GUI View – Improved operational concept

Simufact Forming comes with a newly developed GUI operation concept: Highly interactive context-related user dialogs allow for a direct access to all relevant settings, which provides a completely new handling experience. Users benefit from an ease-of-use modelling procedure via mouse or touchpad, and finally a higher productivity in results evaluation.

New module Pressure Welding

Pressure Welding allows for simulating Resistance Welding processes, which includes Friction Welding, Friction Spot Welding, and Resistance Spot Welding. The module’s functionality puts its focus on the process simulation and helps examine the single welding spot – combining forming and thermal joining aspects. High relevance for Hot Forgers (Electrical Upsetting) and Cold Formers (Projection welding).

Rolling operations now included in the Forming Hub

With Simufact Forming 14, all users obtain full access to the rolling module since it is included in the Forming Hub now. Customers employed with Hot Forging, Cold Forming and other processes requested a general availability of rolling simulation functionality since rolling is a typical pre-forming process.

New Process types in Mechanical Joining

Simufact Forming 14 covers new process types in its Mechanical Joining application module: Self-Pierce-Riveting, Punch Riveting, Blind Riveting, and Tensile Test. The Mechanical Joining module comes with new automation capabilities for model design (pre-processing), and evaluation of the most relevant geometrical parameters (post-processing). The positioning and simulation of adhesives has been further improved.
Joining Optimizer – automatic validation of self-piercing riveting and clinching processes

The Joining Optimizer serves as an efficient solution in car body manufacturing - shortening development times by automatic validation of self-piercing riveting and clinching processes and delivering a ranking list of technically feasible tool-rivet combinations for a single material-thickness combination. The Joining Optimizer Assembly helps finding the best possible tool-rivet combination compromise in assembly – aiming at highest efficiency in serial production by minimizing the number of tool and rivet changes. It’s a joint development with Audi.

Automated serial evaluations

Simufact Forming is now supporting automatic serial evaluations of tool geometries and boundary conditions. This functionality can be used for automated try-out of alternative die designs and for process stability examinations.

Process chain simulation: Interface to casting simulations

New interface for data import from ProCAST* (ESI), which allows to smoothly import casting simulation results like porosity and segregations into Simufact Forming for subsequent forming simulation (e.g. in open die forging) – in order to predict the position of segregations in the forged part and the remaining porosity.

Industry 4.0: Coupling process simulation and process monitoring

New interface to Brankamp* process monitoring systems. By linking process simulation with process monitoring, Simufact and Brankamp, a company of Marposs group, remarkably contribute to the Industry 4.0 idea. Allows the use of a set-point and actual comparison of measured and simulated forces to be set up in the same way as the process was previously simulated or optimized: „Manufactured as simulated“. As a result, the tool life can be increased during cold forming.

Enhanced material database

In cooperation with MatCalc* Engineering, Simufact has added an interface for the import of high-quality aluminum material data. This improves Simufact Forming capabilities for simulating aluminum forming processes. In addition, Simufact has enhanced their JMatPro interface and the Simufact Materials database for electrical material properties.

* All product names, logos, and brands are property of their respective owners.
All company, product and service names used in this document are for identification purposes only.