

Sarnafil® G 410-12EL

Polymeric membrane for roof waterproofing

Product Description

Sarnafil® G 410-12EL (thickness 1.2 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 410-12EL is a hot air weldable roof membrane, formulated for direct exposure and designed to use in all global climatic conditions. Sarnafil® G 410-12EL is produced with an integral glass non-woven carrier for dimensional stability. Sarnafil® G 410-12EL is used with the Adhered System.

Sarnafil® G 410-12EL has a unique lacquer coating applied to the top of the membrane to resist staining from airborne dirt and pollutants.

Sarnafil® G 410-12EL has no built-in stress at the time of production and has a fully encapsulated carrier with no risk of delamination or water-wicking. The dimensional stability of Sarnafil® G 410-12EL is excellent. Sarnafil® G 410-12EL can be produced also in a variety of colours in smaller quantities.

Uses

Roof waterproofing membrane for exposed flat roofs:

- Fully bonded roof surfaces with contact adhesive Sarnacol® 2170.
- 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 410-12EL 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
- Recyclable



Approval / Standards	<p>Sarnafil® G 410-12EL 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 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 9001/14001.
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) azure blue (nearest RAL 5009) traffic white (nearest RAL 9016) pearl copper metallic (nearest RAL 8029) with hammer style embossing</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 410-12EL standard rolls are wrapped individually in a blue PE-foil.</p> <p>Packing unit: up to 27 rolls per pallet</p> <p>Roll length: 20.00 m</p> <p>Roll width: 2.00 m</p> <p>Roll weight: 60.00 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>

Technical Data

Product Declaration	EN 13956	
Visible defects	Pass	EN 1850-2
Length	20 (-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	1.2 (-5 / +10 %) mm	EN 1849-2
Mass per unit area	1.5 (-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°, > 20°	EN 13501-5
Reaction to fire	E	EN ISO 11925-2, classification to EN 13501-1
Hail resistance:		EN 13583
rigid substrate	≥ 17 m/s	
flexible substrate	≥ 25 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⁾	≥ 9.5 N/mm ²	
transversal (cmd)²⁾	≥ 9.0 N/mm ²	
Elongation,		EN 12311-2
longitudinal (md)¹⁾	≥ 220 %	
transversal (cmd)²⁾	≥ 200 %	
Resistance to impact,		EN 12691
hard substrate	≥ 450 mm	
soft substrate	≥ 800 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)	EN 1297

¹⁾ md = machine direction

²⁾ cmd = cross machine direction

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 410-12EL Sheet for detailing

Sarnafil® G 410-12EL for Coverstrips

Sarnafil® Metal Sheet

Sarnabar

Peelstops

Sarna Seam Cleaner

Sarnacol® 2170 (contact adhesive)

Sarna Cleaner

Application Details

Substrate Quality

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

Sarnafil® G 410-12EL 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) and extruded polystyrene (XPS) 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.

Application Conditions / Limits

Temperature

The use of Sarnafil® G 410-12EL 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 and XPS. 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 depending on the type of substrate. Seam overlaps are welded by hot air.

Adhering flashings
Sarnafil® G 410-12EL 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 Registered Sarnafil Contractors.

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.

Roofing

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	The product does not fall within the EC-regulation of hazardous goods. As a result, a material safety data sheet following EC-Guideline 91/155 EWG is not needed to bring the product to the market, transport or use it. The product does not damage the environment when used as specified.
Protective Measures	Fresh air ventilation must be ensured, when working (welding) in closed rooms. Local safety regulations must be observed.
Transportation Class	The product is not classified as hazardous good for transport.
Disposal	The material is recyclable. Disposal must be in accordance with regulatory guidelines.

All data in our product information are based on our current knowledge and experience. They do not release users from careful testing of the application and strict observation of the relevant processing regulations because of the wide range of possible influences during the application and use of our products. Legally valid assurances of specific characteristics or suitability for special purposes of application other than those provided in our documentation for the specific product cannot be inferred from our information. Any protective rights or existing laws and provisions must be followed by the recipient or processor of our products at their own responsibility. Moreover our general terms and conditions of sale and guarantee are valid.



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