Sika Anchorfix® -2
High-performance Anchoring Adhesive

Description
Solvent- and styrene free, epoxy acrylate based two-part anchoring adhesive.

Uses
As a fast curing anchoring adhesive for all grades of:
■ Rebars / reinforcing steel
■ Threaded rods
■ Bolts and special fastening systems
■ Concrete
■ Solid masonry
■ Steel

Prior to any application, the suitability of the Sika AnchorFix® Adhesive for the substrate in terms of the desired bond strength, and for the prevention of surface staining or discolouration, must be confirmed by testing in a sample area. This is due to the wide variation of possible substrates, particularly in terms of strength, composition and porosity:
■ Hard natural stone
■ Solid rock

Characteristics / Advantages
■ Fast curing
■ Standard guns can be used
■ High load capacity
■ Non-sag, even overhead
■ Styrene-free
■ Low odour
■ Low wastage
■ No transportation restrictions

Tests
Approval / Standards
European Technical Approvals for threaded rods:

<table>
<thead>
<tr>
<th>Galvanised anchor</th>
<th>Stainless steel anchor</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC Cert. 0679-CPD-0027</td>
<td>EC Cert. 0679-CPD-0028</td>
</tr>
<tr>
<td>ETA-05 / 103</td>
<td>ETA-05 / 104</td>
</tr>
</tbody>
</table>

European Technical Approval ETAG 001 Part 5 Option 7 for threaded rods.
Testing according to ICC / ICBO standards.
ICC ES Legacy Report ESR-1382 Reissued December 1, 2006
Report Holder: Sika Corporation (USA)

Fire resistance:
Test report from the University of Brunswick
Report No. 3551/4926
Tests according DIN EN 1363-1 (ISO 834)
Product Data

Form

<table>
<thead>
<tr>
<th>Part</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>light green</td>
</tr>
<tr>
<td>B</td>
<td>black</td>
</tr>
<tr>
<td>A+B</td>
<td>light grey</td>
</tr>
</tbody>
</table>

Packaging

300 ml standard cartridge, 12 per box.

Storage

Storage Conditions / Shelf life

15 months from date of production if stored properly in original unopened, sealed and undamaged packaging in cool and dry conditions at temperatures between +5°C and +20°C. Protect from direct sunlight.

All Sika AnchorFix®-2 cartridges have the expiry date printed on the label.

Technical data

Density

Part A: 1.62 – 1.70 kg/l  
Part B: 1.44 – 1.50 kg/l  
1.60 – 1.68 kg/l (Part A+B mixed)

Curing Speed

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Open time</th>
<th>T_gel</th>
<th>Curing time</th>
<th>T_cur</th>
</tr>
</thead>
<tbody>
<tr>
<td>+20°C - +35°C</td>
<td>1 minute</td>
<td></td>
<td>40 minutes</td>
<td></td>
</tr>
<tr>
<td>+10°C - +20°C</td>
<td>4 minutes</td>
<td></td>
<td>70 minutes</td>
<td></td>
</tr>
<tr>
<td>+5°C - +10°C</td>
<td>8 minutes</td>
<td></td>
<td>100 minutes</td>
<td></td>
</tr>
<tr>
<td>0°C - +5°C</td>
<td>*</td>
<td></td>
<td>180 minutes</td>
<td></td>
</tr>
<tr>
<td>-5°C - 0°C</td>
<td>*</td>
<td></td>
<td>24 hours</td>
<td></td>
</tr>
</tbody>
</table>

*Min. cartridge temperature = +5°C

Sag Flow

Non-sag, even overhead

Layer thickness

3 mm max.

