

Issues Related to the FRP Repair of Corroded Prestressed Piles

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Abstract

The poor durability of conventional repairs has led to increased interest in the application of FRP for repairing corroded concrete structures. Several state agencies in Canada and US have completed demonstration studies to evaluate the application of FRP for repairing columns that had been corroded as a result of exposure to salt water runoff from faulty expansion joints in bridge decks or salt spray from passing vehicular traffic. In most cases, the performance of the FRP repairs was found to be satisfactory.

Very recently, the Florida Department of Transportation funded studies to explore the feasibility of using FRP for repairing corrosion damaged prestressed piles driven in tidal waters. The conditions for carrying out FRP repair and monitoring their performance in half-submerged elements pose obvious problems that are exacerbated by their non-circular cross-section. This paper discusses some of these problems and their resolution with reference to recently completed laboratory studies and field implementation.