

عنوان مقاله:

Investigation of the Seismic Behavior of the Coupled Shear Walls

محل انتشار:

دومین کنفرانس بین المللی پژوهش های نوین در عمران، معماری و شهرسازی (سال: 1394)

تعداد صفحات اصل مقاله: 10

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خلاصه مقاله:

This study was aimed to investigate the analytical behavior of coupled shear walls having short and deep coupling beams under seismic loadings. In the first step, equivalent seismic loads were applied to the selected coupled shear walls and then, shear forces and bending moments acting on shear walls and coupling beams were determined. By changing the dimensions of coupled shear wall system, it was investigated how stiffness of coupling beams influences internal force distribution. Maximum shear forces acting of the coupling beams of coupled shears were selected. Diagonal reinforcements of the coupling beams of coupled shear wall system were determined. SAP2000 software package was used in this study. Coupling beam moments and shear forces were calculated. Diagonal reinforcements designed by Regulations on Buildings to be Built in Seismic Zones (TEC 2007) and European Earthquake Regulations (Eurocode8 2004) were compared. The effects of coupling beams of the coupled shear walls were investigated. It was aimed to investigate the new reinforcement arrangement in diagonal reinforcement. Since reinforcement density in diagonal reinforcement of coupling beams of coupled shear walls designed by the seismic regulations cannot be constructed due to reinforcement congestion and building-up difficulty. Therefore, a new type of diagonal reinforcement was presented to the literature to be able to eliminate the construction difficulties. Structural steel components of the new type of diagonal reinforcement were designed.

کلمات کلیدی:

Coupled shear wall, Coupling beams, Diagonal reinforcement, Equivalent frame model, Seismic design

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/509449>

