

Analisis Pengendalian Kualitas Dengan Metode Six Sigma dan TRIZ pada Proses Produksi General Plywood di PT ABC

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ABSTRAK

PT ABC merupakan salah satu perusahaan manufaktur pengolahan kayu di kabupaten Temanggung. Perusahaan ini memproduksi beberapa jenis kayu lapis seperti *Blockboard*, *Floor Base* dan *General Plywood*. Permasalahan yang dihadapi perusahaan adalah adanya produk cacat pada hasil produksi *general plywood* disetiap periode produksi. Hal ini tentunya akan berdampak pada kerugian biaya dan waktu yang harus ditanggung perusahaan. Untuk mengurangi jumlah produk yang cacat maka perlu dilakukan upaya perbaikan untuk meminimalisir potensi terjadinya produk cacat produk. Upaya perbaikan ini dapat dilakukan menggunakan metode *six sigma* dengan tahapan DMAIC. Berdasarkan analisis peta kendali proporsi cacat produksi bulan April melebihi batas kendali atas. Dari perhitungan yang dilakukan didapatkan nilai DPMO rata-rata 685,416 dan sigma 4,741. Terdapat 23 jenis cacat, dengan cacat *delaminasi face/back* paling dominan (21,84%). Berdasarkan identifikasi dengan diagram *fishbone*, faktor penyebab terjadinya cacat adalah faktor manusia, material dan metode. Usulan perbaikan dengan 40 Prinsip Inventif TRIZ mencakup: melakukan rotasi tugas secara berkala serta mengganti penggunaan *micrometer* manual dengan digital, meningkatkan pengawasan *pre-prosesing* dengan cara melakukan sampling bahan sebelum dilakukan proses pelaburan lem, penyesuaian komposisi dempul dengan waktu pengeringan agar dempul kering secara maksimal dengan waktu kurang dari 15 menit, menambah jumlah pengoperasian mesin kempa dingin agar standar waktu pengerjaan kempa dingin dapat dicapai dan terakhir dengan menambahkan fasilitas pendingin ruangan dan penambahan fasilitas alat pelindung telinga.

Kata kunci: *Six Sigma*, TRIZ, Kayu Lapis

Quality Control Analysis Using Six Sigma and TRIZ Methods in the General Plywood Production Process at PT ABC

ABSTRACT

PT ABC is one of the manufacturing companies in Temanggung district that processes wood. This company manufactures various types of plywood, including Blockboard, Floor Base, and General Plywood. The company faces a problem with defective products in its general plywood production during each production period. This issue will affect the costs and time losses that the company will have to bear. In order to decrease the amount of faulty products, it is essential to implement improvements that will minimize the possibility of defects. The Six Sigma method with DMAIC stages can achieve this improvement. According to the control chart analysis, the proportion of production defects in April exceeded the upper control limit. The calculations resulted in an average DPMO value of 685.416 and a sigma of 4.741. 23 defects were identified in the plywood production process, with the most prevalent being face/back delamination defects at 21.84%. Through analysis using the fishbone diagram, it was determined that the main factors contributing to these defects are human factors, materials, and methods. Recommendations for improvement utilizing the 40 Inventive Principles of TRIZ involve implementing periodic task rotation, switching from manual micrometers to digital ones, enhancing pre-processing supervision by sampling materials prior to glue coating, adjusting putty composition to optimize drying time, increasing cold pressing machine operations to meet standard processing times, and installing air conditioning and ear protection facilities.

Keywords: Six Sigma, TRIZ, Plywood

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