Sarnafil® G 476-20

Polymeric membrane for roof waterproofing

Roofing

Product Description

Sarnafil® G 476-20 (thickness 2.0 mm) is a multi-layer, synthetic roof waterproofing sheet based on premium-quality polyvinyl chloride (PVC) with inlay of glass non-woven according to EN 13956.

Sarnafil® G 476-20 is a hot air weldable roof membrane, formulated and designed to use in all global climatic conditions. Sarnafil® G 476-20 is produced with an integral glass non-woven carrier for dimensional stability. Sarnafil® G 476-20 is used with the Loose-Laid System with ballast.

Sarnafil® G 476-20 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 476-20 is excellent.

Uses

Waterproofing membrane for roofs with ballast (e.g. concrete slabs, green roof (intensive, extensive), terraces with pedestrian traffic):

- Green roofs
- Utility roofs
- Inverted roofs

Characteristics / Advantages

- Specially formulated for below grade applications, including plaza decks, planters, foundations, balconies, terraces and split slab applications
- 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
- Recyclable

Approval / Standards

Sarnafil® G 476-20 is designed and manufactured to meet most international recognised standards.

- 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.
- Official Quality Approvals and Agrement Certificates and approvals.
- Monitoring and assessment by approved laboratories.
- Quality Management system in accordance with EN ISO 9001/14000.

Appearance / Colours

Surface:	Embossed finish
Colours:	
Top surface:	red
Bottom surface:	dark grey

Packaging	Sarnafil® G 476-20 standard rolls are wrapped individually in a blue PE-foil. Packing unit: up to 27 rolls per pallet Roll length: 15.00 m Roll width: 2.00 m Roll weight: 72.00 kg
Storage Conditions / Shelf-Life	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.

Technical Data

Product Declaration	EN 13956	
Visible defects	Pass	EN 1850-2
Length	15 m (-0 % / +5 %)	EN 1848-2
Width	2 m (-0.5 % / +1 %)	EN 1848-2
Straightness	≤ 30 mm	EN 1848-2
Flatness	≤ 10 mm	EN 1848-2
Effective thickness	2.0 mm (-5 % / +10 %)	EN 1849-2
Mass per unit area	2.4 kg/m² (-5 % / +10 %)	EN 1849-2
Water tightness	Pass	EN 1928
Effects of liquid chemicals, including water	On request	EN 1847
Reaction to fire	Class E	EN ISO 11925-2, classification to EN 13501-1
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)]	≥ 10.0 N/mm²	
transversal (cmd)[2)]	≥ 9.0 N/mm²	
Elongation		EN 12311-2
longitudinal (md)[1)]	≥ 240 %	
transversal (cmd)[2)]	≥ 230 %	
Resistance to impact		EN 12691
hard substrate	≥ 700 mm	
soft substrate	≥ 1250 mm	
Resistance to static load		EN 12730
soft substrate	≥ 20 kg	
rigid substrate	≥ 20 kg	
Resistance to root penetration	Pass	EN 13948
Dimension stability		EN 1107-2
longitudinal (md)[1)]	≤ |0.2| %	
transversal (cmd)[2)]	≤ |0.1| %	
Foldability at low temperature	≤ -25 °C	EN 495-5

[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, protection sheets and separation layers. The following materials are recommended: Sarnafil® G 410-15EL sheet for detailing Sarnafil® Metal Sheet Sarnabar S-Welding Cord Sarna Seam Cleaner S-Felt

Application Details

Substrate Quality	The substrate surface must be uniform, smooth and free of any sharp protrusions or burrs, etc. Sarnafil® G 476-20 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 solvent resistant, clean, dry and free of grease and dust. Metal sheets must be degreased before adhesive is applied.

Application Conditions / Limits

Temperature	The use of Sarnafil® G 476-20 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.
Resistance	Not resistant for permanent exposure to UV irradiation.

Installation Instructions

Installation Method / Tools

Installation procedure:
According to the valid installation instructions for Sarnafil® G 476-types system for roofs with ballast.

Fixing Method:

Unroll Sarnafil® G 476-20 flat without waves or creases and position to overlap by 80 mm. The overlapped membranes must be welded immediately (on the same working day) and the loose laid Sarnafil® G 476-20 membrane ballasted as soon as possible.

Flat roofs with pedestrian walkway:
- A protective layer must be installed on top of the Sarnafil® G 476-20 membrane (e.g. Sarnafil® Protective Sheet or S-Felt Type T).
- The wear surface (composite slabs, concrete slabs or similar) must be installed on top of a drainage layer (chippings, elevated bed or similar).

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

Notes on Application / 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.

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. Regulatory safety requirements must be observed.
Transportation Class	The product is not classified as hazardous good for transport.
Disposal	The material is recyclable. Any disposal must be according to local regulations.

Roofing

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