عنوان مقاله:

NONLINEAR BEHAVIOR OF RC FRAMES STRENGTH ENED WITH STEELL GUSSET PLATES AND CURBS

محل انتشار:

هفتمین کنفرانس بین المللی زلزله شناسی و مهندسی زلزله (سال: 1394)

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خلاصه مقاله:

One of the severe deficiencie s in RC frame structures making it vulnerable a gainst earthquakes isthe inadequate shear resistance of beam-column joints and low stiffness of frames. To improve the seismic performance of the structure, impr oving the performance of its joints is essential. A steel curb and gusset plate system is introduced at the b eam–column connections to protect the joint panel zone from extensive damage and brittle shear mechanis ms, while inverting the hierarchy of strength and stiffness within the beam-column subassemblies and forrming a plastic hinge in the beam.In this paper, the RC frames which were strengthened using this proposed method are investigated under monotonic lateral force usin g the numerical modelling. After verifying the models, local and global behavior of these frames, such as displacement, strength and ductility factor were studied. Analytical results show that maximum and ultimate l ateral force of the strengthened frames has grown up to two times of the ordinary frame, averagely. Accordi ng to the results, when the number of gusset pla te increases, the strenght and stiffness of frames will increas e remarkbaly but the ductility factor of frames will decrease relatively. The analytical results also demonstrated the effectiveness of the proposed solutioon for upgrading of RC frames andthe displacing ofplastic hinges to far from the .beam-column joint

کلمات کلیدی:

Strengthening, RC Frames, Steel Gusset Plate and Curb,Finite Element