ABSTRACT

This research is conducted to know the old influence of aging and corrosion with the condensation NaOH 15% and 20% to aluminum alloy, with the chemical composition of sample Al-76,09, Zn-14,97%, Fe-0,31%, Mg-0,25%, Cu-0,11%, Si-0,00%.

Phase process the examination cover the normalizing with the temperature 550° C during 1 hour with the refrigeration of 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. For the examination of interesting tension and tension broken, specimen to be tested to cover the normal specimen, specimen which have been aged, specimen which have been aged and corrosion with the condensation NaOH 15% and 20%.

Research result indicate that the specimen with the treatment aging (1 hour, 5½ hour, 10 hour) and corrosion with the condensation NaOH experience of the degradation of interesting strength, strength broken, while for the strain of, 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 dan korosi dengan larutan NaOH 15% dan 20% terhadap aluminium paduan, dengan komposisi kimia sampel Al-76,09, Zn-14,97%, Fe-0,31%, Mg-0,25%, Cu-0,11%, Si-0,00%.

Tahap proses pengujian meliputi normalising dengan suhu 550° C selama 1 jam dengan pendinginan 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. Untuk pengujian tarik dan impak, spesimen yang akan diuji meliputi spesimen normal, spesimen yang telah diaging, spesimen yang telah diaging dan dikorosi dengan larutan NaOH 15% dan 20%..

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.