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1 General information

1.1 Scope

This method statement is intended for use by developers, contractors, and applicators as a general guideline for the application of the waterproofing system KÖSTER KSK SY 15 membrane.

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

1.2 Manufacturer

KÖSTER BAUCHEMIE AG

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KÖSTER
Waterproofing Systems

1.3 Definitions

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

Cold self-adhesive: Cold self-adhesive membranes do not require hot air or propane gas welding, or special adhesives for application. The underside coating compound is designed to be laid on a suitable substrate after a separating film is removed.

Radon Gas: Radon is a naturally-occurring radioactive gas that can cause lung cancer. Radon gas is inert, colorless, and odorless. Radon is naturally in the atmosphere in trace amounts. Outdoors, radon disperses rapidly and, generally, is not a health issue. Most radon exposure occurs inside homes, schools, and workplaces. Radon gas becomes trapped indoors after it enters buildings through cracks and other holes in the foundation. Indoor radon can be controlled and managed with proven, cost-effective techniques.

Fillet: A concave easing of an interior corner. By employing fillets on points and lines of expected high stress, stress concentrations are reduced.

Crack-bridging: Crack-bridging waterproofing means that a waterproofing system remains intact even though the substrate has cracked.

Joints: Concrete structures are subjected to a variety of stresses. These stresses are the result of shrinkage and differential movement. Stresses in concrete can be controlled by the proper placement of joints in the structure.

2 System description

2.1 System features

The KÖSTER KSK SY 15 membrane consists of a highly tear-resistant, 2-layer cross laminated polyethylene foil with a plastic bitumen/rubber adhesive and sealing compound. It is cold applied and therefore no hot air or propane gas welding is required for application. Due to its high ductility, it can easily be applied to difficult details. The sealing membrane is highly flexible and immediately waterproof, it is resistant to driving rain and crack-bridging.

The KÖSTER KSK SY 15 membrane is suitable for waterproofing horizontal and vertical surfaces of structures according to DIN EN 18533 such as slab foundations, exterior basement walls, basement floors, balconies, terraces, etc. KÖSTER KSK SY 15 is also suitable for the protection against radon gas since the membrane is radon-proof.

2.1.1 Characteristics/Advantages

- Positive side waterproofing against pressurized water
- Cold applied, self-adhesive
- No hot air or propane gas welding required
- Immediate waterproofing effect
- Uniform waterproofing layer
- Highly flexible due to rubber-bitumen basis
- Crack-bridging
- Fast application due to the size of the membrane (1.05 m)
- Age resistant
- Radon-proof tested
- Vapor tight $\mu \leq 130,000$
- Reduced material and labor costs on site
- Self-sealing in case of small damage
- High seam resistance against water pressure and water vapor
- No need for use of external adhesive or mastics to ensure lap bonding or substrate adhesion
- Can be applied to all mineral substrates as well as plastic and metal
- Laminated on the top side with a high tear resistance foil
- The self-adhesive material on the overlap areas improves security
- Less time needed for installation as product is ready to use

2.2 Main products and components



KÖSTER KSK SY 15

Cold self adhesive bitumen membrane with HDPE top foil. Highly tear resistant membrane consisting of 2-layer cross laminated polyethylene foil with a plastic bitumen/rubber adhesive and sealing compound. The sealing membrane is highly flexible, immediately waterproof, resistant to driving rain, and crack bridging. KÖSTER KSK SY 15 is radon proof.

[See online](#)



KÖSTER KBE Liquid Film

Solvent-free, highly elastic bitumen/rubber-based sealing compound. For foundation waterproofing and intermediate waterproofing on horizontal areas such as terraces, balconies, wet and moist rooms (under screeds), as well as vertical areas such as ventilated facades with covering systems, for priming and for sealing the seams and edges of KÖSTER KSK waterproofing membranes in above and below ground construction, and garages.

[See online](#)



KÖSTER SD 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 the DIN EN 18533.
2. Decoupling of the waterproofing layer from any ground movement.
3. The hollow core leads seepage and backwater safely to the drainage. Measurements are 2 m x 15 m, 30 m².

[See online](#)



KÖSTER Wall connection profile 60 mm

Finishing and protecting profile, aluminum, length 3 m, perforated.

[See online](#)



KÖSTER Repair Mortar Plus

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.

[See online](#)



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. It is 1.5 mm thick with a separating backing paper on the bottom side. The material is highly tear resistant, immediately waterproof and can be plastered over due to its fleece-laminated upper side.

[See online](#)

2.3 Associated products



KÖSTER Butyl
Fix-Tape Fleece

[See online](#)



KÖSTER KBE
Liquid Film

[See online](#)



KÖSTER KSK ALU 15

[See online](#)



KÖSTER KSK Primer BL

[See online](#)



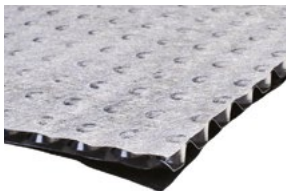
KÖSTER Repair Mortar

[See online](#)



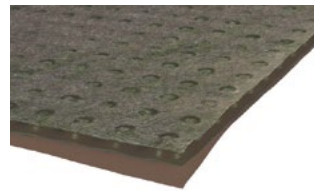
KÖSTER Roofing Nails

[See online](#)



KÖSTER SD Protection
and Drainage Sheet 3-250

[See online](#)



KÖSTER SD Protection
and Drainage Sheet 3-400

[See online](#)



KÖSTER Universal
Cleaner

[See online](#)



Leister Hand pressure
roller 40 mm

[See online](#)

2.4 Associated literature

- [Abdichtungsreport 2-2005 \[GERMAN\]](#) [↗](#)
- [Technical contribution: Waterproofing against Radon \[GERMAN\]](#) [↗](#)
- [KÖSTER Product Flyer: KSK Membranes](#) [↗](#)
- [System brochure: External Basement Waterproofing](#) [↗](#)
- [Product Declaration of Performance: KÖSTER KSK SY 15](#) [↗](#)
- [Installation Instructions: KÖSTER KSK Membranes](#) [↗](#)

3 Tools and Equipment

3.1 Tools



Measuring tool



Cutter



Leister Hand pressure roller 40 mm



Hammer



Rounded trowel



Trowel



Brush or roller for applying the primer



Roofing nails

3.2 Cleaning

Clean all tools immediately after use with KÖSTER Universal Cleaner. It is a solvent free cleaning agent for bituminous materials.

4 Environmental, health and safety

4.1 Personal Protection Equipment (PPE)

The following is a short overview of Personal Protective Equipment and serve only as a guideline. Contractors and Employers are responsible for meeting the occu-

pational safety guidelines in their countries, states, and localities.



Eye protection

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

Head protection

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

Foot and Leg Protection

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

Hand Protection

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

Hearing protection

Suitable hearing protection must be provided for the job environment.

4.2 Material safety & First Aid

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

After contact with skin:

If on skin wash with plenty of soap and water.

4.3 Waste disposal

Disposal recommendations

Dispose of waste according to applicable legislation.

List of Wastes Code - residues/unused products (050117)

WASTES FROM PETROLEUM REFINING, NATURAL GAS PURIFICATION AND PYROLYTI TREATMENT OF COAL;
wastes from petroleum refining; Bitumen

Contaminated packaging

Completely emptied packages can be recycled.

