

INCREASE IN PRODUCTIVITY OF ALUMINIUM GRAVITY DIES CASTING BY REDUCING THE REJECTIONS FOR HYDRAULIC COUPLINGS

M-Tech Dissertation

Submitted in
Partial fulfilment of the requirements
For the degree of

MASTERS OF TECHNOLOGY

In Production Engineering

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APRIL- 2020

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ABSTRACT

The casting of Non-ferrous Aluminium is a very critical process which requires stringent methoding and all its parameters such as melting temperature, pouring velocity and pre-heating of dies for a sound casting which will be hydraulically tested for acceptance of the casting. The Aluminium Alloy used contains higher amount of Zinc up to 10% by weight which is a another critical aspect to prevent slag formation of the Zinc along with the melting temperature of the Aluminium which reaches to 850 °C. The strength of the Aluminium ASZ 15,16,17 have been tested and grain refiners & binders for cores have been used to further increase the strength followed by addition of MOD Alloy in the Aluminium molten metal after de-gassing. This Research work focusses on the methods to reduce the generation of the gases due to reaction between molten metal and a foundry flux Zircon. The pre-heating of the die, cores and methods are adopted for effective removal of the gases from the core after pouring of the metal. The effect of gas is very severe since it restricts the molten Aluminium to develop the ribs of the Impeller and Runner of a fluid coupling. The effect of gas which is generated has to be studied and reduce its generation and also provision for the easy removal of the gases from the Cores during pouring.