BUILDING TRUST

PRODUCT DATA SHEET

Sikadur®-30

Thixotropic self-priming epoxy adhesive for structural strengthening using CFRP laminates and steel plate bonding

DESCRIPTION

Sikadur®-30 is a thixotropic, structural 2-component adhesive, based on a combination of epoxy resins and special filler, designed for use at normal temperatures between +8 °C and +35 °C.

USES

Sikadur®-30 may only be used by experienced professionals.

Adhesive for bonding structural reinforcement, particularly in structural strengthening works. Especially for the following uses:

- Sika® CarboDur® Plates to concrete, brickwork and timber (for details see the Sika® CarboDur® Product Data Sheet, the “Method Statement for Sika® CarboDur® Externally Bonded Reinforcement” Ref: 850 41 05 and the “Method Statement for Sika® CarboDur® Near Surface Mounted Reinforcement” Ref: 850 41 07).
- Steel plates to concrete (for details see the relevant Sika Technical information).

CHARACTERISTICS / ADVANTAGES

Sikadur®-30 has the following advantages:

- Very low VOC
- Easy to mix and apply.
- No primer needed. Self Priming adhesive saving time on installation.
- High creep resistance under permanent load.
- Very good adhesion to concrete, masonry, stonework, steel, cast iron, aluminium, timber and Sika® CarboDur® Plates.
- Hardening is not affected by high humidity.
- High strength adhesive.
- Thixotropic: non-sag in vertical and overhead applications.
- Hardens without shrinkage.
- Different coloured components (for mixing control).
- High initial and ultimate mechanical resistance.
- High abrasion and shock resistance.
- Impermeable to liquids and water vapour.

SUSTAINABILITY

- Conformity with LEED v4 MRc 4 (Option 2): Building Product Disclosure and Optimization - Material Ingredients
- Conformity with LEED v2009 IEQc 4.1: Low-Emitting Materials - Adhesives and Sealants
- VOC-SCAQMD Method 304-91

APPROVALS / CERTIFICATES

- IBMB, TU Braunschweig, test report No. 1871/0054, 1994: Approval for Sikadur®-30 Epoxy adhesive.
- IBMB, TU Braunschweig, test report No. 1734/6434, 1995: Testing for Sikadur®-41 Epoxy mortar in combination with Sikadur®-30 Epoxy adhesive for bonding of steel plates.
- Avis Technique N° 3/16-875 (annule et remplace N° 3/10-669) Sika® CarboDur®, SikaWrap®
- CIT n°290 18/07/2017 (certificato di idoneità tecnica all'impiego) ; Sika ® CarboDur®, SikaWrap®, Sikadur®
- Adhesive for structural bonding tested according to EN 1504-4, provided with the CE-mark

PRODUCT INFORMATION

Composition	Epoxy resin	
Packaging	6 kg (A+B)	Pre-batched unit
		pallets of 480 kg (80 x 6 kg)
Shelf life	24 months from date of production	
Storage conditions	Store in original, unopened, sealed and undamaged packaging in dry conditions at temperatures between +5 °C and +30 °C. Protect from direct sunlight.	
Colour	Component A: white Component B: black Components A+B mixed: light grey	
Density	1.65 kg/l ±0.1 kg/l (components A+B mixed) (at +23 °C)	
Volatile organic compound (VOC) content	7 grams/litre	(ASTM D3960-05)

TECHNICAL INFORMATION

Compressive strength (EN 196)

Curing Time	Curing Temperature	
	+10 °C	+35 °C
12 hours	-	~85 N/mm²
1 day	~55 N/mm²	~90 N/mm²
3 days	~70 N/mm²	~90 N/mm²
7 days	~75 N/mm²	~90 N/mm²

Modulus of elasticity in compression ~9 600 N/mm² (at 23 °C) (ASTM D 695)

Tensile strength (DIN EN ISO 527-3)

Curing Time	Curing Temperature	
	+15 °C	+35 °C
1 day	~20 N/mm²	~26 N/mm²
3 days	~23 N/mm²	~27 N/mm²
7 days	~26 N/mm²	~29 N/mm²

Modulus of elasticity in tension ~11 200 N/mm² (+23 °C) (ISO 527)

Shear strength (FIP 5.15)

Curing time	Curing Temperature		
	+15 °C	+23 °C	+35 °C
1 day	~4 N/mm²	-	~17 N/mm²
3 days	~15 N/mm²	-	~18 N/mm²
7 days	~16 N/mm²	18 N/mm² (1)	~18 N/mm²

