

PRODUCT DATA SHEET

Sikadur[®]-31 SBA Cold Weather

High-modulus, high-strength, moisture tolerant epoxy adhesive, specifically designed for use in freezing conditions

PRODUCT DESCRIPTION

Sikadur[®]-31 SBA Cold Weather is a two-component, cold weather, 100% solids, moisture-tolerant, high-modulus, high strength, structural epoxy adhesive designed for bonding hardened precast concrete to hardened precast concrete in segmental bridge construction. It conforms to the current ASTM C-881, Type VI requirements, ASBI guidelines and is CE Marked to EN 1504-4.

USES

Sikadur[®]-31 SBA Cold Weather may only be used by experienced professionals.

- Structural bonding of post-tensioned precast concrete bridge segments.
- Sealing joints between concrete segments.
- For use in segment-by-segment erection.
- Segmental bridge construction in cold temperatures -6°C to +7°C.
- As a bonding bridge between new and old concrete.
- A structural adhesive to rigidly bond most construction materials, including:
 - fresh concrete to hardened concrete
 - precast concrete elements
 - hard natural stone
 - ceramics and fibre cement
 - mortar, bricks, masonry and render
 - iron and steel
 - wood
 - polyester, fibreglass, epoxy and polyurethane

CHARACTERISTICS / ADVANTAGES

- Application temperature range: -6°C to +7°C.
- Easy to mix and apply.
- Suitable for dry and matt damp substrates.
- Moisture tolerant before, during and after cure.
- High-modulus, high-strength, structural adhesive.
- Curing times to meet assembly and strength gain requirements.
- Easy to apply, non-sag for vertical applications.
- Excellent adhesion to concrete, steel and most construction materials.
- Convenient, easy to mix ratios (A : B = 2 : 1 by volume).
- Colour-coded components to ensure proper mixing control.
- No primer needed.
- Hardens without shrinkage.
- High initial and ultimate mechanical strength.
- Impermeable to liquids and water vapour.
- Good chemical resistance.
- Enables construction projects to continue, even during freezing conditions.

APPROVALS / STANDARDS

CE marking and declaration of performance based on EN 1504-4:2004 Products and systems for the protection and repair of concrete structures — Structural bonding.

PRODUCT INFORMATION

Packaging	9.46 Litres (~11.5 kg), supplied in a two-component kit
Colour	Concrete grey (when mixed)
Shelf Life	2 years in original, unopened containers
Storage Conditions	The Product must be stored in original, unopened and undamaged packaging in dry conditions at temperatures between +4°C and +35°C. Always refer to packaging. Refer to the current Safety Data Sheet for information on safe handling and storage. NOTE: Condition material to -6°C and +7°C before using.
Density	~1.22 kg/l
Consistency	Non-sag thixotropic paste

TECHNICAL INFORMATION

Compressive Strength	3-day	~13.8 MPa	(ASTM D-695)
	7-day	~41.4 MPa	
NOTE: Product conditioned at +7°C and cured at -6°C.			
Lap Shear Strength	Bond Strength: Hardened Concrete to Hardened Concrete		(ASTM C-882)
	2-day	~6.9 MPa	
NOTE: Product moist cured at +7°C.			
	Contact Strength		
	48-hours at +7°C	~6.9 MPa	(ASTM C-882)
Heat deflection temperature	7-day	[fibre stress loading = 1.8 MPa] +49°C (minimum)	(ASTM D-648)

APPLICATION INFORMATION

Mixing Ratio	2 : 1
Consumption	Approximately 3.6 kg/m ² per 3mm layer.
Product Temperature	-6°C to +7°C
Pot Life	Less than 3 minutes at +23°C. ~20 minutes at +7°C. NOTE: Values are for ~4 litres of Product.
Open Time	~60 minutes at +7°C.

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.

ECOLOGY, HEALTH AND SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

NOTES ON INSTALLATION

- Do not part mix - mix full units only.
- Mixed material must be applied within the specified pot life.
- Do not thin Sikadur®-31 SBA Cold Weather. Solvents will prevent proper cure.
- Use correct temperature range materials for the application conditions.
- Use appropriate materials for the method of construction.
- Not designed as an aesthetic Product. Colour may alter due to variations in lighting and/or UV exposure.
- Do not apply onto concrete if frost is present.

- **Do not use in temperatures greater than +7°C. Pot life, open time and consistency will be greatly affected.**

SUBSTRATE PREPARATION

IMPORTANT

Reduced adhesion performance

Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials, ice and any other contaminants that may impair adhesion and reduce the Product's performance.

CONCRETE, MASONRY, MORTAR OR STONE

Substrates must be prepared mechanically using suitable equipment to achieve an open-textured, gripping surface profile. Suitable techniques for substrate preparation include the following:

- Abrasive blast cleaning
- Needle gunning
- Light scabbling
- Bush hammering
- Grinding

STEEL

Suitable techniques for substrate preparation include the following:

- Abrasive blast cleaning
- Rotating wire brush
- Grinding

The substrate has a bright metal finish with a surface profile to satisfy the necessary tensile adhesion strength requirement.

WOOD

Prepare the substrate by planing, sanding or using other suitable equipment.

CERAMICS OR GLASS

Prepare the substrate by sanding or using other suitable equipment.

MIXING

Pre-mix each component before combining. Do not part mix - mix full units only. Mix all of Part A with all of Part B until a uniform grey colour is achieved. Mix thoroughly for a minimum of 3 minutes with a drill and paddle on a low-speed setting (i.e. 300 to 400 rpm) until uniform in colour. Scrape down the sides of the mixing pail and ensure there are no streaks of unmixed epoxy before applying. Mix only the quantity (in full units) that can be used within its pot life. Leaving the mixture of Components A and B in the mixing container longer than 20 minutes (pot life) will allow the mixture to begin the curing process in the container, and should therefore be avoided. Spread the mixture onto the intended surface as soon as it is properly

mixed. Leaving the curing Product in the mixing container will affect the consistency and workability of the adhesive.

APPLICATION METHOD / TOOLS

Apply the mixed Sikadur®-31 SBA Cold Weather onto the concrete surface using a trowel, spatula or glove protected hand. Spread to a thickness of ~3mm to one face or ~1.5mm onto both substrates to be bonded, depending upon project requirements. If applicable, segments must be post-tensioned within the open time of the Product.

CLEANING OF TOOLS

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

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.

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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