BUILDING TRUST
CONSTRUIRE LA CONFIANCE

PRODUCT DATA SHEET

Sikadur®-30

High modulus, high strength, structural epoxy paste adhesive for use with Sika® Carbodur® reinforcement system

PRODUCT DESCRIPTION

Sikadur®-30 is a two-component, 100 % solids, moisture-tolerant, high modulus, high strength, structural epoxy paste adhesive.

WHERE TO USE

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, brickwork and timber.
- Structural bonding of steel plates to concrete.
- Suitable for use in vertical and overhead configurations.
- Multi-purpose, high strength, structural epoxy paste adhesive.
- As a binder for epoxy mortar repairs.
- Designed for use at normal temperatures between 8 °C to 35 °C (46 °F to 95 °F).

CHARACTERISTICS / ADVANTAGES

- Long pot life and open time.
- Moisture tolerant before, during and after cure.
- High modulus, high strength, structural paste adhesive.
- Excellent adhesion to concrete, masonry, metals, wood and most structural materials.
- Fully compatible and excellent adhesion to Sika® CarboDur® CFRP composite laminates.
- Paste consistency ideal for vertical and overhead applications.
- High creep resistance under permanent loads.
- High abrasion and shock resistances.
- Convenient easy mix ratio A:B = 3:1 by weight.
- Solvent-free.
- Colour coded components to ensure proper mixing control.

ENVIRONMENTAL INFORMATION

- Environmental Product Declaration (EPD) available

APPROVALS / CERTIFICATES

- Meets ASTM C881 and AASHTO M-235 requirements.
- Canadian Food Inspection Agency accepted.
- Approved by the Ministère des Transports du Québec.

PRODUCT INFORMATION

CSC MasterFormat®	03 25 00 COMPOSITE REINFORCING
Packaging	10 kg (22 lb) / 6 L (0.226 US gal) unit
Colour	Component A: White

	Component B: Black Components A+B mixed: Light Grey	
Shelf Life	2 years in original, unopened packaging.	
Storage Conditions	Store dry at 5 °C to 32 °C (41 °F to 89 °F). Condition product to 15 °C to 24 °C (59 °F to 75 °F) before using.	
Density	1.65 kg/L (14.0 lb/US gal)	
Water Absorption	0.03%	(ASTM D570) 24 h

TECHNICAL INFORMATION

Compressive Strength (ASTM D695)

	5 °C (41 °F)*	23 °C (73 °F)*	32 °C (89 °F)*
4 hours	-	-	37.9 MPa (5499 psi)
8 hours	-	24.1 MPa (3497 psi)	46.2 MPa (6703 psi)
16 hours	-	46.2 MPa (6703 psi)	51 MPa (7400 psi)
1 day	5.1 MPa (740 psi)	53.7 MPa (7792 psi)	53.7 MPa (7792 psi)
3 days	46.8 MPa (6790 psi)	57.2 MPa (8300 psi)	57.2 MPa (8300 psi)
7 days	55.1 MPa (7995 psi)	59.3 MPa (8604 psi)	59.3 MPa (8604 psi)
14 days	58.6 MPa (8503 psi)	59.3 MPa (8604 psi)	61.3 MPa (8894 psi)
28 days	58.6 MPa (8503 psi)	59.3 MPa (8604 psi)	62 MPa (8996 psi)

*Product cured and tested at temperatures indicated.

Modulus of Elasticity in Compression	2.69 GPa (39.0 x 104 psi) at 7 days	(ASTM D 695)
Tensile Strength	24.8 MPa (3598 psi) at 7 days	(ASTM D638)
Modulus of Elasticity in Tension	4.5 GPa (65.3 x 104 psi) at 7 days	(ASTM D638)
Elongation at Break	1% at 7 days	(ASTM D638)
Shear Strength	14 day cure @ 15 °C (59 °F) 15 MPa (2175 psi) 14 day cure @ 35 °C (95 °F) 17 MPa (2465 psi)	(ASTM D732)

Shear Adhesion Strength (ASTM C882)

Hardened concrete to hardened concrete

2 days	moist cure	18.6 MPa (2699 psi)
2 days	dry cure	22 MPa (3192 psi)
14 days	moist cure	21.3 MPa (3091 psi)

Hardened concrete to steel

	2 days	moist cure	17.9 MPa (2597 psi)	(ASTM C882)
	2 days	dry cure	20.6 MPa (2989 psi)	
	14 days	moist cure	17.9 MPa (2597 psi)	

Coefficient of Thermal Expansion	9 x 10^5/°C [Temperature range: -10 °C to 40 °C (14 °F to 104 °F)]	
Heat Deflection Temperature	7 day cure @ 10 °C (50 °F) 30 °C (86 °F) 7 day cure @ 35 °C (95 °F) 53 °C (127 °F) Fibre stress loading = 1.8 MPa (264 psi)	(ASTM D648)

