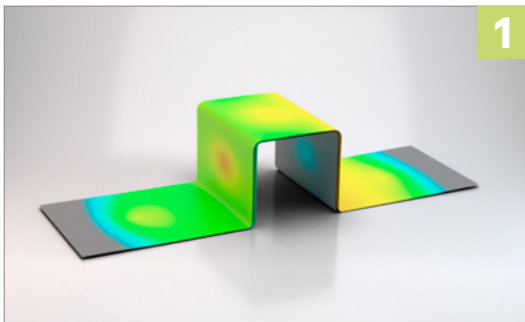




Top 5 Highlights in Simufact Welding 2022



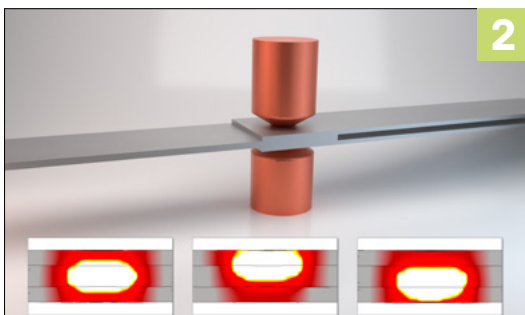
New mode for RSW simulation for up to 30x speed

In Simufact Welding 2022, a new purely mechanical solution called has “Simplified Spot” been implemented. It runs completely on 2D shell elements. The new mode speeds up your resistance spot welding simulation up to 30x speed with consistent quality of results.

4 modes are available depending on your requirements:

- Temperature field and distortions are required:
 1. Full transient simulation, or
 2. Thermal cycle mode
- Only the distortions are required:
 3. Electrodes mode, or
 4. New simplified spot mode

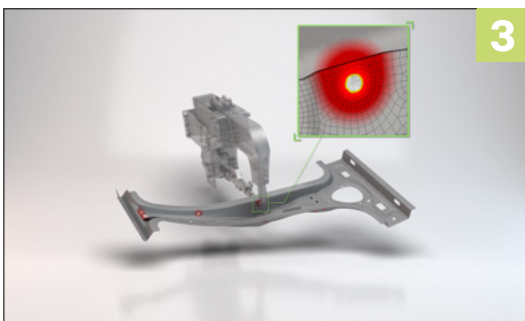
For example, up to 30x faster RSW simulations can be achieved if the temperature is not required and you use the new “Simplified Spot” mode.



Simulation of asymmetric weld nuggets

In the latest version of Simufact Welding 2022 it is possible to consider asymmetric weld nuggets in a resistance spot weld simulation. Just shift the centre line or define the ratio of the upper and lower weld nugget to the centre line.

The asymmetric weld nuggets can be easily considered and defined via a dedicated dialog. With the new feature you can easily create asymmetric weld nuggets to simulate even more realistic Resistance Spot Welding (RSW) simulation results.



New refinement technique for RSW Simulation

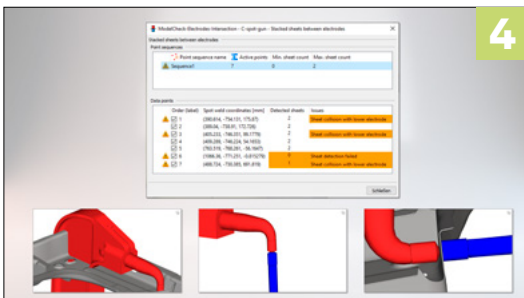
In general, there is a dependency between the number of Finite Elements and the calculation time. Also a dependency between the accuracy and the number of FE elements occurs. In order to achieve a high accuracy, you need many elements, which lead to high computation times.

In our Simufact products, so-called “refinement boxes” help you to create a fine mesh, where high accuracy is required. For the rest of the model you benefit from a coarser mesh.

Thanks to the new refinement technique for resistance spot welding simulation, it is now possible to remesh an imported shell mesh and perform local refinements on the welding spots. It gives you a high resolution at the welding points. You save remarkable computing time and there is no need to mesh the entire model very finely.



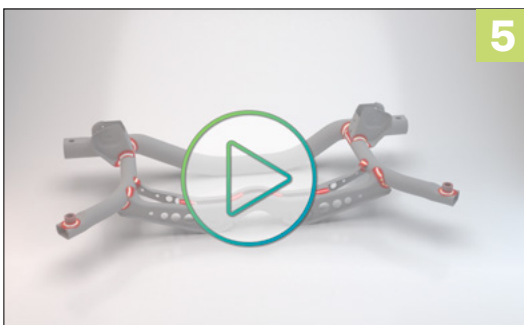
Top 5 Highlights in Simufact Welding 2022



Extension of the model check

Even to the most experienced FE calculation engineer mistakes happen when creating his FE model. Simufact helps with a function called 'model check.' It warns the user before starting the simulation, which possible errors, that can lead to a crash of the simulation.

The model check has been extended in the latest version of Simufact Welding 2022. Among other things, it warns the user if either an electrode intersects the component, if no sheet is welded or if only one sheet is detected between the electrodes.



New restart function

It's super annoying when a long-running simulation suddenly crashes. There are many reasons for such a breakdown, such as when your PC goes into energy-saving mode, loses the connection to the network/ internet and therefore the connection to the licence server.

For such cases, we have implemented the restart function in Simufact Welding 2022. If your long-running simulation should crash for any reason, you can easily right-click on your project with the latest version and continue calculating with the 'resume' function. There is no need to recalculate the entire model, after such a model crash. This saves you a lot of time if your simulation model has crashed, as you do not have to recalculate the entire model.