

**ANALYSIS OF THE VARIATION OF DISTANCE AND VOLTAGE OF  
THE NICKELPLATING ELECTROPLATING PROCESS AGAINST THE  
CORROSION RATE OF ALUMINUM ALLOY 5052 IN SEAWATER  
MEDIA**

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**ABSTRACT**

Aluminum alloy 5052 is widely used as a material for fishing boat propellers because it has quite good corrosion resistance. However, continuous exposure to seawater can accelerate the corrosion process so coating is required. One of them is coating with the electroplating method. Electroplating serves to protect surfaces that make objects made of materials containing metal materials more resistant to corrosion. In this study, the parameters of the electroplating process are varied in distance and voltage. The distances used are 10, 20, and 30 cm with voltages of 6, 10, and 14 Volts. The purpose of this study is to determine the effect of distance and voltage variations in the electroplating process on the corrosion rate in aluminum alloy 5052 with nickel coating. The research method used is experimental, by taking the object of the research on the corrosion rate value of aluminum alloy 5052 material. The results of the research and observations conducted by the researcher are that the least weight loss is found in the variation of 10cm distance and 14V voltage of 0.01gr, resulting in the best corrosion rate value of 0.877 Mpy. Meanwhile, the most weight loss was in the variation of 30cm distance and 6V voltage with a weight loss of 0.07 gr with a corrosion rate value of 6.142 Mpy. Thus the closer the distance and the high voltage of the nickel electroplating process results in a low corrosion rate value, the better the corrosion resistance

**Keywords:** *Alloy 5052 aluminum, electroplating, corrosion rate*