BUILDING TRUST

BUILDING PRODUCT INFORMATION SHEET

Sikadur®-30

Thixotropic epoxy adhesive for bonding reinforcement

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

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).

LIMITATIONS OF USE

All structural design work including the specification of Sika CarboDur products and their location within the structure shall only be undertaken by a registered Professional Structural Engineer. All aspects of the installation work must be undertaken by one of Sika's approved contractors.

FEATURES

Sikadur®-30 has the following advantages:

- Easy to mix and apply.
- No primer needed.
- 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

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

Product identifier	Sikadur®-30
Place of manufacture	Overseas
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)	

TECHNICAL INFORMATION

Compressive strength

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

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

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

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	Curing time	Curing temperature	TG
	30 days	+30 °C	+52 °C

Heat deflection temperature	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	
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 mm^2 at +15 °C at 15 kg	(FIP: Fédération Internationale de la Précontrainte)
Product 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 % pbwWhen applied to mat damp concrete, brush the adhesive well into the substrate.	

Pot Life	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).

MANUFACTURER AND IMPORTER INFORMATION

Manufacturer information	Address	Sika Supply Centre AG Industriestrasse 26 6060, Sarnen Switzerland

Importer information	Address	Sika (NZ) Limited 85-91 Patiki Road Avondale, Auckland 1026 New Zealand
	Phone number	0800 745 269
	Website	https://nzl.sika.com/
	Email address	info@nz.sika.com
	NZBN	9429000018791

BUILDING CODE INFORMATION

Building Code clauses	B1 Structure: Performance clauses B1.3.1, B1.3.2, B1.3.3(a, b, f) B1.3.4. B2 Durability: Performance clause B2.3.1-(a) not less than 50 years F2 Hazardous Building Materials: Performance clause F2.3.1
Building Code compliance statements	Performance B1.3.1, B1.3.2, B1.3.3(a, b, f), B1.3.4: When the Sika CarboDur system is designed and specified by a registered Professional Structural Engineer; and it is used as an externally applied strengthening system it contributes to the concrete (or other substrates as stated in the product data sheets) meeting the loading requirements, as defined in the preceding B1 Structure performance clauses. Refer to the product data sheets and nzl.sika.com For a list of certificates and approvals that support the use of CarboDur for external Strengthening. Performance B2.3.1 (a) 50 years: The Sika CarboDur system will achieve the 50 year requirement for durability. Refer to the product data sheets and nzl.sika.com For a list of certificates and approvals that support the use of CarboDur for external Strengthening. The Sika CarboDur system has been in use continuously in NZ since 1995 Performance F2.3.1: This product meets this requirement when used and applied in accordance with Sika's installation instructions and does not present a health hazard to people occupying or using the building. Refer to the Sika Product Technical Data sheet and product Safety Data Sheet nzl.sika.com for further information if required

BASIS OF PRODUCT DATA

All technical data in this document 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

INSTALLATION REQUIREMENTS

The specified Sika CarboDur system must be installed by a trained and approved specialist Sika applicator

DESIGN REQUIREMENTS

All structural design work including the specification of SikaWrap Hex products and their location within the structure shall only be undertaken by a registered Professional Structural Engineer in accordance with ACI 440.7R-10, NZS4320:2004 and AS/NZS 1170.0:2002. Fire protection requirements needed to make the system compliant with clause 3.4(a) of the NZ Building Code must be designed and specified by a registered fire engineer

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.

CLEANING OF EQUIPMENT

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

APPLICATION

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.

MAINTENANCE REQUIREMENTS

In applications were the installed Sika CarboDur system is not located and protected behind permanently fixed, UV blocking, building materials, such as wallboard linings, etc. there will need to be an annual maintenance check to ensure that the system and any

protective over coatings have not been damaged, or are deteriorating. This inspection and any necessary remedial work, shall be undertaken by Sika's approved applicator.

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 the 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 written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. 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. It may be necessary to adapt the above disclaimer to specific local laws and regulations. Any changes to this disclaimer may only be implemented with permission of Sika® Corporate Legal in Baar.

The building product/building product line is not subject to warning or ban under section 26 of the Building Act 2004.

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