

## **ABSTRACT**

*Bolted extended end plate moment connection is one type of connection that is prequalified for seismic application based on SNI 7972:2013. All welding processes is done in workshop, while the installation and bolt tightening is done in field. Thus, the quality of connection is more controllable and suits for application in Indonesia. SNI 7279:2013 itself is an adoption of the AISC 358-2010 Prequalified Connections for Special and Intermediate Steel Moment Frames for Seismic Application, which is also associated to another provision, such as Steel Construction Manual, AISC 360 - 10 Specification for Structural Steel Buildings, and AISC 341-2010 Seismic Provisions for Structural Steel Buildings. These provisions are subjected to common used material and steel section in America, while common used section in Indonesia is subjected to JIS section. In addition, the number of failure mode considered in the design and the number of connection parameter leads to complex design procedure. In this thesis, numerical study is done to evaluate how far might this type of connection be able to apply for materials and section provided in Indonesia. Numerical study is also done to study the effect of parameters to the strength of the connection. To facilitate the analysis, an automation program is developed to calculate the connection strength. The automation program is developed using Microsoft Visual Basic. It is possible for the data collected from this analysis to be used in preliminary design of bolted extended end plate connection.*

*Keywords: connection configuration, bolted extended end plate moment connection, prequalified connection, seismic application, study of parameter.*