

SOLIDWORKS PLASTICS

OBJECTIVE

For companies that design plastic parts or injection molds, SOLIDWORKS® Plastics helps users predict and avoid manufacturing defects during the earliest stages of part and mold design, eliminating costly mold rework, improving part quality, and decreasing time to market.

OVERVIEW

SOLIDWORKS Plastics offers computer-aided engineering (CAE) simulation tools that predict how melted plastic flows during the injection molding process—the manufacturing method used to produce more than 80 percent of all plastics products. The ability to predict how the plastic will flow allows the prediction of manufacturing-related defects. By being able to predict these defects, users can change mold geometry, processing conditions, or the plastic material used, to minimize potential defects, thus saving energy, natural resources, time, and money.

BENEFITS

- **Avoid Hidden Costs:** SOLIDWORKS Plastics products can be used to optimize part wall thickness, gate locations, runner system size, and layout to ensure the mold works right the first time, reducing or eliminating the need for rework.
- **Reduce Manufacturing Defects and Scrap:** SOLIDWORKS Plastics makes it easy to analyze design iterations at the earliest stages of product development—when the cost of change is lowest and the impact on manufacturability is greatest. This improves part quality and minimizes scrap rates.
- **Reduce Time-to-Market Delays:** SOLIDWORKS Plastics helps to predict and avoid potential manufacturing defects before any mold tooling is cut, virtually eliminating the need for time-consuming and costly mold rework and ensuring project deadlines and ship dates are met, and projects are within budget.
- **Avoid Inefficient “Islands of Automation”:** SOLIDWORKS Plastics provides automated report generation tools that facilitate the sharing and interpretation of simulation results, allowing increased collaboration among development teams at different sites.

CAPABILITIES

SOLIDWORKS PLASTICS STANDARD

Helps you ensure parts are manufacturable during the design process. Easy to learn and use, SOLIDWORKS Plastics Standard is fully embedded within SOLIDWORKS CAD, so you can analyze and modify part designs at the same time you optimize for form, fit, and function.

SOLIDWORKS PLASTICS PROFESSIONAL

Builds upon SOLIDWORKS Plastics Standard with added support for mold design analysis. With easy-to-use tools, you can quickly analyze single- and multi-cavity, and family mold layouts, including sprues, runners, and gates, to estimate cycle time, and to optimize feed system design.

SOLIDWORKS PLASTICS PREMIUM

Includes SOLIDWORKS Plastics Professional with advanced simulation functionality to analyze mold cooling line layouts and part warpage. Optimizing the cooling line minimizes cycle times and decreases manufacturing costs.

SOLIDWORKS DESIGN SUPPORT

- Native SOLIDWORKS files
- Associative with SOLIDWORKS geometry
- Fully embedded in SOLIDWORKS 3D CAD

GENERAL ANALYSIS AND MESHING

- Automated mesh generation
- Guided mesh creation and analysis setup
- Global and local mesh refinement controls
- Solid 3D mesh
- Boundary mesh (shell)

MOLD GEOMETRY SUPPORT

- Runner Design
- Sprues and Runners
- Hot and Cold Runners
- Multicavity Molds
- Family Molds
- Cooling Lines
- Baffles and Bubblers
- Conformal Cooling Channels
- Mold Inserts
- Cyclic and Symmetric Cavity and Runner Layouts

RESULTS (PARTIAL LISTING)

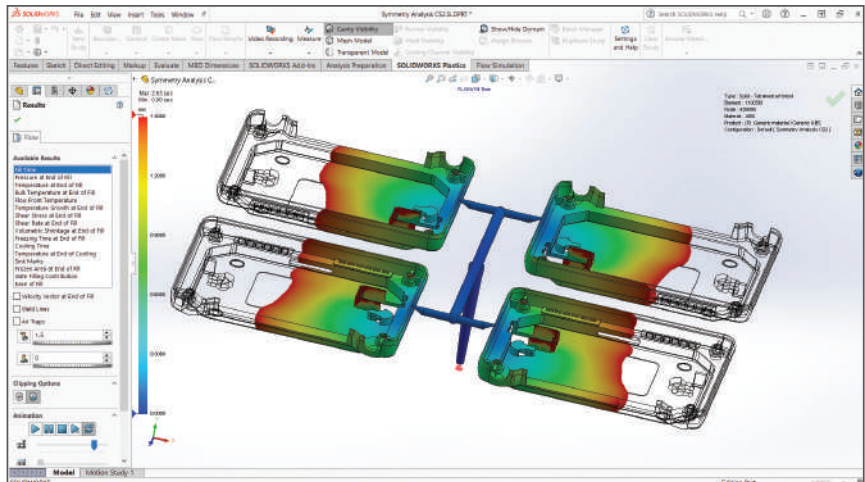
- eDrawings® Support
- Fill Time, Ease of Fill, Results Adviser
- Pressure Profile
- Part and Mold Temperature Profiles
- Shear Rate
- Cooling Time
- Weld Lines, Air Traps, Sink Marks
- Frozen Layer Fraction
- Clamp Force, Cycle Time
- Volumetric Shrinkage
- Displacement (part warpage)
- Export to ABAQUS®, ANSYS®, Digimat®

PLASTICS MATERIAL DATABASE

- Thermoplastic, thermoset, mold material, and coolant databases
- Material database customization

SIMULATION CAPABILITIES

- Filling Phase
- Packing Phase
- Cooling Analysis
- Warpage Prediction



ADVANCED SIMULATION CAPABILITIES

- Part Insert Overmolding
- Multi-shot Overmolding
- Fiber Orientation Analysis
- Valve Gates
- Venting Analysis
- Mold Inserts
- Gas- or Water-Assisted Injection Molding
- Co-injection Molding
- Birefringence
- Reaction Injection Molding
- Conformal Cooling Analysis

LANGUAGE SUPPORT

- Czech
- English
- French
- German
- Italian
- Japanese
- Korean
- Polish
- Portuguese
- Russian
- Simplified Chinese
- Spanish
- Traditional Chinese
- Turkish

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