

PRODUCT DATA SHEET

Sikaplan® WP 1100-21 HL2

PVC SHEET WATERPROOFING MEMBRANE FOR BASEMENTS AND TUNNELS

DESCRIPTION

Sikaplan® WP 1100-21 HL2 is a flexible, 2,1 mm thick, homogeneous sheet waterproofing membrane. It contains a ≤ 0.2 mm thick signal layer and is based on high-quality polyvinylchloride (PVC-p).

USES

Sikaplan® WP 1100-21 HL2 is used for:

- Waterproofing of tunnels against water ingress
- Waterproofing of basements against water ingress

CHARACTERISTICS / ADVANTAGES

- Certified for öBV tunnel guidelines, table 4.6 and table 4.7
- Contains no recycled materials and no DEHP (DOP) plasticisers
- Proven performance over decades

- High resistance to ageing
- Good resistance to microbial degradation
- Good resistance to root penetration
- Suitable for contact with acidic (soft) water and alkaline environments
- Optimised flexibility, tensile strength and multi-axial elongation
- Optimised workability and thermally weldable

APPROVALS / STANDARDS

- CE marking and declaration of performance based on EN 13967:2012 Flexible sheets for waterproofing — Plastic and rubber damp proof sheets including plastic and rubber basement tanking sheet — Definitions and characteristics
- 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
- Sikaplan WP 1100-21 HL2 / initial type testing according to öBV table 4-7

PRODUCT INFORMATION

Chemical base	PVC-p	
Packaging	Roll width	2.0 m
	Roll length	20 m or specified
Colour	Signal layer colour	yellow
	Bottom layer colour	black
Shelf life	5 years 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.	
Effective Thickness	2.10 mm (-0.10 mm / +0.21 mm) including signal layer	(EN 1849-2)
Mass per unit area	2.70 kg/m ² (-0.13 kg/m ² / +0.27 kg/m ²)	(EN 1849-2)
Colour	Surface texture	smooth

TECHNICAL INFORMATION

Resistance to Impact	Method A, 500 g falling weight	Watertight at 750 mm drop height	(EN 12691)
Resistance to Static Load	No perforation at 20 kg for 24 h		(EN 12730)
Resistance to Static Puncture	≥ 2.5 kN		(EN ISO 12236)
Resistance to Root Penetration	Pass		(CEN/TS 14416)
Long Term Compression Strength	Water tightness, aged 48 hours	Watertight at 7.0 N/mm ²	(ÖBV Guideline Tunnel Waterproofing)
Tensile Strength	Longitudinal (MD)	17 N/mm ² ± 2 N/mm ²	(EN ISO 527-3)
	Transversal (CMD)	16.0 N/mm ² ± 2.0 N/mm ²	
Modulus of Elasticity in Tension	≤ 20 N/mm ² (machine/ cross direction)		(ISO 527)
Elongation at Break	> 300 % (machine/ cross direction)		(EN ISO 527-3)
Burst Strength	Maximum burst stress	6.0 N/mm ²	(DIN 61551)
	Elongation at break	90 %	
Dimensional Change after Heat	Blisters, aged 6 hours at +80 °C	No blisters	(EN 1107-2)
	Longitudinal (MD), aged 6 hours at +80 °C	< 2 %	
	Transversal (CMD), aged 6 hours at +80 °C	< 2 %	
Foldability at Low Temperature	No cracks at -20 °C		(EN 495-5)
Reaction to Fire	Class E		(EN 13501-1)
CHEMICAL RESISTANCE	Change in tensile strength, 5-6 % sulphurous acid test, aged 90 days at +23 °C	< 20 %	(EN 1847)

	Change in tensile strength and elongation, saturated lime wash, aged 360 days at +50 °C	< 20 %	(EN 14415)
	Change in tensile strength and elongation, saturated lime wash, aged 56 days at +50 °C	< 10 % (MD/CMD)	
	Change in tensile strength and elongation, 10 % sulphuric acid test, aged 56 days at +50 °C	< 10 % (MD/CMD)	
Behaviour after Storage in Warm Water	Change in tensile strength, aged 240 days at +50 °C	< 20 % (MD/CMD)	(ÖBV Guideline Tunnel Waterproofing)
	Change in elongation, aged 240 days at +50 °C	< 20 % (MD/CMD)	
	Change in mass, aged 240 days at +50 °C	< 3 %	
Resistance to Weathering	Aged 3000 h at UV 350 MJ/m ²	> 75 % retained tensile strength and elongation	(EN 12224)
Resistance to Oxidation	Change in tensile strength, aged 120 days at +80 °C		(EN 1847; EN 14575)
	Change in tensile strength, aged 90 days at +85 °C	≤ 10 % (MD/CMD)	
	Change in elongation, aged 120 days at +80 °C		
	Change in elongation, aged 90 days at +85 °C	≤ 10 % (MD/CMD)	
	Foldability at low temperatures, aged 120 days at +80 °C		
	Foldability at low temperatures, aged 90 days at +85 °C	No cracks at -20 °C	
	Aged 90 days at +85 °C, tested 24 hours at 400 kPa		(EN 14575)
Microbiological Resistance	Change in tensile strength, aged 16 weeks	< 15 %	(EN 12225)
	Change in elongation, aged 16 weeks	< 15 %	
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)
Service temperature	Maximum	+40 °C	(ÖBV Guideline Tunnel Waterproofing)
	Minimum	-10 °C	
Behaviour after heat welding	Behaviour of weld in shear test	Break occurs outside the seam	(EN 12317-2)
	Peel resistance of welded seam	> 6.0 N/mm	(EN 12316-2)



SYSTEM INFORMATION

System Structure

Ancillary products:

- Sika® FlexoDrain
 - Sikaplan® Geotextile
 - Sika® Drains
 - Sika® W Tundrains
 - Sikaplan® WP Drainage Angles
 - Sikaplan® WP Disc
 - Sika Waterbar® WP
 - Sikaplan® WP Tape System
 - Sikaplan® WP Control Socket
 - Sikaplan®-8 Separation
 - Sikaplan® WP Trumpet Flange
 - Sika® Anchors
 - Sikaplan® WP Protection Sheet
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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.

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 QUALITY

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

- Sika Method Statement 850 72 03 Sikaplan® WP sheet membrane (PVC) system for waterproofing tunnels
- Sika Method Statement 850 72 01 Sikaplan® WP sheet membrane (PVC) system for waterproofing basements

APPLICATION

IMPORTANT

Strictly follow installation procedures

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

IMPORTANT

Application by trained personnel

The application of this Product must only be carried out by an applicator that is trained or approved by Sika. The applicator must also be experienced in this type of application.

IMPORTANT

Ventilation in confined spaces

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

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g/m²).

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

- Sika Method Statement 850 72 01 Sikaplan® WP sheet membrane (PVC) system for waterproofing basements
- Sika Method Statement 850 72 03 Sikaplan® WP sheet membrane (PVC) system for waterproofing tunnels

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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