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***NUMERICAL SIMULATION OF STEERING SYSTEM ELEMENT CASTING***

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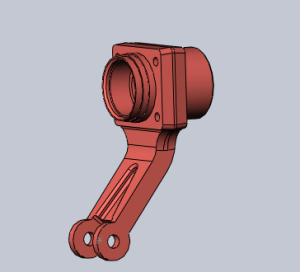
M. Szucki

**Keywords:** numerical simulation, casting technology, Solid Works, MAGMA Soft ®

**Abstract**

Computer aided engineering is getting critical for the foundry industry. Nowadays, to achieve commercial success modern foundries are in need of using simulation systems.

This software supported by CAD (Computer Aided Design) system gives us knowledge about filling and solidification of a cast. Particularly, numerical approximation of temperature, pressure and velocity distribution fields are available for the engineer.



The aim of this work was to use MAGMA Soft® to simulate casting of a steering system element (Fig. 1). The casted part was made of cast iron GJL-200.

Simulation software requires digital geometry. To build a 3D model of a chosen cast, Solid Works system was used.

Fig. 1. 3D model

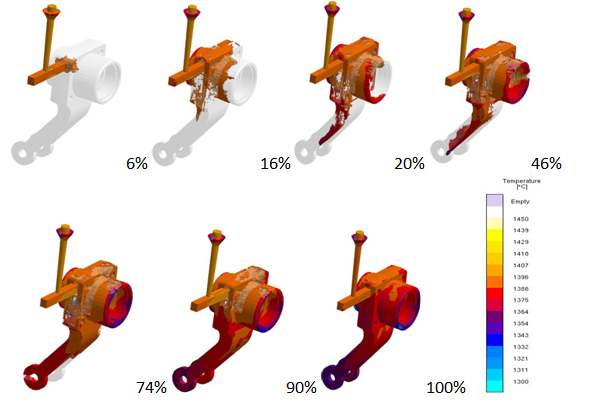


Fig. 2. Temperature distribution during mould filling

Filling and solidifying simulation results shows temperature distribution (Fig.2), pressure, liquid fraction and velocity of alloy in the mould cavity.

Results of simulation must be transformed into useful information to evaluate if a casting is sound or what must be done to improve the casting quality.

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