BUILDING TRUST

PRODUCT DATA SHEET

Sikadur®-31 Hi-Mod Gel

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

PRODUCT DESCRIPTION

Sikadur®-31 Hi-Mod Gel, is a 2-component, 100 % solids, solvent-free, moisture-tolerant, high-modulus, high strength, structural epoxy paste adhesive. It conforms to the current ASTM C-881, Types I and IV, Grade-3, Class-B/C and AASHTO M-235 specifications.

USES

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

- Structural bonding of concrete, masonry, metals, wood, etc. to a maximum glue line of 1⁄8 in. (3 mm).
- Grout bolts, dowels, and pins.
- Seals cracks and around injection ports prior to pressure-injection grouting.
- Interior, vertical, and overhead repair of concrete as an epoxy mortar binder.
- As a pick-proof sealant around windows, doors, lock-ups etc. inside correctional facilities.

CHARACTERISTICS / ADVANTAGES

- Meets physical requirements of ASTM C-881 Types I, II & IV, Grade 3, Classes B & C.
- Suitable for potable water contact, meets NSF/ANSI Standard 61.
- Excellent adhesion to concrete, masonry, metals, wood, and most structural materials.
- Paste consistency ideal for vertical and overhead repair of concrete.
- Fast-setting and strength-producing adhesive.
- Convenient easy mix ratio A:B = 1:1 by volume.

PRODUCT INFORMATION

Packaging	1 gal. and 3 gal. (11.4 L) units.
Color	Concrete gray
Shelf Life	24 months in original, unopened containers
Storage Conditions	Store dry at 40–95 °F (4–35 °C). Condition material to 65–85 °F (18–29 °C) before using.
Consistency	Non-sag paste

TECHNICAL INFORMATION

Compressive Strength (ASTM D-695)

	40 °F (4 °C)* **	73 °F (23 °C)* **	90 °F (32 °C)* **
2 hours	-	-	450 psi (3.1 MPa)
4 hours	-	800 psi (5.5 MPa)	10,500 psi (72.4 MPa)
8 hours	-	8,500 psi (58.6 MPa)	11,000 psi (75.8 MPa)
16 hours	-	10,000 psi (68.9 MPa)	11,500 psi (79.3 MPa)
1 day	2,000 psi (13.8 MPa)	11,000 psi (75.8 MPa)	11,800 psi (81.4 MPa)
3 days	6,000psi (41.4 MPa)	12,000 psi (82.7 MPa)	12,000 psi (82.7 MPa)
7 days	10,000 psi (68.9 MPa)	12,300 psi (84.8 MPa)	12,400 psi (85.5 MPa)
14 days	11,000 psi (75.8 MPa)	12,500 psi (86.2 MPa)	13,000 psi (89.6 MPa)
28 days	12,000 psi (82.7 MPa)	13,000 psi (89.6 MPa)	13,000 psi (89.6 MPa)

* Material cured and tested at temperatures indicated.
** See Limitations section for further information.

Modulus of Elasticity in Compression	5.6 X 10^5 psi (53,861 MPa) (7 days)	(ASTM D-695) 73 °F (23 °C) 50 % R.H.
Flexural Strength	6,100 psi (42.0 MPa) (7 days)	(ASTM D-790) 73 °F (23 °C) 50 % R.H.
Modulus of Elasticity in Flexure	1.5 X 10^6 psi (10,342 MPa) (7 days)	(ASTM D-790) 73 °F (23 °C) 50 % R.H.
Tensile Strength	3,300 psi (22.7 MPa) (7 days)	(ASTM D-638) 73 °F (23 °C) 50 % R.H.
Elongation at Break	0.9 % (7 days)	(ASTM D-638) 73 °F (23 °C) 50 % R.H.
Tensile Adhesion Strength	**Hardened Concrete to Hardened Concrete:** 2 days (dry cure): 4,000 psi (27.5 MPa) 2 days (moist cure): 3,800 psi (26.2 MPa) 14 days (moist cure): 3,800 psi (26.2 MPa)	(ASTM C-882)
	Hardened Concrete to Steel: 2 days (dry cure): 2,900 psi (20.0 MPa)	(ASTM C-882)
	Tensile Bond Strength (Pull-off Method, Dyna): 2 days: 420 psi (2.9 MPa	(ASTM C-1583-04)
Shear Strength	4,600 psi (31.7 MPa) (7 days)	(ASTM D-732) 73 °F (23 °C) 50 % R.H.
Heat deflection temperature	(Fiber Stress Loading = 264 psi)135 °F (57 °C) (7 days)	(ASTM D-648)

