

 RELEASE NOTES

Altair[®] Inspire[™] Extrude 2022.3

New Features and Enhancements 2022.3

The Inspire Extrude 2022.3 release includes the following new features and enhancements.

General

Enabling Number Format

The interface is enhanced to specify the number format. Real numbers in the model data and results can be now represented in a fixed or scientific format. In addition, the numerical precision can also be specified. (*IEXT-2994*)

Advanced Tooltips for Preference Dialog

The preferences dialog options for Inspire Extrude now have advanced tooltips enabled to guide the users. (*IEXT-2764*)

Metal Extrusion

Report Generation

In the previous releases, images used in the automatic PDF report were generated using the batch mode of HyperView. This required packaging HyperView with Inspire Extrude and the installer size was exceeding the allowed limit. Now, the interface has implemented a new feature to generate the images using native Inspire tools. This requires generating the report in an interactive mode.

The batch HyperView method is also available if the user has their own HyperView installation and specifies that location in the preferences. (*IEXT-2982, IEXT-3018*)

Post-processing Tensor Results

The interface will now include derived results for tensor quantities, and these include von Mises stress (effective stress), maximum principal stress, minimum principal stress, and max shear stress results in the post-processing. (*IEXT-2987*)

Tool Deflection Export

The export dialog of *tool deflection* now includes reference temperature input data. In the previous releases, it was assuming that data. This data plays a crucial role in determining the material data and thermal stresses. (*IEXT-2948*)

Polymer Extrusion

Puller Speed

A new feature to specify the puller speed at the exit is implemented. The natural exit speed of the profile is computed from the inlet speed and the extrusion ratio. This new puller speed implementation will allow a puller speed of 10% higher or lower than the natural exit speed. This analysis requires performing mesh update iterations in the solver, and a default value of three mesh update iterations is used. The solver is enhanced to automatically detect any unacceptable mesh distortions and stop the solution when it happens. (*IEXT-1663*)

Resin Transfer Molding

Curing Kinetics Material Data and Visualization

Thermoset polymers undergo curing reactions, and the solver supports two material models to compute curing kinetics. Of these, the generalized nth order and autocatalytic model is difficult to understand and visualize how the material data will affect the reaction. To overcome that, the interface has implemented a new feature that will solve an ordinary differential equation using SciPy and plot the degree of curing as a function of time. This feature will help users to understand the data and also correct if there are any errors. (IEXT-2984)

Resolved Issues

The following issues have been resolved for the 2022.3 release:

General:

- Name of the Material. The solver has rules for the name of a material used in the data file. The material interface will now check if the specified names adhere to these rules. It will warn and not allow the user to create the material with an incorrect name. (IEXT-2935)
- Source Material Data Folder Used with Fit Material. The fit material module in the interface is used to create material data from raw input data files. The interface expects this input data to be located in a user folder and not inside the material database, and it was failing when the input data was within the material database. This issue is now resolved. The interface is enhanced to handle this data correctly irrespective of its location. (IEXT-3004)

Polymer Extrusion:

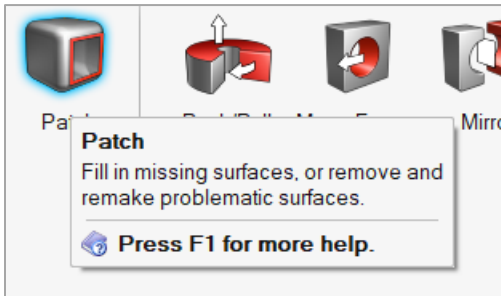
- Calibration Analysis and Inlet BC. A critical issue was found in how Inspire communicated the inlet BC data to the batch meshing module. This led to incorrect data decks. This issue is now resolved. (IEXT-2652)
- Assigning Non-existent Preform Materials. The materials assignment interface stored the previously used preform material and showed that as a default choice in the next model setup. Sometimes, this led to assigning material that does not exist in the material database and subsequent errors due to this assignment. This issue is resolved now. (IEXT-2996)
- User Defined Mesh and Number of Layers. The number of layers specified in the user-defined mesh size was not getting communicated to the batch meshing module and was leading to failed model setup. This issue is resolved in this release. (IEXT-3020)

