

# PRODUCT DATA SHEET

## Sikadur®-32 Normal

### 2-COMPONENT STRUCTURAL EPOXY BONDING AGENT

#### PRODUCT DESCRIPTION

Sikadur®-32 Normal is a moisture tolerant, structural, two part bonding agent, based on a combination of epoxy resins and special fillers, designed for use at temperatures between +10 °C and +30 °C.

#### USES

Sikadur®-32 Normal may only be used by experienced professionals.

Sikadur®-32 Normal is used as a structural bonding agent and adhesive for:

- Concrete elements (including bonding fresh to hardened concrete)
- Hard natural stone
- Ceramics, fibre-cement
- Mortar, Bricks, Masonry
- Steel, Iron, Aluminium
- Wood
- Polyester / fibreglass and Epoxy resin materials
- Glass

#### CHARACTERISTICS / ADVANTAGES

Sikadur®-32 Normal has the following advantages:

- Easy to mix and apply
- Suitable for dry and damp concrete surfaces
- Very good adhesion to most construction materials
- High bond strength
- Hardens without shrinkage
- Different coloured components (for mixing control)
- No primer needed
- High initial and ultimate mechanical strength
- Impermeable to liquids and water vapour
- Good chemical resistance

#### APPROVALS / STANDARDS

- Structural bonding agent tested according to EN 1504-4, provided with the CE-mark

#### PRODUCT INFORMATION

<b>Chemical Base</b>	Epoxy resin	
<b>Packaging</b>	5 kg (A+B)	Pre-batched unit pallets of 450 kg (90 x 5 kg)
	1.2 kg (A+B)	Pre-batched unit box of 6 x 1.2 kg
<b>Colour</b>	Component A: white Component B: dark grey Components A+B mixed: concrete grey	
<b>Shelf Life</b>	24 months from date of production	
<b>Storage Conditions</b>	Store in original, unopened, sealed and undamaged packaging in dry conditions at temperatures between +5 °C and +30 °C. Protect from direct sunlight.	

**Density**

1.4 ± 0.1 kg/l (component A+B mixed) (at +23 °C)

**TECHNICAL INFORMATION**

Compressive Strength	Curing time	Curing temperature			(ASTM D 695-95)
		+10 °C	+23 °C	+30 °C	
	1 day	–	~24 N/mm <sup>2</sup>	~30 N/mm <sup>2</sup>	
	3 days	~13 N/mm <sup>2</sup>	~28 N/mm <sup>2</sup>	~41 N/mm <sup>2</sup>	
	7 days	~32 N/mm <sup>2</sup>	~39 N/mm <sup>2</sup>	~52 N/mm <sup>2</sup>	
	14 days	~42 N/mm <sup>2</sup>	~49 N/mm <sup>2</sup>	~56 N/mm <sup>2</sup>	

Compressive strength at 4 % elongation

<b>Modulus of Elasticity in Compression</b>	~ 3 250 N/mm <sup>2</sup> (14 days at +23 °C)	(ASTM D 695-95)
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Flexural Strength	Curing time	Curing temperature			(DIN EN ISO 178)
		+10 °C	+23 °C	+30 °C	
	1 day	–	~29 N/mm <sup>2</sup>	~52 N/mm <sup>2</sup>	
	3 days	~12 N/mm <sup>2</sup>	~48 N/mm <sup>2</sup>	~57 N/mm <sup>2</sup>	
	7 days	~24 N/mm <sup>2</sup>	~50 N/mm <sup>2</sup>	~60 N/mm <sup>2</sup>	
	14 days	~42 N/mm <sup>2</sup>	~56 N/mm <sup>2</sup>	~65 N/mm <sup>2</sup>	

<b>Flexural E-Modulus</b>	~ 3 600 N/mm <sup>2</sup> (14 days at +23 °C)	(DIN EN ISO 178)
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Tensile Strength	Curing time	Curing temperature			(ISO 527)
		+10 °C	+23 °C	+30 °C	
	1 day	–	~16 N/mm <sup>2</sup>	~24 N/mm <sup>2</sup>	
	3 days	–	~25 N/mm <sup>2</sup>	~30 N/mm <sup>2</sup>	
	7 days	~20 N/mm <sup>2</sup>	~32 N/mm <sup>2</sup>	~33 N/mm <sup>2</sup>	
	14 days	~25 N/mm <sup>2</sup>	~33 N/mm <sup>2</sup>	~34 N/mm <sup>2</sup>	

