

## PRODUCT DATA SHEET

# Sikaplan® U-15

Polymeric membrane for mechanically fastened and ballasted roof waterproofing

### DESCRIPTION

Sikaplan® U-15 (thickness 1,5 mm) is a polyester reinforced multi-layer, synthetic roof waterproofing sheet based on polyvinyl chloride (PVC) containing ultraviolet light stabiliser and flame retarder with inlay of glass non-woven according to EN 13956. It is hot air weldable roof membrane formulated for direct exposure and designed to use in all global climatic conditions.

### USES

Roof waterproofing membrane for exposed roofs:

- Loose laid and mechanically fastened

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

- Loose laid with ballasted
- Green roofs
- Utility roofs

### CHARACTERISTICS / ADVANTAGES

- Resistant to UV exposure
- Resistant to permanent wind exposure
- Resistant to most common environmental influences
- Resistant to mechanical influences
- Resistant to micro-organisms
- Resistant to root penetration
- Hot air weldable, no open flame equipment required
- High water vapour permeability
- High dimensional stability due to glass fleece inlay
- Specially formulated for below grade applications, including plaza decks, planters, foundations, balconies, terraces and split slab applications

### SUSTAINABILITY

- 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
- Environmental Product Declaration (EPD) available

### APPROVALS / CERTIFICATES

- CE Marking and Declaration of Performance to EN 13956 - Polymeric sheets for roof waterproofing

## PRODUCT INFORMATION

|                              |  |                         |
|------------------------------|--|-------------------------|
| <b>Product declaration</b>   | EN 13956 - Polymeric sheets for roof waterproofing   |                         |
| <b>Composition</b>           | Polyvinyl chloride (PVC)   |                         |
| <b>Packaging</b>             | Packing unit:  | see price list          |
|                              | Roll length:   | 20,00 m                 |
|                              | Roll width:  | 2,00 m                  |
|                              | Roll weight:   | 72,00 kg                |
|                              | Refer to price list for packaging variations.  |                         |
| <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>Appearance and colour</b> | Surface:   | structured              |
|                              | Colours:   |                         |
|                              | Top surface:   | light grey (~ RAL 7047) |
|                              | Bottom surface:  | dark grey               |
| <b>Visible defects</b>       | Pass   | (EN 1850-2)             |
| <b>Length</b>                | 20,00 m (-0 % / +5 %)  | (EN 1848-2)             |
| <b>Width</b>                 | 2,00 m (-0,5 % / +1 %)   | (EN 1848-2)             |
| <b>Effective thickness</b>   | 1,50 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 area</b>         | 1,80 kg/m <sup>2</sup> (-5 % / +10 %)  | (EN 1849-2)             |

## TECHNICAL INFORMATION

|                                       |   |                |              |
|---------------------------------------|---|----------------|--------------|
| <b>Resistance to impact</b>           | hard substrate  | ≥ 400 mm       | (EN 12691)   |
|                                       | soft substrate  | ≥ 700 mm       |              |
| <b>Hail resistance</b>                | rigid substrate   | ≥ 21 m/s       | (EN 13583)   |
|                                       | flexible substrate  | ≥ 26 m/s       |              |
| <b>Resistance to static loading</b>   | soft substrate  | ≥ 20 kg        | (EN 12730)   |
|                                       | rigid substrate   | ≥ 20 kg        |              |
| <b>Resistance to root penetration</b> | Pass  |                | (EN 13948)   |
| <b>Tensile strength</b>               | longitudinal (md) <sup>1)</sup>   | ≥ 1000 N/50 mm | (EN 12311-2) |
|                                       | transversal (cmd) <sup>2)</sup>   | ≥ 900 N/50 mm  |              |
|                                       | <sup>1)</sup> md = machine direction<br><sup>2)</sup> cmd = cross machine direction |                |              |
| <b>Elongation</b>                     | longitudinal (md) <sup>1)</sup>   | ≥ 15 %         | (EN 12311-2) |
|                                       | transversal (cmd) <sup>2)</sup>   | ≥ 15 %         |              |
|                                       | <sup>1)</sup> md = machine direction<br><sup>2)</sup> cmd = cross machine direction |                |              |

