

عنوان مقاله:

Performance of Double I-beams to Box Columns Connections with Reduced Beam Sections

محل انتشار:

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خلاصه مقاله:

After the 1994 Northridge and 1995 Kobe earthquakes, a wide variety of beam to column connection concepts have been developed for use in steel moment resistant frames and retrofit of existing steel structures. One of these welded moment connections is reduced beam section (RBS) connection. In a RBS moment connection, portions of the beam flanges are selectively trimmed in the region adjacent to the beam to column connection in order to force plastic hinging to occur within the reduced section, and thereby reduce the likelihood of fracture occurring at the beam flange groove welds and surrounding base metal regions. Steel moment resistant frames in Iran mostly are used in medium and high height buildings. The columns of these buildings are often of box types and the beams used in these buildings are either of Double IPE profile types or plate girder. Therefore in this study, RBS connections of Double I-beams to the box columns are studied. The study begins with the Finite Element Analysis (FEA) of a beam-column assembly with a RBS connection, which is compared with test results. The FEA model of RBS connection correlates very well with the actual performance observed during testing. In order to study the nonlinear behavior of these connections, the ANSYS software is utilized and nonlinear of materials and large deformations are considered. Each model was subjected to a cyclic load pattern. In this paper, the impact of effective parameters in the behavior of RBS connections such as depth of the cut, distance from the face of the column to the start of the cut and the length of the .cut are studied

کلمات کلیدی:

Connection, Steel Moment Frames, Reduced Beam Section

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