ABSTRACT

This research is conducted to know the effect of aging on Al- Zn which has been corrosion with the condensation NaOH 25% and 30% to micro structure, hardness and plasticity specimen. The chemical composition on Al-Zn is Aluminum (Al) = 76,09%, Zinc (Zn) = 14,97%, Iron (Fe) = 0,31%, Magnesium (Mg) = 0,25%, Copper (Cu) = 0,11%, Silicon (Si) = 0,00%.

Phase process the examination cover the normalizing with the temperature 550° C during 1 hour with the specimen cooled in oven reach the room temperature, and aging at temperature 150° C during 1 hour with the variable of time aging 1 hour, 5½ hour, and 10 hour at temperature 150° C. Interesting tension and tension broken conducted at normal specimen, specimen which have been aged, specimen which have been aged and corrosion with the condensation NaOH 25% and 30%.

Research result indicate that the specimen with the treatment aging (1 clock, 5½ clock, 10 clock) and corrosion with the condensation NaOH experience of the degradation of interesting strength, strength broken, while for the strain, energy broken, resilient price experience of ascend from condition early. At various time of treatment aging happened by the interesting strength ascend, strength broken, diameter, strain, energy broken, and resilient price. Longer good treatment aging progressively its uniform structure, and excelsior of rate of condensation NaOH, hence size measure downhill diameter specimen progressively. Analyze the micro structure at specimen experienced of the aging show the existence of item forming making better uniform structure so that aluminum become resilient progressively.

INTISARI

Penelitian ini dilakukan untuk mengetahui pengaruh lama aging aluminium paduan seng yang dikorosi dengan larutan NaOH 25% dan 30% terhadap struktur mikro, kekerasan dan keliatan spesimen. Spesimen yang digunakan adalah aluminium paduan seng dengan komposisi kimia Aluminium (Al) = 76,09%, Seng (Zn) = 14,97%, Besi (Fe) = 0,31%, Magnesium (Mg) = 0,25%, Tembaga (Cu) = 0,11%, dan Silikon (Si) = 0,00%.

Tahap proses pengujian meliputi normalising dengan suhu 550° C selama 1 jam dengan pendinginan berubah dalam oven sampai mencapai suhu kamar, dan aging pada suhu 150° C selama 1 jam dengan variabel waktu aging 1 jam, 5½ jam, dan 10 jam pada suhu 150° C. Pengujian tarik dan impak dilakukan pada spesimen normal, spesimen yang telah diaging, spesimen yang telah diaging dan dikorosi dengan larutan NaOH 25% dan 30%.

Hasil penelitian menunjukkan bahwa spesimen dengan perlakuan aging (1 jam, 5½ jam, 10 jam) dan dikorosi dengan larutan NaOH mengalami penurunan pada kekuatan tarik, kekuatan patah, sedangkan untuk regangan, tenaga patah, harga keuletan mengalami kenaikkan dari kondisi awal. Pada berbagai waktu perlakuan aging terjadi kenaikkan kekuatan tarik, kekuatan patah, diameter, regangan, tenaga patah, dan harga keuletan. Semakin lama perlakuan aging semakin baik keseragaman strukturnya, dan semakin tinggi kadar larutan NaOH, maka ukuran diameter spesimen semakin menurun. Analisis struktur mikro pada spesimen yang telah mengalami aging menunjukkan adanya pembentukan butiran-butiran yang membuat keseragaman struktur lebih baik sehingga aluminium menjadi semakin ulet.