

## PRODUCT DATA SHEET

# Sarnafil® G 476-20

Polymeric membrane for ballasted roof waterproofing

### DESCRIPTION

Sarnafil® G 476-20 (thickness 2.0 mm) is a multi-layer, synthetic roof waterproofing membrane based on polyvinyl chloride (PVC) with an inlay of non-woven glass fibre. Sarnafil® G 476-20 is a hot-air weldable roof membrane, formulated and designed for use in all global climatic conditions.

### USES

Waterproofing membrane for ballasted roofs:

- Roof gardens (intensive / extensive)
- Utility roofs
- Inverted roofs

Waterproofing membrane for applications with a ballasted protection layer:

- Balconies and terraces
- Plaza decks
- Planters
- Split slab applications
- Concrete slabs

### CHARACTERISTICS / ADVANTAGES

- Proven performance over decades
- High dimensional stability from glass fleece inlay
- High water vapour permeability
- Resistant to all common environmental influences
- Resistant to mechanical influences
- Resistant to micro-organisms
- Resistant to root penetration
- Hot-air weldable
- No open flame equipment required

### APPROVALS / STANDARDS

- CE Marking and Declaration of Performance to EN 13956 - Polymeric sheets for roof waterproofing
- GB 12952, Sarnafil® G 476-20, Test report No. RS19-21.pdf

### PRODUCT INFORMATION

<b>Composition</b>	Polyvinyl Chloride (PVC)	
<b>Packaging</b>	Standard rolls are wrapped individually in a blue PE-foil.	
	<b>Packing unit</b>	
	Roll length	15.00 m
	Roll width	2.00 m
	Roll weight	81.00 kg
<b>Appearance / Colour</b>	Surface	matt
	<b>Colours</b>	
	Top surface	Orange
	Bottom surface	Dark grey
<b>Shelf Life</b>	5 years from date of production.	

<b>Storage Conditions</b>	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.	
<b>Product Declaration</b>	EN 13956: Polymeric sheets for roof waterproofing GB 12952 - Type G	
<b>Visible Defects</b>	Pass	(EN 1850-2)
<b>Length</b>	15.00 m (-0 / +5 %)	(EN 1848-2)
<b>Width</b>	2.00 m (-0.5 / +1 %)	(EN 1848-2)
<b>Effective Thickness</b>	2.0 mm (-5 / +10 %)	(EN 1849-2)
<b>Overall Thickness</b>	2.0 mm (-5 % / +10 %)	(GB 12952)
<b>Straightness</b>	≤ 30 mm	(EN 1848-2)
<b>Flatness</b>	≤ 10 mm	(EN 1848-2)
<b>Mass per Unit Area</b>	2.55 kg/m <sup>2</sup> (-5 % / +10 %)	(EN 1849-2)

## TECHNICAL INFORMATION

<b>Resistance to Impact</b>	<u>hard substrate</u>	<u>≥ 700 mm</u>	(EN 12691)
	<u>soft substrate</u>	<u>≥ 1 250 mm</u>	
	watertight		(GB/T20624.2)
<b>Resistance to Static Load</b>	<u>soft substrate</u>	<u>≥ 20 kg</u>	(EN 12730)
	<u>rigid substrate</u>	<u>≥ 20 kg</u>	
	watertight		(GB/T328.25)
<b>Resistance to Root Penetration</b>	Pass		(EN 13948)
	Pass		(JC/T1075)
	Pass		(FLL)
<b>Tensile Strength</b>	<u>longitudinal (md)<sup>1)</sup></u>	<u>≥ 8.5 N/mm<sup>2</sup></u>	(EN 12311-2)
	<u>transversal (cmd)<sup>2)</sup></u>	<u>≥ 8.5 N/mm<sup>2</sup></u>	
	<u>longitudinal (md)<sup>1)</sup></u>	<u>≥ 10 MPa</u>	(GB/T328.9)
	<u>transversal (cmd)<sup>2)</sup></u>	<u>≥ 10 MPa</u>	
	<sup>1)</sup> md = machine direction		
	<sup>2)</sup> cmd = cross machine direction		
<b>Elongation</b>	<u>longitudinal (md)<sup>1)</sup></u>	<u>≥ 180 %</u>	(EN 12311-2)
	<u>transversal (cmd)<sup>2)</sup></u>	<u>≥ 180 %</u>	
	<u>longitudinal (md)<sup>1)</sup></u>	<u>≥ 200 %</u>	(GB/T328.9)
	<u>transversal (cmd)<sup>2)</sup></u>	<u>≥ 200 %</u>	
	<sup>1)</sup> md = machine direction		
	<sup>2)</sup> cmd = cross machine direction		
<b>Dimensional Stability</b>	<u>longitudinal (md)<sup>1)</sup></u>	<u>≤  0.2  %</u>	(EN 1107-2)
	<u>transversal (cmd)<sup>2)</sup></u>	<u>≤  0.2  %</u>	
	≤ 0.1 %		(GB/T328.13)
	<sup>1)</sup> md = machine direction		
<sup>2)</sup> cmd = cross machine direction			
<b>Tear Strength</b>	≥ 50 N/mm		(GB/T529)
<b>Joint Peel Resistance</b>	≥ 3 N/mm		(GB/T328.21)

