acid resistant tiles can be used which are bonded to the substrate with KÖSTER Silicate Adhesive. The jointing is done with KÖSTER Silicate Mortar. 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.*

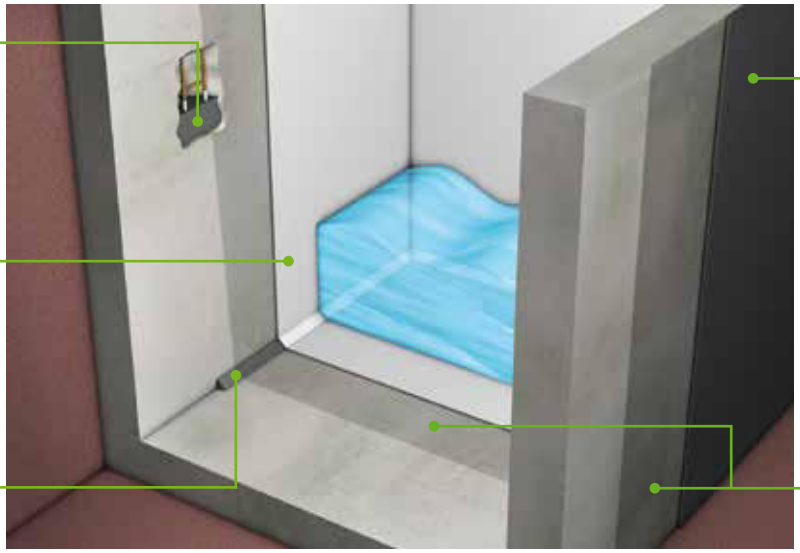
*For restoring concrete or masonry damaged by acids, the substrate is to be mechanically cleaned until a solid, unburdened substrate is achieved. The substrate is then primed with KÖSTER Polysil TG 500. Reprofiling is done with KÖSTER Repair Mortar NC. On top of the reprofiling KÖSTER Silicate Mortar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

*Shafts made from masonry and concrete must also be mechanically cleaned until a solid, unburdened substrate is reached. Reprofiling and levelling 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 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 PUR Gel is an ideally suitable injection material for such cases. It forms an elastic waterproofing layer around the leak. In this way pipe connections 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 cases 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 re-injected with the elastic resin KÖSTER IN 2.*

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

## Waterproofing water tanks



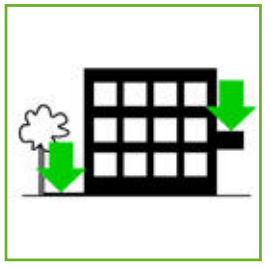

*Concrete water tanks are waterproofed from the inside using KÖSTER NB 1 Grey or KÖSTER NB 2 White. KÖSTER NB 1 Grey is approved for use in drinking water environments.*

*The waterproofing is applied onto solid and prepared concrete substrates. The primer KÖSTER Polysil TG 500 increases the mechanical resistance of concrete surfaces and immobilizes salts present in the substrate. Smaller areas are repaired with KÖSTER Betomor Multi A. Larger areas can be restored and re-profiled with KÖSTER Repair Mortar NC. In the case of below grade tanks, the external side is waterproofed with a crack bridging coating, for example KÖSTER Deuxan 2C.*

*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.*

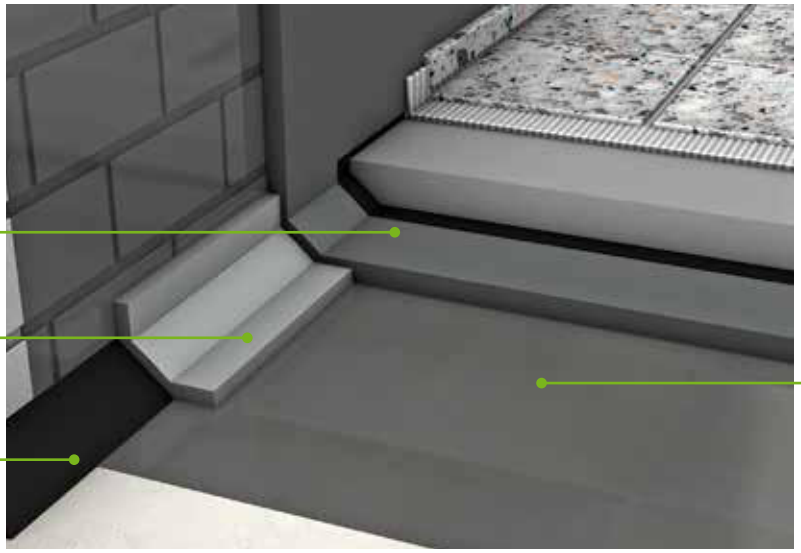
*Always adhere to the specifications in the respective Technical Data Sheets.*

# 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 a waterproofing system with high crack bridging capabilities.*

## Waterproofing of balconies and terraces with liquid applied bitumen based waterproofing systems




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

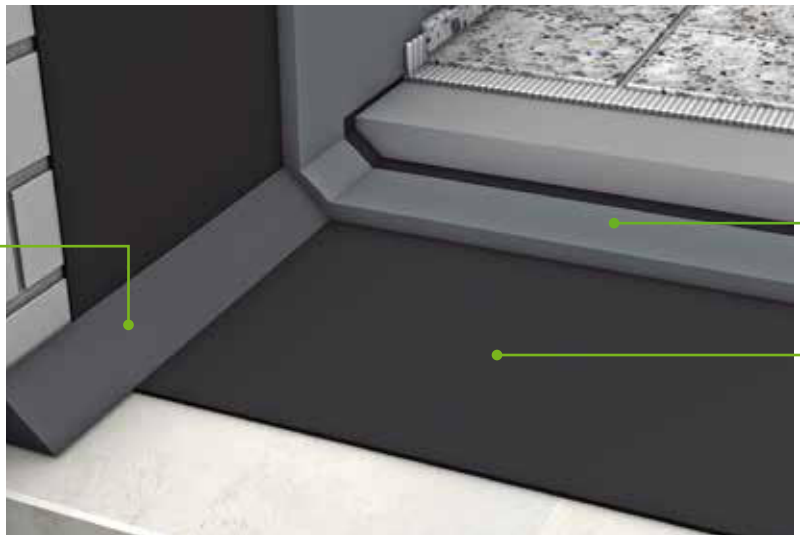
*When working with liquid applied bituminous waterproofing the prepared and clean substrate is primed with KÖSTER Polysil TG 500. A rounded fillet made from KÖSTER WP Mortar is installed in wallfloor-junctions in order to protect the subsequent layers from damage caused by movement.*

*The waterproofing is carried out with a liquid applied coating in two layers. Ideally suitable is KÖSTER KBE Liquid Film. Alternatively the rubberized bitumen thick film sealant KÖSTER Deuxan 2C (4 – 6 mm) can be applied. In the wall-floor-junction and areas in danger of cracking KÖSTER Glass Fiber Mesh is embedded into the fresh first waterproofing layer.*

*A screed protects the waterproofing against mechanical damage. A gliding layer consisting of 2 layers of PE-foil is installed under the screed.*

*Always adhere to the specifications in the respective Technical Guidelines.*

## Waterproofing of balconies and terraces with cold applied self adhesive membranes




*A fast and easy method for waterproofing balconies and terraces is using the cold applied self adhesive KÖSTER KSK waterproofing membranes.*

*The solid and clean concrete substrate is primed with KÖSTER KBE Liquid Film which provides an excellent bond between the concrete and waterproofing layer. In case of temperatures below 0 °C the non water based KÖSTER KSK Primer SP is used.*

*A fillet in the wall-floor-junction can be easily installed by using the KÖSTER KSK Triangular Ribbon: Remove the protective foil, press into the primed corner, done! Alternatively, before priming the substrate a fillet made of KÖSTER WP Mortar is applied.*

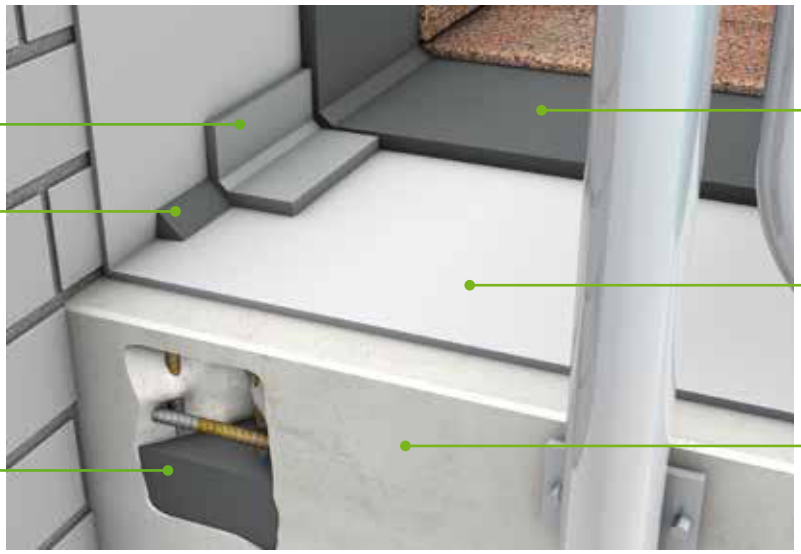
*The standard area waterproofing is done with KÖSTER KSK SY 15. In case of temperatures below 0 °C KÖSTER KSK AW 15 is the material of choice. The waterproofing membranes are simply bonded onto the prepared substrate and overlapped min. 10 cm on each side.*

*If the waterproofing is applied vertically onto a wall, the waterproofing membrane is mechanically fixed. Connections and overlaps are sealed with KÖSTER BS 1 Bitumen Paste. If the top end of the waterproofing is to be plastered, it can be covered with KÖSTER Butyl Fix-Tape Fleece.*

*A screed protects the waterproofing against mechanical damage. A gliding layer consisting of 2 layers of PE-foil is installed under the screed.*

*Always adhere to the specifications in the respective Technical Guidelines.*

## Waterproofing of balconies and terraces with mineral based waterproofing System



**Reinforcement layer**
(W 450) KÖSTER Flex Fabric

**Fillet**
(W 534) KÖSTER WP Mortar

**Concrete repair**
(C 500) KÖSTER Betomor Multi A

**Waterproofing layer**
(W 233) KÖSTER NB Elastic Grey
(W 234) KÖSTER NB Elastic White

**Primer**
(M 111) KÖSTER Polysil TG 500

**Concrete protection**
(P 262) KÖSTER Acrylic Paint
(P 264) KÖSTER Concrete Elast
(C 510) KÖSTER C-Coat
(P 260) KÖSTER Silicone Paint White

*The mineral waterproofing of balconies and terraces is carried out with crack bridging KÖSTER NB Elastic (white or grey). This waterproofing is resistant to foot traffic and can be covered with tiles. It also bonds to damp substrates.*

*Before installing the waterproofing the substrate is hardened and prepared with the primer KÖSTER Polysil TG 500. Fillets are installed with KÖSTER WP Mortar. In the wall floor junction and all areas in danger of cracking KÖSTER Glass Fiber Mesh is embedded into the fresh first waterproofing layer.*

*Concrete repair work is done with KÖSTER Betomor Multi A. The concrete surface must be mechanically cleaned and a solid substrate achieved. Reinforcement steel has to be thoroughly cleaned from rust by sandblasting. In case of severe damage the reinforcement has to be strengthened.*

*Minor damages in the concrete surface can be levelled with KÖSTER C-Coat, and painting done with KÖSTER Silicone Paint White.*

*Always adhere to the specifications in the respective Technical Guidelines.*


# M Restoration of masonry

M

## KÖSTER Polysil TG 500

***Primer for mineral substrates before waterproofing with cementitious waterproofing slurries and PMBCs.***

*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. Also suitable for the additional hardening of waterproofing slurries. 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 formation of salt efflorescence.*

| Consumption | Article No. | Packaging |
|---|---|---|
| Approx. 0.1 - 0.13 kg / m² depending on substrate | M 111 001 | 1 kg |
| Approx. 0.2 - 0.25 kg / m² for hardening of slurries | M 111 010 | 10 kg |

Masonry primer

Concrete primer

Prevents salt efflorescence

Strengthens substrate

| | Article No. | Packaging |
|---|---|---|
| **KÖSTER Mautrol Borehole Suspension** | M 150 024 | 24 kg |

*Sulphate-resistant, solidifying mortar with silicifying properties for the filling of voids and cracks before the installation of a horizontal barrier. Due to the low viscosity the mortar penetrates into the finest voids and cracks. Low viscosity, flows easily. Particularly for use before the installation of horizontal barriers by pressurized injection.*

*Consumption: Approx. 1.6 kg / l void*

| | | |
|---|---|---|
| **KÖSTER Restoration Plaster Key Coarse** | M 154 025 | 25 kg |

*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 |

*KÖSTER Hydrosilicate Adhesive SK is used for gluing the butted boards and used as a spackle / plaster for the installed boards.*

*Consumption: Approx. 3 kg / m² (depending on the substrate)*

*KÖSTER HSP-System: M 170 + M 670*

| | | Article No. | Packaging |
|---|---|---|---|
| **KÖSTER Mautrol Liquid Sealant**  | *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.*<br><br>*Consumption: Approx. 0.1 kg / m per cm wall thickness per m wall* | *M 241 012*<br>*M 241 036*<br>*M 241 240* | *12 kg*<br>*36 kg*<br>*240 kg* |
| **KÖSTER Mautrol Liquid Sealant Cartridge**  | *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.*<br><br>*Consumption: Approx. 0.1 kg / m per cm wall thickness per m wall* | *M 241 550* | *0.55 kg* |
| **KÖSTER Mautrol 2C**  | *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 on the basis of siliconates and esters and has a strengthening and solidifying effect on mansonry.*<br><br>*Consumption: Approx. 0.15 kg / m per cm wall thickness* | *M 261 039*<br>*M 261 262* | *39.5 kg*<br>*262 kg* |
| **KÖSTER Mautrol Flex 2C**  | *2-component, solvent-free, water dilutable acrylic based injection liquid against rising damp (wicking moisture). Suitable for application even in very damp construction members without prior drying.*<br><br>*Consumption: Approx. 0.2 kg / m per cm wall thickness* | *M 262 020* | *20 kg* |
| **KÖSTER Crisin Cream**  | *Injection cream based on resin / silane against rising damp (wicking moisture). KÖSTER Crisin Cream is resistant against any moisture / salt content.*<br><br>*Consumption: 12 cm wall thickness: Approx. 140 ml / m; 36 cm wall thickness: Approx. 510 ml / m* | *M 278 010*<br><br>*M 278 310* | *10 l*<br><br>*310 ml Cartridge* |

## KÖSTER Crisin 76 Concentrate

***Waterproofing against rising damp (wicking moisture), especially suitable in cases of high moisture and salt contents in the masonry.***

*Due to its low specific gravity (0.91 g / m³) and its low surface tension compared to water, KÖSTER Crisin 76 Concentrate displaces the water in the capillaries. After its full cure the material stays elastic, does not decay or decompose. KÖSTER Crisin 76 Concentrate is resistant against all ordinary aggressive media that occur in masonry (e.g. acids, bases, salts) during application and after curing.*

KÖSTER Suction Angle System: M 279 + M 930 + M 963

| Consumption | Article No. | Packaging |
|---|---|---|
| Approx. 0.1 l / m per cm wall thickness | M 279 200 | 200 ml Box |
| | M 279 005 | 5 l |
| | M 279 010 | 10 l |
| | M 279 030 | 30 l |

Simple installation

Also for thick walls

Successful over 25 years

Water insoluble

## KÖSTER Fine Plaster

| Article No. | Packaging |
|---|---|
| M 655 025 | 25 kg |

*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: 1.4 kg / m² per mm layer thickness*

