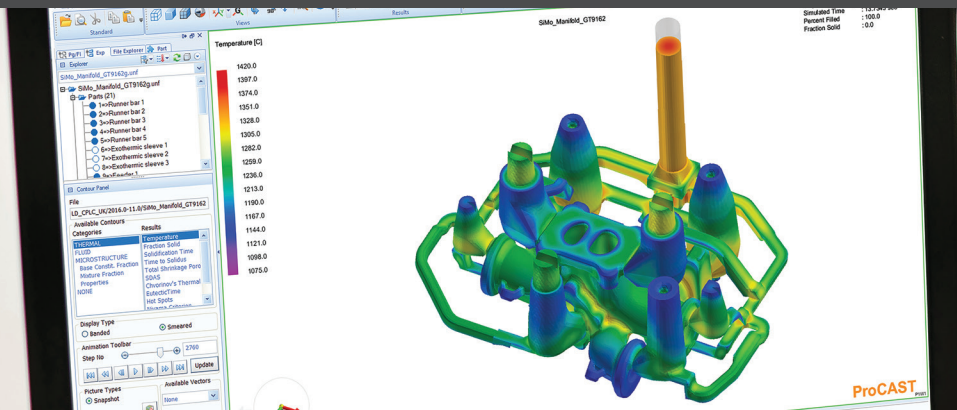


ProCAST CASTING SIMULATION SOFTWARE



Simulate the complete casting process for defect-free parts every time with a single tool.

For decades, customers have relied upon ProCAST for efficiently predicting casting basics and effectively solving deformations and residual stresses.

It's time to turn the corner on your manufacturing process

Your first off-tool parts are finally available, only for you to realize they contain pinholes, shrinkage, or hot spots. With tight deadline, you can either ship the parts and undoubtedly deal with an unhappy customer or go back to the design stage and try to identify the problem, correct it, and hope it is finally free from defects. And because the trial period in the casting development schedule is underestimated, it is imperative to get your gating design to be robust against process variations before arriving at the testing phase.

Casting simulation allows for virtual testing early in the development stage. This is key to meet deadlines and stop wasting money on scrap parts or late designs.

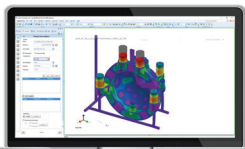
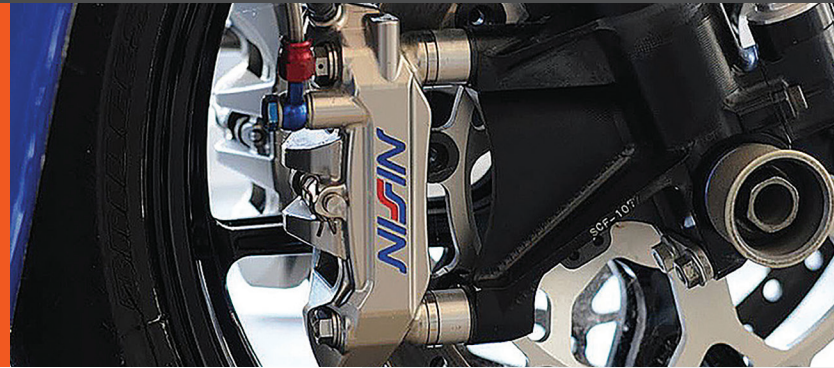
Simulate the entire process chain across casting processes

For decades, engineers have relied upon casting simulation with ProCAST as their go-to tool: Predict, analyze, measure and quantify the most common casting defects in the earliest design stages. Simulate the entire process – from furnace to final casting to capturing and tracking all physics.

Automatically determine the casting part's best process window to reach the final quality goal through design of experiments, optimization and process robustness analyses. With its finite element technology, ProCAST also predicts complex issues and comprehensively addresses most castable alloys and most casting processes like sand castings, die castings, investment castings, and multiple variants associated with these processes.

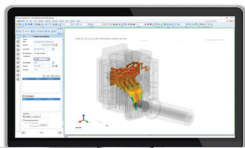
ProCAST CASTING SIMULATION SOFTWARE

Engineers at **NISSIN KOGYA** were able to reduce the percentage of defects to a very large extent thanks to a high accuracy simulation tool like ProCAST.



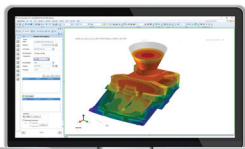
Sand casting foundries optimize the gating system & eliminate the risk of shrinkage porosity

Model any sand casting process, including high-pressure molding lines. Study filling, solidification & residual stresses as well as the effects of feeder locations, filters, chills, insulation & exothermic sleeves on the casting process and quality.



Die casting reproduce shop floor conditions

Use casting simulation to perform several production cycles and obtain steady-state die temperatures. Study filling, solidification, intensification pressure effect, cooling channel design & process parameters optimization.



Investment casting efficiently control the entire process to cast intricate designs

Automatically generate the mesh representing the shell mold. Allow blending for non-uniform shell thickness and creation of multiple shell layers. Consider radiation with view factors, including shadowing effects critical for high-temperature alloys.

MEET ALL QUALITY REQUIREMENTS FOR RIGHT-FIRST-TIME DELIVERY

- Residual stress & distortion
- Microstructure & heat treatment
- Advanced porosity model
- Grain structure
- Process optimization
- Continuous casting
- Centrifugal casting
- Lost foam



Learn More:
esi-group.com/products/casting