ABSTRAK

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Program Studi	:	Teknik Industri
Judul Skripsi	:	Analisis *Total Productive Maintenance* Menggunakan Metode *Six Big Losses, Fishbone Diagram* Dan *Failure Mode And Effect Analysis* (Fmea) Terhadap Mesin *Kneader* Di Perusahaan Resin Sintetis
Pembimbing	:	Popy Yuliarty, S.T, M.T.

Bulk Molding Compound (BMC) adalah salah satu produk Perusahaan Resin Sintetis yang diproduksi di Seksi Produksi 3. Proses produksi BMC dilakukan dengan menggunakan mesin *kneader*. Mesin-mesin *kneader* pada Seksi Produksi 3 sering mengalami *breakdown* yang menyebabkan terjadinya *downtime*. Kinerja mesin *kneader* dianalisis dengan menghitung nilai OEE. Nilai rata-rata *availability rate*, *performance rate* dan *rate of quality* untuk ketiga mesin *kneader* secara berturut-turut adalah 79,40%, 87,63% dan 100%. Hasil perhitungan menunjukkan bahwa rata-rata nilai OEE untuk ketiga mesin *kneader* adalah 69,57%. Analisis *six big losses* yang dipetakan dalam diagram pareto menunjukkan bahwa kerugian terbesar adalah kerugian *equipment failure*, yaitu sebesar 20,60%. Selanjutnya, penyebab *equipment failure losses* dianalisis dengan *fishbone diagram* dan metode *failure mode and effect analysis* (FMEA). Analisis dengan *fishbone diagram* menyimpulkan bahwa kerusakan mesin adalah penyebab dominan pada *equipment failure losses*. Pada metode analisis FMEA, *failure mode* pada *equipment failure losses* yang memiliki nilai *risk priority number* (RPN) paling tinggi, yaitu sebesar 288, adalah kerusakan *seal* hidrolik pada bak mesin *kneader*. Rekomendasi usulan perbaikan diberikan dengan terlebih dahulu melakukan analisis 5W1H.

Kata Kunci : OEE, *six big losses*, *fishbone diagram*, FMEA, 5W1H

ABSTRACT

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Study Program	:	Industrial Engineering
Thesis Title	:	*Analysis of Total Productive Maintenance Using the Six Big Losses Method, Fishbone Diagram and Failure Mode and Effect Analysis (Fmea) for Kneader Machines in Synthetic Resin Companies.*
Counsellor	:	Popy Yuliarty, S.T, M.T.

Bulk Molding Compound (BMC) is one of the products of Synthetic Resin Company, which is produced in Production 3 Section. Production process of BMC is done using kneader machine. The kneader machines in Production 3 Section often experience breakdowns which leads to downtime. The performance of kneader machines is analyzed by measuring OEE. The average value of availability rate, performance rate and rate of quality is 79,40%, 87,63% and 100%, consecutively. The OEE calculation shows that average OEE value for all three kneader machines is 69,57%. The analysis of Six Big Losses which being charted in Pareto Diagram shows that the biggest losses is equipment failure losses for 20,60%. Afterwards, the cause of equipment failure losses is being analyzed using fishbone diagram and failure mode and effect analysis (FMEA) method. Fishbone diagram analysis concludes that the dominant cause in equipment failure losses is machine breakdown. In FMEA method, failure mode with the highest risk priority number (RPN), 288 points, in equipment failure losses is hydraulic seal failure in kneader tub. The recommendation for improvement proposal is given after doing the 5W1H analysis.

Keywords : *OEE, six big losses, fishbone diagram, FMEA, 5W1H*