ABSTRAK

STUDI EKSPERIMENTAL *VIBRATOR SHAFT* PADA MESIN *PRESSURE LEAF FILTER* DI *KERNEL CRUSHING PLANT* PT HINDOLI MILL SUNGAI LILIN

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xvii + 40 halaman, 14 tabel, 9 Lampiran

Mesin *pressure leaf filter* dengan model PLF 38-1380/1350-15 yang ada di PT Hindoli Mill Sungai Lilin memiliki masalah kerusakan pada *vibrator shaft* yang terjadi akibat beban kejut yang terlalu besar. Penelitian ini bertujuan mengganti material yang digunakan pada *vibrator shaft* lama dan dilakukan pengujian komposisi, uji tarik, uji impak, dan uji kinerja penggunaan. Hasil yang didapat dari penelitian ini adalah spesifikasi *vibrator shaft* lama menggunakan material *Stainless Steel SS304* dan *vibrator shaft* baru menggunakan material Baja *AISI*-1070. Hasil uji tarik *vibrator shaft* baru material Baja *AISI*-1070 dengan nilai rata-rata *ultimate tensile strength* 527,955 N/mm^2. Hasil uji impak *vibrator shaft* baru material Baja *AISI*-1070 dengan rata-rata nilai impak 3,614 J/mm^2 jauh lebih kuat dibandingkan *vibrator shaft* lama material *Stainless Steel SS304* dengan rata-rata nilai impak 0,548 J/mm^2. Hasil uji kinerja penggunaan didapat bahwa *vibrator shaft SS304* mengalami kerusakan setiap 2-3 bulan sekali sedangkan *vibrator shaft AISI*-1070 tidak mengalami patah selama 1 tahun pemakaian.

Kata Kunci: *Pressure Leaf Filter*, *Vibrator Shaft*, *SS304*, *AISI*-1070

ABSTRACT

EXPERIMENTAL STUDY OF VIBRATOR SHAFT ON PRESSURE LEAF FILTER MACHINE IN KERNEL CRUSHING PLANT PT HINDOLI MILL SUNGAI LILIN

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xvii + 40 pages, 14 tables, 9 appendices

Pressure leaf filter machine with model PLF 38-1380/1350-15 at PT Hindoli Mill Sungai Lilin has a problem of damage to the vibrator shaft which occurs due to too large a shock load. This research aims to replace the material used in the old vibrator shaft and carry out composition tests, tensile tests, impact tests and performance tests. The results obtained from this research are the specifications for the old vibrator shaft using SS304 Stainless Steel material and the new vibrator shaft using AISI-1070 Steel material. Tensile test results of the new vibrator shaft for AISI-1070 steel material with an average ultimate tensile strength value of 527.955 N/mm^2. The impact test results of the new vibrator shaft made of AISI-1070 Steel with an average impact value of 3.614 J/mm^2 are much stronger than the old vibrator shaft made of SS304 Stainless Steel with an average impact value of 0.548 J/mm^2. The results of the performance test showed that the SS304 vibrator shaft was damaged every 2-3 months, while the AISI-1070 vibrator shaft did not break during 1 year of use.

Keywords: *Pressure Leaf Filter, Vibrator Shaft, SS304, AISI-1070*