

Simulation is more than Software®

The link between injection molding and structural mechanics



MoldSim NL inside ANSYS

CADFEM ANSYS Extension for combining of injection molding simulation with ANSYS Workbench – including elastic-plastic material behavior

Two worlds, one goal

In the development of short fiber-reinforced plastics parts, two types of simulation play a central role. While injection molding simulation maps the manufacturing process, Mechanical simulation gives an insight in the response of the structural part under consideration.

For this, the **MoldSim NL inside ANSYS** is a new development by CADFEM in order to establish a link between injection molding simulation and structural mechanics calculation in ANSYS Workbench, focusing on the optimum product quality.

Advantages

- Complete integration in ANSYS Workbench, beginning from importing the injection molding data up to evaluating the results in ANSYS Mechanical.
- Efficient computation of effective nonlinear material constants of the short fiber reinforced composite directly in ANSYS.

MoldSim NL inside ANSYS is a new development and offers:

- Elastic-plastic material model of short fiber reinforced thermoplastic.
- Curve-Fitting of experimental test data for determining the inelastic hardening parameters by using optiSLang algorithms of our partner, Dynardo.
- Increase of performance by supporting ANSYS Distributed Memory Parallelization (DMP).

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The direct path from injection molding to structural mechanics

Short fiber-reinforced plastics are used in numerous industries such as consumer goods, automotive, aerospace, shipbuilding, medical engineering, electronics, and electrical industry.

Integrating the results of the injection molding process into the structural mechanics simulation provides comprehensive knowledge and insight in the final production part performance.

With MoldSim NL inside ANSYS, CADFEM newly developed a product for ANSYS 19.1, to seamlessly integrate the results of an injection molding simulation into the FEM simulation environment of ANSYS Workbench.

This module supports elastic-plastic material behavior, in order to be able to account for the non-linear nature of many short-fiber reinforced thermoplastics.

Optimal plastic parts

With MoldSim NL inside ANSYS the user is able to account for the effect of essential injection molding process parameters such as fiber orientation, or residual thermal stresses, respectively with regard to the simulation of the overall structural response with ANSYS Workbench.

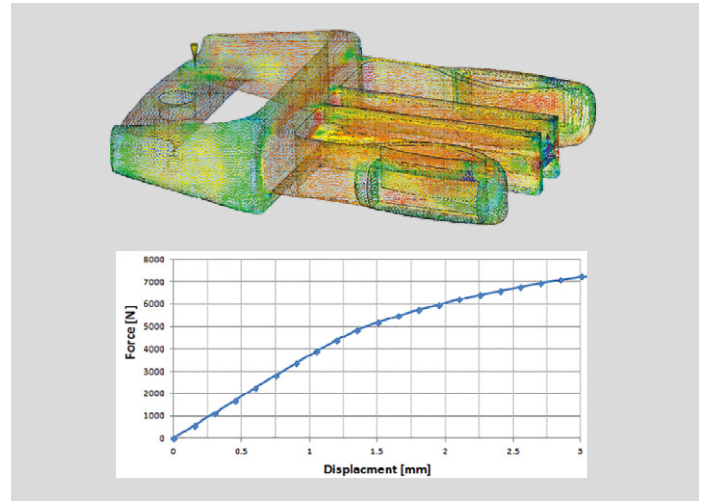
The MoldSim NL inside ANSYS offers a completely integrated workflow from the transfer of injection molding simulation results to the FEM analysis with ANSYS Mechanical. In addition, it offers an efficient and complete process simulation with significant design improvements.

Technical information

- System requirements: ANSYS Workbench Enterprise version 19.1.
- Support of Autodesk Moldflow Insight, Moldex3D and SOLIDWORKS Plastics
- Extension to other injection molding tools available upon request.

www.cadferm.de/extensions

MoldSim NL inside ANSYS is a product of CADFEM GmbH; Autodesk Moldflow Insight is a product of Autodesk, Inc.; Moldex3D is a product of CoreTech System Co., Ltd; SOLIDWORKS Plastics is a product of Dassault Systèmes; ANSYS Workbench is a product of ANSYS, Inc.



MoldSim: Fiber orientation distribution; Nonlinear force displacement curve

CADFEM®

CADFEM is recognized for CAE competence since 1985 – a single provider offering everything that decides on the success of simulations: i.e., Software and IT solutions, Consulting, Technical support, Engineering solutions, and Transfer of Know-how. As ANSYS Elite Channel partner and ANSYS Competence Center FEM, we serve & support the ANSYS users in Central Europe. www.cadferm.de

ANSYS®

ANSYS is the world's largest provider of simulation software and offers Engineering software for almost every application in industry, research, and academia. ANSYS is among the most popular CAE solutions in the market.

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