

PRODUCT DATA SHEET

Sikadur®-31 Hi-Mod Gel CA

High-modulus, high-strength, structural, epoxy paste adhesive

PRODUCT DESCRIPTION

Sikadur®-31 Hi-Mod Gel CA is a two-component, solvent-free, moisture-insensitive, high-modulus, high-strength, structural epoxy paste adhesive.

WHERE TO USE

Sikadur®-31 Hi-Mod Gel CA may only be used by experienced professionals.

- Structural bonding of concrete, masonry, metals, wood and other structural materials to a maximum glue line of 3 mm (1/8 in)
- Grout bolts, dowels, pins, vertical and overhead
- Seals cracks and injection port surrounds prior to pressure-injection grouting
- Interior, vertical, and overhead repair of concrete as an epoxy mortar binder

CHARACTERISTICS / ADVANTAGES

- Insensitive to moisture before, during and after cure
- High-modulus, high-strength, structural paste adhesive
- Excellent adhesion to concrete, masonry, metals, wood and most structural materials

- Paste consistency ideal for vertical and overhead applications
- Fast-setting and strength-producing adhesive
- Easy mix A:B = 1:1 ratio by volume

ENVIRONMENTAL INFORMATION

- Environmental Product Declaration (Type III - Product specific, externally verified - CAN/CSA-ISO 14025 and ISO 21930 compliant)
- Clean Air GOLD Certification - Certified Low VOC Emitting Product (Intertek Sustainability)
- Corporate Sustainability Report (Sika Group, 2025)
- EcoVadis Sustainability Assessment Report (2025)

APPROVALS / CERTIFICATES

- Meets ASTM C881, Type I, II, IV and V, Grade 3, Class B and C, epoxy resin adhesive
- Meets the requirements of CFIA and USDA for use in food plants
- Ministère des Transports et de la Mobilité durable du Québec (MTMD) acceptance
- Product recognized by the British Columbia Ministry of Transportation (BC MoT)
- NSF-ANSI 61 Approved for contact with Potable Water (Special order only)

PRODUCT INFORMATION

Packaging	10 L (2.64 US gal) unit Component A: 5 L (1.32 US gal) and Component B: 5 L (1.32 US gal)
Colour	Concrete grey
Shelf Life	24 months in original, unopened packaging
Storage Conditions	▪ Store dry at temperatures between 5 °C and 32 °C (41 °F and 89 °F) ▪ Condition product between 18 °C and 25 °C (65 °F and 77 °F) before using

Compressive Strength

ASTM D695

	4 °C (40 °F)	23 °C (73 °F)	32 °C (90 °F)
2 h	-	-	33 MPa (4785 psi)
4 h	-	14 MPa (2030 psi)	59 MPa (8555 psi)
8 h	-	53 MPa (7690 psi)	67 MPa (9715 psi)
16 h	-	64 MPa (9280 psi)	72 MPa (10 440 psi)
1 day	13 MPa (1885 psi)	81 MPa (11 745 psi)	79 MPa (11 455 psi)
3 days	63 MPa (9135 psi)	81 MPa (11 745 psi)	85 MPa (12 325 psi)
7 days	70 MPa (10 150 psi)	86 MPa (12 470 psi)	87 MPa (12 615 psi)
14 days	76 MPa (11 020 psi)	87 MPa (12 615 psi)	87 MPa (12 615 psi)
28 days	83 MPa (12 040 psi)	87 MPa (12 615 psi)	87 MPa (12 615 psi)

* Product cured and tested at the temperatures indicated

Tensile Strength in Flexure	42 MPa (6090 psi) - 14 days			ASTM D790
Modulus of Elasticity in Flexure	7.22 GPa (10.5 x 10 ⁵ psi) - 14 days			ASTM D790 Tangent modulus of elasticity
Tensile Strength	24 MPa (3480 psi) - 14 days			ASTM D638
Modulus of Elasticity in Tension	5.13 GPa (7.4 x 10 ⁵ psi) - 14 days			ASTM D638
Shear Strength	19 MPa (2755 psi) - 14 days			ASTM D732
Shear Adhesion Strength	<u>2 days</u>	<u>Dry Cure</u>	<u>28 MPa (4060 psi)</u>	ASTM C882
	<u>14 days</u>	<u>Wet cure</u>	<u>22 MPa (3190 psi)</u>	
	Hardened concrete to hardened concrete			
Heat Deflection Temperature	Fibre stress loading = 1.8 MPa (264 psi) @ 53 °C (127 °F) 14 days			ASTM D648
Water Absorption	<u>7 days</u>	<u>24 h boil</u>	<u>0.29 %</u>	ASTM D570
Elongation at break	0.95 % - 14 days			ASTM D638
Mixing Ratio	A:B = 1:1 by volume			
Yield	▪ As a structural adhesive: 1 L yields 1 m² of epoxy adhesive at 1 mm thick ▪ As an epoxy mortar: 1 L of epoxy adhesive mixed with 1 L (by loose volume) of oven-dried sand yields approx. 1.5 L of epoxy mortar			
Pot Life	Approx. 30 min			
Tack-free time	1 h 30 min - 2 h (30 mil thickness)			

BASIS OF PRODUCT DATA

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.

LIMITATIONS

- Minimum surface temperature: 4 °C (40 °F)
- Do not thin with solvents, it will prevent proper cure and will also void any applicable Sika warranty
- Use oven-dried sand only
- Maximum epoxy mortar thickness: 38 mm (1 1/2 in) per lift
- Product is a vapour barrier after cure
- Porous substrates must be tested for moisture-vapour transmission prior to mortar applications
- Product not designed for sealing cracks under hydrostatic pressure

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY

Substrate must be clean and structurally sound. Minimum age of concrete must be 21–28 days, depending upon curing and drying conditions. Surface may be dry or damp, but free of standing water.

SUBSTRATE PREPARATION

Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, loose materials.

Concrete: Sandblast or use other approved mechanical methods.

Steel: Sandblast to white-metal finish.

MIXING

Pre-mix each component. Proportion 1 part component B to 1 part of component A by volume into clean pail. Mix thoroughly for three (3) minutes with paddle on low-speed drill (300 - 450 rpm), until uniform in colour. Mix only that quantity that can be used within its pot life. To prepare an epoxy mortar, slowly add up to 1 part by loose volume of an oven-dried sand to 1 part of the mixed Sikadur®-31 Hi-Mod Gel CA and mix until uniform in consistency.

APPLICATION

As a structural adhesive

Apply the neat, mixed Sikadur®-31 Hi-Mod Gel CA to the mating or non-mating prepared substrates. Work into the substrate for positive adhesion. Secure the bonded unit firmly into place until the adhesive has cured. Glue line should not exceed 3 mm (1/8 in).

To seal cracks for injection grouting

Place the neat material over the cracks to be pressure-injected and around each injection port. Allow sufficient time to set before pressure injecting.

To anchor bolts, dowels and pins

Annular space around bolt should not exceed 3 mm (1/8 in); depth of embedment is typically 10 to 15 times the bolt diameter. Grout with neat Sikadur®-31 Hi-Mod Gel CA.

For interior vertical and overhead patching

Place the prepared mortar into the void working the material into the prepared substrate and filling the cavity. Strike off level. Lifts should not exceed 38 mm (1 1/2 in).

CLEAN UP

Collect with absorbent material. Uncured material can be removed with Sika® Epoxy Cleaner. Cured material can only be removed mechanically.

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 exact product data and uses.

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 recommendations, or from any other advice offered. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. 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 or may be downloaded from our website at: www.sika.ca

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