

## PRODUCT DATA SHEET

# Sikaplan® WP 1120-20 HL

### SHEET WATERPROOFING MEMBRANE FOR BASEMENTS AND TUNNELS

#### DESCRIPTION

Sikaplan® WP 1120-20HL is a homogenous sheet waterproofing membrane with a yellow signal layer, based on polyvinylchloride (PVC-P)

#### USES

Waterproofing of tunnels, basement and all kinds of below ground structures against groundwater.

#### CHARACTERISTICS / ADVANTAGES

- Based on virgin material with consistent quality
- With signal layer to indicate damages
- High resistance to aging
- High tensile strength and elongation
- Resistant to natural aggressive mediums in ground water and soil
- High resistance to mechanical impact
- High dimensional stability
- High flexibility in cold temperatures
- Optimized workability, thermally weldable
- Suitable for installation on weak substrate
- Can be installed on damp and wet substrate

#### APPROVALS / CERTIFICATES

Tested According to various EN standards

#### PRODUCT INFORMATION

<b>Packaging</b>	Sikaplan® WP 1120-20HL standard rolls are wrapped individually in a yellow PE-foil. The roll dimension is 2.0mm (Thickness) x 2.0m (Width) x 15.0 m (Length). Roll weight is around 78kg/roll.	
<b>Appearance / Colour</b>	Top layer: yellow Bottom layer: dark grey	
<b>Shelf life</b>	5 years from date of production in unopened, undamaged and original packaging.	
<b>Storage conditions</b>	Rolls must be stored in the original package with a horizontal position on pallet and protected from direct sunlight, rain and snow. Do not stack pallets of rolls during transport or storage.	
<b>Visible Defects</b>	Pass	EN 1850-2
<b>Overall Thickness</b>	2.0 (-5/+10%) mm	EN 1849-2

<b>Straightness</b>	≤ 75 mm/10 m	EN 1848-2	
<b>Mass per unit area</b>	~ 2.600 (-5/+10%) kg/m <sup>2</sup>	EN 1849-2	
<b>Tensile strength</b>	<u>Longitudinal (MD)</u>	<u>17.0 (±2.0) N/mm<sup>2</sup></u>	EN 12311-2
	<u>Transversal (CMD)</u>	<u>16.0 (±2.0) N/mm<sup>2</sup></u>	
<b>Elongation</b>	<u>Longitudinal (MD)</u>	<u>≥ 300 %</u>	EN 12311-2
	<u>Transversal (CMD)</u>	<u>≥ 300 %</u>	
<b>Resistance to Impact</b>	≥ 750 mm	EN 12691	
<b>Resistance to Static Load</b>	≥ 20 kg	EN 12730 (Method B 24 h / 20 kg)	
<b>Watertightness</b>	Pass	EN 1928 B	
<b>Foldability at Low Temperature</b>	-25 °C	EN 495-5	
<b>Tear Strength</b>	≥ 500N (Nail shank)	EN 12310-1	
<b>Dimensional Change after Heat</b>	≤ 2 %	EN 1107-2	
<b>Durability of Watertightness against Ageing</b>	Pass	EN 1296(12 weeks) EN 1928 B (24h/60kPa)	
<b>Durability of Watertightness against Chemicals</b>	Pass	EN 1847 (28d,23°C) EN 1928 B (24h/60kPa)	
<b>Accelerated Ageing in Alkaline Environment</b>	Pass	Appendix C (24 weeks/90°C) EN 12311-2	
<b>Reaction to fire</b>	Class E	EN 13501-1	
<b>Exposure to Bitumen</b>	No performance determined	EN 1548 (28d/70°C) EN 1928 A	

## SYSTEMS

<b>System Structure</b>	Ancillary products: - Sikaplan® WP laminated metal for pieces - Sikaplan® WP Disc - Sika® Waterbar, Type AR and DR for fixing pieces and waterproofing concrete joints
<b>Ambient Air Temperature</b>	+5 °C min./ +35 °C max.

## APPLICATION INSTRUCTIONS

### SUBSTRATE QUALITY

#### In-situ concrete:

Clean, sound and dry, homogeneous, free from oils and grease, dust and loose or friable particles.

#### Shotcrete:

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.). A polypropylene geotextile (≥ 500 g/m<sup>2</sup>) or a compatible drainage layer must be installed prior to the Sikaplan® WP 1120-20 HL membrane installation.

## APPLICATION METHOD / TOOLS

The Sikaplan® WP 1120-20 HL membrane is installed loose laid and mechanically fastened, or loose laid and ballasted as appropriate in accordance with the Sika Method Statement for sheet waterproofing membrane installations. 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 heat welded using hand welding guns 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). Welding parameters, such as speed and temperature must be established with trials on site, prior to any welding works. The execution of T-joints demands particular preparation of the weld area. In the previously fabricated weld area the overlaps must be chamfered carefully.

## IMPORTANT CONSIDERATIONS

Installation works must only be carried out by Sika® trained contractors, experienced in the waterproof lining of tunnels and belowground structures. Particular precautions must be taken for installation in wet conditions, at temperatures below +5 °C, and when the relative air humidity (RH) of more than 80 %. The effectiveness of these measures must be proven. Fresh air ventilation must always be ensured, especially when working (welding) in closed rooms and in accordance with all relevant local regulations. The membrane is not resistant to permanent contact with bitumen, and some types of plastics other than PVC or Sika approved system components. For use over or adjacent to these materials, a separation layer of polypropylene geotextile ( $\geq 150 \text{ g/m}^2$ ) is required. The membrane is not UV stabilized and cannot be installed on structures permanently exposed to sunlight and weathering.

## 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.

## LOCAL RESTRICTIONS

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

## ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related 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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