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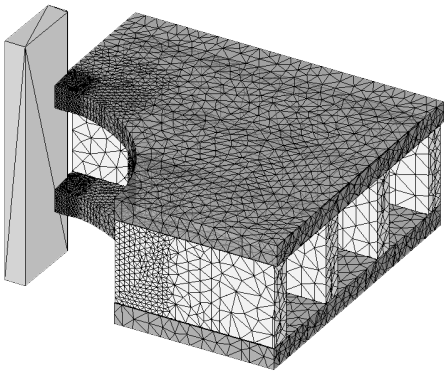

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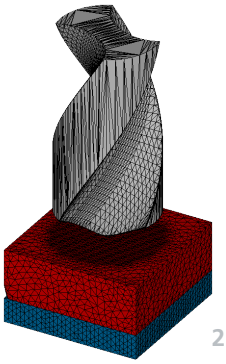

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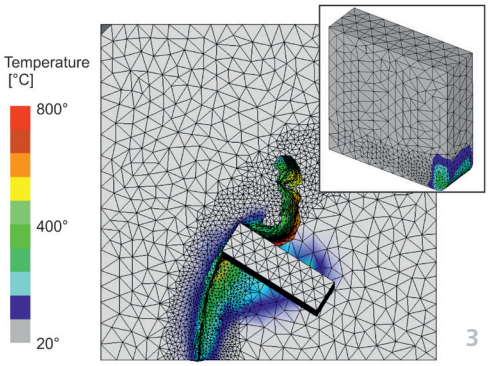

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1 *Simulation of the machining of a sandwich structure*
2 *Simulation of the drilling of stacks*
3 *Temperature calculation in the simulation of a milling process*

SIMULATION OF MACHINING PROCESSES

Motivation

Modern lightweight construction demands a basic understanding of the mechanical behavior of materials, individually and as composites. Through the use of simulation technologies, the individual properties of the materials within a composite are intensively considered.
The complex properties of lightweight structures present significant challenges during their manufacturing processes. In this regard, simulation is an essential tool to analyze the complex behavior of materials under the high loads of machining processes. Through simulations, tool design and the selection of optimal parameters for machining operations can be achieved. In this way, the required costs and time for the development of new tools can be reduced.

Competence

Based on our several years of experience in machining and the use of modern software and hardware, it is possible for us to simulate machining operations precisely. In addition, we are able to prepare material models for the simulation of machining processes for current and future composite structures.

Scope of Services

- High-resolution simulation of machining processes
- Analyses of tool geometry and processing parameters
- Analyses of the influence of residual stresses and process temperatures
- Simulation and model validation by means of experimental machining tests
- Test platform for process adjustments and tool development processes
- Preparation of material models for simulation

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