

## PRODUCT DATA SHEET

# Sikadur<sup>®</sup>-30

High-modulus, high-strength, structural epoxy paste adhesive for use with Sika<sup>®</sup> CarboDur<sup>®</sup> reinforcement.

### PRODUCT DESCRIPTION

Sikadur<sup>®</sup>-30 is a 2-component, 100% solids, moisture-tolerant, high-modulus, high-strength, structural epoxy paste adhesive. It conforms to the current ASTM C-881 Type I, IV Grade 3, Class C and AASHTO M-235 specifications.

### USES

Sikadur<sup>®</sup>-30 may only be used by experienced professionals.

- Adhesive for bonding external reinforcement to concrete, masonry, steel, wood, stone, etc.
- Structural bonding of composite laminates (Sika<sup>®</sup> CarboDur<sup>®</sup> CFRP) to concrete.
- Structural bonding of steel plates to concrete.
- Suitable for use in vertical and overhead configurations.
- As a binder for epoxy mortar repairs.

### CHARACTERISTICS / ADVANTAGES

- Long pot life.
- Long open time.
- Tolerant of moisture before, during and after cure.
- High strength, high modulus, structural paste adhesive.
- Excellent adhesion to concrete, masonry, metals, wood and most structural materials.
- Fully compatible and excellent adhesion to Sika<sup>®</sup> CarboDur<sup>®</sup> CFRP composite laminate.
- Paste consistency ideal for vertical and overhead applications of Sika<sup>®</sup> CarboDur<sup>®</sup>.
- High abrasion and shock resistance.
- Convenient easy mix ratio A:B=3:1 by volume.
- Solvent-free.
- Color-coded components to ensure proper mixing control.

### PRODUCT INFORMATION

<b>Chemical Base</b>	Epoxy resin
<b>Packaging</b>	1 gal. units.
<b>Color</b>	Light gray
<b>Shelf Life</b>	2 years in original, unopened containers.
<b>Storage Conditions</b>	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-85°F (18°-29°C) before using.
<b>Consistency</b>	Non-sag paste.

## TECHNICAL INFORMATION

### Compressive Strength

Bond Strength: Hardened Concrete to Hardened Concrete			
<b>2 day (moist cure)</b>	<b>2,700 psi (18.6 MPa)</b>		(ASTM C-882)
<b>2 day (dry cure)</b>	<b>3,200 psi (22.0 MPa)</b>		
<b>14 day (moist cure)</b>	<b>3,100 psi (21.3 MPa)</b>		
Bond Strength: Hardened Concrete to Steel			
2 day (moist cure)	2,600 psi (17.9 MPa)		(ASTM C-882)
2 day (dry cure)	3,000 psi (20.6 MPa)		
14 day (moist cure)	2,600 psi (17.9 MPa)		

### Compressive Properties (ASTM D-695) - Compressive Strength, psi (MPa)

	40°F* (4°C)	73°F* (23°C)	90°F* (32°C)
4 hour	-	-	5,500 (37.9)
8 hour	-	3,500 (24.1)	6,700 (46.2)
16 hour	-	6,700 (46.2)	7,400 (51.0)
1 day	750 (5.1)	7,800 (53.7)	7,800 (53.7)
3 day	6,800 (46.8)	8,300 (57.2)	8,300 (57.2)
7 day	8,000 (55.1)	8,600 (59.3)	8,600 (59.3)
14 day	8,500 (58.6)	8,600 (59.3)	8,900 (61.3)
28 day	8,500 (58.6)	8,600 (59.3)	9,000 (62.0)

