

Sarnafil® G 410-18EL

Polymeric membrane for roof waterproofing

Product Description

Sarnafil® G 410-18EL (thickness 1.8 mm) is a multi-layer, synthetic roof waterproofing sheet based on premium-quality polyvinyl chloride (PVC) with inlay of glass non-woven containing ultraviolet light stabilizers and flame retardant according to EN 13956.

Sarnafil® G 410-18EL is a hot air weldable roof membrane, formulated for direct exposure and designed to use in all global climatic conditions. Sarnafil® G 410-18EL is produced with an integral glass non-woven carrier for dimensional stability. Sarnafil® G 410-18EL is used with the Adhered System.

Sarnafil® G 410-18EL has a unique lacquer coating applied to the top of the membrane.

Sarnafil® G 410-18EL 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® G 410-18EL is excellent. Sarnafil® G 410-18EL can be produced in different colours.

Uses

Roof waterproofing membrane for exposed flat roofs:

- Fully bonded roof surfaces with contact adhesive Sarnacol® 2170 or Sarnacol® 2121 depending on substrates.
- Enhancement of Solar Reflection of existing PVC roofs (relevant only for colour RAL 9016 SR)
- Roof waterproofing membrane for exposed roof junction zones:
 - Roof waterproofing for junctions and flashings, e.g. wall and parapet junctions, roof lights, etc., which are permanently exposed in installations of Sarnafil® G 410-18EL roof waterproofing systems with ballast.
 - Fully bonded junction areas with contact adhesive Sarnacol® 2170 in mechanically fastened roof systems with Sarnafil® S 327-EL types.
 - Roof waterproofing for junctions and flashings in installations of Sarnafil® G 410-EL Felt type exposed roof waterproofing systems.

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 water vapour permeability
 - Excellent weldability
 - No risk of delamination or water-wicking
 - Can be produced also in a variety of colours
 - Lacquer coated surface
- Highest reflectance properties for excellent cool roofing characteristics and bifacial Photovoltaic panels (relevant only for colour RAL 9016 SR)
- Recyclable



Approval / Standards	<p>Sarnafil® G 410-18EL is designed and manufactured to meet most international recognised standards.</p> <ul style="list-style-type: none"> ■ Polymeric sheets for roof waterproofing according to EN 13956, certified by notified body 1213-CPD-3916/4919 and provided with the CE-mark. ■ Reaction to fire according to EN 13501-1, class E. ■ External fire performance tested according to EN 1187 and classified according to EN 13501-5: B_{ROOF}(t1). ■ Official Quality Approvals and Agreement Certificates and approvals. ■ Monitoring and assessment by approved laboratories. ■ Quality Management system in accordance with EN ISO 9001/1400.
Appearance / Colours	<p>Surface: matt</p> <p>Colours:</p> <p>Top surface: light grey (nearest RAL 7047) lead grey (Sika colour no. 9500) copper patina (Sika colour no. 6525) window grey (nearest RAL 7040) copper brown (nearest RAL 8004) traffic white (nearest RAL 9016) traffic white, solar reflective (RAL 9016 SR)</p> <p>Bottom surface: dark grey</p> <p>Top surface of sheet in other colours available on request, subject to small minimum order quantities.</p>
Packaging	<p>Sarnafil® G 410-18EL standard rolls are wrapped individually in a blue PE-foil.</p> <p>Packing unit: see price list</p> <p>Roll length: 15.00 m</p> <p>Roll width: 2.00 m</p> <p>Roll weight: 66.00 kg</p>
Storage Conditions / Shelf-Life	<p>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.</p> <p>Do not stack pallets of rolls during transport or storage.</p>

