

Sarnafil® TS 77-18

Polymeric membrane for roof waterproofing

Product Description

Sarnafil® TS 77-18 (thickness 1.8mm) is a Polyester reinforced, multi-layer, synthetic roof waterproofing sheet based on premium-quality flexible polyolefins (FPO) containing ultraviolet light stabilizers, flame retardant and an inlay of glass non-woven according to EN 13956.

Sarnafil® TS 77-18 is a hot air weldable roof membrane formulated for direct exposure and designed to use in all global climatic conditions. Sarnafil® TS 77-18 is produced with an inlay of glass non-woven for dimensional stability and a polyester reinforcement for high strength. Sarnafil® TS 77-18 is provided for mechanically attached roof systems.

Sarnafil® TS 77-18 has no built-in stress at the time of production and has a fully encapsulated carrier with no risk to delamination or water-wicking. The dimensional stability of Sarnafil® TS 77-18 is excellent.

Uses

Waterproofing membrane for:

- Mechanically fastened roofs
- Enhancement of Solar Reflection of existing TPO roofs (relevant only for colour RAL 9016 SR)

Characteristics / Advantages

- Outstanding resistance to weathering, including permanent UV irradiation
- Excellent flexibility in cold temperatures
- No built-in stress at the time of production
- High dimensional stability
- High resistance against impact load
- Excellent weldability
- No risk of delamination or water-wicking
- Compatible to old bitumen (not recommended for RAL 9016 SR)
- Recyclable

Approval / Standards

Sarnafil® TS 77-18 is designed and manufactured to meet the most international recognised standards.

- Polymeric sheets for roof waterproofing according to EN 13956, certified by notified body 1213-CPD-3915 and provided with the CE-mark.
- Reaction to fire according to EN 13501-1.
- External fire performance tested according to ENV 1187 and classified according to EN 13501-5: B_{ROOF(t4)}.
- Official Quality Approvals and Agreement Certificates and approvals.
- Monitoring and assessment by approved laboratories.
- Quality Management system in accordance with EN ISO 9001/14001.

Roofing



Appearance / Colours	Surface:	matt
	Colours:	
	Top surface:	window grey (nearest RAL 7040)
	Bottom surface:	black

Packaging	Sarnafil® TS 77-18 standard rolls are wrapped individually in a blue PE-foil.
Packing unit:	see price list
Roll length:	15.00 m
Roll width:	2.00 m
Roll weight:	59.50 kg

Storage Conditions / Shelf-Life	Rolls must be stored in a horizontal position on pallet and protected from direct sunlight, rain and snow. Product does not expire if correctly stored.
	Do not stack pallets of rolls during transport or storage.

Technical Data

Product Declaration	EN 13956	
Visible defects	Pass	EN 1850-2
Length	15 m (-0% / +5%)	EN 1848-2
Width	2 m (-0% / +5%)	EN 1848-2
Straightness	≤ 30 mm	EN 1848-2
Flatness	≤ 10 mm	EN 1848-2
Effective thickness	1.8 mm (-5% / +10%)	EN 1849-2
Mass per unit area	1.98 kg/m ² (-5% / +10%)	EN 1849-2
Water tightness	Pass	EN 1928
Effects of liquid chemicals, including water	On request	EN 1847
External fire performance		ENV 1187
Part 1-4	B _{ROOF} (t1) < 20°	EN 13501-5
Reaction to fire	Class E	EN ISO 11925-2, classification to EN 13501-1
Hail resistance		EN 13583
rigid substrate	≥ 25 m/s	
flexible substrate	≥ 33 m/s	
Joint peel resistance	≥ 300 N/50 mm	EN 12316-2
Joint shear resistance	≥ 500 N/50 mm	EN 12317-2
Water vapour transmission properties	μ = 150'000	EN 1931
Tensile strength		EN 12311-2
longitudinal (md)¹⁾	≥ 1000 N/50 mm	
transversal (cmd)²⁾	≥ 900 N/50 mm	
Elongation		EN 12311-2
longitudinal (md)¹⁾	≥ 13 %	
transversal (cmd)²⁾	≥ 13 %	
Resistance to impact		EN 12691
hard substrate	≥ 1000 mm	
soft substrate	≥ 1250 mm	
Resistance to static load		EN 12730
soft substrate	≥ 20 kg	
rigid substrate	≥ 20 kg	
Tear strength		EN 12310-2
longitudinal (md)¹⁾	≥ 300 N	
transversal (cmd)²⁾	≥ 300 N	
Dimension stability		EN 1107-2
longitudinal (md)¹⁾	≤ 0.2 %	
transversal (cmd)²⁾	≤ 0.1 %	
Foldability at low temperature	≤ -40 °C	EN 495-5
UV exposure	Pass (> 5'000 h / grade 0)	EN 1297
Exposure to bitumen³⁾	Pass	EN 1548

¹⁾md = machine direction

²⁾cmd = cross machine direction

³⁾ Sarnafil® T is compatible to old bitumen

System Information

System Structure

Wide range of accessories is available e.g. prefabricated parts, roof drains, scuppers and walkway pads.

