

# Sika Wrap<sup>®</sup> (Dry)

## Carbon fibre fabric strengthening system

Construction

<b>Description</b>	Sika Wrap (Dry) is an externally applied carbon fibre strengthening system for reinforced concrete, masonry or timber. It consists of two components, Sikadur-330 epoxy based impregnating resin and Sika Wrap-230C carbon fibre fabric.
<b>Uses</b>	<p>Sika Wrap (Dry) can be used to strengthen reinforced concrete structures, brickwork and timber for flexural and shear loads due to:</p> <ul style="list-style-type: none"> <li>• Loading increases.</li> <li>• Damage to structural parts.</li> <li>• Changes in structural system.</li> <li>• Design or construction defects.</li> <li>• Earthquake/seismic requirements.</li> </ul> <p>Sika Wrap (Dry) can also be used in reprofiling and confinement work on columns, beams and walls as part of a repair and restoration system.</p>
<b>Advantages</b>	<ul style="list-style-type: none"> <li>• Multifunctional, can be used in bending and in shear.</li> <li>• Low in weight.</li> <li>• Available in any length.</li> <li>• Flexible, fits around any given structural element.</li> <li>• Excellent chemical and weathering resistance.</li> <li>• Low overall thickness.</li> <li>• Economic application.</li> <li>• Easy to use solvent free impregnating resin.</li> </ul>
<b>Storage and Shelf Life</b>	When not exposed to direct sunlight, Sika Wrap-230C has unlimited shelf life. Sikadur-330, when stored in the original sealed containers within the temperature range of +5°C to +25°C, this product will keep for a minimum of eighteen (18) months.
<b>Instructions for Use</b>	
<b>Surface Preparation</b>	<p>The substrate should be prepared by sandblasting or grinding. Any dust, loose particles and laitance should be removed using an industrial vacuum cleaner. The substrate should be free of grease and oil and have a maximum moisture content of 4%.</p> <p>The surface to be bonded must be level. Steps and formwork marks should be no greater than 0.5mm.</p> <p>Structural corners should be rounded to a radius of at least 10mm. This can be achieved using a diamond grinding disk.</p>
<b>Mixing</b>	Sikadur-330 is supplied in factory proportioned units comprising the correct quantities of Part A and Part B. Thoroughly stir both components separately using a slow running drill/stirrer with a helical paste mixer (max. speed 600rpm).
<b>Application</b>	<p>If any necessary patching work needs to be done on the surface, this must be done with Sikadur-41, on the day preceding the actual bonding operations.</p> <p>Application of the Sika Wrap (Dry) system can be broken up into 4 steps.</p> <ol style="list-style-type: none"> <li>1. Apply the well mixed Sikadur-330 to the prepared substrate by lamb skin roller. This seals the substrate and promotes adhesion.</li> <li>2. Place Sika Wrap-230C onto the resin coating in the required direction. Carefully work the fabric into the resin with a plastic roller until the resin is squeezed out between the rovings.</li> <li>3. Application of more than one layer of fabric – apply more resin, as in step 1. This must be done within 1 hour (at 20°C) after the application of the previous layer. If this is not possible, a waiting time of at least 12 hours must be observed before the next layer is applied. Apply the next layer as in step 2.</li> <li>4. The system can be coated using Sikadur or Sikagard coating for protective or aesthetic purposes.</li> </ol>

<b>Cleaning</b>	Clean all tools immediately after use with Sika Colma Cleaner. Wash hands and skin thoroughly in warm soapy water. Cured material can only be removed mechanically.
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### Technical Data (Typical)

Sika Wrap-230C	Carbon Fibre Fabric
<b>Form</b>	High strength carbon fibres
<b>Colour</b>	Black
<b>Weight</b>	225g/m <sup>2</sup>
<b>Thickness</b>	0.13mm (based on total area of carbon fibres)
<b>Tensile strength</b>	3500 MPa
<b>Tensile Elastic Modulus</b>	230 000 MPa
<b>Elongation at Break</b>	1.5%
<b>Packaging</b>	Supplied in two widths 300mm and 600mm Fabric length ≥ 50m Supplied in rolls or precut.
Sikadur-330	Impregnation
<b>Appearance</b>	Part A: White Part B: Grey Part A + B: Light Grey when mixed
<b>Mix Ratio</b>	A : B = 4 : 1 by weight
<b>Density</b>	1.31 kg / litre (A+B)
<b>Pot Life</b>	90 minutes (at 15°C) 30 minutes (at 35°C)
<b>Open Time</b>	30 minutes (at 35°C)
<b>Viscosity</b>	Paste like
<b>Adhesive Strength</b>	>1.5 MPa (concrete failure)
<b>Tensile Strength</b>	30 MPa (cured 7 days at 23°C)
<b>Flexural E-Modulus</b>	3800 MPa (cured 7 days at 23°C)
<b>Application Temperature</b>	5°C to 35°C (ambient and substrate)
<b>Packaging</b>	5 kg tins Part A = 4 kg Part B = 1 kg
<b>Consumption Rates</b>	<ul style="list-style-type: none"> <li>Applying Sikadur-330 to prepared substrate 0.7 to 1.2kg/m<sup>2</sup>.</li> <li>Applying Sikadur-330 to applied fabric 0.5kg/m<sup>2</sup>.</li> </ul>
<b>Design</b>	<ul style="list-style-type: none"> <li>Design calculations must be made and certified by an independent consulting structural engineer.</li> <li>For design details refer to Sika's Structural Strengthening Engineering Guidelines.</li> </ul>
<b>Important Notes</b>	<ul style="list-style-type: none"> <li>If required on site, the fabric can be cut by sharp scissors or knife. Never fold the material.</li> <li>When overlapping, the fabric must extend at least 100mm over the applied fabric (in the fibre direction).</li> <li>Overlapping is not necessary when placing several fabric webs side by side.</li> <li>At low temperatures and/or high humidity, the surface of the epoxy and the fabric may become sticky. Before a further coat of adhesive or layer of fabric is applied, the stickiness must be removed with a water soaked sponge, followed by rinsing with plenty of water.</li> <li>Prevent exposure of the carbon fabric to constant U.V. light.</li> <li>Ambient temperature during application must be at least 3°C above dew point.</li> <li>Constant exposure to service temperatures &gt;50°C may affect the performance of the product.</li> </ul>

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**Handling Precautions**

- Avoid contact with the skin, eyes and avoid breathing it's vapour.
- Wear protective gloves when mixing or using.
- If poisoning occurs, contact a doctor or the Poisons Information Centre.
- If swallowed, do NOT induce vomiting. Give a glass of water.
- If skin contact occurs, remove contaminated clothing and wash skin thoroughly.
- If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

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**Important Notification**

The information, and, in particular, the recommendations relating to the application and end-use of Sika's 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 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 proprietary rights of third parties must be observed. All orders are accepted subject of our terms and conditions of sale. Users should always refer to the most recent issue of the Technical Data Sheet for the product concerned, copies of which will be supplied on request.

PLEASE CONSULT OUR TECHNICAL DEPARTMENT FOR FURTHER INFORMATION.

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