List of Wastes Code - used product (050117)

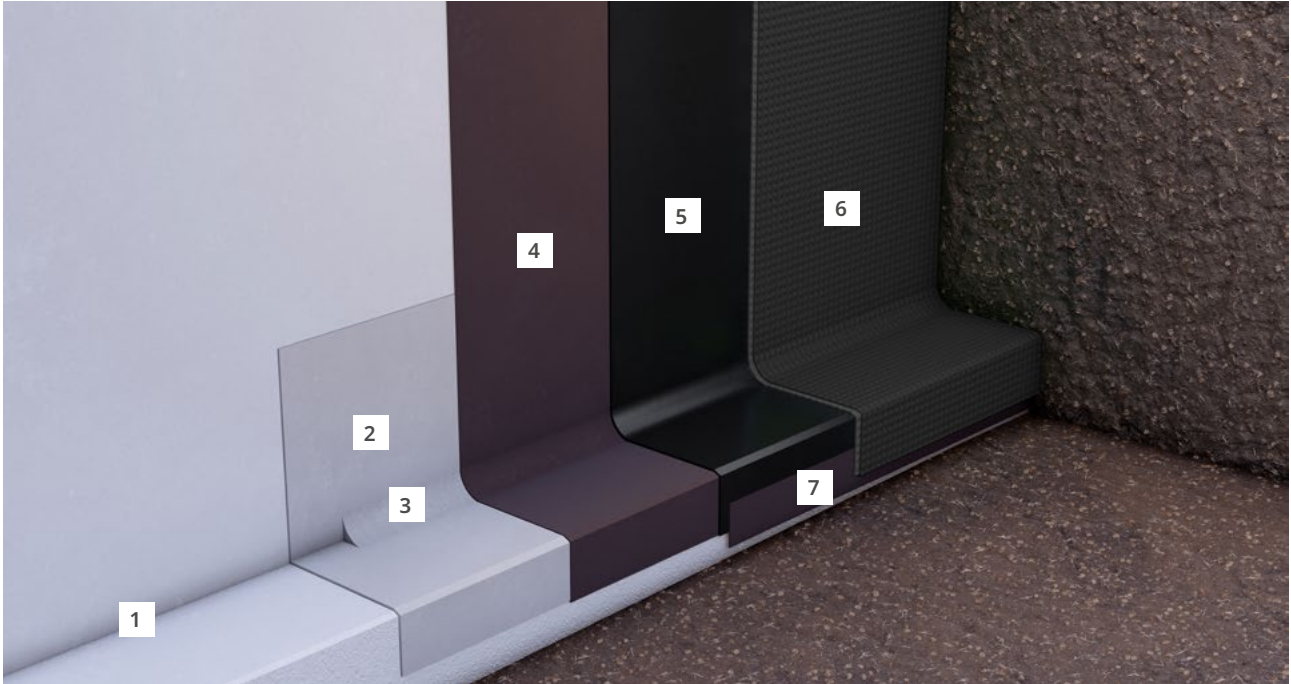
WASTES FROM PETROLEUM REFINING, NATURAL GAS PURIFICATION AND PYROLYTIC TREATMENT OF COAL;
wastes from petroleum refining; Bitumen

5 Fields of application

5.1 General examples

- Slab foundations
- Structural members
- Vertical retaining walls
- Internal basement slabs
- External basement walls
- Pile heads
- Bridges
- Balconies
- Terraces

5.2 Example: External basement waterproofing



- | | |
|------------------------------------------|-----------------------------------------------|
| 1. Joint sealing (embedded in the wall): | KÖSTER Quellband |
| 2. Preparing wall/floor junction: | KÖSTER NB 1 Grey |
| 3. Installing fillets: | KÖSTER Repair Mortar Plus |
| 4. Primer: | KÖSTER KBE Liquid Film |
| 5. Waterproofing layer: | KÖSTER KSK SY 15 |
| 6. Protection of the waterproofing layer | KÖSTER SD Protection and Drainage Sheet 3-400 |
| 7. Waterproofing membranes ending | KÖSTER KBE Liquid Film |

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 Plus are installed in interior corners.

Apply a primer coat of KÖSTER KBE Liquid Film on clean, solid substrates.

Pipe penetrations are sealed using flanges cut to size from KÖSTER KSK SY 15.

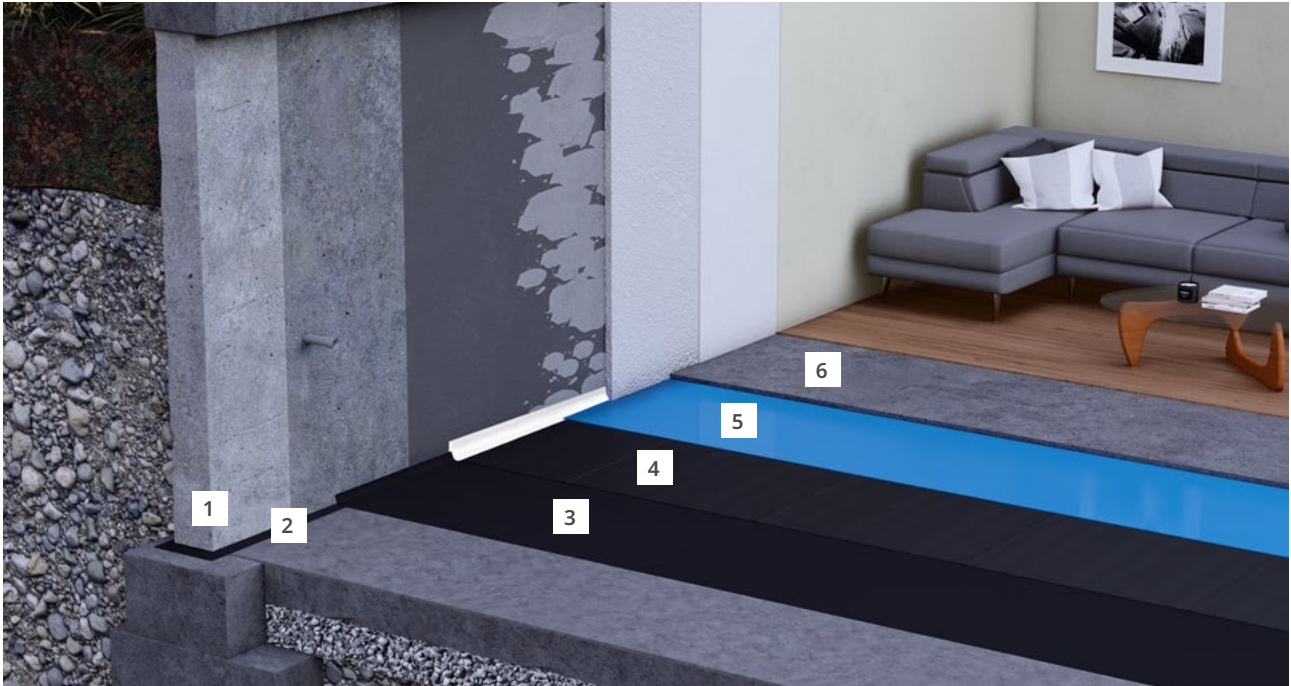
The actual area waterproofing is generally done with KÖSTER KSK SY 15. It is applied crease free to the substrate. The membranes are overlapped 8 cm.

Details, corners and connections are made according to the directions on the packaging and according to the Technical Guidelines, and these areas are covered with KÖSTER KBE Liquid Film.

On vertical areas the top edge is mechanically fastened and these fasteners are also coated with KÖSTER KBE Liquid Film.

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

5.3 Example: Internal basement waterproofing of slab foundation



- | | |
|----------------------------------------|------------------------------------|
| 1. Joint sealing (underneath the wall) | KÖSTER NB 1 |
| 2. Installing fillets: | KÖSTER Repair Mortar Plus |
| 3. Primer: | KÖSTER KBE Liquid Film |
| 4. Waterproofing Layer: | KÖSTER KSK SY 15 |
| 5. Protection layer (PE foil): | Customary PE-foil |
| 6. Finish layer: | Concrete screed or flooring system |

Installation process:

Apply a joint sealing layer underneath the wall using a single coat of the KÖSTER NB 1.

