

REINFORCED CONCRETE BEAMS AND SLABS



PROTECTION FOR CARBON FIBRE BONDED BEAMS

6, bis rue Jacques Kellner
95150 Taverny

+33(0)1 30 26 37 00
email: com@geostaff.fr

www.geostaff.fr/en



FIRE RESISTANT BOARDS GEOTEC®S

Thanks to the tests carried out in the Efectis laboratory, Geostaff offers validated solutions in GEOTEC®S 30/45 mm to protect carbon reinforcements installed under concrete slabs and beams according to the critical temperatures given by the manufacturer and fire performances required.



GEOTEC®S fire resistant boards are made of GRG (Glass Reinforced Gypsum). GRG is a stronger glass-fibre reinforced gypsum which is used for our fireproof elements and guarantees the excellent resistance of our boards.

The boards are tested and classified according to current European standard and subjected to ecological tests for environmental and safety standards.



Scan this QR code to find all the technical details and installation solutions on site.



SYSTEM

REINFORCED CONCRETE BEAMS AND SLABS

The fire stability of reinforced concrete structures and supports is achieved by limiting the temperature rise of the steel and reinforcement embedded in the concrete.

When existing load-bearing structures require reinforcements (in the case of a change of condition, earthquake containment, rehabilitation, etc.), one of the solutions consists of bonding carbon fibre reinforced laminates with an epoxy resin-based adhesive.

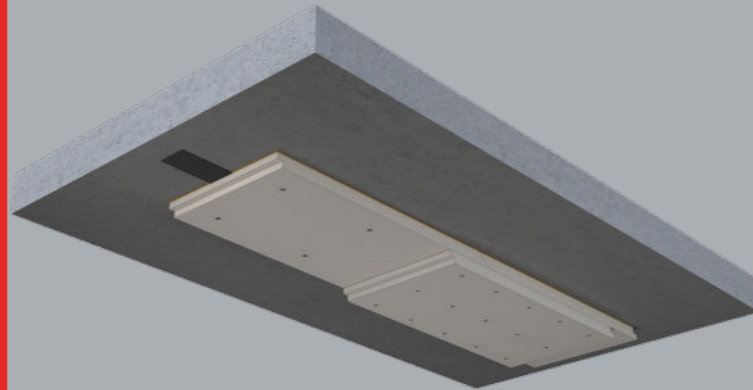
In order to ensure that these carbon reinforcements hold and function properly in the event of fire, the solution is to guarantee the temperature of the adhesive used.

This maximum temperature, which varies between 45 and 80°C, is indicated in the manufacturers' technical notices, to which reference should be made.

Following the performance of fire resistance tests in the Efectis laboratory, GEOSTAFF® offers, through Laboratory Assessment No. EFR-18-001644, validated solutions in GEOTEC® to protect carbon reinforcements installed under concrete slabs and beams according to the fire performance required and critical temperature given by the manufacturer.

PV fire reference
Laboratory Assessment
EFR-18-001644

PROTECTION UNDER CONCRETE FLOOR SLAB



In this configuration, a GEOCOL® adhesive is applied to the periphery of the carbon reinforcement.

A first layer of GEOTEC®S fire protection boards is fixed to the concrete with concrete screws (centre distance : 400 mm in both directions).

The second layer of boards protection is fixed to the first with wood screws at staggered joints (centre distance : 200 mm in both directions).

If a third layer of protection is required, it should be fixed to the second layer with wood screws. devra être fixée sur la seconde au moyen de vis à bois (centres : 200 mm in both directions).

PROTECTION IN A WALL CORNER

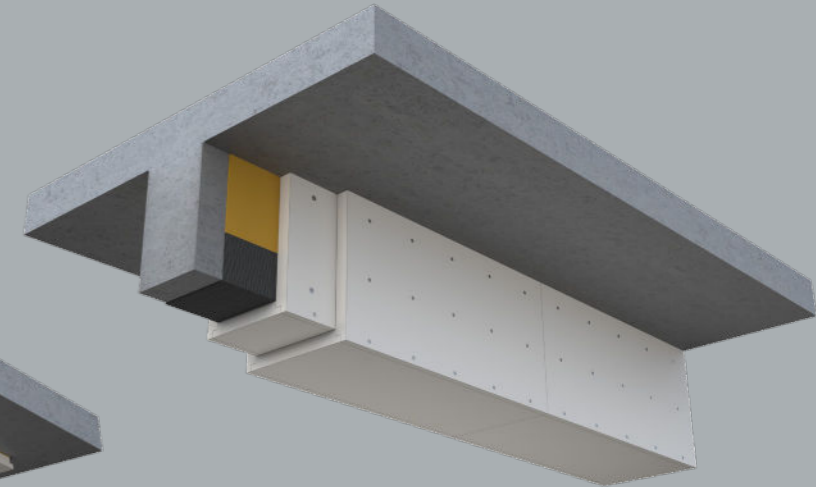


In this particular case, the protection of the structural reinforcement elements must be implemented in the same way as under a concrete slab: same thickness, same overhangs and same fixing distances.



Scan this QR code to
find all the technical
details and installation
solutions on site.

PROTECTION UNDER THE BEAM



In this configuration, the beam is clad (in its entirety) on all three sides. The carbon reinforcement is glued around the edges with GEOCOL® adhesive.

The first layer of GEOTEC® sheeting is fixed to the two vertical flanges with concrete screws (centre distance : 400 mm) and to the bottom of the beam with wood screws (centre distance: 200m).

The second layer of protection is fixed at staggered joints to the first by means of wood screws (200 mm centres in both directions).

If a third layer of protection is required, it should be fixed to the second layer with wood screws (centres : 200 mm in both directions).