

FOSROC ANNUAL APPLICATORS MEET VADORA, 20TH SEPTEMBER 2013

Theme : Latest Design, Materials and Execution of Repairs and Retrofitting of Distressed Transportation Infrastructures

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Abstract:

FOSROC manufactures a large number of products for the use of the construction industry. For the theme under discussion it is proposed to give application examples of traditional methods of repairs and retrofitting of concrete structures as well as those that have come into use in recent times.

Traditional methods include remedial measures using pre packaged non shrink high strength cementitious mortars and micro concrete of the RENDROC and CONBEXTRA family.

Epoxy injection under pressure into thin cracks as low as 0.25mm can be successfully carried out by the NITOFIL family of products which have as low viscosity as 150cps. Epoxy concretes of the EXPOCRETE can be advantageously used combining fine sand and coarse aggregates (10mm down) when large thickness have to be built.

Recent methods include application of Fibre reinforcement polymer (FRP) systems of the NITOWRAP family. These can be in the form of textile fibre systems that give strength in one or both directions or in the form of pultruded carbon fibre plates

Fibre- reinforcement polymer (FRP) systems for strengthening concrete structures are an alternative to traditional strengthening techniques, such as steel plate bonding, section enlargement, and external post-tensioning. FRP systems offer advantages over traditional strengthening techniques: they are lightweight, relatively easy to install are noncorrosive and of very high strength. They are truly non-invasive as they are applied on the surface of concrete only. They are factory made products where the quality can be ensured with high reliability.

FRP system applications are still in their infancy and the range of products rather limited. There are very few design codes (e.g. ACI 440.2R-08) though specialist literature is available in abundance.

The future developments are likely to take place both in traditional materials and method as well as in recently developed ones because both have a place in remedial technologies. Often they are used to supplement each other to get the most efficient remedial scheme.