



KÖSTER Bridge Deck Waterproofing Membrane

Extremely crack bridging and extremely durable waterproofing membrane for fast installation onto concrete under asphalt

Features

A five layered membrane to be installed in a "sandwich" type waterproofing system, particularly on concrete road bridges or parking decks with rolled or mastic asphalt.

The core of the membrane is a 1,5 mm flexibilized polymer membrane of bitumen modified TPO. This extremely flexible crack bridging membrane is embedded in two fleece layers that carry hot weld bitumen layers of approx. 1,5 mm thickness. The total thickness of the membrane is 4,5 mm.

The membrane can be installed in a similar way by torch application as done with bitumen membranes but with the big advantage of having a highly flexible tear resistant polymer membrane as a core. The outer two bitumen layers protect the polymer layer from overheating during installation.

The membrane has a tear resistance of 15 kN/M and a maximum tear resistance at an elongation of 95% at 23 °C.

Advantages

- Extremely crack bridging in a very wide range of temperatures ranging from -30 °C up to 50 °C
- Extremely durable due to the high quality polyethylene based membrane
- Perfectly suited for rolled and mastic asphalt
- Full homogenous bond between substrate and asphalt leads to higher shear resistance
- The absence of volatile plasticizers in the core membrane makes the membrane stay flexible and not become brittle over time
- Internal tests have shown that the membrane bridges cracks of > 5mm even at a temperature of -20 °C
- The membrane consists of three fully waterproofing layers that are installed as a single layer, saving working costs and time
- The KÖSTER Bridge Deck system avoids blisters under the asphalt caused by moisture, reducing maintenance and repairs costs over the life time of the bridge or parking deck

Technical Data

Surface weight, total membrane acc. to DIN 52123	> 4000 g/m ²
Thickness of sheet acc. to DIN 52123	> 4,5 mm
Thickness of adhesive layer top	> 1,4 mm
Thickness of adhesive layer underneath	> 1,4 mm
Roll length	20 m
Roll width	1,035 m
Elongation of sheet for maximum tensile force acc. to DIN 52123	75 %
Maximum tensile force of sheet	650 N/50 mm

Waterproofing ability acc. to DIN 52123	2 bar/24h
Change by water immersion acc. to DIN 52123	0 %/vol
Availability at low temperatures acc. to DIN 52123	0 °C/no crack
Cold bending temperature acc. to DIN EN 1109	≤ -10 °C
Crack bridging at - 20°C acc. to internal method	> 3,0 mm

Fields of Application

For the waterproofing of concrete decks with asphalt top coatings such as road bridges and parking decks.

Substrate

The typical substrate for the KÖSTER Bridge Deck Waterproofing Membrane is a concrete slab that is prepared by shot blasting and primed with KÖSTER CT 225.

The substrate has to be clean, dry and free of debris or any other bond inhibiting substances. The substrate has to have a minimum tensile strength of 1,5 N/mm². Any voids and unevenness are leveled using KÖSTER Repair Mortar Plus for smaller areas (fast curing) and KÖSTER R4 mortar for larger areas. The area is shot blasted to receive a sufficiently rough surface (ICRI CSP 3/4). KÖSTER CT 225 is then applied according to the respective Technical Datasheet.

After KÖSTER CT 225 is fully cured, the KÖSTER Bridge Deck Waterproofing Membrane can be applied. Clean and dry the surface if necessary. Work at minimum 3 °C above dew point in order to avoid condensation water on the surface.

Application

KÖSTER Bridge Deck waterproofing Membrane is installed on top of KÖSTER CT 225, KÖSTER Bridge Deck Resin. See the respective KÖSTER Technical Data Sheet for proper installation instructions.

Bonded installation with hot weld bitumen

Place the rolls onto the substrate for installation. Make sure that the substrate is dry. Wear suitable protective clothes. Spread suitable hot weld bitumen with a consumption of 2 kg per m² on the prepared concrete according to ZTV-Ing. and TL-BEL EP 1999. The membrane is rolled out immediately onto the hot weld bitumen pushing a small bead in front of it. Make sure that no air is entrapped under the membrane. The hot weld bitumen has to cover the full area.

The membranes are overlapped 5 cm.

Rolled or mastic asphalt can be applied directly onto the membrane.

Torch application

The membrane can be applied by torch application similar to the application of torch on bitumen membranes. Prime the substrate using KÖSTER Bitumen Primer with a consumption of 150 - 200 ml per m².

The information contained in this technical data sheet is based on the results of our research and on our practical experience in the field. All given test data are average values which have been obtained under defined conditions. The proper and thereby effective and successful application of our products is not subject to our control. The installer is responsible for the correct application under consideration of the specific conditions of the construction site and for the final results of the construction process. This may require adjustments to the recommendations given here for standard cases. Specifications made by our employees or representatives which exceed the specifications contained in this technical guideline require written confirmation. The valid standards for testing and installation, technical guidelines, and acknowledged rules of technology have to be adhered to at all times. The warranty can and is therefore only applied to the quality of our products within the scope of our terms and conditions, not however, for their effective and successful application. This guideline has been technically revised; all previous versions are invalid.

The bottom layer of hot weld bitumen is heated to melting with a gas flame and rolled out directly onto the prepared substrate. The roughness of the surface must not be more than 1 mm. Important: Make sure no air is entrapped under the membrane during application.

The membranes are overlapped 5 cm.

Rolled or mastic asphalt can be applied directly onto the membrane.

Consumption

Approx. 1.05 m² / m²

1,05 m² of membrane per 1 m² of area to be waterproofed. Calculate for extra material for corners, edges etc.

Storage

Store rolls standing upright. Do not place pallets on top of each other. Protect from pressure and moisture. Do not expose rolls to heat and direct sunlight.

Related products

KÖSTER Repair Mortar R4

Prod. code C 536

KÖSTER Repair Mortar Plus

Prod. code W 532 025

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