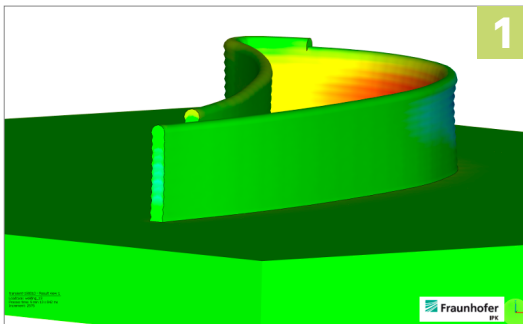




Simufact Welding

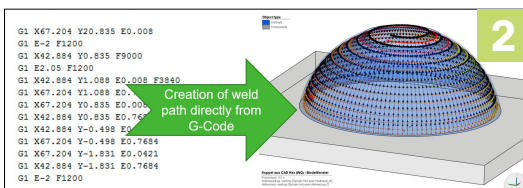
Top 5 highlights in Simufact Welding 2020



Direct Energy Deposition (DED) – New Module for Simufact Welding

With the release of Simufact Welding 2020 users will now be able to simulate Direct Energy Deposition (DED) processes. This new module inside Simufact Welding 2020 helps the user quickly and efficiently setup robust DED models in order to calculate and evaluate for stress, strain, distortion, thermal history, and hot spots during manufacturing and post processing.

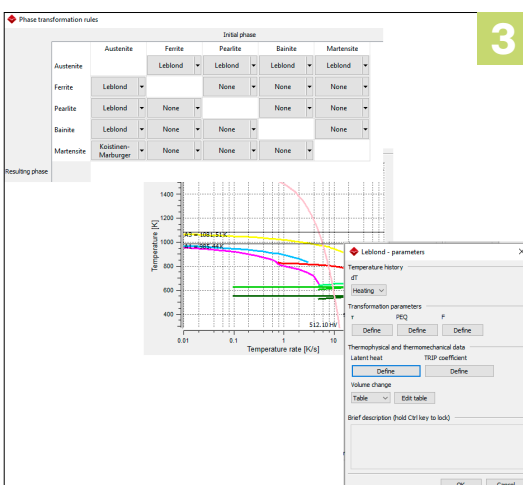
The DED models utilize common robot programming such as the G-Code which allows the user to simply import existing tool paths instead of defining weld paths manually.



G-Code Import for Welding Processes

With the latest release of Simufact Welding 2020, the user is enabled to work with the robot programming code, the G-Code. With this function, the software can easily process complex welding sequences that were difficult to implement manually.

Many types of G-Codes can be processed automatically and translated into welding trajectories inside the model. Furthermore, it will be possible to identify and automatically process velocities of the robots as well as the information of the welding heat source. These data can be used for definition of weld paths and heat source properties.



Pre-Processing improvements by implementing, among others, Leblond Model and Scripting

One of the most important highlights of the latest version is the implementation of the Leblond phase transformation model which is implemented in the solver and material GUI. The implementation allows processing of CCT data and converts it into model parameters. This allows user-defined transformation kinetics for steels.

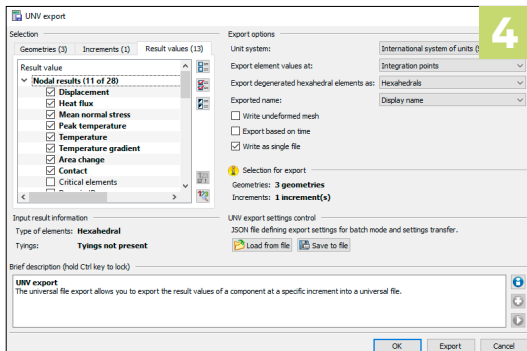
Another highlight is the newly implemented scripting functionality based on Python that helps to script and automatize recurring activities. This is a great benefit if several variants of a model are to be set up with e. g. different welding sequences or clamping conditions. This saves the user a lot of time and effort in generating each individual variant manually.

Additionally, Simufact Welding 2020 offers enhancements especially for large-sized models by improving the performance of the 3D view as well as the GUI performance. Thus, setting up a model is significantly faster and streamlines the workflow.



Simufact Welding

Top 5 highlights in Simufact Welding 2020

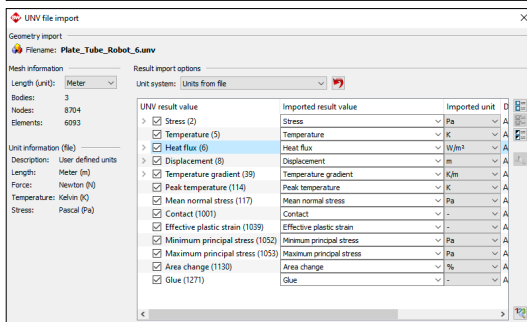


Enhancements in the post-processing such as MpCCI-Mapper or filter options

An interface was added to exchange simulation results like deformations and stresses to and from the MpCCI-Mapper. This makes data exchange between Simufact Welding 2020 and third-party products such as Abaqus, LS-Dyna and various other programs possible.

Another feature of the latest version is the enhanced evaluation functionality of the results. The user is now able to filter different results which allows a more qualified evaluation of the process with respect to the simulation results. The filter is also able to extract or highlight selected elements or nodes in the 3D representation of the model. During model debugging and understanding, it helps to detect several critical locations that might have occurred during the calculation process.

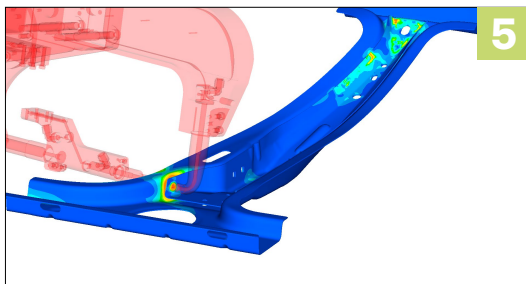
Finally, a new convergence monitor helps to track the solving performance of the model and to identify possible improvements in terms of calculation time and result quality.



Calculate quickly resistance spot welding process with several robots

Simplified approaches enable user to calculate large resistance welding processes with several robots welding at the same time. Take advantage of Simufact Welding 2020 to quickly achieve needed results in terms of distortions, stresses and temperature fields.

Additionally, the possibility to use the thermal cycle approach for more than two sheets inside the weld spot is added. This provides more flexibility to the simplified modelling approach and avoids the need to use the transient solution with higher computational effort if more than two sheets are involved.



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