

ABSTRAK

Telah dilakukan penelitian tentang pengaruh perlakuan panas white cast iron dengan variasi media *quenching*, annealing dan tempering serta inokulan terhadap nilai kekerasan dan dampak. Unsur yang masuk untuk pengecoran logam Antara lain : C 3.2%, Si 0.8%, S 0.1%, P 0.01%, Mn 0.2%, Cr 2.5 %, Cu 0.1% dan dengan variasi (inokulan) penambahan FeSi 0.6%. Diperlakukan *heat treatment* di temperatur 850^oC dengan *holding time* 30 menit. Pengujian kekerasan dengan menggunakan metode *Hardness Brinell* dan pengujian dampak menggunakan *charpy*. Hasil pengujian kekerasan tertinggi ada pada *treatment quenching* oli dengan Non Inokulan sebesar 606,11 HB dan hasil nilai kekerasan yang terkecil pada *treatment annealing* dengan Inokulan. Hasil pengujian dampak tertinggi ada pada temper 400 ^oC Non Inokulan dengan 3.875 J/mm². Kekerasan sesuai *Original Equipment Manufacturer* 447.21 BHN untuk pembuatan *grinding ball*.

Kata kunci : *Grinding ball, Quenching, Annealing, Temper, Inokulan*

ABSTRACT

Research has been carried out on the effect of heat treatment of white cast iron with variations of quenching, annealing and tempering media as well as inoculants on hardness and impact values. Elements that are input for metal casting include : C 3.2%, Si 0.8%, S 0.1%, P 0.01%, Mn 0.2%, Cr 2.5 %, Cu 0.1% and with variations (inoculants) the addition of 0.6% FeSi. Treated heat treatment at a temperature of 850⁰C with a holding time of 30 minutes. Hardness testing using the Brinell Hardness Method and impact testing using Charpy. The results of the highest hardness test were in the oil quenching treatment with Non Inoculants of 606.11 HB and the smallest hardness values were in the annealing treatment with Inoculants. The highest impact test results were at 400 ⁰C Non Inoculant tempered with 3.875 J/mm². Hardness according to Original Equipment Manufacturer 447.21 BH for the manufacture of grinding balls.

Keywords : *Grinding ball, Quencing, Anneling, Temper, Inokulan*