

An Investigation on Overstrength Factor (Ω) of Reinforced Concrete Buildings in Turkish Earthquake Draft Code (TEC-2016)

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Abstract : Overstrength factor is an important parameter of load reduction factor. In this research, the overstrength factor (Ω) of reinforced concrete (RC) buildings and the parameters of Ω in TEC-2016 draft version have been explored. For this aim, 48 RC buildings have been modeled according to the current seismic code TEC-2007 and Turkish Building Code-500-2000 criteria. After modelling step, nonlinear static pushover analyses have been applied to these buildings by using TEC-2007 Section 7. After the nonlinear pushover analyses, capacity curves (lateral load-lateral top displacement curves) have been plotted for 48 RC buildings. Using capacity curves, overstrength factors (Ω) have been derived for each building. The obtained overstrength factor (Ω) values have been compared with TEC-2016 values for related building types, and the results have been interpreted. According to the obtained values from the study, overstrength factor (Ω) given in TEC-2016 draft code is found quite suitable.

Keywords : reinforced concrete buildings, overstrength factor, earthquake, static pushover analysis

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