## KÖSTER Restoration Plaster 1 Grey

| | |
|---|---|
| M 661 000 | 40 x 25 kg |
| M 661 025 | 25 kg |

*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.*

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

## 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-cing 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.*

Salt crystals on the surface

## KÖSTER Restoration Plaster 2 White

***Diffusion-open, salt-resistant, high compressive strength, white restoration plaster.***

*Due to its very high porosity and hydrophobicity it allows for a damage free drying and desalination of masonry, event at high salt contents. Prevents the formation of condensate and absorbs crystallizing salts. It can be applied manually or by machine. High compressive strength. Free of light fillers. For internal and external application. CE certified according to DIN EN 998-1. WTA certified.*

| Consumption | Article No. | Packaging |
|---|---|---|
| Approx. 12 kg / sqm per cm layer thickness | M 662 025 | 25 kg |

Suitable for historical objects

On damp masonry

On salt burdened substrates

As well as for external use

| | Article No. | Packaging |
|---|---|---|
| **KÖSTER Restoration Plaster 2 Fast**<br>  | M 663 030 | 30 kg |

*White, fast setting restoration plaster. Diffusion-open, high compressive strength, water-repellent and ready for smoothing after 30 - 60 minutes. Free of light fillers.*

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

| | Article No. | Packaging |
|---|---|---|
| **KÖSTER Restoration Plaster 2 Light**<br>  | M 664 025 | 25 kg |

*White, water-repellent, hydrophobic, salt-resistant restoration plaster open to water vapor diffusion with a low specific gravity and high porosity.*

*Consumption: Approx. 9 kg / m² per cm layer thickness*

| | Article No. | Packaging |
|---|---|---|
| **KÖSTER Hydrosilicate Tapered Board**<br>  | M 670 001 | 20 Pcs./ Box |

*The KÖSTER Hydrosilicate Tapered Board is a special 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: 5.26 Boards / m²*

KÖSTER HSP-System: M 170 + M 670

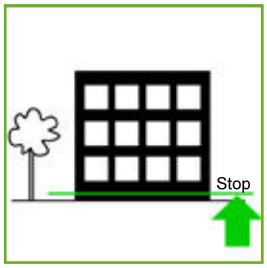
| | | Article No. | Packaging |
|---|---|---|---|
| **KÖSTER Hydrosilicate Board**  | *Hydrophobic, fiber free, breathable, mineral based boards for the renovation of mold infested mineral based interior building materials. KÖSTER Hydrosilicate boards have a high resistance to aging, are insulative and non-flammable. KÖSTER Hydrosilicate boards are free of synthetic additives, regulate moisture, reduce condensate formation, and promote a healthy indoor climate.*<br><br>*Consumption: 4.54 Boards / m²* | *M 670 008 (50 mm)*<br><br>*M 670 016 (25 mm)* | *8 Pcs. / Box*<br><br>*16 Pcs./ Box* |
| | | | *KÖSTER HSP-System: M 170 + M 670* |
| **KÖSTER Suction Angle**  | *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.* | *M 930 001* | *Piece* |
| | | | *KÖSTER Suction Angle System: M 279 + M 930 + M 963* |
| **KÖSTER Installation Tool for Capillary Rods**  | *Assembly tool for an easy and fast installation of KÖSTER Capillary Rods.* | *M 931 001* | *Piece* |
| **KÖSTER Extension for Crisin Cream Cartridge**  | *Length: 100 cm.* | *M 932 100* | *Piece* |
| **KÖSTER KÖSTER Drill Hole Cleaner**  | *For cleaning drill holes before inserting the KÖSTER Capillary Rods.* | *M 933 001* | *Piece* |

| | | Article No. | Packaging |
|---|---|---|---|
| **KÖSTER Capillary Rods** | *For pressureless and material saving 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.* | M 963 045 (45 cm) | 50 Pieces |
| | | M 964 090 (90 cm) | 50 Pieces |

*KÖSTER Suction Angle System: M 279 + M 930 + M 963*

| | | | |
|---|---|---|---|
| **KÖSTER Protimeter** | *For evaluating the surface moisture of construction members.* | M 999 001 | Piece |

# Horizontal barriers / Restoration of masonry




*Rising moisture in masonry over a longer period of time can lead to considerable damage. Indications of this damage are 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, protecting the value and integrity of the building.*

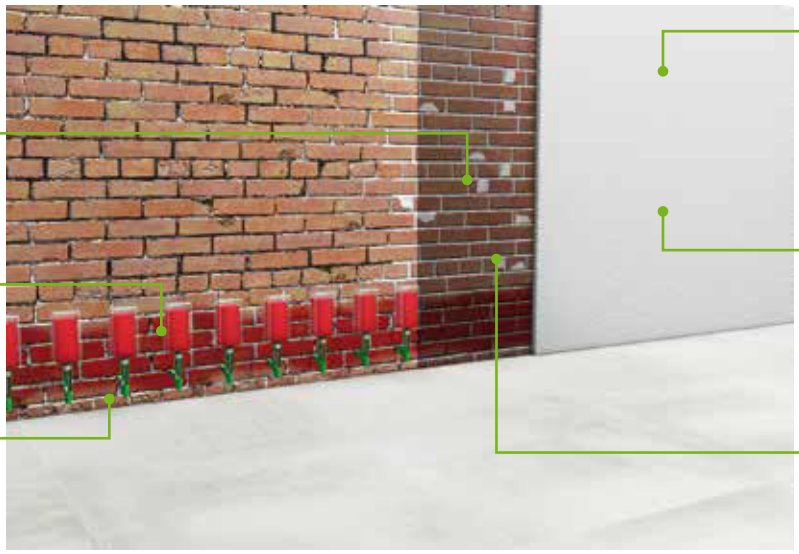
## Horizontal barriers beneath rising walls

***Horizontal barriers for walls***
*(W 810) KÖSTER Fix-Tape 15 SY*
***Alternatives***
*(W 233) KÖSTER NB Elastic Grey*
*(W 221) KÖSTER NB 1 Grey*
*+ (W 721) KÖSTER NB 1 Flex*

*Horizontal waterproofing beneath the walls in a 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. Alternatively the waterproofing slurry KÖSTER NB 1 Grey (mixed with KÖSTER NB 1 Flex) or the crack bridging waterproofing material KÖSTER NB Elastic Grey are used.*

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

## Horizontal barriers with pressureless injection



**Levelling**

(W 534) KÖSTER WP Mortar

**Horizontal barrier**

(M 279) KÖSTER Crisin 76 Concentrate

**Alternatives**

(M 241) KÖSTER Mautrol Liquid Sealant

**Accessories**

(M 930) KÖSTER Suction Angle

(M 963) KÖSTER Capillary Rods

**Plaster**

(M 662) KÖSTER Restoration Plaster 2 White

**Alternatives**

(M 672), (M 661), (M 664), (M 655), (M 663)

**Surface finishing**

(M 369) KÖSTER Restoration Plaster Coat

**Alternatives**

(P 260) KÖSTER Silicone Paint White

**Primer**

(M 111) KÖSTER Polysil TG 500

*Rising damp (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 damp can be avoided by the installation of a horizontal barrier.*

*The easiest and most successful KÖSTER system to use when installing 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 and stops the capillary action permanently, it also has a hydrophobizing effect.*

*Boreholes are drilled with a regular spacing which depends 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 of 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 , e.g when the walls are only slightly damp, KÖSTER Mautrol Liquid Sealant can also be applied. Before the application an analysis of the moisture content and the salt content must be carried out.*
*In cases where damage is caused by rising damp 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 salts do not effloresce to the surface and 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 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 MF 1.*

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

## Horizontal barriers with pressure injection for voidless masonry

**Primer**
(M 111) KÖSTER Polysil TG 500

**Injection packer**
(IN 914) KÖSTER Superpacker 13 x 85 mm

**Pump**
(IN 929) KÖSTER 1C Injection Pump

**Plaster**
(M 662) KÖSTER Restoration Plaster 2 White
**Alternatives**
(M 672), (M 661), (M 664), (M 655), (M 663)

**Surface finishing**
(M 655) KÖSTER Fine Plaster
**Alternatives**
(P 260) KÖSTER Silicone Paint White

**Horizontal barrier**
(M 261) KÖSTER Mautrol 2C
**Alternatives**
(M 262) KÖSTER Mautrol Flex 2C

*The installation of a horizontal barrier via pressurized injection is fast and effective. 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 with KÖSTER Borehole Suspension. After filling, the borehole is re-drilled.*

*Suitable injection liquids for this kind of application are KÖSTER Mautrol 2C and KÖSTER Mautrol Flex 2C. Two component materials have a faster setting time which results in quicker blocking of the capillaries.*

*In cases where damage is caused by rising damp 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 salts do not effloresce to the surface and 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 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 MF 1.*

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

## Restoration of masonry with restoration plasters

**Primer**

(M 111) KÖSTER Polysil TG 500

**Levelling**

(W 534) KÖSTER WP Mortar

**Plaster key**

KÖSTER Restoration Plaster + (W 710) KÖSTER SB Bonding Emulsion

**Plaster**

(M 662) KÖSTER Restoration Plaster 2 White

**Alternatives**

(M 672), (M 661), (M 664), (M 655), (M 663)

**Surface finishing**

(M 655) KÖSTER Fine Plaster

**Alternatives**

(P 260) KÖSTER Silicone Paint White

*When masonry is just slightly damp often a renovation using 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, open pored surface. For best results, prime with KÖSTER Polysil TG 500 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, 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 to ensure the best possible 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 salts do not effloresce to the surface and cause damage to the plaster or paint.*

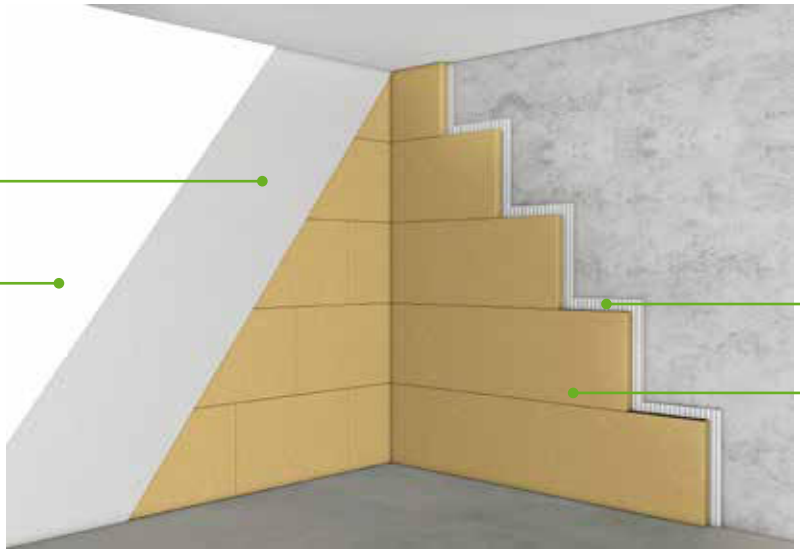
*KÖSTER Restoration Plasters are available in different varieties (grey, white, fast and light). KÖSTER Restoration Plaster 2 White is often used in older buildings without subsequent painting. KÖSTER Fine Plaster creates a very smooth surface and can be applied when desired to meet architectural goals. KÖSTER Restoration Plasters can only be painted over with breathable (open to vapor diffusion) paints such as KÖSTER Silicon Paint White or KÖSTER MF 1.*

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

# Anti-Mold System

*Mold in living areas is caused by moisture penetration and thermal bridges and can cause serious health problems as the mold releases spores into the air which are 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 protective coating on which mold cannot grow.*

## Mold Remediation with KÖSTER hydrosilicate boards




*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.*

# IN Injection Systems

*Crack injection and crack repair systems*

IN

| | Article No. | Packaging |
|---|---|---|

**KÖSTER IN 1**

*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*

| Article No. | Packaging |
|---|---|
| IN 110 001 | 1 kg |
| IN 110 005 | 5.5 kg |
| IN 110 027 | 27.5 kg |

**KÖSTER 2 IN 1**

### *2 products in 1: PU Injection resin for dry and water bearing cracks, two component, solvent-free.*

*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.*

| Consumption | Article No. | Packaging |
|---|---|---|
| Approx. 0.1 kg / l void (foam) | IN 201 001 | 1 kg |
| Approx. 1.1 kg / l void (solid resin) | IN 201 005 | 5 kg |
| | IN 201 025 | 25 kg |

*For water bearing cracks*

*Forms foam in wet cracks*

*For dry cracks*

*Forms resin in dry cracks*

**KÖSTER IN 2**

*Elastic PU injection resin. For permenantly 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. 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.*

*Consumption: Approx. 1.1 kg / l void*

| Article No. | Packaging |
|---|---|
| IN 220 001 | 1 kg |
| IN 220 008 | 8 kg |
| IN 220 040 | 40 kg |

**KÖSTER IN 3**

*Viscoplastic 2- component PU injection resin for the restoration of structural strength in cracks and joints . Solvent free, low viscosity. Compressive strength >80 N/mm² , tensile strength 14 N/mm². Fields of application: In combination with KÖSTER IN 1 for the permanent sealing and bridging (where structural strength is required) of water bearing cracks and joints in concrete. It can be used without pre-injection for closing dry cracks and joints.*

*Consumption: Approx. 1.1 kg / l void*

| Article No. | Packaging |
|---|---|
| IN 230 001 | 1 kg |
| IN 230 008 | 8 kg |

## KÖSTER KB-Pox IN

### *Low viscous 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 as well as joints and restores structural integrity. KÖSTER KB-Pox IN 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, without any prior injection, be used for filling and closing dry, damp and wet cracks, joints and voids.*

| Consumption | Article No. | Packaging |
|---|---|---|
| Approx. 1 kg / l void | IN 231 001 | 1 kg |
| | IN 231 006 | 6 kg |

Penetrates into very fine cracks

Suitable for moist cracks

Suitable for wet cracks

Crack stitching

| | Article No. | Packaging |
|---|---|---|

## KÖSTER IN 4

*Solvent free, flexible, extremely low viscosity polyurethane for elastically sealing very fine cracks and construction joints in building structures. Due to its low viscosity and long pot life it is especially suitable for injection via injection hoses. KÖSTER IN 4 acts passively when coming into contact with steel or iron, so that corrosion protection is achieved. Fields of application: waterproofing of fine cracks, construction joints, hose injection, or for solidifying porous building structures.*

*Consumption: Approx. 1.1 kg / l void*

*IN 240 010* — *10 kg*

## KÖSTER IN 5

*Very low viscosity, 2-component elastic PU injection resin. For permanently and elastically sealing dry, moist and waterbearing cracks and joints in concrete . Very low viscosity, (at 25 °C approx. 70 mPa · s).*

*Consumption: Approx. 1.1 kg / l void*

*IN 250 010* — *10 kg*
*IN 250 025* — *25 kg*

## KÖSTER IN 7

*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. 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*

