BUILDING TRUST
CONSTRUIRE LA CONFIANCE

PRODUCT DATA SHEET

Sikadur®-53 CA

EPOXY RESIN-BASED STRUCTURAL GROUT DESIGNED FOR INJECTION, ANCHORING AND SEATING APPLICATIONS

PRODUCT DESCRIPTION

Sikadur®-53 CA is a two-component structural grout based on epoxy resin, designed for injection, anchoring, and seating applications and for use at temperatures between 5 and 30 °C.

WHERE TO USE

Sikadur®-53 CA may only be used by experienced professionals.

- Injection of voids and cracks by gravity or under pressure, including in wet or submerged environments
- Grouting of anchors, posts, connectors for mixed wood or concrete floors, etc.
- Seating of support plates, machine bases, metal rail support saddles (track work, crane tracks), metal profiles, etc.
- Filling of cavities, voids, etc., including in a submerged environment (by displacement of the water in place when filling the void with Sikadur®-53 CA)

CHARACTERISTICS / ADVANTAGES

- Applicable for gravity feeding or pressure injection of cracks widths ranging from 0.5 to 30mm (0.02 to 1.18 in)
- Applicable to a maximum thickness of 30 mm (per layer) for base plate/seating applications
- Application temperature between 5 and 30 °C
- Hardens without shrinkage
- Hardens even in damp conditions
- Barrier against moisture and oxygen
- Prevents the entry of water and the infiltration of substances causing corrosion of the reinforcement in the structures
- Good adhesion on concrete, steel, masonry elements, stone
- Good adhesion on cement-based substrates immersed in salt water
- Displaces water from the cracks and voids during filling
- Good mechanical strength even after hardening underwater
- Injectable with a single piston pump or bulk injection equipment

APPROVALS / CERTIFICATES

Approved by the Ministère des Transports du Québec (MTQ).

PRODUCT INFORMATION

CSC MasterFormat®	**03 64 23 | EPOXY INJECTION GROUTING**
Composition / Manufacturing	Mixture of epoxy resin and special fillers

Packaging

6 L (1.59 US gal.) and 12 L (3.17 US gal.) pre-dosed units divided into 2 components (A+B)

6 L (1.59 US gal.) unit	
Comp A	~4.68 L (1.24 US gal.)
Comp. B	~1.33 L (0.35 US gal.)

12 L (3.17 US gal.) unit	
Comp. A	~9.35 L (2.47 US gal.)
Comp. B	~2.65 L (0.70 US gal.)

Colour

Comp. A	Grey
Comp. B	Transparent
Comp. A + Comp. B (mixed)	Concrete grey

Shelf Life

2 years in original, unopened packaging and stored in appropriate conditions (see 'Storage conditions').

Storage Conditions

Store dry at temperatures between 5 and 30 °C (41 and 86 °F). Protect material from direct exposure to sunlight and freezing.

Density

at 23 °C (73 °F) and 50 % R.H.

Comp. A	~2.33 kg/L
Comp. B	~1.01 kg/L
Comp A + B (mixed)	~2.07 kg/L

Viscosity

3,320 cps (A and B components mixed together)

TECHNICAL INFORMATION

Shore D Hardness

91 (7 days at 23 °C (73 °F) and 50 % R.H.) (ASTM D2240)

Compressive Strength (ASTM D695)

time	cured under water 5 °C (41 °F)	cured under water 23 °C (73 °F)	cured at 50 % R.H. 23 °C (73 °F)
1 day	-	69 MPa (10,005 psi)	79 MPa (11,455 psi)
7 days	-	81 MPa (11,745 psi)	-
14 days	72.6 MPa (10,527 psi)	91 MPa (13,195 psi)	90 MPa (13,050 psi)

Modulus of Elasticity in Compression (ASTM D695)

time	cured under water 20 °C (68 °F)
14 days	2,880 MPa (417, 600 psi)

Tensile Strength in Flexure (ASTM C580)

time	cured under water 5 °C (41 °F)	cured under water 23 °C (73 °F)	cured at 50 % R.H. 23 °C (73 °F)
1 day	-	22.3 MPa (3,233 psi)	29 MPa (4,205 psi)
14 days	31.5 MPa (4,567 psi)	41.6 MPa (6,032 psi)	33 MPa (4,785 psi)

Modulus of Elasticity in Flexure (ASTM C580)

time	cured under water 23 °C (73 °F)
14 days	4,470 MPa (417,600 psi)

Tensile Strength		**cured under water**	**cured at 50 % R.H.**	(ASTM D638)
	time	**23 °C (73 °F)**	**23 °C (73 °F)**	
	14 days	16.5 MPa (2,392 psi)	18.7 MPa (2,711 psi)	
Pull-Off Strength	Pull-off method			
		cured under water	**cured at 50 % R.H.**	(ASTM C1583)
	time	23 °C (73 °F)	23 °C (73 °F)	
	14 days	2.64 MPa (382 psi) - Concrete failure	2.5 MPa (362 psi) - Concrete failure	
Coefficient of Thermal Expansion	6.565 x 10-5 per °C (linear expansion between -20 °C and +60 °C) (product cured at 23 ºC)			
Chemical Resistance	Contact Sika Canada			
Heat Deflection Temperature	46.8 ºC (after 14 days)			(ASTM D-648)

