# VIRTUAL MOLDING

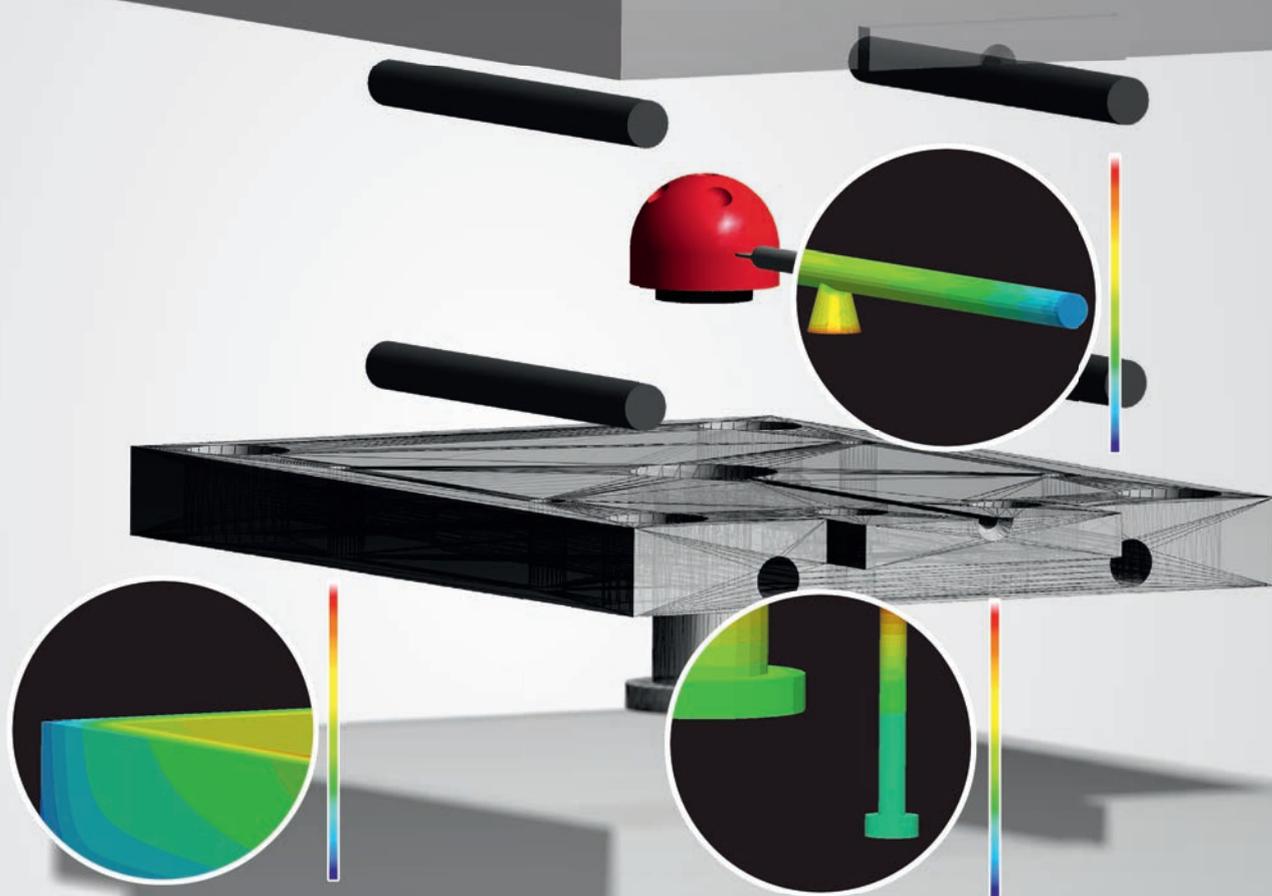## MOLDING

*THERMOSET*

**SIGMASOFT®**
Virtual Molding

Simulate all injection molding and transfer injection molding processes of free flowing thermosets, cast resins and BMC in a single software application.

# SIGMASOFT® VIRTUAL MOLDING THERMOSET

Just imagine you could analyze all parameters of your injection molding process, before the first prototype of your mold is built. An entirely virtualized production process, on top of that enriched with special know-how for the processing of thermoset materials. The perfect solution to visualize, analyze and optimize your mold concept, the material flow, use of energy during production and a number of further parameters. A virtual injection machine which can make the difference in profitability for your thermoset injection molding production. This imagination can become reality with SIGMASOFT® VIRTUAL MOLDING Thermoset.

