BUILDING TRUST

PRODUCT DATA SHEET

Sarnafil® S 327-15 L

Polymeric PVC membrane for mechanically fastened roof waterproofing

DESCRIPTION

Sarnafil® S 327-15 L (thickness 1.5 mm) is a polyester reinforced, multi-layer, synthetic roof waterproofing sheet based on polyvinyl chloride (PVC) containing ultraviolet light stabilisers according to EN 13956 / GB 12952. Sarnafil® S 327-15 L is a hot-air weldable roof membrane formulated for direct exposure and designed to use in all global climatic conditions.

USES

Sarnafil® S 327-15 L may only be used by experienced professionals.
Waterproofing membrane for:
- Mechanically fastened roofing systems

CHARACTERISTICS / ADVANTAGES

- Proven performance over decades
- Lacquer coated surface
- Resistant to permanent UV exposure
- Resistant to permanent wind exposure
- Resistant to all common environmental influences
- Hot-air weldable
- No open flame equipment required
- High water vapour permeability

ENVIRONMENTAL INFORMATION

- Conformity with LEED v4 SSc 5 (Option 1): Heat Island Reduction - Roof (only white)
- Conformity with LEED v4 MRc 3 (Option 2): Building Product Disclosure and Optimization - Sourcing of Raw Materials
- Conformity with LEED v4 MRc 4 (Option 2): Building Product Disclosure and Optimization - Material Ingredients (only light grey and white)

APPROVALS / STANDARDS

- Tensile Strength, Elongation at Break, Dimensional Stability and Watertightness tests EN 13956:2012, Sarnafil® S 327-15 L, Sika, Test report No. RS19-21
- CE Marking and Declaration of Performance to EN 13956 - Polymeric sheets for roof waterproofing

PRODUCT INFORMATION

Chemical Base	Polyvinyl Chloride (PVC)	
Packaging	Sarnafil® S 327-15 L standard rolls are wrapped individually in a blue PE-foil.	
	Packing unit	Refer to price list
	Roll length	20.00 m
	Roll width	2.00 m
	Roll weight	78.00 kg

Appearance / Colour	Surface	matt	
	Colours		
	Top Surface	white	
	Bottom surface	dark grey	
	Top surface of sheet, other colours on request, subject to minimum order quantities.		
Shelf Life	5 years from date of production.		
Storage Conditions	Product must be stored in original unopened and undamaged packaging in dry conditions and temperatures between +5 °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.		
Product Declaration	EN 13956: Polymeric sheets for roof waterproofing GB 12952: Type P		
Visible Defects	Pass		(EN 1850-2)
Length	20 m (-0 % / +5 %)		(EN 1848-2)
Width	2 m (-0.5 % / +1 %)		(EN 1848-2)
Effective Thickness	1.5 mm (-5 % / +10 %)		(EN 1849-2)
Overall Thickness	1.5 mm (-5 % / +10 %)		(GB 12952)
Straightness	≤ 30 mm		(EN 1848-2)
Flatness	≤ 10 mm		(EN 1848-2)
Mass per Unit Area	1.9 kg/m² (-5 % / +10 %)		(EN 1849-2)

TECHNICAL INFORMATION

Resistance to Impact	hard substrate	≥ 600 mm	(EN 12691)
	soft substrate	≥ 900 mm	
	Apass		(GB/T20624.2)
Hail Resistance	rigid substrate	≥ 25 m/s	(EN 13583)
	soft substrate	≥ 30 m/s	
Resistance to Static Load	soft substrate	≥ 20 kg	(EN 12730)
	rigid substrate	≥ 20 kg	
	pass		(GB/T328.25)
Tensile Strength	longitudinal (md)[1)]	≥ 1000 N/50 mm	(EN 12311-2)
	transversal (cmd)[2)]	≥ 1000 N/50 mm	
	longitudinal (md)[1)]	≥ 250 N/cm	(GB/T328.9)
	transversal (cmd)[2)]	≥ 250 N/cm	
	[1)] md = machine direction [2)] cmd = cross machine direction		
Elongation	longitudinal (md)[1)]	≥ 12 %	(EN 12311-2)
	transversal (cmd)[2)]	≥ 12 %	
	[1)] md = machine direction [2)] cmd = cross machine direction		
Elongation at maximum tensile stress	longitudinal (md)[1)]	≥ 15 %	(GB/T328.9)
	transversal (cmd)[2)]	≥ 15 %	
	[1)] md = machine direction [2)] cmd = cross machine direction		

