Application of Cooling by Liquid CO_2 for the Die Casting Moulds Cores

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Quality of high-pressure castings is influenced by many factors. Structure and mechanical properties of these castings are mostly influenced by properties of casted material, technological parameters and thermal conditions in die casting mould. Thermal conditions in system casting – die casting mould is ensured by tempering system. However there is problem with thin cores and thin protrusions of die casting mould which is not possible to keep on the optimal temperature during casting by commonly available methods. Thus there is overheating in these places. It leads to the porosity of casting and also to the unsufficinet treatment of critical places of moulds which causes the lowering of their service time. With regard to the increasing requires on the castings quality is in practice searching still new possibilities how to cool down these critical places. One of the possibilities is to ally cooling by liquid CO_2 into such places. This paper deals with the monitoring liquid CO_2 cooling effect that is applied into the die casting mould core.

Keywords: high pressure die casting, cooling, core, CO_2

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