

# PRODUCT DATA SHEET

## Sikadur®-32 LP

### DESCRIPTION

Sikadur®-32 LP is a moisture tolerant, structural, two part bonding agent, based on a combination of epoxy resins and special fillers, designed with a longer pot-life or working time for use at higher temperatures, between +20 °C and +40 °C.

### USES

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

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 LP 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 / CERTIFICATES

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

### PRODUCT INFORMATION

|                           |                                                                                                                                                       |                                                   |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| <b>Composition</b>        | Epoxy resin                                                                                                                                           |                                                   |
| <b>Packaging</b>          | 5 kg (A+B)                                                                                                                                            | Pre-batched unit<br>pallets of 450 kg (90 x 5 kg) |
|                           | 1.2 kg (A+B)                                                                                                                                          | Pre-batched unit<br>box of 6 x 1.2 kg             |
| <b>Colour</b>             | Component A: white<br>Component B: dark grey<br>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) |
|----------------------|-------------|-----------------------|-----------------------|-----------------------|-----------------|
|                      |             | +23 °C                | +30 °C                | +40 °C                |                 |
|                      | 1 day       | -                     | ~2 N/mm <sup>2</sup>  | ~30 N/mm <sup>2</sup> |                 |
|                      | 3 days      | ~14 N/mm <sup>2</sup> | ~24 N/mm <sup>2</sup> | ~41 N/mm <sup>2</sup> |                 |
|                      | 7 days      | ~34 N/mm <sup>2</sup> | ~38 N/mm <sup>2</sup> | ~52 N/mm <sup>2</sup> |                 |
|                      | 14 days     | ~39 N/mm <sup>2</sup> | ~43 N/mm <sup>2</sup> | ~56 N/mm <sup>2</sup> |                 |

Compressive strength at 4 % elongation

|                                             |                                               |                 |
|---------------------------------------------|-----------------------------------------------|-----------------|
| <b>Modulus of Elasticity in Compression</b> | ~ 2 100 N/mm <sup>2</sup> (14 days at +23 °C) | (ASTM D 695-95) |
|---------------------------------------------|-----------------------------------------------|-----------------|

| Tensile Strength in Flexure | Curing time | Curing temperature    |                       |                       | (DIN EN ISO 178) |
|-----------------------------|-------------|-----------------------|-----------------------|-----------------------|------------------|
|                             |             | +23 °C                | +30 °C                | +40 °C                |                  |
|                             | 1 day       | -                     | -                     | ~18 N/mm <sup>2</sup> |                  |
|                             | 3 days      | ~21 N/mm <sup>2</sup> | ~20 N/mm <sup>2</sup> | ~30 N/mm <sup>2</sup> |                  |
|                             | 7 days      | ~24 N/mm <sup>2</sup> | ~28 N/mm <sup>2</sup> | ~36 N/mm <sup>2</sup> |                  |
|                             | 14 days     | ~38 N/mm <sup>2</sup> | ~38 N/mm <sup>2</sup> | ~42 N/mm <sup>2</sup> |                  |

|                                         |                                               |                  |
|-----------------------------------------|-----------------------------------------------|------------------|
| <b>Modulus of Elasticity in Flexure</b> | ~ 2 600 N/mm <sup>2</sup> (14 days at +23 °C) | (DIN EN ISO 178) |
|-----------------------------------------|-----------------------------------------------|------------------|

| Tensile Strength | Curing time | Curing temperature    |                       |                       | (ISO 527) |
|------------------|-------------|-----------------------|-----------------------|-----------------------|-----------|
|                  |             | +23 °C                | +30 °C                | +40 °C                |           |
|                  | 1 day       | -                     | -                     | ~11 N/mm <sup>2</sup> |           |
|                  | 3 days      | ~13 N/mm <sup>2</sup> | ~16 N/mm <sup>2</sup> | ~18 N/mm <sup>2</sup> |           |
|                  | 7 days      | ~20 N/mm <sup>2</sup> | ~18 N/mm <sup>2</sup> | ~22 N/mm <sup>2</sup> |           |
|                  | 14 days     | ~22 N/mm <sup>2</sup> | ~24 N/mm <sup>2</sup> | ~25 N/mm <sup>2</sup> |           |

|                                         |                                               |           |
|-----------------------------------------|-----------------------------------------------|-----------|
| <b>Modulus of Elasticity in Tension</b> | ~ 2 750 N/mm <sup>2</sup> (14 days at +23 °C) | (ISO 527) |
|-----------------------------------------|-----------------------------------------------|-----------|

