(Template for local translation, only for internal use)

Construction

Sikaplan® WT 4220-18H

Sheet waterproofing membrane – Drinking Water

Product Description	Sikaplan® WT 4220-18H is a homogenous waterproofing membrane based on flexible polyolefin (FPO-PE).
Uses	Membrane specifically designed for detailing works in the waterproof lining of closed potable water tanks with Sikaplan® polyolefin based sheet waterproofing membranes.
Characteristics / Advantages	■ Contains no solvents, fungicides, heavy metals, halogens, or plasticizers ■ High tensile strength and elongation ■ Approved for contact with potable (drinking) water ■ Resistant to microbial attack ■ Physiologically harmless and environmentally neutral (no volatile or extractable materials) ■ Good crack bridging ability ■ Suitable for contact with acidic soft water (low pH aggressive to concrete surfaces) ■ Can be installed on damp and wet substrates ■ Hot air weldable ■ Resistant to bitumen (discoloration is possible)

Tests

Approval / Standards	*National approvals for contact with potable(drinking) water:* Germany: W270, KTW. Switzerland: SVGW, BAG. United Kingdom: WRAS: BSI 6920 cold and hot water (60°C) Product Declaration EN 13361 - Geosynthetic barriers - Characteristics required for use in the construction of reservoirs and dams. CE-Approval No. 1349-CPD.

Product Data

Form

Appearance / Colours	Rolled sheet membrane, homogeneous. Surface: smooth Membrane thickness: 1.8 mm Colour: light blue

Packaging	Roll size: 1.08 m (roll width) x special length Packed in UV-protective polyethylene foil. Unit weight: 1.67 kg/m^2	

Storage

Storage Conditions / Shelf-Life	Rolls must be stored in their original packaging, in a horizontal position and in cool and dry conditions. They must be protected from direct sunlight, rain, snow and ice, etc. Product does not expire if correctly stored.	

Technical Data

Product Declaration	EN 13361: (2006) Mandatory for European countries	1349-CPD
Material Basis	Flexible polyolefin based ethylene-copolymer (FPO-PE).	
Thickness	1.8 (-5/+10%) mm	EN 1849-2
Mass per Unit Area	1.670 (-5/+10%) kg/m²	EN 1849-2
Thermal Expansion	230x10^{-6} (±55x10^{-6}) 1/K	ASTM D 696-91
Water Permeability	(liquid tightness) < 10^{-7} m^3 x m^{-2} x d^{-1}	prEN 14150:2001

Mechanical / Physical Properties

Tensile Strength	Machine: 24.5 (± 4.0) N/mm²	ISO 527 – 1/3/5
	Cross: 26.0 (± 4.0) N/mm²	ISO 527 – 1/3/5
Tear Strength	Machine: ≥ 120 kN/m	ISO 34 Method B; V=50 mm/min
	Cross: ≥ 120 kN/m	ISO 34 Method B; V=50 mm/min
Elongation	Machine : ≥ 700 %	ISO 527 – 1/3/5
	Cross: ≥ 700 %	ISO 527 – 1/3/5
Burst Strength	≥ 50 %	prEN 14151 D=1,0 m
Static Puncture	3.0 (± 0.40) kN	EN ISO 12236
Low Temperature Behaviour	≤ -50 °C	EN 495-5
Weathering	Remaining tensile strength and elongation: ≥ 75%	EN 12224, 350 MJ/m^2;ISO 527-3/5/100
Micro Organism	Change of tensile strength: ≤ 10%	EN 12225; ISO 527-3/5
	Change in elongation: ≤ 10%	EN 12225; ISO 527-3/5
Oxidation	Change of tensile strength: ≤ 15%	prEN 14575; ISO 527-3/5
	Change in elongation: ≤ 15%	prEN 14575; ISO 527-3/5
Environmental Stress Cracking	≥ 200 h	ASTM D 5397-99

Leaching (Water Soluble)	A (hot water): Change in elongation : ≤ 10%	EN 14415: 2004-08
	B (alkaline liquid): Change in elongation: ≤ 10%	EN 14415: 2004-08
	C (organic alcohol): Change in elongation: ≤ 10%	EN 14415: 2004-08

Resistance

Resistance to Root Penetration	Pass	prEN 14416:2002

System Information

System Structure	Ancillary Products: - Sikaplan® WT 4220-15C, Sikaplan® WT 4220-15C Felt 500 - Sikaplan® W Felt PP 500 white / S-Felt - Levelling and cushioning layer - Sikaplan® WT External/Internal Corner 90° PE fixing pieces - Sikaplan® W Flat Profile Stainless Steel - Sikaplan® WT Flat Profile PE light blue - Sarnafil® T Prep, cleaner for membrane surface preparation prior to welding - Sarnafil® T Clean, cleaner for soiled membrane surface

Application Details

Substrate Quality	Clean and dry (not wet), homogeneous, free from oil, dust and loose or friable particles. In order to improve the hygienic quality of the substrate it is recommendable to eliminate existing bacterial growth by disinfection or steam cleaning (approx. 120°C). (Recommended disinfection medium: sodium hypochlorite 15%, dissolved as 10% solution in clean water (90% vol. clean water), or according to local regulation. Preferably to be applied by low pressure spray).

Application Conditions / Limitations

Substrate Temperature	0°C min. / +35°C max.
Ambient Temperature	+5°C min. / +35°C max. For installation below +5°C ambient temperature, special measures for safety requirements may be required in accordance with relevant national regulations.

Application Instructions

Application Method / Tools	Installation method: Mechanically fastened, loose laid or ballasted in accordance with Sika application manual and installation instructions. All membrane overlaps must be welded i.e. 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, Leister Comet / semi-automatic: Leister Triac Drive). Use Sarnafil® T Prep for seam preparation and cleaning of slightly soiled membrane surfaces. Welding parameters, such as speed and temperature must be established with trials on site, prior to any welding works.

Construction

Notes on Application / Limitations

Installation works shall only be carried out by Sika® trained professional contractors experienced in the lining of drinking water tanks.

Sikaplan® WT 4220 membranes are **not UV-stabilised** and in no circumstances shall they be exposed to direct sunlight (it can reduce the weldability of the membrane). Membrane rolls shall be stored correctly as stated above.

The watertightness of the structure must be tested and approved after completing the membrane installation works, according to the requirements of the local Water Authority.

The cleaning and disinfection of membrane surfaces shall also be according to the requirements of the local Water Authority.

Sikaplan® WT 4220 membranes are not suitable for use as the liner in drinking water tanks with the following conditions:

- Permanent water temperature exceeding +35°C
- Continual or frequent dosage of free chlorine exceeding 0.8 mg/l

Slight visual changes in the surface characteristics of the material, which can be caused by the effects of incorrect or excessive chemical exposure, such as during cleaning or treatment of the water, or by water flow under the membrane, do not constitute defects for which Sika is responsible.

The long-term performance of waterproofing membranes in water tanks, can be significantly prolonged by continuous monitoring with regular physical inspections and cleaning (in accordance with any specific national directives).

Specifically with regards to cleaning, drinking water reservoirs shall always be drained at least once a year and professionally cleaned.

Sika is not liable for defects caused by non-compliance with specific national directives and the care instructions in the Sika product documentation. Liability for consequential damage is excluded.

Value Base

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.

Health and Safety Information

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.

It may be necessary to adapt the above disclaimer to specific local laws and regulations. Any changes to this disclaimer may only be implemented with permission of Sika® Corporate Legal in Baar.

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Responsible Care

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