عنوان مقاله:

Seismic Behavior of Post-Tensioned Steel Connections with Top and Seat Angles

محل انتشار:

اولین کنفرانس بین المللی پیشرفت های نوین در مهندسی عمران (سال: 1396)

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نویسندگان:

Saeed Eilbeigi Ghalani - *PhD Candidate, Ferdowsi University of Mashhad, Department of Civil Engineering, Mashhad, Iran*

Fatemeh Nowroozi - *BSC Student, Islamic Azad University of Torbat Heidarieh, Department of Civil Engineering, Torbat Heidarieh, Iran*

خلاصه مقاله:

Post-tensioned (PT) connections are used in steel moment resisting frames to eliminate structural damageand minimize residual drifts under seismic loads. A steel post-tensioned connection with top and seatangles has recently been developed. The connection includes top and seat angles bolted to the beam andcolumn. Strands are placed along the length of the beam, passing through the column and posttensionedto provide a pre-compression of the beam against the column. The angles act as energy dissipationdevices in PT connections. In this research the seismic responses of steel buildings with semi rigid posttensionedconnections (PT) are estimated and compared with those steel buildings with typical rigid(welded) connections. Different parameters influence on behavior of PT steel connection. The parametersinvestigated in this study include the angle size, angle gage length, beam flange reinforcing plates, shimplates, number of strands, initial posttensioning force and stiffened angles. The obtained results show thatMRF wit PT steel connections represent better behavior in respect with MRF with welded connections.Also it can see that by increasing number of strands, angle size, initial posttensioning force and addingstiffener to angles, PT connection represent better behavior, and increasing gauge length decreasesmoment .resistant of the frame

کلمات کلیدی:

Post Tension, Steel Connection, Moment Resistance, Energy Absorption