

Sikadur® 30

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

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.
Where to use	<ul style="list-style-type: none"> ■ 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.
Advantages	<ul style="list-style-type: none"> ■ 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.
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.
Packaging	1 gal. units.

Typical Data (Material and curing conditions @ 73°F {23°C} and 50% R.H.)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

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.		
Color	Light gray		
Mixing Ratio	Component 'A': Component 'B' = 3:1 by volume.		
Consistency	Non-sag paste.		
Pot Life	Approximately 70 minutes @ 73°F (23°C) (1 qt.)		
Tensile Properties (ASTM D-638)			
7 day	Tensile Strength	3,600 psi (24.8 MPa)	
	Elongation at Break	1%	
	Modulus of Elasticity	6.5 X 10 ⁵ psi (4,482 MPa)	
Flexural Properties (ASTM D-790)			
14 day	Flexural Strength (Modulus of Rupture)	6,800 psi (46.8 MPa)	
	Tangent Modulus of Elasticity in Bending	1.7 X 10 ⁶ psi (11,721 MPa)	
Shear Strength (ASTM D-732)	14 day	Shear Strength	3,600 psi (24.8 MPa)
Bond Strength (ASTM C-882): Hardened Concrete to Hardened Concrete			
2 day (moist cure)	Bond Strength	2,700 psi (18.6 MPa)	
2 day (dry cure)	Bond Strength	3,200 psi (22.0 MPa)	
14 day (moist cure)	Bond Strength	3,100 psi (21.3 MPa)	
	Hardened Concrete to Steel	2,600 psi (17.9 MPa)	
2 day (moist cure)	Bond Strength	3,000 psi (20.6 MPa)	
2 day (dry cure)	Bond Strength	2,600 psi (17.9 MPa)	
14 day (moist cure)	Bond Strength		
Heat Deflection Temperature (ASTM D-648)			
7 day	[fiber stress loading=264 psi (1.8 MPa)]		118°F (47°C)
Water Absorption (ASTM D-570)	7 day (24 hour immersion)		0.03%



PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT [HTTP://USA.SIKA.COM/](http://usa.sika.com/) OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800.933.7452 NOTHING CONTAINED IN ANY SIKA 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 DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

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)
Compressive Modulus	7 day	3.9 x 10 ⁵ psi (2,689 MPa)	

*Material cured and tested at the temperatures indicated.

How to Use Surface 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

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.

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