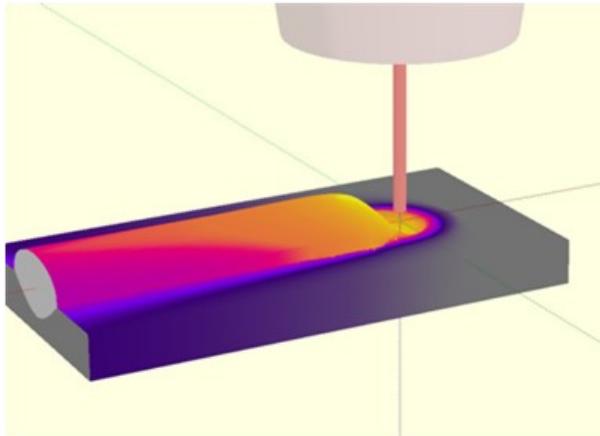


Process simulation for GMA-Welding



SimWeld comprises long term research and development for user friendly welding process simulation performed by



Welding and Joining Institute of RWTH Aachen.



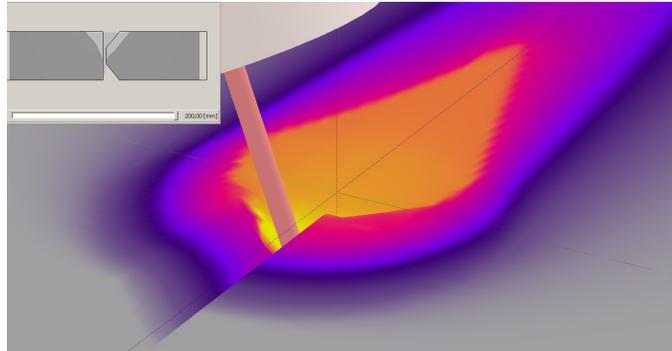
Your contact for SimWeld:
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 Web: www.tl-ing.de
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Mobil: +49 (0) 176 6126 8671
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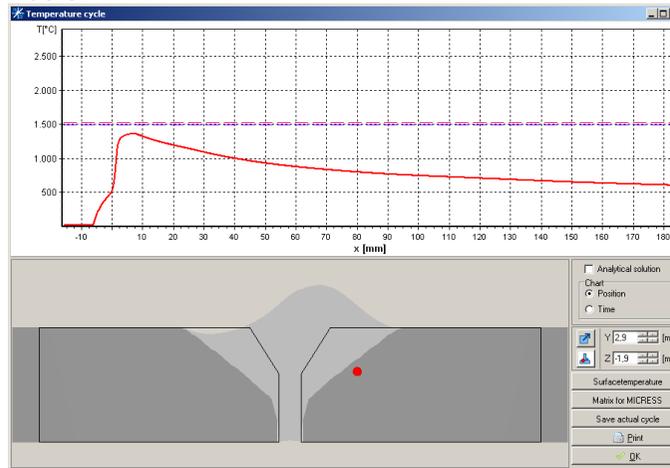
Herdweg 13 • D-75045 Wössingen (Karlsruhe) • GERMANY

Agent for
 IS+F e.V. Innovations- und Informationszentrum
 Schweißen und Fügen e.V. Aachen

The numerical simulation of GMAW-Processes facilitates the analysis of the operation sequence, which allows the optimization of your manufacturing process

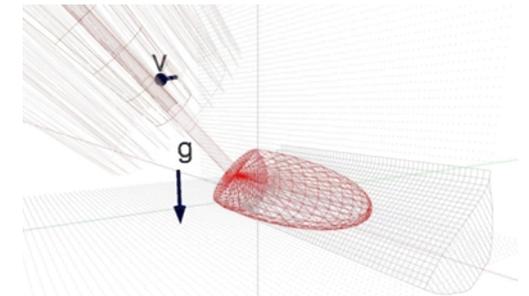


The numerical process simulation is a powerful prediction tool which helps you to spare many tests.

