عنوان مقاله:

Behavior of Steel Plate Shear Wall in Multi Span Moment Frame with Various Infill Plate Connection to Column

محل انتشار:

نهمین کنفرانس بین المللی زلزله و سازه (سال: 1398)

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خلاصه مقاله:

Steel plate shear walls consist of thin infill steel plates attached to beams, called (horizontal boundary elements, HBEs), and columns (vertical boundary elements, VBEs) in structural steel frames. The thin unstiffened web plates are expected to buckle in shear at low load levels and develop tension field action, providing ductility and energy dissipation through tension yielding of the web plate. HBEs are designed for stiffness and strength requirements and are expected to anchor the tension field formation in the web plates. VBEs are designed for yielding of web plates and plastic hinge formation at the ends of the HBEs. This design approach may result in very large demand on boundary frame members,especially VBEs in most cases. Several methods such as using LYP, perforating the infill plate and omitting connection of infill plate to columns have been proposed to reduce the moment and axial force demands on the VBEs. The main purpose of this research is to study the behavior of steel plate shear walls with various connection of infill plate to columns in multi span moment frames. A numerical study has been performed in order to investigate the behavior of such a system. The results of proposed system were compared with those of the conventional SPSWs. Results show that reducing the infill plate connection to columns will reduce the axial forces in columns.

کلمات کلیدی:

SPSW, column forces, ultimate capacity, initial stiffness