

Seismic Behavior of Steel Plate Shear Wall for RC Structure By Using SAP-2000 And ETAB 2013

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Abstract

Shear Wall is an basic important structural component .These walls can be utilized for giving more strength and safety to the structure, when the structures are subjected to external loads such as earthquake loads, wind loads etc. This study is based on the response of steel plate shear wall using seismic analysis for different size of steel plate and RC shear wall. The steel plate shear wall for RC structure in low intensity earthquake zone is preferred because steel has more ductility, energy dissipation capacity as well as strength. This study includes the structural modeling for four model using SAP2000 and ETAB2013 software. The four structural models are compared based on seismic parameter such as base force and storey displacement. Static and dynamic analysis methods are used for building analysis. Building model consists of variation of thickness 5mm and 10mm steel plate, also composite section of steel and RC wall, steel bracing are used. The behavior of building with and without steel plate shear wall is studied under pin and fixed support condition. From the overall modeling of structure using software SAP2000 and ETAB 2013, structural model with 10 mm size steel plate along with RCC shear wall has shown results.

Key Words: Shear Wall, earthquake loads, seismic analysis, SAP2000, ETAB2013, Static and dynamic analysis.