<b>Tensile Modulus of Elasticity</b>	~ 4 000 N/mm <sup>2</sup> (14 days at +23 °C)	(ISO 527)
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<b>Elongation at Break</b>	1.0 ± 0.1 % (14 days at +23 °C)	(ISO 527)
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<b>Shrinkage</b>	Hardens without shrinkage.	
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Tensile Adhesion Strength	Curing time	Substrate	Curing temperature	Adhesion strength	(EN ISO 4624, EN 1542, EN 12188)
7 days	Concrete moist	+10 °C	> 3 N/mm <sup>2</sup> *		
1 day	Steel	+10 °C	~8 N/mm <sup>2</sup>		
3 days	Steel	+10 °C	~12 N/mm <sup>2</sup>		
3 days	Steel	+23 °C	~13 N/mm <sup>2</sup>		
3 days	Steel	+30 °C	~15 N/mm <sup>2</sup>		

\*100% concrete failure

<b>Coefficient of Thermal Expansion</b>	8.2 × 10 <sup>-5</sup> 1/K (Temperature range +23 °C – +60 °C)	(EN 1770)
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Heat Deflection Temperature	Curing time	Curing temperature- HDT		(ISO 75)
		ure		
	7 days	+23 °C	+46 °C	

(thickness 10 mm)

**APPLICATION INFORMATION**

<b>Mixing Ratio</b>	Component A : component B = 2 : 1 by weight or volume
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<b>Consumption</b>	The consumption of Sikadur®-32 Normal is ~ 1.3 kg/m <sup>2</sup> per mm of thickness.
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<b>Layer Thickness</b>	~ 1 mm max in one application. Multiple layers can be used to achieve required final thickness. Wait for each previous layer to harden before applying next layer.		
<b>Sag Flow</b>	On vertical surfaces it is non-sag up to ~ 1 mm thickness.		(EN 1799)
<b>Product Temperature</b>	Sikadur®-32 Normal must be applied at temperatures between +10 °C and +30 °C.		
<b>Ambient Air Temperature</b>	+10 °C min. / +30 °C max.		
<b>Dew Point</b>	Beware of condensation. Substrate temperature during application must be at least 3 °C above dew point.		
<b>Substrate Temperature</b>	+10 °C min. / +30 °C max.		
<b>Pot Life</b>	<b>Temperature</b>	<b>Potlife*</b>	<b>Open time</b>
	+10 °C	~ 145 minutes	–
	+23 °C	~ 55 minutes	~ 120 minutes
	+30 °C	~ 35 minutes	~ 60 minutes
<small>*200 g 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).</small>			

## APPLICATION INSTRUCTIONS

### SUBSTRATE QUALITY

Hardened mortar and concrete must be older than 28 days (depending on any minimal strength requirements).

Verify the substrate strength by testing (concrete, masonry, natural stone).

The substrate surface (all types) must be clean, dry or mat damp (no standing water) and free from contaminants such as dirt, oil, grease, existing surface treatments and coatings etc.

Steel substrates must be de-rusted to a condition similar to Sa 2.5.

The substrate must be sound and all loose or friable particles must be removed.

### SUBSTRATE PREPARATION

#### Concrete, mortar, stone and brick

Concrete and other hardened mineral substrates must be prepared by suitable means such as high pressure water jetting and / or blast cleaning, in order to obtain surfaces that are sound, clean, dry or mat damp (no standing water) and free from any cement laitance, ice, grease, oils, old coatings or other surface treatments. Any loose or friable particles must also be removed to achieve a contaminant free and open textured surface.

#### Steel

Steel surfaces must be cleaned and prepared thoroughly to the acceptable quality standard equivalent to Sa 2.5 i.e. normally by blast cleaning and then removing any dust by vacuum. Avoid dew point conditions.

### MIXING

Pre batched units (A & B Components):

Mix components for at least 3 minutes with a suitable mixing spindle for the pack size. Spindle should be securely attached to a slow speed electric drill (max. 300 rpm). Mix until the material becomes a smooth consistency and a uniform grey colour. Avoid air entrapment at all times to a minimum while mixing. After 1st mix, pour this mix into a clean container and stir again for approximately 1 more minute. Do not part mix the pre batched units. When mixing large quantities of units, mix only the required quantity of units that can be used within their potlife.

### APPLICATION METHOD / TOOLS

Apply the mixed Sikadur®-32 Normal to the prepared surface by brush, roller, spray or with a trowel, and ensure uniform and complete coverage. On hardened concrete substrates mechanically prepared to receive fresh concrete, always apply by brush and work the material well into the substrate.

Place the fresh concrete whilst the Sikadur®-32 Normal layer is still 'tacky'. If the material becomes glossy and loses tackiness, apply a fresh coat with additional Sikadur®-32 Normal and proceed.

### 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 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 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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