

PRODUCT DATA SHEET

Sarnafil® AT-18 FSH

Polymeric FPO membrane for mechanically and ballasted roof waterproofing

DESCRIPTION

Sarnafil® AT-18 FSH (thickness 1.8 mm) is a self-healing, multi-layer synthetic roof waterproofing sheet. It is based on elastomer-modified flexible polyolefin (FPO) with internal polyester reinforcement, a glass non-woven inlay and a polyester backing according to EN 13956. The Product is a hot air weldable roof membrane formulated for direct exposure and designed for use in all global climatic conditions.

USES

The product is used as a waterproof membrane in the following roofing applications:

- Mechanically fastened roofing systems
- Loose laid ballasted roofs with different ballast materials such as gravel or concrete slabs
- Intensive green roofs
- Extensive green roofs
- Utility roofs
- Inverted roofs
- Terraces

Please note:

- The Product may only be used by experienced professionals.
- The use of the Product is limited to geographical locations with average monthly minimum temperatures of -50 °C. Permanent ambient temperature during use is limited to +50 °C.

PRODUCT INFORMATION

Composition	Flexible polyolefins (FPO)	
Packaging	Standard rolls are wrapped individually in a blue PE-foil.	
	Packing unit	Refer to price list
	Roll length	10.00 m
	Roll width	2.00 m
	Roll weight	46.00 kg
	Refer to the current price list for available packaging variations.	

FEATURES

- Fast installation
- Very good resistance to permanent wind exposure
- Very good resistance to impact load and hail
- Very good mechanical resistance
- Very good resistance to permanent UV exposure
- High dimensional stability from glass fleece inlay
- Very good resistance to common environmental influences
- Proven resistance to root penetration
- Very good resistance to micro-organisms
- Compatible with old bitumen
- Hot air weldable
- No open flame equipment required

CERTIFICATES AND TEST REPORTS

- 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

Appearance and colour	Surface	matt
	Top layer	window grey (~RAL 7040)
	Bottom layer	black
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 -20 °C and +30 °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.	
Visible defects	Pass	(EN 1850-2)
Length	10.00 m (+0.50 m / -0.00 m)	(EN 1848-2)
Width	2.00 m (+0.02 m / -0.01 m)	(EN 1848-2)
Effective thickness	1.8 mm (+0.18 mm / -0.09 mm)	(EN 1848-2)
Straightness	≤ 30 mm	(EN 1848-2)
Flatness	≤ 10 mm	(EN 1848-2)
Mass per area	2.3 kg/m ² (+0.23 kg/m ² / -0.115 kg/m ²)	(EN 1849-2)

TECHNICAL INFORMATION

Resistance to impact	Hard substrate	≥ 1000 mm	(EN 12691)
	Soft substrate	≥ 3500 mm	
Hail resistance	Rigid substrate	≥ 29 m/s	(EN 13583)
	Flexible substrate	≥ 42 m/s	
Resistance to static loading	Soft substrate	≥ 20 kg	(EN 12730)
	Rigid substrate	≥ 20 kg	
Resistance to root penetration	Pass		(EN 13948)
Tensile strength	Longitudinal (MD)	≥ 950 N/50mm	(EN 12311-2)
	Transversal (CMD)	≥ 900 N/50mm	
Elongation	Longitudinal (MD)	≥ 18 %	(EN 12311-2)
	Transversal (CMD)	≥ 18 %	
Dimensional stability	Longitudinal (MD)	≥ 0.4 %	(EN 1107-2)
	Transversal (CMD)	≥ 0.1 %	
Joint peel resistance	Failure mode	C, no failure of the joint	(EN 12316-2)
Joint shear resistance	≥ 400 N/50 mm		(EN 12317-2)
Foldability at low temperature	≤ -50 °C, top surface only		(EN 495-5)
External fire performance	Class B _{Roof} (t1) < 20°		(EN 13501-5)
Reaction to fire	Class E		(EN 13501-1)
Chemical resistance	Resistance to Ozone	Pass	(ISO 1431-1)
Effect of liquid chemicals, including water	Resistant to many chemicals. Contact Sika Technical Services for additional information.		(EN 1847)
Exposure to bitumen	Pass		(EN 1548)

Resistance to UV exposure	Pass (> 5000 h / grade 0)	(EN 1297)
Diffusion resistance to water vapour	$\mu = 190\ 000$	(EN 1931)
Watertightness	Pass	(EN 1928)