Install the fillets using the KÖSTER Repair Mortar Plus.

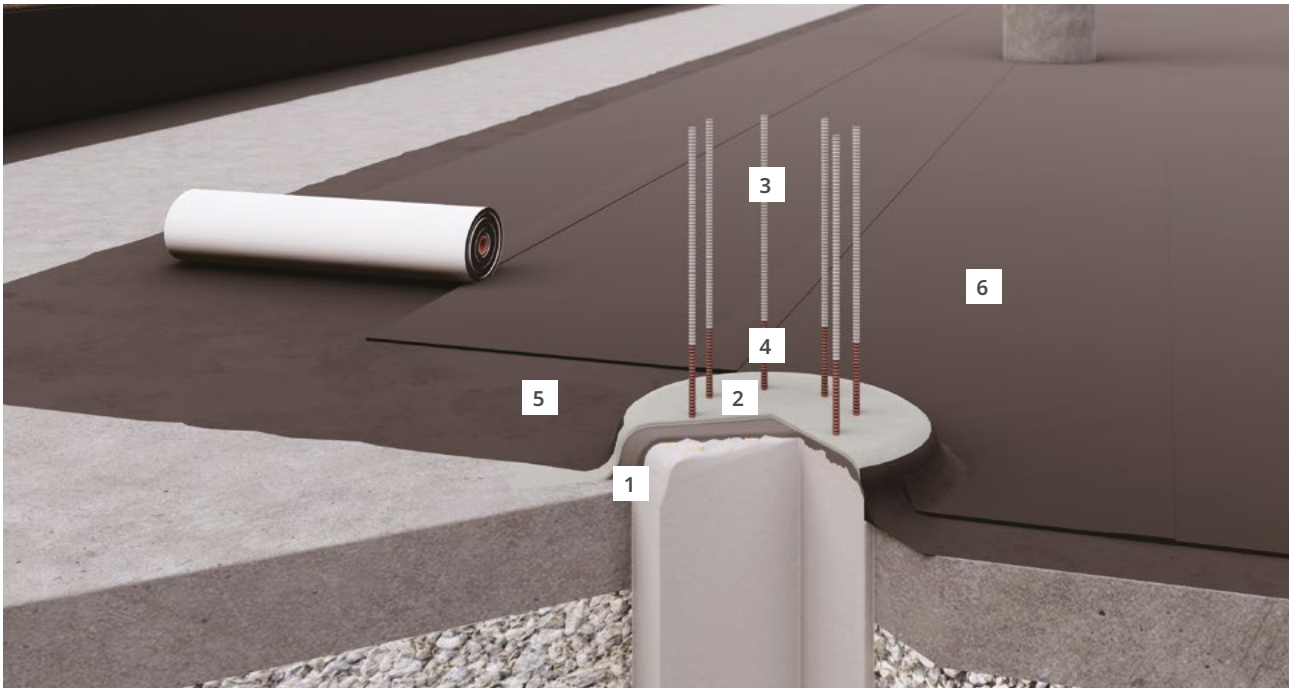
The primer is done by the KÖSTER KBE Liquid Film.

As a standard, the primed surface of the floor slab is waterproofed with the cold applied, self-adhesive waterproofing membrane KÖSTER KSK SY 15. Overlap the joints 8 cm.

The waterproofing layer is carried up the wall and secured with the KÖSTER Butyl Fix-Tape Fleece.

The applied KÖSTER KSK SY 15 have to be protected from mechanical damage as work continues. Before pouring the screed or self-leveling underlayment, a gliding layer of customary PE-Foil is applied.

5.4 Example: Pile head waterproofing



- | | |
|--------------------------|-------------------------|
| 1. Reprofiling: | KÖSTER Repair Mortar R4 |
| 2. Waterproofing layer: | KÖSTER NB 1 Grey |
| 3. Corrosion protection: | KÖSTER Z 1 |
| 4. Corrosion protection: | KÖSTER Z 2 |
| 5. Primer: | KÖSTER KBE Liquid Film |
| 6. Waterproofing layer: | KÖSTER KSK SY 15 |

Installation process:

At first, all non-load bearing materials and separating substances have to be removed from the surface of the pile head. After that, the surface has to be levelled and reprofiled with KÖSTER Repair Mortar R4.

This reprofiling must also include the installation of a fillet adjacent to the pile head. KÖSTER NB 1 Grey is used to waterproof the pile head.

Mineral corrosion protection for the steel reinforcement bars is carried out with a first layer of the polymer modified special slurry KÖSTER Z 1 and a second layer of KÖSTER Z 2. KÖSTER Z 2 is red pigmented and allows a visual control of the application.

KÖSTER KBE Liquid Film is applied as primer on the entire surface as well as on all overlaps around the pile head.

The waterproofing on top of the blinding slab is made with KÖSTER KSK SY 15.

Protect the waterproofing layer from mechanical damage when continuing with the application.

6 Substrate preparation

6.1 Project site conditions

6.1.1 Application temperature

Do not apply bituminous and cementitious waterproofing to unprotected surfaces in wet weather or to surfaces on which ice, frost, or water is visible. Do not apply KÖSTER KSK SY 15 membrane when the temperature is lower than +5 °C or expected to fall below this temperature within 24 hours from the time of application.

6.1.2 Moisture content in substrate

The substrate must be clean, dry, even, and without sharp corners, ridges, gaps, or voids.

6.1.3 Relative humidity

The relative humidity should not exceed 95 % as it may affect the final results and installation process.

6.1.4 Rain and frost

The KÖSTER KSK SY 15 must not be exposed to mist, rain, intense heat, snow, frost, and strong wind during the installation.

6.2 Requirements

The mineral substrate has to be sound and solid as well as free of bonding inhibiting agents such as grease or oil. Remove all bond breaking substances such as loose particles, dust etc.

The substrate must be open pored in case of using KÖSTER KBE Liquid Film on a concrete surface for non absorbative surfaces such as steel substrates. The KÖSTER KSK SY 15 can be adhered immediately to the substrate without using the primer.

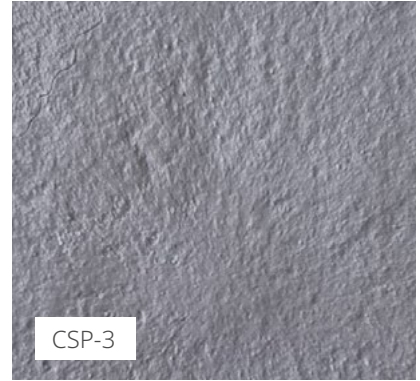
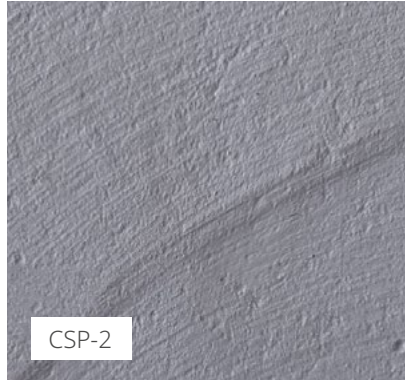
The surface has to be free from gaps, holes, large break-outs, nests and ridges. It must be also leveled and free from protrusions and sharp edges, any sharp objects or nails must be completely removed from the surface before installing the KÖSTER KSK SY 15.

6.3 Surface preparations

6.3.1 Concrete surfaces

Concrete surfaces must be prepared accordingly. The surface roughness must present a structure corresponding to a Concrete Surface Profile from CSP-1, CSP-2, CSP-3, CSP-4 to CSP-5; according to the guidelines by the International Concrete Repair Institute (ICRI). The surface

must then be intensively cleaned prior to the installation. According to the standard, a primer is not absolutely necessary in the floor area. Adhere membranes only after complete drying of the primer.



