



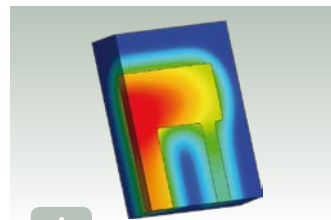
NUMERICAL SIMULATION

NUMERICAL SIMULATION OF DISTORTION AND RESIDUAL STRESS IN CASTINGS

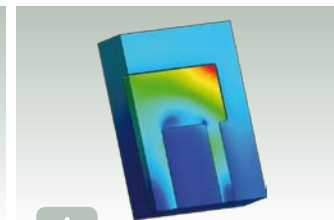
Within the scope of a research-project distortion and residual stress analysis with MAGMAstress and ANSYS Workbench is performed at the Austrian Foundry Research Institute.

AIMS

- Numerical simulation of the entire casting process
- Prediction of critical regions in the casting
- Prediction of critical regions in the die
- Reduction of scrap
- Optimisation of the casting process and cost reduction



Temperature distribution



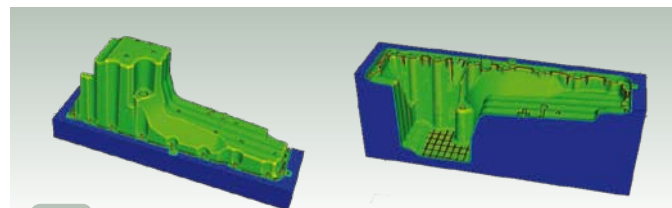
corresponding displacement distribution in a casting

DURABILITY OPTIMISATION OF CASTING DIES

In co-operation with the Materials Center Leoben (MCL) and industrial partners the Austrian Foundry Research Institute works on a project aiming at durability optimisation of dies by numerical simulation.

AIMS

- Prediction of critical areas in permanent dies
- Prediction of die damaging
- Prediction of die durability
- Increase in die durability through process optimisation



Equivalent v. Mises-Stress in the two half dies of a high pressure casting die for an oil sump