

Performance Evaluation of CFRP retrofitted beam-column in G+2 RCC building by pushover analysis

Abstract— In this paper, an analytical procedure for the evaluation of the expected performance of existing reinforced concrete (RC) beam-column before and after being retrofitted using Fiber reinforced polymer (FRP) composite materials is presented. The beam-column that didn't satisfy the required performance level are locally retrofitted using CFRP wrapping and the resulting hinge formation are studied. Using the pushover analysis in Structural analysis and design software SAP 2000, the seismic response of RC building frame in terms of performance point and the effect of seismic forces on multi storey frame are studied. It has been concluded that after CFRP retrofitting of beam-column, the hinge formation on the structure were found to be within the required performance level and the lateral resistance as well as displacement capacity of the frame was drastically improved.

Keywords— *CFRP, RC building frame, Performance point, Pushover analysis, Retrofitting*