*IN 270 001* — *1 kg*
*IN 270 005* — *5.5 kg*
*IN 270 027* — *27.5 kg*

| | | Article No. | Packaging |
|---|---|---|---|
| **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.*<br><br>*Consumption: Depends on the field of application.* | *IN 285 002*<br>*IN 285 025*<br>*IN 285 210* | *2.5 kg*<br>*25 kg*<br>*210 kg* |
| **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 10% 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.*<br><br>*Consumption: Depends on the field of application.* | *IN 290 021*<br>*IN 290 214*<br>*IN 290 070* | *21.4 kg*<br>*214 kg*<br>*1.070 kg* |
| **KÖSTER Micro Grout 1C**  | *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.*<br><br>*Consumption: Approx. 1.6 kg / l void* | *IN 295 024* | *24 kg* |
| **KÖSTER PUR Cleaner**  | *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.*<br><br>*Consumption: as needed* | *IN 900 010* | *10 l* |
| **KÖSTER Impact Packer 12**  | *Plastic packer with cone-head fitting and non-return valve for low-pressure resin injection.* | *IN 903 001*<br>*(12 x 70 mm)* | *500 Pieces* |

| | | Article No. | Packaging |
|---|---|---|---|
| KÖSTER **Impact Packer 18 Plus** | *Plastic packer with non-return valve for the low-pressure injection of resins and gel.* | *IN 904 001 (18 x 110 mm)* | *500 Pieces* |
|  | | | |
| KÖSTER **Drive in aid for Impact Packer 12** | *Plastic cylinder for installing impact packers.* | *IN 907 001* | *Piece* |
|  | | | |
| KÖSTER **Impact Packer 18 Adapter** | *Adapter for connecting KÖSTER Impact Packers 18 and KÖSTER Impact Packers 18 Plus.* | *IN 908 001* | *Piece* |
|  | | | |
| KÖSTER **Lamella Impact Packer** | *A modular impact packer for the injection of injection 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.* | *IN 909 001 (18 x 112 mm)* | *500 Pieces* |
|  | *Valve for the KÖSTER Lamella Impact Packer.* | *IN 910 001* | *500 Pieces* |
| KÖSTER **Drive in aid for Lamella Packer** | *Plastic cylinder for installing KÖSTER Lamella Packer.* | *IN 911 001* | *Piece* |
|  | | | |

| | | Article No. | Packaging |
|---|---|---|---|
| **KÖSTER Superpacker**  | *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.* | *IN 912 001 (10 x 85mm)* | *100 Pieces* |
| | | *IN 913 001 (10 x 115 mm)* | *100 Pieces* |
| | | *IN 914 001 (13 x 85 mm)* | *100 Pieces* |
| | | *IN 915 001 (13 x 115 mm)* | *100 Pieces* |
| **KÖSTER One-day-site Packer**  | *Allows injection work to be completed in one day. The screw packer for pressure injection has a firmly mounted cone-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 921 001 (13 x 90 mm)* | *100 Pieces* |
| | | *IN 922 001 (13 x 120 mm)* | *100 Pieces* |
| **KÖSTER Injection Lance**  | *Injection lance with pan-head fitting for gel injections.* | *IN 923 001 (18 x 300 mm)* | *25 Pieces* |
| | | *IN 924 001 (18 x 550 mm)* | *25 Pieces* |
| **KÖSTER Distributor Lance**  | *Injection lance with pan-head fitting for gel curtain injections and a guide bar for the lateral distribution of the injection material. German patent, European patent.* | *IN 925 001 (18 x 300 mm)* | *25 Pieces* |
| | | *IN 926 001 (18 x 580 mm)* | *25 Pieces* |

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

## KÖSTER Gel Pump

***2 component injection pump specially designed for KÖSTER PUR Gel.***

*The electrical pump allows for a stageless adjustable mixing ratio (gel : water) and is operated by a pressure of approx. 15 bar. The maximum delivery rate is approx. 2.5 l / min. Technical data: Operating pressure approx. 15 bar, electrical connection 230 V, 50 Hz, Static suction lift 2 m, capacity of the material hopper approx. 6 kg PUR Gel.*

| Technical Data | | Article No. | Packaging |
|---|---|---|---|
| Operating pressure | Approx. 15 bar | IN 928 001 | Piece |
| Electrical connection | 230 V, 50 Hz | | |
| Static suction lift | 2 m | | |
| Material Hopper | Approx. 6 kg PUR Gel | | |

Curtain injection

Surface injection

Water-bearing joints

Steplessly adjustable

| Accessories list for the KÖSTER Gel Pump | | | Article No. | Packaging |
|---|---|---|---|---|
| KÖSTER Water Hose |  | Length: 5 m | IN 928 002 | Piece |
| KÖSTER Gel Hose |  | Length: 5 m | IN 928 003 | Piece |
| KÖSTER Manometer |  | 40 bar | IN 928 004 | Piece |
| KÖSTER Mixhead |  | | IN 928 005 | Piece |
| KÖSTER Injection Whip |  | Length: 300 mm | IN 928 006 | Piece |
| KÖSTER Slide Coupling |  | Connection M10 x 1 | IN 928 007 | Piece |
| KÖSTER Swivel-joint |  | Connection between injection whip and slide coupling. Length 300 mm, connection M10 x 1 | IN 928 008 | Piece |

## KÖSTER 1C Injection Pump

***1 component injection pump for KÖSTER Injection Resins (foams and resins).***

*The electrical pump is suitable for high and low pressure injections in cracks or voids. Operating pressure can be adjusted from 0 - 200 bar. The maximum delivery rate is approx. 2.2 l / min. Technical data: Operating pressure approx. 0 -200 bar, electrical connection 230 V, 2,25 A, 50 Hz, motor performance 0,75 kW, capacity of the material hopper approx. 6 kg PUR Gel.*

| Technical Data | | Article No. | Packaging |
|---|---|---|---|
| Operating pressure | 0 - 200 bar | IN 929 001 | Piece |
| Electrical connection | 230 V, 2.25 A, 50 Hz | | |
| Material hopper | 0.75 kW | | |
| Capacity | Approx. 6 l | | |

0 - 200 bar adjustable pressure

Suitable for foams

Suitable for resins

6 l container capacity

| Accessories list for the KÖSTER 1C Injection Pump | | | Article No. | Packaging |
|---|---|---|---|---|
| KÖSTER HP Material Hose |  | Length: 5 m | IN 929 002 | Piece |
| KÖSTER Ball Valve |  | With grip head | IN 929 003 | Piece |
| KÖSTER Manometer |  | 200 bar | IN 929 004 | Piece |
| KÖSTER Material Hopper |  | 6 l material hopper with sieve for the KÖSTER 1C Injection Pump. | IN 929 005 | Piece |
| KÖSTER Coarse Sieve |  | Coarse sieve for the KÖSTER 1C Injection Pump. | IN 929 006 | Piece |
| KÖSTER Fine Sieve |  | Fine sieve for the KÖSTER 1C Injection Pump. | IN 929 007 | Piece |
| KÖSTER Injection Gun |  | One-handed adjustable high-pressure injection gun for KÖSTER 1C Injection Pump. M16 x 1.5 | IN 929 016 | Piece |

| | | Article No. | Packaging |
|---|---|---|---|
| KÖSTER **Acrylic Gel Pump**  | *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.* | *IN 930 001* | *Piece* |
| KÖSTER **Loka Hand Pump**  | *Manual membrane pump for the pumping and injection of grouts.* | *IN 952 001* | *Piece* |
| KÖSTER **Hand Pump without manometer**  | *For small injection projects or areas which are difficult to access. Operating pressure 10 bar max. , output approx. 2 cm³ per pass.* | *IN 953 001* | *Piece* |
| KÖSTER **Hand Pump with manometer**  | *For small injection projects or areas which are difficult to access. Operating pressure 10 bar max. , output approx. 2 cm³ per pass.* | *IN 953 002* | *Piece* |
| KÖSTER **Injection Whip**  | *Available length: 500 mm or 300 mm* | *IN 953 003 (300 mm)*<br>*IN 953 005 (500 mm)* | *Piece*<br>*Piece* |

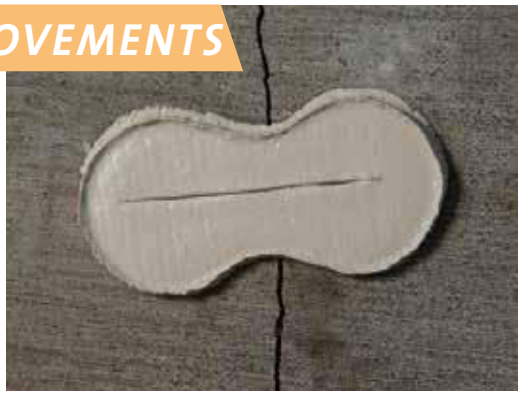
| | | Article No. | Packaging |
|---|---|---|---|
| **KÖSTER Grip Head** | *With 4 jaws for cone-head fittings.* | *IN 953 005* | *Piece* |

| | | | |
|---|---|---|---|
| **KÖSTER Foot Pump** | *Manual membrane pump for pumping and injecting liquid products.* | *IN 958 001* | *Piece* |

| | | | |
|---|---|---|---|
| **KÖSTER Cleaning Brush** | *Conical round brush for cleaning voids at cable and pathway penetrations.* | *IN 959 001* | *Piece* |

| | | | |
|---|---|---|---|
| **KÖSTER Resin Mixer** | *Special mixer for resins. Reduces air enclosures. Round connector Ø 12 mm for chuck.* | *IN 988 001* | *Piece* |

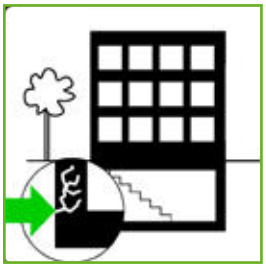
## GOOD TO KNOW: ANALYZING CRACK MOVEMENTS



***Gypsum mark***

*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.*

# Crack injection and hose injection



*Cracks in a building's substance are structurally weak points. Additionally, penetrating water may cause damage and affect the lifespan and usability of the building. An elastic sealing or structural-bonding of the crack is required. In order to achieve this, the crack is completely filled over its entire course with a polyurethane injection resin via pressure injection. The KÖSTER injection resins which are applied can also be used in drinking water environments.*

## Crack injection by pressure injection on dry or wet cracks

***Injection Resin (elastic)***

***(IN 201) KÖSTER 2 IN 1***
***Alternatives***
***(IN 250) KÖSTER IN 5***

***Injection Resin (structural)***

***(IN 231) KÖSTER KB-Pox IN***
***Alternatives***
***(IN 230) KÖSTER IN 3***
***(IN 295) KÖSTER Micro Grout 1C***

***Pump***

***(IN 929) KÖSTER 1C Injection***

***Installing the packers***

***(IN 914) KÖSTER Superpacker***
***Alternatives***
***(IN 918) KÖSTER One-day-site Packer***
***(IN 903) KÖSTER Impact Packer 12***
***(IN 905) KÖSTER Impact Packer 18***

*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 IN 3 is used for the structural bonding of cracked or damaged building elements. 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.*

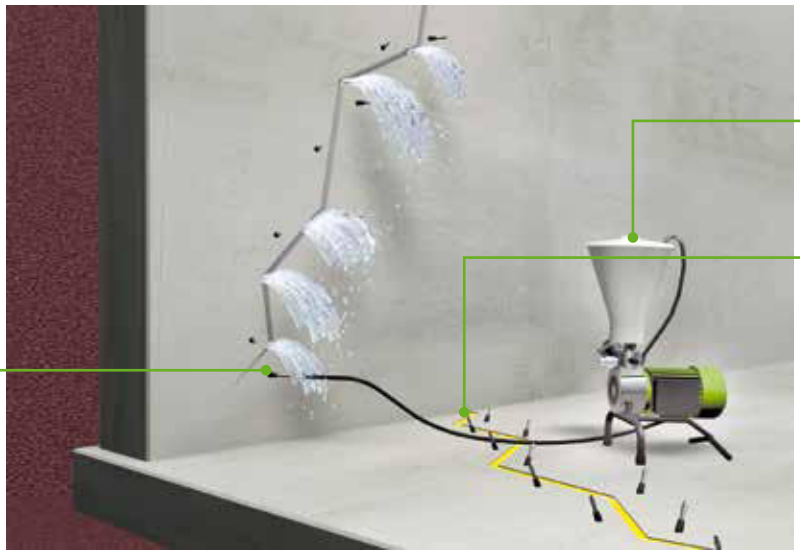
*All KÖSTER injection resins are installed with the KÖSTER 1C Injection Pump via injection valves called "Packers" into the crack. Depending on the application, different packers are available. KÖSTER Impact Packers "12" are installed very quickly and are recommended for low to medium pressure.*

*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 Data Sheets.*

## Pressure injection of water bearing cracks



**Pump**
**(IN 929) KÖSTER 1C Injection Pump**

**Injection Resin**
**(IN 110) KÖSTER IN 1**
**Alternatives**
**(IN 201) KÖSTER 2 IN 1**
**(IN 270) KÖSTER IN 7**
**Permanent seal with**
**(IN 220) KÖSTER IN 2**
**Alternatives**
**(IN 201) KÖSTER 2 IN 1**

**Installing the packers**
**(IN 914) KÖSTER Superpacker**
**Alternatives**
**(IN 918) KÖSTER One-day-site Packer**
**(IN 903) KÖSTER Impact Packer 12**
**(IN 905) KÖSTER Impact Packer 18**

*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" 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 Data Sheets.*

## Waterproofing of construction joints in the wall/floor junction

**Injection Resin**
**(IN 250) KÖSTER IN 5**
**Alternatives**
**(IN 201) KÖSTER 2 IN 1**

**Pump**
**(IN 929) KÖSTER 1C Injection Pump**

**Injection Resin**
**(IN 914) KÖSTER Superpacker**
**Alternatives**
**(IN 918) KÖSTER One-day-site Packer**
**(IN 903) KÖSTER Impact Packer 12**

*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.*

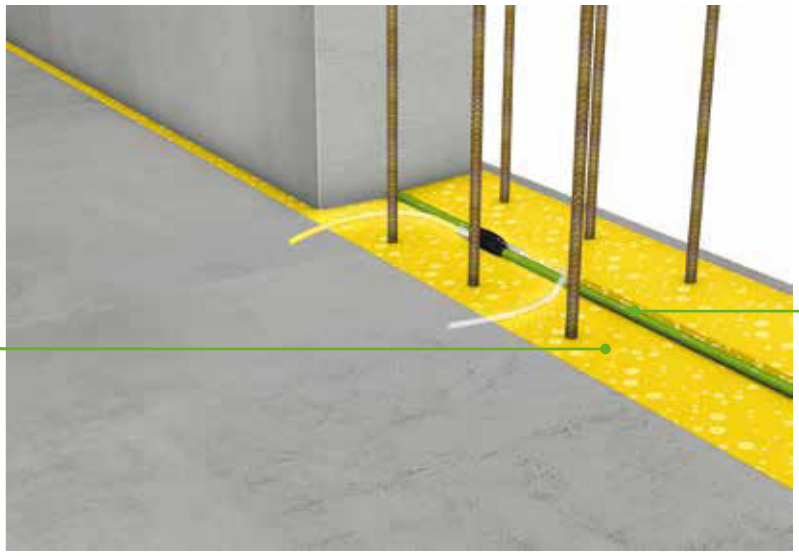
*For this application KÖSTER Superpackers or KÖSTER One Day Site Packers are used. The injection is done with the KÖSTER 1C Injection Pump.*

*For this KÖSTER IN 5 can be used, which is a very low viscous polyurethane injection resin with a very long pot life. It will pass into the small and finest cracks along 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 Data Sheets.*

## Construction joint injection via an injection hose

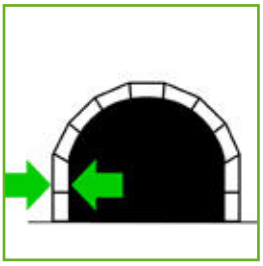



*Construction joints, especially in the wall floor junction, when installed underneath ground level always need particular attention when it comes to waterproofing. Defects in this area are not uncommon. Before pouring the concrete for the rising wall, the injection hose is installed in the construction 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.*

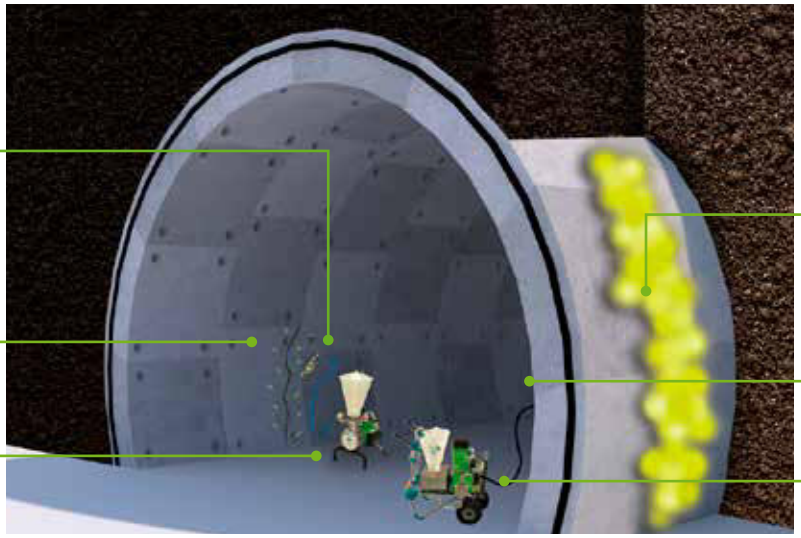
*Always adhere to the specifications in the respective Technical Data Sheets.*

