BUILDING TRUST

PRODUCT DATA SHEET

SikaProof®-110 FB6

1.5 mm thick FPO membrane with a hybrid bonding layer for waterproof tunnel lining

DESCRIPTION

SikaProof®-110 FB6 consists of a flexible polyolefin (FPO) layer membrane (EVA based) with a hybrid bonding layer that forms a mechanical and chemical dual bond with the in-situ concrete lining, and a non-woven polypropylene geotextile (felt), which is linearly fixed onto the membrane and serves as protection.

USES

SikaProof®-110 FB6 is used for the waterproofing of tunnels and below ground structures.

FEATURES

- Also available without geotextile (felt)
- High mechanical and chemical bonding properties on the inner concrete lining
- No lateral water migration between concrete and membrane
- Very good thermal jointing properties
- Flexible in cold temperatures
- High crack-bridging ability
- Simple and fast to install

CERTIFICATES AND TEST REPORTS

- CE marking and declaration of performance based on EN 13491:2004/A1:2006 Geosynthetic barriers — Characteristics required for use as a fluid barrier in the construction of tunnels and underground structures

PRODUCT INFORMATION

Packaging	Roll width	2 m or 2.1 m	
	Roll length	specified	
	Refer to the current price list for available packaging variations.		
Colour	Top layer colour	White to grey	
	Bottom layer colour	White to grey	
Shelf life	24 months from date of production		
Storage conditions	The Product must be stored in original unopened and undamaged sealed packaging in dry conditions and temperatures between +5 °C and +35 °C. Protect the Product from direct weather exposure. Store in a horizontal position. Do not stack pallets of the rolls on top of each other, or under pallets of any other materials during transport or storage. Always refer to the packaging.		
Thickness	Overall mechanical thickness without geotextile	1.50 mm	(EN 1849-2)

Mass per area	1.34 kg/m² (-0.06 kg/m²) without geotextile	(EN 1849-2)
Geotextile composition	Polypropylene	

TECHNICAL INFORMATION

Resistance to impact	Method A, Hard support	> 350 mm	(EN 12691)
Resistance to static loading	Hard support	Pass (20 kg)	(EN 12730)
Resistance to static puncture	1.6 kN (- 0.1 kN)		(EN ISO 12236)
Tensile strength	Longitudinal (MD) Transversal (CMD)	9.0 N/mm² (- 1.0 N/mm²) 9.0 N/mm² (- 1.0 N/mm²)	(EN ISO 527-3)
Tensile strain at break	Longitudinal (MD) Transversal (CMD)	> 500% > 500%	(EN ISO 527-3)
Resistance to tear	Longitudinal (MD) Transversal (CMD)	> 400 N > 400 N	(EN 12310-1)
Joint peel resistance	> 80 N/50 mm		(EN 12316-2)
Foldability at low temperature	-40 °C		(EN 495-5)
Reaction to fire	Class E		(EN 13501-5)
Resistance to oxidation	> 75 % retained tensile strength and elongation		(EN 14575)
Watertightness	Method B, 24 hours at 60 kPa	Pass	(EN 1928)
Durability of watertightness against ageing	Aged 12 weeks at +70 °C, tested 24 hours at 60 kPa	Pass	(EN 1928; EN 1296)
Durability of watertightness against chemicals	Calcium hydroxide, aged 28 days at +23 °C, tested 24 hours at 60 kPa	Pass	(EN 1928; EN 1847)
Ambient maximum temperature of liquids	+ 35 °C max.		
Resistance to lateral water migration	Up to 7 bar	Pass	(ASTM D5385 / D5385M)
Water permeability	Type A	< 10^{-6} $m^3 \cdot m^{-2} \cdot d^{-1}$	(EN 14150)

Geotextile properties

Weight	300 g/m² (- 30 g/m²)	400 g/m² (- 40 g/m²)	500 g/m² (- 50 g/m²)	700 g/m² (- 70 g/m²)	(ISO 9864)
Tensile strength, MD	≥ 20.0 kN/m	≥ 22.0 kN/m	≥ 27.0 kN/m	≥ 35.0 kN/m	(EN ISO 10319)
Tensile strength, CMD	≥ 15.0 kN/m	≥ 18.0 kN/m	≥ 22.0 kN/m	≥ 25.0 kN/m	(EN ISO 10319)
Puncture resistance, CBR	≥ 2300 N	≥ 3200 N	≥ 3600 N	≥ 5500 N	(EN ISO 12236)
Thickness at specified pressure 2 kPa	2.0 mm ± 0.8 mm	2.5 mm ± 0.8 mm	3.0 mm ± 0.8 mm	5.5 mm ± 1.0 mm	(EN ISO 9863-1)

SYSTEM INFORMATION

System structure

- SikaProof®-11 Anchor
- SikaProof®-12 Anchor
- Sikaplan® WT Trumpet Flange

BASIS OF PRODUCT DATA

All technical data stated in this Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

ECOLOGY, HEALTH AND SAFETY

This product is an article as defined in article 3 of regulation (EC) No 1907/2006 (REACH). It contains no substances which are intended to be released from the article under normal or reasonably foreseeable conditions of use. A safety data sheet following article 31 of the same regulation is not needed to bring the product to the market, to transport or to use it. For safe use follow the instructions given in the product data sheet. Based on our current knowledge, this product does not contain SVHC (substances of very high concern) as listed in Annex XIV of the REACH regulation or on the candidate list published by the European Chemicals Agency in concentrations above 0,1 % (w/w).

APPLICATION INSTRUCTIONS

SUBSTRATE PREPARATION

For information on substrate quality and pre-treatment, refer to the following Sika® document:

- SikaProof®-110 for Umbrella Waterproofing of Tunnels

APPLICATION

IMPORTANT

Strictly follow installation and maintenance procedures

Strictly follow installation and maintenance procedures as defined in Method Statements, application manuals and working instructions which must always be adjusted to the actual site conditions.

IMPORTANT

Ventilation in confined spaces

Always ensure good ventilation when applying the Product in a confined space.

For information on application, refer to the following Sika® document:

- SikaProof®-110 for Umbrella Waterproofing of Tunnels

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for exact product data and uses.

LEGAL NOTES

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

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All products are supplied under a management system certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001, ISO 14001 and ISO 45001.