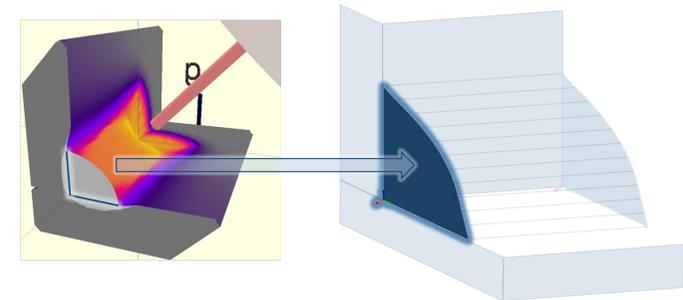


Simulation offers your company
technological lead
quality assurance
cost savings
reduced development time

Structure Welding Analysis

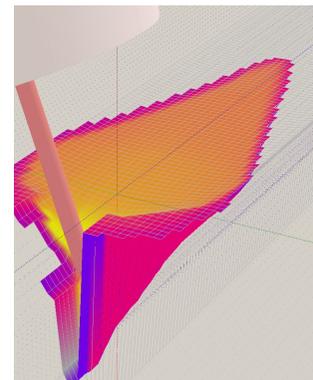
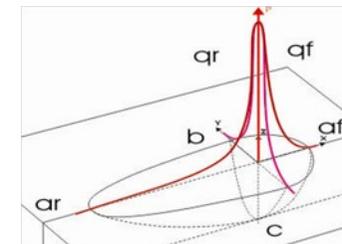


An interface enables the user to transfer **SimWeld results** like weld pool geometry and equivalent heat source function to a welding structure analysis software (Simufact.welding, SYSWELD) to calculate **residual stresses and distortions**.



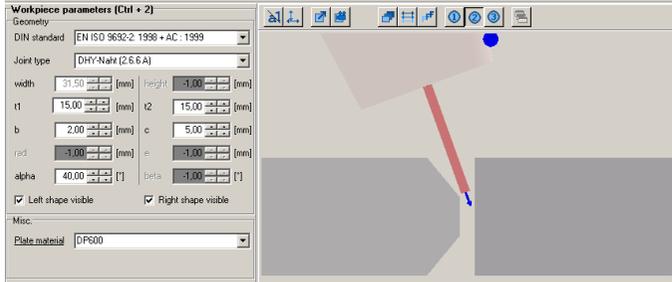
SimWeld geometry transferred to finite element mesh of welding structure simulation.

Equivalent heat source

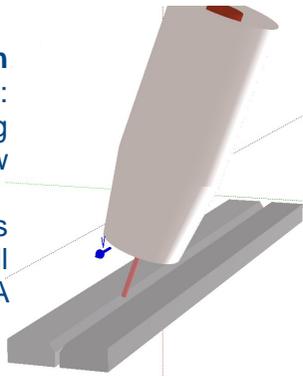


Input Data

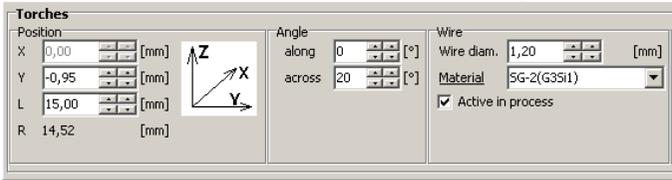
Standardized weld preparation. In SimWeld you can choose between standardized types of welds with its weld preparations or define it the weld preparation individually according to your needs.



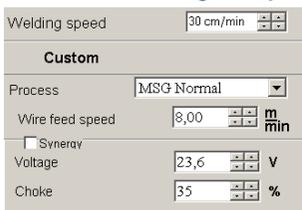
SimWeld takes the **torch orientations** into account: from slabbing to stabbing as well as the skew position.



