BUILDING TRUST

PRODUCT DATA SHEET

Sarnafil® TS 77-20

2.0 mm thick polymeric FPO membrane for mechanically-fastened roof waterproofing

PRODUCT DESCRIPTION

Sarnafil® TS 77-20 (thickness 2.0 mm) is a premium multi-layer synthetic roof waterproofing sheet based on flexible polyolefin (FPO) with internal Polyester reinforcement and glass non-woven inlay according to EN 13956. The product is hot air weldable, UV-stabilised with extrenal fire performance. Can be applied in all climatic zones.

USES

Sarnafil® TS 77-20 is used as a waterproofing membrane in the following roofing applications:
- Mechanically fastened roofing systems

CHARACTERISTICS / ADVANTAGES

- High durability and long service life
- Increased resistance to damage through wind uplift
- UV-stabilised
- Hot-air welding application

ENVIRONMENTAL INFORMATION

- Contributes towards satisfying Materials and Resources (MR) Credit: Building product disclosure and optimization — Environmental Product Declarations under LEED® v4 — 1 point
- Contributes towards satisfying Materials and Resources (MR) Credit: Building Product Disclosure and Optimization — Sourcing of Raw Materials under LEED® v4 — 1 point
- Contributes towards satisfying Materials and Resources (MR) Credit: Building Product Disclosure and Optimization — Material Ingredients under LEED® v4 — 1 point
- Contributes towards satisfying Sustainable Sites (SS) Credit: Heat Island Reduction under LEED® v4 — 1–2 points
- Specific Environmental Product Declaration (EPD) in accordance with EN 15804. EPD independently verified by Institut für Bauen und Umwelt e.V. (IBU)

APPROVALS / STANDARDS

- CE marking and declaration of performance based on EN 13956:2012 Flexible sheets for waterproofing — Plastic and rubber sheets for roof waterproofing — Definitions and characteristics
- FM Approved, Certificate of Compliance, Sarnafil® G 410 EL, Approval Identificat
- Root resistance EN 13948, Sarnafil® TS 77, Weihenstephan-Triesdorf, Test Report No. 26e/20
- Fire classification report EN 13501-5 Sarnafil TS 77 on PIR / PUR <20° Broof T1

PRODUCT INFORMATION

Chemical Base	Flexible polyolefins (FPO)	
Packaging	Standard rolls are wrapped individually in a PE-foil.	
	Roll width	2 m
	Roll length	15 m
	Roll weight	64.8 kg
	Refer to the current price list for available packaging variations.	
Colour	Top layer colour	light grey (~RAL 7047), lead grey (~RAL 7012)
	Bottom layer colour	dark grey
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 +40 °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 the packaging.	
Product Declaration	EN 13956 - Polymeric sheets for roof waterproofing	
Visible Defects	Pass	(EN 1850-2)
Length	15 m (+0.75 m / -0 m)	(EN 1848-2)
Width	2 m (+0.02 m / -0.01 m)	(EN 1848-1)
Effective Thickness	2.0 mm (+0.2 mm / -0.1 mm)	(EN 1849-2)
Straightness	≤ 30 mm	(EN 1848-2)
Flatness	≤ 10 mm	(EN 1848-2)
Mass per unit area	2.16 kg/m² (+0.22 kg/m² / -0.11 kg/m²)	(EN 1849-2)
Colour	matt	

TECHNICAL INFORMATION

Resistance to Impact	Method A, Hard support	≥ 1250 mm	(EN 12691)
	Method B, Soft support	≥ 1500 mm	
Hail Resistance	Hard support	≥ 30 m/s	(EN 13583)
	Soft support	≥ 40 m/s	
Resistance to Static Load	Hard support	≥ 20 kg	(EN 12730)
	Soft support	≥ 20 kg	
Resistance to Root Penetration	Pass		(EN 13948)
Dimensional Stability	Longitudinal (MD), aged 6 hours at +80 °C	≤ |0.2| %	(EN 1107-2)
	Transversal (CMD), aged 6 hours at +80 °C	≤ |0.1| %	
Resistance to Tearing (nail shank)	Longitudinal (MD)	≥ 300 N	(EN 12310-2)
	Transversal (CMD)	≥ 300 N	
Joint Peel Resistance	Failure mode C, no failure of the joint.		(EN 12316-2)

