

ABSTRACT:

This paper presents the experimental investigation conducted on Al-Si cast alloy (LM6) cast using lost foam process. The main objective of the research is to investigate the effect of pouring temperature, section thickness and melt treatment on the microstructure of the lost foam casting of Al-Si alloy. Step pattern with five different sections was prepared from 20 kg/m³ density foam and poured at five different temperatures; 700, 720, 740, 760, and 780°C with and without the addition of AlTiB as grain refiner. Analysis on microstructure, eutectic silicon spacing and porosity percentage were conducted to determine the effect of both parameters. The results show that pouring temperature has significant influence on the quality as well as microstructure of the lost foam casting of LM6 Al-Si alloy. Lower pouring temperature was found to produce finer microstructure casting. However, the addition of AlTiB as grain refiner did not affect the produced castings significantly whether in terms casting quality or microstructure.