Grinding

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



High-pressure water blasting

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



Sandblasting or shotblasting

Suitable for creating a CSP-2 to CSP-8.

6.3.2 Masonry

Masonry walls must be mechanically cleaned and freed from efflorescence prior to the application of the KÖSTER KSK SY 15. Uneven brick or block work must be first rendered flush with KÖSTER Repair Mortar Plus enhanced with KÖSTER SB-Bonding Emulsion.

6.3.3 Wood

Wooden substrates must be dry, clean, and free from dust, oil, grease, and any other pollutants. The Substrate must be primed with KÖSTER KBE Liquid Film, prior the installation of the KÖSTER KSK SY 15.

6.3.4 Steel

Steel substrates must be cleaned and freed from dust, oil, grease, and any other pollutants. Steel surfaces must be free of rust. In case of rusted areas, abrade the surface until reaching a grade ISO SA 2 ½, then prime with the KÖSTER KBE Liquid Film before installing the KÖSTER KSK SY 15.



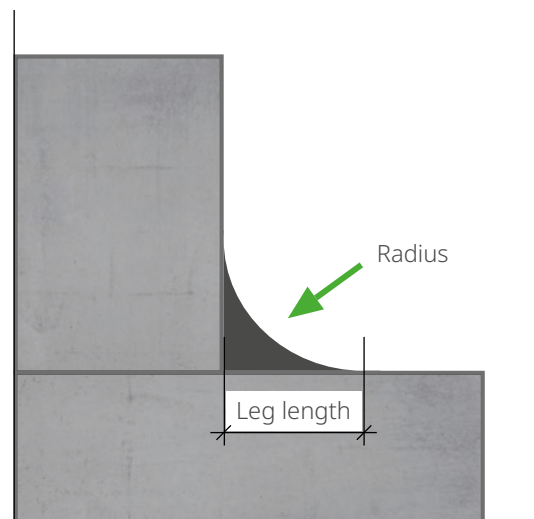
6.4 Levelling and repairing the surface

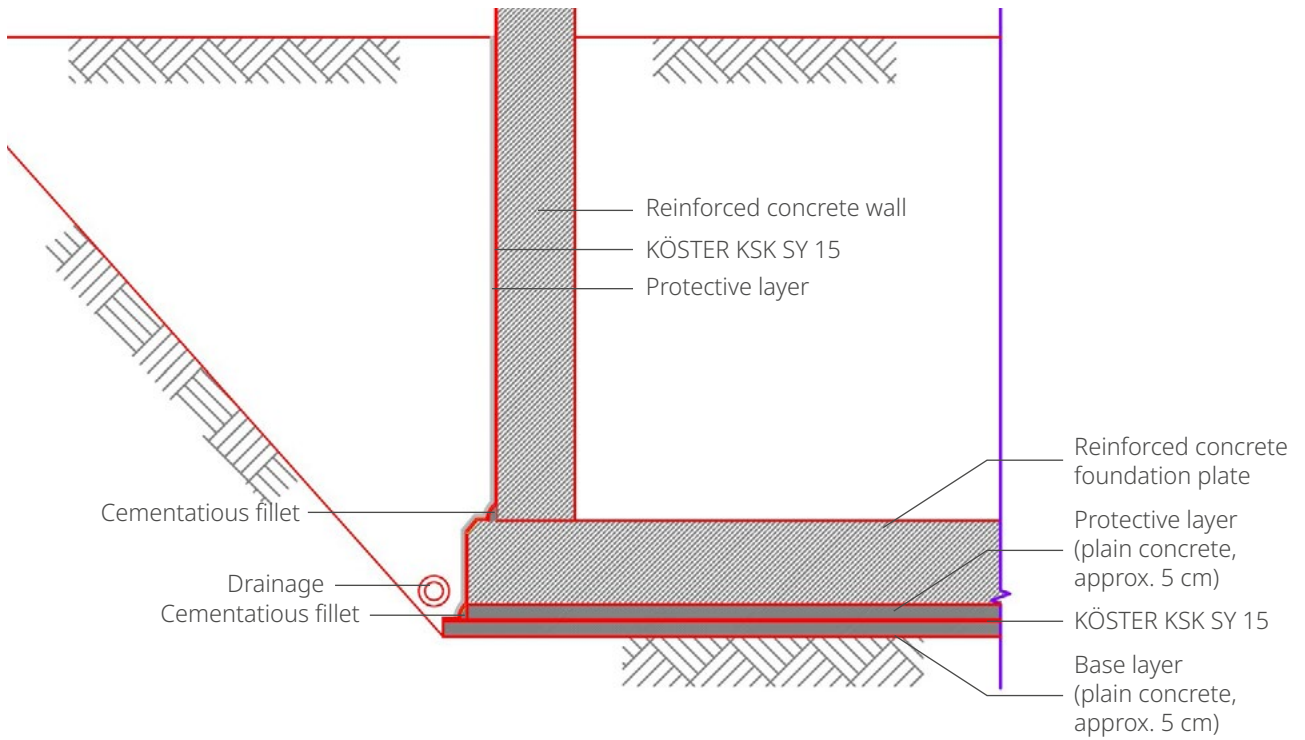
Honeycombed areas, cavities, recesses and chipped out areas, as well as all holes or irregularities wider or deeper than 5 mm have to be filled with KÖSTER Repair Mortar Plus enhanced with KÖSTER SB-Bonding Emulsion before applying KÖSTER KSK SY 15.

6.5 Corners and fillets

All sharp corners and edges are to be rounded to a radius of approx. 6 cm. On interior corners, a fillet must be installed to reduce stress concentrations in the walls, and therefore in the coating. In the transition from horizontal to vertical waterproofing and on foundation skirtings, a

fillet with a leg length of 4 - 6 cm made of e.g., KÖSTER Repair Mortar must be installed and allowed to harden before applying the primer (minimum waiting time: 24 hours).





6.6 Priming the substrate

Cementitious fillets must have dried completely before primers are applied.

As a primer a thin coat of KÖSTER KBE Liquid Film mixed 1:1 with water is applied to the substrate (Consumption: approx. 200 g/m²). Alternatively, KÖSTER Primer BL undiluted (Consumption approx. 150 g/m²), or KÖSTER Bitumen Primer (Consumption approx. 150-200 g/m²) on old bituminous layers; but a preliminary test is required.

In the case of rough or strongly absorbent substrates, up to double the amount may be required. The priming layer must be allowed to dry completely.

Depending on local standards, in the floor area, a primer may be optional. Apply the membrane, preferably on the same day.

When bonding the membranes onto the substrate on the same day on which the primer was applied, check and make sure that no condensate has formed on the surface and that the primer is totally dry.