<b>Joint Shear Resistance</b>	≥ 500 N/50 mm	(EN 12317-2)
<b>Foldability at Low Temperature</b>	≤ -25 °C no crack	(EN 495-5) (GB/T328.15)
<b>Reaction to Fire</b>	Class E Class E	(EN ISO 11925-2, classification to EN 13501-1) (GB 8624 / EN 13501-1)
<b>Effect of Liquid Chemicals, Including Water</b>	On request	(EN 1928)
<b>Resistance to Alkalinity</b>	tensile strength retention ≥ 85 % elongation retention ≥ 80 % low temperature bend no crack	(GB/T12952)
<b>Retention of Properties after Heat Ageing</b>	tensile strength retention ≥ 85 % elongation retention ≥ 80 % low temperature bend no crack	(GB/T18244)
<b>Resistance to UV Exposure</b>	Not resistant for permanent exposure to UV irradiation.	
<b>Water Vapour Transimission</b>	μ = 15 000	(EN 1931)
<b>Water Absorption</b>	wet weight ≤ 4 % dry weight ≤ -0.4 %	(GB/T 12952)
<b>Water Tightness</b>	pass watertight	(EN 1928) (GB/T328.10)

## SYSTEM INFORMATION

<b>System Structure</b>	<p>The following products must be considered for use depending on roof design:</p> <ul style="list-style-type: none"> <li>▪ Sarnafil® G 410-15 Sheet for detailing</li> <li>▪ Sarnafil® Metal Sheet</li> <li>▪ Sarnabar</li> <li>▪ S-Welding Cord</li> <li>▪ Sarna Seam Cleaner</li> <li>▪ Sarna Cleaner</li> <li>▪ S-Felt</li> </ul> <p>Ancillary products: wide range of accessories is available e.g. prefabricated parts, roof drains, scuppers, protection sheets and separation layers.</p>
<b>Compatibility</b>	<p>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.</p>

## APPLICATION INFORMATION

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

# 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

## SUBSTRATE QUALITY

- The supporting structure must be of sufficient structural strength to receive all new and existing layers of the roof build-up. Complete roof system must be designed and secured against wind uplift loadings.
- 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 / 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 flat without creases and overlapping by 80 mm. It is then covered with ballast or a protection layer immediately after laying and seam welding.

### Balconies, terraces and plaza decks

A protective sheet of Sarnafil® Protective Sheet or S-Felt Type GK must be installed on top of the Sarnafil® G 476-20 membrane.

The ballasted protective layer (slabs, tiles, etc) must be installed on top of a drainage layer (chippings, gravel, elevated beds or similar).

### Flashings

Refer to standard details in Application Manual

### 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 a minimum 20 mm.

### 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.

## FURTHER INFORMATION

Installation

- Application Manual

## IMPORTANT CONSIDERATIONS

Installation work must only be carried out by Sika® trained and approved contractors experienced in this type of application.

- Ensure Sarnafil® G 476-20 is prevented from direct contact with incompatible materials (refer to compatibility section).
- Do not apply to wet, damp or unclean surfaces
- 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.

## 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.

## 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

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

### REGULATION (EC) NO 1907/2006 - REACH

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 regulation or on the candidate list published by the European Chemicals Agency in concentrations above 0,1 % (w/w).

## 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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### **Product Data Sheet**

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