Dimensional Stability	longitudinal (md)[1]	≤ |0.4| %	(EN 1107-2)
	transversal (cmd)[2]	≤ |0.4| %	
	longitudinal (md)[1]	≤ |0.5| %	(GB/T328.13)
	transversal (cmd)[2]	≤ |0.5| %	
	[1] md = machine direction [2] cmd = cross machine direction		
Tear Strength	longitudinal (md)[1]	≥ 200 N	(EN 12310-2)
	transversal (cmd)[2]	≥ 200 N	
	longitudinal (md)[1]	≥ 250 N	(GB/T328.19)
	transversal (cmd)[2]	≥ 250 N	
	[1] md = machine direction [2] cmd = cross machine direction		
Joint Peel Resistance	Failure mode: C, no failure of the joint ≥ 3 N/mm		(EN 12316-2) (GB/T328.21)
Joint Shear Resistance	≥ 800 N/50 mm		(EN 12317-2)
Foldability at Low Temperature	≤ -25 °C no crack		(EN 495-5) (GB/T328.15)
External Fire Performance	B_{ROOF} (t1) < 20°		(EN 1187) (EN 13501-5)
Reaction to Fire	Class E		(EN ISO 11925-2, classification to EN 13501-1) (GB 8624)
Effect of Liquid Chemicals, Including Water	breaking strength retention	≥ 85%	(GB 12952)
	elongation at break ret.	≥ 80 %	
	low temperature bend	pass	
Retention of Properties after Heat Ageing	breaking strength retention	≥ 85 %	(GB/T18244)
	elongation at break ret.	≥ 80 %	
	low temperature bend	pass	
Resistance to UV Exposure	Pass (> 5000 h / grade 0)		(EN 1297)
Resistance to Weathering	breaking strength retention	≥ 85 %	(GB/T18244)
	elongation at break ret.	≥ 80 %	
	low temperature bend	no crack	
Water Vapour Transimission	μ = 15 000		(EN 1931)
Water Absorption	wet weight	≤ 4 %	(GB 12952)
	dry weight	≥ -0.4 %	
Water Tightness	pass		(EN 1928) (GB/T328.10)
Solar Reflectance	0.80		(GJB 2502.2)

Colour	**Initial**	**3 years aged**	**Test Institute**	(ASTM C 1549)
White	0.844	0.702	Intertek	

Thermal Emittance	**Colour**	**Initial**	**3 years aged**	**Test Institute**	(ASTM C 1371)
	white	0.85	0.88	Intertek	

Solar Reflectance Index	**Colour**		**Initial**		(ASTM E 1980)
	white		108		
	Colour	**Initial**	**3 years aged**	**Test Institute**	(ASTM E 1980)
	white	104	85	Intertek	

SYSTEM INFORMATION

System Structure	The following products must be considered for use depending on roof design: ▪ Sarnafil® G 410-15 L Sheet for detailing ▪ Sarnafil® Metal Sheet PVC ▪ Sarnabar® / Sarnafast® / S-U Bar ▪ S-Welding Cord PVC ▪ Sarnacol® 2170 (contact adhesive) ▪ Sarna Seam Cleaner ▪ Sarna Cleaner Ancillary Products: e.g. Prefabricated parts, roof drains, scuppers, walkway pad, decor profiles, protection sheets.
Compatibility	Not compatible in direct contact with bitumen, tar, fat, oil, solvent containing materials and other plastic materials, e.g. expanded polystyrene (EPS), extruded polystyrene (XPS), polyurethane (PUR), polyisocyanurate (PIR) or phenolic foam (PF). These materials could adversely affect the product properties.

APPLICATION INFORMATION

Ambient Air Temperature	-20 °C min. / +60 °C max.
Substrate Temperature	-30 °C min. / +60 °C max.

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.

