

**INVESTIGATION OF ULTIMATE BENDING STRENGTH  
OF STEEL BRACKET PLATES**

by

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(ABSTRACT)

Currently, the design model for flexural rupture of an eccentrically loaded bracket plate is based on the material tensile rupture strength times the net elastic section modulus. Different bolt and plate sizes were tested to determine if this model is correct. It was found that the current model is conservative and that the material tensile rupture strength times the net plastic section modulus is a superior design model. Also, limited finite element modeling was performed to predict the elastic stiffness of such connections. The resulting data correlates well with test results, and confirms that most of the connection ductility comes from bolt plowing. These results can be used for splice plate connections in cantilever construction, as well.

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