

# QForm UK Longitudinal Rolling. Introductory course for beginners.

<b>Introduction</b>	<ul style="list-style-type: none"><li>● Introductory presentation</li><li>● Overview of available options</li><li>● Objectives of the event</li></ul>
<b>Demonstration of initial data assignment</b>	<ul style="list-style-type: none"><li>● Interface overview</li><li>● Structure of the initial data panel</li><li>● Features of rolling parameters</li><li>● Database</li><li>● Simulation parameters</li><li>● Overview of new features in QForm UK 11</li></ul>
<b>Geometry Preparation</b>	<ul style="list-style-type: none"><li>● Geometry requirements</li><li>● Direct import from dxf and step files</li><li>● Parametric geometry, planes of symmetry</li></ul>
<b>Analysis of results</b>	<ul style="list-style-type: none"><li>● Result fields, graphs, dimensioning</li><li>● Saving images/animations</li><li>● Traceable objects, subroutines</li></ul>
<b>Roll pass design in CAD QKaliber</b>	<ul style="list-style-type: none"><li>● Introductory presentation</li><li>● Preparation of initial data</li><li>● Analysis of results</li><li>● Automatic project preparation in QForm UK</li></ul>
<b>Analysis of Olympiad task</b>	<ul style="list-style-type: none"><li>● Statement and requirements</li><li>● Solution example</li><li>● Recommendations to participants</li></ul>

## Goals:

- *Familiarization with QForm UK capabilities for simulation longitudinal rolling processes and QKaliber software for roll pass design.*
- *Learning the interface and results analysis tools*
- *Mastering the principles of preparing initial data*
- *Acquiring skills in simulation longitudinal rolling processes and roll pass designing*
- *Introduction to the requirements of the Olympiad task*

## **Schedule (09:00 – 14:00 CET)**

### **1. Introduction (Presentation) (09:00-09:20)**

- Introductory presentation. Overview of QForm UK capabilities for simulation longitudinal rolling processes.

### **2. Preparing a case №1 «2 operations with heating before rolling» (report and hands-on session) (09:20-10:00)**

- Initial data panel: Project, Geometry, Workpiece parameters, Tool parameters, Rolling Parameters, Stop conditions, Boundary conditions, Simulation parameters.
- Demonstration of the preparation of raw data for simulation
- Simulation of a chain of operations

### **3. Interface overview (report) (10:00-10:30)**

- Main menu, toolbar, result playback panel, calculation control panel, simulation log, results view window, right-click menu.
- Fields and scale
- Cross-cut sections and measurements
- Additional options for post-processor analysis of simulation results

### **4. Preparing a case №2 «Revolve the geometry» (report and hands-on session) (10:30-11:00)**

- Requirements for 2D geometry. Direct import of geometry from dxf files.
- Parametric geometry
- Requirements for 3D geometry
- Graphs
- Save animations/images and export results

### **5. Preparing a case №3 «1 operation, 7 passes in reverse rolling» (report and hands-on session) (11:00-11:40)**

- Simulation in the reverse rolling module
- Passes tab parameters
- Batch mode
- Finite element mesh settings
- Workpiece trimming

### **Break (11:40-12:10)**

### **6. Preparing a case №4 «1 operation - 3 passes. Planes of symmetry.» (report and hands-on session) (12:10-12:30)**

- Use of planes of symmetry
- Database overview
- Project structure, copying, editing processes and operations

### **7. Roll pass design in CAD QKaliber (presentation) (12:30-12:45)**

- Introductory presentation. Overview of CAD QKaliber capabilities for roll pass designing.

### **8. Preparing a case №1 «Getting started» (report) (12:45-13:00)**

- Initial data panel: Billet parameters, Stand and rolls, Groove.
- Interface overview

- Preparing the geometry of box groove

**9. Preparing a case №2 «Create a project in QForm UK» (report) (13:00-13:20)**

- Automatic project preparation for simulation in QForm UK
- Results Analysis. Charts.

**10. Preparing a case №3 «Practical exercise» (report) (13:20-13:30)**

- Program functionality on the example of oval-round roll pass design

**11. Olympiad on longitudinal rolling 2024 (report) (13:30-13:50)**

- Statement and requirements
- Solution example
- Recommendations to participants

**Q&A session (13:50-14:00)**