

ABSTRACT

PT Pindad is an industrial and manufacturing company engaged in manufacturing military and commercial products including the forging & cast division. There are 3 types of railway facilities and pre-production products produced, one of which is the shoulder for e-clip. Based on historical data from January 2017 to December 2018 this product experienced an average defect of 5.22% per month while the defect tolerance set by the company was 2%. The type of defect that produces the most defects is cold shut that occurs during the pouring process. This research will be focused on reducing cold shut defects in the pouring process using the DMAIC approach (Define, Measure, Analyze, Improve, Control). At the define stage CTQ is identified using the delphi method and SIPOC diagram making. In the measure phase, the calculation of process stability using p control chart and process capability calculations are calculated so that the average DPMO is 3739 while the average sigma level is 4.22. In the analyze stage, a fishbone diagram tool is used so that the causes of the problem are obtained which is by man, method, material, tools, and environment. After that, the FMEA approach is used to determine the failure mode that will be prioritized for improvement in which the method and man factors have the highest RPN values. Therefore, in the improve stage proposed improvements prioritize the man and method to reduce cold shut defects, namely by installing pyrometers and making checksheets.

Keywords: cold shut, defect, DMAIC, premature freezing, pouring, CTQ, DPMO, FMEA