

Performance Check of Column Retrofitted Multi-Story (G+2) RCC Building using CFRP by Pushover Analysis in SAP 2000

Abstract— This paper presents the result of an analytical study investigating the effect of external wrapping using Carbon fiber Reinforced Plastics (CFRP) laminates on the performance point of reinforced concrete column. The column that didn't meet the targeted performance level are retrofitted using CFRP and the resulting hinge formation are studied. The seismic response of RC building frame in terms of performance point and the effect of earthquake forces on multi storey building frame with the help of pushover analysis is carried out in this paper. The pushover analysis of the building frame is carried out by using structural analysis and design software SAP2000 (version20). It has been concluded that after the use of CFRP for retrofitting of columns, the hinge formation on the structure were found to be within the targeted performance level and the lateral resistance and displacement capacity of the frames was significantly improved

Keywords— *CFRP, Capacity Curve, Performance Point, Pushover analysis, RC building*