

Suitability of Aruwakkalu Red Sand as the Molding Sand for Cast Iron Casting

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Sand casting is a common casting method used for the production of metallic components. Normally Silica sand and Bentonite clay are used as the main ingredients of molding sand. There is a vast deposit of red sand in Aruwakkalu and currently it is not used for industrial applications.

The particle size distribution of Red Sand is very much similar to Silica sand and there is a clay content in it as well. Therefore, there is a possibility of partially replacing Silica sand and Bentonite with Aruwakkalu Red Sand. In this study, the Silica sand was replaced from 100% to 10% by red sand and the properties of molding sand were analyzed. The test results were compared with the requirements of the AFS standards.

The optimum percentage of Aruwakkalu Red Sand, Silica sand, and Bentonite clay is 11.4%, 77.9% and 7.1% by weight respectively. The moisture content was kept at 3.6%. Therefore 9.8% of silica sand and 0.8% of Bentonite clay can be reduced compared to the conventional molding sand when Aruwakkalu Red Sand is added.

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