

The Effect of the Proportion of Carbon on the Corrosion Rate of Carbon-Steel

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Abstract : The carbon steel is of one of the most common mineral materials used in engineering and industrial applications in order to have access to the required mechanical properties, especially after the change of carbon ratio, but this may lead to stimulate corrosion. It has been used in models of solids with different carbon ratios such as 0.05% C, 0.2% C, 0.35% C, 0.5% C, and 0.65% C and have been studied using three testing durations which are 4 weeks, 6 weeks, and 8 weeks and among different corrosion environments such as atmosphere, fresh water, and salt water. This research is for the purpose of finding the effect of the carbon content on the corrosion resistance of steels in different corrosion medium by using the weight loss technique as a function of the corrosion resistance. The results that have been obtained through this research shows that a correlation can be made between corrosion rates and steel's carbon content, and the corrosion resistance decreases with the increase in carbon content.

Keywords : proportion of carbon in the steel, corrosion rate, erosion, corrosion resistance in carbon-steel

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