




## KÖSTER KSK SY 15

Technical Data Sheet W 815 105

Issued: 2023-02-08

- Radon impermeability test - University of Saarland  
 - MPA Braunschweig "Testing according to DIN EN 13969" - July 2020  
 - Test report 2017100201d for determining the Radon diffusion length of a cold, self adhesive waterproofing membrane on HDPE foil (KSK) KÖSTER KSK SY 15 from Dr. Joachim Kemski  
 - Test report 2017103001d for determining the Radon diffusion length of a cold, self adhesive waterproofing membrane on HDPE foil (KSK) KÖSTER KSK SY 15 - Overlap area - from Dr. Joachim Kemski

### Cold self adhesive bitumen membrane with HDPE top foil (moisture barrier type A and ground water barrier type T) 1.5 mm x 1.05 m x 20 m, 21 m<sup>2</sup>

|   |  |
|---|--|
| <br>0761-CPR-0424  | KÖSTER BAUCHEMIE AG<br>Dieselstraße 1-10, 26607 Aurich<br>20<br><b>W 815</b><br><b>EN 13969:2004</b><br><b>KÖSTER KSK SY 15</b><br><b>Cold self adhesive bitumen membrane with HDPE-top foil Moisture barrier (Type A) and ground water barrier (Type T) EN 13969:2004 + A1 2006</b> |
| Flammability<br>Tensile strength lengthwise/crosswise<br>Elongation at break lengthwise/crosswise<br>Resistance to static loads<br>Resistance to impact loads<br>Resistance to impact loads<br>Waterproof at 400 kPa pressure<br>Resistance of the joint seams to shearing<br>Resistance of the joint seams lengthwise/crosswise<br>Colt bending properties<br>Straightness<br>Permanently resistant to<br>Aging:<br>Chemicals: | Class E<br>265 ± 55 N/50 mm<br>255 ± 60 %<br>10 kg tight<br>20 cm (hard underlayment)<br>75 cm (soft underlayment)<br>passed<br>130 ± 30 N/50 mm<br>175 ± 20 N<br>> -15 °C<br>passed<br>passed<br>passed   |

- Crack-bridging
- Fast application due to the size of the membrane (1.05 m)
- Age resistant
- Laminated on the top side with a highly tear resistance foil
- Radon-proof tested
- Vapor tight  $\mu \leq 130\,000$
- Can be applied to all mineral substrates as well as plastic and metal
- 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
- Factory applied adhesive on the overlap areas improves security
- Less time needed for installation as product is ready to use
- Reduced material and labor costs on site

#### Technical Data

|  |                  |
|--|------------------|
| Working temperature  | +5 °C to +35 °C  |
| (Air/substrate)  |                  |
| Thickness according to DIN EN 1849-1 (MDV)   | 1.5 mm           |
| Length according to DIN EN 1848-1  | 20 m             |
| Width according to DIN EN 1848-1   | 1.05 m           |
| Straightness according to DIN EN 1848-1 (MDV)  | passed           |
| Flammability according to DIN EN 13501-1   | Class E          |
| Tensile strength according to DIN EN 12311-1   | 265 ± 55 N/50 mm |
| Elongation at break according to DIN EN 12311-1  | 255 ± 60 %       |
| Waterproof 400 kPa according to DIN EN 1928 (72 h)   | passed           |
| Resistant to static loads DIN EN 12730 procedure B (10 kg)   | tight            |
| Resistance against artificial aging (heat aging) according to DIN EN 1928, procedure. B                    | passed           |
| Resistance to impact loads acc. to DIN EN 12688  |                  |
| Procedure A (AI-Underlayment)  | tight            |
| Procedure B (EPS-Underlayment)   | tight            |
| Resistance against artificial aging according to DIN EN 1296 and 1928, procedure. B (test pressure 60 kPa) | passed           |

#### Features

KÖSTER KSK SY 15 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, immediately waterproof, resistant to driving rain, and crack bridging. KÖSTER KSK SY 15 is radon proof. Suitable for waterproofing concrete structures or their elements in contact with the ground, to protect against the ingress of moisture and possibly dissolved salts (e.g. chloride).

