

APPLICATION OF FMEA AND FTA TO PREVENT FAILURES AND CONTROL QUALITY IN THE INTERIOR DEPARTMENT AT PT X

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Abstracts

The Interior Department is one of the departments of PT X that produces bus and minibus interior parts. During the interior production process, there are still quite a lot of defect products. There are six types of defects that is air bubbles, not 100% filled, double-tip that does not stick, torn, too dense or less dense, and striped. The main focus of this research is to analyze the causes of failure of a process and prioritize proposed improvements by using the FTA and FMEA methods, then reduce defects and improve product quality in the Interior Department by applying the six-sigma method, which has the DMAIC stages. Based on the results of the FTA analysis, it can be seen that the root causes of failure are influenced by human, machine, equipment, and environmental factors. By knowing the cause of the failure, the severity, occurrence, detection, and RPN values can be assessed using the FMEA method, and the proposed improvements can be prioritized based on the highest RPN value. The results of the six-sigma calculation before the implementation of improvements were a DPMO value of 27,798.01 and a sigma level of 3.41. After the implementation, DPMO value of 9,998,989 and a sigma level of 3,826,761. This means that the implementation of improvements can reduce the DPMO value and increase the sigma level. This must be maintained to improve the quality of a product and reduce defects, which can be done by creating a quality control system.

Keywords: Interior Products, Defects, Quality, FTA, FMEA, Six Sigma, DPMO, Sigma Levels