Through the advanced solver technology, the 360° 3D simulation software can calculate and reproduce flow and curing behavior accurately, as well as complex phenomena such as jetting or plug-flow. Additionally, SIGMASOFT® VIRTUAL MOLDING Thermoset is the only simulation software which can easily incorporate all mold components, and therefore consider all effects caused by the alloy, process times and temperatures on the filling and curing behavior. It predicts filling behavior and pressure demand as well as fiber orientation, localizes air traps and calculates the influence of exothermal reactions during curing on the temperature distribution.

**With SIGMASOFT® VIRTUAL MOLDING Thermoset you optimize your injection molding processes in every detail. And you find the actually most efficient solution.**

SIGMASOFT® Thermoset answers the following questions:

- **How many heating cartridges with which amount of power are required?**
- **Which cycle time can be achieved with each tempering concept?**
- **Can the energy consumption be reduced through simple measures?**
- **Which heating time will be required for a sufficient curing in every region of the part?**
- **How do different venting concepts perform?**
- **Will an early curing influence both flow behavior and part quality?**

## Analysis included:

**Our engineers are there for you**
**SOLUTION SERVICE for SIGMASOFT® Users**

Almost three decades of plastic and injection molding know-how are contained in each one of our SIGMASOFT® VIRTUAL MOLDING solutions. Each analysis result from our software delivers reliable advice for the design of the optimal mold and process. To use the complete potential from SIGMASOFT® VIRTUAL MOLDING, the user has the SOLUTION SERVICE at hand – a team of engineers and technicians with profound experience in processes, materials and modelling. Additionally our Solution Service offers you competent support when setting up a project, as well as in the evaluation and analysis of the different results.
