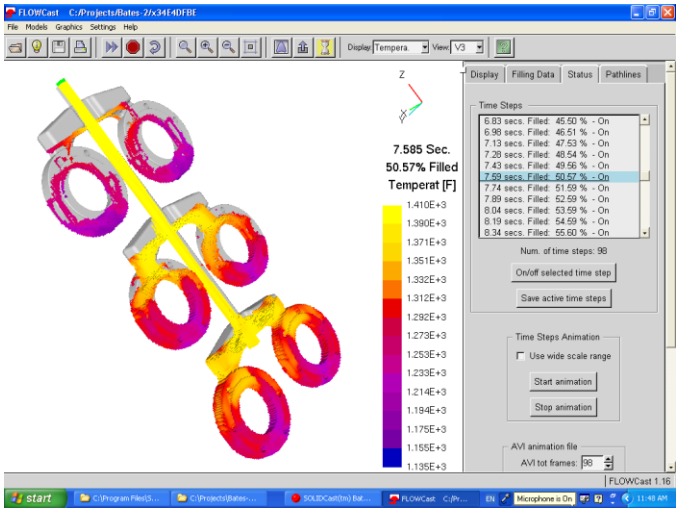
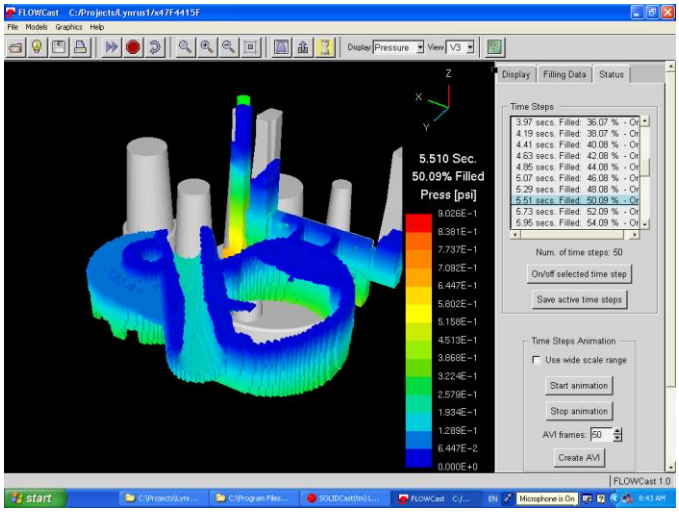
FLOW CAST

FLOW MODELING FOR MOLD FILLING USING COMPUTATIONAL FLUID DYNAMICS

FLOWCast™ is the fluid flow modeling module from Finite Solutions, Inc. **FLOWCast** works with models created by **SOLIDCast™**. Fluid flow modeling lets you see how molten metal will move through gating systems and fill the mold.



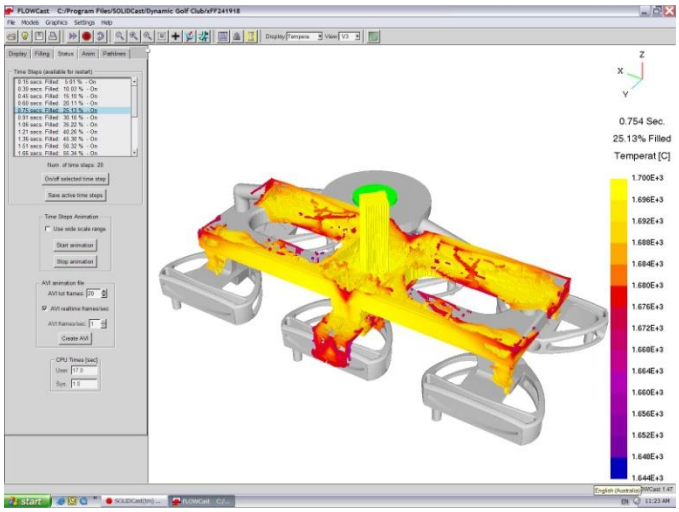
Initial Filling of Aluminum Castings Showing Metal Temperature in the Tilting Die. Permanent Mold Process.



Metal Velocity Plot During the Filling Sequence. Aluminum Permanent Mold Process.

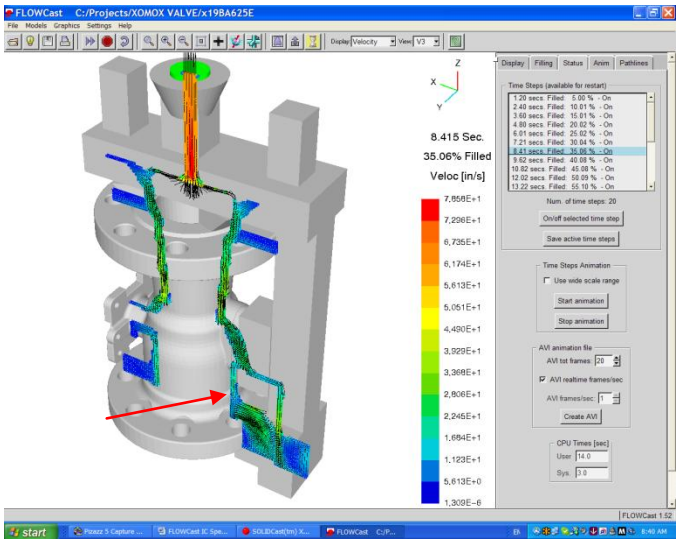
FLOWCast models convection, conduction and radiation in the mold cavity, so you can analyze your casting and gating design to predict and minimize flow-related defects such as misruns due to premature solidification, or oxide formation or mold erosion due to excessive velocities during filling.

