BUILDING TRUST

PRODUCT DATA SHEET

# Sikaflex®-11 FC Purform®

Multipurpose elastic adhesive and joint sealant

## DESCRIPTION

Sikaflex®-11 FC Purform® is a 1-part moisture curing elastic adhesive and sealant. It is used for interior and exterior multipurpose bonding and joint sealing. It has good and durable adhesion to most construction materials.

## USES

An adhesive to bond construction components and materials such as:
- Concrete
- Masonry
- Reconstituted or cast stone
- Ceramic
- Wood
- Metal
- Glass

A sealant to seal vertical and horizontal joints.

## CHARACTERISTICS / ADVANTAGES

- Movement capability of ± 25 %
- Easy to apply and non-sagging
- Bonds well to most construction materials
- Good mechanical and weathering resistance
- Very low monomer content
- No training on the safe use of diisocyanates (REACH) required
- Adhesive-sealant with CE marking

## ENVIRONMENTAL INFORMATION

- Conformity with LEED v4 EQc 2: Low-Emitting Materials
- VOC emission classification GEV-Emicode EC1PLUS, license number 11290/20.10.00
- Class A+ according to French Regulation on VOC emissions
- VOC emission classification of building materials RTS M1

## APPROVALS / STANDARDS

- CE Marking and Declaration of Performance to EN 15651-1 - Sealants for non-structural use in joints in buildings - Facade elements - F EXT-INT CC 25HM
- CE Marking and Declaration of Performance to EN 15651-3 - Sealants for non-structural use in joints in buildings - Sealants for joints for non-structural use in sanitary areas - XS 3
- CE Marking and Declaration of Performance to EN 15651-4 - Sealants for non-structural use in joints in buildings - Sealants for pedestrian walkways - PW EXT-INT CC 25HM
- Migration Behaviour EN 1186, EN 13130, CEN/TS 14234, Sikaflex®-11 FC Purform, ISEGA, Certificate No. 54312 U 21

## PRODUCT INFORMATION

| | |
|---|---|
| **Chemical Base** | Sika® Purform® polyurethane with a monomeric diisocyanate content of less than 0.1 % by weight. Therefore, users do not require a training on the safe use of diisocyanates according to Commission Regulation (EU) 2020/1149. |
| **Packaging** | 300 ml cartridge — 12 cartridges per box<br>300 ml cylindrical foil pack — 20 foil packs per box<br>600 ml cylindrical foil pack — 20 foil packs per box<br>Refer to current price list for packaging variations |
| **Colour** | grey (Other colours on demand) |
| **Shelf Life** | 15 months from the date of production |
| **Storage Conditions** | The product must be stored in original, unopened and undamaged packaging in dry conditions at temperatures between +5 °C and +25 °C. Always refer to packaging. |
| **Density** | ~1.35 kg/l (ISO 1138-1) |

## TECHNICAL INFORMATION

**Shore A Hardness** ~33 (after 28 days) (ISO 868)

| Time | Final hardness development (+23 °C / 50 % r.h.) |
|---|---|
| 1 day | 60 % |
| 2 days | 85 % |
| 3 days | 100 % |

| | | |
|---|---|---|
| **Tensile Strength** | ~1.8 N/mm² | (ISO 37) |
| **Secant Tensile Modulus** | ~0.6 N/mm² at 100 % elongation (+23 °C) | (ISO 8339) |
| **Elongation at Break** | ~800 % | (ISO 37) |
| **Elastic Recovery** | ~85 % | (ISO 7389) |
| **Lap Shear Strength** | ~1.0 MPa | (ISO 4587) |
| **Tear Propagation Resistance** | ~8.0 N/mm | (ISO 34) |
| **Movement Capability** | ± 25 % | (ISO 9047) |
| **Chemical Resistance** | Resistant to many chemicals. Contact Sika® Technical Services for additional information. | |
| **Service Temperature** | –40 °C min. / +80 °C max. | |

**Joint Design**

The joint dimensions must be designed to suit the movement capability of the sealant. The joint width must be ≥ 10 mm and ≤ 35 mm. A width to depth ratio of 1:0.5 for facade joints and a with to depth ratio of 1:0.8 for floor joints must be maintained (for exceptions, see table below).

**Typical joint dimensions for joints between concrete elements:**

| Joint distance (m) | Minimum joint width (mm) | Minimum joint depth (mm) |
|---|---|---|
| 2 | 10 | 10 |
| 4 | 15 | 10 |
| 6 | 20 | 10 |
| 8 | 30 | 15 |
| 10 | 35 | 17 |

Minimum joint width for perimeter joints around windows is 10 mm.