# 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.*

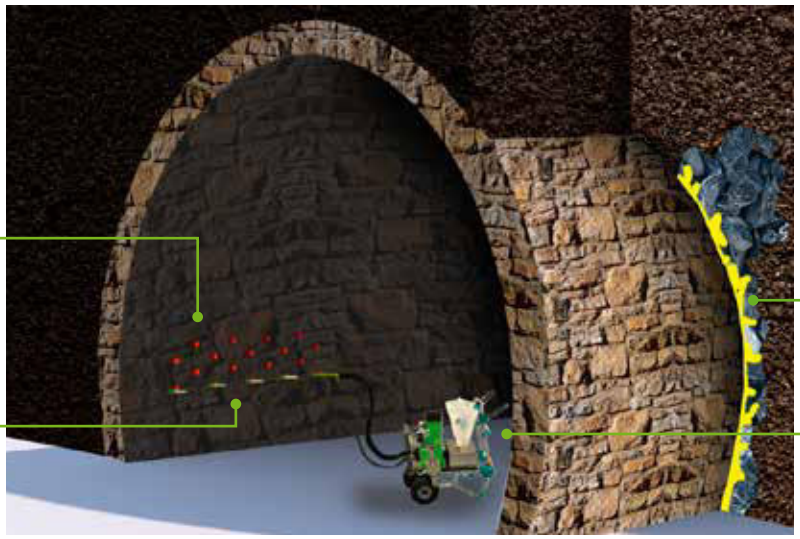
## Tubbing Tunnel Construction




*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.*

## Masonry Tunnel Construction



**Injection packer**

(IN 922) KÖSTER One-Day-Site Packer
(IN 915) KÖSTER Superpacker

**Area injection**

(IN 201) KÖSTER 2 IN 1
(270) KÖSTER IN 7
(IN 290) KÖSTER Injection Gel G4
(IN 285) KÖSTER PUR Gel

**Void filling**

(IN 290) KÖSTER Injection Gel G4
(IN 285) KÖSTER PUR Gel

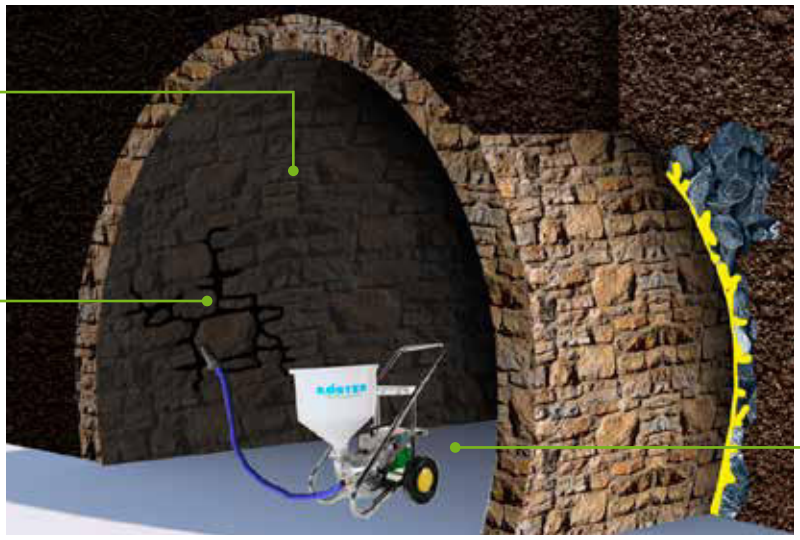
**Injection pump**

(IN 930) KÖSTER Acrylic Gel Pump
(IN 928) KÖSTER PUR Gel pump
(IN 929) KÖSTER 1C Injection Pump

*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 levelling**

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

**Negative side waterproofing**

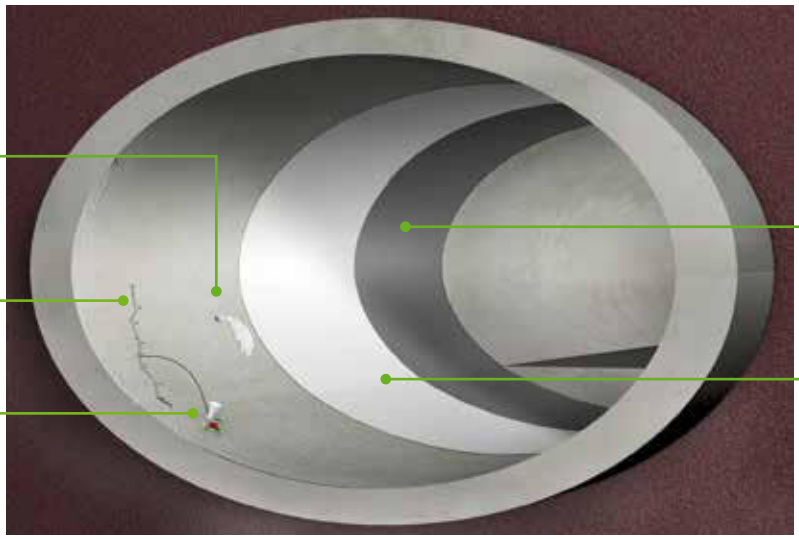
(W 512) KÖSTER KD 2 Blitz Powder
(W 221) KÖSTER NB 1 Grey
(W 540) KÖSTER Waterstop

**Injection pump**

(IN 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



**Stopping active leakages**

(W 512) KÖSTER KD 2 Blitz Powder

**Crack injection**

IN 110) KÖSTER IN 1
(IN 220) KÖSTER IN 2

**Accessories**

(IN 929) KÖSTER 1C Injection Pump
(IN 922) KÖSTER One-Day-Site Packer
(IN 915) KÖSTER Superpacker

**Surface Waterproofing**

(W 220) KÖSTER CFR 1

**Waterproofing layer**

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

*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 closed construction techniques. Flowing water is stopped by injecting KÖSTER IN 1 and afterwards permanently sealed with the elastic resin KÖSTER IN 2. 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. After KÖSTER NB 1 Grey has hardened the crack bridging coating KÖSTER CFR 1 is applied to the waterproofed and dry substrate. Finally the system is covered with another layer of concrete. The waterproofing is sandwiched between two concrete layers.*

*Always adhere to the specifications in the respective Technical Guidelines.*

# C Concrete protection and repair

*Concrete and mortar additives*

C

| | | Article No. | Packaging |
|---|---|---|---|
| **KÖSTER Z 1** | *KÖSTER Z 1 is a polymer modified special slurry for the mineral corrosion protection of steel reinforcement.*<br><br>*Consumption: Approx. 800 g / m² (per coat)* | *C 155 001* | *1 kg* |

| | | | |
|---|---|---|---|
| **KÖSTER Z 2** | *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.*<br><br>*Consumption: Approx. 800 g / m² (per coat)* | *C 255 001* | *1 kg* |

| | | | |
|---|---|---|---|
| **KÖSTER PSM** | *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 area of ph 0 - 8. Suitable for dry substrates, easy to apply.*<br><br>*Consumption: Approx. 1.9 kg / m² per mm layer thickness* | *C 280 030* | *30.75 kg* |

## KÖSTER Betomor Multi A

***Multi purpose mortar for concrete restoration. Shrink-free, fast curing.***

*Particularly suitable for the protection of exposed reinforcement steel: It unites corrosion protection, bonding bridge, coarse mortar and fine filler in one product. For layer thicknesses from 0 – 60 mm.*

| Consumption | Article No. | Packaging |
|---|---|---|
| *Approx. 1.3 kg / l Void* | *C 500 015*<br>*C 500 025* | *15 kg*<br>*25 kg* |

*Corrosion protection (coating)*

*Coarse mortar*

*Fine filler*

*Balcony restoration*

| | | Article No. | Packaging |
|---|---|---|---|
| KÖSTER **C-Coat**  | *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.*<br><br>*Consumption: Approx. 1.7 kg / m² per mm layer thickness* | *C 510 025* | *25 kg* |
| KÖSTER **KB-FIX 1**  | *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.*<br><br>*Consumption: Approx. 1.8 kg / l void* | *C 511 015* | *15 kg* |
| KÖSTER **KB-FIX 5**  | *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.*<br><br>*Consumption: Approx. 1.8 kg / l void* | *C 515 015* | *15 kg* |
| KÖSTER **Turbo F**  | *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.*<br><br>*Consumption: Approx. 1.9 kg / l void* | *C 516 025* | *25 kg* |
| KÖSTER **Turbo M**  | *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.*<br>*Consumption: Approx. 1.9 kg / l void* | *C 517 025* | *25 kg* |

## KÖSTER Repair Mortar NC

***Suitable for large re-profiling 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.*

| Consumption | Article No. | Packaging |
|---|---|---|
| Approx. 1.9 kg / l void as repair mortar<br>Approx. 19 kg / sqm as plaster | C 535 025 | 25 kg |

Restoration of support beams

Bridge restoration

Large surface restoration

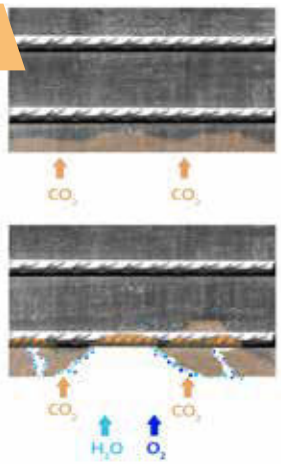
Spray application

| | Article No. | Packaging |
|---|---|---|
| **KÖSTER Sewer and Shaft Mortar**<br>  <br>*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.*<br><br>*Consumption: Approx. 1.8kg / l void as repair mortar; Approx. 18kg / m², per cm layer thickness* | C 590 025<br><br>C 590 040 | 25 kg<br><br>40 x 25 kg (1,000 kg) |
| **KÖSTER Turbo Binding Agent**<br>  <br>*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 $CO_2$ is released as compared to a pure portland cement.*<br><br>*Consumption: Approx. 1.9 kg / l void* | C 716 025 | 25 kg |
| **KÖSTER Turbo Super Plasticizer**<br>  <br>*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.*<br><br>*Consumption: One pack per 25 kg KÖSTER Turbo F / M* | C 717 065 | 65 g |

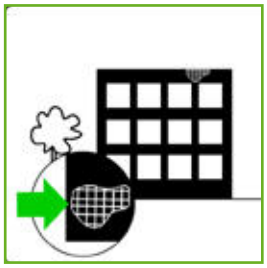
| | | Article No. | Packaging |
|---|---|---|---|
| **KÖSTER Turbo Retarding Agent** | *Additive for the KÖSTER Turbo System. For slowing the setting time of KÖSTER Turbo Mortars to meet individual jobsite requirements.* | *C 718 025* | *25 g* |
|  | *Consumption: One pack per 25 kg KÖSTER Turbo F / M* | | |
| **KÖSTER BDM** | *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.* | *C 731 000*<br>*C 731 030* | *1,000 kg*<br>*30 kg* |
|  | *Consumption: 2 % (mass) of cement content* | | |

## 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 $CO_2$ in the air to form calcium carbonate $CaCO_3$. 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.*

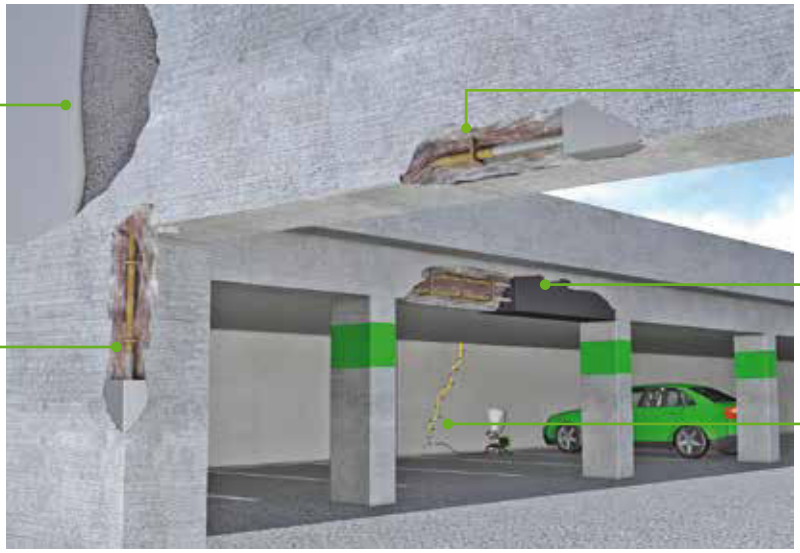


# Concrete protection and repair



*Damaged concrete requires treatment in order to restore the buildings integrity. Exposed steel reinforcement must be protected from corrosion. The original structure is repaired using mineral products.*

## Concrete repair




*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 finishing layer. The material is applied onto the prepared, stable substrate which must also be free of separating agents and rust.*

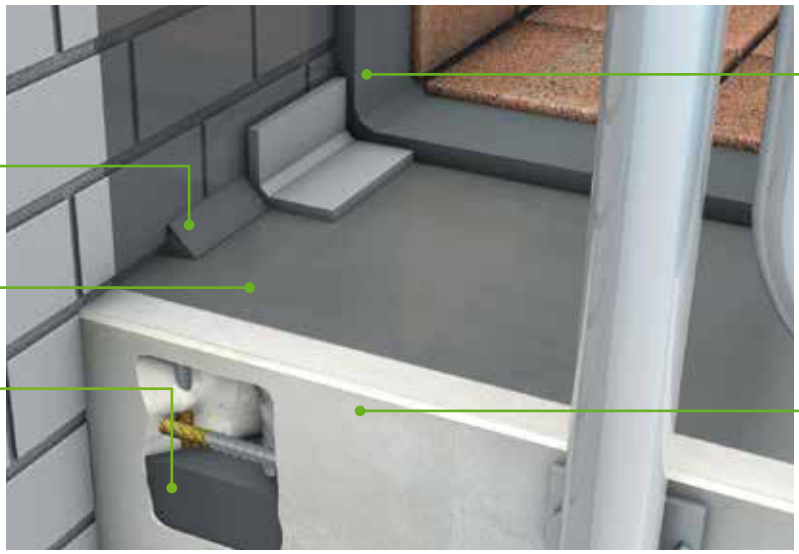
*Repair and maintenance of concrete surfaces is done with KÖSTER C-Coat. KÖSTER C-Coat is a high quality finishing layer for levelling and smoothing concrete surfaces.*

*For re-profiling and concrete replacement in larger areas, KÖSTER Repair Mortar NC is applied. It is suitable for trowel application and can also be spray applied. The mortar is applied onto the prepared, stable substrate which must also be free of bond inhibiting agents. Reinforcement steel has to be cleaned, and corrosion protection and bonding agent KÖSTER Z1 / Z2 is applied.*

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

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

## Concrete repair of balconies and terraces



**Waterproofing layer**

**(W 233) KÖSTER NB Elastic Grey**

**Alternativess**

**(W 234) KÖSTER NB Elastic White**

**Reinforcement**

**(W 450) KÖSTER Flex Fabric**

**Fillet**

**(C 534) KÖSTER WP Mortar**

**Primer**

**(M 111) KÖSTER Polysil TG 500**

**Concrete Repair**

**(C 500) KÖSTER Betomor Multi A**

**Alternatives**

**(W 534) KÖSTER WP Mortar + (C 155 / C 255) KÖSTER Z 1 / Z 2**

**Concrete protection**

**(C 510) KÖSTER C-Coat**

**Alternatives**

**(P 260) KÖSTER Silicone Paint White**

*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 finishing layer.*

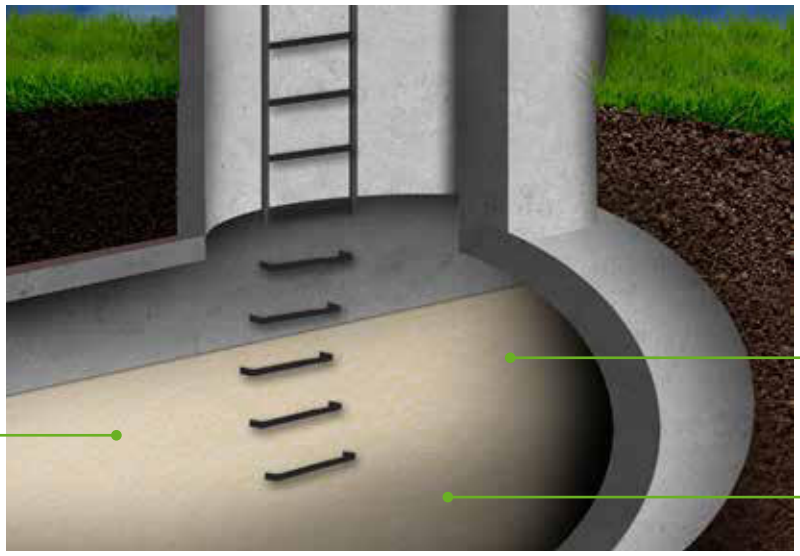
*KÖSTER Betomor Multi A fulfils all of these requirements in one product. The advantage is that only one product is needed for the renovation and provides an easier calculation of the required amount and management of logistics. Concrete repair of building elements can be quickly and easily done with KÖSTER Betomor Multi A.*

