

عنوان مقاله:

Friction-Slip Connections for Moment Frames with Continuous Beams

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خلاصه مقاله:

This paper presents an assessment on a friction-slip connection for moment frames with continuous beams based on the current detail. It also proposes a new configuration for rigid connections in moment frames with continuous beams, which can be developed as a friction-slip connection. In conventional moment frames, beams are placed between two adjacent columns and connected to the column flanges faces. However, in moment frames with continuous beams, two beams are continuously passed next to the column. In the existing practice for connections in these frames, two vertical connection plates placed on column flanges, and the beams are connecting to these plates via their wings. In the mentioned detail, it was assumed that the load transfers with in-plane action between connection plates and column; therefore, the design force is pure shear, and based on the design procedure, it should have been able to be developed for a friction-slip connection. However, the results showed that the out-of-plane action of RPLs could be significant; although this action provides extra capacity in moment connections, it is not desirable in friction connections due to changes in the developed forces in pretension bolts. Based on this action, a locking occurs, which changes the performance of the connection considerably. As an alternative to this detail, a new configuration is proposed in this paper, which can also be used as a friction-slip connection and provides a friction connection in moment frames with continuous beams. In new detail, by eliminating the effect of connection plate thickness, the friction joint works as expected. Thus, instead of the plastic behavior of structural elements, these friction joints can be used as an energy-dissipating system.

کلمات کلیدی:

Friction-slip connection, Bolted connection, Continuous beams, Moment frame

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