

KÖSTER

ECB Membranes

Technical guideline / Article Number **RE 8**
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Ethylene Copolymer Bitumen based waterproofing membrane with centrally embedded glass fiber mesh

Features

KÖSTER ECB Membranes are made of a mixture of Ethylene Copolymer and a special bitumen.

A glass fiber mesh is embedded in the middle of the membrane to provide an especially high dimensional stability and resistance against shrinkage.

KÖSTER ECB Membranes are watertight, chemically resistant, and resistant to stress cracking.

KÖSTER ECB roof and waterproofing membranes are resistant to all materials commonly used in construction such as lime, cement, and gypsum, and against soiling common to roof surfaces such as from soot and rotting leaves. They can be applied directly to bituminous roofs.

They offer high reliability and are characterized by a fast and economical installation. KÖSTER ECB Membranes are UV-stable, resistant to aging, and microorganisms.

KÖSTER ECB Membranes are:

- environmentally friendly
- free of softeners and chlorine
- UV-stable
- safe for health, water, soil, and plants
- resistant to microorganisms
- resistant to normal mechanical stresses
- compatible with bitumen
- compatible with polystyrene
- root resistant
- temperature and weather resistant
- recyclable
- aging and rot resistant
- homogeneously weldable

Technical data

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Field of application

For waterproofing ventilated and non-ventilated flat roofs, terraces, balconies, roof gardens, wet rooms, parking garages, pitched roof valleys, landfill and waste water waterproofing, reservoirs, horticulture, (for example fish ponds), etc.

The membranes can also be used in waterproofing according to the DIN 18195.

Application by loose laying with ballast, mechanical fastening, or strip adhesion with KÖSTER PUR Membrane Adhesive (fleece coated membranes only).

Application

Mechanical fastening

The most common method of installing ECB membranes is through mechanical fastening. The membrane is mechanically fastened to the roof structure, which can consist of either wooden sheathing, trapezoidal metal sheets, or a concrete slab. The membrane is generally fastened through the thermal insulation, which requires special fasteners. These fasteners have a large contact area which durably connect the membrane to the substrate. Overlapping the membranes over the fasteners prevent the penetration of water into the installation.

Loose laying with ballast

A quick and secure way to install KÖSTER ECB 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.

Strip adhesion of KÖSTER ECB Membrane F

Strip adhesion to the substrate offers a time-saving installation. The KÖSTER ECB F Membrane features a special fleece coating which increases the bonding of the KÖSTER PUR Membrane adhesive. This results in a high adhesive strength and creates a perfect bond to the substrate.

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.

Welding of joints

The connection of the sheets is performed by hot air welding using automatic welding machines and manual welding tools. The membranes are plasticized in the overlapping area by the hot air flow and homogeneously connected by compressing with a roller. During this procedure a small weld seam is formed and material should flow slightly from the overlap. This should be kept as small as possible, but must be visible. The welding seam is an indicator of a secured and waterproof connection.

Technical Guidelines cited:

KÖSTER PUR Membrane Adhesive Art. Nr. RT 101

Values marked with a (#) Pound sign were determined by the Materials Testing Institute (MPA) at Braunschweig	
Material product description: Thermoplastic Polyolefin (ECB)	
Technical Details according to the DIN EN 13956 and DIN V 20000-201	
Product description	KÖSTER ECB 2.0
Description according to DIN 20000-201	DE/E1-ECB-BV-E-GV-2.0
Loose laying under ballast and under wear surfaces	x
Mechanically fastened, without ballast	x
Adhered with KÖSTER PUR Membrane Adhesive without ballast	-
Lamination	Centrally embedded glass fiber mesh
Color	Standard: Black ³⁾
# Visible defects	Free of visible defects
# Length according to DIN EN 1848-2	20 m ¹⁾
Width according to DIN EN 1848-2	2100/1500/1050/750/ 525/350/250 mm
# Straightness according to DIN EN 1848-2	≤ 50 mm
# Flatness according to DIN EN 1848-2 #	≤ 10 mm
# Area related weight according to DIN EN 1849-2	2010 g/m ² -5% / + 10%
Nominal thickness ²⁾	2.0 mm
# Effective thickness according to DIN EN 1849-2	+ 10% / - 5%
# Water tightness according to DIN EN 1928 (method B)	watertight
Reaction to liquid chemicals including water according to DIN EN 1847	passed
# External fire exposure according to DIN V ENV 1187, DIN 4102-7	BROOF (t1) ⁵⁾
# Reaction to fire according to DIN EN ISO 11925-2, DIN EN 13501-1	Class E
# Resistance to shock loads (Hail) according to DIN EN 13583	<i>Rigid Substrate</i> ≥ 25 m/s <i>Flexible Substrate</i> ≥ 40 m/s
# Peel strength of the overlap seam according to DIN EN 12316-2	Type of failure: 100% C No failure of the seam
# Weld seam shear resistance according to DIN EN 12317-2	≥ 500 N / 50mm
# Water vapor diffusion resistance according to DIN EN 1931	$g = 1.2 \cdot 10^{-9} \text{ kg} / (\text{m}^2 / \text{s})$ $S_d = 354 \text{ m}$ $\mu = 182610$
# Elongation at break acc. to DIN EN 12311-2	≥ 6 N / mm ²
# Elongation according to DIN EN 12311-2 (Method B)	≥ 600%
# Resistance to shock loads according to	

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DIN EN 12691	<i>Substrate AI Plate (method A) Substrate EPS (Method B)</i>	≥ 900 mm ≥1250 mm
# Resistance to static loading DIN EN 12730 Method A/B		> 20 kg (tight)
# Tear continuation resistance according to DIN EN 12310-2 ⁶⁾		≥ 250 N
# Root penetration resistance ⁴⁾		given
# Dimensional stability according to DIN EN 1107-2		≤ 0.2 %
# Folding at low temperatures according to DIN EN 495-5		≤ - 40 °C Free of cracks
# Behavior under UV irradiation, elevated temperatures, and water according to DIN EN 1297 (1000 h)		Level 0
# Ozone resistance according to DIN EN 1844		passed
# Behavior upon exposure to bitumen according to DIN EN 1548		passed

1) Special lengths available on request 2) Including lamination 3) Does not apply to ECB Membranes 4) Applies only to green roofs 5) Requirements are met for roofs tested by KÖSTER in Germany. Further information can be requested from KÖSTER 6) Only when mechanically fixated

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