*Maintenance of concrete surfaces is done with KÖSTER C-Coat. KÖSTER C-Coat is a high quality finishing layer for levelling and smoothing of concrete surfaces. KÖSTER Silicon Paint White is an optimal decorative paint coating for concrete surfaces.*

*The elastic and crack bridging waterproofing material KÖSTER NB Elastic (Grey or White) 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 Flex Fabric is embedded between the two waterproofing layers. Fillets are made with KÖSTER WP Mortar.*

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

## Waterproofing Sewers and Shafts




*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 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 Data Sheets.*

## SL Self leveling underlayments

*Self leveling mineral underlayments, floor patching materials, corresponding primers*

# SL

| | Article No. | Packaging |
|---|---|---|
| **KÖSTER VAP I 06** | SL 131 009 | 9.5 kg |

*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. 70 - 100 g / m² (depending on substrate characteristics)*

| | | |
|---|---|---|
| **KÖSTER SL Primer** | SL 189 005 | 5 kg |

*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: 50 - 150 g / m², dependent on substrate characteristics*

| | | |
|---|---|---|
| **KÖSTER VGM Fast** | SL 251 025 | 25 kg |

*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 SL Premium

***High quality, fast setting mineral underlayment that hardens tension free and provides a smooth, level surface ready to receive subsequent flooring systems.***

*For interior use. Hardens within a few hours to a smooth, strong, and multifunctional leveling layer. KÖSTER SL Premium is easily applied and suitable for casting and pumping. The material is free-flowing and self leveling and may be applied onto a variety of substrates. KÖSTER SL Premium hardens crack free and fast with shrinkage reduction of up to 90%.*

| Consumption | Article No. | Packaging |
|---|---|---|
| approx. 1.5 kg / m² per mm layer thickness | SL 280 025 | 25 kg |

Primer: KÖSTER SL Primer

Easy application

Very robust

Coating after 24 hrs

| | Article No. | Packaging |
|---|---|---|
| **KÖSTER SL Flex** | SL 284 025 | 25 kg |

*Special mineral underlayment for the application on wooden floors, tiles and asphalt. The material hardens hydraulically and tension free to a level, high strength surface KÖSTER SL Flex is easy to mix and install, is pump- and pourable, and is self-leveling. KÖSTER SL Flex can be applied in layer thicknesses between 2 and 15 mm, and in depressions up to 30 mm. It hardens quickly and crack free with up to 90 % reduced shrinkage.*

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

| | | |
|---|---|---|
| **KÖSTER SL Protect** | SL 286 025 | 25 kg |

*Mineral based self-leveling underlayment with high resistance to chemical and mechanical stresses. It is early loadable and directly useable. 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.*

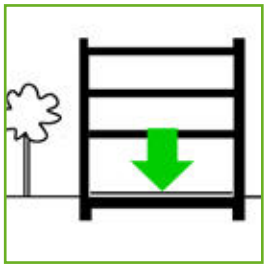
*Consumption: Approx. 1.9 kg/m² per mm layer thickness*

## 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.*

*Priming a wooden surface with KÖSTER VAP I 06 primer*

# Self leveling underlayments



*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.*



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


*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 hours foot traffic is allowed, subsequent flooring systems can be installed after 5 hours, and after 24 hours curing time the material is even trafficable.*

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

## Self leveling underlayment on wooden substrates


*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.*

## *CT Coatings*

*Floor and corrosion protection coatings, moisture control systems*

# CT

| | | Article No. | Packaging |
|---|---|---|---|
| **KÖSTER LF-BM**<br>  | *Broadly applicable bonding agent with excellent adhesion to all mineral substrates. KÖSTER LF-BM is a 2 component, solvent free, low viscous epoxy resin. Mechanically highly resistant, mixed with dried silica sand also suitable as a mortar. Fields of application: 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* | *CT 160 001*<br>*CT 160 006*<br>*CT 160 025* | *1 kg*<br>*6 kg*<br>*25 kg* |
| **KÖSTER Construction Resin**<br>  | *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.*<br><br>*Consumption: 300 - 500 g / m² total consumption* | *CT 165 025* | *25 kg* |
| **KÖSTER ESD 175**<br>  | *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.*<br><br>*Consumption: Approx. 100 g / m²* | *CT 175 008* | *8 kg* |
| **KÖSTER EM-VS**<br>  | *Broadly applicable, scratch resistant sealant for wall and floor surfaces against medium mechanical stresses. KÖSTER EM-VS is a 2-component, water based epoxy resin sealant with excellent covering properties. Color approximates RAL 7032 (pebble grey), other colors are available upon request. Fields of application: all types of mineral surfaces in shops, garages, etc.*<br><br>*Consumption: As interior coating: Approx. 0.2 - 0.3 kg / m² per work step. Two coats are recommended. In the KÖSTER BTG System: 200 to 300 g / m² in one work step.* | *CT 210 008* | *8 kg* |

## 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.*

## KÖSTER VAP I 2000

***Vapor barrier for priming unsealed interior concrete floors, e.g. against osmotic action under vapor tight flooring.***

*Curing time 12 hours. Fields of application: under epoxy, polyurethane or vapor tight flooring e.g. in gymns, industrial halls or sales rooms. KÖSTER VAP I 2000 is a 2-component, low viscous, solvent-free, transparent special resin.*

| Consumption | Article No. | Packaging |
|---|---|---|
| approx. 0.4 kg / m² | CT 230 002 | 2.95 kg |
| (0.2 kg / m² per layer) | CT 230 010 | 10.13 kg |
| | CT 230 025 | 25.32 kg |


For unsealed concrete floors


Prevents osmotic blistering


Applicable to concrete after 7 days


Recoatable after 12 hrs.



| | Article No. | Packaging |
|---|---|---|
| **KÖSTER VAP I 2000 FS** | CT 233 002 | 2.96 kg |
| | CT 233 010 | 10.15 kg |

*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 gymns, industrial halls or sales rooms. KÖSTER VAP I 2000 is a 2-component, low viscous, solvent-free, transparent special resin.*

*Consumption: Approx. 0.5 kg / m²*

| | | |
|---|---|---|
| **KÖSTER VAP I 2000 UFS** | CT 234 002 | 2.96 kg |
| | CT 234 010 | 10.15 kg |

*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. 0.5 kg / m²*

| | | |
|---|---|---|
| **KÖSTER UC 100** | CT 251 020 | 20 kg |

*KÖSTER UC 100 is a self-leveling 100% solids, 3 component aromatic urethane cement system. This medium duty slurry applied flooring system can be pigmented. KÖSTER UC 100 is typically applied 0.5 - 3 mm thick depending on the design requirements. It is designed to withstand aggressive chemical and thermal attack while providing high abrasion resistance.*

*Consumption: 1.3 kg / mm layer thickness / m²*

| | | Article No. | Packaging |
|---|---|---|---|
| KÖSTER<br>**UC 200**<br>  | KÖSTER UC 200 is a 3 component aromatic urethane cement system. It is a pigmented, heavy duty flooring system. KÖSTER UC 200 is typically applied 3 to 9 mm thick depending on the design requirements. It is designed to withstand aggressive chemical and thermal attack while providing high abrasion resistance.<br><br>Consumption: 1.3 kg / m² / mm layer thickness | CT 252 020 | 20 kg |
| KÖSTER<br>**UC 300**<br>  | KÖSTER UC 300 is a roller applied 100% solids, 3 component aromatic urethane cement thin film system. It is a heavy duty pigmented coating typically applied 0.3 - 1 mm thick depending on the design requirements. It is designed to withstand aggressive chemical and thermal attack while providing abrasion resistance. KÖSTER UC 300 serves as a primer and topcoat for KÖSTER UC 100 and KÖSTER UC 200, and seal coat for the KÖSTER UC broadcast system.<br><br>Consumption: 0.32 - 1.1 kg / m² | CT 253 020 | 20 kg |
| KÖSTER<br>**LF-VL**<br>  | KÖSTER LF-VL is a solvent free, decorative floor covering with high abrasion resistance which can be applied on screed or cement based floors. It is suitable for multi-function halls, business rooms, offices, production facilities and many other areas.<br><br>Consumption: 2.6 kg / m² (2 mm total layer thickness) | CT 271 006<br>CT 271 026 | 6.7 kg<br>26.8 kg |
| KÖSTER<br>**ESD 275**<br>  | 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 and DIN EN 61340-1, supplementary sheet 1.<br><br>Consumption: 1.5 kg / m² / mm layer thickness | CT 275 026 | 26 kg |
| KÖSTER<br>**PS Flex**<br>  | 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. DIBT Certificate for reinforced concrete tanks for the storage of silage and liquid manure.<br><br>Consumption: Total consumption 1.8 kg / m² - 2.3 kg / m² | CT 276 010 | 10 kg |

| | | Article No. | Packaging |
|---|---|---|---|
| **KÖSTER CMC**  | *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.*<br><br>*Consumption: 1.7 kg / m² / 1 per layer thickness* | *CT 280 005* | *5.3 kg* |
| **KÖSTER Corrosion Protection**  | *KÖSTER Corrosion Protection is a 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 such as agricultural plants, sewage treatment plants or tanks.*<br><br>*Consumption: Approx. 1 kg / m²* | *CT 283 006* | *6 kg* |
| **KÖSTER Bridge Coat**  | *Low viscosity epoxy sealant for waterproofing bridge decks and other civil engineering structures. Due to the good heat resistance of the cured KÖSTER Bridge Coat, asphalt can be installed directly onto the fully cured coating. It is resistant to high mechanical stresses. Fields of application include waterproofing of civil engineering stuctures and corrosion protection of concete exposed to moderate chemical stresses*<br><br>*Consumption: 200 g / m² total consumption applied in 2 coats* | *CT 284 005*<br>*CT 284 013* | *5.4 kg*<br>*13.5 kg* |
| **KÖSTER VE**  | *KÖSTER VE is a vinyl ester mortar with very good adhesion to all mineral substrates and to stainless steel. It is perfectly suitable for the protection of surfaces in facilities with high chemical and mechanical demands on the coatings such as agricultural concrete elements, waste treatment plants, and chimneys.*<br><br>*Consumption: Approx. 4.5 kg / m² (2 mm layer tickness)* | *CT 286 006* | *6.47 kg* |
| **KÖSTER TS transparent**  | *KÖSTER TS transparent is a solvent containing surface sealant for concrete or for KÖSTER Coatings such as KÖSTER EM-VS, KÖSTER UC 100 and KÖSTER LF-VL. It is used in conjunction with the KÖSTER BTG System. 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.*<br><br>*Consumption: Approx 0.1 kg / m² - 0.2 kg / m²* | *CT 320 001*<br>*CT 320 006* | *1 kg*<br>*6 kg* |

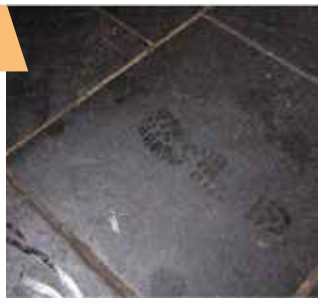
| | | Article No. | Packaging |
|---|---|---|---|
| **KÖSTER Color-Chips**<br>  | *UV and chemically resistant decorative colored chips for broadcasting into the surface of KÖSTER LF-VL, KÖSTER EM-VS, and for use with the KÖSTER BTG System.*<br><br>*Consumption: Minimum 50 g / m² as a decorative, non-covering surface decoration.* | *CT 429 005*<br>*CT 429 010* | *5 kg*<br>*10 kg* |
| **KÖSTER UC Pigment Paste**<br>  | *KÖSTER UC Pigment Paste is a highly effective color pigment dispersion. The inorganic pigments have a very high coverage mixed with KÖSTER UC 100, 200, and 300 even at low dosages.*<br><br>*Consumption: 1 cartridge per KÖSTER UC System Kit* | *CT 451 245* | *245 g Cartridge* |
| **KÖSTER KB-Pox Thickening Agent**<br>  | *KÖSTER KB-Pox Thickening Agent increases the viscosity of epoxy resins and stabilizes them on sloped and vertical surfaces.*<br><br>*Consumption: Slight slope, Approx. 2 M%; Strong slope, Approx. 3 - 4 M%; Vertical surface, Approx. 4 - 10 M%* | *CT 764 001*<br>*CT 764 010* | *1 kg*<br>*10 kg* |
| **KÖSTER Spiked Roller**<br>  | *For de-airing floor coatings.* | *CT 914 001* | *Piece* |
| **KÖSTER Gauging rake**<br>  | *For the even installation of KÖSTER SL products in the desired layer thickness of 0 - 30 mm. Continuously adjustable, changeable steel sheet and gliding vats made of hardened valyrian steel.* | *CT 915 001* | *Piece* |

| | | Article No. | Packaging |
|---|---|---|---|
| **KÖSTER Resin Roller**  | *Short nap roller for applying thin coatings and sealers.* | *CT 916 001 (250 mm)*<br>*CT 916 002 (250 mm - without handle)*<br>*CT 917 001 (150 mm)*<br>*CT 917 002 (150 mm - without handle)* | *Piece*<br>*Piece*<br>*Piece*<br>*Piece* |
| **KÖSTER Squeegee**  | *For the application of resin based primers. Complete set.* | *CT 918 001 (580 mm)*<br>*CT 919 001 (Replace-ment)* | *Piece*<br>*Piece* |



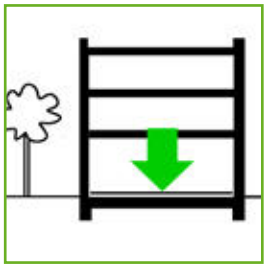
## GOOD TO KNOW: DEW POINT FOR COATINGS

*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.*



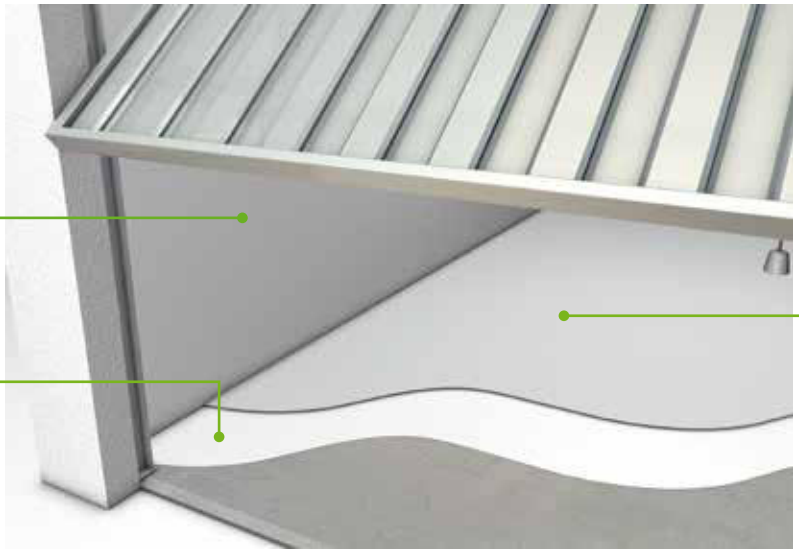
*The dew point is found by first measuring the temperature of the substrate with an IR thermometer. Next, air temperature and relative humidity are measured. The dew point temperature is then found in the dew point table at the intersection of the measured air temperature and measured relative humidity. 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 are 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

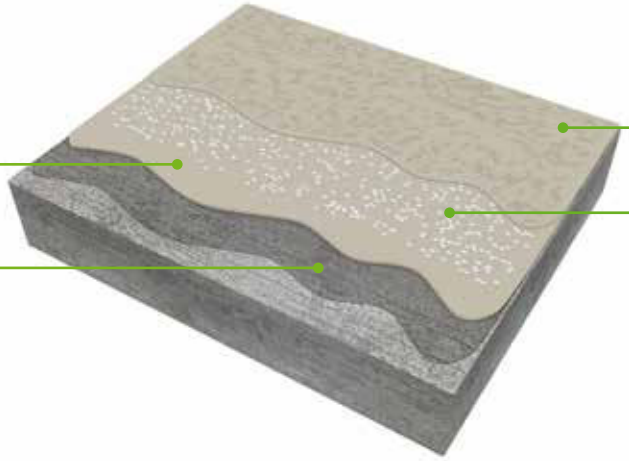



*Concrete floors exposed to moderate stresses are ideally and easily coated with the decorative floor sealant KÖSTER EM-VS. The coating is applied in two layers onto the prepared and cleaned concrete surface.*

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

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

## Highly resistant floor coating for interior rooms, industry and production




*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.*

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

## Moisture Mitigation System


*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 2000 is a special material which fulfils all of these functions; it has very low permeance ->*

-> (ASTM E96 wet: .04-.09), excellent bonding characteristics and is resistant to sustained high alkalinity (pH of 14). The KÖSTER VAP 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 VAP Finish together with KÖSTER VAP 06 Primer on top of the moisture mitigation system.