APPLICATION INFORMATION

Mixing Ratio	Comp.A : Comp.B = 8 : 1	per weight
	Comp.A : Comp.B = 3.5 : 1	per volume
Layer Thickness	30 mm (1.18 in) max.	
Ambient Air Temperature	5 °C (41 °F) min. / 30 °C (86 °F) max.	
Substrate Temperature	5 °C (41 °F) min. / 30 °C (86 °F) max.	
Pot Life	Full kit tested at 20 °C (68 °F)	
	Kit Format	Pot Life
	12.3 kg	29 minutes
	24.5 kg	30 minutes

Note: Pot life begins when the two components are mixed. It is shorter at high temperatures and longer at low temperatures. The greater the quantity mixed, the shorter the pot life. For longer pot life at high temperatures, divide the mixed product into several portions. Another method is to cool components A and B before mixing (not below 5 °C / 41 °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.

LIMITATIONS

- Sikadur®-53 CA should only be used by experienced professionals.
- Do not mix by hand. Only use mechanical mixing equipment.
- Mix only full kits. do not split kits or do partial mixes.
- Do not thin with solvents. Solvents will prevent proper cure.
- Pot life at low temperatures is longer than at high temperatures but the product will be more difficult to inject and will take longer to cure.
- Pot life is shorter at higher temperatures.
- Do not exceed the maximum application thickness of 30 mm (per coat).
- Do not seal exterior slabs on grade.
- Minimum age of concrete must be 21- 28 days, depending on curing and drying conditions, for mortar and to seal slabs.
- A suitability study and tests must be carried out in order to establish the compatibility of the resin, the spacing of the injection ports, the injection equipment to use and the pressures to be exerted.
- Not for injection of cracks under hydrostatic pressure at the time of application.
- In case of doubt, take core samples at the crack's location to check for material/resin penetration
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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 PREPARATION

Concrete / masonry / mortar / stone
Check the resistance of the substrate. The surface after preparation must be clean, dry and free of all contaminants (impurities, oil, grease, coating or existing surface treatment) that could alter the adhesion of the product to the substrate. The substrate must be prepared mechanically (sandblasting, shot-blasting or other appropriate mechanical means) until an open surface texture is obtained. For concrete surface preparation, a CSP 3-4 as per ICRI is required.
Steel
All steel contact surfaces must be dry, clean and stable. Remove all existing treatments such as coatings, sealers, wax, and contaminants i.e. dirt, dust, grease, oils, and foreign matter, which will interfere with the adhesion of Sikadur®-53 CA. Prepare steel substrates by appropriate mechanical means, such as abrasive blast-cleaning in order to achieve clean white metal profile equivalent to SSPC-SP10, Near White Metal, 2 to 4 mil anchor profile, and install grout before oxidation of the steel occurs.

MIXING

Pre-mix each component separately. Empty component B into the component A pail. Mix the combined components for at least three (3) minutes, using a low-speed drill (300 - 450 rpm) to minimize entrapping air. Use an Exomixer® or Jiffy® type mixing paddle (recommended model) suited to the volume of the mixing container. During the mixing operation, scrape down the sides and bottom of the container with a flat or straight edge trowel at least once, to ensure complete mixing. When completely mixed, Sikadur®-53 should be uniform in colour and consistency.

For application under water, let the product stand for 15 minutes (at 20 °C / 68 °F) after mixing components A and B for the product to start a pre-reaction, to obtain an optimal adhesion on the substrate.
Mix only the number of kits that can be installed during the pot-life.

APPLICATION METHOD / TOOLS

To gravity feed cracks:
Pour neat Sikadur®-53 CA into V-notched crack. Continue placement until completely filled. Seal underside of slab prior to filling if cracks reflect through. Sikadur® 53 CA can be used in cracks widths ranging from 0.5 to 30 mm.

To pressure inject cracks:
Use applicable injection equipment or manual bulk gun. Set appropriate injection ports based on system used. Seal ports and cracks with Sikadur®-31 Hi-Mod Gel or any Sika AnchorFix® products. When the epoxy adhesive seal has cured, inject Sikadur®-53 CA with slow, steady pressure. Sikadur®-53 CA is suited for injection of wider cracks with widths in excess of 6 mm.

Grouting / Seating:
For optimum flowability for grouting applications, condition materials to 23 °C (73 °F) for 24 hours prior to use. When the product is used for grouting (seating) applications, use watertight formwork to avoid any product leakage. For underwater application, use a system such as a funnel and flexible tubes for pouring the product in order to have sufficient weight / hydrostatic pressure by gravity for underwater injection. It may also be mixed and pumped with an appropriate single component airless pump. Contact your Sika Technical Sales Representative for additional details.

CLEAN UP

Clean all tools and equipment with Sika® Epoxy Cleaner. Once hardened, product can only be removed mechanically.

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 in accordance with Sika's recommendations. 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

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