



High Pressure Die Casting Process for Light Alloys

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Message from the Guest Editors

Dear Colleagues,

As one of the most popular manufacturing processes for light metals such as aluminium and magnesium alloys in the casting industry, high-pressure die casting is known for its high productivity, high dimensional accuracy and excellent mechanical properties. However, due to the fierce turbulence and limited shrinkage feeding capability, defects such as entrapped air and shrinkage porosity can form in castings, which affects the stability of mechanical properties in the castings. Such variation in mechanical properties between Al-based or Mg-based alloys has been extensively researched and the main explanation comes down to the randomness in distribution of the above-mentioned defects in castings, which causes inhomogeneity in the cast microstructure and leads to early failure during the material deformation process. The formation and existence of potential defects in the HPDC process for light metals poses a huge threat to the alloy development, process design, as well as the manufacturing and application of HPDC products. In this Special Issue, the complete cycle of the HPDC process for light alloys will be addressed.





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