Investigation of Overstrength of Dual System by Non-Linear Static and Dynamic Analyses

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Abstract : The nonlinear static and dynamic analysis procedures presented in EN 1998-1 for the structural response of a RC wall-frame building are assessed. The structure is designed according to the guidelines for high ductility (DCH) in 1998-1. The finite element packages SeismoStruct and OpenSees are utilized and evaluated. The structural response remains nearly in the elastic range even though the building was designed for high ductility. The overstrength is a result of oversized and heavily reinforced members, with emphasis on the lower storey walls. Nonlinear response history analysis in the software packages give virtually identical results for displacements.

Keywords : behaviour factor, dual system, OpenSEES, overstrength, seismostruct
Conference Title : ICESE 2016 : International Conference on Earthquake and Structural Engineering
Conference Location : London, United Kingdom
Conference Dates : February 25-26, 2016