

عنوان مقاله:

An analytical investigation of ductile moment-resisting connections using cold-formed steel sections

محل انتشار:

دهمین کنگره بین المللی مهندسی عمران (سال: 1394)

تعداد صفحات اصل مقاله: 7

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خلاصه مقاله:

This paper presents an investigation on the potential use of cold-formed steel sections (CFS sections) in moment-resisting frames (MRFs) for seismic applications. The main limitation of CFS sections is the low out-of-plane stiffeners of their thin-walled elements which leads to low ductility. In earthquake resistant MRFs, the beams are designed to provide considerable ductility, whereas the other elements are mainly limited to their elastic range. The proposed beam-column connections are used to connect innovative column which has box section and double back-to-back C-shape beam. In web bolted connections without out-of-plane stiffeners, premature web buckling results in early loss of strength, while some kinds of stiffeners can improve the performance of connections. The behaviour of CFS beam-column connections is studied by means of finite element analysis (FEA). The results of the analyses show optimum stiffeners which can postpone local buckling, and they increase dramatically the level of resistant moment

کلمات کلیدی:

Cold-formed steel sections, Beam-column connections, Moment-resisting frames, FE analysis

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