

عنوان مقاله:

Experimental Evaluation of Cover Plate and Flange Plate Steel Moment-Resisting Connections Considering Unequal Beam Depths

محل انتشار:

فصلنامه زلزله شناسی و مهندسی زلزله، دوره 12، شماره 3 (سال: 1389)

تعداد صفحات اصل مقاله: 18

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خلاصه مقاله:

This paper presents the differences of cyclic behavior in Special Moment Resisting Frames (SMRF) with unequal beam depths which can be affected by connection detailing arrangements. The studied connection detailing arrangements consist of continuity plate arrangements such as straight or inclined continuity plates, cover plate and flange plate connection and haunch connection systems at the shallow beam side which can create some alternatives to connect shallow beams and deep beams with columns. In spite of probable occurrences of this special case in current engineering practice, codes do not take these especial cases into consideration. Six full scale beams to column sub-assemblages were tested to investigate the cyclic behavior for this special case i.e. unequal beam depths. Experiments show that the mentioned connection detailing arrangements could achieve performance discriminations ranged between story drift ratios of at least ۴% to ۶% radians before experiencing ۲۰% strength degradation. Using a specific combination of flange plate connection with the haunch connection system, the crack propagation at the deep beam bottom flange which is observed in most of the connection detailing arrangements for this special case is eliminated.

کلمات کلیدی:

Connection Detailing, Unequal Beam Depth, Panel Zone, SMRF

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