Learn More About Inspire Extrude

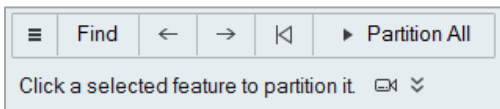
You can learn more about new and existing features in Inspire Extrude using the following resources:



In-Application User Assistance

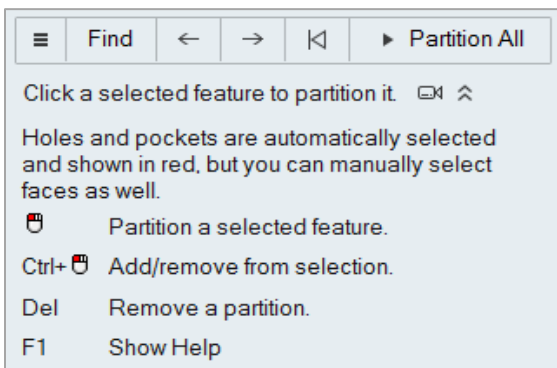
Inspire Extrude provides two types of user assistance. **Enhanced tooltips** appear when you hover over icons and other features. They describe what the tool does.



Workflow help appears when you select a tool that opens a guide bar or microdialog. The text prompts you what to do next.

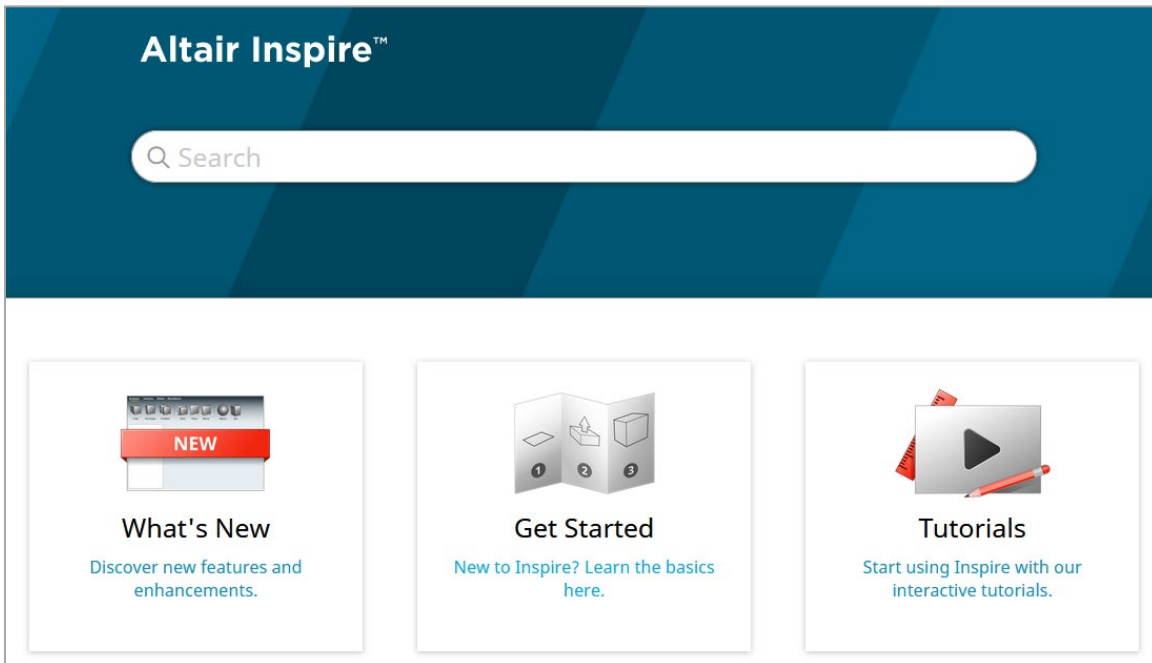


Click  to view additional tips and shortcuts. Some tools also include a video .



Online and Offline Help

Press **F1** or select **File > Help > Help** to view the online help.



You can download an offline version by selecting **File > Help > Download Offline Help**. An internet connection is required to download.

