BUILDING TRUST

PRODUCT DATA SHEET

# SikaHyflex®-402 Connection

LOW-MODULUS CONSTRUCTION SEALANT FOR CONNECTION AND MOVEMENT JOINTS

## PRODUCT DESCRIPTION

SikaHyflex®-402 Connection is a 1-part, moisture-curing, elastic joint sealant for sealing many types of joint configurations. It has a primerless application and good adhesion to most construction materials. Provides a waterproof seal with good mechanical properties, remains elastic over a wide range of temperatures and is over-paintable. Movement capability ±25 %. Internal and External use.

## USES

Sealing joints for:
- Movement and connection joints
- Facade elements
- Balconies
- Window and door frames
- Pre-cast elements
- Retaining walls
- Partition walls
- Parapets

## CHARACTERISTICS / ADVANTAGES

- Internal and external use
- Movement capability ±25 %
- Over-paintable
- Bubble-free curing
- Good resistance to weathering and ageing
- Good adhesion ot many construction materials
- Suitable for use in most global conditions
- Elastic over a wide range of temperatures
- 1-part ready to use
- Available in many colors
- Waterproof
- Phthalate free formulation

## ENVIRONMENTAL INFORMATION

- Conformity with LEED v4 EQc 2: Low-Emitting Materials
- VOC emission classification GEV-Emicode EC1$^{PLUS}$
- VOC emission classification of building materials RTS M1

## APPROVALS / STANDARDS

- CE Marking and Declaration of Performance to EN 1565-1 - Sealants for non-structural use in joints - Facade elements
- EN ISO 11600: Building construction - Jointing products - Classification and requirements for sealants.

## PRODUCT INFORMATION

| | |
|---|---|
| **Chemical Base** | Silane terminated polymer |
| **Packaging** | 290 ml cartridges, 12 cartridges per box<br>600 ml cylindrical foil pack, 20 foil packs per box |
| **Colour** | Colour range to be defined by local sales organization.<br>Other colours on request. |

| | | |
|---|---|---|
| **Shelf Life** | 12 months from the date of production | |
| **Storage Conditions** | The product must be stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between +5 °C and +25 °C. Always refer to packaging. | |
| **Density** | ~1,25 kg/l | (ISO 1183-1) |
| **Product Declaration** | ▪ EN 1565-1: F EXT-INT CC 25 LM<br>▪ EN ISO 11600: F 25 LM | |

## TECHNICAL INFORMATION

| | | |
|---|---|---|
| **Shore A Hardness** | ~20 (after 28 days) | (ISO 868) |
| **Secant Tensile Modulus** | ~0,40 N/mm² at 100 % elongation (23 °C)<br>~0,50 N/mm² at 100 % elongation (-20 °C) | (ISO 8339) |
| **Elongation at Break** | ~500 % | (ISO 37) |
| **Elastic Recovery** | ~70 % | (ISO 37) |
| **Tear Propagation Resistance** | ~4,0 N/mm | (ISO 34) |
| **Movement Capability** | ±25 % | (ISO 9047) |
| **Resistance to Weathering** | 8 | (ISO / DIS 19862) |
| **Service Temperature** | −40 °C to +70 °C | |

**Joint Design**

The joint width must be designed to suit the movement capability of the sealant. The joint width shall be ≥ 10 mm and ≤ 35 mm. A width to depth ratio of 2:1 must be maintained.

Standard joint widths for joints between concrete elements

| Joint distance [m] | Min. joint width [mm] | Min. joint depth [mm] |
|---|---|---|
| 2 | 10 | 10 |
| 4 | 15 | 10 |
| 6 | 20 | 10 |
| 8 | 30 | 15 |
| 10 | 35 | 17 |

All joints must be correctly designed and dimensioned in accordance with the relevant standards and codes of practice. 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.

For larger joints contact Sika Technical Services for additional information.

