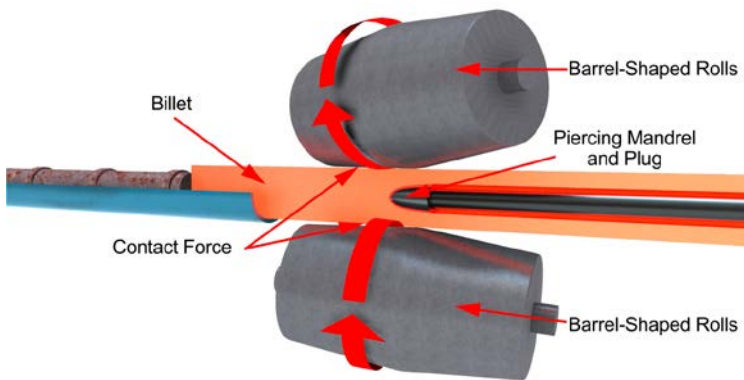


# STEEL TUBING PRODUCTION

eLearning courses designed to increase productivity and profits



## Learning made Simple, Visual, and Interactive

Credit Hours **2**

The THORS *Steel Tubing Production* course offers an interactive learning experience that allows learners to gain an in-depth understanding of production, inspection and testing of steel tubes. This course elaborates on the two primary production methods of steel tubes, namely seamless production and welded production. The defects found during steel tubing production and the respective inspection methods are explored in detail.

## Learning Objectives

- 💡 Understand how temperature affects the mechanical characteristics for effective steel tube production.
- 💡 Relate the process characteristics of seamless production processes.
- 💡 Understand the manufacturing cycle of welded steel tubes.
- 💡 Describe the various inspection techniques involved in steel tubes.
- 💡 Classify the dimensional and surface quality issues in steel tubes.
- 💡 Relate various quality issues to the manufacturing process steps in the production of steel tubes.

## Table of Contents

### I. Tubing Production Methods

- **Seamless Production**
  - Hot Twist Curves
  - Piercing Process
    - Process
    - Process Parameters
  - Extrusion Process
    - Process
    - Process Parameters
- **Welded Production**
  - Electric Resistance Welding (ERW)
    - Process
    - Process Parameters
  - Submerged Arc Welding (SAW)
    - Process
    - Process Parameters

### II. Testing and Defects

- **Inspection Techniques**
  - Visual Inspection
  - Laser Inspection
  - Ultrasonic Inspection
  - Eddy Current Inspection
  - Magnetic Particle Inspection
  - Hydrostatic Inspection
  - Drift Inspection
  - Split Ring Inspection
- **Quality Issues**
  - Dimensional Issues
    - Large Outer Diameter
    - Small Outer Diameter
    - Short Length

### II. Testing and Defects (continued)

- Straightness
- Eccentricity
- **Surface Quality Issues**
  - Laps
  - Seams
  - Scratches
  - Shearing
  - Slivers
  - Rolled in Scale
  - Excessive Decarburization

