

Structural Strengthening with Sika® CarboDur® Composites



Strengthening System Requirements

Structural Requirements

- ▲ Static loading
- ▲ Dynamic loading
- ▲ Crack bridging
- ▲ Creep
- ▲ Durability

When the working load is applied, the plates absorb the tensile forces proportionally with the steel reinforcement. An unused load-bearing reserve must be available in the concrete compression zone of the existing structure. The adhesive layer must be capable of levelling out any stress peaks. The better the levelling, the greater is the proportion of load-transmitting adhesive surface.

Requirements under Environmental Influences

- ▲ Temperature
- ▲ Moisture
- ▲ Frost
- ▲ Freeze/thaw
- ▲ Corrosion
- ▲ Ultra violet radiation

Corrosion resistance is an important factor in long life. The Sika CarboDur plates have high chemical resistance to the pollutants normally occurring on structures. In particular, there is no risk of underrusting.

Sika® CarboDur® Plates

Advantages

- ▲ Defined performance properties
- ▲ Range of dimensions – optimum design
- ▲ Choice of modulus
- ▲ Factory prepared for use
- ▲ Low temperature application with heated plates
- ▲ Elevated temperature in service grade
- ▲ Can be prestressed
- ▲ Very high strength



Strengthening of the reinforced concrete slab with the Sika® CarboDur® Plate System (Sikadur-30 adhesive and Sika® CarboDur® plates)



SikaWrap® Fabrics

(Glass, Carbon, Hybrid) Wet/Dry Application

Advantages

- ▲ Shear strengthening
- ▲ Impact and blast resistance
- ▲ Very flexible for details
- ▲ Easy on circular and square sections
- ▲ High strength
- ▲ Carbon fiber, glass and hybrid fabrics available



Application of SikaWrap® Fabric System for impact resistance on a bridge column



Sika® CarboDur® Composite Strengthening Systems.
A Global Alliance between Sika® and Hexcel®.

