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Analytical Study on Behaviour of RC Beam Column Joint Retrofitted with Various Thicknesses of CFRP and GFRP Sheets.

Jafar Ali M*, Gayathri S

Department of Civil Engineering, Anna University Regional Campus Coimbatore, Tamilnadu, India

Abstract: Many existing structures located in seismic regions are not adequate because of current seismic design codes[3]. In addition, a number of major earthquakes during recent years have underscored the importance of mitigation to reduce seismic risk. Seismic retrofitting of existing structure is one of the most effective methods of reducing this risk[6,7]. However, the seismic performance of the structure may not be improved by retrofitting or rehabilitation unless selecting the appropriate technique. Therefore, the requirements of rehabilitation of various retrofit techniques must be taken before selecting retrofit schemes. In the present study, a beam column joint from an existing G+3 storey office building is considered for analytical study. The CFRP and GFRP sheets of varying thicknesses in beam column joint were modeled and compared with the model without FRP. The most effective and economical retrofit material is identified. The analytical study for the model has been done by using ANSYS software and the results are discussed.

Key words : Beam Column Joint, CFRP, GFRP, Seismic Retrofitting, ANSYS.

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