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

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

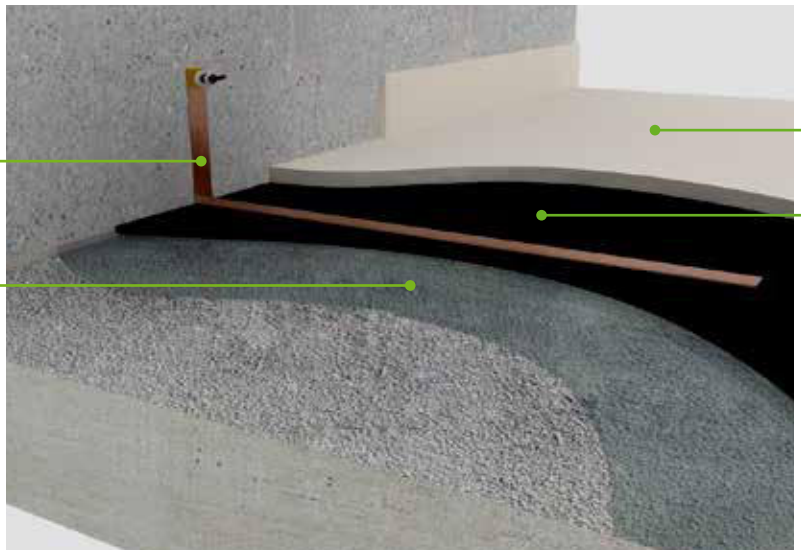

The KÖSTER BTG System is a visually appealing floor coating system for concrete and screed floors. It is comprised of KÖSTER EM-VS (resin coating), KÖSTER Color Chips (colored enhancement) and KÖSTER TS Transparent (transparent surface sealant). The BTG System protects balconies, terraces, laboratories, 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.

## Static discharge protective coating for shock sensitive production areas



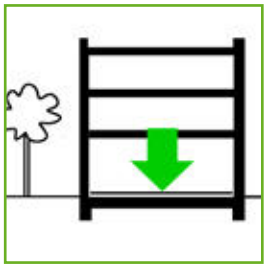

*In areas where electronics are manufactured or in areas that can be electrostatically charged by people or machines, the floor must have a sufficiently high electrostatic dissipation to eliminate the risk of damage. For this ESD protection areas are required, (ESD : Electrostatic Discharge) where special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

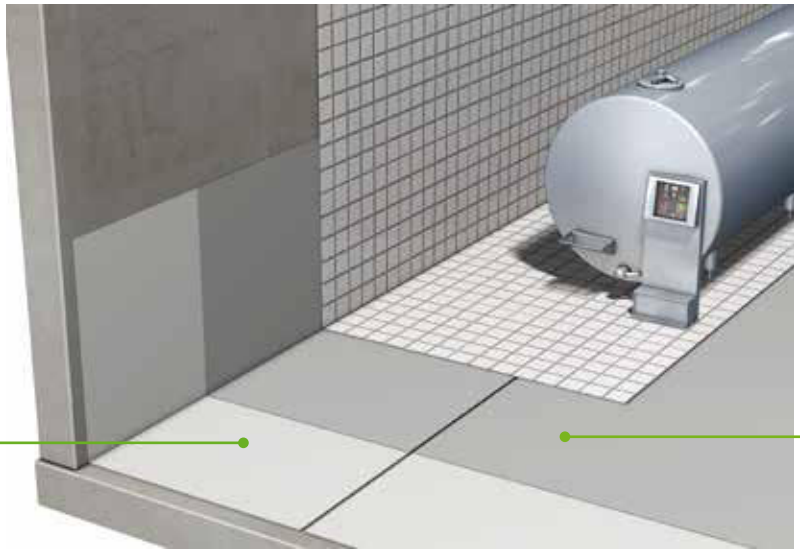
*Always adhere to the specifications in the respective Technical Data Sheets.*

# 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 with Silicate Mortar or PSM




*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 or the faster version KÖSTER NB 1 fast. The acid protection itself is made with KÖSTER Silicate Mortar (also suitable for damp substrates) or KÖSTER PSM (suitable for dry substrates and easy to apply).*

*Where acid resistant tiles are to be applied KÖSTER Silicate adhesive can be used as a tile adhesive and KÖSTER Silicate Mortar is used for jointing the tiles.*

*Always adhere to the specifications in the respective Technical Guidelines.*

## Corrosion protection of steel

**Corrosion protection**

**(CT 283) KÖSTER Corrosion Protection**

**(CT 286) KÖSTER VE**

**Corrosion protection (crack bridging)**

**(CT 276) KÖSTER PS Flex**

*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 PS Flex.*

*In the case of extraordinary high acid impact (e. g. when underrunning the acid dew point) the entire coating is to be carried out with two layers of KÖSTER VE. In addition to that KÖSTER VE is suitable for covering edges, holes and screws prior to the application of KÖSTER Corrosion Protection.*

*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.*

# J Joint sealing

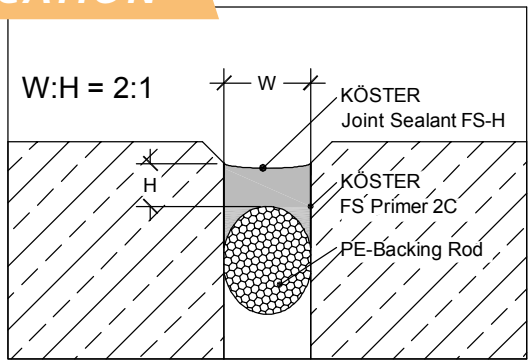
*Joint sealants, joint tapes*

J

| | | Article No. | Packaging |
|---|---|---|---|
| **KÖSTER KB-Pox Adhesive**  | *High performance adhesive specially designed for fastening KÖSTER Joint Tapes. It 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. Two types of the material, normal and rapid curing, are available. The material has a pastelike consistency, contains no solvents and has a 100 % solids content.*<br><br>*Consumption: For Joint Tape 20: 1 kg / m, for Joint Tape 30: 1.5 kg / m* | *J 120 005* | *5 kg* |
| **KÖSTER FS Primer 2C**  | *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.*<br><br>*Consumption: Approx. 10 - 20 g / m* | *J 139 200* | *200 g* |
| **KÖSTER Joint Sealant FS-V**  | *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.*<br><br>*Consumption: Approx. 1.6 kg/l void* | *J 231 004 (black)*<br>*J 233 004 (grey)* | *4 kg* |
| **KÖSTER Joint Sealant FS-H**  | *Self Levelling 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.*<br><br>*Consumption: Approx. 1.6 kg / l void* | *J 232 004 (black)*<br>*J 234 004 (grey)* | *4 kg* |

## 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 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 must be primed with KÖSTER FS Primer 2C twice. Non-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.*



## KÖSTER KB-Flex 200

### *Sealant for pipe and cable penetrations, even in the case of pressurized water.*

*KÖSTER KB-Flex 200 is a one component, permanently plastic material and can therefore be directly applied from the cartridge – even in the case of flowing water. The material bonds to a broad variety of substrates, such as concrete, masonry, mortar, plaster and all other mineral building materials, even ceramics, PVC, Polyethylene and Polypropylene.*

| Consumption | Article No. | Packaging |
|---|---|---|
| approx. 1.6 kg / l Void | J 250 310 | 310 ml Cartridge |
| | J 250 530 | 530 ml Cartridge |

Cable penetration


Pipe openings


Swimming pool installation


Against flowing water

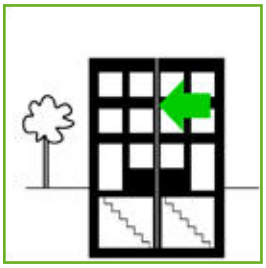
| | | Article No. | Packaging |
|---|---|---|---|
| **KÖSTER Joint Tape 20** | *Thermoplastic tape for sealing expansion and dilatation joints (up to 12 cm) and broad, irregular cracks. KÖSTER Joint Tape 20 is UV resistant, highly elastic and can withstand extreme movements in the joint. The joint tape system consists of KÖSTER Joint Tape and KÖSTER KB-Pox Adhesive, a high performance adhesive for fastening the joint tape to mineral substrates.*<br><br>*Consumption: Approx. 1 kg of KÖSTER KB-Pox Adhesive per meter KÖSTER Joint Tape 20* | J 820 020 | 20 m |

| | | | |
|---|---|---|---|
| **KÖSTER Joint Tape 30** | *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.*<br><br>*Consumption: Approximately 1.5 kg of KÖSTER KB-Pox Adhesive per meter KÖSTER Joint Tape 30* | J 830 020 | 20 m |

| | | | |
|---|---|---|---|
| **KÖSTER Special Caulking Gun** | *Cartridge gun for the application of KÖSTER KB-Flex 200 (530 ml / 850 g cartridge).* | J 981 001 | Piece |

| | | Article No. | Packaging |
|---|---|---|---|
| KÖSTER **Connecting Hose and Nozzle**  | *Accessories for the application of KÖSTER KB-Flex 200 Sealing Paste with a flexible hose and 45° bend.* | *J 982 001* | *Piece* |
| KÖSTER **Caulking Gun**  | *For standard 310 ml cartridges, e. g. KÖSTER KB Flex 200 and KÖSTER Crisin 76 Cream.* | *J 989 001* | *Piece* |

# Joint sealing



*Joints in construction members are designed to accommodate movement. In order to seal such joints effectively the sealants used must be permanently elastic, form stable and UV-resistant. Such sealants will then allow for any future movement which may occur and protect against damage.*

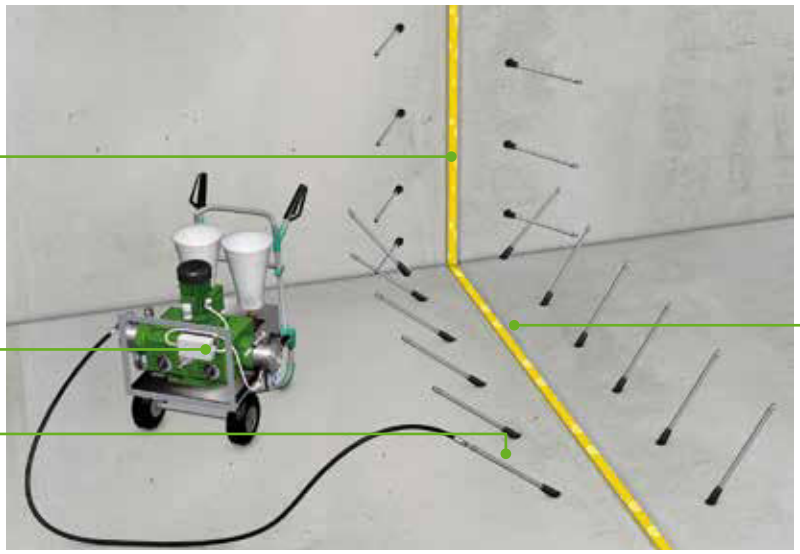
## Joint sealing on mineral and metal surfaces


*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.*

*It is important when waterproofing construction joints to apply a durable material which will 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. Optimal distribution of tension is guaranteed when the KÖSTER Joint Sealant FS is connected to just two opposing joint flanks. This allows the material to expand across the construction joint. To separate the joint sealing from the bottom a backer rod (e. g. customary PE-round cord) is installed into the joint before applying the material. To avoid damage caused by tension stresses the joint sealant should be applied at a thickness appropriate to 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.*

## Joint sealing by pressure injection into dry, damp and water bearing joints



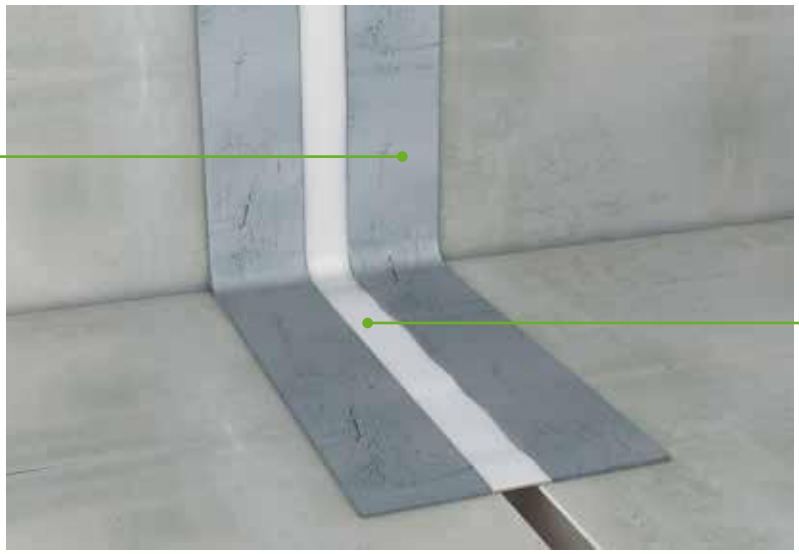

*Waterproofing joints which are exposed to water, active leakage or even pressurized water is a challenge because common joint sealing materials don't bond to wet substrates.*

*KÖSTER KB-Pur Gel is applied by pressure injection into the joint, old joint sealants generally don't have to be removed. KÖSTER KB-PUR Gel reacts with water and creates an elastic waterproofing material. Even flowing water can be stopped with this method.*

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

*Because the subsequent sealing and waterproofing of construction joints requires experience and should be analyzed case by case, please contact our technical consultants. They will be glad to answer your questions.*

## Joint sealing on dilatation joints and other moving joints



**Adhesive**
**(J 120) KÖSTER KB-Pox Adhesive**

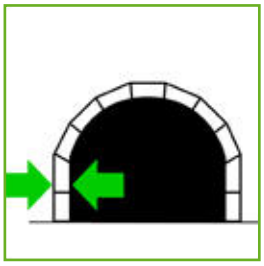
**Joint sealing**
**(J 820) KÖSTER Joint Tape 20**
**Alternatives**
**(J 830) KÖSTER Joint Tape 30**