Mechanical / Physical Properties

Compressive Strength 60 N/mm²  
(According to ASTM D695)

Design

Terminology and Abbreviations

\[ h_{\text{min}} = \text{Min. concrete thickness (mm)} \]
\[ h_{\text{ef}} = \text{Effective anchorage depth (bond length) (mm)} \]
\[ f_{\text{cm}} = \text{Concrete compressive strength (N/mm}^2\text{)} \]
\[ S_{\text{crN}} = \text{Minimum anchor spacing to achieve NRK (mm)} \]
\[ C = \text{Close edge distance (mm)} \]
\[ h_{\text{o}} = \text{Hole depth (mm)} \]
\[ d_{\text{o}} = \text{Drilled hole diameter (mm)} \]
\[ d = \text{Stud or bar nominal diameter (mm)} \]
\[ N_{\text{Rk}} = \text{Characteristic tensile load (kN)} \]
\[ N_{\text{Rd}} = \text{Recommended load = NRK multiplied with a total safety factor} \]
\[ R_{\text{fcN}} = \text{Close edge reduction factor, tension only} \]
\[ R_{\text{fcV}} = \text{Close edge reduction factor, shear only} \]
\[ R_{\text{fsN}} = \text{Close spacing reduction factor, tension only} \]
\[ R_{\text{fsV}} = \text{Close spacing reduction factor, shear only} \]
\[ T_{\text{inst}} = \text{Max. installation torque (Nm)} \]
Load Capacity Data for all Thread Rods for concrete C20/25 (according ETAG001)

Important Note:
The anchor hole must be dry.

 Increasing Factor for Concrete:

<table>
<thead>
<tr>
<th>Concrete Capacity Reduction Factor</th>
<th>C30/37</th>
<th>C40/50</th>
<th>C50/60</th>
</tr>
</thead>
<tbody>
<tr>
<td>ψ_c, N</td>
<td>1.04</td>
<td>1.07</td>
<td>1.09</td>
</tr>
<tr>
<td>ψ_s, N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ψ_sc, N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ψ_cs, N</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Concrete capacity reduction factors, tension (ψ_c, N):**

Single anchor, close edge C:

ψ_c, N = 0.5 (C/h_{ef}) + 0.5 ≤ 1

Two anchors, close spacing S:

ψ_s, N = 0.25 (S/h_{ef}) + 0.5 ≤ 1

Two anchors, c/l perpendicular to close edge C1:

ψ_sc, N = 0.25 (C1/h_{ef}) + 0.25 (S/h_{ef}) + 0.25 ≤ 1

Concrete capacity reduction for more complex anchor configurations in tension, and for shear forces acting towards a close edge, should be determined using the design method A, given in ETAG 001, Annex C.

**Load Capacity Data for Reinforcing Bar Anchors:**

Requirement for the calculation of the characteristic load capacity:

Reinforcing bar S500 ribbed

(the load capacity of the reinforcing bar itself must also be verified)

Min Concrete C20 / 25

The anchor hole must be dry.
### Bar diameter d (mm)

<table>
<thead>
<tr>
<th>d (mm)</th>
<th>6</th>
<th>8</th>
<th>10</th>
<th>12</th>
<th>14</th>
<th>16</th>
<th>20</th>
<th>25</th>
</tr>
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<tr>
<td>6</td>
<td></td>
<td></td>
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<td>18</td>
<td>20</td>
<td>25</td>
<td>32</td>
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### Minimum anchor embedment h_{\text{min}} (mm)

<table>
<thead>
<tr>
<th>d_{\text{min}} (mm)</th>
<th>60</th>
<th>80</th>
<th>90</th>
<th>100</th>
<th>115</th>
<th>130</th>
<th>140</th>
<th>150</th>
</tr>
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</table>

### Equation for tensile load capacity:

\[ N_{RK} = \frac{h_{ef} - 50}{2.0} \]

### Equation for shear load capacity:

\[ V_{RK} = \frac{h_{ef} \cdot d_0 \cdot f_{cm}}{1000} \quad \text{for} \quad f_{cm} \leq 50 \]

### Reduction Factors for Close Edge Distances and Anchor Spacing:

- **Close edge, tension:**
  \[ R_{f_{cN}} = 0.4 \left( \frac{C}{h_{ef}} \right) + 0.4 \leq 1 \]  
  (Valid for \( 0.5 \leq \left( \frac{C}{h_{ef}} \right) \leq 1.5 \))

