PRODUCT DATA SHEET

Sikadur®-30

THIXOTROPIC EPOXY ADHESIVE FOR BONDING REINFORCEMENT

CE

PRODUCT 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. Including:
- Sika® CarboDur® Plates to concrete, brickwork and timber (for details see the Sika® CarboDur® Product Data Sheet, the "Technical Information Manual for Sika® CarboDur® Externally Bonded Reinforcement" Ref: 850 41 05 and the "Technical Information Manual 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:
- 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.
- Concrete Society Technical Report No.55 Structural adhesive product specification compliant.
- Very high moisture resistance providing long term durability & performance.

APPROVALS / STANDARDS

- Adhesive for structural bonding tested according to EN 1504-4, provided with the CE-mark
- Concrete Society Technical Report No.55 Structural adhesive product specification compliant (FIG 12). Oxford Brookes University Test Certificate.

PRODUCT INFORMATION

Chemical Base	Epoxy resin	
Packaging	6 kg (A+B)	Pre-batched unit
		pallets of 480 kg (80 x 6 kg)
Colour	Component A: white Component B: black Components A+B mixed: light grey	
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.
Density	1.65 kg/l ±0.1 kg/l (components A+B mixed) (at +23 °C)

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

Tensile Modulus of Elasticity ~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)

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

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

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

Glass Transition Temperature (EN 12614)

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

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

Resistance to moisture Absorption <0.43% Recommendation < 0.5%
(According to FIP (Fédération Internationale de la Précontrainte)

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)
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 % 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).

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY

See the Product Data Sheet of Sika® CarboDur® Plates and Sika® CarboDur® BC rods and Near Surface Mounted Reinforcement.

SUBSTRATE PREPARATION

See the "Technical Information Manual for Sika® CarboDur® Externally Bonded Reinforcement" Ref: 850 41 05 and the "Technical Information Manual 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 "Technical Information Manual for Sika® CarboDur® Externally Bonded Reinforcement" Ref: 850 41 05 and the "Technical Information Manual for Sika® CarboDur® Near Surface Mounted Reinforcement" Ref: 850 41 07.

CLEANING OF TOOLS

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

LIMITATIONS

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.

VALUE BASE

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.

LOCAL RESTRICTIONS

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

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.

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.

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