

**ANALYSIS OF PRODUCTION QUALITY CONTROL OF PIPE WATER
INLET EW010 WITH SIX SIGMA AND FMEA AT PPC FACTORY
PT WIJAYA KARYA INDUSTRI DAN KONSTRUKSI**

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Abstract

PT Wijaya Karya Industri dan Konstruksi (WIKON) is a subsidiary of PT Wijaya Karya (Persero) Tbk, which has businesses in the fields of Steel, Plastic, Pressing and Casting (PPC) Manufacturing and heavy construction equipment. The PPC factory produces various kinds of manufacturing components, one of which is metal-based vehicle spare parts which are produced using a casting process. One of the products produced using the casting process is the Pipe Water Inlet EW010. The high number of defective products in the Pipe Water Inlet EW010 product is defective in July-August 2023 with an average defect of 52%. This research was conducted to analyze the sigma value and determine the factors and impact of these defects to provide suggestions for improving production quality. In this research, the method used is the Six Sigma and FMEA method, by applying DMAIC (Define, Measure, Analyze, and Control).

The most common defects were leaks, pen/core, and corrosion, namely a cumulative 89%. Pipe Water Inlet EW010 product is currently at level 2.44 sigma so corrective action needs to be taken to reach the six sigma level. By applying the FMEA method, it can be seen that the most significant and most frequent product defects are caused by poor sand core quality and work method errors. Therefore, the recommended alternative repair solution is to improve the quality of the cores used and improve work methods. The results show an increase in the sigma level value from 2.44 to 2.86 and a decrease in the average defect from 52% to 23%.

Kata kunci: *Pipe Water Inlet EW010, Six Sigma, FMEA, RCA*