Water Absorption	0.07 % (24 hours)	(ASTM D-570)

APPLICATION INFORMATION

Mixing Ratio	Component 'A' : Component 'B' = 1:1 by volume
Coverage	1 gal. yields 231 cu. in. (3,785 cm^3) of epoxy paste adhesive. 1 gal. (3.8 L) mixed with 1 gal. (3.8 L) by loose volume of oven-dried aggregate yields approximately 346 cu. in. (5,670 cm^3) of epoxy mortar.
Pot Life	Approximately 60 minutes at 73 °F (500 gram mass)
Cure Time	Tack-Free Time: 1.5–2.5 hours at 30 mils. thick

BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

LIMITATIONS

- THE NTSB HAS STATED THAT THIS PRODUCT IS APPROVED FOR SHORT TERM LOADS ONLY AND SHOULD NOT BE USED IN SUSTAINED TENSILE LOAD ADHESIVE ANCHORING APPLICATIONS WHERE ADHESIVE FAILURE COULD RESULT IN A PUBLIC SAFETY RISK. CONSULT A DESIGN PROFESSIONAL PRIOR TO USE.
- Components of original 2:1 mix ratio formulation of Sikadur® 31, Hi-Mod Gel cannot be cross-mixed with components of Sikadur®-31 Hi-Mod Gel (NEW 1:1 Mix Ratio) formulation.
- Minimum substrate and ambient temperature 40 °F (4 °C).
- Do not thin. Solvents will prevent proper cure.
- When preparing an epoxy mortar, use oven-dried aggregate only.
- Maximum epoxy mortar thickness is 1 in. (25 mm) per lift.
- Epoxy mortar is for interior use only. Material is a vapor barrier after cure.
- Minimum age of concrete must be 21–28 days, depending upon curing and drying conditions, for mortar applications.
- Porous substrates must be tested for moisture-vapor transmission prior to mortar applications.
- Not for sealing cracks under hydrostatic pressure.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

DIRECTIVE 2004/42/CE - LIMITATION OF EMISSIONS OF VOC

4.0 g/L (A+B)

SUBSTRATE PREPARATION

Surface must be clean and sound. It may be dry or damp, but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes, and any other contaminants.
Preparation Work: Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blast cleaning or equivalent mechanical means.
Steel - Should be cleaned and prepared thoroughly by blast cleaning or other equivalent mechanical means.

MIXING

Pre-mix each component. Proportion 1 part Component 'B' to 1 part Component 'A' by volume into a clean pail or appropriately sized mixing container. Mix thoroughly for 3 minutes with Sika paddle on low-speed (400–600 rpm) drill until uniform in color. Mix only that quantity which can be used within its pot life. Prior to mixing, material should be conditioned to 65–85 °F (18–29 °C). To prepare an epoxy mortar, slowly add up to 1 part, by loose volume of an oven dried aggregate, to 1 part of the mixed Sikadur®-31 Hi-Mod Gel, and mix until uniform in consistency.

APPLICATION METHOD / TOOLS

As a structural adhesive - Apply the neat mixed Sikadur®-31 Hi-Mod Gel to the 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 1⁄8-in. (3 mm).

To seal cracks for injection grouting - Place the neat mixed material over the cracks to be pressure injected and around each injection port. Allow sufficient time to set before pressure injecting. For interior vertical and

overhead patching - Place the prepared mortar in void, working the material into the prepared substrate, filling the cavity. Strike off level. Lifts should not exceed 1-in (25 mm).

As a pick-proof sealant - Use automated or manual method. Apply an appropriate size bead of material around the area being sealed. Seal with neat Sikadur®-31 Hi-Mod Gel.

OTHER RESTRICTIONS

See Legal Disclaimer.

LEGAL DISCLAIMER

- **KEEP CONTAINER TIGHTLY CLOSED**
- **KEEP OUT OF REACH OF CHILDREN**
- **NOT FOR INTERNAL CONSUMPTION**
- **FOR INDUSTRIAL USE ONLY**
- **FOR PROFESSIONAL USE ONLY**

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