Technical Data

Product Declaration	EN 13956	
Visible defects	Pass	EN 1850-2
Length	15 (-0 / +5 %) m	EN 1848-2
Width	2 (-0.5 / +1 %) m	EN 1848-2
Straightness	≤ 30 mm	EN 1848-2
Flatness	≤ 10 mm	EN 1848-2
Effective thickness	1.8 (-5 / +10 %) mm	EN 1849-2
Mass per unit area	2.2 (-5 / +10 %) kg/m ²	EN 1849-2
Water tightness	Pass	EN 1928
Effects of liquid chemicals, including water	On request	EN 1847
External fire performance:		EN 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	≥ 600 N/50 mm	EN 12317-2
Water vapour transmission properties	μ = 15'000	EN 1931
Tensile stress,		EN 12311-2
longitudinal (md)¹⁾	≥ 10 N/mm ²	
transversal (cmd)²⁾	≥ 9 N/mm ²	
Elongation,		EN 12311-2
longitudinal (md)¹⁾	≥ 250 %	
transversal (cmd)²⁾	≥ 230 %	
Resistance to impact,		EN 12691
hard substrate	≥ 800 mm	
soft substrate	≥ 1250 mm	
Resistance to static load,		EN 12730
soft substrate	≥ 20 kg	
rigid substrate	≥ 20 kg	
Dimension stability,		EN 1107-2
longitudinal (md)¹⁾	≤ 0.2 %	
transversal (cmd)²⁾	≤ 0.1 %	
Foldability at low temperature	≤ -25 °C	EN 495-5
UV exposure	Pass (> 5000 h / grade 0)	EN 1297
	¹⁾ md = machine direction	
	²⁾ cmd = cross machine direction	

CIGS-Reflectance RAL 9016 SR types (initial)	95 %	Reflectivity according to EN 410 in conjunction with CIGS Sensitivity
Solar Reflectance RAL 9016 SR types (initial)	0.90	ASTM C 1549
Initial Emittance RAL 9016 SR types (initial)	0.85	ASTM E 408, ASTM C1371, others
SRI (Solar Reflectance Index) RAL 9016 SR types (initial)	112	ASTM E 1980
USGBC: LEED Rating RAL 9016 SR types (initial) RAL 9016 traffic white (initial)	Conform on the SS Credit 7.2 Heat Island Effect – Roofs SRI > 78	ASTM E 1980-01

All values related to the reflectance / emittance properties provided in this Product Data Sheet refer to the initial (as produced) status of the product.

System Information

System Structure	Wide range of accessories is available e.g. prefabricated parts, roof drains, scuppers, walkway pad, decor profiles, protection sheets and separation layers. The following materials are strongly recommended: Sarnafil® G 410-18EL Sheet for detailing Sarnafil® Metal Sheet Sarnabar® Sarna Seam Cleaner Sarnacol® 2170 (contact adhesive) Sarna Cleaner
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Application Details

Substrate Quality	The substrate surface must be uniform, smooth and free of any sharp protrusions or burrs, etc. Sarnafil® G 410-18EL must be separated from any incompatible substrates by an effective separation layer to prevent accelerated ageing. Prevent from direct contact with bitumen, tar, fat, oil, solvent containing material and direct contact to other plastic materials, e.g. expanded polystyrene (EPS), extruded polystyrene (XPS), polyurethane (PUR), polyisocyanurate (PIR) or phenolic foam (PF) as this could adversely affect the product properties. 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.
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Application Conditions / Limits

Temperature	The use of Sarnafil® G 410-18EL 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	Not compatible with direct contact to other plastics, e.g. EPS, XPS, PUR, PIR or PF. Not resistant to tar, bitumen, oil and solvent containing materials.

Installation Instructions

Installation Method / Tools

Installation procedure:
According to the valid installation instructions for Sarnafil® G 410-EL types system fully bonded for exposed roofs.

Fully adhered roof surfaces and junction areas:
The roof waterproofing membrane is bonded to substrate by contact adhesive Sarnacol® 2170 or dispersion adhesive Sarnacol® 2121 depending on the type and slope of substrate. Seam overlaps are welded by hot air.

Adhering flashings
Sarnafil® G 410-18EL is adhered to substrate layers such as reinforced concrete, rendering, timber panels, metal sheets etc. using Sarnacol® 2170 adhesive.

Welding Method:
Overlap seams are welded by electric heat 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 drivers to ensure the integrity / completion of the weld. Any imperfections must be rectified by hot air welding.

Notes on Installation / Limits

Installation works must be carried out only by Sika instructed 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.

Legal note: 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 material, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, or from any written recommendations, or from any other advice offered. The user must test the product's suitability for the intended application and purpose. Sika products are accepted subject to our current terms of sale and delivery. Users must always refer to the local Product Data Sheet for the product concerned, copies of which will be supplied on request.



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