

ABSTRAK

ANALISIS PENGARUH *HEAT TREATMENT* TERHADAP HASIL KEKERASAN BAJA SKD 61 PADA PISAU *DIGESTER* DI PT HINDOLI

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xiv + 38 halaman, 8 tabel, 6 lampiran

Tujuan penelitian ini adalah untuk mengetahui adakah peningkatan nilai kekerasan baja karbon sedang yang diberi perlakuan panas (*Hardening*) dengan variasi suhu dan *Holding Time* menggunakan *Electric Melting Furnace* sebagai media pemanas baja. Tahapan penelitian dimulai dengan mencari literatur dan survei lapangan dilanjutkan dengan mempersiapkan Spesimen baja. Selanjutnya dilakukan proses *Hardening* dengan variasi suhu *Hardening* yakni 810°C, 860°C, dan 890°C serta variasi *Holding Time* yakni 16 menit, 22 menit, dan 28 menit. Pengujian yang dilakukan guna mendapatkan hasil kekerasan dengan menggunakan uji kekerasan vikers. Analisis data hasil uji menggunakan analysis of varians. Dari hasil penelitian ini diperoleh hasil bahwa kekerasan terbesar terdapat pada temperatur 860°C pada *Holding time* 22 menit dengan nilai kekerasan yaitu 749,68 HV. Dari hasil pengujian struktur mikro dapat dilihat bahwa adanya pengaruh dari variasi suhu dan *holding time* yang awalnya hanya memiliki struktur *ferrite* dan *pearlite* namun, setelah proses *heat treatment* bertambah struktur *martensitee*.

Kata Kunci: Baja Karbon Sedang, *Heat treatment*, Uji Kekerasan, Struktur Mikro

ABSTRACT

ANALYSIS OF THE EFFECT OF HEAT TREATMENT ON STEEL SKD 61 HARDNESS RESULTS ON DIGESTER BLADES AT PT HINDOLI

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xiv + 38 pages, 8 tables, 6 appendices

The purpose of this study is to find out whether there is an increase in the hardness value of medium carbon steel that is given heat treatment (Hardening) with temperatur variations and Holding Time using Electric Melting Furnace as a steel heating medium. The research stage begins with searching for literature and field surveys followed by preparing steel Spesimens. Next, the Hardening process was carried out with variations in Hardening temperatur, namely 810°C, 860°C, and 890°C and variations in Holding Time, namely 16 minutes, 22 minutes, and 28 minutes. The test was carried out to obtain the results of violence using the *Vickers* hardness test. The analysis of test results data uses analysis of variance. From the results of this study, the results were obtained that the greatest hardness was found at a temperatur of 860°C at a holding time of 22 minutes with a hardness value of 749.68 HV. And from the results of the microstructure test, it can be seen that there is an influence of temperatur variations and holding time which initially only had ferrite and pearlite structures, however, after the heat treatment process, the *martensitee* structure increased.

Keywords: Medium Carbon Steel, Heat treatment, Hardness Test, Microstructure