Bonding the membranes too early onto a surface that was primed with a solvent-containing primer which has



7 Application/Installation instructions

7.1 Cutting and preparing

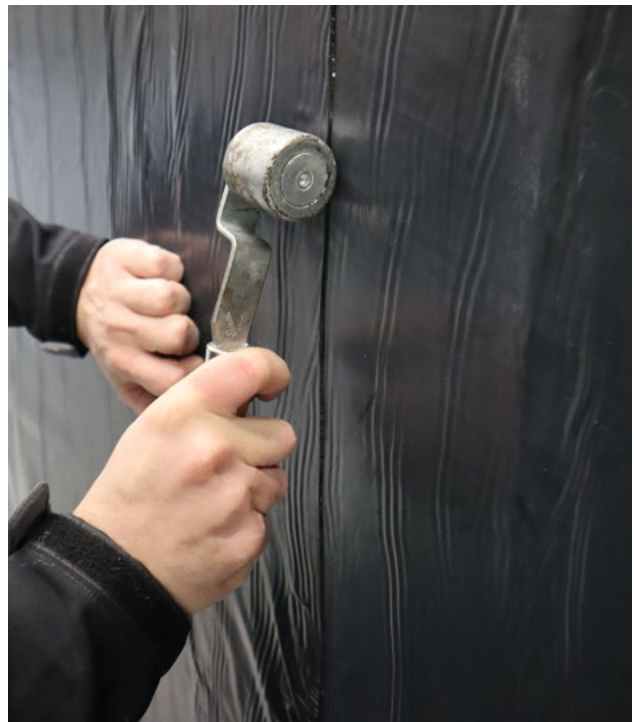


Cut the KÖSTER KSK SY 15 using a sharp knife. Cut on top of a wooden board and use a straight edge as cutting support. Wet the blade repeatedly to avoid soiling the blade with bitumen.

Pull the backing paper off on a length of 20 cm through underneath the roll, and bond the exposed adhesive side of the membrane to the substrate. Continue to pull off the backing paper evenly when progressing to bond the KÖSTER KSK SY 15 to the substrate without folds and without enclosures of air. The membranes are placed so that the edges on longitudinal and transverse seams overlap by min. 8 cm and at connections and details 10 cm.

Use the Leister Hand Pressure Roller 40 mm on the overlaps and edge areas to firmly press the membranes onto the substrate.

When used for sealing in and under walls, the overlap must be at least 20 cm.

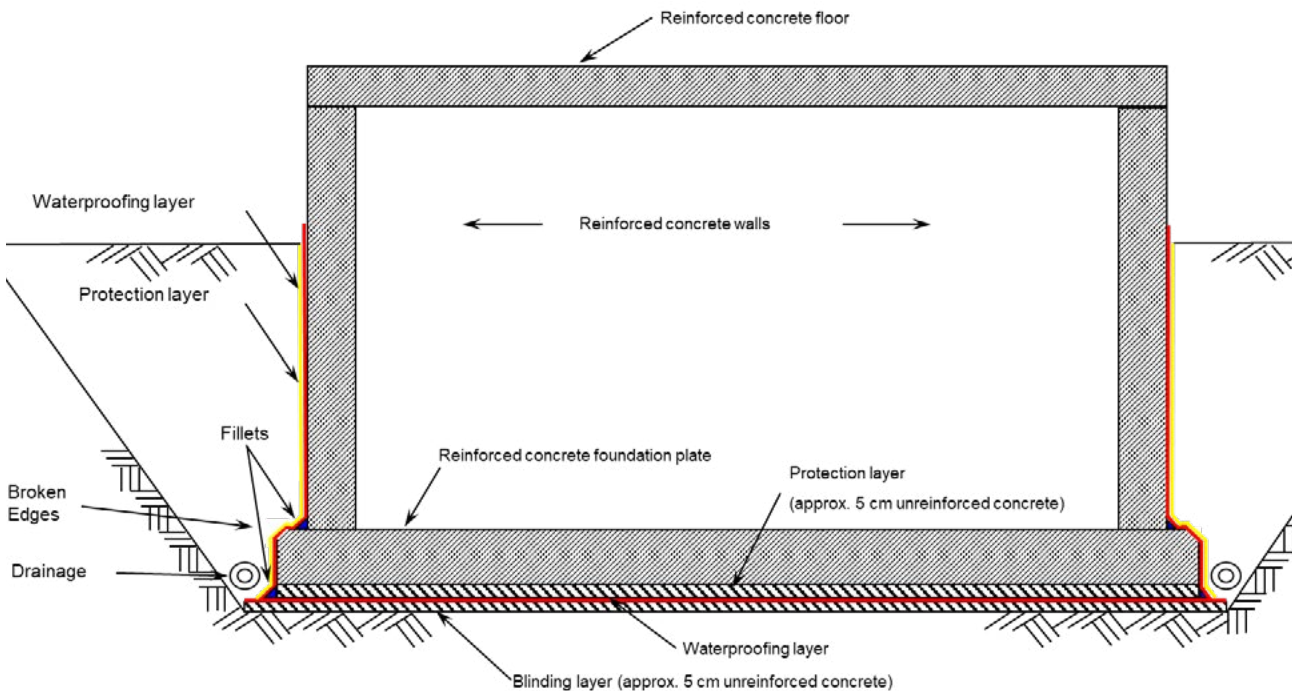


7.2 Installation techniques

7.2.1 Installation on concrete or mineral substrates

It is necessary to prepare the substrate correctly to achieve guaranteed durability. Edges must be rounded with appropriate tools and the surface of the walls must be intensively cleaned of any adhesion inhibiting substances. Surface roughness must be leveled or smoothed accordingly. Level surfaces (i.e., voids and any irregularities, blowholes, or breakouts) with KÖSTER Repair Mortar Plus or KÖSTER Repair Mortar with the addition of a maximum of 30 % KÖSTER SB Bonding Emulsion added to the mixing water. Install fillets made from KÖSTER Repair Mortar Plus at the wall/floor junctions and respectively

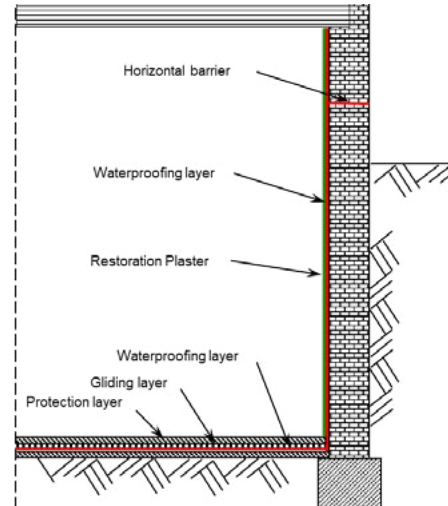
blinding layer/floor or at inside corners, (rounded fillets with leg length of 4-6 cm). Moving joints must be sealed with KÖSTER Joint Sealant FS or KÖSTER Joint Tape 20/30 using KÖSTER KB-Pox Adhesive. Prime the surface with KÖSTER KBE Liquid Film. Apply an undiluted thin layer of primer over walls and exterior surfaces including fillets and foundation. An adhesion check is required to check if the substrate has reached the required adhesion level. Finally apply the KÖSTER KSK SY 15 as described in the following sections.



Example: New Construction

7.2.2 Installation on an old substrate

In the presence of old substrate, imperfections in old surfaces must be smoothed. Prime the restored substrate completely with KÖSTER Bitumen Primer and allow adequate drying time. Alternatively, KÖSTER KBE Liquid Film can be used as a primer. An adhesion check is required to check if the substrate has reached the required adhesion level.



7.2.3 Horizontal areas



On top of the fillet, an approximately 30 cm wide strip is applied as corner reinforcement. Apply the horizontal layers on top of the strip.

Roll out membranes or pre-cut pieces in the required length, remove approx. 30-50 cm of the backing paper at the beginning of the membrane and press the exposed adhesive layer onto the substrate beginning from the middle. Avoid trapping air and creating folds. Pull the backing paper through from under the roll and pull it off while unrolling the membrane. Firmly press the applied membranes onto the substrate.

Use the Leister Hand Pressure Roller 40 mm on the overlaps and edge areas. Overlap the membranes a minimum of 8 cm (according to German standards, national and local guidelines may vary).

Connections to metal can be achieved using a strip of KÖSTER Fix-Tape 10 ALU or KÖSTER Fix-Tape 15. All inside corners are to receive a fillet.

The KÖSTER KSK SY 15 must then be protected from UV radiation and weather using the appropriate protection according to site conditions.