<b>Modulus of Elasticity in Compression</b>	7 day		3.9 x 10 <sup>5</sup> psi (2,689 MPa)
<b>Flexural Strength</b>	14 day	6,800 psi (46.8 MPa)	(ASTM D-790)
<b>Modulus of Elasticity in Flexure</b>	14 day	1.7 X 10 <sup>6</sup> psi (11,721 MPa)	(ASTM D-790)
<b>Tensile Strength</b>	7 day	3,600 psi (24.8 MPa)	(ASTM D-638)
<b>Tensile Modulus of Elasticity</b>	7 day	6.5 X 10 <sup>5</sup> psi (4,482 MPa)	(ASTM D-638)
<b>Elongation at Break</b>	7 day	1%	(ASTM D-638)
<b>Shear Strength</b>	14 day	3,600 psi (24.8 MPa)	(ASTM D-732)
<b>Heat Deflection Temperature</b>	7 day	[fiber stress loading=264 psi (1.8 MPa)]	118°F (47°C) (ASTM D-648)

## APPLICATION INFORMATION

<b>Mixing Ratio</b>	Component 'A': Component 'B' = 3:1 by volume.		
<b>Coverage</b>	Type S 512 CarboDur®: approx. 50 LF/gal.; Type S 812 CarboDur: approx. 32 LF/gal.; Type S 1012 CarboDur®: approx. 22 LF/gal.		
<b>Substrate Moisture Content</b>	7 day (24 hour immersion)	0.03%	(ASTM D-570)
<b>Pot Life</b>	Approximately 70 minutes @ 73°F (23°C) (1 qt.)		

## APPLICATION INSTRUCTIONS

### SUBSTRATE PREPARATION

The concrete surface should be prepared to a minimum concrete surface profile (CSP) 3 defined by the ICRI surface-profile chips. Localized out-of-plane variations, including form lines, should not exceed 1/32 in. (1 mm). 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, and other bond inhibiting materials from the surface. Existing uneven surfaces must be filled with an appropriate repair mortar (e.g., Sikadur® 30 with the addition of 1 part oven-dried sand). The adhesive strength of the concrete must be verified after surface preparation by random pull-off testing (as defined by ACI 503R, ASTM C1583) at the discretion of the engineer. Minimum tensile strength, 200 psi (1.4 MPa) with concrete substrate failure.

**Concrete** - Blast clean, shot blast or use other approved mechanical means to provide an open roughened texture.

**Steel** - Should be cleaned and prepared thoroughly by blast cleaning to a white metal finish.

**CarboDur®** - Wipe clean with appropriate cleaner (e.g. MEK)

### MIXING

**Pre-mix each component.** Proportion 1 part Component 'B' to 3 parts 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.

**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® 30 and mix until uniform in consistency.

### APPLICATION METHOD / TOOLS

**For bonded, external reinforcement:** Apply the neat mixed Sikadur® 30 onto the concrete with a trowel or spatula to a nominal thickness of 1/16" (1.5 mm). Apply the mixed Sikadur® 30 onto the CarboDur® laminate with a "roof-shaped" spatula to a nominal thickness of 1/16" (1.5 mm). Within the open time of the epoxy, depending on the temperature, place the CarboDur® laminate onto the concrete surface. Using a hard rubber roller, press the laminate into the epoxy resin until the adhesive is forced out on both sides. Remove excess adhesive. Glue line should not exceed 1/8 inch (3 mm). The external reinforcement must not be disturbed for a minimum of 24 hours. The epoxy will reach its design strength after 7 days.

**For interior vertical and overhead patching:** Work the material into the prepared substrate, filling the cavity. Strike off level. Lifts should not exceed 1 inch (25 mm).

## LIMITATIONS

- Minimum substrate and ambient temperature is 40°F (4°C).
- Do not thin. Addition of solvents will prevent proper cure.
- Use oven-dried aggregate only.
- Maximum glue line of neat epoxy is 1/8 inch (3 mm).
- Maximum epoxy mortar thickness is 1 inch (25 mm) per lift.
- Minimum age of concrete must be 21-28 days, depending upon curing and drying conditions.
- Porous substrates must be tested for moisture vapor transmission prior to mortar applications.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

## 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.

## OTHER RESTRICTIONS

See Legal Disclaimer.

## 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.

## 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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**Product Data Sheet**

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