

Studi pengaruh konsentrasi larutan nacl dan perubahan ferrite content terhadap ketahanan korosi pada baja tahan karat dua fasa austenitik ferritik duplex uns32205 menggunakan metoda electrochemical impedance spectroscopy eis = Effect of the concentration of nacl solution and the change of ferrite content against the corrosion resistivity on duplex stainless steel uns32205 using electrochemical impedance spectroscopy eis method

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Abstrak

[ABSTRAK

Penggunaan baja tahan karat dua fasa austenitik-ferritik (Duplex) UNS32205 telah digunakan secara luas pada berbagai sektor perusahaan, khususnya industri Minyak dan Gas serta industri Petrokimia karena memiliki sifat mekanik dan ketahanan korosi yang sangat baik. Pada penelitian ini, yang diamati adalah pengaruh konsentrasi NaCl pada lingkungan kerja baja tahan karat ini, yang bertujuan mencari konsentrasi yang bersifat paling korosif, dan juga dilakukan pengamatan terhadap pengaruh perubahan Ferrite Content atau nilai rasio dari kedua fasa penyusun baja tahan karat UNS32205 yaitu Austenit dan Ferrit. Pada sampel awal yang diamati tanpa diberikan perlakuan panas apapun memiliki nilai rasio fasa 40% Austenit ? 60 Ferrit. Perubahan Ferrite Content atau perubahan rasio tersebut dilakukan dengan melakukan dua metode pemanasan sampel. Yaitu pemanasan menggunakan muffle furnace pada temperatur 11000C dan ditahan selama 20 menit, dengan hasil rasio 42% Austenit ? 58% Ferrit dan nilai ketahanan korosi paling rendah. Dan juga dilakukan pemanasan dengan cara mengambil sampel pada daerah HAZ dengan temperatur antara 4000C-12000C dan langsung quench, dengan hasil pengamatannya adalah memiliki ketahanan korosi paling tinggi karena memiliki rasio 50,3% Austenit ? 49,7% Ferrit.

ABSTRACT

The use of Duplex Stainless Steel UNS32205 has been widely used in various sectors of the company, particularly the oil and Gas industry and the petrochemical industry because it has excellent mechanical properties and corrosion resistance. In this study, the effect of NaCl concentration was observed on the stainless steel working environment, which aims to find the most corrosive nature of concentrations, and also carried out observations on the influence of Ferrite Content or change the value of the ratio of the phase constituent of stainless steel UNS32205 i.e. Austenite and Ferrite. On the initial samples were observed without any heat treatment has given the value of the phase ratio 40% Austenite ? 60 Ferrite. Ferrite Content changes or changes the ratio by doing two sample heating method. I.e. the heating furnace temperature on muffle using 11000C and detained for 20 minutes, with a ratio of 42% Austenit ? 58% Ferrit and lowest corrosion resistance value. And also done warming up by taking samples at the HAZ with temperature between 4000C-12000C and direct quench, with the results of its observations is to have the highest corrosion resistance because it has a ratio of 50.3% Austenite ? 49.7% Ferrite.

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