Experimental analysis of flow of ductile cast iron in streamlined gating systems

Streamlined gating systems have been developed for production of high integrity ductile cast iron parts. Flow of ductile cast iron in streamlined gating systems was studied in glass fronted sand moulds where flow in the gating system and casting was recorded by a digital video camera. These results are compared with real-time x-ray recordings of melt flow. Results show that flow patterns are the same using both techniques. The glass fronted moulds give global information on flow in the whole gating system and casting while the x-ray analysis gives detailed information on specific areas.

The experiments show how the quality of pouring, design of ingates, design of bends and flow over cores influence melt flow and act to determine the quality of the castings.

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