*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.*

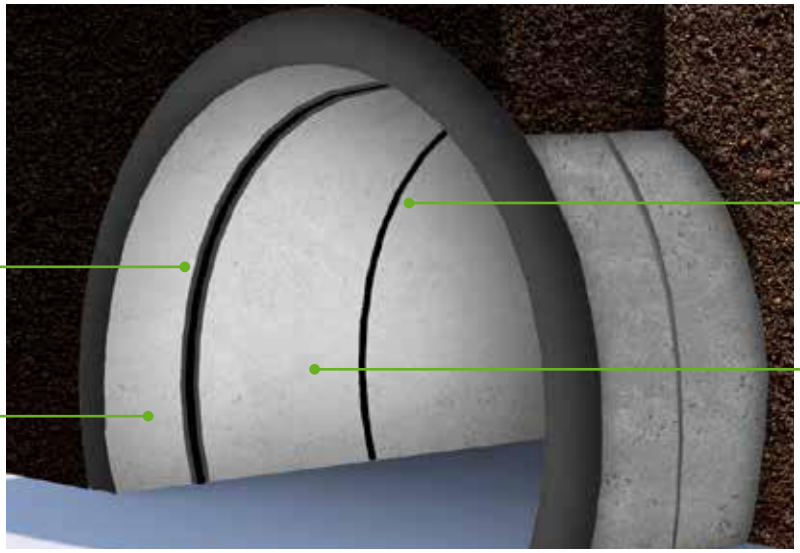
*Always adhere to the specifications in the respective Technical Data Sheets.*

# 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.*

## Joint Sealing in Tunnel Constructions




*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.*

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

# B Wet room waterproofing

B

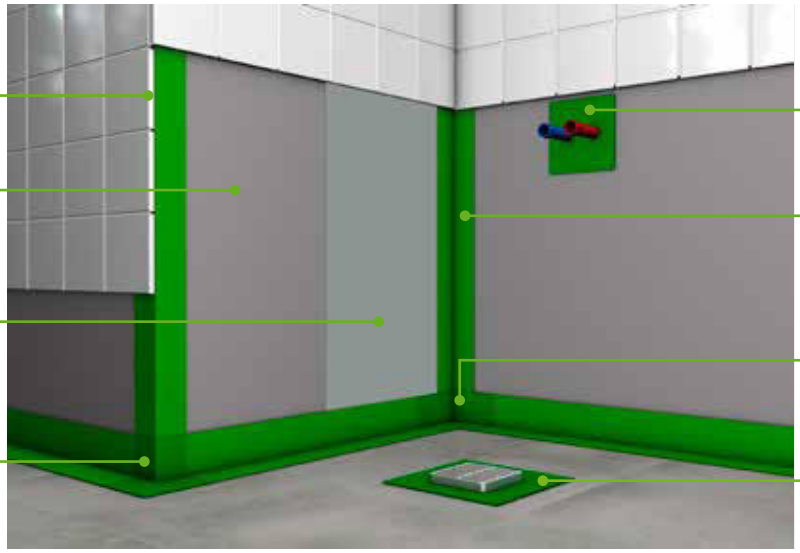
| | | Article No. | Packaging |
|---|---|---|---|
| KÖSTER **BD 50 Primer**  | *Special primer for the KÖSTER BD System on dry or absorbent substrates. Penetrates deeply into the substrate creating an excellent bonding bridge for the subsequent waterproofing.*<br><br>*Consumption: Approx. 0.05 - 0.1 kg / m²; depends on the substrate* | *B 190 005* | *5 kg* |
| KÖSTER **BD 50**  | *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.*<br><br>*Consumption: Approx. 1 kg / m²* | *B 290 010* | *10 kg* |
| KÖSTER **BD Flexible Tile Adhesive**  | *Single component, mineral flexible adhesive for all mineral building materials in construction. In combination with the KÖSTER BD System suitable for waterproofing wet rooms.*<br><br>*Consumption: Approx. 1.7 kg / m² per mm layer thickness* | *B 540 025* | *25 kg* |
| KÖSTER **BD Flex-Band K 120**  | *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.The KÖSTER BD System is an ETAG 022 certified system for the waterproofing of wetrooms e. g. under ceramic tile.* | *B 931 010*<br>*B 931 050* | *10 m*<br>*50 m* |
| KÖSTER **BD Inside Corner**  | *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. The KÖSTER BD System is an ETAG 022 certified system for the waterproofing of wetrooms e. g. under ceramic tile.* | *B 932 001* | *Piece* |

| | | Article No. | Packaging |
|---|---|---|---|
| KÖSTER **BD Outside Corner**  | *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. The KÖSTER BD System is a ETAG 022 certified system for the waterproofing of wetrooms e.g. under ceramic tile.* | *B 933 001* | *Piece* |
| KÖSTER **BD Wall Sleeve**  | *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. The KÖSTER BD System is a ETAG 022 certified system for the waterproofing of wetrooms e.g. under ceramic tile.* | *B 934 001* | *Piece* |
| KÖSTER **BD Floor Sleeve**  | *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. The KÖSTER BD System is a ETAG 022 certified system for the waterproofing of wetrooms e.g. under ceramic tile.* | *B 935 001* | *Piece* |

# 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 is seamlessly waterproofed. The waterproofing layer must be able to bridge possible cracks.*

## Wet room waterproofing with liquid synthetics




*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 water proofing 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 Data Sheets.*

# P Façade protection and paints

P

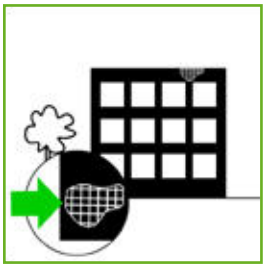
| | | Article No. | Packaging |
|---|---|---|---|
| **KÖSTER Façade Cleaning Cream**  | *Liquid, pasty Façade Cleaning Cream. It removes scaling and efflorescence from mineral substrates. It also cleans many other materials and surfaces quickly and effectively. KÖSTER Façade Cleaning Cream is made from 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.*<br><br>*Consumption: Approximately 100 - 250 g / m² depending on the substrate.* | *P 110 005* | *5 kg* |
| **KÖSTER Façade Cream**  | *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.*<br><br>*Consumption: Approx. 0.1 - 0.25 l / m² depends on absorbency of the surface.* | *P 200 005*<br>*P 200 015* | *5 l*<br>*15 l* |
| **KÖSTER Siloxan**  | *Façade hydrophobization for the protection of mineral building materials from water and driving rain. Sprayable, colorless after curing and open to water vapor diffusion.*<br><br>*Consumption: 0.2 - 1.0 l / m², depends on absorbency of the surface.* | *P 240 010* | *10 l* |
| **KÖSTER Silicone Paint White**  | *Ideal for use on restoration plasters. Diffusion open, matt silicone resin paint with a special water repelling effect.*<br><br>*Consumption: Approx. 0.2 l / m² per coat* | *P 260 010* | *10 l* |
| **KÖSTER Acrylic Paint**  | *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.*<br><br>*Consumption: Approx. 0.2 ltr / sqm per layer* | *P 262 015* | *15 l* |

| | Article No. | Packaging |
|---|---|---|
| KÖSTER MF 1 | P 280 012 | 12 kg |

*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 fungicial toxins.*

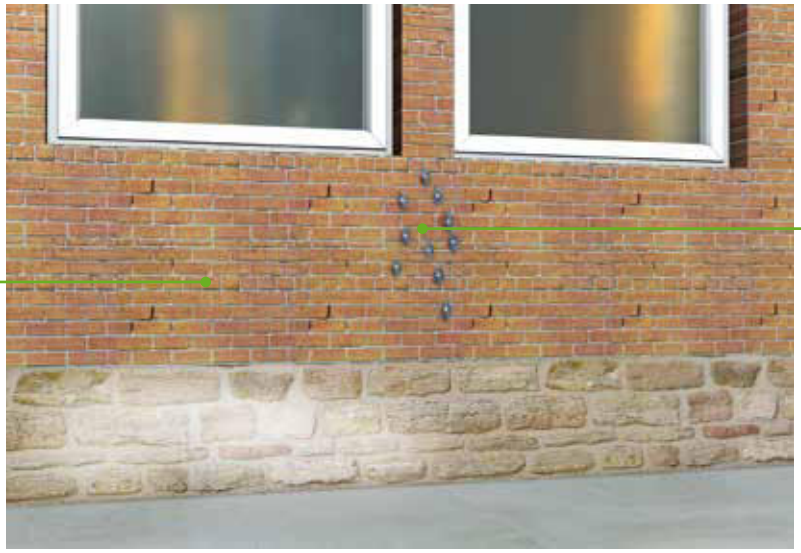
*Consumption: Approx. 1.6 kg / m² in 2 coats (per coat Approx. 0.8 kg / m²)*

# 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 or cementitious building materials, impregnations are used which make the surface water repellent. These hydrophobic 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.*

## Protecting façades made of mineral building materials



***Cleaner***

***(P 110) KÖSTER Façade Cleaning Cream***

***Surface protection***

***(P 200) KÖSTER Façade Cream***

***Alternatives***

***(P 240) KÖSTER Siloxan***

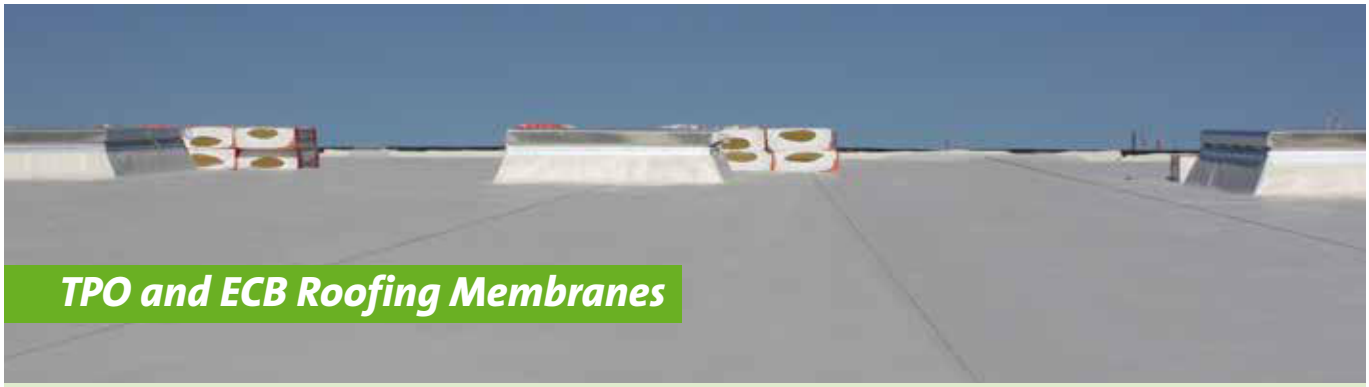
*KÖSTER façade protection systems prevent masonry and concrete from liquid water ingress (rain or splash water, condensate) but at the same time water vapor is still able to escape from the façade. That way long term moisture damage can be avoided.*

*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 Data Sheets.*



# R



# TPO and ECB Roofing Membranes

*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.*

| | | | |
|---|---|---|---|
| *m:* | *mechanical fastening* | *w:* | *white* |
| *l:* | *loose laying with ballast* | *fr:* | *improved flame-resistance* |
| *b:* | *full surface or strip adhesion* | *sk:* | *self-adehered* |
| *u:* | *unreinforced (homogenous) roofing membrane for creation of drainage and ventilation flanges, and corner reinforcements.* | | |

*Full surface adhesion*

*Mechanical fastening*

*Under ballast / green roofs*

*Complex geometries*

## Roofing membrane with embedded glass fleece

| Product name | Thickness | Width | Application | Article No. | Length |
|---|---|---|---|---|---|
| KÖSTER TPO 1.6 - 1.50 m | 1.6 mm | 1.50 m | m,l | RT 816 150 | 20 m |
| KÖSTER TPO 1.6 - 1.05 m | 1.6 mm | 1.05 m | m,l | RT 816 105 | 20 m |
| KÖSTER TPO 1.6 - 0.75 m | 1.6 mm | 0.75 m | m,l | RT 816 075 | 20 m |
| KÖSTER TPO 1.6 - 0.525 m | 1.6 mm | 0.525 m | m,l | RT 816 052 | 20 m |
| KÖSTER TPO 1.6 - 0.35 m | 1.6 mm | 0.35 m | m,l | RT 816 035 | 20 m |
| KÖSTER TPO 1.6 - 0.25 m | 1.6 mm | 0.25 m | m,l | RT 816 025 | 20 m |
| KÖSTER TPO 1.8 - 2.10 m | 1.8 mm | 2.10 m | m,l | RT 818 210 | 20 m |
| KÖSTER TPO 1.8 - 1.50 m | 1.8 mm | 1.50 m | m,l | RT 818 150 | 20 m |
| KÖSTER TPO 1.8 - 1.05 m | 1.8 mm | 1.05 m | m,l | RT 818 105 | 20 m |
| KÖSTER TPO 1.8 - 0.75 m | 1.8 mm | 0.75 m | m,l | RT 818 075 | 20 m |
| KÖSTER TPO 1.8 - 0.525 m | 1.8 mm | 0.525 m | m,l | RT 818 052 | 20 m |
| KÖSTER TPO 1.8 - 0.35 m | 1.8 mm | 0.35 m | m,l | RT 818 035 | 20 m |
| KÖSTER TPO 1.8 - 0.25 m | 1.8 mm | 0.25 m | m,l | RT 818 025 | 20 m |
| KÖSTER TPO 2.0 - 2.10 m | 2.0 mm | 2.10 m | m,l | RT 820 210 | 20 m |
| KÖSTER TPO 2.0 - 1.50 m | 2.0 mm | 1.50 m | m,l | RT 820 150 | 20 m |
| KÖSTER TPO 2.0 - 1.05 m | 2.0 mm | 1.05 m | m,l | RT 820 105 | 20 m |
| KÖSTER TPO 2.0 - 0.75 m | 2.0 mm | 0.75 m | m,l | RT 820 075 | 20 m |
| KÖSTER TPO 2.0 - 0.525 m | 2.0 mm | 0.525 m | m,l | RT 820 052 | 20 m |
| KÖSTER TPO 2.0 - 0.35 m | 2.0 mm | 0.35 m | m,l | RT 820 035 | 20 m |
| KÖSTER TPO 2.0 - 0.25 m | 2.0 mm | 0.25 m | m,l | RT 820 025 | 20 m |
| KÖSTER TPO 2.0 W - 1.50 m | 2.0 mm | 1.50 m | m,l | RT 820 150 W | 20 m |

## Roofing membrane with polyester fleece backing

| Product name | Thickness | Width | Application | Article No. | Length |
|---|---|---|---|---|---|
| KÖSTER TPO 2.0 F - 1.50 m | 2.0 mm | 1.50 m | m,l,b | RT 820 150 F | 20 m |
| KÖSTER TPO 2.0 F - 1.05 m | 2.0 mm | 1.05 m | m,l,b | RT 820 105 F | 20 m |
| KÖSTER TPO 2.0 F - 0.525 m | 2.0 mm | 0.525 m | m,l,b | RT 820 052 F | 20 m |
| KÖSTER TPO 2.0 F FR - 1.50 m | 2.0 mm | 1.50 m | m,l,b | RT 820 150 F FR | 20 m |
| KÖSTER TPO 2.0 F FR - 1.05 m | 2.0 mm | 1.05 m | m,l,b | RT 820 105 F FR | 20 m |
| KÖSTER TPO 2.0 F FR- 0.525 m | 2.0 mm | 0.525 m | m,l,b | RT 820 052 F FR | 20 m |
| KÖSTER TPO 2.0 F W - 1.50 m | 2.0 mm | 1.50 m | m,l,b | RT 820 150 F W | 20 m |

## Self-adhered TPO membrane with polyester fleece backing

| Product name | Thickness | Width | Application | Article No. | Length |
|---|---|---|---|---|---|
| KÖSTER TPO 1.5 SK FR - 1.05 m | 2.0 mm | 1.50 m | sk | RT 815 105 SK FR | 20 m |
| KÖSTER TPO 1.5 SK FR - 0.525 m | 2.0 mm | 0.525 m | sk | RT 815 052 SK FR | 20 m |

## Unreinforced, homogenous TPO membrane

| Product name | Thickness | Width | Application | Article No. | Length |
|---|---|---|---|---|---|
| KÖSTER TPO 2.0 U - 0.525 m | 2.0 mm | 0.525 m | u | RT 820 052 U | 20 m |

