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EFFECT OF DIFFERENT SI CONTENT ON THE MECHANICAL PROPERTIES IN AL-BASED ALLOY

HESHAM ELZANATY

Department of Basic Engineering Sciences, Faculty of Engineering, Delta University for Science and Technology, Gamasa, Mansoura, Egypt

ABSTRACT

The aim of this work was to determine the effect of Si content on the mechanical properties of near eutectic and hypereutectic Al–Si alloys with high Si content. The alloys of different content of Si–namely, 2, 4, 6, 8, 11.6, 12.5, 15, 17 and 20 wt.% are produced by stir casting route in an induction heating furnace. The mechanical properties namely Tensile strength and Hardness were investigated according to standard procedure. Tensile tests were carried out with universal testing machine. Yield strength and ultimate tensile strength has increased with increase in silicon content. But, percent elongation decreases with the increase of silicon content. The hardness tests of all the samples were conducted using a Vicker's hardness testing machine. The hardness of the samples increases with the increase in silicon content.

KEYWORDS: Al–Based Alloy, Tensile Strength, Percent Elongation and Hardness