Special Research Study Title	Design and Assessment of Mid-rise Shear Wall Structures Under Seismic Load
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Abstract

The structural behavior of shear walls in medium - rise buildings under seismic load was investigated in this research. Buildings, 15 and 25 stories high, with shear walls located in Bangkok were used. The study began by designing the reinforced concrete shear walls based on ACI 318-2002 using wind and seismic loads calculated according to DWP 1311-2007 and DWP 1302-2009, respectively .The performance of the wall structures was assessed by using nonlinear time-history analyses with 12 simulated ground motions scaled for a return period of 475 years. From the assessment results, both structures showed high possibility of having severe damage in three ground motions out of 12. In order to enhance the performance of the shear walls, it is recommended that the ductile boundary elements be provided at the edges of the walls, even though the current standard does not required them.

Keywords : Ground motion / Nonlinear pushover method / Nonlinear time-history analysis / Shear wall under seismic load