

## PRODUCT DATA SHEET

# Sarnafil® G 410-18 EL Felt

### PVC ADHERED MEMBRANE FOR ROOF WATERPROOFING

#### DESCRIPTION

Sarnafil® G 410-18 EL Felt is a PVC, multi-layer, fully adhered, lacquered matt finish, weldable sheet membrane with a glass fibre reinforcing inlay and polyester fleece backing for roof waterproofing. Contains ultraviolet light stabilizers and flame retardants to provide a colour stable, fast installation, low maintenance and durable membrane. Thickness 1,8 mm.

#### USES

This product may only be used by experienced professionals.

- Fully bonded, roof waterproofing membrane for exposed roofs
- Enhancement of solar reflection of existing PVC roofs (~RAL 9016 SR)

#### CHARACTERISTICS / ADVANTAGES

- Proven performance over decades
- Lacquer coated surface
- Various colours available
- Fast installation with Sarnacol® adhesives
- High reflectance properties for excellent cool roofing characteristics (relevant only for colour RAL 9016 SR).
- Resistant to UV exposure
- High dimensional stability due to glass fleece inlay
- High water vapour permeability
- Resistant to all common environmental influences
- Felt backing compatible with old bitumen surfaces
- Heat weldable

#### SUSTAINABILITY

- Conformity with LEED v4 SSc 5 (Option 1): Heat Island Reduction - Roof (only traffic white (SR))
- Conformity with LEED v4 MRc 2 (Option 1): Building Product Disclosure and Optimization – Environmental Product Declarations
- 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
- BRE Environmental Product Declaration (EPD)

#### APPROVALS / CERTIFICATES

- CE Marking and Declaration of Performance to EN 13956 - Polymeric sheets for roof waterproofing
- FM Approved, Certificate of Compliance, Sarnafil® G 410 EL Felt, Approval Identification No. 3047304

# PRODUCT INFORMATION

|                            |                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                            |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Packaging</b>           | Standard rolls are wrapped individually in a blue PE-foil.                                                                                                                                                                                                                                                               |                                                                                                                                                                                                            |
|                            | Roll size                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                            |
|                            | Length:                                                                                                                                                                                                                                                                                                                  | 15,00 m                                                                                                                                                                                                    |
|                            | Width:                                                                                                                                                                                                                                                                                                                   | 2,00 m                                                                                                                                                                                                     |
|                            | Weight:                                                                                                                                                                                                                                                                                                                  | 78,00 kg                                                                                                                                                                                                   |
| <b>Appearance / Colour</b> | <b>Surface:</b>                                                                                                                                                                                                                                                                                                          | matt                                                                                                                                                                                                       |
|                            | <b>Colours:</b>                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                            |
|                            | Top surface:                                                                                                                                                                                                                                                                                                             | light grey (~RAL 7047)<br>lead grey (Sika colour no. 9500)<br>copper patina (Sika colour no. 6525)<br>window grey (~RAL 7040)<br>copper brown (~RAL 8004)<br>traffic white, solar reflective (RAL 9016 SR) |
|                            | Bottom surface:                                                                                                                                                                                                                                                                                                          | dark grey                                                                                                                                                                                                  |
|                            | Top surface colour available in other colours subject to minimum order quantities.                                                                                                                                                                                                                                       |                                                                                                                                                                                                            |
| <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                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                            |
| <b>Visible Defects</b>     | Pass                                                                                                                                                                                                                                                                                                                     | (EN 1850-2)                                                                                                                                                                                                |
| <b>Length</b>              | 15 m (-0 % / +5 %)                                                                                                                                                                                                                                                                                                       | (EN 1848-2)                                                                                                                                                                                                |
| <b>Width</b>               | 2 m (-0,5 % / +1 %)                                                                                                                                                                                                                                                                                                      | (EN 1848-2)                                                                                                                                                                                                |
| <b>Effective Thickness</b> | 1,8 mm (-5 % / +10 %)                                                                                                                                                                                                                                                                                                    | (EN 1849-2)                                                                                                                                                                                                |
| <b>Straightness</b>        | ≤ 30 mm                                                                                                                                                                                                                                                                                                                  | (EN 1848-2)                                                                                                                                                                                                |
| <b>Flatness</b>            | ≤ 10 mm                                                                                                                                                                                                                                                                                                                  | (EN 1848-2)                                                                                                                                                                                                |
| <b>Mass per unit area</b>  | 2,6 kg/m <sup>2</sup> (-5 % / +10 %)                                                                                                                                                                                                                                                                                     | (EN 1849-2)                                                                                                                                                                                                |