|  |  |   |  |
|--|--|---|--|
| <b>Tear strength</b>                               | longitudinal (md) <sup>1)</sup>          | ≥ 150 N   | (EN 12310-2)                                   |
|  | transversal (cmd) <sup>2)</sup>          | ≥ 150 N   |  |
|  |  | <sup>1)</sup> md = machine direction<br><sup>2)</sup> cmd = cross machine direction |  |
| <b>Joint peel resistance</b>                       | Failure mode: C, no failure of the joint |   | (EN 12316-2)                                   |
| <b>Joint shear resistance</b>                      | ≥ 600 N/50 mm                            |   | (EN 12317-2)                                   |
| <b>Dimensional stability</b>                       | longitudinal (md) <sup>1)</sup>          | ≤  0,5  %   | (EN 1107-2)                                    |
|  | transversal (cmd) <sup>2)</sup>          | ≤  0,5  %   |  |
|  |  | <sup>1)</sup> md = machine direction<br><sup>2)</sup> cmd = cross machine direction |  |
| <b>Foldability at low temperature</b>              | ≤ -25 °C                                 |   | (EN 495-5)                                     |
| <b>Watertightness</b>                              | Pass                                     |   | (EN 1928)                                      |
| <b>Water-vapour transmission rate</b>              | μ = 20 000                               |   | (EN 1931)                                      |
| <b>Effect of liquid chemicals, including water</b> | On request                               |   | (EN 1847)                                      |
| <b>Resistance to UV exposure</b>                   | Pass (> 5000 h / grade 0)                |   | (EN 1297)                                      |
| <b>External fire performance</b>                   | B <sub>ROOF</sub> (t1) < 20°             |   | (EN 13501-5)                                   |
| <b>Reaction to fire</b>                            | Class E                                  |   | (EN ISO 11925-2, classification to EN 13501-1) |

## SYSTEM INFORMATION

|                         |   |
|-------------------------|---|
| <b>System structure</b> | <p>The following products must be considered for use depending on roof design:</p> <p>Remove products below not in local price list.</p> <ul style="list-style-type: none"> <li>▪ Sikaplan® D-18 unreinforced sheet for detailing</li> <li>▪ Sikaplan® S-15 unreinforced sheet for detailing</li> <li>▪ Sikaplan® SG-15 or Sikaplan® G-15 roofing sheet for exposed connections and flashings</li> <li>▪ Moulded corner pieces, prefabricated corners and pipe flashings</li> <li>▪ Sika® Trocal® Metal Sheet Type S</li> <li>▪ Sika® Trocal Cleaner-2000</li> <li>▪ Sika® Trocal Cleaner L-100</li> <li>▪ Sika® Trocal C-733 (Contact adhesive)</li> </ul> <p>Wide range of accessories is available e.g. prefabricated parts, roof drains, scuppers, walkway pads and decor profiles.</p> |
| <b>Compatibility</b>    | <p>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. These materials could adversely affect the product properties.</p>   |

## APPLICATION INFORMATION

|                                |                           |
|--------------------------------|---------------------------|
| <b>Ambient air temperature</b> | -15 °C min. / +60 °C max. |
| <b>Substrate temperature</b>   | -25 °C min. / +60 °C max. |

## 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.

## 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 Sikaplan® U-15 is prevented from direct contact with incompatible materials (refer to compatibility section).
- Sikaplan® U-15 must be installed by loose laying and without stretching or installing under tension.
- The use of Sikaplan® U-15 membrane is limited to geographical locations with average monthly minimum temperatures of -25 °C. Permanent ambient temperature during use is limited to +50 °C.
- 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.

## 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 this 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)

## APPLICATION INSTRUCTIONS

### EQUIPMENT

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: Leister Varimat or similar

Semi-automatic: Leister Triac Drive

### SUBSTRATE QUALITY

The substrate surface must be uniform, smooth and free of any sharp protrusions or burrs, etc. Sikaplan® U-15 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 Sika® Trocal Cleaner-2000 before adhesive is applied.

### APPLICATION

#### Installation procedure

Reference must be made to further documentation where applicable, such as relevant method statement, application manual and installation or working instructions.

#### Fixing method - Spot fastening

The waterproofing membrane is installed by loose laying (without stretching membrane or installing under tension) with mechanical fastening in seam overlaps or independent from overlaps. Overlap seams are hot welded using specialised hot air equipment. Sikaplan® U-15 must always be installed at right angles to the deck direction. Sikaplan® U-15 is fixed by fasteners and washers/tubes along the marked line, 10 mm from the edge of the membrane. Sikaplan® U-15 is overlapped by 100 mm. The spacing of the fasteners is in accordance with the project specific Sika calculations. At upstands and at all penetrations, the membrane must be secured by additional fasteners and washers/tubes. The fasteners and washers/tubes protect the Sikaplan® U-15 roof covering against tearing and peeling off by wind uplift.

#### Fixing method - Loosely laid and covered with ballast

Mechanical fixing at the roof perimeter to keep membrane in place.

The roof waterproofing membrane is installed by loose laying and covered with ballast according to local wind load situation. If ballast weight is insufficient to restrain against wind uplift the membrane may be fixed mechanically in seam overlap or independent from overlap.

#### Hot welding method

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.

#### Testing overlap seams

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.

PRODUCT DATA SHEET

Sikaplan® U-15

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## 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.

## 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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