Sikaflex® Construction+

Sealant for concrete and masonry facades

Product Description / Uses

Sikaflex® Construction+ is a 1-component, moisture-curing, elastic joint sealant and is designed for movement and connection joints in concrete facades.

Characteristics / Advantages

- Movement capability of 35% (ASTM C 920)
- Very high mechanical and chemical resistance
- Bubble-free curing
- Very good adhesion to most Construction+ materials
- Solvent free and odourless
- Very low emission

Approvals / Standards

Conforms to EN15651-4 PW EXT-INT CC 25 HM
Conforms to ISO 11600 F 25 HM
Conforms to ASTM C 920 class 35
EMICODE EC1 PLUS R, very low emission
M1 (Emission class for Building Materials)

Specific Ratings

<table>
<thead>
<tr>
<th>LEED® EQc 4.1</th>
<th>SCAQMD, Rule 1168</th>
<th>BAAQMD, Reg. 8, Rule 51</th>
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</thead>
<tbody>
<tr>
<td>passes</td>
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Product Data

Colours

Concrete grey, further colours available upon request

Packaging

600 ml foil pack, 20 foil packs per box

Storage Conditions / Shelf-Life

15 months from date of production if stored in undamaged original sealed containers, in dry conditions and protected from direct sunlight at temperatures between +5°C and +25°C.
Technical Data

Chemical Base  
i-Cure® technology polyurethane

Density  
1.45 kg/l approx.  (CQP1) 006-4, ISO 1183-1

Sag Flow  
0 mm (20 mm profile, 50°C)  (ISO 7390)

Skin Time  
~65 minutes approx.  (CQP 019-1)

Tooling Time  
~55 minutes approx.  (CQP 019-2)

Curing Rate  
3 mm/24 h approx.  (CQP 049-1)

Movement Capability  
±25%  (ISO 9047)
±35%  (ASTM C 719)

Shore A Hardness  
28 after 28 days approx.  (ISO 868)

Tear propagation resistance  
7 N/mm approx.  (ISO 34)

Secant Tensile Modulus  
0.45 N/mm² approx. at 100% elongation  (ISO 8339)
1.1 N/mm² approx. at 100% elongation (-20°C)  (ISO 34)

Elongation at Break  
600% approx.  (CQP 036-1, ISO 37)

Elastic Recovery  
> 90%  (CQP 018-1, ISO 7389)

Application Temperature  
+5°C to +40°C, min. 3°C above dew point temperature

Service Temperature  
-40°C to +70°C

Resistance  
Sikaflex® Construction+ is resistant to water, seawater, diluted alkalis, cement grout and water dispersed detergent.

Application Details

Joint Design/Consumption  
The joint width must be designed to suit the movement capability of the sealant. In general the joint width should be > 10 mm < 35 mm. A width to depth ratio of approx. 1:0.8 must be maintained

Standard joint widths for joints between concrete elements:
with a ΔT* of 40 °C

<table>
<thead>
<tr>
<th>Joint distance [m]</th>
<th>2</th>
<th>4</th>
<th>6</th>
<th>8</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min. joint width [mm]</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>15</td>
<td>18</td>
</tr>
<tr>
<td>Min. joint depth [mm]</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>12</td>
<td>15</td>
</tr>
</tbody>
</table>

with a ΔT* of 80 °C

<table>
<thead>
<tr>
<th>Joint distance [m]</th>
<th>2</th>
<th>4</th>
<th>6</th>
<th>8</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min. joint width [mm]</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>28</td>
<td>35</td>
</tr>
<tr>
<td>Min. joint depth [mm]</td>
<td>10</td>
<td>12</td>
<td>17</td>
<td>22</td>
<td>28</td>
</tr>
</tbody>
</table>

*ΔT is considered to be the difference between the highest expected temperature in use (or lowest, check which case leads to higher ΔT) and the application temperature.

