Foreva RFC

- High strength reinforcement
- Corrosion free material
- Non visible, embedded in the substrate
- Factory made composite controlled in geometry and strength

Strengthening solution by bonded composite - Carbon fibres pultruded rod

Foreva® RFC is the Freyssinet solution for structural strengthening by bonded composite. The solution utilizes a pultruded carbon fibre rod anchored with an epoxy adhesive.

Advantages

- **Fast loading of the strengthening:** due to its high modulus of elasticity, the bonded composite immediately drains a significant fraction of the stresses introduced in the section when the strengthened structure is loaded.
- **Fast installation:** impregnated in the factory, the rod is simply anchored by an adhesive.
- **No reduction in the clearance:** valuable for installations such as car parks.
- **No added weight.**
- **Fire, shock and UV resistances:** the rod is protected by concrete cover.

Fields of application

The **Foreva® RFC** solution strengthens slabs under flexure, beams under bending and shear, and any elements in tension.

Foreva® RFC is suitable for standard or industrial buildings, bridges and any kind of concrete structure with elements subject to tensile loads. It can also be used on wood, metal and masonry structures.

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Foreva RFC

Principle

The **Foreva® RFC** solution is based on the use of composite rods as reinforcing bars. Rods are fabricated by pultrusion of carbon fibres impregnated by an epoxy resin.

Two common arrangements:

- The rod is inserted in a groove in the concrete cover and is then embedded in an epoxy resin acting as an adhesive to bond the reinforcement to the structure.
- The rod is coated by a resin and sanded with calibrated grading sand. After resin polymerization, the rod is inserted into a drilled hole or a groove in the concrete cover. It is then embedded in a cementitious mortar which ensures proper bonding of the reinforcement to the structure.

The resulting composite becomes loaded as soon as the strengthened element begins to deflect.

Under permanent deformation of the strengthened element the durability of the resisting effort generated by the composite is ensured by its excellent resistance to creep effects.

Expertise

Design rules associated with **Foreva® RFC** are available from the Freyssinet technical department.

Products

The **Foreva® RFC** solution uses the composite Foreva® RFC 6/8/10/12 and 20 made of specific pultruded rods and adhesion resin.
Cement mortar is typically Foreva® M110 and M140.

Specialised teams

The **Foreva® RFC** solution is implemented by specialised Freyssinet teams.

If necessary, the load on the structure is decreased and cracks are injected.

Once surface integrity has been checked, grooves or holes are made and the rod is embedded in controlled conditions of air hygrometry and temperature.

Foreva® Solutions
Extending life span of structures

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