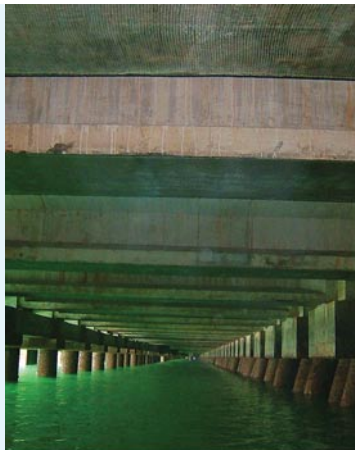


PROJECT BRIEF

Repair and Corrosion Protection of Marine Jetty with the Tyfo® Fibrwrap® Composite System



Jurong, Singapore  
April 2004



Steel corrosion and spalling of concrete was found at the soffit of precast concrete beams at this newly constructed marine jetty in Jurong, Singapore, during routine maintenance inspection. The cause of the problem was found to be lack of sufficient concrete cover to the rebars, and therefore the question of durability of the structure under a marine environment arose. The Tyfo® Fibrwrap® Composite Systems was the quickest and most economical solution to solve the problem given the difficult work environment.

The patented TYFO® Fibrwrap® Composite System uses aerospace technology and materials, i.e. carbon/glass/aramid fibres and epoxy composites and works on the concept of wrapping structural members such as columns, beams, slabs and walls to enhance ductility and load carrying capacity of the members. An added advantage of the system is its ability to form a water-proof barrier between the corrosive elements found in the marine environment and concrete/steel, providing further durability and corrosion resistance to the structure in places where the system has been applied.

Works at the jetty were carried out in restricted working hours and tidal conditions, limiting the period of access to site. A floating barge under the jetty served as a working platform. Under these stringent working conditions, a total of 260 beams were retrofitted with the TYFO® Fibrwrap® Composite System within schedule, in a period of 4 months.

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