- **Close spacing, tension:**
  \[ R_{f_{sN}} = 0.25 \left( \frac{S}{h_{ef}} \right) + 0.5 \leq 1 \]  
  (Valid for \( 0.25 \leq \left( \frac{S}{h_{ef}} \right) \leq 2.0 \))

- **Close edge, shear:**
  \[ R_{f_{cV}} = 0.6 \left( \frac{C}{h_{ef}} \right) - 0.2 \leq 1 \]  
  (Valid for \( 0.5 \leq \left( \frac{C}{h_{ef}} \right) \leq 2.0 \))

- **Close spacing, shear:**
  \[ R_{f_{sV}} = 0.1 \left( \frac{S}{h_{ef}} \right) + 0.4 \leq 1 \]  
  (Valid for \( 1.0 \leq \left( \frac{S}{h_{ef}} \right) \leq 6.0 \))

### Important Note:

The load capacity of the thread rod itself must be also verified.
The anchor hole must be dry.

### System Information

#### Application Details

<table>
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<tr>
<th>Anchor Ø (mm)</th>
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<tbody>
<tr>
<td>6</td>
<td>10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100</td>
</tr>
</tbody>
</table>

The indicated filling quantities are calculated without wastage. Wastage 10 - 50%.

#### Substrate Quality

- Mortar and concrete must be older than 28 days.
- Substrate strength (concrete, masonry, natural stone) must be verified.
- Pull-out tests must be carried out if substrate strength is unknown.
- The anchor hole must always be dry, free from oil and grease etc.
- Loose particles must be removed from the holes.

#### Application Conditions / Limitations

- **Substrate Temperature:** -5°C min. / +35°C max.
- **Material Temperature:** Sika AnchorFix®-2 must be at a temperature of between +5°C and +20°C for application.

#### Dew Point

Beware of condensation!

Substrate temperature during application must be at least 3°C above dew point.

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**Resistance**

**Thermal Resistance**

- Service Temperature range of the Cured Adhesive, ETAG 001, part 5:
  -40°C to +50°C*
- Temperature Resistance of the Cured Adhesive, ETAG 001, part 5
  +50°C long term
  +80°C short term (1-2 hours)

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Application Instructions

Mixing

Part A : part B = 10 : 1 by volume

Mixing Tools

Getting the cartridge ready:

1. Unscrew and remove the cap
2. Cut the film
3. Screw on the static mixer
4. Place the cartridge into the gun and start application mixer

When the work is interrupted the static mixer can remain on the cartridge after the gun pressure has been relieved. If the resin has hardened in the nozzle when work is resumed, a new nozzle must be attached.
Application Method / Tools

General Remarks:

Drilling or hole with an electric drill to the diameter and depth required. Drill hole diameter must be in accordance with anchor size.

The drill hole must be cleaned with a blow pump or by compressed air, starting from the bottom of the hole. (at least 2x)

Important: use oil-free compressors!

The drill hole must be thoroughly cleaned with the special steel brush (brush at least 2x). The diameter of the brush must be larger than the diameter of the drill hole.

The drill hole must be cleaned with a blow pump or by compressed air, starting from the bottom of the hole. (at least 2x)

Important: use oil-free compressors!

The drill hole must be thoroughly cleaned with the special steel brush (brush at least 2x). The diameter of the brush must be larger than the diameter of the drill hole.

Pump approx. twice until both parts come out uniformly. Do not use this material. Release the gun pressure and clean the cartridge opening with a cloth.

Inject the adhesive into the hole, starting from the bottom, while slowly drawing back the static mixer. In any case avoid entrapping air. For deep holes extension tubing can be used.

Insert the anchor with a rotary motion into the filled drill hole. Some adhesive must come out of the hole.

Important: the anchor must be placed within the open time.

During the resin hardening time the anchor must not be moved or loaded. Wash tools immediately with Sika® Colma Cleaner. Wash hands and skin thoroughly with warm soap water.

Important Note: Anchors in hollow blocks:

Do use Sika AnchorFix®-1 for hollow blocks.

Clean all tools and application equipment with Sika® Colma Cleaner immediately after use. Hardened / cured material can only be mechanically removed.

Cleaning of Tools

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.

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.

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 Material 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 product 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.