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The Mechanical Aluminium Graphite Stir Cast Composite's Ability to Improve Stirrer Speed

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ABSTRACT

Adjusting the stirrer speed and testing their mechanical qualities, a metal matrix composite with lubricating qualities can be created using a stir casting process. The casting machine has been activated. The temperature of the furnace is set to 750°C. The temperature is preheated to 150°C. The temperature of the pathway is fixed at 550°C. They let the furnace heat up. The aluminum silicon alloy is thrown into the furnace after it has reached 650°C. The melting point of the alloy is between 700 and 750°C. After being preheated, the finely ground graphite powder is allowed to thoroughly combine with the molten metal. To improve the wettability, graphite is preheated and used as reinforcement. To combine the alloy, a stainless-steel stirrer is utilized.First the stirrer is rotated at 250 rpm once both the alloy and reinforcement gets mixed up into a single red hot molt which is poured. The molt now leaves from the bottom of the furnace through the pathway from the machine. Pathway is maintained at 550°C to avoid the solidification of molt in the path. The pathway carries the molt to a die where the die is split up and the mould is taken out from the die. The die, furnace and pathway is coated with the non-stick paste to avoid the sticking of alloy in the walls. The same process is repeated for the stirrer speed of 450rpm, 650rpm, 850rpm and their mechanical properties are compared with each other to find the optimal stirrer speed

Keywords: Alminium Graphite, Metal Matrix Composite, Stir Casting, Properties and Behaviour, Stirrer speed.

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