


**Product Data Sheet**  
Edition 11/09/2007  
Identification no:  
02 04 01 02 001 0 000017  
SikaWrap®-300 CZ/60

# SikaWrap® -300 CZ/60

## Stitched, Carbon Fiber Fabric for Structural Strengthening

<b>Product Description</b>	SikaWrap®-300 CZ/60 is a unidirectional, stitched, carbon fiber fabric (sheet) for the dry and wet application process.	
----------------------------	---	---

<b>Uses</b>	<p>Strengthening of reinforced concrete structures, brickwork and timber to increase flexural and shear load capacity. Reasons:</p> <ul style="list-style-type: none"> <li>■ Improved seismic performance of masonry walls</li> <li>■ Substitute missing / corroded reinforcement</li> <li>■ Strength and ductility of columns</li> <li>■ Increasing loading capacity of structural elements</li> <li>■ Changes of building utilisation</li> <li>■ Structural design construction defects</li> <li>■ Seismic movement</li> <li>■ Improved serviceability</li> <li>■ Structural upgrading to comply with changed standards</li> </ul>
-------------	--

<b>Characteristics / Advantages</b>	<ul style="list-style-type: none"> <li>■ Excellent fiber alignment (no deviation of load carrying fibers)</li> <li>■ Multifunctional use for every kind of strengthening requirement</li> <li>■ Flexibility of surface geometry (Beams, columns, chimneys, piles, walls, silos)</li> <li>■ Low density for minimal additional weight</li> <li>■ Economical compared to traditional techniques</li> <li>■ Excellent cost performance</li> </ul>
-------------------------------------	--

### Product Data

<b>Form</b>			
<b>Fiber Type</b>	Mid strength carbon fiber.		
<b>Fabric Construction</b>	0° Warp:	black carbon fibers	309 g/m <sup>2</sup> (min.–max.: 294-324g/m <sup>2</sup> )
	90°:	E-Glass Stitch	9.4 g/m <sup>2</sup>
	Stitch Yarn:	Polyester	6.3 g/m <sup>2</sup>
	Binder:	EP Powder	7.5 g/m <sup>2</sup>

<b>Packaging</b>		
	Fabric length / roll	Fabric width
2 rolls in cardboard box	100 m	300 mm



---

## Storage

---

**Storage Conditions / Shelf Life** 24 months from date of production if stored properly in undamaged original sealed packaging in dry conditions at temperatures between +5°C and +35°C. Protect from direct sunlight.

---

## Technical Data

---

**Areal Weight** 309 g/m<sup>2</sup> ± 15 g/m<sup>2</sup>

---

**Fabric Design Thickness** 0.171 mm (based on fiber content)

---

**Fiber Density** 1.81 g/cm<sup>3</sup>

---

## Mechanical / Physical Properties

---

**Dry Fiber Properties** Tensile strength:  
3'800 N/mm<sup>2</sup> (nominal).  
  
Tensile E-modulus:  
242'000 N/mm<sup>2</sup> (nominal).  
  
Elongation at break:  
1.55 % (nominal).

---

**Laminate Properties** Laminate thickness:  
1.0 mm per layer (impregnated with Sikadur<sup>®</sup>-330)  
  
Ultimate load:  
550 kN/m width per layer (at typical laminate thickness of 1.0 mm)  
  
Tensile E-modulus:  
40 kN/mm<sup>2</sup> (based on typical laminate thickness of 1.0 mm)  
  
Note:  
The above values are typical and indicative only. The achievable laminate properties obtained from tensile test are dependant on the impregnating/ laminating resin used and the type of tensile testing procedure.  
Apply material reduction factors according to the relevant design standard.