#### Advantages:

- Cold applied, self-adhesive
- No hot air or propane gas welding is required
- Immediate waterproofing effect
- Uniform waterproofing layer
- Highly flexible due to rubber-bitumen basis
- Solvent-free

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Resistance against chemicals according to DIN EN 1847 and 1928 procedure B (Test pressure 60 kPa)

|                     |        |
|---------------------|--------|
| -10 % NaCl          | passed |
| -Lime milk          | passed |
| - 6 % Sulfuric acid | passed |

|   |         |
|---|---------|
| Resistance to water vapor diffusion $\mu$ (MDV) | 130,000 |
|---|---------|

|  |                  |
|--|------------------|
| Resistance to continued tearing lengthwise/crosswise according to EN 12310-1 (MDV) | 175 N $\pm$ 20 N |
|--|------------------|

|  |                |
|--|----------------|
| Cold bending properties according to DIN EN 1109 at -15 °C | free of cracks |
|--|----------------|

Resistance of the joint seams to shearing according to DIN EN 12317-1 (MDV)

|                |                        |
|----------------|------------------------|
| -butt weld     | > 130 $\pm$ 30 N/50 mm |
| -10 cm overlap | > 200 $\pm$ 30 N/50 mm |

MDV = manufacturer's specifications within tolerance

### Fields of Application

KÖSTER KSK SY 15 is suitable for waterproofing horizontal and vertical surfaces of structures and/or structural members according to DIN EN 18533 such as foundation plates, wet rooms, basement floors, balconies, terraces, etc. When used in accordance with the standard, the KÖSTER KSK SY 15 may be used in water exposure classes W1-E (walls in contact with the ground and floor slabs) and W4-E (skirtings and in and under walls) according to DIN 18533-2, as well as water exposure classes W0- I to W2-I single layer interior waterproofing according to DIN 18534-2.

KÖSTER KSK SY 15 is also suitable for protection against radon gas since the membrane is radon proof.

### Main Fields of Application

- Foundation plates
- Structural members
- Vertical retaining walls
- Floor slabs from inside
- Basement floors
- All underground structures
- Tunnels
- Bridges
- Balconies
- Terraces
- Wet rooms

### Substrate

The substrate has to be clean, dry, even, and without sharp corners, ridges, gaps, or voids. It can be mineral, polystyrene, or wooden. In case of basement walls made of masonry, the joints have to be closed flush. When used in and under walls according to the DIN 18533-2 (water exposure class W4-E), the substrate must be leveled with mortar.

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/m<sup>2</sup>). Alternatively, KÖSTER Primer BL undiluted (Consumption approx. 0.150 kg/m<sup>2</sup>), KÖSTER Bitumen Emulsion or KÖSTER Bitumen Primer (Consumption approx. 0.150 - 0.200 kg/m<sup>2</sup>) on old bituminous layers; but preliminary test is required. In the case of rough or strongly absorbent substrates, up to double the amount may be required.

According to the standard, a primer is not absolutely necessary in the floor area! Adhere membranes only after complete drying of the primer. 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).

Before laying the KÖSTER KS SY 15, corners and detail points must be prepared with the KÖSTER KBE Liquid Film (at least 1.0 kg/m<sup>2</sup>, approx. 1 mm dry layer thickness). After laying the KSK membrane, these areas are again coated with the KÖSTER KBE Liquid Film.

### Application

When cutting membranes always use a sharp knife. To avoid having the knife stick to the membrane wet the blade repeatedly. Avoid cutting the material when it has been exposed to heat or direct sunlight. Remove the backing paper after cutting the membrane.

Cutting membranes to length is facilitated by laying a piece of wood or straight edge on top of the membrane along the course of the cut as a guide and cutting support. Do not apply KÖSTER KSK SY 15 at temperatures below +5 °C.

### Horizontal waterproofing

On top of the fillet, an approximately 30 cm wide strip is applied as corner reinforcement. Apply the vertical and horizontal layers on top of the strip. Roll out membranes or pre-cut pieces in a length of approx. 50 - 80 cm, 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 creases. 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 KÖSTER Leister Hand Pressure Roller (40 mm) on the overlaps and edge areas. Overlap the membranes a minimum of 5 cm, national and local guidelines may vary. Connections to metal are achieved using a strip of KÖSTER Fix-Tape 10 ALU. 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.

Cover roofs after waterproofing with a geotextile and cover with a screed or round gravel 16/32.5 cm thick.

### Vertical waterproofing of basement walls

1. All interior and exterior corners are reinforced by applying pre-cut membrane pieces approximately 30 cm wide. Remove the backing paper just before applying the membrane to the surface.
2. For waterproofing of the especially demanding internal and external corners use specially cut pieces of membrane. Refer to the KÖSTER KSK application guidelines on the packaging for details.
3. Waterproof wall surfaces beginning approx. 30 cm above ground level, proceeding downwards to the wall floor junction and on to the side of the foundation. Pre-cut the membrane to the required length. Apply the membrane by removing the protective paper and pressing the membrane onto the substrate. Overlap the edge of the previously applied membrane by a minimum of 5 cm. All overlapping areas of the membranes must be firmly pressed together using a KÖSTER Leister Hand Pressure Roller (40 mm). Remove the backing paper from the self-adhesive edge before applying the next membrane.
4. Mechanically fix the upper ends of the membranes with large-headed zinc-coated nails, (5 pieces/m), or with a fixing profile.