## ECB membrane with embedded glass fleece

| Product name | Thickness | Width | Application | Article No. | Length |
|---|---|---|---|---|---|
| KÖSTER ECB 2.0 - 2.10 m | 2.0 mm | 2.10 m | m,l | RE 820 210 | 20 m |
| KÖSTER ECB 2.0 - 1.50 m | 2.0 mm | 1.50 m | m,l | RE 820 150 | 20 m |
| KÖSTER ECB 2.0 - 1.05 m | 2.0 mm | 1.05 m | m,l | RE 820 105 | 20 m |
| KÖSTER ECB 2.0 - 0.75 m | 2.0 mm | 0.75 m | m,l | RE 820 075 | 20 m |
| KÖSTER ECB 2.0 - 0.525 m | 2.0 mm | 0.525 m | m,l | RE 820 052 | 20 m |
| KÖSTER ECB 2.0 - 0.35 m | 2.0 mm | 0.35 m | m,l | RE 820 035 | 20 m |
| KÖSTER ECB 2.0 - 0.25 m | 2.0 mm | 0.25 m | m,l | RE 820 025 | 20 m |

## ECB membrane with polyester fleece backing

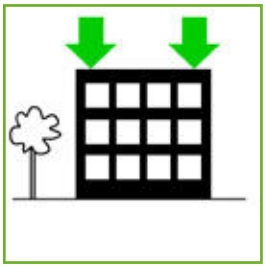
| Product name | Thickness | Width | Application | Article No. | Length |
|---|---|---|---|---|---|
| KÖSTER ECB 2.0 F - 2.10 m | 2.0 mm | 2.10 m | m,l,b | RE 820 210 F | 20 m |
| KÖSTER ECB 2.0 F - 1.50 m | 2.0 mm | 1.50 m | m,l,b | RE 820 150 F | 20 m |
| KÖSTER ECB 2.0 F - 1.05 m | 2.0 mm | 1.05 m | m,l,b | RE 820 105 F | 20 m |
| KÖSTER ECB 2.0 F - 0.525 m | 2.0 mm | 0.525 m | m,l,b | RE 820 052 F | 20 m |

## Unreinforced, homogenous ECB membrane

| Product name | Thickness | Width | Application | Article No. | Length |
|---|---|---|---|---|---|
| KÖSTER ECB 2.0 U - 0.525 m | 2.0 mm | 0.525 m | u | RE 820 052 U | 20 m |

*Product program of KÖSTER TPO / ECB Accessories available separately per request.*

# Roofing 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 mechanically fastened membranes

**KÖSTER TPO Membrane**

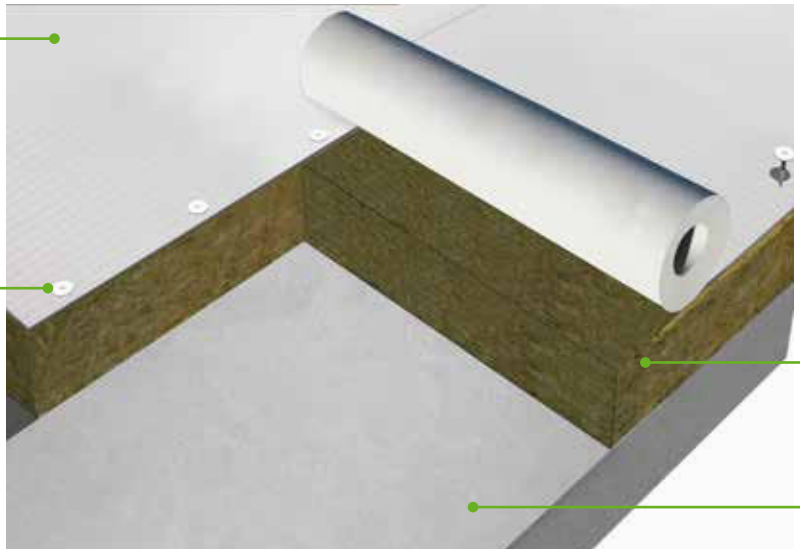
**(RT 820) KÖSTER TPO 2.0**

**Alternatives**

**(RT 816) KÖSTER TPO 1.6**
**(RT 818) KÖSTER TPO 1.8**
**(RE 820) KÖSTER ECB 2.0**

**Supporting construction**

**See KÖSTER TPO / ECB accessories product range**



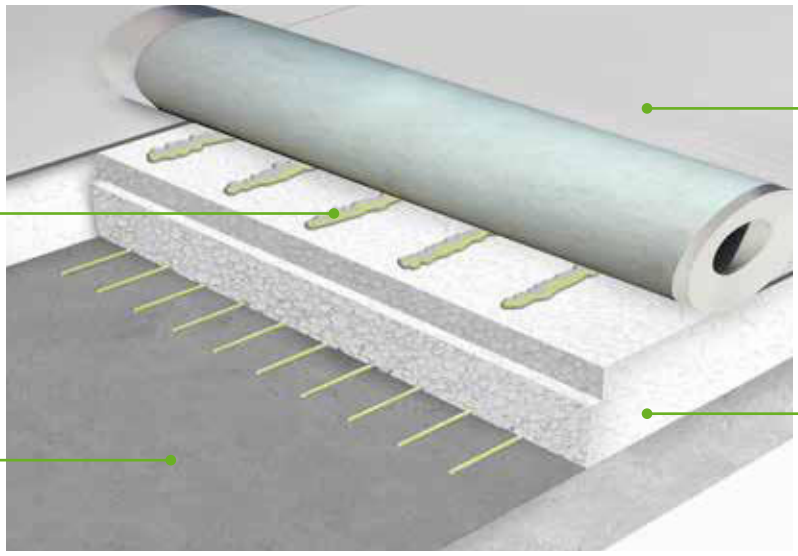
**Insulation**

**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.*

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

## Roof waterproofing with bonded membranes




*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 Polyurethane 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 Polyurethane membrane adhesive is applied in strips to the substrate, the fleececoated 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.*

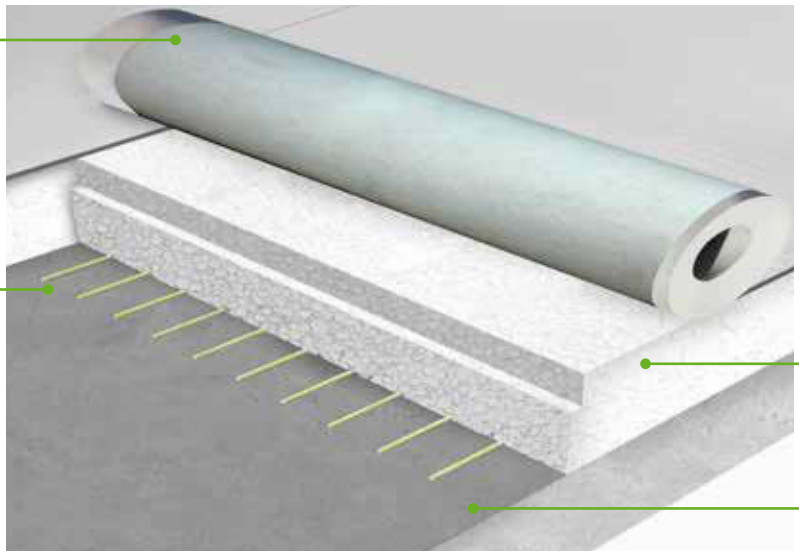
*Always adhere to the specifications in the respective Technical Data Sheets.*

## Roof waterproofing with loose-laid membranes (e. g. green roofs)


*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.*

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

## Roof waterproofing with self-adhered membranes




*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.*

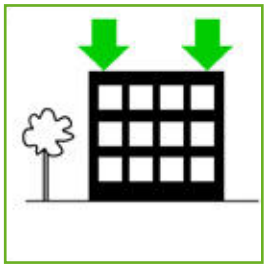
*KÖSTER TPO SK (FR) Roofing Membranes are plasticizer-free and are compatible with all insulation types.*

*KÖSTER TPO SK (FR) Roofing Membranes are classified as $B_{roof}$ (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.*

# Roof waterproofing

| | | Article No. | Packaging |
|---|---|---|---|
| **KÖSTER 21**  | *Multi purpose waterproofing with excellent adhesion to dry and moist substrates. 2 component, solvent-free, elastic, crack bridging material. It is liquid applied and therefore seamless, which eases application to complicated 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.*<br><br>*Consumption: Approx. 2.5 - 3.0 kg / m²* | *W 210 020* | *20 kg* |
| **KÖSTER Elastic Roof**  | *Elastic, crack bridging, solvent free waterproofing for dry and slightly damp substrates. It is free of Volatile Organic Compounds, free of Polyurethanes, and free of Isocyanates. The fast drying foil-like coating is highly flexible, watertight, and water vapor permeable. The coating is resistant against ageing, hydrolysis, UV-rays, frost, and de-icing salts. The white color reflects heat. The application is easy and seamless.*<br><br>*Consumption: Total consumption Approx. 1.25 to 1.5 kg / m² in two coats* | *R 238 015* | *15 kg* |
| **KÖSTER Dachflex**  | *Liquid applied, 1 component synthetic waterproofing for sloped roofs. KÖSTER Dachflex is a foil like coating, waterproof, water vapor permeable and can be colored. The material is highly elastic, quick drying, pasty, solvent-free and is also suitable for the repair of leaky flat roofs.*<br><br>*Consumption: Approx. 0.75 - 1.0 kg / m² per coating; Approx. 1.5 to 2.0 kg / m² total consumption.* | *R 260 020* | *20 kg* |
| **KÖSTER KSK Alu Strong**  | *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.* | *R 817 105 AS* | *10.5 m²* |

# 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.*

## Liquid applied roof waterproofing

**Fillet**
**(W 532) KÖSTER WP Mortar**

**Waterproofing layer**
**(W 238) KÖSTER Elastic Roof**
**(W 210) KÖSTER 21**

**Reinforcement layer**
**(W 450) KÖSTER Flex Fabric**

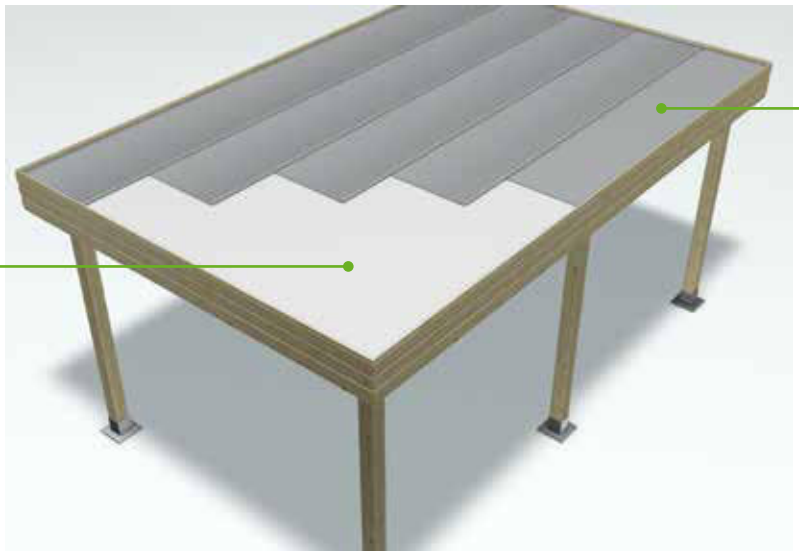
**Primer**
**(M 111) KÖSTER Polysil TG 500**

*Concrete roofs are often difficult to waterproof with membranes due to numerous penetrations and complex geometry. KÖSTER Elastic Roof is a liquid applied elastic waterproofing for roofs. It is UV resistant, white and crack bridging. The product does not contain solvents and allows an easy, seamless application.*

*KÖSTER Elastic Roof is directly applied onto the prepared concrete substrate by roller or spraying. It has very good adhesion to itself (important for overlapping and easy repair) and even damp substrates. Absorbent substrates are primed with KÖSTER Polysil TG 500.*

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

## Roof waterproofing with cold self-adhesive sealing membranes



**Waterproofing layer**

**(R 817) KÖSTER KSK ALU Strong**

**Primer**

**(W 245) KÖSTER KBE Liquid Film**

**Alternatives**

**(W 100) KÖSTER KSK Primer SP**

*Smaller roofs on non residential buildings can quickly and easily be waterproofed with the cold selfadhesive sealing membrane KÖSTER KSK Alu Strong. The clean and dry substrate is primed with KÖSTER KBE Liquid Film. KÖSTER KSK Alu 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 Data Sheets.*

# X Accessories

X

| | | Article No. | Packaging |
|---|---|---|---|
| **KÖSTER Universal Cleaner**  | *Solvent free cleaning agent for bituminous materials and epoxy resins.*<br><br>*Consumption: as needed* | *X 910 010* | *10 l* |
| **KÖSTER Drill Stirrer**  | *Special stirrer for mixing 2-component polymer modified bitumen thick film sealants, e.g. KÖSTER Deuxan 2C and KÖSTER Bikuthan 2C.*<br><br>*Round connector Ø 12 mm for chuck* | *X 911 001* | *Piece* |
| **KÖSTER Ring wrench**  | *For easy opening and closing of 10 l and 30 l jerrycans.* | *X 916 001* | *Piece* |
| **KÖSTER Diagnosis Case**  | *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 digitial hand scale. Also included with the case are work instructions, a notepad, and a pen for documentation.* | *X 919 001* | *Piece* |
| **KÖSTER Rubber Gloves**  | *Robust, smooth gloves for applying of KÖSTER waterproofing slurries.* | *X 920 001* | *Pair* |

| | | Article No. | Packaging |
|---|---|---|---|
| KÖSTER **Cleaning tissue**  | *For cleaning tools.* | *X 985 001* | *10 kg package* |
| KÖSTER **Spatula**  | *For the application of KÖSTER KB-Flex 200 Sealing Paste, etc.* | *X 986 001 (20 mm)*<br>*X 987 001 (50 mm)* | *Piece*<br>*Piece* |
| KÖSTER **Single Paddle Mixer**  | *Electric multi-purpose mixer for materials with low and high viscosity. 1300 Watt, 220 V, stageless adjustable. Delivered including mortar stirrer and disc stirrer.* | *X 991 001* | *Piece* |
| KÖSTER **Double Paddle Mixer**  | *Electric compulsory mixer, especially suitable for paste-like and highly viscous mortars, plasters, adhesives, bitumen, etc. 1400 Watt, 220 V, delivered including mortar stirrer.* | *X 992 001* | *Piece* |
| KÖSTER **Disc Stirrer**  | *For the KÖSTER Single Paddle Mixer. With ring, suitable for the mixing of self-levelling screeds, sealing slurries, injection mortars, etc.*<br><br>*Threaded M14 connector* | *X 996 001* | *Piece* |

| | | Article No. | Packaging |
|---|---|---|---|
| KÖSTER **Mortar Stirrer**  | *For the KÖSTER Single Paddle Mixer. Suitable for mixing thick and paste-like materials, restoration plasters, adhesives, mortars, tile adhesives, etc.*<br><br>*Threaded M14 connector* | *X 997 001* | *Piece* |
| KÖSTER **Mortar Stirrer Set**  | *For the KÖSTER Double Paddle Mixer. The set consists of one right-handed and one left-handed mortar stirrer.* | *X 998 001* | *Piece* |


# *Index*

IX

# *KÖSTER waterproofing products – guaranteed safe*

*Decades of experience and the high quality of our products has made us a reliable partner on the construction site. Our wide product range includes well-engineered, patented waterproofing products and systems for every possible problem with pressurized or non pressurized water.*

*Every KÖSTER product meets state of the art research and development and is subject to permanent product and quality control. Test certificates from numerous institutes confirm the high quality of our waterproofing materials.*

*KÖSTER waterproofing materials – quality you can rely on.*

# 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 withold 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 laterdate 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 remonstration.

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 acceptation 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 lealets 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 canwithdraw 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 productis 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 unimited 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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*For further information, please contact:*

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