

Speech Title: The Investigation of the Collapsibility of the Sand Mold for Multi-Cavity Aluminum Casting Method

Abstract: Recently, as consideration of the environment has grown, aluminum and manufacturing method are increasingly seen as the key to making many kinds of parts lighter. The metal mold casting is insufficient to manufacture the parts with complicated shapes such as the core structure. On the other hand, the sand mold casting is effective way to manufacture the parts with complicated shapes. In this study, we focused on a casting method, which is the sand mold casting process and able to manufacture many parts at the same time. And the collapsibility of the sand mold is a very important issue to observe. In this study, sand molds by using several kinds of sand were prepared, then the temperature characteristics in the sand mold, the bending strength of sand mold, related to a collapsibility characteristic, before or after casting were investigated. As a result, the following can be understood from our investigation. (1) In the sand mold after casting, the bending strength increase due to the distance from surface in contact with the aluminum. (2) There is a negative correlation between an incoming heat to the mold and the bending strength.