All joints must be correctly designed and dimensioned in accordance with the relevant standards and codes of practice before their construction. The basis for calculation of the necessary joint widths are the type of structure, dimensions, technical values of the adjacent building materials, joint sealing material and the specific exposure of the building and the joints.
Joints ≤ 10 mm in width are for crack control and therefore non-movement joints.
For larger joints contact Sika Technical Services for additional information.

## APPLICATION INFORMATION

**Consumption**

**Sealing**

Approximate consumption for floor joints

| Joint width [mm] | Joint depth [mm] | Joint length [m] per 300 ml | Joint length [m] per 600 ml |
|---|---|---|---|
| 10 | 10 | 3 | 6 |
| 15 | 12–15 | 1.5 | 2.5–3 |
| 20 | 17 | 0.9 | 1.8 |
| 25 | 20 | 0.6 | 1.2 |
| 30 | 25 | 0.4 | 0.8 |

Minimum joint width for perimeter joints around windows is 10 mm.
Consumption depends on the roughness and absorbency of the substrate.
These figures are theoretical and do not allow for any additional material due to surface porosity, surface profile, variations in level or wastage etc.

**Yield**

**Bonding**

| Yield 1 Cartridge (300 ml) | Dimension |
|---|---|
| ~15 m bead | Nozzle diameter = 5 mm (~20 ml per linear meter) |

Yield depends on the roughness and absorbency of the substrate.
These figures are theoretical and do not allow for any additional material due to surface porosity, surface profile, variations in level or wastage etc.

| | | |
|---|---|---|
| **Backing Material** | Use closed cell, polyethylene foam backing rod | |
| **Sag Flow** | 0 mm (20 mm profile, +23 °C) | (ISO 7390) |
| **Ambient Air Temperature** | +5 °C min. / +40 °C max. | |
| **Relative Air Humidity** | 30 % to 90 % | |
| **Substrate Temperature** | +5 °C min. / +40 °C max. Minimum +3 °C above dew point temperature | |
| **Curing rate** | ~4.0 mm / 24 hours (+23 °C / 50 % r.h.)<br>*Sika Corporate Quality Procedure | (CQP* 049-2) |
| **Skin Time** | ~50 min (+23 °C / 50 % r.h.) | (CQP 019-1) |

## 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 DOCUMENTS

- Pre-treatment Sealing and Bonding Chart
- Method Statement: Joint Sealing
- Method Statement: Joint Maintenance, Cleaning and Renovation
- Technical Manual: Facade Sealing

## LIMITATIONS

- For good workability, the adhesive temperature must be +20 °C.
- Application during high temperature changes is not recommended (movement during curing).
- Before bonding or sealing, check adhesion and compatibility of paints and coatings by carrying out preliminary trials.
- Sikaflex®-11 FC Purform® can be overpainted with most conventional water-based coating and paint systems. However, paints must first be tested to ensure compatibility by carrying out preliminary trials. The best over-painting results are obtained when the adhesive is allowed to fully cure first. Note: non-flex-

ible paint systems may impair the elasticity of the adhesive and lead to cracking of the paint film.
- Colour variations may occur due to the exposure in service to chemicals, high temperatures and/or UV-radiation (especially with white colour shade). This effect is aesthetic and does not adversely influence the technical performance or durability of the product.
- Always use Sikaflex®-11 FC Purform® in conjunction with mechanical fixings for overhead applications or heavy components.
- For very heavy components provide temporary support until Sikaflex®-11 FC Purform® has fully cured.
- Full surface applications / fixings are not recommended since the inner part of the adhesive layer may never cure.
- Before using on reconstituted, cast or natural stone, contact Sika Technical Services.
- Do not use on bituminous substrates, natural rubber, EPDM rubber or on any building materials which might leach oils, plasticisers or solvents that could degrade the adhesive.
- Do not use on polyethylene (PE), polypropylene (PP), polytetrafluoroethylene (PTFE / Teflon), and certain plasticised synthetic materials. Preliminary trials are recommended or contact Sika® Technical Services.
- Do not use  to seal joints in and around swimming pools.
- Do not use for joints under water pressure or for permanent water immersion.
- Do not use to seal glass.
- Do not use for bonding glass if the bond line is exposed to sunlight.
- Do not use for structural bonding.
- Do not expose uncured Sikaflex®-11 FC Purform® to alcohol containing products as this may interfere with the curing reaction.

## ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Material Safety Data Sheet (MSDS) containing physical, ecological, toxicological and other safety-related data.