APPLICATION INFORMATION

Ambient air temperature	Maximum	+60 °C
	Minimum	-20 °C
Substrate temperature	Maximum	+60 °C
	Minimum	-30 °C

SYSTEM INFORMATION

System structure	<p>The following products must be considered for use depending on roof design:</p> <ul style="list-style-type: none"> ▪ Sarnafil® AT-18 FSA P self adhered membrane for parapet ▪ Sarnafil® AT D sheet for detailing ▪ Sarnafil® T Metal Sheet/coil ▪ Sarnabar® Linear Profiles and Sarnafast® fastener ▪ Sarnafil® T Welding Cord ▪ Sarnafil® T Clean <p>Ancillary products:</p> <ul style="list-style-type: none"> ▪ Prefabricated parts ▪ Roof drains ▪ Scuppers ▪ Walkway pads ▪ Decor profiles ▪ Protection sheets
Compatibility	<p>The Product is compatible with the following substrates:</p> <ul style="list-style-type: none"> ▪ All thermal insulation types and levelling layers suitable for roofing. No additional separation layer is required. ▪ Existing bituminous roofing that is clean and level, for example re-roofing over old flat roofs. Discolouration of the membrane surface may occur if in direct contact with bitumen.

BASIS OF PRODUCT DATA

All technical data stated in this Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

FURTHER DOCUMENTATION

- Application manual Sarnafil® AT

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 reg-

ulation 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 or automatic hot air welding machines with controlled hot air temperature capability of a minimum +600 °C.

Recommended equipment:

Manual	Leister Triac
Automatic	Sarnamatic, Varimat
Semi automatic	Leister Triac Drive

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SUBSTRATE QUALITY

The supporting structure must be of sufficient structural strength to apply all new and existing layers of the roof build-up and the complete roof system must be designed and secured against wind uplift loadings. The substrate must be uniform, firm, smooth and free of any sharp protrusion or burrs, clean, dry, free of grease, bitumen, oil, dust and loose surface sand or gravel dressing.

APPLICATION

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.

Refer to the following application manual:

- Application manual Sarnafil® AT

FIXING METHOD

The waterproofing membrane is installed by loose laying (without stretching membrane or installing under tension) with mechanical fastening in seam overlaps or independent from overlaps. Overlap seams are hot air welded using specialised hot air equipment.

FIXING METHOD - LINEAR FASTENING (SARNABAR®)

1. Unroll the waterproofing membrane, overlapping it by 80 mm.
2. Weld the overlap seams immediately and fix to the substructure by means of the Sarnabar® Fastening Profiles with Sarnafast® Fastener. Note The preferred type of fastening will be advised by Sika. The spacing of the fasteners is in accordance with the project specific Sika calculations.
3. Secure the perimeter piece ends with the Sika® LVP-Universal plate. Note For protection fasten a piece of the Product under bar end plate.
4. **IMPORTANT** Do not fasten using the hole nearest the bar end. Leave a 10 mm clearance between bar ends.
5. Cover the bar ends with a piece of the membrane and weld.
6. Immediately after installation make the Sarnabar® watertight with a cover strip of the waterproofing membrane.
7. At upstands and at all penetrations, secure the Product with a Sarnabar®.
8. Use the 4 mm diameter Sarnafil® T Welding Cord to protect the roof covering against tearing and peeling

off by wind uplift.

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 is 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 S-Welding cord PVC to protect the roof covering against tearing and peeling off by wind uplift.

FIXING METHOD - LOOSE LAID

1. Unroll the waterproofing membrane, overlapping it by 80 mm.
2. Immediately weld the overlap seams.
3. Cover with the appropriate roof material according to the roof design and the local wind loading conditions.
4. Mechanically fix around the roof perimeter with Sarnabar® including Sarnafil® T Welding Cord to keep membrane in place.

SELF ADHERED ROOF JUNCTIONS, FLASHINGS OR UPSTANDS

1. Bond the Product to adjoining surfaces using Sarnafil® AT-18 FSA P self adhered membrane. Refer to individual Product Data Sheet.

HOT WELDING OVERLAP SEAMS

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. The effective width of welded overlaps by hot air must be minimum 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 with hot air welding.

Application below +5 °C

Note: Special measures may be compulsory for installation below +5 °C ambient temperature due to safety requirements in accordance with national regulations. Note: Installation of ancillary products, such as contact adhesives or cleaners is limited to temperatures above +5 °C. Refer to relevant Product Data Sheets for further information.

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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 the 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 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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