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5. To avoid water infiltration behind the membrane, seal all exposed edges of the waterproofing layers as well as around pipe penetrations and other junctions, fixations, and endings with KÖSTER KBE Liquid Film. In the case of rough substrates or porous concrete, a second coat may be needed after the first coat has fully dried. Embed KÖSTER Glass Fiber Mesh into the KÖSTER KBE Liquid Film around pipe penetrations. Alternatively, the upper edge including the nails may be sealed with KÖSTER Butyl Fix-Tape Fleece. The tape can be plastered over. When using pre-perforated metal profiles for fixing the upper edge of the KÖSTER KSK Membranes in position, KÖSTER KBE Liquid Film is also used to protect against leaking from behind.

6. Protect the KÖSTER KSK SY 15 with KÖSTER Protection and Drainage Sheet 3-400 against damage due to backfilling. A layer of XPS Insulation (minimum 30 mm) also provides protection against backfill. The construction pit should be backfilled immediately after full cure of the KÖSTER KBE Liquid Film. Horizontal areas must be covered within two weeks of their application.

### Application Procedure

#### New construction:

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 according to depth. 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). Alternatively, KÖSTER Deuxan 2C can be used (with a leg length of 2 cm). Moving joints must be sealed with KÖSTER Joint Tape 20/30 using KÖSTER KB-Pox as 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.

#### Restoration:

Clean the surface following proper methods to clear any adhesion-reducing substances. Seal the surface of the substrate with a coat of KÖSTER Polysil TG 500. Imperfections in old bituminous surfaces must be smoothed. Prime the bituminous 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.

#### Waterproofing in and under walls:

When waterproofing based on DIN 18533 (water exposure class W4-E, Waterproofing in and under walls), the overlap is at least 20 cm. In the case of double-sided masonry, the overlapping area must be completely glued together.

For further information on processing and waterproofing at detailed points, please read the installation instructions for the KÖSTER KSK membranes.

### Consumption

Approx. 1.05 m<sup>2</sup>/m<sup>2</sup>

### Cleaning

Clean cutting tools with KÖSTER Universal Cleaner.

### Packaging

W 815 105 1.5 mm x 1.05 m x 20 m, 21 m<sup>2</sup> roll

### Storage

- Store rolls standing upright. Do not place pallets on top of each other
  - Protect 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
  - Do not apply on dirty, wet, dusty or humid surfaces
  - Do not apply when the weather is cold or humid and/or when the substrate is humid (the temperature of the areas in which the various materials are in contact should be at least +10 °C)
- Store cool and dry but frost free. Under proper conditions the membranes can be stored for a minimum of 2 years.

### Safety

Observe all governmental, state, and local safety regulations when installing the material.

### Other

When stored in cool temperatures and high humidity the membranes may temporarily lose some of their adhesive characteristics. In this case they should be heated to +15 °C before application and warmed with a hot air pistol during application.

### Packaging/Supply:

Unit: 21 m<sup>2</sup> roll (1.05 m x 20 m)  
 Pallet content: 15 rolls (315 m<sup>2</sup>)  
 Pallet size: Euro Pallet (1.2 m x 0.8 m x 0.14 m)

### Related products

|   |                         |
|---|-------------------------|
| KÖSTER Leister Hand Pressure Roller 40 mm     | Prod. code RT 998 001   |
| KÖSTER Bitumen Primer                         | Prod. code W 110 010    |
| KÖSTER Primer BL                              | Prod. code W 120 015    |
| KÖSTER KBE Liquid Film                        | Prod. code W 245        |
| KÖSTER Glass Fiber Mesh                       | Prod. code W 411        |
| KÖSTER Repair Mortar                          | Prod. code W 530 025    |
| KÖSTER Butyl Fix-Tape Fleece                  | Prod. code W 815 015 F  |
| KÖSTER KSK ALU 15                             | Prod. code W 815 096 AL |
| KÖSTER SD Protection and Drainage Sheet 3-400 | Prod. code W 901 030    |
| KÖSTER SD Protection and Drainage Sheet 3-250 | Prod. code W 903 030    |
| KÖSTER Roofing Nails                          | Prod. code W 981 001    |
| KÖSTER Universal Cleaner                      | Prod. code X 910 010    |

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# KÖSTER

## Waterproofing Systems

|   |  |
|---|--|
| <b>Technical Data</b>                     | <b>Product Name: KÖSTER KSK SY 15</b>    |
| Material Class                            | Cold self-adhesive membrane              |
| Temperature range for application         | +5 °C to +35 °C                          |
| Consumption approx.                       | 1.05 m <sup>2</sup> /m <sup>2</sup>      |
| 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                 | +++                                      |
| <b>Substrate</b>                          |  |
| 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                                      |
| <b>Performance</b>                        |  |
| 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+++

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