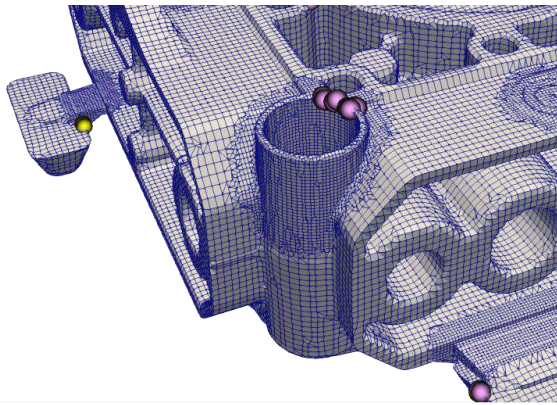


## FROM MICRO TO GIGA WITH EASE

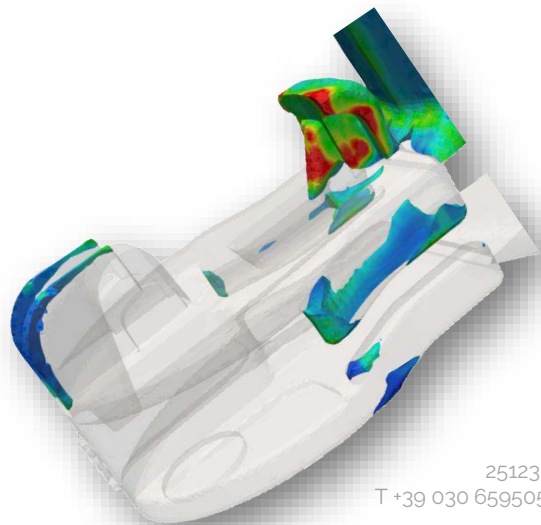
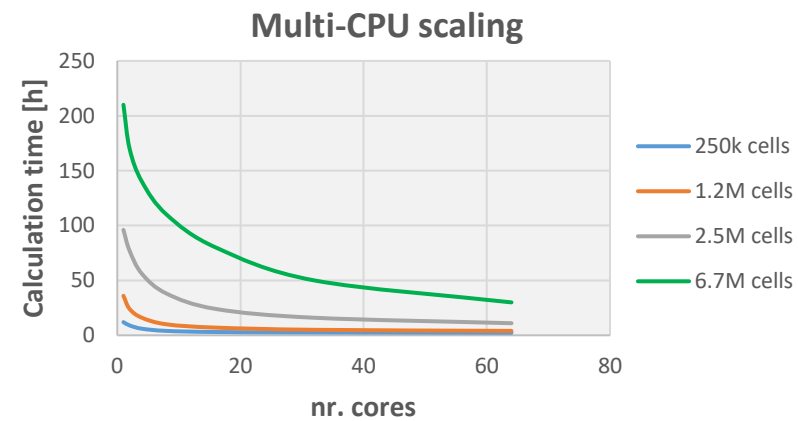
**CastleBODY** allows for **free-of-charge multi-CPU** calculation and meshing. Several simulations can be run at the same time or queued to compare different die configurations or process parameters. This means an important saving of time and the possibility to carry out more simulations within company deadlines

Efficient hybrid mesh algorithms with local refinements help catching even the smallest details in both tiny and huge models



Locally refined hybrid mesh

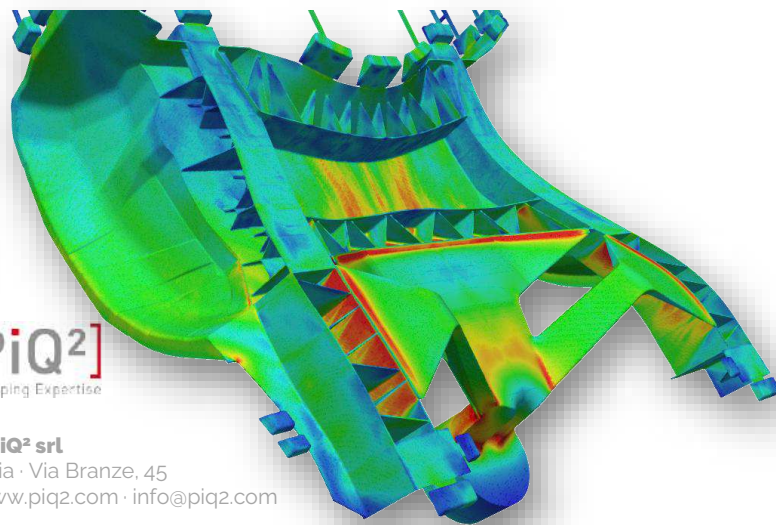
High scalability on multiple CPUs and proven reliability of the results even with coarser meshes allow for quick simulations even with the bigger models



