

ABSTRAK

ANALISIS EFEKTIVITAS *SOFT STOPPER* TERHADAP OPERASI *STACKER LIMESTONE* DI PT SEMEN BATURAJA

(2026: xviii + 101 Halaman + Daftar Gambar + Daftar Tabel + Daftar Lampiran)

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Penelitian ini bertujuan menganalisis efektivitas sistem *soft stopper* terhadap operasi motor induksi tiga fasa pada *travelling stacker limestone* di PT Semen Baturaja Tbk. Permasalahan yang terjadi adalah penghentian motor secara mendadak yang berpotensi menimbulkan alarm *out of pile* dan mengganggu kontinuitas operasi. Penelitian dilakukan dengan mengamati parameter tegangan, arus, daya, efisiensi, kecepatan putar, dan torsi motor pada beberapa variasi *set point* sebelum dan sesudah *soft stopper* aktif. Hasil penelitian menunjukkan bahwa kecepatan motor menurun dari 375,90 rpm menjadi 95,21 rpm pada *set point* 40%, dari 281,98 rpm menjadi 92,30 rpm pada *set point* 35%, dan dari 185,99 rpm menjadi 92,28 rpm pada *set point* 30%. Penurunan kecepatan diikuti penurunan tegangan, arus, dan daya motor. Sebaliknya, torsi meningkat dari 21,68 Nm menjadi 27,13 Nm, dari 17,53 Nm menjadi 26,99 Nm, dan dari 6,47 Nm menjadi 10,23 Nm. Implementasi *soft stopper* menghasilkan proses deselerasi yang lebih halus, meminimalkan alarm *out of pile*, serta meningkatkan keandalan operasi *travelling stacker limestone*.

Kata Kunci: Efektivitas, Motor, Deselerasi, *Stacker*, Alarm.

ABSTRACT

ANALYSIS OF THE EFFECTIVENESS OF SOFT STOPPER TOWARDS LIMESTONE STACKER OPERATIONS AT PT SEMEN BATURAJA

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This study aims to analyze the effectiveness of the soft stopper system on the operation of a three-phase induction motor on a limestone traveling stacker at PT Semen Baturaja Tbk. The problem that occurs is the sudden stopping of the motor which has the potential to cause an out of pile alarm and disrupt the continuity of operation. The study was conducted by observing the parameters of voltage, current, power, efficiency, rotational speed, and motor torque at several set point variations before and after the soft stopper is active. The results showed that the motor speed decreased from 375.90 rpm to 95.21 rpm at 40% set point, from 281.98 rpm to 92.30 rpm at 35% set point, and from 185.99 rpm to 92.28 rpm at 30% set point. The decrease in speed was followed by a decrease in voltage, current, and motor power. Conversely, the torque increased from 21.68 Nm to 27.13 Nm, from 17.53 Nm to 26.99 Nm, and from 6.47 Nm to 10.23 Nm. The implementation of a soft stopper results in a smoother deceleration process, minimizes out-of-pile alarms, and improves the reliability of traveling limestone stacker operations.

Keywords: *Effectiveness, Motor, Deceleration, Stacker, Alarm.*