Joint Shear Resistance	≥ 500 N / 50 mm		(EN 12317-2)
Foldability at Low Temperature	≤ -40 °C		(EN 495-5)
External Fire Performance	B_{Roof} T1, roof angle < 20°	Pass	(EN 13501-5)
Reaction to Fire	Class E		(EN 13501-1)
Chemical Resistance	Resistant to specific chemicals. Contact Sika Technical Services for additional information.		(EN 1847)
Exposure to Bitumen	Bitumen compatibility	Pass	(EN 1928; EN 1548)
UV Exposure	> 5000 hours UV exposure	Grade 0	(EN 1297)
Artificial Ageing	Pass		(EN 1297)
Diffusion Resistance to Water Vapour	Resistance factor, Method A, tested at +23 °C and 75 % r.h.	μ = 190 000	(EN 1931)
Water Tightness	Method B: at 10 kPa	Pass	(EN 1928)
Maximum tensile force	Longitudinal (MD) Transversal (CMD)	≥ 1000 N / 50 mm ≥ 900 N / 50 mm	(EN 12311-2)
Elongation at maximum tensile force	Longitudinal (MD) Transversal (CMD)	≥ 13 % ≥ 13 %	(EN 12311-2)

APPLICATION INFORMATION

Ambient Air Temperature	Maximum	+60 °C
	Minimum	-20 °C
Substrate Temperature	Maximum	+60 °C
	Minimum	-25 °C

SYSTEM INFORMATION

Compatibility	Discolouration of the membrane surface may occur if it is in direct contact with bitumen. To prevent discolouration, use separation layer.

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.

FURTHER DOCUMENTS

- Application manual Sarnafil® TG/TS - Sarnafil® G/S

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

EQUIPMENT

HOT-WELDING OVERLAP SEAMS

- Electric hot-air welding equipment such as hand-held, manual hot-air welding equipment and pressure rollers.
- Automatic hot-air welding machines with controlled hot-air temperature capability of a minimum +600 °C.

Recommended equipment:

Manual	Leister Triac
Automatic	Varimat

SUBSTRATE PREPARATION

The substrate surface must be smooth and uniform. The supporting layer must be compatible with the membrane, resistant to solvents and dry.

1. Remove any sharp protrusions or burrs from the substrate.
2. If contaminants such as grease or dust are present, clean the supporting layer.

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.
FIXING METHOD - GENERAL
The waterproofing membrane is installed by loose laying – without stretching the membrane or installing under tension – with mechanical fastening in the seam overlaps or independently of overlaps. Overlap seams are hot-air welded using specialised hot-air equipment.
FIXING METHOD - SPOT FASTENING (SARNAFAST®)

1. Install the Product at right angles to the deck direction. Unroll the waterproofing membrane, overlapping it by 120 mm.
2. Fix the waterproofing membrane using Sarnafast® fasteners, barbed washers and tubes along the marked line, 35 mm from the edge of the membrane. The spacing of the fasteners must be in accordance with the project specific Sika calculations.
3. At upstands and at all penetrations, secure the Product with a Sarnabar®.
4. Use the 4 mm diameter Sarnafil® T Welding Cord to protect the roof covering against tearing and peeling off by wind uplift.

FIXING METHOD - FIELD FASTENING

1. Install the membrane at right angles to the deck direction. Unroll the waterproofing membrane, overlaping it by 80 mm.
2. Fix the membrane by induction-welding Sarnadisc hot melt coated washers and Sarnafast® fasteners along the marked line, 35 mm from the edge of the membrane. The spacing of the fasteners must be in accordance with the project specific Sika calcula-
3. At upstands and at all penetrations, secure the Product with a Sarnabar®.
4. Use the 4 mm diameter Sarnafil® T Welding Cord to protect the roof covering against tearing and peeling off by wind uplift.

HOT WELDING OVERLAP SEAMS
(a)y electric hot-welding equipment. Prior to 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 conditions. The effective width of overlaps welded by hot air must be a minimum of 20 mm.
TESTING OVERLAP SEAMS

1. Mechanically test seams with a rounded-edge screwdriver to ensure the integrity and completion of the weld.
2. Rectify any imperfections using hot-air welding.

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.

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.

SIKA LIMITED
Watchmead
Welwyn Garden City
Hertfordshire, AL7 1BQ
Tel: 01707 394444
Web: www.sika.co.uk
Twitter: @SikaLimited