THERCAST®

Starting with THERCAST® Continuous Casting

With THERCAST®, simulate how the metal evolves in a casting installation from the mold to exiting secondary cooling!

Taking place over three days, this course will be your first approach to THERCAST® software for continuous casting applications.

The first day lets you understand all of the data setup phases with special attention devoted to building the casting machine. The second day will highlight the different kinds of computations as well as how to analyze the main results.

Lastly, a number of key functions will be covered like identifying internal defects, predicting segregation, using TTT diagrams, point tracking and customizing the working environment.

LEVEL

Beginner

PREREQUISITES

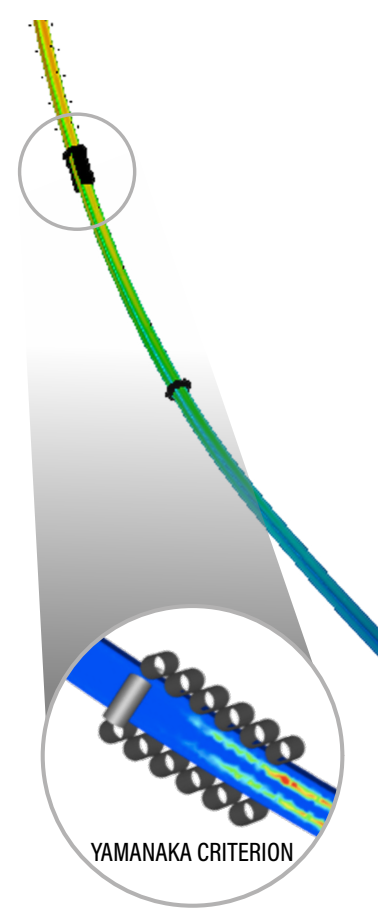**There is no prior requirement for this course.**

GOALS

- **Data setup for continuous casting**
- **Launching a single computation and/or a computation sequence**
- **Analyzing simulation results**
- **Using the continuous casting machine definition interface**
- **Studying the entire process (primary and secondary cooling)**
- **Identifying and interpreting casting faults (bulging, cracks, etc.)**
- **Studying variations in physical values (temperature, pressure, etc.) at any point in the cast product (slab, bloom)**
- **Customizing your working environment**

TRAINING	DURATION	PRICE EXCL. TAX	PARTICIPANTS
In-company	3 days	€4200 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	· Presentation of Transvalor · Course goals
Graphic environment	· Working environment presentation · Project concept with case and stage management · Full description of the backstage
Material file manager tool	· Creation of a material from its nominal composition · Managing the unit system · Displaying physical properties
Segregation models	· Data generation for computations with segregations · Visualizing elements concentration micro and macro-scale segregation · Introduction to micro-segregation models
Tutorial case - continuous casting	· Building continuous casting machine: · Surface and volume meshing · Managing simulation control parameters · Reviewing heat and friction exchanges between ranges · Reviewing fault prediction criteria

YAMANAKA CRITERION

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

Launching computations	· Quick launch · Procedure for restarting computations
Result analysis	· Displaying scalar results: temperature, liquid fraction, material front, etc. · Display options: iso-volumes, cutting planes, curves, scales, smoothed or continuous representations, etc. · Identification of sensitive areas (shrinkage, porosity, etc.) · Combined analyses: multi-cases, multi-windows options · Exploitation of results: animations, VTFx exports
Industrial case	· Data setup and launching computation

SEGREGATION
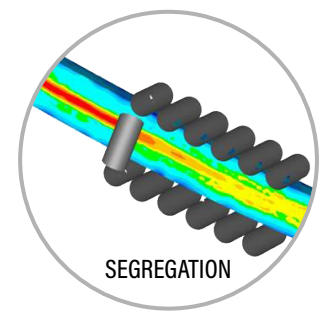
DAY 3 > 8.30 a.m. to 12.00 p.m. & 1.30 p.m. to 5.00 p.m.

Industrial case result analysis	· Influence of exchanges and/or mold shape on results · Optimizing process data to minimize defects
Functions	· Pre- and post-process sensors · Hot tearing criteria
Advanced notions	· Remeshing · TTT and TRC diagram · Customizing environment: materials, heat exchange, friction, etc.
Conclusions	· Questions and course assessment

VELOCITY