|                            |                                 |           |
|----------------------------|---------------------------------|-----------|
| <b>Elongation at Break</b> | 1.0 ± 0.1 % (14 days at +23 °C) | (ISO 527) |
|----------------------------|---------------------------------|-----------|

| Tensile Adhesion Strength | Curing time    | Substrate | Curing temperature      | Adhesion strength | (EN ISO 4624, EN 1542, EN 12188) |
|---------------------------|----------------|-----------|-------------------------|-------------------|----------------------------------|
|                           |                |           |                         |                   |                                  |
| 7 days                    | Concrete moist | +23 °C    | > 3 N/mm <sup>2</sup> * |                   |                                  |
| 1 day                     | Steel          | +23 °C    | ~8 N/mm <sup>2</sup>    |                   |                                  |
| 3 days                    | Steel          | +23 °C    | ~12 N/mm <sup>2</sup>   |                   |                                  |
| 3 days                    | Steel          | +30 °C    | ~13 N/mm <sup>2</sup>   |                   |                                  |
| 3 days                    | Steel          | +40 °C    | ~15 N/mm <sup>2</sup>   |                   |                                  |

\*100% concrete failure

|                  |                            |
|------------------|----------------------------|
| <b>Shrinkage</b> | Hardens without shrinkage. |
|------------------|----------------------------|

|                                         |                                                           |           |
|-----------------------------------------|-----------------------------------------------------------|-----------|
| <b>Coefficient of Thermal Expansion</b> | 11.4 × 10 <sup>-5</sup> 1/K (Temp. range +23 °C – +60 °C) | (EN 1770) |
|-----------------------------------------|-----------------------------------------------------------|-----------|

| Heat Deflection Temperature | Curing time | Curing temperature | HDT | (ISO 75) |
|-----------------------------|-------------|--------------------|-----|----------|
|                             |             |                    |     |          |

(thickness 10 mm)

**APPLICATION INFORMATION**

|                     |                                                       |
|---------------------|-------------------------------------------------------|
| <b>Mixing Ratio</b> | Component A : component B = 2 : 1 by weight or volume |
|---------------------|-------------------------------------------------------|

|                    |                                                                                   |
|--------------------|-----------------------------------------------------------------------------------|
| <b>Consumption</b> | The consumption of Sikadur®-32 LP is ~ 1.3 kg/m <sup>2</sup> per mm of thickness. |
|--------------------|-----------------------------------------------------------------------------------|

|                        |             |
|------------------------|-------------|
| <b>Layer Thickness</b> | ~ 1 mm max. |
|------------------------|-------------|

|                 |                                                            |           |
|-----------------|------------------------------------------------------------|-----------|
| <b>Sag Flow</b> | On vertical surfaces it is non-sag up to ~ 1 mm thickness. | (EN 1799) |
|-----------------|------------------------------------------------------------|-----------|

|                                   |                                                                                                            |                 |                                |
|-----------------------------------|------------------------------------------------------------------------------------------------------------|-----------------|--------------------------------|
| <b>Product Temperature</b>        | Sikadur®-32 LP must be applied at temperatures between +20 °C and +40 °C                                   |                 |                                |
| <b>Ambient Air Temperature</b>    | +20 °C min. / +40 °C max.                                                                                  |                 |                                |
| <b>Dew Point</b>                  | Beware of condensation.<br>Substrate temperature during application must be at least 3 °C above dew point. |                 |                                |
| <b>Substrate Temperature</b>      | +20 °C min. / +40 °C max.                                                                                  |                 |                                |
| <b>Substrate Moisture Content</b> | Substrate must be dry or mat damp (no standing water)<br>Brush the material well into the substrate        |                 |                                |
| <b>Pot Life</b>                   | <b>Temperature</b>                                                                                         | <b>Potlife*</b> | <b>Open time</b> (EN ISO 9514) |
|                                   | +20 °C                                                                                                     | ~ 145 minutes   | –                              |
|                                   | +30 °C                                                                                                     | ~ 55 minutes    | ~ 240 minutes                  |
|                                   | +40 °C                                                                                                     | ~ 35 minutes    | ~ 120 minutes                  |

\*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).

## 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 surface must be cleaned and prepared thoroughly to an 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:

Mix components 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.

### APPLICATION METHOD / TOOLS

Apply the mixed Sikadur®-32 LP 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 LP layer is still 'tacky'. If the material becomes glossy and loses tackiness, apply a fresh coat with additional Sikadur®-32 LP and proceed.

### CLEANING OF EQUIPMENT

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

## IMPORTANT CONSIDERATIONS

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.

## BASIS OF PRODUCT DATA

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

## 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.

## 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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