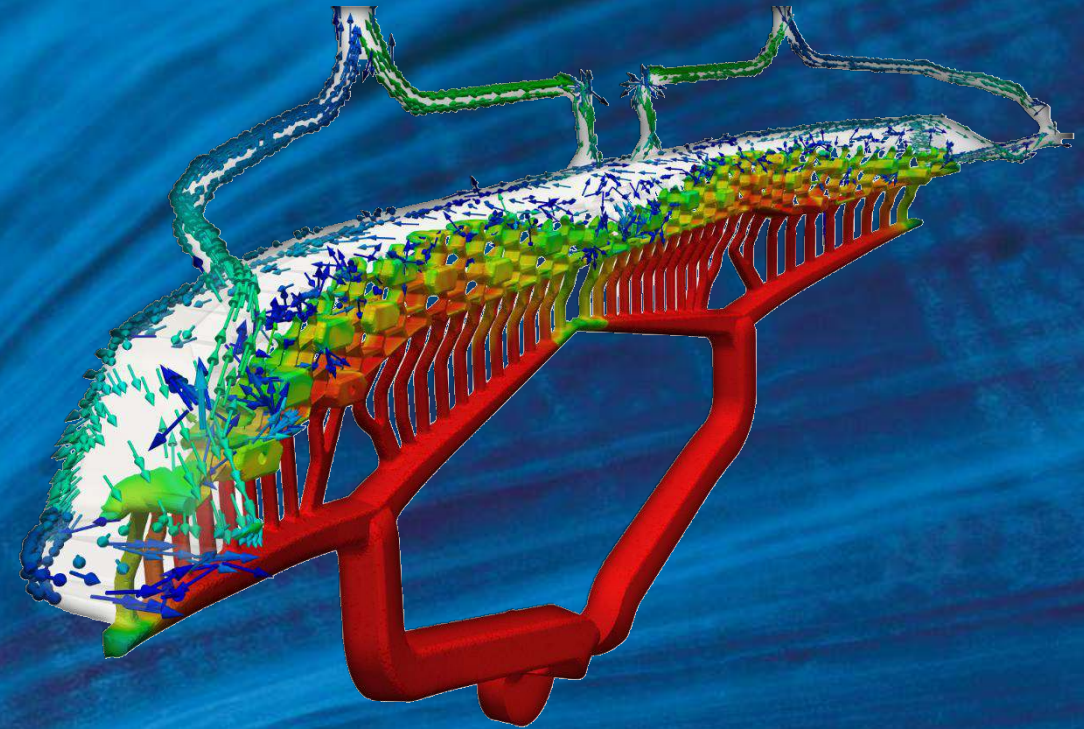
[PiQ<sup>2</sup>]  
Developing Expertise