All joints must be properly designed and dimensioned in accordance with the relevant standards, before Construction+. Basis for calculation of the necessary joint width are the technical values of the joint sealant and the adjacent building materials, as well as the exposure of the building, type of Construction+ and its dimensions.
### Approximate consumption

<table>
<thead>
<tr>
<th>Joint width [mm]</th>
<th>10</th>
<th>15</th>
<th>20</th>
<th>25</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joint depth [mm]</td>
<td>10</td>
<td>12</td>
<td>16</td>
<td>20</td>
<td>24</td>
</tr>
<tr>
<td>Joint length / 600 ml [m]</td>
<td>6</td>
<td>3.3</td>
<td>1.9</td>
<td>1.2</td>
<td>0.8</td>
</tr>
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</table>

Backin: Use closed cell, polyethylene foam backing rods.

| Flush joint design prevents trip hazards and dirt traps | Recessed joint design protects the sealant against mechanical loads |

### Substrate Preparation / Priming

Sikaflex® Construction+ generally has strong adhesion without primers/activators to most dry, clean and sound substrates.

For optimum adhesion and critical, high performance applications such as multi story building work, high stress bonding joints, extreme weather exposure or water immersion the following procedure shall be followed:

#### Non porous substrates

Aluminium, anodised aluminium, stainless steel, galvanised steel, powder coated metals or glazed tiles have to be cleaned and pre-treated with Sika® Aktivator-205 by using a clean towel. Before sealing allow a flash-off time >15 min (max. 6 hours).

Metals like copper, brass, titanium-zinc etc. have to be cleaned and pre-treated with Sika® Aktivator-205 by using a clean towel. After a flash-off time >15 minutes, apply Sika® Primer-3 N by using a brush and allow a flash-off time >30 minutes (max. 8 hours) before sealing.

PVC has to be cleaned and thereafter pre-treated with Sika® Primer-215 by using a brush. Before sealing allow a flash-off time > 30 min (max. 8 hours).

#### Porous substrates

Concrete, aerated concrete and cementitious plasters, mortars, brick, etc. have to be primed with Sika® Primer-3 N by using a brush. Before sealing allow a flash-off time >30 minutes (max. 8 hours).

For detailed instructions consult the Product Data Sheet for pre-treatments or contact our Technical Service Department.

Primers are adhesion promoters. They neither substitute for the correct cleaning of the surface nor improve its strength significantly.

### Application Method / Tools

Sikaflex® Construction+ is supplied ready to use.

After suitable substrate preparation, insert backing rod to the required depth and apply primer if necessary. Insert foil pack into sealant gun and extrude Sikaflex® Construction+ into joint making sure that it is in full contact with the sides of the joint and avoid air entrapment. Sikaflex® Construction+ must be tooled firmly against joint sides to ensure good adhesion.

Masking tape may be used where exact joint lines or exceptionally neat lines are required. Remove the tape within the skin time. Use a compatible tooling agent (e.g. Sika® Tooling Agent N) to smooth the joint surfaces. Do not use solvent containing products!
Cleaning of Tools

Clean all tools and application equipment with Sika® Remover-208 / Sika® TopClean-T immediately after use. Once cured the material can only be removed mechanically.

Further Documents available

- Safety Data Sheet (SDS)
- Pre-treatment Chart Sealing & Bonding
- Method Statement Joint Sealing
- Method Statement Joint Maintenance, Cleaning and Renovation

Notes on Application / Limitations

- Sikaflex® Construction++ can be over-painted with most conventional facade coating paint 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). The best over-painting 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 film.
- Colour variations may occur due to exposure to chemicals, high temperatures and/or UV-radiation (especially with the colour shade white). However, a change in colour is purely of aesthetic nature and does not adversely influence the technical performance or durability of the product.
- Do not use Sikaflex® Construction++ on natural stone.
- Do not use Sikaflex® Construction++ on bituminous substrates, natural rubber, EPDM rubber or on any building materials which might bleed oils, plasticizers or solvents that could attack the sealant.
- Do not use Sikaflex® Construction++ to seal joints in and around swimming pools.
- Do not use Sikaflex® Construction++ for joints under water pressure or for permanent water immersion.
- Do not expose uncured Sikaflex® Construction++ to alcohol containing products as this may interfere with the curing reaction.

Value Base

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.

Health and Safety Information

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

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.