DEFORM News

Training

SFTC offers DEFORM training for U.S. and Canadian customers on the following dates in Summer 2021.

- June 15-17
- August 10-12

Additional training details are listed on the DEFORM website.

For users outside the U.S. and Canada, please contact your local DEFORM distributor for more information on the training events available in your region.

Announcements

SFTC can be found on LinkedIn and YouTube, via the following links.

www.deform.com/linkedin
www.deform.com/youtube

These resources are your link to the latest news, events, developments and examples from SFTC and DEFORM. Please view, like, share and subscribe today.

DEFORM V12.1 & V12.1.1 Releases

The previous newsletter covered specific major features from the recent V12.1 release. The current newsletter highlights general enhancements from V12.1 and the upcoming V12.1.1 release. The improvements will benefit most users, who will enjoy better ease-of-use, added versatility and increased efficiency.

GUI Enhancements

The Object menu always had one simple purpose: to add and remove objects from the Process Tree. New options allow objects to be renamed, duplicated, reordered, imported and have their object type changed. Having this functionality available in a single menu helps speed up the setup process, allowing users to get their simulations running more quickly.
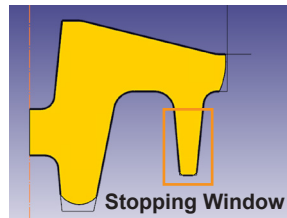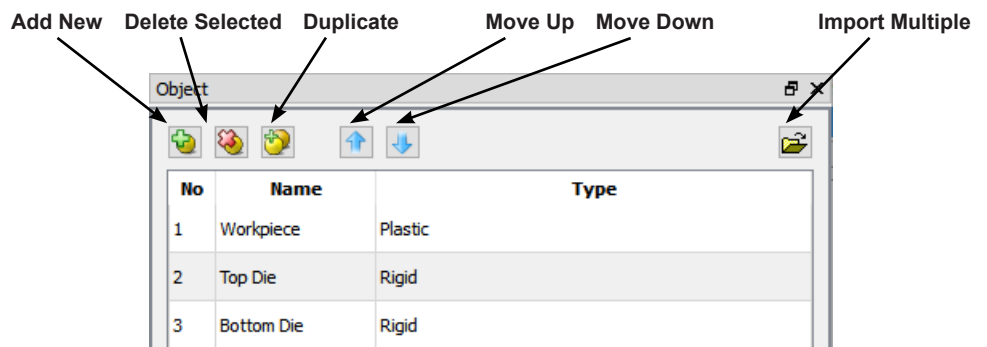
The contact area ratio and fold detection stopping criteria are globally evaluated across the entire workpiece. With the introduction of stopping windows, these criteria can be isolated to specific regions. Critical areas may thus dictate when a simulation stops due to die fill or folds, while regions of less interest (gutters, flash, etc.) will be disregarded.

A new "Max outer diameter" stopping criteria allows 2D axisymmetric operations to end based on the workpiece diameter. This is especially useful for cold/hot preforming and open die forging. It eliminates the need to "over run" the simulation and then manually back up to the step where the desired diameter had been reached. This enhancement allows better automation in multiple operation sequences where intermediate operations must be sized to a particular diameter.
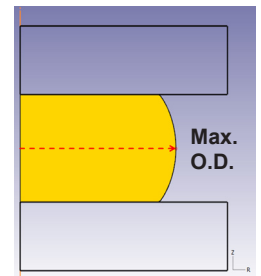
Finding suitable material data is crucial to a successful simulation. Advanced search tools have been added to the Material Library to facilitate simpler, faster and more powerful material selection. Available search criteria includes name, temperature range, chemical composition and more.

DEFORM®

Design Environment for FORMing

In situations where a suitable material is not found in the library, users might obtain flow stress data from other sources. Unfortunately, published data is often only found in graph form (right). Manually extracting the values from printed or digital graphs can be quite tedious. The new Graph Digitizer, found in the flow stress menu, addresses this problem. It streamlines the conversion task using a guided workflow, user-friendly digitization tools and automated creation of flow stress tables.
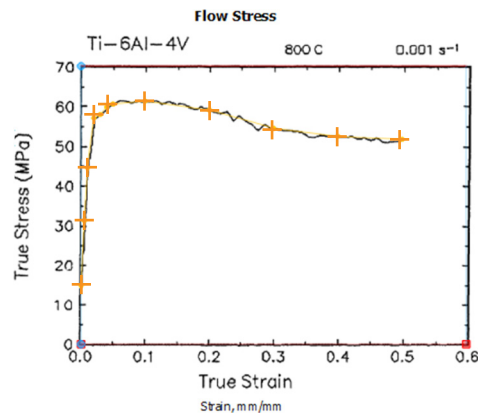

Contact definition can be time consuming in projects involving many operations and/or objects. Numerous users requested a solution that eliminates the need to fully redefine contact relationships at every operation. It is now possible to import all of the relationships from a prior operation. The ability to reuse previous contact relationships can save significant time and effort in certain projects.

