Paper 1-AN EXPERIMENTAL STUDY ON SHELLACKING OF CORROSION PROBLEM IN CONCRETE STRUCTURE (DEEP BEAM) BY SUBSTITUTING GFRP AS A STEEL REINFORCEMENT

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AUTHOR:Er. Rahul Thakur and Sameer Malhotra

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ABSTRACT:Corrosion of steel in reinforced concrete structures is one of the biggest challenges that is faced by the civil construction industry to-day. Corrosion of steel reinforcement in Reinforced Concrete (RC) structures considerably reduces the durability and life span of these structures. The problem of corrosion is also a matter of concern especially when the RC structures are exposed to severe adverse environmental conditions such as in an urban or in a coastal area. In cold region countries, corrosion is a menace at places where de-icing salts are used over RC structures in cold region countries. To overcome this corrosion problem, many new techniques have been tried and tested and these tests were found to be either expensive or ineffective. The use of protective coating by epoxy polymers, the use of stainless steel in the place of conventional steel, controlling corrosion by cathodic protection were some of the methods tried earlier to overcome corrosion. But none of them were fully effective from the functionality or economical point of view. Fiber Reinforced Polymer (FRP) materials which are anticorrosive, were found to be a prospective substitute to conventional steel reinforcement used in RC structures.

KEYWORDS: Corrosion, epoxy polymers, Reinforced Concrete (RC) structures