

PRODUCT DATA SHEET

Sikadur[®]-31 SBA (h) S-02

SEGMENTAL BRIDGE ADHESIVE FOR USE AT +25 °C TO +45 °C

DESCRIPTION

Sikadur[®]-31 SBA (h) S-02 is a 2-part epoxy based moisture tolerant, thixotropic, structural adhesive especially formulated for segmental bridge construction. It has good squeezability, high initial strength gain and hardens without shrinkage. Application temperature range +25 °C to +45 °C.

USES

Sikadur[®]-31 SBA (h) S-02 may only be used by experienced professionals.

- Provides a watertight joint between segments
- Lubricates the surfaces
- Transfers the loading stresses between segments

CHARACTERISTICS / ADVANTAGES

- Follows International and National Standards (FIP, ASTM, AASHTO, etc.)
- Follows the requirements of ASTM C-881 and AASHTO M-235 for Type VI
- Lubricates the surfaces and makes positioning 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
- Hardens without shrinkage
- No primer required

PRODUCT INFORMATION

Composition	Epoxy resin and selected fillers		
Packaging	6 kg (A+B) Prebatched units	12 kg (A+B) Prebatched units	
	Part A: 4 kg container	Part A: 8 kg container	
	Part B: 2 kg container	Part B: 4 kg container	
Colour	Part A	White	(FIP 5.11)
	Part B	Black	
	Part A+B	Concrete Grey	
Shelf life	24 months from 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 +30 °C. Protect from direct sun exposure.		
Density	Mixed resin ~1,80 ±0,1 kg/l Part A+B mixed. Density value at +27 °C.		

TECHNICAL INFORMATION

Compressive Strength	Curing time	Curing temperature	Compressive strength	(FIP 5.12) (IS 9162-1979)
	24 hours	+25 °C	> 60 N/mm ²	
	7 days	+25 °C	> 75 N/mm ²	
Modulus of Elasticity in Compression	~10 000 N/mm ² (Instantaneous Modulus)			(FIP 5.13)
Tensile Adhesion Strength	100 % Concrete failure			(FIP 5.5) (FIP 5.14)
Shear Strength	Temperature	Shear strength		(FIP 5.15) Slant shear cylinder test
	+25 °C	>12 N/mm ²		
Shrinkage	Hardens without shrinkage ~0.13 % after 7 days			(FIP 5.7)
Creep	Deferred modulus in compression (1 h)	~10 000 N/mm ²		(FIP 5.8)
	Deferred modulus in shear (1 h)	~3 500 N/mm ²		
Temperature Resistance	Follows the requirements of FIP 5.10 and ASTM D648.			
Heat Deflection Temperature	Curing conditions	HDT		(ASTM D648)
	7 days / +25 °C	> 50 °C		
Water Absorption	Water absorption	Solvability		(FIP 5.9)
	< 0,5 %	< 0,1 %		

APPLICATION INFORMATION

Mixing Ratio	Part A : Part B = 2 : 1 (by weight)		
Layer Thickness	30 mm max.		
	Note: When using multiple units, one after the other, do not mix the following unit until the previous one has been used, to avoid a reduction in handling time.		
Sag Flow	Flow at 9.5 mm		(ASTM D2730)
	Requirements: Flow at minimum thickness of 3mm		(FIP 5.3)
Squeezability	Squeeze load	Squeeze area	(FIP 5.4)
	15 kg	> 4000 mm ²	
Product Temperature	+5 °C min. / +30 °C max.		
Ambient Air Temperature	+25 °C min. / +45 °C max.		
Dew Point	Beware of condensation. Substrate temperature during application must be at least 3 °C above dew point.		
Substrate Temperature	+25 °C min. / +45 °C max.		
Substrate Moisture Content	When applied to matt damp concrete, brush the adhesive well into substrate.		

Pot Life

Quantity: 1 litre (~1.8 kg)

Temperature	Pot Life	(FIP 5.1)
+20 °C	> 50 min	
+25 °C	~50 min	
+30 °C	~30 min	
+35 °C	~20 min	
+40 °C	~15 min	

Note: The pot life starts when the resin and hardener are mixed. It is shorter at high temperatures and longer at low temperatures. The larger the quantity mixed, the shorter the pot life.

Open Time

Temperature	Open Time	(FIP 5.2)
+30 °C	> 60 min	
+35 °C	~50 min	
+40 °C	~45 min	

Curing Rate

Time	Compressive Strength	(FIP 5.6)
12 hours	≥ 40 N/mm ²	
24 hours	≥ 60 N/mm ²	
7 days	≥ 75 N/mm ²	

All values at +30 °C

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY

Concrete must be at least 28 days old (and have an open textured profile. Any cement laitance shall be removed.

Concrete surfaces must be clean, dry or matt damp. Free from standing water, ice, dirt, oil, grease, laitance, surface treatments, all loose particles and any other surface contaminants that could affect adhesion of the adhesive.

SUBSTRATE PREPARATION

Concrete surfaces must be prepared mechanically using suitable abrasive blast cleaning or other suitable approved equipment to achieve an open textured, laitance free, gripping surface profile. All dust and loose material must be completely removed from surfaces before application of the adhesive.

MIXING

Prior to mixing all parts, mix part A (resin) briefly using a mixing spindle attached to a slow speed electric drill (max. 300 rpm). Add part B (hardener) to part A and mix parts A+B continuously for at least 3 minutes until a uniformly coloured smooth consistency mix has been achieved. To ensure thorough mixing pour materials into a clean container and mix again for approximately 1 minute. Over mixing must be avoided to minimise air entrainment. Mix full units only. Mixing time for A+B = 4.0 minutes. Mix only the quantity which can be used within its pot life.

APPLICATION METHOD / TOOLS

Apply mixed adhesive to the prepared surfaces with a spatula, trowel, notched trowel or by gloved hand at the required thickness.

CLEANING OF EQUIPMENT

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

FURTHER INFORMATION

Where applicable, reference must also be made to International and National Standards such as FIP, BS, ASTM etc.

IMPORTANT CONSIDERATIONS

- When using multiple units during application, do not mix the following unit until the previous one has been used in order to avoid a reduction in workability and handling time.
- Sikadur® resins are formulated to have low creep under permanent loading. However due to the creep behaviour of all polymer materials under load, when using adhesive for structural applications, the long term structural design load must account for creep. Generally the long term structural design load must be lower than 20–25 % of the failure load. A structural engineer must be consulted for design calculations for specific structural applications.

BASIS OF PRODUCT DATA

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

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) 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.

SIKA NORTHERN GULF

Bahrain / Qatar / Kuwait
Tel: +973 177 38188
sika.gulf@bh.sika.com
gcc.sika.com

SIKA SOUTHERN GULF

UAE / Oman / SIC
Tel: +971 4 439 8200
info@ae.sika.com
gcc.sika.com

SIKA SAUDI ARABIA

Riyadh / Jeddah / Dammam
Tel: +966 11 217 6532
info@sa.sika.com
gcc.sika.com



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Sika Gulf B.S.C. (c)

All products are supplied under a management system certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001, ISO 14001 and OHSAS 18001.

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