

Characterization of Thixoformed AlSi12 Alloy with the Addition of Trace Amounts of Silver

Authors : Nursen Saklakoglu, Adnan Turker

Abstract : The main objective of this study is to reveal the effect of the Thixoforming process on the microstructure and mechanical properties of the AlSi12 alloy with trace amounts of silver. It is concluded that Thixoforming has an important effect on the morphology of intermetallics and Si formation, as well as globular α -Al morphology. The intermetallics have been fractured during thixoforming. It is believed that the fine distribution of the intermetallics is one mechanism for the improved mechanical properties of Thixoformed alloys. The discrete Si particles have been observed during both isothermal heating to the semi-solid range and Thixoforming, also have an important effect on mechanical properties. The Thixoforming process has a greater effect on hardness than the addition of Ag does.

Keywords : AlSi alloys, intermetallic phases, mechanical properties trace element, silver, thixoforming

Conference Title : ICMMCE 2016 : International Conference on Mechanics, Materials and Civil Engineering

Conference Location : Paris, France

Conference Dates : July 25-26, 2016