

عنوان مقاله:

Seismic Performance of Coupled Shear Walls with Steel Coupling Beams in High-rise Buildings

محل انتشار:

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خلاصه مقاله:

Coupling beam in a shear wall stands as the first defense line against seismic loads and acts as a frictional fuse, and the first plastic hinges are created in this element of the structure. As a result, the good performance of shear wall is a key factor in the overall structural behavior when seismic loads are applied. Because of the complex and time-consuming procedure of constructing and erecting diagonal reinforcing bars in coupling concrete beams, steel coupling beams have replaced these kind of reinforcements. In this article, two 12- and 22-story structures, with a dual lateral force resisting systems, constructed from coupled shear walls with steel coupling beams and moment resisting frames, have been modeled and analyzed. These structures were investigated by linear static and nonlinear dynamic analyses and their seismic behavior were reported. According to the results of the linear analysis and the nonlinear time history investigation, the direction of bending moment in the height of shear wall changes (because of the formation of moment hinges along the height of the structure) which leads to the dissipation of a great amount of energy.

کلمات کلیدی:

Coupled shear wall, Composite Coupling Beam, Seismic Performance of Structure

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