The new Custom View feature keeps an object in focus through an entire animation. This provides more flexibility in results display and evaluation. In one shape rolling example, Custom View kept a viewport focused on a deforming workpiece as it passed through multiple roll stands. Meanwhile, two additional viewports were set to focus on individual roll stands through which the material passed. Therefore, once viewport moved with the parl, while the others did not.
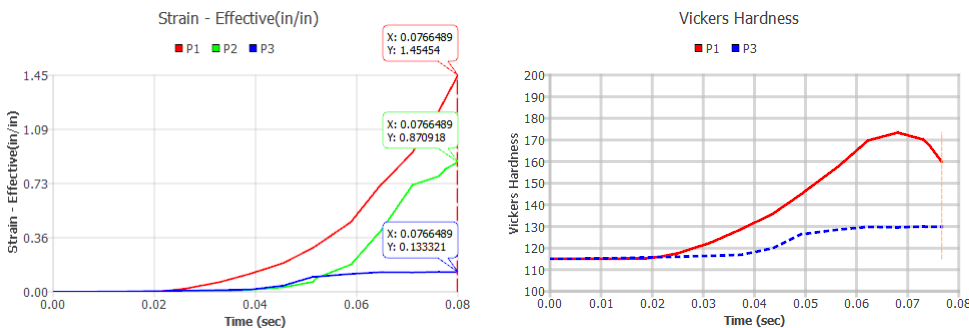
Graphing has been upgraded with a variety of new customization features. Axis increments, tick/grid properties, curve visibility and curve color/style can now be modified. Equation support allows user-defined variables to be plotted, based on stored state variable(s), without user-routines. In the image above, a default point tracking plot of strain was converted to a customized plot of hardness [f(strain)].

A new (beta) DEFORM User Manual and Help system made its debut in V12.1. Technical content is being updated and expanded, with a staged roll out taking place from V12.1 to V13. The manual will provide up-to-date information on the latest DEFORM tools and capabilities. The modern Help interface makes searching more powerful and efficient. The new manual is currently accessed through a link (circled) on the home page of the old manual (below).
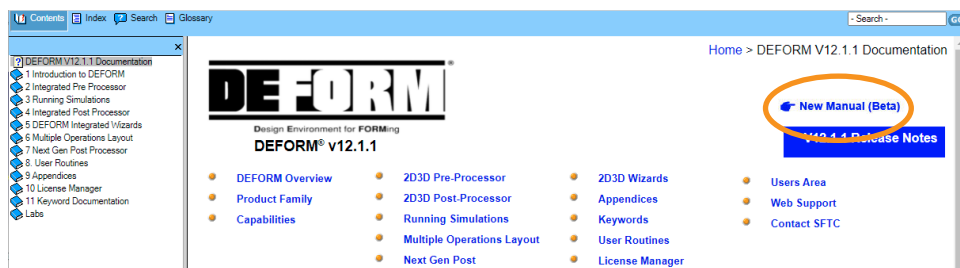
DEFORM V12.1.x Releases

DEFORM V12.1.1 (V12.1 Service Pack 1) will be soon be released. The service pack builds upon V12.1 with an emphasis on bug fixes and small enhancements. V12.1.x changes include:

- Multiple object importing
- Enhanced object management
- 2D geometry digitization tools
- Advanced material library search
- Integrated Graph Digitizer
- Hoffman anisotropic yield criteria
- Anisotropic friction improements
- Multi-blow lift enhancements
- 2D 2nd rotation axis
- Contact pair importing (reuse)
- Max. diameter stopping criteria
- Local stopping criteria windows
- Heat transfer op. die movement
- Mech-to-heat conversion functions
- 2D linear friction welding
- Shape rolling enhancements
- Tube piercing spinning template
- Spinning (express) solver
- Automatic weld path generation
- Heat source path & orientation
- Heat source element activation
- Heat flux boundary condition
- Tool life prediction
- Worn geometry updating
- 2nd gen. cellular automata model
- RVE model with inclusion
- Custom views
- Custom hotkeys
- Cylindrical coordinate indicator
- Region of Interest backtracking
- Heat flux state variable
- Forming limit diagrams
- Next-gen Presentation Editor
- Geo/Mesh Tool (Beta)
- New (Beta) 2D/3D meshers
- New (Beta) User Manual

The complete list of changes are available in the V12.1 and V12.1.1 Release Notes.