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EFFECTS OF GATING SYSTEM DESIGN ON TENSILE PROPERTIES OF CAST ALUMINIUM 6063 ALLOY

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Abstract

The effects of gating system design on the tensile strength properties of cast Al-Mg-Si alloy component were studied, with gating sprue diameters of 10 mm and 12 mm respectively for a pressurized and non-pressurized systems. A match plate pattern was made for channels and mould cavity preparation, while the pouring temperature is at 680^0C maintained as the optimum temperature. The variation with respect to increasing ingate of 1 to 3 was observed, the resulting castings from the gating system were compared for tensile strength using instron tensile test machine. The non-pressurized system with reduced turbulence and increasing cross sectional area towards the mould cavity, had finally increased the tensile strength. The result shows that 2-ingate pressurized gating system with 10 mm sprue diameter designed type has improved tensile strength. While the non-pressurized system with reduced turbulence and increasing cross sectional area towards the mould cavity, had finally increase the tensile strength.

Keywords

Gating system; Pouring Temperature; Tensile Strength; Gravity; Pressurized and Non-pressurized.

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