Horizontal areas must be covered within two weeks of their application. Protection layers against mechanical damage can be a concrete screed, a geotextile layer. A high density polyethylene foil (PE-HD) can also be applied loose laid upon the KÖSTER KSK SY 15.



7.2.4 Vertical areas



Roll out membranes or pre-cut pieces in the required length, remove approx. 30-50 cm of the backing paper at the beginning of the membrane and press the exposed adhesive layer onto the substrate beginning from the middle. Avoid trapping air and creating folds. Pull the backing paper through from under the roll and pull it off while unrolling the membrane. Firmly press the applied membranes onto the substrate.

Use the Leister Hand Pressure Roller 40 mm on the overlaps and edge areas. Overlap the membranes a minimum of 8 cm (according to German standards, national and local guidelines may vary).

Connections to metal can be achieved using a strip of KÖSTER Fix-Tape 10 ALU or KÖSTER Fix-Tape 15. Connections to vertical interior walls are made with KÖSTER Butyl Fix-Tape Fleece to act as a plaster base. All inside corners are to receive a fillet.



The KÖSTER KSK SY 15 must then be protected from UV radiation and weather using the appropriate protection according to site conditions.

Install the vertical KÖSTER KSK SY 15 from top to bottom fully bonded to the surface. Make sure that the vertically installed membranes overlap with the horizontal membranes. This connection has to be protected with KÖSTER KBE Liquid Film.

Vertical areas must be covered within two weeks of their application. Protection layers against mechanical damage such as the KÖSTER Protection and Drainage Sheet 3-400 are to be adhered to the KÖSTER KSK SY 15.

Securing the upper and lower edges of the membrane as well as securing the external and internal corners is an essential step that must be made to protect the membrane, as will be explained in the following sections.



7.2.5 Fastening and sealing the upper edge of the membrane

The upper edges of the membrane must be fixed and totally sealed to avoid unwanted slipping and water infiltration from behind the membranes. To secure the upper edges, a system from the following can be applied:

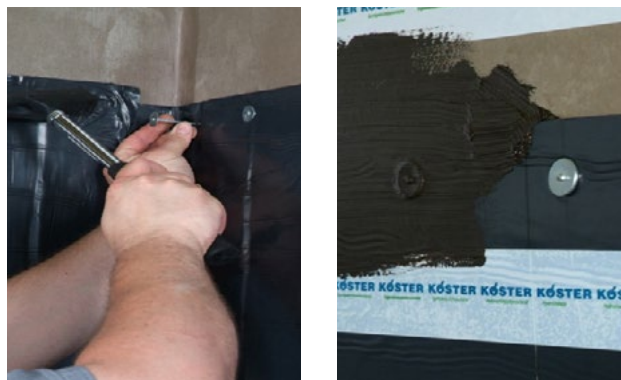
7.2.5.1 Using the KÖSTER Fix-Tape Fleece

Adhere the membrane to the wall. Afterwards, seal the upper edge with KÖSTER Fix-Tape Fleece. It is a self-adhesive tape, to be adhered directly to cover the area between the upper edge of the membrane and the wall above. The KÖSTER Fix-Tape can be plastered over.



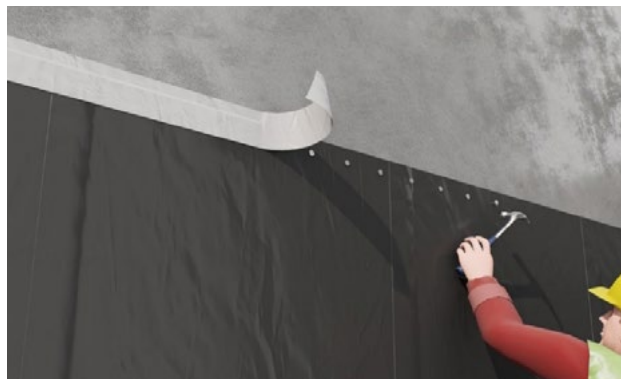
7.2.5.2 Using headed nails and KÖSTER KBE Liquid Film

Use large headed nails to fix the membrane in position. Roofing nails are not applicable for concrete substrates and very massive structures. Afterwards, cover the nails with a thick coat of KÖSTER KBE Liquid Film.



7.2.5.3 Using headed nails and KÖSTER Fix-Tape Fleece

Use large headed nails (KÖSTER Roofing Nails) to fix the membrane in position. Afterwards cover the nails with KÖSTER Fix-Tape Fleece. The KÖSTER Fix-Tape Fleece is adhered to the area between the nails and the wall above the membrane.



7.2.5.4 Using pre-perforated metal profiles

Use pre-perforated metal profiles like KÖSTER Wall Connection profile 60 mm for fixing the upper edge of the KÖSTER KSK SY 15 in position.



7.2.6 Fastening and sealing the lower edge of the membrane

For the lower edge, seal it with KÖSTER KBE Liquid Film.



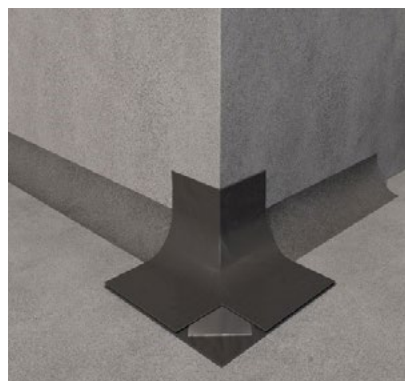
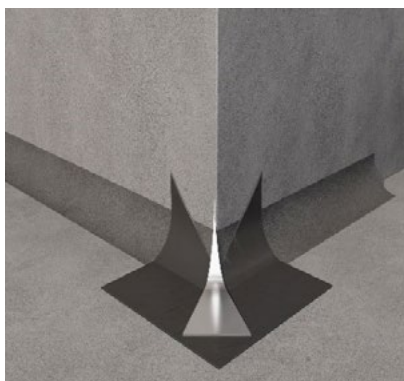
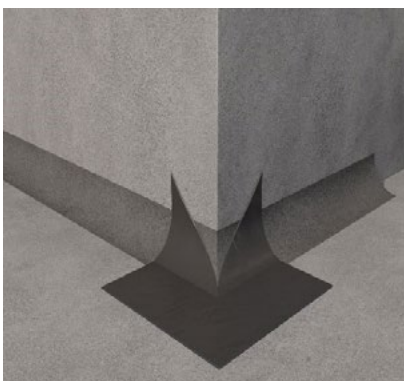
7.2.7 Securing corners with KÖSTER KSK SY 15

For the lower edge, seal it with KÖSTER KBE Liquid Film.

7.2.7.1 External corners

First adhere a diagonally cut piece of membrane to the substrate in the corner. Then adhere a triangular shaped piece of membrane onto the corner with the tip pointing

upwards. Finally apply a piece of membrane cut on the side as shown. Finished details are then leveled off with KÖSTER KBE Liquid Film.