PiQ<sup>2</sup> srl

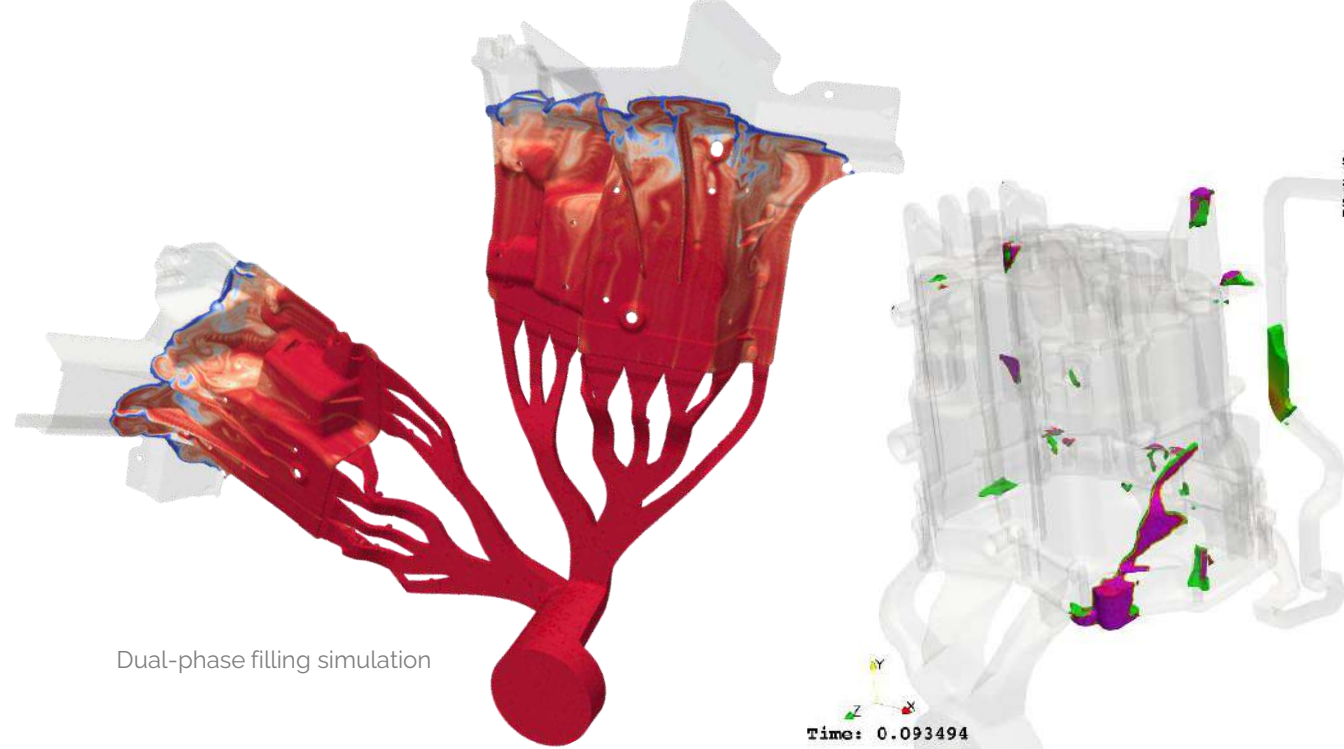
25123 Brescia · Via Branze, 45  
T +39 030 6595058 · [www.piq2.com](http://www.piq2.com) · [info@piq2.com](mailto:info@piq2.com)



[PiQ<sup>2</sup>]  
Developing Expertise



[castle]<sup>2</sup>BODY



Dual-phase filling simulation

## A NEW GENERATION OF SIMULATION SOFTWARE SPECIFICALLY DESIGNED FOR HIGH PRESSURE DIE CASTING

**CastleBODY** is an innovative software solution for high pressure die casting simulation that includes unique, very advanced mathematical features.

Thanks to the **dual-phase technology**, it simulates the combined action of two fluids: heavy-uncompressible alloy and light-compressible air.

The software takes into account the **effect of the alloy spraying** inside the cavity, thus providing extremely accurate **air entrapment results** and allowing the **vacuum and venting performance evaluation**.

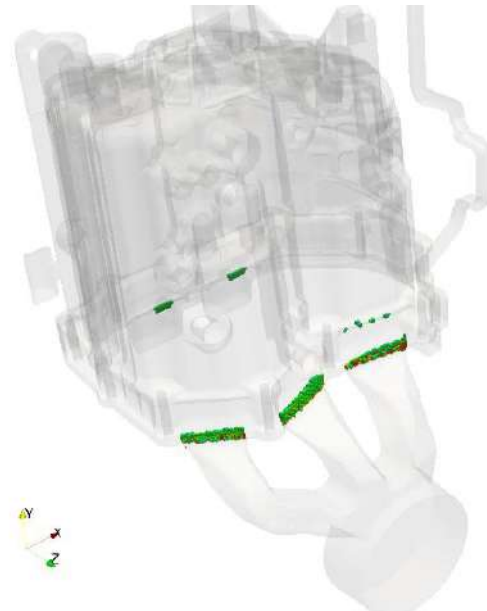
The powerful calculation engine is combined with a very **simple and user-friendly interface**, where both input data and output results are provided in an easy way.

The 3D mesh can be prepared taking into account any **areas requiring a refined mesh** (i.e. the gates) or a coarse mesh in the thicker sections.

The simulation setup can be arranged in just a few minutes even by operators without a specific technical background.

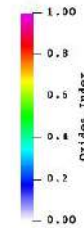
Time: 0.093494  
PiQ2 - CastleBody

Oxides index criteria



Mould erosion index criteria

Simulation setup  
1st phase velocity (m/s)=0.2  
2nd phase velocity (m/s)=3.5  
1st phase time (s)=0.0238  
Solid State Temperature=524.85  
Liquid State Temperature=549.85



→ DATA IMPORT FROM MANY CAD SYSTEM  
(including Step, Parasolid and many others)

