

CONVERSE Top Use Cases

Composites Software by PART Engineering

Fibers and Component Behavior

Challenge

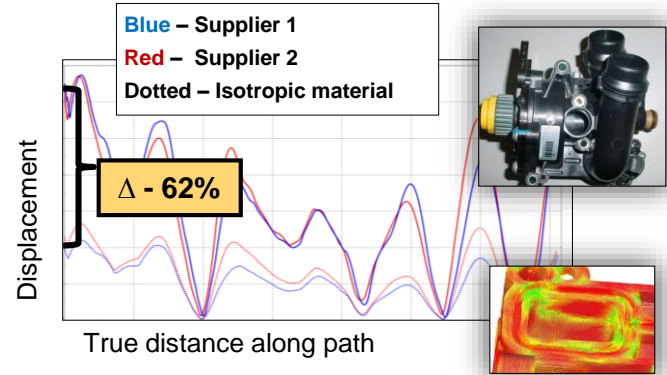
- Realistic material behavior of injection molded fiber-reinforced plastics
- Reduce weight by metal replacement

Solution

- Converse mapping capabilities to assign fiber orientation to the mechanical model
- Converse material database for direction dependent thermo-mechanical material properties

Benefits

- More realistic simulation of parts compared to isotropic approaches
- Consideration of injection molding process on the mechanical part behavior



Audi Hungaria

"With Converse it is possible to use the anisotropic material behavior resulted from fiber orientation. Identifying of manufacturing process induced weak points becomes possible and a more realistic behavior of the part can be predicted".

Tamás Schmidt
Engine Development Department
Audi Hungaria Motor Ltd. Győr,
Hungary

Weld Lines in Plastics

Challenge

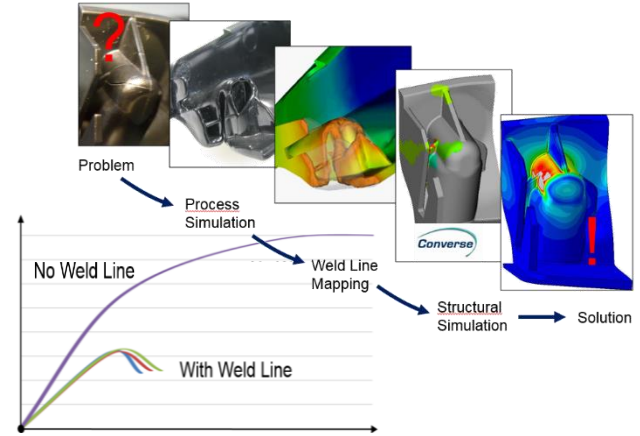
- Detect weak areas due to weld lines
- Estimate the influence on the part strength

Solution

- Converse mapping capabilities in order to assign weld line areas and flow angle to the mechanical model

Benefits

- Optimized manufacturing process
- Knowledge of local varying component strength



“The coupling of fill studies and FE analysis makes the predicted results more reliable. A detailed knowledge of the plastic material properties is important to design the products closer to the limits.”

Dipl.-Ing. Christian Bresser
Senior Manager Process Mechanics
Mechanical Simulation
Huf Hülbeck & Fürst
GmbH & Co. KG, Velbert, Germany



Dynamics of a Fiber-Reinforced Component

Challenge

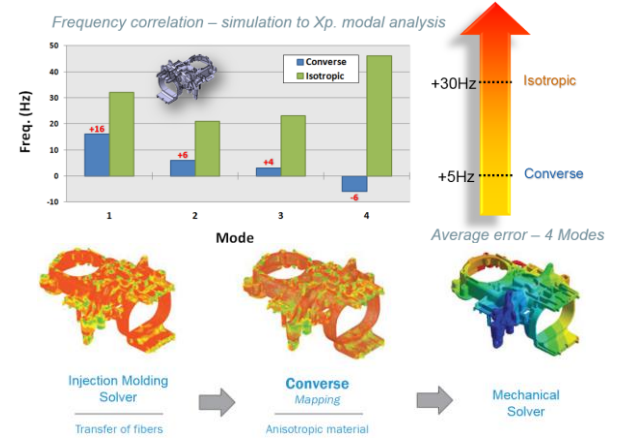
- More realistic results in modal analysis
- Solution should be easy-to-use also for occasional users

Solution

- Converse mapping capabilities to assign fiber orientation to the mechanical model
- Converse material database for direction dependent thermo-mechanical material properties

Benefits

- Significant better correlation of simulation and experimental results for eigenfrequencies
- Improved prediction of modal component behavior



Valeo

“When we were looking for software that would help us to prepare our models for the simulation of glass fiber reinforced plastic parts, we saw that the Altair Partner Alliance offers CONVERSE, which is meeting our needs perfectly.”

Nicolas Pluy
Mechanical Simulation Expert
Valeo Lighting Systems, Wuhan China