



Sikadur[®] 31, Hi-Mod Gel

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

DESCRIPTION

Sikadur 31, Hi-Mod Gel, is a 2-component, 100% solids, moisture-tolerant, high-modulus, high-strength, structural epoxy paste adhesive. It conforms to the current ASTM C-881 and AASHTO M-235 specifications.

WHERE TO USE

- ▲ Structural bonding of concrete, masonry, metals, wood, etc. to a maximum glue line of 1/8 in.
- ▲ Grout bolts, dowels, pins, vertical and overhead, etc.
- ▲ 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 recreational facilities.

ADVANTAGES

- ▲ Tolerant of 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.
- ▲ Convenient easy mix ratio A:B = 2:1 by volume.

COVERAGE

1 gal. yields 231 cu. in. of epoxy paste adhesive and grout.
 1 gal. mixed with 1 gal. by loose volume of oven-dried aggregate yields approximately 346 cu. in. of epoxy mortar.

PACKAGING

3-gal. units; 12-fl-oz. units, 12/case.

HOW TO USE

SURFACE 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.

MIXING

Pre-mix each component. Proportion 1 part Component 'B' to 2 parts Component 'A' by volume into a clean pail. Mix thor-

TYPICAL DATA FOR SIKADUR 31, HI-MOD GEL (Material and curing conditions @ 73F (23C) and 50% R.H.)				
SHELF LIFE	2 years in original, unopened containers.			
STORAGE CONDITIONS	Store dry at 40-95F (4-35C). Condition material to 65-75F (18-24C) before using.			
COLOR	Concrete gray.			
MIXING RATIO	Component 'A' : Component 'B' = 2:1 by volume.			
CONSISTENCY	Non-sag paste.			
VOC (ASTM)	0.8%			
POT LIFE	Approximately 30 minutes @ 73F (23C). (60 gram mass)			
TACK-FREE TIME	2-3 hours.			
TENSILE PROPERTIES (ASTM D-638)				
14 day	Tensile Strength	3,600 psi (24.8 MPa)		
	Elongation at Break	0.4 %		
	Modulus of Elasticity	7.5 X 10 ⁵ psi (5,200 MPa)		
FLEXURAL PROPERTIES (ASTM D-790)				
14 day	Flexural Strength (Modulus of Rupture)	4,400 psi (30.3 MPa)		
	Tangent Modulus of Elasticity in Bending	1.0 X 10 ⁶ psi (6,900 MPa)		
SHEAR STRENGTH (ASTM D-732)				
14 day	Shear Strength	3,400 psi (23.4 MPa)		
BOND STRENGTH (ASTM C-882): Hardened Concrete to Hardened Concrete				
2 day (moist cure)	Bond Strength	2,300 psi (15.9 MPa)		
14 day (moist cure)	Bond Strength	2,400 psi (16.6 MPa)		
2 day (dry cure)	Bond Strength	3,300 psi (22.7 MPa)		
DEFLECTION TEMPERATURE (ASTM D-648)				
7 day	Deflection Temperature [fiber stress loading = 264 psi (1.8 MPa)]	128F (53C)		
WATER ABSORPTION (ASTM D-570)				
24 hour	Total Water Absorption	0.79%		
COMPRESSIVE PROPERTIES (ASTM D-695)				
	Compressive Strength, psi	40F (4C)	73F (23C)	90F (32C)
2 hour	-	-	-	900 (6.2 MPa)
4 hour	-	-	140 (0.9 MPa)	5,400 (37.2 MPa)
8 hour	-	-	6,800 (46.9 MPa)	8,800 (60.7 MPa)
16 hour	400 (2.8 MPa)	-	9,600 (66.2 MPa)	10,100 (69.7 MPa)
1 day	3,900 (26.9 MPa)	-	9,800 (67.6 MPa)	11,700 (80.7 MPa)
3 day	6,700 (46.2 MPa)	-	11,300 (77.9 MPa)	11,900 (82.1 MPa)
7 day	9,100 (62.8 MPa)	-	12,000 (82.8 MPa)	13,000 (89.7 MPa)
14 day	10,400 (71.7 MPa)	12,000 (82.8 MPa)	12,000 (82.8 MPa)	13,000 (89.7 MPa)
28 day	11,200 (77.2 MPa)	12,000 (82.8 MPa)	12,000 (82.8 MPa)	13,000 (89.7 MPa)
MODULUS OF ELASTICITY, PSI				
7 day	3.9 X 10 ⁵ (2,700 MPa)			

oughly 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.

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

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 adhesion has cured. Glue line should not exceed 1/8-in.

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.

To anchor bolts, dowels, and pins - Annular space around bolt should not exceed 1/8-in.; depth of embedment is typically 10-15 times the bolt diameter. Grout with neat Sikadur 31, Hi-Mod Gel.

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.

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.

LIMITATIONS

- ▲ Minimum substrate and ambient temperature 40F (4C).
- ▲ Do not thin. . . solvents will prevent proper cure.

- ▲ Use oven-dried aggregate only.
- ▲ Maximum epoxy mortar thickness is 1-in. 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 at time of application.

CAUTION

Component 'A' - Irritant; Sensitizer

Contains epoxy resin and crystalline silica (sand). Can cause skin sensitization after prolonged or repeated contact. Skin and eye irritant. High concentrations of vapor may cause respiratory irritation. If sanded, crystalline silica dust may be generated and may cause delayed lung injury (silicosis) and is listed as a suspect carcinogen by NTP and IARC (2A). Use only with adequate ventilation. Use of safety goggles and chemical resistant gloves is recommended. In case of exceedance of PELs, use an appropriate, properly fitted NIOSH/MSHA approved respirator. Remove contaminated clothing. Consult MSDS for more detailed information.

Component 'B' - Corrosive; Sensitizer

Contains amines and crystalline silica (sand). Contact with eyes or skin may cause severe burns. Can cause skin and/

or respiratory sensitization after prolonged or repeated contact. Skin and eye irritant. High concentrations of vapor may cause respiratory irritation. Overexposure may cause liver, kidney, and/or central nervous system effects. If sanded, crystalline silica dust may be generated and may cause delayed lung injury (silicosis) and is listed as a suspect carcinogen by NTP and IARC (2A). Avoid skin contact. Use only with adequate ventilation. Use of safety goggles and chemical resistant gloves is recommended. In case of exceedance of PELs, use an appropriate, properly fitted NIOSH/MSHA approved respirator. Remove contaminated clothing. Consult MSDS for more detailed information.

FIRST AID

In case of skin contact, wash immediately and thoroughly with soap and water. If symptoms persist, consult a physician. For eye contact, flush immediately with plenty of water for at least 15 minutes, contact a physician. For respiratory problems, remove person to fresh air; if symptoms persist, contact a physician. In case of ingestion, dilute with water and consult physician. Remove contaminated clothing.

CLEAN UP

In case of spills or leaks, wear suitable protective equipment, contain spill, collect with absorbent material, and transfer to suitable container. Ventilate area. Avoid contact. Dispose of in accordance with current, applicable local, state, and federal regulations.

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**KEEP CONTAINER TIGHTLY CLOSED
NOT FOR INTERNAL CONSUMPTION**

CONSULT MATERIAL SAFETY DATA SHEET FOR MORE INFORMATION

**KEEP OUT OF REACH OF CHILDREN
FOR INDUSTRIAL USE ONLY**

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