→ COMPLETE 3D CAD MODELLING CAPABILITIES

→ EASY PREPARATION AND SETUP FOR THE CALCULATION

→ SIMPLE AND ROBUST MESHING WITH CUSTOMIZED LOCAL REFINEMENT

→ DUAL-PHASE: ALLOY AND AIR ARE SIMULTANEOUSLY SIMULATED AND ANALYZED

→ REALISTIC FILLING SIMULATION OF ALLOY SPRAYING, VACUUM AND VENTING

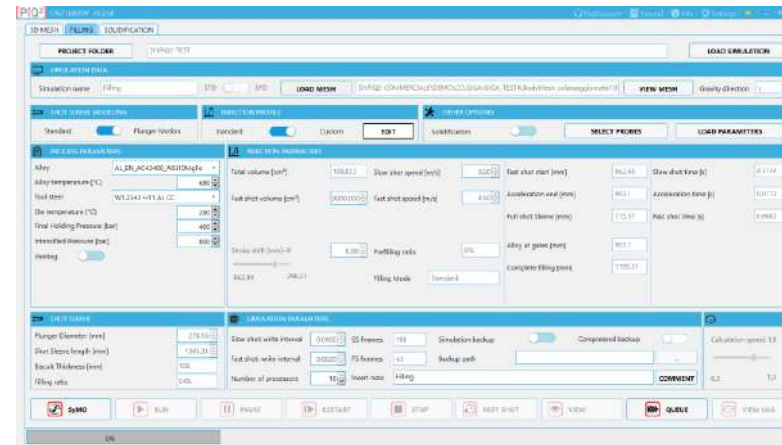
→ FAST AND ACCURATE SOLIDIFICATION ANALYSIS

→ VIRTUAL SHOT SLEEVE WITH PLUNGER MOTION SIMULATION

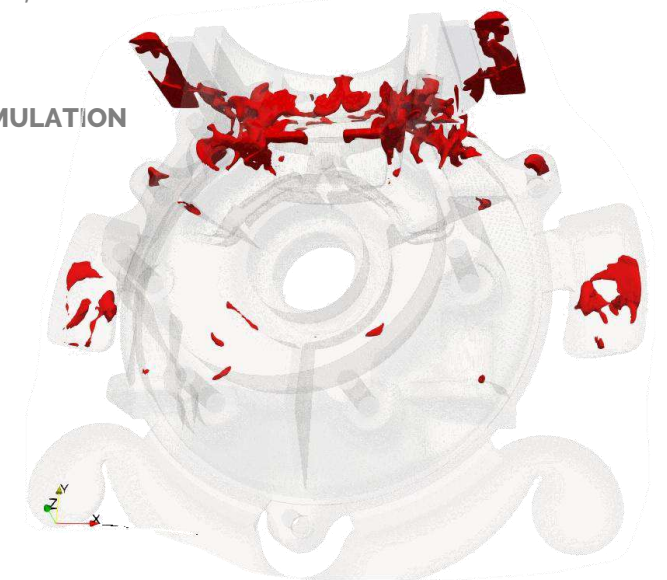
→ TYPICAL TRAINING DURATION OF A FEW HOURS

→ FREE MULTI-CPU CALCULATION AND MESHING

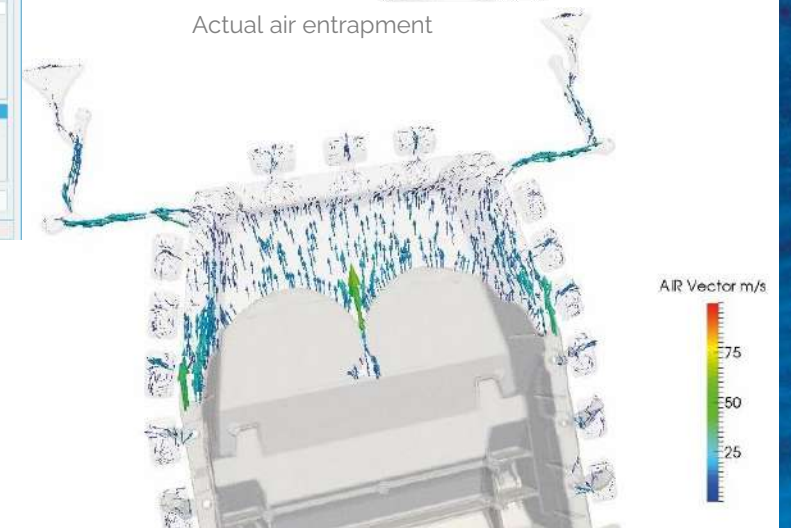
→ FREE RESULTS VIEWER



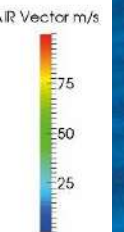
CastleBODY user friendly interface



Actual air entrapment



Air flow behaviour simulation



**[castleBODY]**