

QForm UK Sheet Metal Forming Introductory course

Introduction	<ul style="list-style-type: none"> ● Introductory information ● Overview of available options ● Goals of the course
Demonstration of initial data setting	<ul style="list-style-type: none"> ● Structure of the source data panel: workpiece parameters, parameters of tools, etc. ● Interface overview
Analysis of results	<ul style="list-style-type: none"> ● Result fields, graphs, dimensioning ● Saving images/animations ● Exporting results
Geometry preparation	<ul style="list-style-type: none"> ● Requirements for geometry ● Direct import from step files ● Parametric geometry, creation of quad mesh
Database	<ul style="list-style-type: none"> ● Equipment ● Materials ● Lubricants
Postprocessor capabilities for analyzing results	<ul style="list-style-type: none"> ● Tracked objects: points, lines, line arrays and arrays of points ● Standard postprocessing subroutines: Forming Limit Diagram, Thickness, etc.
Additional features	<ul style="list-style-type: none"> ● Adjustment of simulation parameters: calculation step, volume constancy, accounting for rotational motion, etc. ● Control of finite element meshes of workpiece and tools

Objectives:

- *Introduction to the possibilities of program application*
- *Learning the interface and tools for analyzing results*
- *Mastering the principles of preparing tasks for simulation and the necessary input data*
- *Gaining skills of preparation of initial data and simulation sheet metal forming processes in the specialized QForm UK module*

Schedule

1. Introduction (presentation)

- Introductory presentation. Overview of available options.
- User manual (Help) structure.
- Goal of the introductory course.

2. Possibilities of sheet metal forming simulation in QForm UK 11

- An overview of the available possibilities for sheet metal forming simulation.

3. Preparing the 3D_strip bending training example (presentation and hands-on session)

- Source data panel: Project, Operation, Geometry, Workpiece parameters, Tool parameters, Stop conditions, Boundary conditions, Blows, Simulation parameters.
- Demonstration of the preparation of source data for simulation.

4. Interface overview (presentation)

- Main menu, toolbar, result playback panel, calculation control panel, simulation log and RMB menu.

5. Tools for analyzing results (presentation)

- Fields and scale of results.
- Graphs, sections and measurements.
- Save animations/images and export results.

Break/Lunch (~ 30 minutes)

6. Recommendations for the geometry preparation (presentation)

- Requirements for geometry. Direct import of geometry from step files.
- Creation of hexahedral workpiece mesh.

7. Preparing the 3D_Nakajima training example (hands-on session)

- Setting the material model.
- Additional features for postprocessing analysis of simulation results: Forming Limit Diagram.

8. Overview of databases (presentation)

- Equipment, Lubricants, Deformed materials.

9*. Preparing the 3D_double-action drawing training example (hands-on session) *(additional example; optional)*

- Simulation of a chain of operations.
- Application of the trimming surface.
- Creation of a model of the material and equipment.