## TECHNICAL INFORMATION

|                                  |                                  |               |              |
|----------------------------------|----------------------------------|---------------|--------------|
| <b>Resistance to Impact</b>      | hard substrate                   | ≥ 800 mm      | (EN 12691)   |
|                                  | soft substrate                   | ≥ 1750 mm     |              |
| <b>Hail Resistance</b>           | rigid substrate                  | ≥ 25 m/s      | (EN 13583)   |
|                                  | flexible substrate               | ≥ 33 m/s      |              |
| <b>Resistance to Static Load</b> | soft substrate                   | ≥ 20 kg       | (EN 12730)   |
|                                  | rigid substrate                  | ≥ 20 kg       |              |
| <b>Tensile Strength</b>          | longitudinal (md)1)              | ≥ 750 N/50 mm | (EN 12311-2) |
|                                  | transversal (cmd)2)              | ≥ 750 N/50 mm |              |
|                                  | 1) md = machine direction        |               |              |
|                                  | 2) cmd = cross machine direction |               |              |

|                                                                                       |                                                                                            |                |                                                |                       |               |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------|------------------------------------------------|-----------------------|---------------|
| <b>Elongation</b>                                                                     | longitudinal (md)1)                                                                        | ≥ 65 %         | (EN 12311-2)                                   |                       |               |
|                                                                                       | transversal (cmd)2)                                                                        | ≥ 65 %         |                                                |                       |               |
| 1) md = machine direction<br>2) cmd = cross machine direction                         |                                                                                            |                |                                                |                       |               |
| <b>Dimensional Stability</b>                                                          | longitudinal (md)1)                                                                        | ≤  0,2  %      | (EN 1107-2)                                    |                       |               |
|                                                                                       | transversal (cmd)2)                                                                        | ≤  0,1  %      |                                                |                       |               |
| 1) md = machine direction<br>2) cmd = cross machine direction                         |                                                                                            |                |                                                |                       |               |
| <b>Joint Peel Resistance</b>                                                          | ≥ 300 N/50 mm                                                                              |                | (EN 12316-2)                                   |                       |               |
| <b>Joint Shear Resistance</b>                                                         | ≥ 600 N/50 mm                                                                              |                | (EN 12317-2)                                   |                       |               |
| <b>Foldability at Low Temperature</b>                                                 | ≤ -25°C                                                                                    |                | (EN 495-5)                                     |                       |               |
| <b>External Fire Performance</b>                                                      | BROOF (t1) < 20°                                                                           |                | (EN 1187, classification to EN 13501-1)        |                       |               |
| <b>Reaction to Fire</b>                                                               | Class E                                                                                    |                | (EN ISO 11925-2, classification to EN 13501-1) |                       |               |
| <b>Effect of Liquid Chemicals, Including Water</b>                                    | Resistant to many chemicals.<br>Contact Sika Technical Services for additional information |                | (EN 1847)                                      |                       |               |
| <b>Resistance to UV Exposure</b>                                                      | Pass (> 5'000 h / grade 0)                                                                 |                | (EN 1297)                                      |                       |               |
| <b>Water Vapour Transmission</b>                                                      | μ = 15'000                                                                                 |                | (EN 1931)                                      |                       |               |
| <b>Watertightness</b>                                                                 | Pass                                                                                       |                | (EN 1928)                                      |                       |               |
| <b>Solar Reflectance Index</b>                                                        | <b>Colour</b>                                                                              | <b>Initial</b> | <b>3-years aged</b>                            | <b>Test Institute</b> | (ASTM E 1980) |
|                                                                                       | RAL 9016 SR                                                                                | 111            | 99                                             | CRRC                  |               |
|                                                                                       | RAL 9016                                                                                   | 106            | 77                                             | CRRC                  |               |
|                                                                                       | Nr. 9525                                                                                   | 55             | -                                              | Sika                  |               |
|                                                                                       | Nr. 9500                                                                                   | 4              | -                                              | Sika                  |               |
| CRRC tested products are listed in Cool Roof Rating Council (CRRC) product data base. |                                                                                            |                |                                                |                       |               |
| <b>USGBC LEED Rating</b>                                                              | <b>Colour</b>                                                                              | <b>Initial</b> | <b>3-years aged</b>                            | (ASTM E 1980)         |               |
|                                                                                       | RAL 9016 SR                                                                                | SRI > 82       | SRI > 64                                       |                       |               |
|                                                                                       | RAL 9016 traffic white                                                                     | SRI > 82       | SRI > 64                                       |                       |               |
|                                                                                       |                                                                                            |                |                                                |                       |               |

