ANALYSIS OF THE CORROSIN RATE OF WELDING RESULT (SMAW) OF ST40 STEEL WITH VARIOUS ELECTRODES AND CURRENT STRENGTH IN SEAWATER MEDIA

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ABSTRACT

Steel is one of the materials used in the industrial world due to various interests, which has an impact on its use. Steel that has carbon content so that it is more easily oxidized and rusted. The benefits of this research can help contribute ideas about the results of the comparison of electrode types on corrosion of ST40 steel for use in ship materials. The purpose of this research was held in order to determine the corrosion rate using the weight loss method in accordance with the provisions of ASTM G31-72, where welding using AWS E6013 and AWS E7016 electrodes, current variations of 100A, 110A, and 120A with corrosive media are seawater and sulfuric acid with a concentration of 98%. The results of the corrosion rate research based on the test showed that the AWS E6013 electrode at a current of 100A received a value of 5.135 Mpy (Good), for a current of 110A received a value of 5.014 Mpy (Good), and a current of 120A received a value of 4.715 Mpy (Excelent). At AWS E7016 electrodes with a current of 100A got a value of 5.014 Mpy (Good), for a current of 110A got a value of 5.014 Mpy (Good), and a current of 120A 4.536 Mpy (Excelent).

***Keywords**: ST40 Steel, Corrosion Rate, SMAW Welding, Current Variation, Electrode*