

is done, it is recommended that the specific language taken from the reference be used without modification and attributed to the source, so that fabricators and erectors can readily recognize and become accustomed to the use of the FEMA-353 requirements.

2.12 Quality Control and Quality Assurance

FEMA-353 – Recommended Specifications and Quality Assurance Guidelines for Steel Moment-Frame Construction for Seismic Applications provides complete guidelines and commentary for Quality Control and Quality Assurance. The designer should utilize those guidelines to ensure the proper selection and handling of materials and shop and field fabrication of moment-frame connections.

Commentary: FEMA-353 has a complete discussion of quality control recommendations and the reasons for them. Quality control and quality assurance are important for the achievement of the intended performance.

2.13 Other Structural Connections

2.13.1 Column Splices

Column splices in moment frames should be designed to develop the full bending and shear strength of the column, unless an inelastic analysis is performed to determine the largest axial loads, moments and shears likely to occur at the location of the splice and the splice detail can be shown to be adequate to resist these axial loads, moments and shears, considering stress concentrations inherent in the types of joints being used.

Welded flange splices may be made either with full penetration groove welds, or with splice plates fillet welded to the column flanges. Weld metal with a minimum rated toughness as described in Section 3.3.2.5 should be used and weld tabs should be removed. Bolted column flange splices should be designed to preclude net section fracture, block shear failure, and bolt pull-through failure of the column flange or of the splice plates.

Column web splices may be either bolted or welded, or welded to one column piece and bolted to the other. Bolted splices using plates or channels on both sides of the column web are preferred because of the inherent extra safety afforded by “capturing” the web. Partial Joint penetration welded web splices are not recommended. Column web splices should be designed to resist the maximum shear force that the column is capable of producing.

Splices of columns that are not a part of the seismic-force-resisting system should be made in the center one-third of the column height, and should have sufficient shear capacity in both orthogonal directions to maintain the alignment of the column at the maximum shear force that the column is capable of producing.

Commentary: Section 8.3 of the 1997 AISC Seismic Provisions specifies requirements for design of column splices for columns that are part of the