## SYSTEMS

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>System Structure</b> | <p>The following system accessories must be used:</p> <ul style="list-style-type: none"> <li>▪ Sarnafil® G 410-18EL sheet for detailing</li> <li>▪ Sarnafil® Metal Sheet</li> <li>▪ Sarnabar®</li> <li>▪ Sarna Seam Cleaner</li> <li>▪ Sarnacol® 2170 / 2172 Spray (contact adhesive)</li> <li>▪ Sarna Cleaner</li> </ul> <p>Ancillary Products:<br/>Prefabricated parts, roof drains, scuppers, walkway pad, decor profiles and protection sheets.</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

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

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

## APPLICATION INSTRUCTIONS

### SUBSTRATE QUALITY

The substrate surface/supporting layer must be uniform, smooth and free of any sharp protrusion or burrs, clean, dry and free of grease, bitumen, oil and dust. All layers of the roof build-up and substrate must be secured against wind uplift. Metal sheets must be degreased with Sarna Cleaner before adhesive application.

### SUBSTRATE PREPARATION

If dust exists on the surface, it must be completely removed before application of the product, preferably by vacuum extraction equipment.

Metal sheets must be degreased with Sarna Cleaner before adhesive application.

### APPLICATION METHOD / TOOLS

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

#### Installation procedure

Reference must be made to the installation instructions: Sarnafil® G 410-EL types system fully bonded for exposed roofs.

#### Fully bonded roof surfaces and detailing

The membrane is bonded to the substrate by Sarnacol® 2170 / 2172 Spray adhesive or Sarnacol® 2142S contact adhesive depending on the type and slope of substrate.

#### Welding overlap seams

All membrane seam overlaps must be welded by using hand welding guns and pressure rollers or automatic heat welding machines, with individually adjustable and electronically controlled welding temperatures.

#### Recommended welding equipment

Manual - Leister Triac PID. Automatic - Sarnamatic 681. Welding parameters, such as speed and temperature must be established with trials on site, prior to any welding works. The effective width of welded overlaps by hot air must be minimum 20 mm. The seams must be mechanically tested with a screw driver (rounded edges) to ensure the integrity / completion of the weld. Any imperfections must be rectified by hot air welding.

#### Bonding to flashings

Sarnafil® G 410-18 EL Felt (CH\_CE) is bonded to flashing surfaces using Sarnacol® 2170 / 2172 Spray adhesive.

## FURTHER INFORMATION

- Installation instructions: Sarnafil® G 410-EL types system fully bonded for exposed roofs.

## IMPORTANT CONSIDERATIONS

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

- Do not apply to wet, damp or unclean surfaces
- Installation of some ancillary products, e.g. contact adhesives / cleaners are limited to temperatures above +5 °C. (Refer to appropriate Product Data Sheet).
- Be aware special measures may be compulsory for certain installations below +5 °C ambient temperature due to safety and 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 declared data for this product may vary from country to country. Please consult the local Product Data Sheet for the exact product data.

## ECOLOGY, HEALTH AND SAFETY

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

Installation of RAL 9016 SR type requires the use of UV protection goggles.

### 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)

#### PRODUCT DATA SHEET

Sarnafil® G 410-18 EL Felt

May 2020, Version 01.01

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## LEGAL NOTES

Any information or suggestions for use concerning Sika's products, which we either in writing or orally have given buyers or end-users of the product, have been given in good faith based on our own experiences and based on approved praxis and the technological and scientific knowledge on the time of giving such suggestions and information, which are given without any type of guarantees, and which do not lead to any further responsibility from Sika Danmark A/S, besides what is stated in the sales agreement in question. The buyer or end-user should themselves investigate or otherwise make sure, that our products are suitable for the use in question and further make sure that the products are kept and used correct and in agreement with the published rules and considering the actual conditions in order to avoid damages or less satisfactory results. Any order is accepted and any deliverance is affected according to the general terms of sales and delivery from Sika Danmark A/S, which are considered known and accepted, and which could be handed out when asked for. Our catalogues are not up-dated automatically. The present product data sheet is only for use in Denmark. Values stated in the present product data sheet should be seen as recommended, unless stated otherwise.

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May 2020, Version 01.01  
020905052170181001

SarnafilG410-18ELFelt-en-DK-(05-2020)-1-1.pdf