ABSTRACT

PT. XYZ *is a manufacturing company engaged in the metal industry.* PT. XYZ *implements a make-to-order system with one of the products it produces is Back Top Plate 450 (BTP 450). The product has a defective percentage of 3.06% during the period from February to November 2020, where the lift exceeds the defect tolerance set by the company, which is 1%. Therefore, the product becomes the object of research in this final task. There are 9 types of product defects that are produced in the BTP 450 production process, ranging from breakage to process failure. The process carried out to produce these products starts from the drawing process to assembling. From the description of the process, there are still defective products produced. One of the processes that is the focus of this final project is the drawing process, because the largest number of defective products produced occurs in the drawing process, specifically the type of broken defects, which is 164 pcs during the period February 2020 to November 2020. the number of defective products by improving the process on BTP 450 products using the six sigma method, and the DMAIC approach. In the define stage, identification of problems is carried out and this final project is focused on two stages of the process which are part of the drawing process, namely setting dies, and coating the material with plastic. The next step is the measure stage, measuring the stability and process capability. Then the analyze stage is carried out, containing root cause analysis using fishbone diagrams, 5 why's analysis, and determining the priority of problems that will be repaired with FMEA. After determining the priority of the problems to be repaired, then the improve stage is carried out by designing improvement proposals, namely in the form of determining the optimum engine pressure with the Taguchi method, making work instructions at the dies setting process stage, and making poka yoke for the process stages of coating the material with plastic.*

Keywords: Six Sigma, DMAIC, Taguchi, Work Instruction, Poka Yoke