FLOWCast is a full-featured **CFD** (Computational Fluid Dynamics) simulation, based on the Navier-Stokes equations for fluid flow. With **FLOWCast**, you can view progressive temperature, fluid velocity and fluid pressure during the fill, from any angle of view.



Initial Filling of Steel Castings Showing Metal Temperature. Investment Casting Process.

FLOWCast is integrated with **SOLIDCast** and uses models and meshes created with **SOLIDCast**. Since **SOLIDCast** is the world's easiest-to-use casting modeling system, flow modeling has never been easier. Just import your casting model from 3D CAD or build your model using **SOLIDCast** tools, mesh the model, and run **FLOWCast** to simulate mold filling.



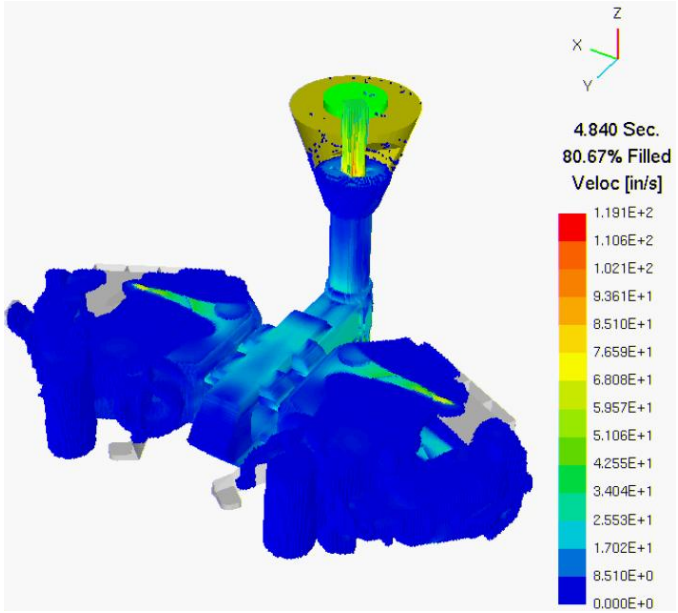
Velocity Vectors Show Reverse Flow OUT of the Casting and INTO the Gating System. Investment Cast Valve Body.

Results from a **FLOWCast** simulation can be used in **SOLIDCast** to model the final solidification of the casting, resulting in a completely integrated casting modeling system. Design and analysis of gating and mold filling with **FLOWCast** is as simple as solidification modeling with **SOLIDCast**.

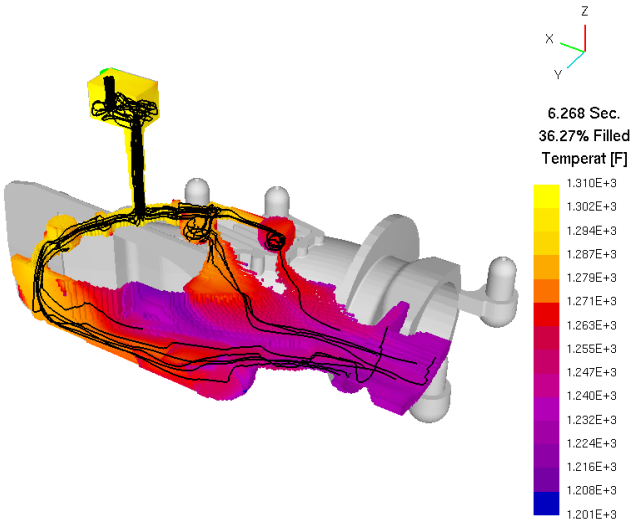
New features allow multiple point pours, so you can backfill risers with hot metal. Bottom pour ladles can be calculated, creating a variable fill rate pouring process.

FLOWCast contains many features to visualize the filling process. You can plot or animate filling sequences showing temperature, velocity or pressure. Movies can be created to show real-time filling, or played at any desired frame rate. In addition to color, you can add velocity vectors, particle tracers, translucence and more!

Finite solutions Incorporated



Metal Velocity Prior to Misrun in two Copper Sand Castings



Flow Path Tracing in an Aluminum Sand Casting

FLOWCast is the most cost-effective flow analysis tool available. It is sold as a site license, so you can run it on as many machines as you want at no extra charge. Run multiple simulations at the same time on multi-processor machines! Multiply your payback with **SOLIDCast** and **FLOWCast**.

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