

PRODUCT DATA SHEET

Sikaplan® WT 4220-15 C

POLYOLEFIN MEMBRANE FOR POTABLE WATER TANK WATERPROOFING



DESCRIPTION

Sikaplan® WT 4220-15 C is a polyolefin based, flexible, homogeneous, smooth sheet membrane with a glass fibre reinforcing inlay with 1,5 mm thickness. Sikaplan® WT 4220-15 C exhibits high strength and is microbiological & soft water resistant, durable and heat weldable. It is suitable for application at temperatures up to +40 °C. Approved for potable water.

USES

Sikaplan® WT 4220-15 C may only be used by experienced professionals.

- Lining of enclosed potable water tanks

CHARACTERISTICS / ADVANTAGES

- Approved for contact with potable (drinking) water
- Contains no solvents, fungicides, heavy metals, halogens or plasticisers
- High tensile strength and elongation
- Resistant against permanent water temperature up to +40 °C
- Resistant to microbiological degradation
- Flexible in cold temperatures
- Suitable for contact with acidic soft water
- Can be installed on damp and wet substrates
- Heat weldable

APPROVALS / CERTIFICATES

- CE-marking and Declaration of Performance as Geosynthetic barrier for use in the construction of reservoirs and dams according to EN 13361: 2004, based on certificate of factory production control issued by notified factory production control certification body and type testing.
- Water Regulations Certification WTPW 101, Sikaplan® WT 4220-15 C, SVGW, Certificate No.0310-4729
- Water Regulations Test Report BS 6920, Sikaplan® WT 4220-15 C, WRC-NSF, Report No 1806503

PRODUCT INFORMATION

Product Declaration	EN 13361 - Geosynthetic barriers for reservoirs and dams
Composition	Polyolefin (FPO-PP)

Packaging	Rolls are wrapped individually in a PE-film.	
	Roll size	
	Length	20,0 m or specified length
	Width	2,00 m
Appearance / Colour	Surface	Smooth
	Colour	Blue
Shelf life	5 years 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	1,50 mm (-5 /+10 %)	(EN 1849-2)
Mass per unit area	1,30 (-5 /+10 %) kg/m ²	(EN 1849-2)

TECHNICAL INFORMATION

Tensile Strength	15 N/mm ²	(machine direction)	(ISO 527)
	12 N/mm ²	(cross direction)	
Elongation	≥ 480 %	(machine/ cross direction)	(ISO 527)
Burst Strength	≥ 50 % (D = 1,00m)		(EN 14151)
Resistance to Static Puncture	> 3,00 kN		(EN ISO 12236)
Permeability to Liquid Water	≤ 10 ⁻⁷ m ³ ·m ⁻² ·d ⁻¹		(EN 14150)
Foldability at Low Temperature	No cracks at - 50 °C		(EN 495-5)
Tear Resistance	≥ 120 kN/m (Method B, V = 50 mm/min)		(ISO 34)
Coefficient of Thermal Expansion	120 × 10 ⁻⁶ (±55 × 10 ⁻⁶) 1/K		(ASTM D 696-91)
Resistance to Oxidation	Change of tensile strength	≤ 15 %	(EN 14575)(ISO 527)
	Change of elongation	≤ 15 %	
Microbiological Resistance	Change of tensile strength	≤ 10 %	(EN 12225) (ISO 527)
	Change of elongation	≤ 10 %	
Resistance to Environmental Stress Cracking	≥ 200 h		(ASTM D 5397-99)
Resistance to Weathering	Remaining tensile strength and elongation	≥ 75 % (350 MJ/m ²)	(EN 12224)(ISO 527)
Resistance to Root Penetration	Pass		(CEN/TS 14416)
Ambient Maximum Temperature of Liquids	+40 °C		

SYSTEMS

System Structure

Ancillary Products:

- Sikaplan® WT 4220-15C Felt 500
- Sikaplan® WT 4220-18H
- Sikaplan® W Felt PES 300 Biocide
- Sarnafil® T Clean, cleaner for soiled membrane surface
- Sikaplan® WT External/Internal Corner 90° preformed PE
- Sikaplan® W Flat Profile Stainless Steel
- Sikaplan® WT Fixation Plate PE light blue
- Sarnafil® T Prep, cleaner for membrane surface preparation prior to welding

APPLICATION INFORMATION

Ambient Air Temperature + 5 °C min./+ 35 °C max.

Substrate Temperature 0 °C min./+ 35 °C max.

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY

Substrates shall be clean, dry and free of all contaminants such as dirt, oil, grease, existing coatings, surface treatments, dust, loose friable particles, cement laitance and other poorly adhering materials.

Prior to the installation of Sikaplan® WT 4220-15 C. The substrate must be disinfected by spraying disinfectant Sikagard® SB, or similar.

If a cushion layer is not specified. Install a geotextile (non-woven fabric) with minimum density of 300 g/m² beneath the membrane.

APPLICATION METHOD / TOOLS

Installation procedure

Reference must be made to further documentation where applicable, such as relevant method statement, application manual and installation or working instructions.

Installation method - General

The waterproofing membrane is installed by loose laying with mechanically fastening in seam overlaps or separate from overlaps.

Preparation of overlap seams

Before seam welding, Sarnafil® T Clean must be used for seam cleaning of slightly soiled membrane surfaces.

After seam cleaning and before seam welding, Sarnafil® T Prep must be used for seam preparation of membrane surfaces.

Hot welding method

Overlap seams must be welded by electric hot welding equipment. Welding parameters including temperature, machine speed, air flow, pressure and machine settings must be evaluated, adapted and checked on site according to the type of equipment and the climatic conditions prior to welding.

Electric hot air welding equipment, such as hand held manual hot air welding equipment and pressure rollers or automatic hot air welding machines with controlled hot air temperature capability of a minimum 600 °C are suitable.

Recommended type of equipment:

- Manual: Leister Triac PID
 - Automatic : Leister Twinny S
 - Semi-automatic: Leister Triac Drive
- Or other suitable equivalent electric hot air welding equipment.

Testing overlap seams

The seams must be mechanically tested with screw driver or steel needle to ensure the integrity/completion of the weld. Any imperfections must be rectified by hot air welding.

Watertightness testing

The watertightness of the structure must be tested and approved after completion of the membrane installation works according to the requirements of the client's specifications.

Cleaning and disinfection of installed membrane

The cleaning and disinfection procedures of the installed membrane surfaces must be carried out in accordance with the requirements of the local water authority.

IMPORTANT CONSIDERATIONS

- Installation work must only be carried out by Sika® trained and approved contractors, experienced in lining of potable water tanks and reservoirs.
- Precautions 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 precautions must be proven by taking measurements.
- Fresh air ventilation must always be ensured and in accordance with all relevant local regulations for confined working.
- Do not use for permanent water temperature exceeding +40 °C
- Do not use for continual or frequent dosage of free chlorine exceeding 0,8 mg/l
- Do not use as a tank lining exposed to weathering and UV-light

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

REGULATION (EC) NO 1907/2006 - REACH

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 this 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).

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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