Concrete failure (~15 N/mm²)
(1) (DIN EN ISO 4624)

Tensile adhesion strength (EN ISO 4624, EN 1542, EN 12188)

Curing time	Substrate	Curing temperature	Adhesion strength
7 days	Concrete dry	+23 °C	> 4 N/mm² *
7 days	Steel	+23 °C	>21 N/mm²

*100% concrete failure

Shrinkage 0.04 % (FIP: Fédération Internationale de la Précontrainte)

Coefficient of thermal expansion 2.5 x 10^{-5} per °C (Temperature range: −20 °C to +40 °C) (EN 1770)

Service temperature −40 °C to +45 °C (when cured at +23 °C)

Glass transition temperature (EN 12614) (ASTM D3418)

Curing time	Curing temp.	TG
30 days	+30 °C	+52 °C
7 days	+30 °C	+61 °C

Heat deflection temperature (ASTM-D 648)

Curing time	Curing temperature	HDT
3 hours	+80 °C	+53 °C
6 hours	+60 °C	+53 °C
7 days	+35 °C	+53 °C
7 days	+10 °C	+36 °C

APPLICATION INFORMATION

Mixing ratio
Component A : Component B = 3 : 1 by weight or volume
When using bulk material the exact mixing ratio must be safeguarded by accurately weighing and dosing each component.

Layer thickness
30 mm max.

Sag flow
On vertical surfaces it is non-sag up to 3–5 mm thickness at 35 °C (FIP: Fédération Internationale de la Précontrainte)

Squeezability
4'000 mm² at +15 °C at 15 kg (FIP: Fédération Internationale de la Précontrainte)

Material temperature
Sikadur®-30 must be applied at temperatures between +8 °C and +35 °C.

Ambient air temperature
+8 °C min. / +35 °C max.

Dew point
Beware of condensation.
Substrate temperature during application must be at least 3 °C above dew point.

Substrate temperature
+8 °C min. / +35 °C max.

Substrate moisture content
Max. 4 % pbw
When applied to mat damp concrete, brush the adhesive well into the substrate.

Pot Life (FIP: Fédération Internationale de la Précontrainte)

Temperature	Potlife	Open time
+8 °C	~120 minutes	~150 minutes
+20 °C	~90 minutes	~110 minuets
+35 °C	~20 minutes	~50 minutes

The potlife begins when the resin and hardener are mixed. It is shorter at high temperatures and longer at low temperatures. The greater the quantity mixed, the shorter the potlife. To obtain longer workability at high temperatures, the mixed adhesive may be divided into portions. Another method is to chill components A+B before mixing them (not below +5 °C).

BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

IMPORTANT CONSIDERATIONS

Sikadur® resins are formulated to have low creep under permanent loading. However, due to the creep behavior of all polymer materials under load, the long term structural design load must account for creep. Generally the long term structural design load must be lower than 20–25 % of the failure load.
A structural engineer must be consulted for load calculations for the specific application.

ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY

See the Product Data Sheet of Sika® CarboDur® Plates and Sika® CarboDur® BC rods.

SUBSTRATE PREPARATION

See the “Method Statement for Sika® CarboDur® Externally Bonded Reinforcement” Ref: 850 41 05 and the “Method Statement for Sika® CarboDur® Near Surface Mounted Reinforcement” Ref: 850 41 07.

MIXING

Pre-batched units:
Mix componentss A+B together for at least 3 minutes with a mixing spindle attached to a slow speed electric drill (max. 300 rpm) until the material becomes smooth in consistency and a uniform grey colour. Avoid aeration while mixing. Then, pour the whole mix into a clean container and stir again for approx. 1 more minute at low speed to keep air entrapment at a minimum. Mix only that quantity which can be used within its potlife.
Bulk packing, not pre-batched:
First, stir each component thoroughly. Add the components in the correct proportions into a suitable mixing pail and stir correctly using an electric low speed mixer as above for pre-batched units.

APPLICATION METHOD / TOOLS

See the “Method Statement for Sika® CarboDur® Externally Bonded Reinforcement” Ref: 850 41 05 and the “Method Statement for Sika® CarboDur® Near Surface Mounted Reinforcement” Ref: 850 41 07.

CLEANING OF EQUIPMENT

Clean all tools and application equipment with Sika® Colma Cleaner immediately after use. Hardened / cured material can only be removed mechanically.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the declared data for this product may vary from country to country. Please consult the local Product Data Sheet for the exact product data.

LEGAL NOTES

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