

**ANALISIS PENGENDALIAN KUALITAS PROSES CASTING  
BLOK MESIN Z DENGAN METODE *QUALITY CONTROL*  
*CIRCLE* (QCC), FTA, DAN FMEA DI PT. X**

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**ABSTRAK**

PT X merupakan produsen di bidang otomotif yang memproduksi blok mesin Y dan Z. Selain karena produksi blok mesin Z belum bisa mendekati standar *defect* 1% yang ditetapkan perusahaan, alasan dipilihnya blok mesin Z untuk diteliti karena produksi mesin ini delapan kali lebih banyak jumlahnya dibandingkan blok mesin Y dalam satu tahun. Peneliti menggunakan metode QCC, FTA, dan FMEA dalam penelitian ini. Berdasarkan perhitungan *seven QC tools* diketahui bahwa terdapat 3 jenis *defect* yang paling banyak dan berpengaruh yaitu *sand inclusion* (41,78%), *gas hole* (19,50%), dan *cold shut* (12,43%). Berdasarkan metode FTA, didapatkan beberapa faktor penyebab dari ketiga jenis *defect* terbesar tadi dari sisi *environment, man, method, dan machine*, yang di dalamnya terbagi lagi menjadi beberapa *root cause*. Kemudian dalam metode FMEA dikerucutkan lagi *root cause* mana yang paling berpengaruh dan menjadi penyebab potensial ketiga jenis *defect* terbesar tersebut. Melalui *root cause* penyebab potensial tersebut, dirumuskan 7 poin rekomendasi perbaikan yang berfokus pada pencegahan *defect sand inclusion, gas hole, dan cold shut* yang memperbaiki *defect* tersebut langsung dari akar masalahnya.

**Kata Kunci :** *Quality Control Circle* (QCC), Pengendalian Kualitas, FTA, FMEA.

**QUALITY CONTROL ANALYSIS OF Z ENGINE BLOCK  
CASTING PROCESS WITH QUALITY CONTROL CIRCLE  
(QCC), FTA, AND FMEA IN PT. X**

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**ABSTRACT**

*PT X is an automotive manufacturer that produces Y and Z engine blocks. Despite the fact that the production of Z engine block has not been able to approach the 1% defect standard set by the company, the reason for choosing the Z engine block to be studied is because the production of this engine is 8 times more than the Y engine block in one year. Researcher used QCC, FTA, and FMEA methods in this study. Based on the calculation of seven QC tools, it is known that there are 3 types of defects that are the most common and influential, namely sand inclusion (41.78%), gas hole (19.50%), and cold shut (12.43%). Based on the FTA method, several causative factors were obtained from the three largest defects in terms of environment, man, method, and machine, which are further divided into several root causes. Root causes is narrowed in FMEA method to which considered most potential causing the three largest defects. Through these potential root causes, 7 points of improvement recommendations are formulated which focuses on preventing sand inclusion, gas holes, and cold shut defect types which eliminating them from their potential root causes.*

**Keywords :** *Quality Control Circle (QCC), Quality Control, FTA, FMEA.*