ECOLOGY, HEALTH AND SAFETY

Fresh air ventilation must be ensured, when working (welding) in closed rooms.

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

FURTHER DOCUMENTS

Installation
- Application Manual

LIMITATIONS

Installation work must only be carried out by Sika® trained and approved contractors, experienced in this type of application.
- Ensure Sarnafil® S 327-15 L is prevented from direct contact with incompatible materials (refer to compatibility section).
- The use of Sarnafil® S 327-15 L membrane is limited to geographical locations with average monthly minimum temperatures of - 50 °C. Permanent ambient temperature during use is limited to + 50 °C.
- The use of some ancillary products such as adhesives, cleaners and solvents is limited to temperatures above +5 °C. Observe temperature limitations in the appropriate Product Data Sheets.
- Special measures may be compulsory for installation below +5 °C ambient temperature due to safety requirements in accordance with national regulations.
- Sarnafil® S 327-15 L must be installed by loose laying and without stretching or installing under tension.
- Ponding water does not affect the performance properties of the membrane.

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 type of equipment:
- Manual: Leister Triac
- Automatic : Sarnamatic 681, Leister Varimat
- Semi-automatic: Leister Triac Drive

SUBSTRATE QUALITY

The substrate surface must be uniform, smooth and free of any sharp protrusions or burrs, etc. Sarnafil® S 327-15 L must be separated from any incompatible substrates / materials by an effective separation layer to prevent accelerated ageing. 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 Sarna Cleaner before adhesive is applied.

APPLICATION

Installation procedure
Strictly follow installation procedures as defined in method statements, application manuals and working instructions which must always be adjusted to the actual site conditions.

Fixing method - General
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 welded using specialised hot air equipment.

Fixing method-Linear fastening (Sarnabar®)
Unroll the Sarnafil® S 327-15 L membrane, overlap by 80 mm, weld immediately and fix to the substructure by means of the Sarnabar® fasteners. The preferred type of fastening will be advised by Sika. The spacing of the fasteners is in accordance with the project specific Sika calculations. The perimeter piece ends must be secured with the Sarnabar® Load Distribution Plate. For protection fasten a piece of Sarnafil® S 327-15 L 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® S 327-15 L and weld. After installation the Sarnabar® must immediately be made watertight with a Sarnafil® S 327-15 L cover strip. At upstands and at all penetrations, the Sarnafil® S 327-15 L membrane must be secured with a Sarnabar®. The 4 mm diameter S-Welding Cord protects the Sarnafil® S 327-15 L roof covering against tearing and peeling off by wind uplift.

Fixing method-Spot fastening (Sarnafast®)
Sarnafil® S 327-15 L must always be installed at right angles to the deck direction. Sarnafil® S 327-15 L is fixed by means of the Sarnafast® fasteners and barbed washers/tubes along the marked line, 35 mm from the edge of the membrane. Sarnafil® S 327-15 L is overlapped by 120 mm. The spacing of the fasteners is in accordance with the project specific Sika calculations. At upstands and at all penetrations, the Sarnafil® S 327-15 L membrane must be secured with a Sarnabar® / S-U Bar. The 4 mm diameter S-Welding Cord protects the Sarnafil® S 327-15 L roof covering against tearing and peeling off by wind uplift.

Fixing method-Field fastening (Sarnaweld or Rhinobond)
Sarnafil® S 327-15 L is fixed by induction welding Sarnadisc hot melt coated washers and Sarnafast® fasteners according to the project specific instructions. Sarnafil® S 327-15 L is overlapped by 80 mm. The spacing of the fasteners is in accordance with the project specific Sika calculations. At upstands and at all penetrations, the Sarnafil® S 327-15 L membrane must be secured with a Sarnabar® / S-U Bar. The 4 mm diameter S-Welding Cord protects the Sarnafil® S 327-15 L roof covering against tearing and peeling off by wind uplift.

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.

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

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the declared data for this product may vary from country to country. Please consult the local Product Data Sheet for the exact product 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.

Sika India Pvt. Ltd.
620, Diamond Harbour Road
Commercial Complex II
Kolkata - 700 034
Tel : +91 33 24472448
Fax : +91 33 23978688
Mail : info.india@in.sika.com