Autodesk® Simulation Moldflow® Adviser 2013

What's New in this Release

Autodesk®

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Autodesk® Simulation Moldflow® Adviser

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Contents

Chapter 1 **Release notes** 1

What's new 1

Autodesk Simulation DFM 1

Autodesk Vault integration 1

Improved Autodesk Inventor Fusion software available 2

Additional license-free CAD formats available for import 3

Consolidated Autodesk Simulation Moldflow Design Link available 3

Autodesk Simulation Moldflow CAD Doctor update 3

Expanded Study file import capability 3

Solver enhancements address accuracy and speed 4

Material database changes 5

Autodesk Simulation Moldflow Communicator compatibility 6

Release notes 1

New features and enhancements are introduced to improve interoperability among Autodesk products, enhance solution accuracy and reduce time to solution.

What's new

New features and enhancements implemented in this product are summarized.

License prerequisites

Before you run the product for the first time, you must have installed and be able to access the Autodesk Network License Manager.

ATTENTION: You must have a valid 2013 serial number and product key, and you must register your products and activate your licenses in order to use the product.

Refer to the *Autodesk Simulation Moldflow Adviser 2013 Installation Guide* for detailed instructions.

Autodesk Simulation DFM

Part designers can now get almost instantaneous feedback on the manufacturability, cost and suitability of their plastic part designs using Autodesk Simulation DFM within their CAD environment.

As features are added to a part in Inventor, Inventor LT, SolidWorks, Pro/Engineer or Creo Elements/Pro, the Manufacturability, Cost, and Sustainability indicators are updated reflecting these changes. Design problems such as undercuts, lack of draft angles as well as manufacturing defects such as weld lines, and sink marks can also be highlighted. These design and manufacturing problems can now be easily resolved before they become expensive and time consuming.

Autodesk Simulation DFM is available from the Subscription Center and requires an Autodesk Simulation DFM license or an Autodesk Simulation Moldflow Adviser license.

Autodesk Vault integration

The ability to integrate with Autodesk Vault data management software products is now available at no cost for Autodesk Simulation Moldflow Adviser and

Autodesk Simulation Moldflow Insight products. Autodesk Vault products organize, manage, and track data creation, simulation, and documentation processes for design and engineering workgroups.

Using Autodesk Vault products allows you to securely store and manage data in a central location, helping teams quickly create, share, and reuse digital prototyping information. With this integration, together with compatible installations of Vault Client and Vault Server, you can access basic file management functionality within the Autodesk Simulation Moldflow environment for a project and its associated files.

This functionality includes the following features:

- Version control of the Autodesk Simulation Moldflow project and associated files.
- Access and data management using a centralized model repository.
- A living history of the project.
- File sharing for each team member.
- The ability to refresh the local copy of a file, which ensures all team members are working on the latest version of the project.

RESTRICTION: The **Autodesk Vault** tab will not appear in the Autodesk Simulation Moldflow product user interface unless the Vault Client is installed on the local machine. To take advantage of the functionality, you also must have access to a Vault Server installation on either the network or the local machine.

IMPORTANT: The Autodesk Simulation Moldflow product(s) must be installed *before* the Vault Client is installed.

NOTE: The **Vault Client** installer is included in a separate folder on the installation media of the Autodesk Simulation Moldflow Adviser and Autodesk Simulation Moldflow Synergy - User Interface products.

The **Vault Server** installer is included on a separate DVD in the Autodesk Simulation Moldflow Adviser and Autodesk Simulation Moldflow Synergy - User Interface product boxes.

Autodesk Vault products also can be downloaded separately.

Improved Autodesk Inventor Fusion software available

Autodesk Inventor Fusion software is a fully fledged, history-free CAD modeler that is included at no additional cost with the Autodesk Simulation Moldflow Adviser and Autodesk Simulation Moldflow Insight products. The Autodesk Inventor Fusion product now allows you to modify part geometry even more efficiently, regardless of the CAD system in which it was created or the existence of parametric relationships in the model.

Autodesk Inventor Fusion 2013 software is included in the installer and by default is selected for installation when either Autodesk Simulation

Moldflow Adviser or Autodesk Simulation Moldflow Synergy - User Interface is installed. It also can be downloaded separately.

Additional license-free CAD formats available for import

Autodesk Simulation Moldflow Insight, Autodesk Simulation Moldflow Adviser, and Autodesk Simulation Moldflow CAD Doctor products now can import Autodesk Inventor and SAT files, without having to install an additional product or requiring an additional license.

This license-free capability also enables the import of files in IGES and STEP formats.

Consolidated Autodesk Simulation Moldflow Design Link available

Additional CAD import formats are available through a newly consolidated, licensed version of Autodesk Simulation Moldflow Design Link.

Once installed with the required license, this new version enables the direct import of Parasolid, SolidWorks, Pro/ENGINEER, CATIA V4 and V5, NX, and Rhino files.

Autodesk Simulation Moldflow CAD Doctor update

A solid CAD model which has been read into Autodesk Simulation Moldflow CAD Doctor can now be exported as a solid model included in a Study (*.sdy) file. These Study files then can be imported into Autodesk Simulation Moldflow Insight or Autodesk Simulation Moldflow Adviser.

