



FORGE®

Starting with FORGE® Hot Metal Forming Essential

FORGE® Hot Metal Forming Essential is suitable for most standard hot forging processes and is specifically designed for closed die forging

The FORGE® Hot Metal Forming Essential module helps you to validate your forging processes, especially regarding the metal flow, the detection of major defects and the forging forces. On day 1, you will learn how to configure the simulation

of a process, how to run calculations, and how to analyze its main results. Day 2 will cover additional features for the prediction of defects and the optimization of your manufacturing processes.

LEVEL



Beginner

PREREQUISITES



There is no prior requirement for this course.

GOALS



- **Configuration of the simulation of one of your hot forging processes**
- **Analysis of the simulation results**
- **Identification of forging defects (folds, cracks, etc.) and causes**
- **Display of grain flow and monitoring of physical values (temperature, pressure, etc.)**
- **Workspace customization**

OTHER RECOMMENDED TRAININGS



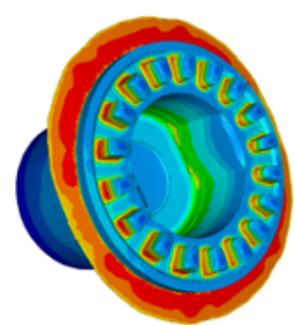
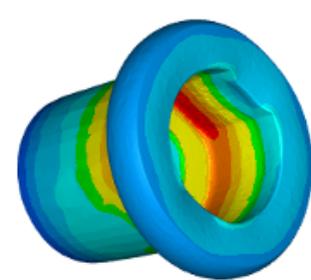
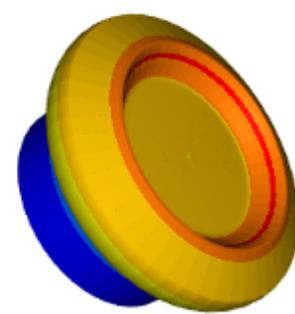
- **New functionalities of FORGE® NxT 4.1**
- **Finite element modeling fundamentals**



TRAINING	DURATION	PRICE EXCL. TAX	PARTICIPANTS
In-company	2 days	€2800 per training	1 to 3 people

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

Introduction	<ul style="list-style-type: none"> • Presentation of Transvalor • Course goals • Review of the finite element method
Data setup	<ul style="list-style-type: none"> • Working environment presentation • Concepts: stores, processes, cases and stages • Import of geometries • Meshing and remeshing procedures • Configuration of kinematics • Rheology, friction, heat transfer, materials database (FPD) • Concept of transition • Application to a tutorial
Computation	<ul style="list-style-type: none"> • Quick launch • Computation manager and chained simulations
Results analysis	<ul style="list-style-type: none"> • Display of results, main scalars (reduction, residual stresses, grain size) and vectors • Diagrams, animations, VTFx exports • Multi-window analysis • Handling animations and exporting results
Setup data of industrial case	<ul style="list-style-type: none"> • Starting the computation



Temperature evolution during the 3 phases of forging a ring

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

Analyzing results of an industrial case	<ul style="list-style-type: none"> • Results analysis
Additional features	<ul style="list-style-type: none"> • Marking grid and grain flow • Predefined and post-processed sensors • Shearing, blanking and flash trimming of workpiece • Import of tooling assembly
Die analysis	<ul style="list-style-type: none"> • Uncoupled simulation
Workspace customization	<ul style="list-style-type: none"> • Creating specific models and data sets (materials, presses, friction, etc.) • Custom keyboard shortcuts
Conclusions	<ul style="list-style-type: none"> • Questions and course assessment