

## ABSTRACT

PT WIKA In-Trade is a company that manufactures spare parts of motor cycle to consumers that there are several automotive companies in Indonesia. Production system used is a system of make to order. One of its products are plastic products are produced in Plastic Injection and Painting Plant specializing in plastic injection product demand for spare parts made of plastic is an average of 149 803 units per month. Manufactured plastic products have a high defect rate is about 8811 units during the year 2011, it exceeds the maximum limit allowed defect 0.1% of total production. To search was done on the production process by using Lean Six Sigma to find the cause of the defect, and take remedial action in the cause of defect.

Research phase begins with the Define phase is performed to identify CTQ and mapping its production process. At this stage there are 3 known CTQ used in producing plastic products and the classification of production activities. Measure then performed to determine the performance level of the existing plant. Analyze then performed to find the type and defect the dominant factor. The dominant type of defect are visual defect is 65.62% of total defect and defect material defects in the product 25.92% of total defect. Improve done at a later stage to address the causes of both types defect dominant.

**Key words:** lean six sigma, Define-Measure-Analyze-Improve, waste, improvement of production processes, Plastic products, Plastic Injection and Painting Plant PT WIKA In-Trade