

عنوان مقاله:

Investigation into Behavior of SR-CFT Columns under Semi Earthquake and Axial Loading Conditions

محل انتشار:

هفتمین کنفرانس ملی و دومین کنفرانس بین المللی سازه و فولاد (سال: 1395)

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خلاصه مقاله:

Composite columns mainly are constructed in two common ways. The first, steel tubes are filled with concrete (CFT), and the second, structural steel shapes are encased in concrete (SRC). Each of the above ways has some advantages and disadvantages, elimination of formwork, elimination of reinforcement, and the confinement effects of the steel tube on concrete in CFTs, and high rigidity, high speed in construction, and large shear resistance of SRCs, are some advantages of these columns. By creating a new section which is the combination of both ones, i.e. embedding a structural steel into a CFT, the disadvantages of both could be removed and also it could benefited by the advantages of both of them. These types of columns are named as steel reinforced concrete filled steel tubular columns (SR-CFT). In this study, all of the analysis have been undertaken using ANSYS, which is a general-purpose finite element program, designed specially for advanced structural analysis and can satisfy all of our requirements such as geometric material nonlinearities, large displacements (buckling of steel tube and modeling of crack and crushing of concrete). Comparisons between the finite element and experimental results, indicate suitable and applicable agreements. Finally the behavior of SR-CFT columns under axial and cyclic loads has been investigated

کلمات کلیدی:

Composite columns, CFT, ANSYS

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