Because these Study files contain solid models with geometry in CAD format, the quality of the models will be optimized for processing in Autodesk Simulation Moldflow Adviser.

Expanded Study file import capability

Study (*.sdy) files that contain CAD models with geometry in Autodesk Inventor or SAT formats can now be imported or added to an Autodesk Simulation Moldflow Adviser study. This includes Study files created by Autodesk Simulation Moldflow Insight and Autodesk Simulation Moldflow CAD Doctor products.

Previously, only Study files that contained Dual Domain or 3D mesh model information could be imported. Now a Study file that contains the native CAD geometry (in *.ipt, *.iam, or *.sat formats) can be imported, whether or not mesh model information is available.

NOTE: If the Study to be imported contains multiple CAD models, only the first CAD model will be processed.

Solver enhancements address accuracy and speed

Enhancements have been implemented to improve the performance of analysis solvers.

Parallel solution technology improves time to solution for Dual Domain models

The use of parallel solution technology to improve time to solution has been extended to Fill and Fill+Pack analyses using Dual Domain analysis technology.

Previously, parallel solution technology was implemented only in 3D analysis solvers.

Automatic parallelization enables the solver to read the CPU usage at each time step and assign an appropriate number of threads to use at that time step of the analysis. Therefore, the number of threads used in the analysis may vary if the machine load (CPU usage) varies during the analysis.

The primary advantage of automatic parallelization is efficiency. The solver looks for physical cores when it determines the most efficient number of threads to use during the analysis; this prevents machine overload and takes advantage of speed improvements where available.

OpenCL support for 3D analysis solvers

Use of GPU (graphics processing unit) technology to reduce solution time for 3D analyses is expanded to include graphics cards with OpenCL support, in addition to the previously supported NVIDIA CUDA graphics cards.

OpenCL is now supported by all analyses that support use of GPU technology.

A GPU is used for the analysis automatically if a compatible graphics card is available on the computer. The graphics card must be capable of double-precision computations.

NOTE: On computers where the graphics card supports both CUDA and OpenCL, the analysis will use CUDA technology preferentially.

High Analysis Resolution option improved for 3D analysis technology

Pre-analysis model processing has been improved for 3D analysis technology. When the **High Analysis Resolution** option to enhance accuracy is enabled, 3D models are now processed more efficiently, and the quality of the analysis model is improved.

Solution time is decreased compared to using this option for 3D models in previous releases. Analysis results, in particular the predicted fill pattern and symmetry of result data, are now more accurate. These improvements are most noticeable on chunky 3D models.

The **High Analysis Resolution** option is not selected by default. To enable it, click (**Home tab > Molding Process Setup panel > Process Settings Wizard**), then go to the **Accuracy** tab and select **High Analysis Resolution**.

Improved 3D automatic injection time

Often the automatic injection time calculated for a chunky 3D model has been too long. The algorithms used for this calculation have been modified to produce a more realistic result.

The automatic injection times for thin-walled parts remain unchanged.

Improved 3D weld line prediction

In response to customer feedback, the calculation of weld lines in 3D analyses has been improved. The new method incorporates a larger search area around the flow front and detects weld lines that previously were not detected.

This broader area of investigation has the dual effect of detecting smaller weld lines and improving the accuracy of existing weld lines.

Material database changes

Changes to the material database that have been implemented since the release of Autodesk Moldflow 2012, Service Pack 1, are summarized here.

These changes accommodate new data required to support solver changes implemented in this product, as well as new information received from material suppliers.

Details of these changes are found in the *Material Database Changes* document provided separately.

Changes to the Thermoplastics material database

- Total number of suppliers: 451
  - New suppliers added: 19
  - Suppliers deleted: 13
- Total number of grades: 8720
  - Grades added: 703
  - Grades deleted: 671
  - Grades amended: 4614
- Specific data:
  - Grades with specific PVT data: 5307
  - Grades with long-fiber Filler Initial Length data: 25
  - Grades with specific Crystallization Morphology data: 19
  - Grades with default Shrinkage Properties data: 2022
  - Grades with Crystallization - Residual Stress data: 1127

- Grades with Crystallization - Residual Strain data: 1165
- Grades with RSC or ARD-RSC Fiber - Residual Stress data: 702
- Grades with RSC or ARD-RSC Fiber - Residual Strain data: 751
- Grades with RSC/ARD-RSC and Crystallization - Residual Stress data: 490
- Grades with RSC/ARD-RSC and Crystallization - Residual Strain data: 510

Autodesk Simulation Moldflow Communicator compatibility

Please use Autodesk Simulation Moldflow Communicator 2013 to view Moldflow Results files (*.mfr) exported from Autodesk Simulation Moldflow Adviser 2013.

The Autodesk Simulation Moldflow Communicator results viewer is included in the installer and by default is selected for installation when either Autodesk Simulation Moldflow Adviser or Autodesk Simulation Moldflow Synergy - User Interface is installed. It also can be downloaded separately.