## APPLICATION INSTRUCTIONS

### SUBSTRATE PREPARATION

The substrate must be sound, clean, dry and free of all contaminants such as dirt, oil, grease, cement laitance, old sealants and poorly bonded paint coatings which could affect adhesion of the adhesive / sealant. The substrate must be of sufficient strength to resist with the stresses induced by the sealant during movement. Removal techniques such as wire brushing, grinding, sanding or other suitable mechanical tools can be used.
All dust, loose and friable material must be completely removed from all surfaces before application of any activators, primers or adhesive / sealant.
Sikaflex®-11 FC Purform® adheres without primers and/or activators.
However, for adhesion to many substrates, joint durability and critical, high performance applications the following priming and/or pre-treatment procedures must be followed:

**Non-porous substrates**

Aluminium, anodised aluminium, stainless steel, PVC, galvanised steel, powder coated metals or glazed tiles, slightly roughen surface with a fine abrasive pad.
Clean and pre-treat using Sika® Cleaner P or Sika® Aktivator-205 applied with a clean cloth.
Before bonding / sealing, allow a waiting time of > 15 minutes (< 6 hours).
Other metals, such as copper, brass and titanium-zinc, clean and pre-treat using Sika® Cleaner P or Sika® Aktivator-205 applied with a clean cloth. After a waiting time of > 15 minutes (< 6 hours). Apply Sika® Primer-3 N by brush.
Allow a further waiting time of > 30 minutes (< 8 hours) before bonding / sealing,
PVC has to be cleaned and pre-treated using Sika® Primer-215 applied with a brush.
Before bonding / sealing, allow a waiting time of > 15 minutes (< 8 hours).

**Porous substrates**

Concrete, aerated concrete and cement-based renders, mortars and bricks, prime surface using Sika® Primer-3 N or Sika® Primer-115 applied by brush.
Before bonding / sealing, allow a waiting time of > 30 minutes (< 8 hours).
Note: Primers and activators are adhesion promoters and not an alternative to improve poor preparation / cleaning of the joint surface. Primers also improve the long-term adhesion performance of the sealed joint.
Contact Sika Technical Services for additional information.

### 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.

### Bonding Procedure

#### Application

After the necessary substrate preparation, prepare the end of the cartridge / foil pack before or after inserting into the sealant gun then fit the nozzle.
Apply in triangular beads, strips or spots at intervals of a few centimetres each. Use hand pressure only to fix the components to be bonded into position before skinning of the adhesive occurs. Incorrectly positioned components can easily be unbonded and repositioned during the first few minutes after application. If necessary, use temporary adhesive tapes, wedges, or supports to hold the assembled components together during the initial curing time.
Fresh, uncured adhesive remaining on the surface must be removed immediately. Final strength will be reached after complete curing of Sikaflex®-11 FC Purform®, i.e. after 24 to 48 hours at +23 °C, depending on the environmental conditions and adhesive layer thickness.

### Sealing Procedure

#### Masking

It is recommended to use masking tape where neat or exact joint lines are required. Remove the tape within the skin time after finishing.

#### Joint Backing

After the required substrate preparation, insert a suitable backing rod to the required depth.

#### Priming

Prime the joint surfaces as recommended in substrate preparation. Avoid excessive application of primer to avoid causing puddles at the base of the joint.

#### Application

Prepare the end of the cartridge / foil pack before or after inserting into the sealant gun then fit the nozzle. Extrude Sikaflex®-11 FC Purform® into the joint ensuring that it comes into full contact with the sides of the joint and avoiding any air entrapment.

#### Finishing

As soon as possible after application, sealant must be firmly tooled against the joint sides to ensure adequate adhesion and a smooth finish.
Use a compatible tooling agent (e.g. Sika® Tooling Agent N) to smooth the joint surface. Do not use tooling products containing solvents.

### CLEANING OF TOOLS

Clean all tools and application equipment with Sika® Remover-208 immediately after use. Once cured, hardened material can only be removed mechanically. For cleaning skin use Sika® Cleaning Wipes-100.

## 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.

## 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. It may be necessary to adapt the above disclaimer to specific local laws and regulations. Any changes to this disclaimer may only be implemented with permission of Sika® Corporate Legal in Baar.

**SIKA HONGKONG LTD.**
Rm.1507-12, Blk A, New Trade Plaza,
6 On Ping Street, Shatin, N.T., H.K.
Phone: +852 26868108
Fax: +852 26453671
Mail: marketing@hk.sika.com
Website: www.sika.com.hk