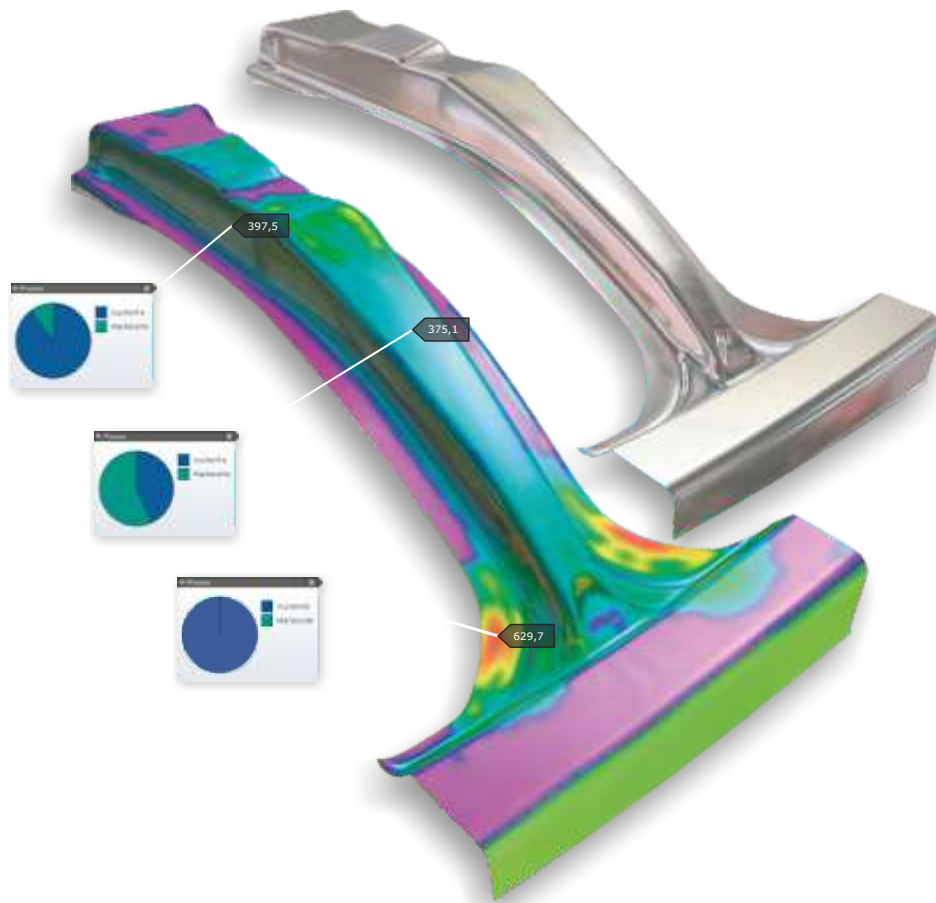


AutoForm- PhaseChange Plug-In

Software for Simulation of Hot Stamping Processes



- ▶ Rapid and accurate simulation of hot forming and quenching processes of ultra-high strength steels
- ▶ Stamped parts with challenging geometrical complexity and tolerance
- ▶ Stamped parts with targeted local strength properties
- ▶ Improved crash simulation accuracy and crash performance



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AutoForm-PhaseChange Plug-In

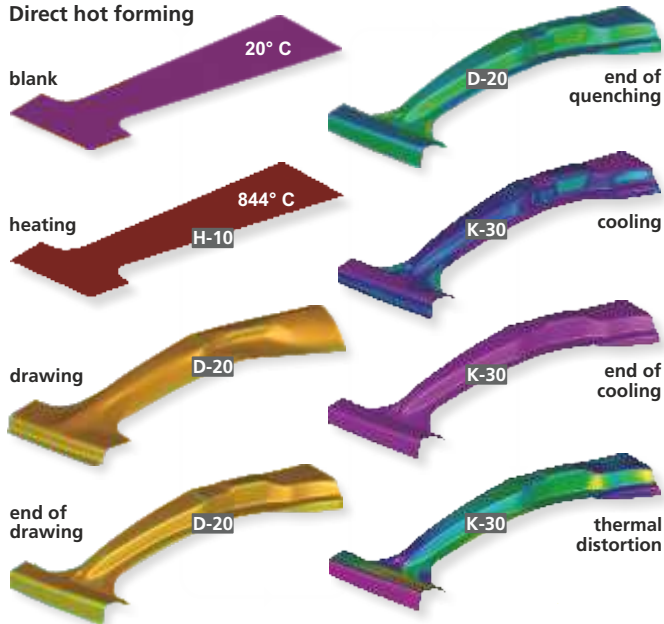
Stamped Parts with High Strength, Challenging Geometrical Complexity and Minimized Springback Effects

AutoForm-PhaseChange plug-in enables engineers to realistically simulate hot forming processes of ultra-high strength steels. These processes have become very important for the automotive industry in order to meet specific requirements regarding a higher level of crash safety and a reduction of overall weight.

AutoForm-PhaseChange plug-in supports direct and indirect hot forming, which are both followed by the quenching and cooling processes. This software takes into account phase transformation during quenching and thermal distortion after cooling. In addition, AutoForm-PhaseChange plug-in allows for the calculation of final part properties, including thickness distribution, strain-stress distributions, resulting hardness distribution as well as the distribution and local percentages of different material phases, such as austenite, ferrite, pearlite, bainite and martensite.

By using AutoForm-PhaseChange plug-in, engineers gain better insight into the effects of phase transformation and have better control over the resulting mechanical properties of the hot-formed part.

Direct hot forming



With this plug-in, the user can also simulate the tailored tempering process, thus enabling the engineering of stamped parts with targeted local strength properties. Based on the results of AutoForm-PhaseChange plug-in, crash simulation accuracy can be improved by taking into account the real strength distribution of the hot-formed component.

With the AutoForm-PhaseChange plug-in, car manufacturers and suppliers can reliably design and engineer the processes of hot-stamped parts, such as A- and B-pillars, tunnels, front and rear bumper beams, side rail members, door beams or roof rails for their new vehicles.

Direct hot forming



AutoForm-PhaseChange plug-in supports direct and indirect hot forming

Indirect hot forming



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