

Compact Reinforced Composite (CRC)

Description

Meta Fields

Project Completion Year : 2003

Project Starting Year : 1993

Budget : 0.00

Key Words :

Compact Reinforced Composite, CRC, fibre-reinforced high-performance concrete

Abstract :

CRC is the designation for a special type of Fibre Reinforced High Performance Concrete with high strength (150-400 MPa) developed by Aalborg Portland A/S and now marketed and sold by CRC Technology. Because of a large content of steel fibres the matrix of CRC is very ductile and that makes it possible to utilise rebars much more effectively without having large cracks under service conditions.

The size of the fibres and the largest grains of the matrix dictate the distance between reinforcing bars and the cover layer to the reinforcement, both of which have to be optimised in the slender structures, which can be produced with CRC. This is the reason for typically using a mortar composition for CRC and for using short fibres. Often a cover layer of 10-15 mm and a similar distance between individual bars are used.

With the high fibre contents, CRC is especially suitable for pre-cast applications, but in-situ cast concrete with 6% by volume of fibres has also been produced - for joints between slabs made in conventional concrete - using a poker vibrator for compaction. For these applications a premix called CRC JointCast is usually supplied.

CRC has been the subject of a number of research projects investigating mechanical properties as well as durability and fire resistance. This information is necessary in order to be able to use CRC for structural applications, as this type of material is not covered in existing standards and codes of practice.

Subject : Alternatives

Group : Ultra-High Performance Concrete (UHPC)

Category : Completed Projects