Diagonal cut



Triangular cut

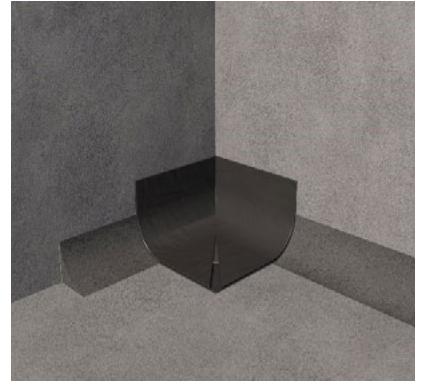
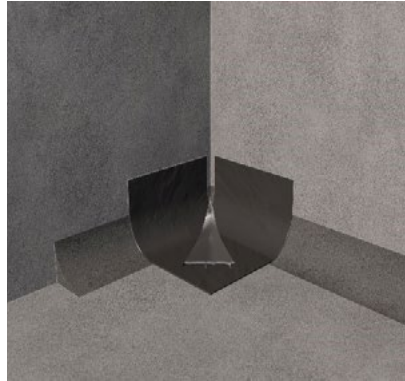
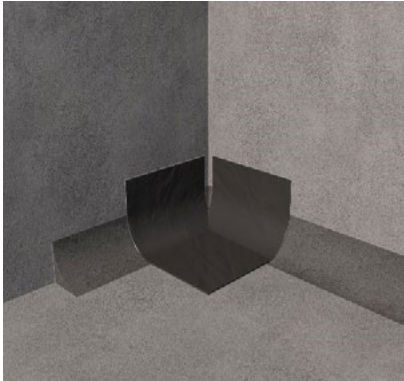


Side cut

7.2.7.2 Internal corners

First, adhere a piece of membrane with the square shaped cut out to the substrate in the corner. Then adhere a triangular shaped piece of membrane onto the corner with the tip pointing upward. Finally, apply a

piece of membrane with the triangular shaped cut out as shown. Finished details are then leveled off with KÖSTER KBE Liquid Film.



Square cut



Triangular cut



Triangular square cut

7.3 The KÖSTER waterproofing method for foundations

7.3.1 Horizontal waterproofing

Before commencing the concrete foundation work, it is essential to complete the assembly of the concrete forms. Apply the KÖSTER Fix-Tape 15 SY waterproofing

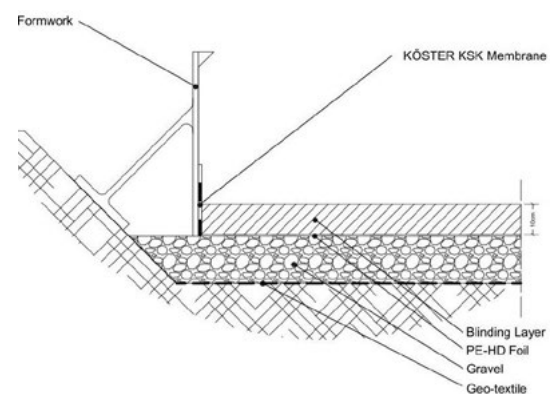
membrane strip with a width of 200 mm with the protective paper facing inward onto the assembled concrete formwork.



Install concrete blinding layer (approx. 8-10 cm thickness)



Once the concrete has hardened, apply a primer to the horizontal surface above the blinding layer in the adjacent area to the formwork, then adhere the membrane strip to the horizontal surface using either KÖSTER Primer BL or KÖSTER KBE Liquid Film.



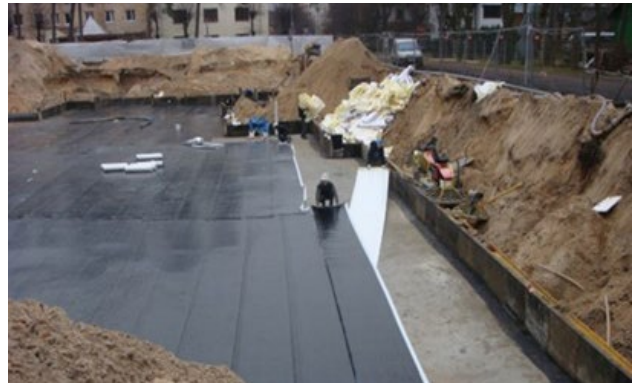
Once the bitumen primer has dried, peel off the protective paper from the KÖSTER Fix Tape and fold it onto the primed concrete surface. Complete the horizontal water-



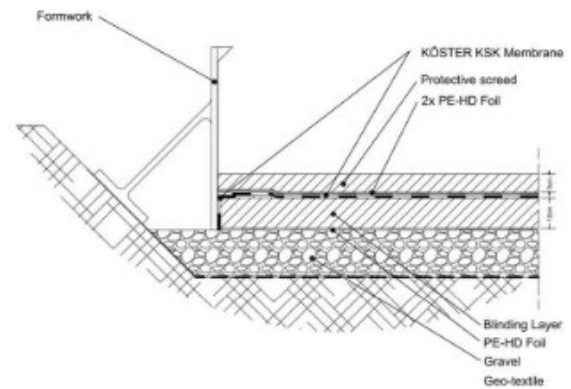
Use a Leister Hand Pressure Roller 40 mm to firmly press down on all overlapping areas of the membranes. Protect the KÖSTER KSK SY 15 membrane by covering it



proofing by applying the KÖSTER KSK SY 15 membrane across the entire area.



with a concrete layer of 30-50mm thickness, or by applying two layers of PE-HD foils.



7.3.2 Vertical waterproofing

Once the concrete frames are dismantled, the area where the KÖSTER KSK SY 15 membrane will be installed is exposed. Prepare the surface of the concrete walls by using a water jet with a minimum of 300 bar to remove



frame oil, dust, and any weakened concrete. Repair the concrete surface where necessary and install the fillet using KÖSTER Repair Mortar Plus.



Apply a primer to the concrete surface using KÖSTER KBE Liquid Film or KÖSTER Primer BL.



On the vertical primed concrete walls, install the, KÖSTER KSK SY 15 waterproofing membrane. Cut the membrane to the necessary length beforehand. Peel off the protective paper and firmly press the membrane onto the substrate. Ensure to overlap the edge of the previously installed membrane by at least 8 cm.



Use a Leister Hand Pressure Roller 40 mm to firmly press together all overlapping areas of the membranes.

To prevent water infiltration behind the membrane, seal all exposed edges of the waterproofing layers, as well as around pipe penetrations and other junctions and endings, with KÖSTER KBE Liquid Film.

Protect the KÖSTER KSK SY 15 membrane using KÖSTER Protection and Drainage Sheet 3-400 to safeguard against damage during backfilling. XPS sheets can also be used for protection. Once the KÖSTER KBE Liquid Film has fully cured, the construction pit should be promptly backfilled.

To securely fasten and seal the upper edge of the membrane, preventing slipping and water infiltration, utilize one of the following methods: Seal the upper edge with KÖSTER Fix-Tape Fleece, a self-adhesive tape applied directly to cover the area between the upper edge of the membrane and the wall above. The KÖSTER Fix-Tape can be plastered over for added reinforcement. Alternatively the upper edge can be mechanically fastened and water-proofed with KÖSTER KBE Liquid Foil.



7.4 Waterproofing protection

KÖSTER SD Protection and Drainage Sheet 3-400 is a high-quality protection and drainage sheet for horizontal and vertical areas for KÖSTER KSK SY 15 in contact with groundwater according to the DIN EN 18533. Fix the



protection sheet to the wall using the KÖSTER SD Edge Profile.

Alternatively, XPS sheets can be used for backfill protection.



8 Surface details

8.1 Waterproofing around pipes

Cut a hole with a diameter 2 cm smaller than the pipe into a piece of the KÖSTER KSK SY 15 and bond it to the substrate, ensuring that no air is enclosed under the membrane. If the pipe penetrations are already connected, cut the blank on the side and pull it around the penetration. Always glue the edge of the cut to the opening by at least 1 cm. Make sure to remove the backing paper directly before adhering the piece to the wall.



Cover the cut with a 10 cm wide strip of KÖSTER KSK SY 15. Use another 10 cm wide stripe to cover the end of the membrane around the pipe. Make sure to overlap at least 1 cm.