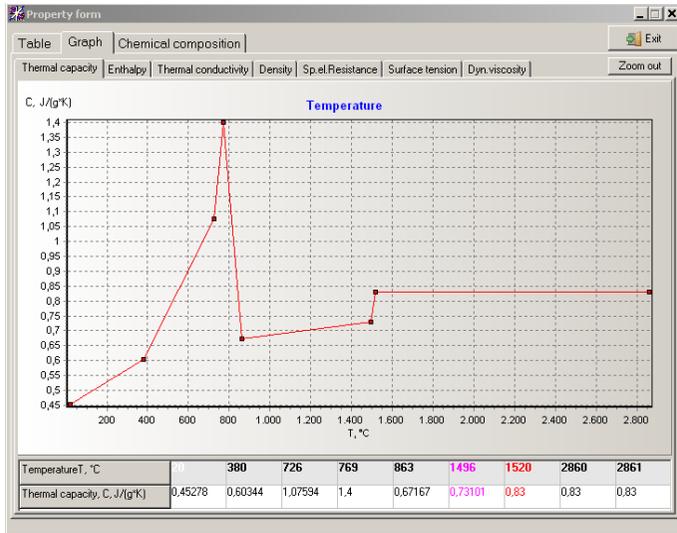
Additionally SimWeld has the capacity to simulate all welding positions from PA to PG.



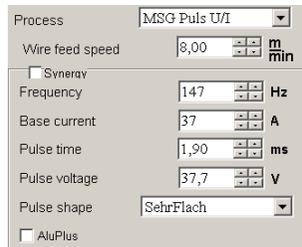
Welding parameters. SimWeld uses the machine settings of your welding power source.



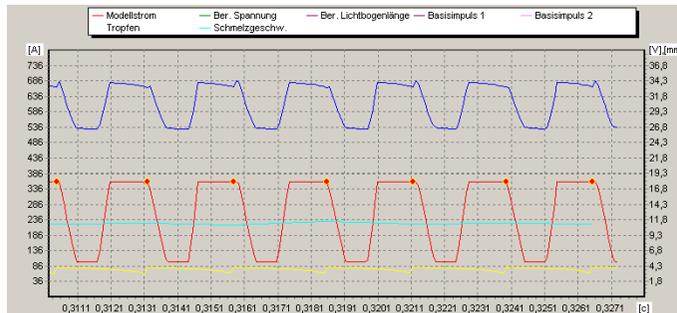
Welding power sources of well-known manufacturers are included and additional sources can be completed at user's request.



Material data. SimWeld provides material data for most common steels. These data can be complemented with specifications from the user.

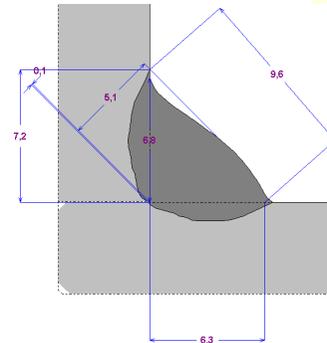
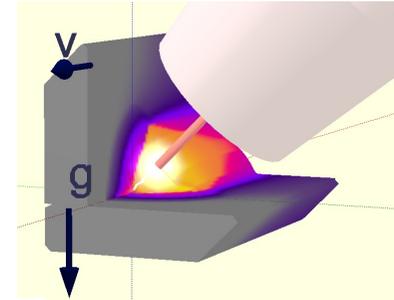


Pulsed welding. Part of SimWeld's capabilities is the simulation of pulsed welding and AluPlus pulsed welding. Points in red curve in the graphic at the bottom: droplet detachment in the U-I-time diagram.



Process Optimization with SimWeld

With **SimWeld** the user can calculate the bead geometry through the machine settings of your welding power source.



SimWeld verifies weld penetration, peaking and formation of undercut. Weld errors are avoided by choosing optimized machine settings.

The algorithms of **SimWeld-Arcsolver** calculate and help visualize the associated processes of arc and wire fusing taking into account the arc length including the short circuits. The process parameters can be supervised, which contributes to **quality assurance**.

