

ABSTRAK

ANALISA SIFAT MEKANIK PISAU TEMPA TRADISIONAL MELALUI PROSES PERLAKUAN PANAS

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(2025: xvi +48 Halaman, 22 Gambar, 6 Tabel, 7 Lampiran)

Penelitian ini bertujuan untuk menganalisis pengaruh perlakuan panas terhadap sifat mekanik pisau tempa tradisional. Proses yang digunakan meliputi pengerasan (hardening) dan tempering pada variasi suhu tertentu. Sampel pisau diuji melalui pengujian kekerasan, serta pengamatan struktur mikro untuk mengetahui perubahan material setelah perlakuan panas. Hasil penelitian menunjukkan bahwa perlakuan panas berpengaruh terhadap peningkatan kekerasan dan kekuatan pisau, namun pada suhu tempering tertentu terjadi penurunan kekerasan yang diikuti peningkatan keuletan. Dengan demikian, pemilihan parameter perlakuan panas yang tepat sangat penting untuk menghasilkan pisau tempa tradisional dengan kualitas yang baik dan sesuai kebutuhan.

Kata Kunci : pisau tempa tradisional, perlakuan panas, pengerasan, tempering, sifat mekanik, struktur mikro

ABSTRACT

ANALYSIS OF MECHANICAL PROPERTIES OF TRADITIONAL FORGED KNIVES THROUGH HEAT TREATMENT PROCESS

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(2025: xvi +48 Page, 22 Figures, 6 Tabels, 7 Attachments)

This study aims to analyze the effect of heat treatment on the mechanical properties of traditional forged knives. The processes applied include hardening and tempering at various temperatures. The knife samples were tested through hardness testing, and microstructural observations to determine the changes in the material after heat treatment. The results show that heat treatment significantly affects the hardness and strength of the knives, although tempering at certain temperatures leads to a decrease in hardness followed by an increase in toughness. Therefore, selecting the proper heat treatment parameters is essential to produce traditional forged knives with good quality and properties suited to their application.

Keywords: traditional forged knife, heat treatment, hardening, tempering, mechanical properties, microstructure