

PERBAIKAN KUALITAS PRODUK ATAP ASBES PADA MESIN D DI PT XYZ DENGAN MENGGUNAKAN METODE SIX SIGMA (DMAIC)

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ABSTRAK

PT XYZ merupakan perusahaan manufaktur yang bergerak dibidang industri bahan bangunan, salah satu produk yang dihasilkan adalah atap asbes. Perusahaan menemui permasalahan cacat pada produk atap asbes yang dihasilkan. Penelitian ini bertujuan untuk menemukan upaya perbaikan serta mengatasi permasalahan cacat perusahaan. Pendekatan *Six Sigma* digunakan untuk identifikasi, pengukuran, analisis, dan eliminasi sumber variasi cacat dalam produk dan proses. Diketahui jenis produk cacat yang paling berpengaruh kritis terhadap kualitas produk atap asbes adalah *Lap Fault*, *Side Flat*, *Former Damage*, *Broken at Break up*, *Uncut*, *Unsquare*, dan *Stuck to The Former*. Hasil pengukuran kinerja diperoleh nilai DPMO (*Defect per Million Opportunity*) sebesar 1.612,43 dan tingkat *Sigma* perusahaan cukup baik sebesar 4,45, tetapi pengukuran kendali produksi diperoleh terdapat 47,06% proporsi cacat diluar batas kendali sehingga perusahaan memerlukan upaya perbaikan meminimalisasi cacat. Analisis penyebab masalah dilakukan pada jenis cacat kritis (CTQ) dengan menggunakan *Fishbone Diagram* dan *5 Why's analysis* dan diperoleh 27 sumber masalah penyebab cacat paling potensial dari hasil analisis. Sejumlah sumber masalah penyebab cacat tersebut ditindaklanjuti sebagai mode kegagalan dalam metode FMEA (*Failure Mode and Effect Analysis*) untuk mengetahui langkah perbaikan dalam mengatasi masalah pada sumber kegagalan tersebut. Hasil analisis FMEA diperoleh upaya perbaikan terhadap sumber masalah yaitu diperlukannya peningkatan pada perawatan dan pemeliharaan mesin *conveyor*, mesin *stacker*, mesin *water jet trimming*, mesin *agitator*, *steel former*, dan mesin *stacker break up*), inspeksi rutin mesin *stacker* khususnya pada bagian (*stacker carriage* dan busa *pad*), pembakuan metode pemasangan *pad corrugated*, perbaikan prosedur *lifting* meja *scissors hoist*, metode penumpukan *steel former*, inspeksi rutin lembaran yang tidak standar dan penjadwalan proses *curing* yang tepat.

Kata kunci: *CTQ*, *Fishbone Diagram*, *5 Why's*, *Six Sigma*, *FMEA*.

IMPROVING ASBESTOS ROOF QUALITY IN MACHINE D AT PT XYZ USING SIX SIGMA METHODOLOGY (DMAIC)

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ABSTRACT

XYZ is a manufacturing company engaged in the materials industry. One of the product is asbestos roof. The company has found some defects in the product. This study aims to find improvement and overcoming the flaws in the company. The Six Sigma approach is used for identification, measurement, analysis and elimination of variation disabilities source in the products and in the process. Some of the types of asbestos roof products that have some defects that make a critical influential of their qualities are Lap Fault, Side Flat, Former Damage, Broken at Break up, Uncut, Unsquare and Stuck to The Former. The performance measurement results obtained DPMO (Defect per million Opportunities) value of 1612.43 and a fairly good level of Sigma company at 4.45, but the measurements are acquired production control 47.06% the proportion of disability beyond the control limits so the company needs an improvement efforts to minimize defects. Analysis of the cause of the problem using Fishbone Diagram and 5 Whys methods has been done on the type of critical defects (CTQ) and obtained 27 most potential cause of disability sources. Some of the sources of defects problem are followed up as a failure mode in the FMEA (Failure Mode and Effect Analysis) method to determine the corrective action to address the source of the problem. The FMEA analysis result is the improvement effort to fix the source of the problem which is the need for improvement in the maintenance of the conveyor machine, stacker machine, water jet trimming machine, agitator machine, steel former and stacker break up machine. A regular inspection for the stacker machine especially in the stacker carriage and foam pad parts, standardization of methods of mounting pad corrugated, the lifting repair procedure of scissors hoist table, steel former stacking method, a routine non standard sheet inspection and a proper curing process scheduling.

Keywords: CTQ, Fishbone Diagram, 5 Why's, Six Sigma, FMEA.