ABSTRACT

This research aimed to knowing the effect of concentration and corrosion time on aluminium that have been quenchs in the solution of NaOH toward diameter size and ultimate load. The test was conducted on the stick of cylinder which were immersed in the solution of NaOH. The immersion in the solution of NaOH was done in 1 hour, 5,5 hours, 10 hours with the solution concentration 5%, 10%, 15%, 20%, 25%, 30%.

The effect of the solution concentration and aluminium corrosion time in the solution pf NaOH was observed the changing of the diameter size, ultimate load, breaking strength and macro structure.

From the results of the research, it was found the specimen in the initial condition have the biggest ultimate load compared to the soecimen after immersed in the solution of NaOH. In the various levels of the solution concentration and immersion time, there were the decreases of the diameter size, the decrease of the ultimate load and breaking strength, The higher level of the solution concentration, the lower of diameter size, ultimate load and breaking strength. The longer immersion time, the lower of the diameter size, ultimate load and breaking strength.

INTISARI

Tujuan dari penelitian ini untuk mengetahui pengaruh konsentrasi dan waktu korosi pada aluminium yang sudah diquenching dalam lingkungan NaOH terhadap perubahan ukuran diameter dan kekuatan tarik. Pengujian dilakukan pada batang silinder aluminium yang dicelup dalam lingkungan NaOH, pencelupan dalam lingkungan NaOH dilakukan selama 1 jam, 5,5 jam, 10 jam dengan konsentrasi larutan 5%, 10%, 15%, 20%, 25%, 30%.

Pengaruh konsentrasi larutan dan waktu korosi aluminium dalam lingkungan NaOH diamati pada perubahan ukuran diameter, kekuatan tarik, tegangan patah dan struktur makro.

Dari hasil penelitian, benda uji pada kondisi mula-mula mempunyai kekuatan tarik yang paling besar dibanding benda uji setelah mengalami pencelupan dalam lingkungan NaOH. Pada berbagai tingkat konsentrasi larutan dan waktu pencelupan, terjadi penurunan ukuran diameter, penurunan kekuatan tarik dan tegangan patah. Semakin tinggi tingkat konsentrasi larutan, maka ukuran diameter, kekuatan tarik dan tegangan patahnya semakin menurun. Semakin lama waktu pencelupan, maka ukuran diameter, kekuatan tarik dan tegangan patahnya juga semakin turun