

Abstract

PT X is a bottled drinking water industry company. One of the production processes at PT X is the manufacture of packaging bottles using preform material. Preform material is the initial form of bottle packaging made of PET. During the production process, a lot of preform material rejects are produced so that the research aims to reduce preform material rejects. The object of research is the product SKU 600 ml. The types of preform rejects on 600 ml SKU products vary such as broken bottles, unstable bottle thickness, white preforms, pinched bottles, and white bottles.

The method used in the research is the Six Sigma method with the DMAIC (Define, Measure, Analyze, Improve, and Control) stages. Analysis of factors causing preform material rejects using FMEA with the calculation of RPN values. The proposed improvement recommendations are checklist form operation blowing machine, preform specification form for suppliers, and training schedule form. However, the recommendation that is implemented is the checklist of blowing machine operation forms because machine malfunction is the main factor causing preform material rejects.

The results of the calculation of the Six Sigma value before the implementation of the improvement recommendations obtained a DPMO value of 1961.93. The DPMO value is then converted to the sigma level value and a value of 4.38 sigma is obtained, which shows that the company's sigma level is still not close to six sigma. The final calculation results after implementing the improvement recommendations show that the DPMO value decreased by 1726.26 and the sigma level value increased by 4.42 which was previously 4.38 sigma, from this value it shows that the sigma level increased by 0.04 sigma.

Key words: *Reject, Preform Materials, Six Sigma.*