

**EFFECT OF VARIATION OF COATING THICKNESS AND
TEMPERATURE VARIATIONS ON CORROSION RATE OF ASTM A36
LOW CARBON STEEL WITH METHOD PAINTING**

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ABSTRACT

This study aims to determine the effect of variations in coating thickness and temperature on low carbon steel test media with the method *painting* on the corrosion rate of a steel material. The method used in this study is the use of variations in the thickness of the paint coating and the immersion temperature. The paint coating uses variations of 1 layer of 75 μ m thickness, 3 layers of 125 μ m thickness, and 5 layers of 275 μ m thickness using brand *International Paint* and temperature variations using temperatures of 80°C, 85°C and 90°C. In this study, seawater was used as an applied problem, which was taken from the Payangan coastal sea of Jember. The test results on the effect of thickness *coating* are the greater the value of the thickness *coating*, the smaller the value of the corrosion rate that occurs. The results of the temperature variation test are that the higher the drying temperature, the higher the quality of the painting results. The test results on the corrosion rate are that the lowest corrosion rate value is found at a temperature variation of 90°C with a thickness of 275 μ m and the resulting corrosion rate value is 0.006 mm/y, the highest corrosion rate value is located at a temperature of 80°C with a thickness of *coating* 75 μ m and a corrosion rate value. 0.040 mm/y.

Keywords: ASTM A36 steel, *painting*, corrosion rate, thickness *coating*