

Sikadur® -30LP

Adhesive for Bonding Reinforcements

Product Description	Sikadur®-30LP is a thixotropic, structural two part adhesive, based on a combination of epoxy resins and special filler, designed for use at normal temperatures between +25°C and +55°C.
Uses	<ul style="list-style-type: none">Adhesive for bonding structural reinforcements, particularly in structural strengthening works. Including:<ul style="list-style-type: none">Sika® CarboDur® Plates to concrete, brickwork, timber and steel(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	<ul style="list-style-type: none">Sikadur® -30LP has the following advantages:<ul style="list-style-type: none">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.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.
Tests	
Approval / Standards	Sika® Publications: shorter curing time for structural strengthening with Sika® CarboDur® CFRP plates - Use of the Sika® CarboHeater Language: GER Issued: 10/08/99 Testing according to EN 1504-4 Sikadur -30LP has been tested as per SCAQMD Method 304-91. Result: VOC Content < 10 g/L

Product Data

Form

Colour	Comp. (A):	white.
	Comp. (B):	black.
	Comp. (A + B) mixed:	light grey.

Packaging 6 kg units (A+B) pre- batched unit, pallets of 480 kg (80 x 6 kg).

Storage

Storage Conditions / Shelf-Life 24 months from date of production if stored properly in original unopened, sealed and undamaged packaging in dry conditions at temperatures between +5°C and +30°C. Protect from direct sunlight.

Technical Data

Chemical Base Epoxy resin.

Density 1.65 kg/l. \pm 0.1 kg/l (parts A+B mixed) (at + 23° C)

Sag Flow (According to FIP (Fédération Internationale de la Précontrainte))
On vertical surfaces it is non-sag up to 3-5 mm thickness at +55°C.

Squeezability (According to FIP (Fédération Internationale de la Précontrainte))
5'500 mm² at +15°C at 15 kg

Layer Thickness 30 mm max.
When using multiple units, one after the other. Do not mix the following unit until the previous one has been used in order to avoid a reduction in handling time.

Change of Volume Shrinkage:
0.04% (According to FIP (Fédération Internationale de la Précontrainte))

Thermal Expansion Coefficient Coefficient W:
2.5 x 10⁻⁵ per °C (temp. range -20°C to +40°C)

Thermal Stability Glass transition temperature:
(According to FIP (Fédération Internationale de la Précontrainte))

Curing time	Curing Temperature	TG
7 days	+80°C	+72°C
7 days	+35°C	+55°C
7 days	+23°C	+45°C

(According to FIP (Fédération Internationale de la Précontrainte) (ASTM - D 648))

Curing time	Curing Temperature	HDT
6 hours	+80°C	+84°C
3 hours	+55°C	+82°C
7 days	+23°C	+55°C

Service Temperature - 40°C to +45°C (when cured at > +23°C)
-40°C to +72°C (when cured > 2 h at +80°C within 7 days)
-40°C to +90°C (when cured > 2 h at +100°C within 7 days)

Mechanical / physical Properties

Compressive Strength

(According to EN 196)

Curing Time	Curing Temperature	
	+25° C	+55 C
12 hours	-	75 – 100 N/mm ²
1 day	> 75 N/mm ²	85 – 115 N/mm ²
3 days	> 85 N/mm ²	95 – 120 N/mm ²

Flexural Strength

(According to EN 196)

Curing Time	Curing Temperature	
	+25° C	+55 C
1 day	> 12 N/mm ²	38 N/mm ²
3 day	> 20 N/mm ²	40 N/mm ²
7 days	> 25 N/mm ²	42 N/mm ²

Shear Strength

Concrete failure (~ 15 N/mm²)

(According to FIP 5.15)

Temperature	Shear strength
+40°C to +55°C (7 days)	17 – 21 N/mm ²

17 N/mm² (when cured > 1 h at +80°C)

(According to DIN 53283)

7 N/mm² (when cured > 7 days at +25°C)

(According to DIN 53283)

Tensile Strength

Curing Time	Curing Temperature	
	+25° C	+55 C
1 day	-	23 – 28 N/mm ²
3 days	12 – 15 N/mm ²	25 – 30 N/mm ²
7 days	15 – 18 N/mm ²	26 – 31 N/mm ²

Bond Strength

Tensile Adhesive Strength:

(According to DIN EN 24624)

On concrete:

Curing Time	Curing Temperature	
	+25° C	+55 C
1 day	> 4 N/mm ² (Concrete fracture)	> 4 N/mm ² (Concrete fracture)

On steel:

Curing Time	Curing Temperature	
	+25° C	+55 C
1 day	15 N/mm ²	25 N/mm ²
3 day	22 N/mm ²	28 N/mm ²

E-Modulus	Compressive:	10'000 N/mm ² (at +23°C)	(According to ASTM D695)
	Tensile:	10'000 N/mm ² (at +23°C)	(initial, According to ISO 527)

System Information

System Structure	Sika® CarboDur® System: For Application Details of Sika® CarboDur® plates with Sikadur®-30 LP, 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
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Application Details


Substrate Quality	See the Product Data Sheet of Sika® CarboDur® Plates.
Substrate Preparation	See the Product Data Sheet of Sika® CarboDur® Plates.

Application Conditions/ Limitations

Substrate Temperature	+25°C min. / +55°C max.
Ambient Temperature	+25°C min. / +55°C max.
Material Temperature	Sikadur®-30LP must be applied at temperatures between +20°C and +40°C.
Substrate Moisture	Max. 4% pbw
Content	When applied to mat damp concrete, brush the adhesive well into the substrate.
Dew Point	Beware of condensation! Substrate temperature during application must be at least 3°C above dew point.

Application Instruction

Mixing	Part A : part B = 3 : 1 by weight or volume Only mix complete prebatched units of Sikadur®-30 LP.
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Mixing Time	<p>Pre-batched units: Mix parts A+B together for at least 3 minutes with a mixing spindle attached to a slow speed electric drill</p>  <p>(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.</p>
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Application Method /	See the Product Data Sheet of Sika® CarboDur® Plates.
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Tools	
Cleaning of Tools	Clean all tools and application equipment with Sika® Colma Cleaner immediately after use. Hardened / cured material can only be mechanically removed.

Potlife

(According to FIP (Fédération Internationale de la Précontrainte))

Temperature	+25°C	+55°C
Potlife	~ 60 minutes	~ 30 minutes
Open time	~ 90 minutes	~ 60 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 parts A+B before mixing them (not below +5°C).

Notes on Application /

Limitations

Sikadur® resins are formulated to have low creep under permanent loading. However due to the creep behaviour 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. Please consult a structural engineer for load calculations for your specific application.

Health and Safety Information

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

Transport

- Comp. (A): Non-hazardous.
- Comp. (B): 8/65 c).

Safety precautions

- Product can cause skin irritation. Wear protective clothing (gloves, safety glasses). Cover hands with barrier cream before application. In contact with eyes or membranes, rinse thoroughly with clean warm water immediately and seek medical attention without delay.

Toxicity

Com p. (A): Class 4, under the relevant health and Safety codes.
Observe warning on packing.
Comp. (B): Non-Toxic.

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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