

Comparative Study on the Behaviour of Steel Reinforced Beam-Column Joint with GFRP Bars

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Abstract: *Beam-column joints are the crucial zones in the moment resisting structure and are designed to achieve the desired strength and durability. In extreme weathering conditions, the steel in the reinforced concrete is more susceptible to corrosion. So, the steel should be provided with the precautionary measure like coating, etc, if used in such conditions. This results in the use of Fibre Reinforced Polymer (FRP) bars as an alternative to steel since it is non-corrodible. Several researches were done by using FRP bars as an alternative to steel. It is identified that the flexural strength of the beam reinforced with FRP bars were reduced compared to the beams with steel bars. To increase the flexural strength, the fibres were added to the beam. And the seismic behaviour of the beam-column joint will be studied. In this study, a journal proposed by Mohammed Hasaballa and Ehab El-Salakawy is validated using FEA Software package and the results were compared. The comparison between these results was proposed. The failure study is undertaken and compared with GFRP and Steel.*

Keywords: Fibre Reinforced Polymer, Beam-column joints, GFRP, Steel

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