APPLICATION INFORMATION

Mixing Ratio	A:B = 3:1 by weight and by volume	
Consumption	**Type of Laminate**	**Sikadur®-30 kg/Linear meter** **(lb/ft)**
	S512	0.30 (0.20)
	M614	0.36 (0.24)
	S812	0.48 (0.32)
	M914	0.54 (0.36)
	S1012/S1014/M1014	0.60 (0.40)
	S1214/M1214	0.72 (0.48)
	S1512	0.90 (0.60)
	Consumption is based on a 3 mm (1/8 in) nominal thickness and does not take into consideration the plane, roughness of substrate as well as laminate crossings. Actual consumption of adhesive will then be higher.	
Ambient Air Temperature	Minimum 5 °C (41 °F) Maximum 35 °C (95 °F)	
Dew Point	Beware of condensation. Substrate temperature during application must be at least 3 °C above dew point.	
Substrate Temperature	Minimum 5 °C (41 °F) Maximum 35 °C (95 °F)	
Pot Life	Approx. 1 h 30 min	[20°C (68°F)]
Open Time	Approx. 1 h 50 min	
Curing Time	The epoxy will reach its design strength after 7 days at 23 °C (73 °F).	

BASIS OF PRODUCT DATA

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods. Properties tested at 23 °C (73 °F) and 50 % R.H. unless stated otherwise.

LIMITATIONS

- Do not thin: Solvents will prevent proper cure.
- Maximum glue line of neat epoxy: 3 mm (1/8 in).
- Use oven-dried aggregate only when used as epoxy mortar.
- Maximum epoxy mortar thickness: 25 mm (1 in) per lift.
- Material is a vapour barrier after cure.
- Porous substrates must be tested for moisture-vapour transmission prior to mortar applications

ENVIRONMENT, HEALTH & SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY

- Minimum age of concrete must be between 21 and 28 days, depending upon curing and drying conditions.
- 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 (i.e. Sikadur®-30 with the addition of 1 part silica sand).
- The concrete adhesive strength must be verified after surface preparation by random pull-off testing (ACI 503R) at the engineer's discretion. Minimum tensile strength : 1.5 MPa (218 psi) with concrete substrate failure.
- Planeness of substrate to be checked with a metal batten. tolerance for 2 m (6.5 ft) length max. 10 mm (3/8 in), or 2.5 mm (3/32 in) for 50 cm (20 in) length respectively.

SUBSTRATE PREPARATION

- **Concrete:** Blast clean, shotblast or use other approved mechanical means to provide an open roughened texture equivalent to CSP 3 minimum, as per ICRI-310.2R.
- **Steel:** Sandblast to white metal finish (SSPC SP5).
- **Sika® CarboDur®:** Surface should be wiped clean using an appropriate cleaner. Using a clean white cloth wipe down the side receiving adhesive (this side is not labeled) with acetone until all residual carbon dust is removed (i.e. the white cloth remains white after wiping the laminate).
  In the case where the design requires "stacking" of the strips, the bottom surface of the strip (labeled) should be lightly sanded (emery paper type 180) and cleaned as above prior to the application of the second strip.
- **Timber:** Blast clean or grind. After cleaning, remove all dust from the surface with an industrial vacuum cleaner.

MIXING

- Pre-mix each component.
- Proportion 1 part of component B to 3 parts of component A by volume into a clean pail.
- Mix for three (3) minutes using a low-speed drill (300 - 450 rpm) to minimize air entrapment. Use a Exomixer® type mixing paddle (recommended model).
- During the mixing operation, scrape down the sides and bottom of the pail with a flat or straight edge trowel at least once to ensure thorough mixing. Upon completion of mixing, Sikadur®-30 should be uniform in colour.
- Mix only that quantity you can use within its pot life.

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 1.5 mm (1/16 in).
  Apply mixed Sikadur®-30 onto the Sika® CarboDur® laminate with a "roof-shaped" spatula to a nominal thickness of 1.5 mm (1/16 in).
  Within the epoxy open time and depending on the temperature, place Sika® 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 3 mm (1/8 in).
  The laminate must not be disturbed for a minimum of 24 hours.

- **For vertical and overhead patching:**
  Work Sikadur®-30 with the addition of 1 part oven dried sand into the prepared substrate, filling the cavity. Strike off level. Lifts should not exceed 25 mm (1 in).

CLEAN UP

Clean all tools and equipment immediately with Sika® Epoxy Cleaner. Once hardened, product can only be removed mechanically. Wash soiled hands and skin thoroughly in hot, soapy water.

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for exact product data and uses.

LEGAL NOTES

The Information, and in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions, within their shelflife. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any recommendations, or from any other advice offered. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request or may be downloaded from our website at: www.sika.ca

Sika Canada Inc.
Head Office
601, avenue Delmar
Pointe-Claire, Quebec
H9R 4A9
1-800-933-SIKA
www.sika.ca

Other locations
Boisbriand (Quebec)
Brantford; Cambridge;
Sudbury; Toronto (Ontario)
Edmonton (Alberta)
Surrey (British Columbia)