## APPLICATION INFORMATION

**Consumption**

| Joint width [mm] | Joint depth [mm] | Joint length [m] per 600 ml foil pack |
|---|---|---|
| 8 | 8 | 12 |
| 15 | 8 | 6 |
| 20 | 10 | 3 |
| 25 | 12 | 2 |
| 30 | 15 | 1.3 |

| | | |
|---|---|---|
| **Backing Material** | Use closed cell, polyethylene foam backing rods. | |
| **Sag Flow** | 0 mm (20 mm profile, 50 °C) | (ISO 7390) |
| **Ambient Air Temperature** | +5 °C to +40 °C | |

| | | | |
|---|---|---|---|
| **Substrate Temperature** | +5 °C to +40 °C | ≥ 3 °C above dew point temperature | |
| **Curing Rate** | ~2 mm/24 hours (23 °C / 50 % r.h.) | Sika Corporate Quality Procedure | (CQP 049-2) |
| **Skin Time** | ~60 minutes (23 °C / 50 % r.h.) | | (CQP 019-1) |
| **Tooling Time** | ~50 minutes (23 °C / 50 % r.h.) | | (CQP 019-2) |

# 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 coatings which could affect adhesion of the sealant.
The substrate should be of sufficient strength to cope with the stresses induced by the sealant during movement.
Removal techniques such as wire brushing, grinding, grit blasting 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 sealant. Where joints in substrate are saw cut. After sawing, all slurry material must be flushed away and joint surfaces allowed to dry.
SikaHyflex®-402 Connection adheres without primers and/or activators.
For optimum adhesion, joint durability and critical, high performance applications such as joints on multi-storey buildings, highly stressed joints, extreme weather exposure. The following priming and/or pre-treatment procedures shall 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® Aktivator-205 applied with a clean cloth.
Before sealing, allow a waiting time of > 15 minutes (< 6 hours).
Other metals, such as copper, brass and titanium-zinc, cleaned and pre-treat using Sika® Aktivator-205 applied with a clean cloth. After a waiting time of > 15 minutes (< 6 hours). Apply Sika® Primer-3 N applied by brush. Allow a further waiting time of > 30 minutes (< 8 hours) before sealing.
**Porous substrates**
Concrete, aerated concrete and cement based renders, mortars and bricks. Prime surface using Sika® Primer-3 N applied by brush.
Before sealing, allow a waiting time of > 30 minutes (< 8 hours).
For more detailed advice contact Sika Technical Services for additional information.

Note: Primers 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.

### APPLICATION METHOD / TOOLS

**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:**
SikaHyflex®-402 Connection is supplied ready to use. Prepare the end of the foil pack or cartridge, insert into the sealant gun and fit the nozzle. Extrude SikaHyflex®-402 Connection 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 immediately after use with Sika® Remover-208. Once cured, hardened material can only be removed mechanically. For cleaning skin use Sika® Cleaning Wipes-100.

# FURTHER DOCUMENTS

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

# LIMITATIONS

- 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.
- SikaHyflex®-402 Connection can be over-painted with most conventional facade paint coating systems. However, paints must first be tested to ensure compatibility by carrying out preliminary trials (e.g.

according to ISO technical paper: Paintability and Paint Compatibility of Sealants). Optimum results are obtained when the sealant is allowed to fully cure first. Note: non-flexible paint systems may impair the elasticity of the sealant and lead to cracking of the paint coating.
- Do not use on natural stone.
- Do not use as a glass sealant,on bituminous substrates, natural rubber, EPDM rubber or on any building materials which might leech oils, plasticizers or solvents that could degrade the sealant.
- Do not use to seal joints in or around swimming pools.
- Do not use for joints under water pressure or permanent water immersion.

## VALUE BASE

All technical data stated in this Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

## LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for the exact product data and uses.

## ECOLOGY, HEALTH AND SAFETY

Local safety regulations must be observed and it advisable to wear PPI when working with this product with particular attention paid to cutting and handling. Transportation Class: The product is not classified as hazardous good for transport. Disposal: The material is recyclable. Disposal must be according to local regulations. Please contact your local Sika sales organisation for more information.

## 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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