---

**Design** Design strain:  
Max. 0.75% (this value is dependent on the type of loading and must be adapted according to the relevant local design standards)

Tensile strength: (theoretical tensile strength for the design):

- at elongation 0.4%: 135 kN/m width (= 40 kN / 30 cm)
  - at elongation 0.6%: 200 kN/m width (= 60 kN / 30 cm)
- 

## System Information

---

**System Structure** Concrete primer: Sikadur<sup>®</sup>-330 or Sikadur<sup>®</sup>-300 with Sikadur<sup>®</sup>-513  
Impregnating/laminating resin: Sikadur<sup>®</sup>-330 / Sikadur<sup>®</sup>-300  
Structural strengthening fabric: SikaWrap<sup>®</sup>-300 CZ/60  
For detailed resin properties, fabric application details and general information, refer to the respective Product Data Sheet.

---

---

## Application Details

---

### Consumption

#### *Dry Application:*

- Impregnating of the first layer incl. primer (depending on the roughness of the substrate): 1.0 - 1.5 kg/m<sup>2</sup> (Sikadur<sup>®</sup>-330)
- Impregnating of the following layers: ~ 0.8 kg/m<sup>2</sup> (Sikadur<sup>®</sup>-330)

#### *Wet Application:*

Primer on prepared substrate (depending on the roughness):

- Smooth surfaces: ~ 0.5 kg/m<sup>2</sup> (Sikadur<sup>®</sup>-300 / Sikadur<sup>®</sup>-301 or Sikadur<sup>®</sup>-330)
- Rough surfaces: ~ 0.5 - 1.0 kg/m<sup>2</sup> (Sikadur<sup>®</sup>-330 / Sikadur<sup>®</sup>-301 or Sikadur<sup>®</sup>-300 mixed with max. 5% thixotropic agent Sikadur<sup>®</sup>-513)

Impregnation resin for each layer (manually):  
~ 0.7 kg/m<sup>2</sup> (Sikadur<sup>®</sup>-301)

Impregnation resin for each layer (with saturator):  
~ 0.6 kg/m<sup>2</sup> (Sikadur<sup>®</sup>-300)

---

### Substrate Quality

Specific requirements:

Minimum substrate tensile strength: 1.0 N/mm<sup>2</sup> or as specified in the strengthening design codes.

---

### Substrate Preparation

Refer to Sikadur<sup>®</sup>-330 / -300 or -301 Product Data Sheet.

---

## Application Instructions

---

### Application Method / Tools

The fabric can be cut with special scissors or razor knife. Never fold the fabric!

Refer to Sikadur<sup>®</sup>-330 / -300 or -301 Product Data Sheet for impregnating / laminating procedure.

---

### Notes on Application / Limitations

Minimum radius required for application around corners: > 10 mm.  
Grinding edges or building up with Sikadur<sup>®</sup> mortars may be necessary.

In fiber direction, overlapping of the fabric must be at least 100 mm depending on SikaWrap<sup>®</sup> type or as specified in the strengthening design.

Overlapping length in the weft direction 100 mm or depending on the strengthening design specification. Overlaps of additional layers should be distributed over the column circumference.

For side-by-side application, no overlapping length in the weft direction is required. Overlaps of additional layers should be distributed over the column circumference.

The strengthening application is inherently structural and great care should be taken when choosing suitably experienced contractors.

The SikaWrap<sup>®</sup>-300 CZ/60 fabric is coated to ensure maximum bond and durability with the Sikadur<sup>®</sup> impregnating/laminating resins. To maintain system compatibility do not interchange system components.

The SikaWrap<sup>®</sup>-300 CZ/60 may be/should be coated with a cementitious overlay or coatings for aesthetic and/or protective purposes. Selection will be dependent on exposure requirements. For basic UV protection use Sikagard<sup>®</sup>-550W Elastic, Sikagard<sup>®</sup> ElastoColor-675W or Sikagard<sup>®</sup>-680S.

---

## 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.

---

---

## 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.

---

## 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.

---



Sika India Pvt. Ltd.  
Commercial Complex II  
620, Diamond Harbour Road  
Kolkata, 700 034, India

Phone +91 33 2447 2448/2449  
Telefax +91 33 2468 8688/2665  
[www.sika.in](http://www.sika.in)  
[info@in.sika.com](mailto:info@in.sika.com)