Engineering – Manufacturing Process

Comparison of hardness of cast from Sand Casting and Magnetic Molding

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In recent trends, owing to so many disadvantages of sand casting (such as poor thermal conductivity, pollution due to burning of binders), the use of sand casting for manufacturing of components becomes questionable. A major concern related to sand casting is environmental pollution. Moreover, in sand casting, the foundry wastes are released and sand that is burnt after casting is of no use thereafter. In Magnetic moulding, steel shots are used instead of sand and magnetic field is used to bind them, which has no effect on worker's health. Also, the solidification rate is higher in magnetic moulding compared to sand casting. In this paper, we compare the hardness of the sand casted and magnetic moulded Silicon reinforced AluminiumMetal Matrix Composites (MMC). It is found that the hardness of the component that is manufactured by magnetic moulding is higher than the sand-casted component.

Keywords: Hardness, Magnetic Molding, Metal Matrix Composites, Sand Casting