



*Proceedings of Iran International Aluminium Conference (IIAC2018)
April 24-25, 2018, Tehran, I.R. Iran*

Effect of Annealing Heat Treatment on Mechanical properties of 3xxx Series Aluminum Alloys

Mahsa Navidirad*, Maziar Azadbeh , Paria Zarei

Sahand University of Technology

Abstract: In present work, heat treatment at different temperatures ranging from 100-600 °C for 1 hour were performed in a cast commercial 3xxx series aluminum alloy to evaluate the mechanical properties of the alloy. For this purpose, Charpy impact and Brinell hardness tests were carried out at room temperature. Moreover, the influence of heat treatment on the morphology and dispersion of dispersoids was investigated using optical microscopy imaging. The results revealed that although the amount of energy absorbed by the alloy increased by rising temperature, the hardness presented steady trend. This can be attributed to the distribution of continuous α -Al₆(Fe, Mn)Si secondary phases at high temperatures.

Keywords: 3xxx series aluminium alloys, precipitation treatment, mechanical properties