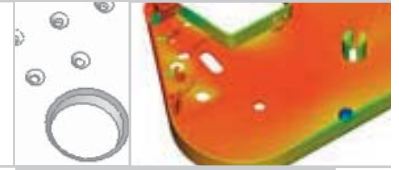


MPI/Fusion



MPI/Fusion is the fastest way to prepare CAD solid models for in-depth filling, packing, optimization, cooling, and warpage simulations while reducing the time needed for model preparation.

You can also take advantage of MPI/Fusion benefits when you use MPI simulation modules for thermoset molding processes.

Using MPI/Fusion, you can refine the part and mold design, material, and processing conditions to achieve the optimum balance between quality, cost, and time. There is no need to create a midplane model!

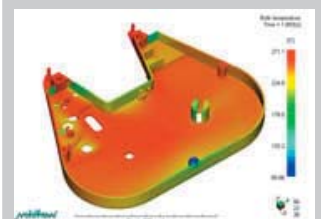
Capabilities

Analyze Solid Geometry:

- MPI/Fusion allows users to analyze a CAD solid model directly rather than having to go through the process of generating an analysis specific midplane mesh
- MPI/Fusion supports 3D CAD files in STL, Patran Neutral, I-deas Universal, Nastran BDF, and Ansys formats, among others
- Users can also analyze Moldflow Part Adivser and Mold Adviser files directly
- MPI/Fusion offers all the same mesh editing tools that are available for working with midplane models
- Users can display and edit the thickness of the mesh to improve the design of the part:
 - Easily add flow leaders and/or flow restrictors
 - Add ribs and bosses within the MPI environment

Solution Breadth:

- Thermoplastics users can run a complete asymmetric filling, packing, optimization, cooling, and warpage analysis on a 3D CAD solid model
- Thermoset users can simulate reactive injection molding processes as well as the microchip encapsulation and underfill encapsulation molding processes using a 3D CAD solid model also





Filling and Packing Analyses:

- MPI/Fusion integrates with MPI/Flow to simulate the filling and packing stages of the thermo-plastic injection molding process
- The combination of MPI/Fusion and MPI/Flow also allows the use of the 3D CAD solid model to simulate:
 - ┆ Automatic Runner Balancing
 - ┆ Automatic Gate Location
 - ┆ Molding Window Optimization
 - ┆ Design of Experiments (DOE)

Fiber Analysis:

- Fibers play an important part in the design and manufacture of plastic parts. MPI/Fusion integrates with MPI/Fiber to accurately predict the orientation of fibers and the thermo-mechanical property distribution in the molded part

Warpage Analysis:

- MPI/Fusion links to MPI/Warp to accurately predict the shrinkage and warpage of the molded part. Users no longer have to create a midplane model to determine if their design will manufacture without deformation

Optimization Analysis:

- MPI/Optim can be used in conjunction with MPI/Fusion to determine the optimum filling and packing profiles to be used on the molding machine which produce parts that meet user specified criteria

Reactive Molding Analysis:

- MPI/Fusion can be used with MPI/Reactive Molding to simulate thermoset molding processes on the 3D CAD solid model:
 - ┆ Reaction injection molding (RIM)
 - ┆ Structural reaction injection molding (SRIM)
 - ┆ Resin transfer molding (RTM)

Microchip Encapsulation Analysis:

- The benefits of using the MPI/Fusion solids-based analysis extend to the MPI/Microchip Encapsulation simulation as well. Any company involved in the design and manufacture of micro electronic devices can benefit

Underfill Encapsulation Analysis:

- MPI/Fusion also links with the MPI/Underfill Encapsulation module, which is used to analyze the flow of the encapsulant material in the cavity, between the chip and the substrate during the underfill encapsulation process

Extends the Capabilities of Moldflow Plastics Advisers Software:

- Part and mold designers using Moldflow Plastics Advisers (MPA) software can quickly and easily check their CAD solid models for manufacturability. When the MPA results indicate that a more in-depth analysis is required to rule out unexpected problems, designers can simply export the model for analysis with MPI/Fusion
- Analysts using MPI/Fusion can then undertake a more detailed analysis to optimize the design as required. This allows the analysts to extend MPA capabilities to include full asymmetric filling, packing, optimization, fiber, cooling, and warpage analyses

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