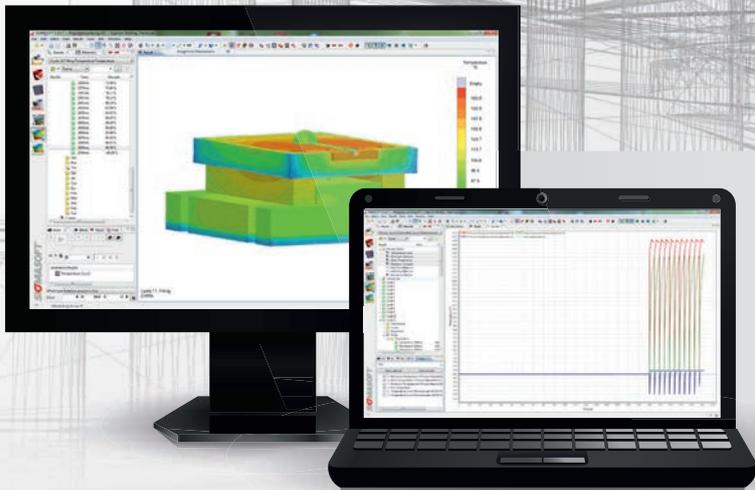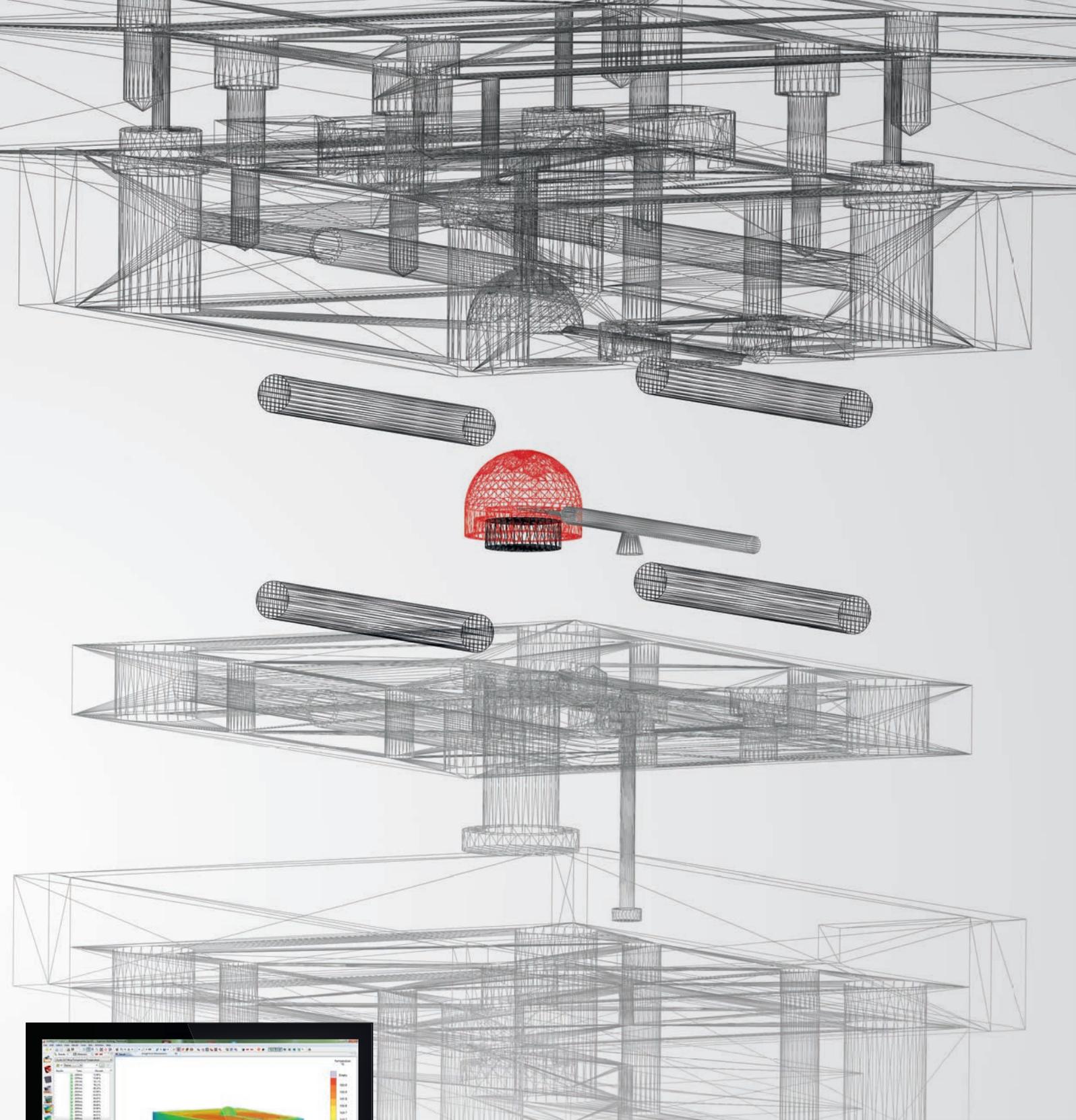
The intuitive, graphical user interface of SIGMASOFT® leads you step-by-step through all process levels. Automatic algorithms allow you to mesh a complete mold in a few minutes. Without need for mesh healing, triangle manipulation or removal of rounded or chamfered corners. SIGMASOFT® VIRTUAL MOLDING Thermoset makes the mold and process transparent during production.

# SIGMASOFT® VIRTUAL MOLDING THERMOSET

## Determines the optimal process window …

… because the prediction of the part filling is coupled with the thermal interaction inside the mold.
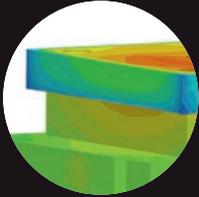
## Optimizes processes …

… because all process times are taken into account over several cycles – even potential time-outs between cycles.

## Takes care of the optimum thermal layout …

… by testing different tempering concepts comfortably and fast before the mold is built – even of innovative concepts for serial production.
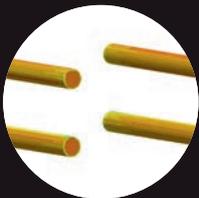
## Defines energy efficient processes …

… by an easy dimensioning of electrical heating systems, including the determination of necessary power and optimum control parameters.

## Precisely predicts the curing reaction …

… because the software also considers the vitrification and its influence on the curing degree and thus on the part propertiest.

## Predicts precisely the part deformation …

… because the curing induced part contraction is considered.

## Perfections the form filling …

… because in the calculation the influence of gravitational force and air counter pressure is reproduced in detail and close to reality.