عنوان مقاله:

Behavior of Top-Seat Angle Connections Under Combined Tension-Moment Loading

محل انتشار:

سومین کنفرانس ملی و اولین کنفرانس بین المللی مقاوم سازی (سال: 1387)

تعداد صفحات اصل مقاله: 8

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خلاصه مقاله:

Bolted top and seat angle connections are mainly designed to sustain gravitational loads of simply supported steel beams. However, the inherent flexural resistance of such connections may not be ignored when an accurate analysis of semi-rigid steel frames is desired. Current research aims at studying moment-rotation behavior of this type under combined moment and axial tension force. Several refined 3D finite element (FE) models were created based on the previous experimental studies and their accuracy is examined comparing by results of previous experimental studies. This study showed that axial tension force reduces connection rotational stiffness and moment capacity. Based on the results obtained from analyzing a series of finite element models under combined axial tension and moment loading an equation is presented to estimate affected moment-rotation response of such connections in terms of the connection geometrical properties, its moment-rotation response in the case of zero axial force and an expected axial .tension force

کلمات کلیدی:

;bolted angles; moment-rotation relation; nonlinear finite element, axial tension