ABSTRACT:

This paper presents an experimental investigation on typical end-plate connection with reduced beam-to-end plate welding, connected to cruciform column (CCUB) section. The study aims to reduce the cost of fabrication and materials. Two tests were conducted to study the behavior of the proposed connections and evaluate the failure modes, moment resistance, initial stiffness and rotational capacity of the connections. The experimental results indicated that the failure mechanisms for the tested specimens begin with the end-plate yielding followed by bolt slippage that was limited to the tension region of the joint due to the tension forces exerted through the top bolt rows. The experimental results will then be used to validate the theoretical model for the T-stub idealization of the tension zone.