Sikadur®-31 SBA S-02
Segmental bridge adhesive

Product Description
Sikadur®-31 SBA S-02 is a solvent-free, thixotropic, structural two part adhesive especially formulated for segmental bridge construction.

Uses
- Segmental bridge adhesive for use on substrates at +30°C to +45°C

Characteristics / Advantages
Sikadur®-31 SBA S-02 has the following advantages:
- Meets and / or exceeds International and National Standards (FIP, BS, ASTM etc.)
- Lubricates the surfaces and makes location of the shear keys easier
- High strength and high modulus of elasticity
- High initial and ultimate strengths
- Impermeable to liquids and water vapour
- Minimal water absorption
- Suitable for dry and damp concrete surfaces (moisture tolerant)
- Hardening is not affected by humidity
- Thixotropic: non-sag in vertical and overhead applications
- Solvent free
- Hardens without shrinkage
- Different coloured components (for mixing control)
- No primer needed
- Good chemical resistance

Note: There are at least 5 types of Skadur-31 SBA available for substrate temperatures of +5°C to +60°C. Please consult our technical department.

Product Data

Form

<table>
<thead>
<tr>
<th>Colours</th>
<th>Part A: white</th>
<th>Part B: black</th>
<th>Part A+B mixed: concrete grey</th>
</tr>
</thead>
</table>

Packaging
- 6 kg (A+B) Prebatched unit, Pallets of 480 kg (80 x 6 kg).  

Storage

Storage Conditions / Shelf-Life
- 24 months from date of production if stored properly in original unopened, sealed and undamaged packaging, in dry conditions at temperatures between +5°C and +30°C. Protect from direct sunshine.
### Technical Data

#### Chemical Base
- Epoxy resin

#### Density
- $1.80 \text{ kg/l} \pm 0.1 \text{ kg/l} \text{ (part A+B mixed) \ (at +20°C)}$

#### Sag Flow
- Flow at 9.5mm (According to FIP 5.3 with measurement according to ASTM D2730)
  - (Requirement: Flow at minimum thickness of 3 mm).

#### Squeezability

<table>
<thead>
<tr>
<th>Squeeze Load</th>
<th>Squeeze Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 kg</td>
<td>5'410 mm²</td>
</tr>
<tr>
<td>200 kg</td>
<td>7'854 mm²</td>
</tr>
</tbody>
</table>

#### Layer Thickness
- 30 mm max.

When using multiple units, one after the other. Do not mix the following unit until the previous one has been used in order to avoid a reduction in handling time.

#### Change of Volume
- Hardens without shrinkage.

#### Thermal Stability
- Heat Deflection Temperature (HDT):
  - Curing conditions:
    - 7 days / +40°C Martens point = 64.5°C
    - 7 days / +35°C ASTM D648 heat deflection temperature = 58°C

#### Mechanical / Physical Properties

##### Compressive Strength

<table>
<thead>
<tr>
<th>Curing time</th>
<th>Temperature</th>
<th>Compressive strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 hours</td>
<td>+10°C</td>
<td>&gt; 45 N/mm²</td>
</tr>
<tr>
<td>24 hours</td>
<td>+15°C</td>
<td>&gt; 60 N/mm²</td>
</tr>
<tr>
<td>24 hours</td>
<td>+20°C</td>
<td>65 - 70 N/mm²</td>
</tr>
<tr>
<td>24 hours</td>
<td>+25°C</td>
<td>75 - 80 N/mm²</td>
</tr>
<tr>
<td>24 hours</td>
<td>+30°C</td>
<td>75 - 80 N/mm²</td>
</tr>
</tbody>
</table>

##### Shear Strength

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Shear strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>+40°C</td>
<td>&gt; 15 N/mm²</td>
</tr>
<tr>
<td>+45°C</td>
<td>14 - 16 N/mm²</td>
</tr>
<tr>
<td>+50°C</td>
<td>13 - 15 N/mm²</td>
</tr>
</tbody>
</table>

##### E-Modulus
- Instant Modulus: 10'000 N/mm²
- Deferred Modulus: 9'500 N/mm²

- Requirements: 8'000 N/mm²
- Requirements: 6'000 N/mm²

##### Elongation at Break
- 0.6% (14 days / +23°C)

#### Resistance

- **Thermal Resistance**
  - Meets the requirements of FIP 5.10, DIN 53458 and ASTM D648.
System Information

Application Details

Substrate Quality
Concrete should be cured for at least 28 days, (depends on minimal requirement of strengths) and have an open textured profile. Any cement laitance should be removed.

Substrate must be sound and free of all loose or friable particles with a minimum compressive strength 25 N/mm² and a minimum pull off 1.5 N/mm².

Substrate must be clean and free of all contaminants such as dirt, oils and grease, surface treatments or coatings etc..

Substrate must be dry or mat damp and free from any standing water, ice etc..

Substrate Preparation
Concrete:
The surfaces must be cleaned and mechanically prepared to achieve the desired substrate quality.

Application Conditions / Limitations

Substrate Temperature
+30°C min. / +45°C max.

Ambient Temperature
+30°C min. / +45°C max.

Material Temperature
Sikadur®-31 SBA S-02 must be at a temperature of between +5°C and +30°C for application.

Substrate Moisture Content
When applied to mat moisture concrete, brush the adhesive well into substrate.

Dew Point
Beware of condensation!
Substrate temperature during application must be at least 3°C above dew point.

Application Instructions

Mixing
Part A : part B = 3 : 1 by weight or volume

Mixing Time
Pre-batched units:
Mix parts A+B together for at least 3 minutes with a mixing spindle attached to a slow speed electric drill (max. 600 rpm) until the material becomes smooth in consistency and a uniform grey colour. Avoid aeration while mixing. Then, pour the whole mix into a clean container and stir again for approx. 1 more minute at low speed to keep air entrapment at a minimum. Mix only that quantity which can be used within its potlife.

Application Method / Tools
Apply the mixed adhesive to the prepared surface with a spatula, trowel, notched trowel, or with hands protected by gloves.

Cleaning of Tools
Clean all tools and application equipment with Thinner C immediately after use. Hardened / cured material can only be mechanically removed.

Potlife
Quantity: 1 litre (~ 1.8 kg)
(According to FIP 5.1 and 5.2)

<table>
<thead>
<tr>
<th>Temperature</th>
<th>+20°C</th>
<th>+25°C</th>
<th>+30°C</th>
<th>+35°C</th>
<th>+40°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potlife</td>
<td>&gt; 50 minutes</td>
<td>~ 50 minutes</td>
<td>~ 30 minutes</td>
<td>~ 20 minutes</td>
<td>~ 15 minutes</td>
</tr>
<tr>
<td>Open time</td>
<td>-</td>
<td>-</td>
<td>&gt; 60 minutes</td>
<td>~ 50 minutes</td>
<td>~ 45 minutes</td>
</tr>
</tbody>
</table>

The potlife begins when the resin and hardener are mixed. It is shorter at high temperatures and longer at low temperatures. The greater the quantity mixed, the shorter the potlife.
| **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. |
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