

## ABSTRACT

*In choosing a product, consumers definitely want a quality product. A product can be said to be of high quality if it is in accordance with the specifications that have been set and based on the wishes of the customer. PT XYZ is a private company engaged in the manufacturing industry producing truepave ash paving blocks. Truepave ash products can be said to be of high quality if they comply with the specifications that have been set in the form of critical to product quality. Fulfillment of critical to product quality can be achieved if the production process can run well, in accordance with the CTQ process. In the period January 2020 to December 2020, it shows that PT XYZ has not been able to fulfill the product CTQ maximally. This is because the number of defective products exceeds the tolerance limit for the number of defective products almost every month.*

*There is a methodology used in the preparation of this final project, namely six sigma with the DMAIC approach. The six sigma method is expected to solve the problem of improving the production process in a structured manner. The problem solving process begins with the define stage, which is to describe the non-fulfillment of the product CTQ, then carry out the measure stage. At the measure stage, the stability and process capability calculations are carried out to determine the sigma level in the existing condition. Next is analyze, analyzing the root causes of problems that occur at the stage of the mixing process for the raw materials of the head body. After the measure, improvements were made, namely modifying the mixer machine with the principle of poka-yoke and Jidoka. After making improvements, then an analysis of these improvements is carried out.*

*The result of the preparation of this final project is a proposed improvement in the form of a modification of the mixer machine with the principle of poka-yoke and jidoka. Modification of the mixer machine has the ability to detect the amount of raw materials that are entered into the mixer machine and detect the rotating speed of the mixer machine, and can stop the operating system if there is a discrepancy in the process of mixing raw materials.*

*Based on the results of the research conducted, it can be seen that the modification of the mixer machine with the poka-yoke and Jidoka principles can help minimize defective products due to the stages of the process of entering raw materials and mixing raw materials in the process of mixing raw materials for the body and head. It can also be concluded by looking at the calculation of the new sigma level which has increased compared to the calculation of the sigma level in the existing condition..*

*Keywords: Truepave Gray, CTQ, Six sigma, DMAiC, Poka-yoke, Jidoka*