



# Starting with COLDFORM®

**A simulation solution dedicated to cold forming processes. With COLDFORM®, be ready to simulate your cold forming processes and get the most out of the software!**

This course will be your first approach to COLDFORM® software. The first day lets you understand all of the data setup steps, the procedure for launching computations and how to analyze the main results. The second day will be dedicated to a more in-depth analysis of notions such as forming defect detection, dimen-

sional checks (spring-back) and residual stresses.

To better interpret physical phenomena, key functions will also be covered such as Die stress analysis (with or without interference fit), fibering and point tracking techniques.

## LEVEL

Beginner

## PREREQUISITES

There are no prior requirements for this course.

## GOALS

- Data setup for a cold forming case study using a multi-station process
- Launching a single computation and/or a computation sequence
- Analyzing simulation results
- Identifying and interpreting forming defects (folds, cracks, etc.)
- Measuring spring-back and quantifying residual stresses
- Viewing grain flow and monitoring physical values (temperature, pressure, etc.) at any point on the part
- Predicting stress states in tooling or in pre-stressed assemblies
- Customizing your working environment

## OTHER RECOMMENDED COURSES

- Finite element modeling fundamentals
- New functionalities of COLDFORM® NxT 3.0

DURATION	DATES 2022		
2 Days	12-13 April	28-29 July	08-09 December
TRAINING	PRICE EXCL. TAX	PARTICIPANTS	
Inter-company	1080€ per person	3 to 8 people	
In-company	2600€ 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.

<b>Introduction</b>	<ul style="list-style-type: none"> <li>• Transvalor presentation</li> <li>• Course goals</li> </ul>
<b>Data setup</b>	<ul style="list-style-type: none"> <li>• Presentation of the environment: concepts of stores, processes, cases, stages</li> <li>• Geometries import</li> <li>• Surface and volume meshes</li> <li>• Definition of the kinematics</li> <li>• Reminders on: rheology, friction and heat exchanges</li> <li>• Materials database (FPD) / creating a cold forming file with YS, UTS and Elongation at break</li> <li>• Working on objects (creation, trimming, 2D/3D transfer)</li> <li>• Setting up a tutorial case (a screw): cold forming in 2D and 3D modes</li> </ul>
<b>Launching computations</b>	<ul style="list-style-type: none"> <li>• Start, stop, information</li> <li>• Simulation chaining</li> </ul>
<b>Analyzing results</b>	<ul style="list-style-type: none"> <li>• Displaying results, the main scalars and vectors, spring-back</li> <li>• Curve lines, animations, VTFx export</li> </ul>
<b>Customer case</b>	<ul style="list-style-type: none"> <li>• Setup</li> <li>• Starting computation</li> </ul>



Cold forming a bevel gear with contact evolution



Cold forming a valve cage on an automatic transfer press

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

<b>Analyzing results from a customer case</b>	<ul style="list-style-type: none"> <li>• Interpreting results</li> </ul>
<b>Functions</b>	<ul style="list-style-type: none"> <li>• Marking grid and grain flow</li> <li>• Pre defined and post processes sensors</li> <li>• Assembly import</li> </ul>
<b>Die analysis</b>	<ul style="list-style-type: none"> <li>• Uncoupled and coupled approach</li> </ul>
<b>Advanced notions</b>	<ul style="list-style-type: none"> <li>• Environment customization: models, materials, presses, friction, etc.</li> </ul>
<b>Conclusions</b>	<ul style="list-style-type: none"> <li>• Questions and course assessment</li> </ul>