BUILDING TRUST

PRODUCT DATA SHEET

SikaProof®-110 PP-300

Fully bonded, pre-applied waterproofing membrane for tunnels with a 300 g/m2 geotextile linearly fixed at the back

DESCRIPTION

SikaProof®-110 PP-300 is EVA based flexible layer waterproofing membrane with a hybrid bonding layer that forms a mechanical and chemical dual bond with the in situ concrete lining, and a nonwoven polypropylene geotextile (felt), which is linearly fixed onto the membrane during the manufacturing process and serves as a protection.

USES

Waterproofing of tunnels and below ground structures.

CHARACTERISTICS / ADVANTAGES

- Strong mechanical and chemical bonding properties on inner concrete lining
- No lateral water migration between inner concrete structure and membrane
- Excellent thermal jointing properties
- Highly flexible, also in cold temperatures
- Strong crack bridging ability
- Fast and simple installation

APPROVALS / STANDARDS

Conforms to KS F 4911 (Waterproofing sheet of synthetic polymer).

PRODUCT INFORMATION

Chemical base	Functional layer: Cement-polymer modified Waterproofing layer: EVA based membrane Protection layer: Non-woven polypropylene geotextile
Packaging	SikaProof®-110 PP-300 standard rolls are wrapped individually in a PE-foil. Roll width : 2.1 m Roll length 20 m or specified.
Appearance / Colour	Functional layer: Rough / White to grey Waterproofing layer: Smooth / White to grey Protection layer: Fleece texture / White
Shelf life	Min. 24 months from date of production
Storage conditions	Product must be stored in original unopened and undamaged sealed packaging in dry conditions and temperatures between + 5°C and +35°C, 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 packaging.
Effective Thickness	Thickness including the functional layer ≥ 1.4mm
Mass per unit area	~1.64 kg/m² (±10%) (including geotextile)
Felt Weight	**Technical information of geotextile (felt):**

- Chemical base:	Polypropylene	
- Unit Weight:	300 g/m² (±10%)	EN ISO 9864
- Tensile Strength:	MD: ≥ 20.0 kN/m CD: ≥ 15.0 kN/m	EN ISO 10319
- CBR Puncture Resistance:	≥ 2,300 N	EN ISO 12236
- Thickness under 2 kPa:	2.5 (±0.8) mm	EN ISO 9863-1

TECHNICAL INFORMATION

Resistance to Impact	> 350 mm	(EN 12691)
Resistance to Static Load	Pass	(EN 12730 (Method B, 24h/20kg))
Resistance to Static Puncture	> 700 N	(ASTM E0154)
Tensile Strength	MD: > 800 N/50mm CD: > 800 N/50mm	(EN 12311-2)
Elongation	MD: > 500% CD: > 500%	(EN 12311-2)
Resistance to tear (nail shank)	MD: > 500 N CD: > 500 N	(EN 12310-1)
Joint Peel Resistance	Peel resistance of welded seam: > 80 N/50mm	(EN 12316-2)
Reaction to Fire	E	(EN ISO 11925-2)
Water Vapour Transmission	0.4 g/m² x 24 hr	(EN 1931 (+23 °C/75% r.h.))
Watertightness	Pass	(EN 1928 B (24h/60kPa))
Durability of Watertightness against Ageing	Pass	(EN 1296 (28d/+23°C) (EN 1928 B (24h/60kPa))
Durability of Watertightness against Chemicals	Pass	(EN 1296 (28d/+23°C) (EN 1928 B (24h/60kPa))
Adhesion in Peel	> 80 N/50mm	(EN ISO 22631:2019)
Resistance to lateral water migration	Pass (7 bar)	(ASTM D 5385 mod)

SYSTEM INFORMATION

System Structure	▪ SikaProof®-11 Anchor ▪ SikaProof®-12 Anchor ▪ Sikaplan® WT Trumpet Flange

BASIS OF PRODUCT DATA

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

IMPORTANT CONSIDERATION

Installation works must only be carried out by Sika trained contractors, experienced in the waterproof lining of tunnels and below ground structures.
Precaution measures must be taken for installation in wet conditions, at temperatures below +5°C and when the relative air humidity (RH) is more than 80 %.
The effectiveness of these measures must be proven.
Fresh air ventilation must always be ensured, especially when working in closed rooms and in accordance with all relevant local regulations.
The SikaProof®-110 PP-300 is not UV stabilized and cannot be installed on structures permanently exposed to sunlight and weathering.
At all block joints (stop-end formwork), membrane protection with an additional plain membrane strip of 50cm installed over the waterproofing membrane is recommended.

ECOLOGY, HEALTH AND SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY

The profile of the shotcrete surface must not exceed a ratio of length to depth of 5:1 and its min. radius must be 20 cm. The shotcrete surface must not contain broken aggregates. Any leaks must be sealed with Sika® waterproof plugging mortar, or drained with a Sika® FlexoDrain system. Where necessary to achieve the desired profile/surface, apply a fine sprayed concrete layer on the shotcrete surface with a min. thickness of 3-5 cm and aggregate diameter not exceeding 8 mm.
Steel (girders, reinforcement mesh, anchors, etc.) must also be covered with a minimum of 4 cm fine sprayed concrete. The shotcrete surface must be clean (no loose stones, nails, wires, etc.).

APPLICATION METHOD / TOOLS

The SikaProof®-110 PP-300 membrane is installed loose laid and mechanically fastened in accordance with the Sika Method Statement for sheet waterproofing membrane installations (available separately on request).
The jointing faces must be dry and free from contaminations. For contaminated / soiled surfaces, follow the instructions for cleaning and preparation etc. in the Sika Method Statement.
All membrane overlaps must be thermally jointed using hand welding gun and pressure rollers or automatic heat welding machines, with individually adjustable and electronically controlled welding temperatures (such as the manual Leister Triac PID / automatic: Leister Twinny S / semi-automatic: Leister Triac Drive). Thermal jointing parameters, such as speed and temperature must be established with trials on site, prior to any thermal jointing works.
T-joints demand specific preparation of the thermal jointing area. In the previously fabricated weld area the overlaps must be chamfered carefully. For more specific instructions refer to the Sika Method Statement.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the declared data for this product may vary from country to country. Please consult the local Product Data Sheet for the exact product data.

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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