REM3D®

REM3D® - Foam molding

Start the REM3D® experience and simulate your foam molding processes. This way you will be one step ahead when it comes to understanding physical phenomena and you can aim to better optimize your current processes.

This course constitutes your first approach to REM3D® software for the PU foam injection molding process. From examples inspired by industrial applications, you will cover the various aspects of foam filling and expansion. You will learn all of the necessary stages starting with setup, then starting the simulation and wrapping up with an analysis of results. During the first day, you will have the opportunity to review the essentials on chemical foam work and you will understand how to use the wealth of functions such as sensors or isovolumes.

The second day will be devoted to a more in-depth study of industrial cases illustrating how variations in process conditions influence mold optimization and cycle times.

LEVEL

Beginner

PREREQUISITES

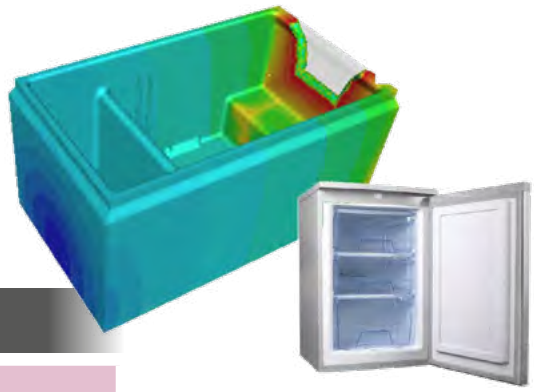
There are no prior requirements for this course.

GOALS

- **Data setup for a PU foam molding case**
- **Launching a computation on a multi-core machine**
- **Analyzing results**
- **Identifying and interpreting injection-expansion faults (underfilling, etc.)**
- **Monitoring physical values (temperature, density, etc.) at any point on the part**
- **Testing the influence of process parameters (injected mass, flow rate, gate position, regulation temperature, etc.)**
- **Understanding how to characterize PU foams**

TRAINING	DURATION	PRICE EXCL. TAX	PARTICIPANTS
In-company	2 Days	2600€ per training	1 to 3 people

Contact us to set the course date and location.



Appliance application

DAY 1 > 8.30 a.m. to 12.00 p.m. & 1.30 p.m. to 5.00 p.m.

Introduction	· Transvalor presentation · Course goals
Data setup	· Finite element principle · Project concept · Importing geometries · Surface and density meshes · Defining process parameters: flow rate, injection point, temperature, etc. · Defining the material: temperature, rheology · Defining the mold: temperature, properties · Defining the symmetry plane · Defining Eulerian or Lagrangian sensors: monitoring material points and saving some result fields · Managing simulation parameters: - Time increment, storage time - Stop criteria: maximum time, maximum temperature, etc.
Modeling the polyurethane foam	· General chemical reaction principles · Modeling injection and expansion phases · Experimental characterization resources
Tutorial case	· Setup for a mini refrigerator case · Starting computation - Quick start - Batch manager · First analysis
Analyzing results	· Displaying results: density, foam front, temperature, etc. · Isovolume, isosurface and vectors · Curve patterns, animations, VTFx export
Customer case	· Data setup and launching computation

Automotive application

DAY 2 > 8.30 a.m. to 12.00 p.m. & 1.30 p.m. to 5.00 p.m.

Analyzing results from a customer case	· Analyzing and interpreting results: changes in density, gas levels, temperature evolution · Graphic analyses: injected mass, flow rate, vent air flow, etc.
Influence of process parameters	· Foam distribution · Regulating cooling · Positioning vents · Balancing mold and incline
Advanced notions	· AAA (Automatic, Anisotropic, Adaptive) remeshing
Lab visit if the training is at Transvalor	· Presentation of the foam characterization machine · Introduction to the characterization via Transfoam (avec une puce devant)
Conclusions	· Questions and course assessment

Displaying the expansion phase