Behavior of R.C. BEAMS Reinforced with EPOXY COATED BARS UNDER REPEATED LOAD

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Abstract:

Corrosion of reinforcing bars for most of concrete structures is considered to be the main reason of deterioration of concrete cover. The deterioration of concrete cover increases the corrosion of steel bars which causing a reduction of bars cross-section, which is considerably the main reason of failure of the concrete structures. So, the coating of bars with epoxy coating is very important specially for elements of structures subjected to a humidity ambient conditions. The coating of reinforcing bars by epoxy coating is to protect the bars from corrosion and consequently affecting the behavior of R.C. beams practically the bond strength between steel bars and adjacent concrete. Most of the previous works are dealing with the field of behavior of R.C. beams reinforced with epoxy-coated bars under static loading. This paper is concerning with the behavior of R.C. beams reinforced with coated bars under repeated loading. The main parameters, which are taken into consideration, are the thickness of the coating film and the percentage area of main steel. Some beams are tested under static loading are taken as reference beams. The results are given in the form of tables and curves. Conclusions and important recommendations are presented.

Keywords:

Repeated loading, Bond strength, Epoxy coated bars

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