

Seismic Retrofitting Products

Sika Qualcrete: Introduces *Sika Wrap* and *Carbo Dur* plates

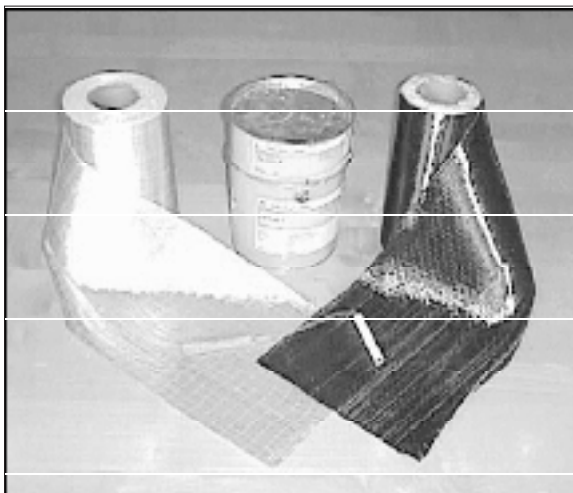
The fibre reinforced polymers which were once referred as “space age” materials have found their way into the field of civil engineering and bonding has become a tool of reinforced concrete repair industry for the past two decades and is increasingly finding use in seismic strengthening.

Sika Qualcrete Pvt Ltd offers several products which can be used in seismic retrofitting such as *Sikawrap Hex Fabrics* consisting of glass and carbon fabrics. *Sika Wrap 230 C* (dry application) has a tensile strength of 3500 N/mm^2 with a thickness of 0.13 mm and *Sika Wrap 430 G* has tensile strength of 2250 N/mm^2 with a thickness of 0.17 mm. Its surface preparation consists of sandblasting, grinding and finally filling the imperfections. A primer

is then applied on the substrate. The corners of the structural elements are rounded to 10 mm minimum. The surface is smoothed and levelled.

While applying the fabric it is important to ensure proper fibre orientation, eliminate air pockets, adhere fabric to substrate with hands and then smoothed out with squeegee. Thus, a smooth and neat finish is applied.

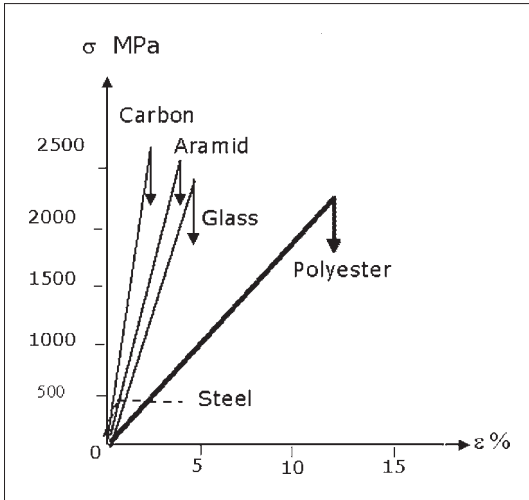
Proper surface preparation is highly essential for FRP application



Composite fabrics — (left) glass fabric, (centre) Sikadur epoxy, (right) carbon fabric



The fibre being carefully wrapped around a column



Mechanical properties of FRP

Mechanical properties of Carbo Dur plates

	<i>CarboDur S</i>	<i>CarboDur M</i>	<i>CarboDur H</i>
Elastic modulus (logitudinal), N/mm ²	165,000	210,000	300,000
Tensile strength, N/mm ²	>2,800	>2,400	>1,300
Strain, percent	>1.7	>1.2	>0.45

Sika Carbo Dur plates

Sika Carbo Dur plates are of types S, M and H. The width of plates varies from 50 to 150 mm and thickness from 1.2 to 1.4 mm. The tensile strength varies from 2800 N/mm² to 1300 N/mm². They increase the flexural capacity of beams and slabs and ductility, etc.

These materials are used as an external reinforcement for many structural application such as:

- passive confinement to improve the load carrying capacity of compression members.
- to upgrade the structures as per new codal provisions
- for crack control and cracks stitching
- For strengthening around new openings in slab
- To strengthen the structure for increased live load considerations.

Sika plays an active role in providing design guidelines and technical assistance (for example, mechanical properties, tests, data, certifications) and in recommending and repair approach.

For more details, please contact:

*General Manager
Sika Qualcrete Pvt Ltd
111, Gauri, Plot No. 19
Opp Indian Bank,
Sector-11, CBD Belapur,
Navi Mumbai 400 614
Tel: (022) 7580686/0690, 757 2181
Fax: (022) 7580679
E-mail: sikamumbai@rediffmail.com
Website: www.sikaqualcrete.com*



Indian applications — Kamal Mills, Parel, Mumbai



Indian applications — J.K. House, Breach-Candy, Mumbai

Some of the main equipment and products used for seismic retrofitting have been presented here. Items reported in this feature are based on information supplied by manufacturers and developers. The description of these items do not represent endorsement by this Journal or by The Associated Cement Companies Limited.