



## PRODUCT DATA SHEET

# Sikaplan® WP 1100-31 HL2

3.1 mm thick PVC sheet waterproofing membrane for basements and tunnels with a thin signal layer

### PRODUCT DESCRIPTION

Sikaplan® WP 1100-31 HL2 is a flexible, 3.1 mm thick, homogeneous sheet waterproofing membrane. It contains a ≤ 0.2 mm thick signal layer and is based on high-quality polyvinylchloride (PVC-p).

### WHERE TO USE

Sikaplan® WP 1100-31 HL2 is used for the waterproofing of tunnels against water ingress.

### CHARACTERISTICS / ADVANTAGES

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

- 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 HL2 series / initial type testing according to öBV table 4-6 and 4-7

### TECHNICAL INFORMATION

<b>Resistance to Impact</b>	Method A, 500 g falling weight	Watertight at 1250 mm drop height	(EN 12691)
<b>Resistance to Static Puncture</b>	≥ 3.5 kN		(EN ISO 12236)

<b>Resistance to Root Penetration</b>	Pass		(CEN/TS 14416)
<b>Long Term Compression Strength</b>	Water tightness, aged 48 hours	Watertight at 7.0 N/mm <sup>2</sup>	(ÖBV Guideline Tunnel Waterproofing)
<b>Tensile Strength</b>	Longitudinal (MD) Transversal (CMD)	17 N/mm <sup>2</sup> ± 2 N/mm <sup>2</sup> 16.0 N/mm <sup>2</sup> ± 2.0 N/mm <sup>2</sup>	(EN ISO 527-3)
<b>Modulus of Elasticity in Tension</b>	Longitudinal (MD) Transversal (CMD)	≤ 20 N/mm <sup>2</sup> ≤ 20 N/mm <sup>2</sup>	(EN ISO 527-3)
<b>Elongation at Break</b>	Longitudinal (MD) Transversal (CMD)	> 300 % > 300 %	(EN ISO 527-3)
<b>Burst Strength</b>	Burst stress, D = 1000 mm Burst strain, D = 1000 mm	6.0 N/mm <sup>2</sup> 90 %	(DIN 61551)
<b>Dimensional Change after Heat</b>	Blisters, aged 6 hours at +80 °C Longitudinal (MD), aged 6 hours at +80 °C Transversal (CMD), aged 6 hours at +80 °C	No blisters < 2 % < 2 %	(EN 1107-2)
<b>Foldability</b>	No cracks at -20 °C		(EN 495-5)
<b>Reaction to Fire</b>	Class E		(EN 13501-5)
<b>Chemical Resistance</b>	Change in tensile strength and elongation, 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)	
<b>Behaviour after Storage in Warm Water</b>	Change in tensile strength, aged 240 days at +50 °C Change in elongation, aged 240 days at +50 °C Change in mass, aged 240 days at +50 °C	< 20 % (MD/CMD) < 20 % (MD/CMD) < 3 %	(ÖBV Guideline Tunnel Waterproofing)
<b>Resistance to UV Exposure</b>	Not permanently UV stable		
<b>Resistance to Weathering</b>	Aged 3000 h at UV 350 MJ/m <sup>2</sup>	> 75 % retained tensile strength and elongation	(EN 12224)

Not resistant to permanent weathering

<b>Resistance to Oxidation</b>	Change in tensile strength, aged 90 days at +85 °C	≤ 10 % (MD/CMD)	(EN 1847; EN 14575)
	Change in elongation, aged 90 days at +85 °C	≤ 10 % (MD/CMD)	
	Foldability at low temperatures, aged 90 days at +85 °C	No cracks at -20 °C	
<b>Microbiological Resistance</b>	Change in tensile strength, aged 16 weeks	< 15 %	(EN 12225)
	Change in elongation, aged 16 weeks	< 15 %	
<b>Durability of Watertightness against Ageing</b>	Aged 12 weeks at +85 °C, tested 24 hours at 60 kPa	Pass	(EN 1296)
<b>Service Temperature</b>	Maximum	+40 °C	(ÖBV Guideline Tunnel Waterproofing)
	Minimum	-10 °C	
<b>Behaviour after heat welding</b>	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)
<b>Water Permeability</b>	< 10 <sup>-6</sup> m <sup>3</sup> ·m <sup>-2</sup> ·d <sup>-1</sup>		(EN 14150)

## PRODUCT INFORMATION

<b>Composition / Manufacturing</b>	PVC-p	
<b>Packaging</b>	Roll width	2.0 m
	Roll length	20 m or specified
Rolls are wrapped in PE film. Refer to the current price list for available packaging variations.		
<b>Shelf Life</b>	5 years from date of production	
<b>Storage Conditions</b>	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.	
<b>Colour</b>	Signal layer colour	yellow
	Bottom layer colour	black
<b>Colour</b>	Surface texture	smooth
<b>Effective Thickness</b>	3.10 mm (-0.15 mm / +0.31 mm) including signal layer	(EN 1849-2)
	Signal layer thickness	≤ 0.2 mm
<b>Mass per unit area</b>	4.0 kg/m <sup>2</sup> (-0.2 kg/m <sup>2</sup> / +0.4 kg/m <sup>2</sup> )	(EN 1849-2)

## SYSTEMS

### 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

## BASIS OF PRODUCT DATA

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.

or applied at the jobsite, according to the Hazardous Product Act - Section 2. Based on our current knowledge, this product is not classified as dangerous and does not contain any hazardous materials. Always wear personal protective equipment (including safety goggles and gloves) to manipulate and install Sika® products.

## ENVIRONMENT, HEALTH & SAFETY

This product is a manufactured article that does not require Safety Data Sheets to be marketed, transported

## APPLICATION INSTRUCTIONS

### SUBSTRATE QUALITY

Product Data Sheet  
Sikaplan® WP 1100-31 HL2  
November 2024, Version 07.01  
020720101200000004

**BUILDING TRUST**  
**CONSTRUIRE LA CONFIANCE**



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

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

## 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.

IMPORTANT

### Avoid permanent contact with bitumen and plastics

The Product is not resistant to permanent contact with bitumen and some types of plastics other than PVC.

1. For use over or adjacent to these materials, apply a separation layer of polypropylene geotextile ( $\geq 150$  g/m<sup>2</sup>).

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

- Sika Method Statement 850 72 03 Sikaplan® WP sheet membrane (PVC) system for waterproofing 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 recommendations, or from any other advice offered. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. 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 or may be downloaded from our website at: [www.sika.ca](http://www.sika.ca)

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### **Other locations**

Boisbriand (Quebec)  
Brantford; Cambridge;  
Sudbury; Toronto (Ontario)  
Edmonton (Alberta)  
Surrey (British Columbia)

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