

ABSTRACT

PT XYZ is a textile company that provides dyeing services for textile products. The most produced type of fabric is cotton carded 24s. PT XYZ sets a defect product tolerance limit of 2% for each period. Based on production result data, the defective exceeds the tolerance limit in certain periods. In addition, there was a recurring occurrence of defects within 30 months of production. This is due to the performance of the process that has not been able to meet the process standards so that the resulting product does not meet the specifications. One of the problematic stages of the process is the padding process that is the process of giving texture to the fabric. Padding produces 5 out of 8 types of defects that appear repeatedly within 30 months of the production period. Therefore, this final task aims to determine the causative factors of process variation at the padding stage and design improvement action that can reduce or eliminate the cause of process variation using six sigma with the DMAI approach. Six sigma aims to reduce variability in the production process while DMAI is a framework used to identify problems to design corrective actions. In the define phase, identification of specifications (CTQ) of processes and products, production process flow, production data is carried out. Identification of production data is used in the measure phase to measure process performance by calculating process capabilities and stability. In the analyze phase, analysis of the cause of the problem is done using fishbone diagram and analysis of 5 whys. Existing issues will be sorted to see the priorities of corrective action using FMEA analysis. In the improve phase the corrective action is designed so that the proposed procurement of durometers, visual display procedures for measuring the hardness of rubber rollers using durometers, and the designing air pressure monitoring systems. The simulation result of the new sigma level calculation shows an increase from the existing sigma level of 4,41 sigma to 4,51 sigma.

Keywords: Textile, Padding, CTQ, Six Sigma, DMAI