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ASPECTS OF BEHAVIOUR OF CFRP REINFORCED CONCRETE BEAMS IN BENDING

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Abstract:

The corrosion of steel poses a serious problem to the durability of reinforced concrete structures and fibre reinforced polymer (FRP) has emerged as a potential alternative material to the traditional steel. The results of a test series consisting of carbon FRP (CFRP) and steel bars reinforced concrete beams are reported in this paper. The results indicated that the behaviour of CFRP and steel reinforced beams was similar in many aspects. Both type of beams failed in their predicted modes of failure. The strength design method underestimated nominal moment capacity of CFRP reinforced beams. The deflection of CFRP reinforced beams was satisfactory at service load level, corresponding to theoretical load capacity. The deformability factor of CFRP reinforced beams was more than 6 indicating their ductile nature of failure.

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