The following materials are strongly recommended:

Sarnafil® T 66-15 D Sheet for detailing
Sarnafil® TS 77 strips
Sarnafil® T Metal Sheet
Sarnabar
Sarnafil® T Welding Cord
Sarnafil® T Prep
Sarnafil® T Clean

Application Details

Substrate Quality

The substrate surface must be uniform, smooth and free of any sharp protrusions or burrs, etc.

The supporting layer must be compatible to the membrane, solvent resistant, clean, dry and free of grease and dust. Metal sheets must be degreased with Solvent T 660 before adhesive is applied.

Application Conditions / Limits

Temperature

The use of Sarnafil® TS 77-18 membrane is limited to geographical locations with average monthly minimum temperatures of -50°C.
Permanent ambient temperature during use is limited to +50°C.

Compatibility

Sarnafil® TS 77-18 may be installed on all thermal insulations and levelling layers suitable for roofing. No additional separation layer is required. Probably a fire protection layer is necessary.

Sarnafil® TS 77-18 is suitable for installation directly on top of existing, carefully cleaned, levelled bituminous roofing, e.g. re-roofing over old flat roofs.

Colour changes in membrane surface may occur in case of direct contact with bitumen.

In case of existing roof build up needs to be removed, Sarnafil® TS 77-18 can be adhered directly on to the bituminous control layer for partitioning and protection of the day work.

In case of Photovoltaic applications (RAL 9016 SR) it is advised to remove bitumen before applying the TS 77-18 membrane.

Installation Instructions

Installation Method / Tools

Installation procedure:
According to the valid installation instructions of manufacturer for Sarnafil® TS 77-types system for mechanically fastened roofs.

Fixing Method, linear fastening (Sarnabar):

Unroll the Sarnafil® TS 77-18 membrane, overlap by 80 mm, weld immediately and fix to the substructure by means of Sarnabars. The type of fastening will be advised by Sika. The spacing of the fasteners is in accordance with the project specific calculations made by Sika. The perimeter piece ends must be secured with the Sarnafil® Load Distribution Plate. For protection fasten a piece of Sarnafil® TS 77-18 under bar end and plate. Leave a 10 mm clearance between bar ends. Do not fasten in hole nearest bar end. Cover the bar ends with a piece of Sarnafil® TS 77-18 and weld. After installation the Sarnabars must immediately be made watertight with a Sarnafil® cover strip. At upstands and at all penetrations, the Sarnafil® TS 77-18 membrane must be secured with a Sarnabar. The Sarnafil® T Welding Cord protects the Sarnafil® TS 77-18 roof covering against tearing and peeling of by wind uplift.

Fixing Method, spot fastening (Sarnafast):

Sarnafil® TS 77-18 must always be installed at right angles to the deck direction. Sarnafil® TS 77-18 is fixed by means of the Sarnafast fasteners and barbed washers along the marked line, 35 mm from the edge of the membrane. Sarnafil® TS 77-18 is overlapped by 120 mm.

Welding Method:

Before welding the seams are prepared with Sarnafil® T Prep. Overlap seams are welded by electric hot air welding equipment, such as manual hot air welding machines and pressure rollers or automatic hot air welding machines with controlled hot air temperature.

Recommended type of equipment: Leister Triac PID for manual welding
Sarnamatic 661^{plus} for automatic welding

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 situation prior to welding. The effective width of welded overlaps by hot air should be minimum 20 mm.

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

Notes on Installation / Limits

Installation works to be carried out only by Sarnafil Registered Contractors for roofing.

Temperature limits for the installation of the membrane:

Substrate temperature: -30 °C min. / +60 °C max.

Ambient temperature: -20 °C min. / +60 °C max.

Installation of some ancillary products, e.g. contact adhesives / cleaners is limited to temperatures above +5 °C. Please observe information given by Product Data Sheets.

Special measures may be compulsory for installation below +5°C ambient temperature due to safety requirements in accordance with national regulations.

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.
Ecology, Health and Safety Information	A Safety Data Sheet following EC-Regulation 1907/2006, Article 31 is not needed to bring the product to the market, to transport or to use it. The product does not damage the environment when used as specified.
REACH	<p>European Community Regulation on chemicals and their safe use (REACH: EC 1907/2006)</p> <p>This product is an article within the meaning 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. Therefore, there are no registration requirements for substances in articles within the meaning of Article 7.1 of the Regulation.</p> <p>Based on our current knowledge, this product does not contain SVHC (substances of very high concern) from the candidate list published by the European Chemicals Agency in concentrations above 0.1 % (w/w).</p>
Protective Measures	<p>Fresh air ventilation must be ensured, when working (welding) in closed rooms.</p> <p>Installation of RAL 9016 SR type requires the use of UV protection goggles.</p> <p>Local safety regulations must be observed.</p>
Transportation Class	The product is not classified as hazardous good for transport.
Disposal	The material is recyclable. Disposal must be according to local regulations. Please contact your local Sika sales organisation for more information.



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