

QForm UK Longitudinal Rolling Introductory course

Introduction	<ul style="list-style-type: none">● Introductory presentation● Overview of available options● Objectives of the event
Demonstration of initial data assignment	<ul style="list-style-type: none">● Interface overview● Structure of the initial data panel● Rolling parameters● Database● Simulation parameters
Geometry Preparation	<ul style="list-style-type: none">● Geometry requirements● Direct import from DXF and STEP files● Parametric geometry, planes of symmetry
Analysis of results	<ul style="list-style-type: none">● Result fields, graphs, dimensions● Saving images/animations● Tracking objects, subroutines
Roll pass design in CAD QKaliber	<ul style="list-style-type: none">● Introductory presentation● Preparation of initial data● Analysis of results● Automatic project preparation in QForm UK
Analysis of Olympiad task	<ul style="list-style-type: none">● Statement and requirements● Solution example for the Olympiad task 2024● Recommendations to participants

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) (09:00-09:25)

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

2. Preparing a case №1 «One pass in longitudinal rolling» (report and hands-on session) (09:25-10:05)

- Initial data panel: Project, Geometry, Workpiece parameters, Tool parameters, Rolling Parameters, Stop conditions, Boundary conditions, Simulation parameters.
- Demonstration of initial data preparation for simulation.

3. Interface overview (report) (10:05-10:30)

- Main menu, toolbar, result playback panel, simulation 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
- Workpiece trimming

Coffee break (11:00-11:30)

5. Preparing a case №3 «1 operation, 7 passes in reverse rolling» (report and hands-on session) (11:30-12:10)

- Simulation in the reverse rolling module
- Passes tab parameters
- Batch mode
- Finite element mesh settings
- Save animations/images and export results

6. Preparing a case №4 «2 operations. Reverse and longitudinal rolling» (report and hands-on session) (12:10-12:50)

- Database overview
- Simulation of a chain of operations
- Project structure, copying, editing processes and operations

7. Roll pass design in CAD QKaliber (presentation) (12:50-13:00)

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

8. Preparing a case №1 «Getting started» (report) (13:00-13:10)

- Initial data panel: Billet parameters, Stand and rolls, Groove.
- Interface overview
- Preparing the geometry of box groove

Coffee break (13:10-13:25)

9. Preparing a case №2 «Create a project in QForm UK» (report) (13:25-13:35)

- Automatic project preparation for simulation in QForm UK
- Results analysis and charts.

10. Olympiad on longitudinal rolling (report) (13:35-13:50)

- Statement and requirements
- Example solution
- Recommendations to participants

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

Additional examples

- QForm UK. Case №5 «1 operation - 3 passes. Planes of symmetry.
- QForm UK. Case №6 «Universal stand and symmetry plane».