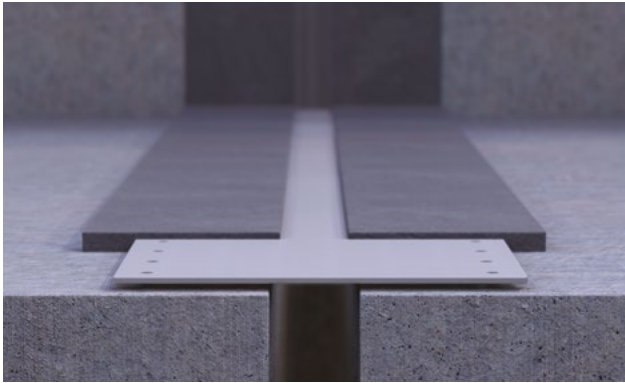
Use KÖSTER KBE Liquid film to seal the ends of the membrane around the pipe and all other spots which may require additional protection.



8.2 Moving joints

If dilation joints are present in the structure, these should be sealed with KÖSTER Joint Tapes 20/30 before starting with the application of the cold self-adhesive membranes KÖSTER KSK SY 15. KÖSTER KB-Pox Adhesive is applied to the prepared substrate on both sides of the joint so that both sides of the KÖSTER Joint Tape 20/30 are embedded into the adhesive at least 50 mm. The layer thickness of the KÖSTER KB-Pox Adhesive should be approx. 1-2 mm. The KÖSTER Joint Tape 20/30 is then immediately embedded into the fresh adhesive and pressed into the adhe-

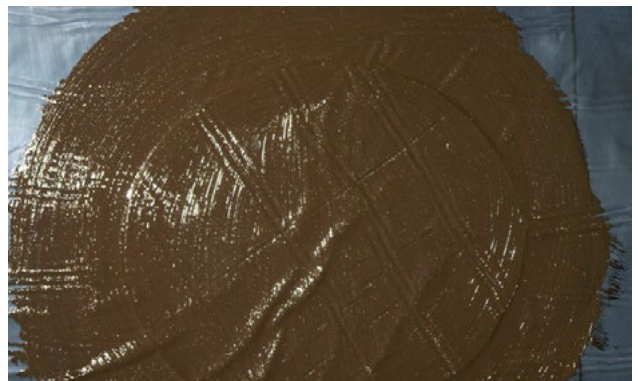
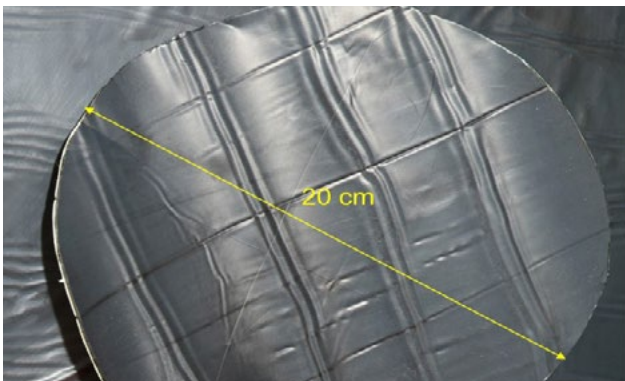
sive using a hand roller or a similar suited tool. Make sure that the tape has complete contact to the adhesive. A second layer of KÖSTER KB-Pox Adhesive is then applied on top of the KÖSTER Joint Tape 20/30 so that the edges of the KÖSTER Joint Tape 20/30 are over-coated at least 50 mm. Also apply KÖSTER KB-Pox Adhesive so that it covers the substrate next to the tape at least 20 mm. In this case the membrane is adhered on top of the KÖSTER KB-Pox Adhesive on both sides avoiding covering the KÖSTER Joint Tape 20/30.



8.3 Entrapped air bubbles or accidental damage

When, during the installation air is entrapped underneath the membrane, use a sharp cutter to create a small cut in the membrane where the air is present, and press the membrane onto the substrate to release the air and adhered the membrane properly to the surface.

Use a circular patch made of the KÖSTER KSK SY 15 with a diameter of 20 cm and place it over the small cut, then seal the patch and overlapping area with KÖSTER KBE Liquid Film.



9 General Notes

9.1 Material storage

- Store rolls standing upright. Do not place pallets on top of each other
- Protect the rolls from pressure and moisture
- Do not remove the roll from its package until the moment of application
- Do not expose rolls to low temperatures or direct sunlight
- Avoid keeping the product outside for long periods when the external temperature is higher than +28 °C
- Do not leave the roll outside overnight.
- If possible, use the entire product which has been removed from its original packaging in the same day

9.2 Packaging

For KÖSTER KSK membranes/tapes

Membrane	Roll area	Roll thickness	Roll width	Roll length	Top layer
KÖSTER KSK SY 15	21 m ²	1.5 mm	1.05 m	20 m	HDPE foil
KÖSTER KSK ALU 15	19.2 m ²	1.5 mm	0.96 m	20 m	Aluminium foil
KÖSTER Fix-Tape 15 SY	4 m ²	1.5 mm	0.2 m	20 m	HDPE foil
KÖSTER Fix-Tape 10 ALU	1.5 m ²	1.0 mm	0.15 m	10 m	Aluminium foil
KÖSTER Butyl Fix-Tape Fleece	1.5 m ²	1.5 mm	0.15 m	10 m	Fleece laminated

9.3 Important considerations

Testing the suitability of the material and equipment for the intended use is strongly recommended before commencing work. This method statement is intended for use as a general guideline for the application of the referred system and must be adapted to suit the local conditions, standards and specifications, as well as special requirements.

9.4 Limitations

Special conditions may require alterations to these recommendations; therefore, warranty can only be given for the quality of the products but not for the correct usage or the workmanship of the materials.

10 Certifications

- **Certificate for production quality control, SKZ- WÜRZBURG/DEUTSCHLAND** (German only)
- **Certificate for KÖSTER KSK SY 15:** Waterproofing against water and humidity (German only)
- **Radon impermeability test, University of Saarland**
- **Testing according to DIN EN 13969, MPA Braunschweig, July 2022**
- **Test report from Dr. Joachim Kemski, No. 2017100201d:**
Determining the Radon diffusion length of a cold, self-adhesive waterproofing membrane on HDPE foil (KSK)
- **Test report from Dr. Joachim Kemski, No. 2017103001d:**
Determining the Radon diffusion length of a cold, self-adhesive waterproofing membrane on HDPE foil (KSK)
- Overlap area

11 Appendix

Technical Data	Product Name: KÖSTER KSK SY 15
Material Class	Cold self-adhesive membrane
Temperature range for application	+ 5 °C to + 35 °C
Consumption approx.	1.05 m ² / m ²
Layers	1 + primer
Color	Black
Solvent-Free	Yes
Mode of application	Hand application
Suitable for negative side waterproofing	Sandwich-Waterproofing
Waiting time until backfilling	No waiting time (protection is required)
Simplicity of application	+++
Substrate	
Masonry	+++
Cementitious plaster	+++
Concrete	+++
Polystyrene	++
Old Bitumen membranes / coatings	++
Plaster	+++
Concrete or ceramic bricks	+++
Screeds	+++
Old ceramic substrates	+++
Gypsum	Should be removed
Moisture condition of surface	Dry
Performance	
Waterproofing against max. load condition	Pressurized Water
Time until rainproof	Immediately
Chemical resistance	Good
Tested to be radon proof	Yes
Permeability to vapor diffusion	Very low
UV-resistance	Not long term resistant
Crack bridging	+++

Lower+ Medium++ High+++

12 Legal disclaimer

This method statement reflects general cases with standard parameters. It is not suitable as a step-by-step guide for all and each waterproofing projects as the conditions on site at the moment of the application cannot be foreseen. It is solely the applicator's responsibility to

decide on the actual procedure considering the specific situation on the construction site. In any case, KÖSTER's Terms of business are valid and can be viewed under www.koester.eu 