PRODUCT DATA SHEET

Sikadur®-30

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

PRODUCT DESCRIPTION

Sikadur®-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®-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® CarboDur® 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® CarboDur® CFRP composite laminate.
- Paste consistency ideal for vertical and overhead applications of Sika® CarboDur®.
- 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

Chemical Base	Epoxy resin
Packaging	1 gal. units.
Color	Light gray
Shelf Life	2 years 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	Bond Strength: Hardened Concrete to Hardened Concrete		
	2 day (moist cure)	2,700 psi (18.6 MPa)	(ASTM C-882)
	2 day (dry cure)	3,200 psi (22.0 MPa)	
	14 day (moist cure)	3,100 psi (21.3 MPa)	

	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)

Modulus of Elasticity in Compression	7 day	3.9 x 105 psi (2,689 MPa)
Flexural Strength	14 day	6,800 psi (46.8 MPa)	(ASTM D-790)
Modulus of Elasticity in Flexure	14 day	1.7 X 106 psi (11,721 MPa)	(ASTM D-790)
Tensile Strength	7 day	3,600 psi (24.8 MPa)	(ASTM D-638)
Tensile Modulus of Elasticity	7 day	6.5 X 105 psi (4,482 MPa)	(ASTM D-638)
Elongation at Break	7 day	1%	(ASTM D-638)
Shear Strength	14 day	3,600 psi (24.8 MPa)	(ASTM D-732)
Heat Deflection Temperature	7 day	[fiber stress loading=264 psi (1.8 MPa)]	118°F (47°C)	(ASTM D-648)

APPLICATION INFORMATION

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

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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

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates ("SIKA"), the user must always read and follow the warnings and instructions on the product's most current product label, Product Data Sheet and Safety Data Sheet which are available at usa.sika.com or by calling SIKA's Technical Service Department at 1-800-933-7452. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product.

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SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within the product's shelf life. User determines suitability of product for intended use and assumes all risks. User's and/or buyer's sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs. **NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.**

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