ABSTRACT

Abdy Rahman Ristioko. Frame Structure Design Engineering Design Las Cut With Pattern Sensor Reader. Jakarta: Department of Mechanical Engineering, Faculty of Engineering, State University of Jakarta, in 2016.

This research aims to design a welding machine construction pieces. The draft is analyzed by looking at the value of von mises, safety and material shifts. The analysis uses software based on the finite element method. Type simulations done is linear static analysis with four models / analysis phase. The first model is the model with the burden lies on the end of the frame that is the foundation, the second model is a model with a load lies in a quarter of the length of the frame, the third model is the model with the burden lies the middle frame, and the fourth model is the model with the burden lies on the tip of a cantilever beam. Four models are given assumed to represent the whole movement of the machine. The elements used in such methods is a tetrahedral element by element number 355.541 190.974 and the number of nodes. The results of the design framework welding machine cut is obtained greatest von mises 71.19 MPa, the safety factor value of 2.91 and a low of 0.9496 mm biggest shift value.

Kata kunci: Cutting Weld,Finite Element Method, Stress Analysis