

The effect of inoculation on properties of modified ductile Ni-resist alloy

Abstract

In this study, ductile Ni-resist alloy with a minimum 18 wt. % nickel composition was modified. Up to 12 wt. % manganese was added together with 10 wt. % nickel before undergoing the inoculation process at various percentages to investigate the effects of the alloying elements on both its microstructure and mechanical properties.. The results showed that increasing inoculation did reduce carbide formation and further led to improved tensile value and decreased hardness value. Moreover, inoculation led to a uniform distribution of free graphite. The experimental results show the inoculation process refined the modified alloyed iron microstructure and improved its mechanical properties.

Keywords; Austenite, Casting, Nodule Graphite