



Steel Line Pipe and OCTG Manufacturing

Course: ERW, LSAW, Seamless Mills and API 5L/5CT Testing



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Introduction:

Steel line pipe and OCTG manufacturing across ERW, LSAW and seamless mills with API 5L/5CT testing is a 1-week course for pipe mill process, quality and buyer inspection staff, ending with a Mill Inspection and Test Plan for a case pipe order. Orders are rejected when seam defects, hydrotest failures, off-grade heat treatment or coating holidays surface late, or certificates miss the data sheet. Nominees already work in or audit pipe mills and learn through an inspection walkthrough of case mill records and defect samples. CoreConcept Training Center delivers this steel line pipe and OCTG manufacturing course.

Course Objectives:

- Compare ERW, LSAW, HSAW and seamless mill routes and match each to the size, wall and grade range of a pipe order
- Read an API 5L or API 5CT purchase data sheet and translate PSL level, grade and supplementary requirements into mill controls
- Check HFI welding, submerged arc welding, piercing and heat treatment settings against the parameters that govern seam and body quality
- Witness hydrostatic, ultrasonic, electromagnetic and mechanical tests and judge results against specification acceptance limits
- Inspect threading, coupling make-up and external coating line output and record holidays, thickness and adhesion results
- Build a Mill Inspection and Test Plan with hold points, witness points and a release checklist for a pipe order

Target Audience:

- Staff responsible for setting forming, welding and heat treatment practice on welded or seamless pipe lines
 - Staff responsible for mill quality control, test laboratories and release of line pipe and casing to customers
 - Staff responsible for inspecting pipe orders at the mill on behalf of operators, contractors or stockists
 - Staff responsible for threading, coupling and external coating lines in tubular finishing plants
 - Staff responsible for purchasing and expediting line pipe, casing and tubing against technical specifications
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Course Outline:

Day 1: Pipe Mill Routes, Product Families and Order Specifications

- ERW, LSAW, HSAW and Seamless Route Comparison by Size Range
- API 5L Line Pipe Scope and PSL Product Levels
- API 5CT Casing and Tubing Groups and Grade Designations
- Purchase Order Data Sheet Review Against Specification Levels
- Mill Process Flow Chart From Coil or Billet to Shipment

Day 2: Forming and Welding Technology on Welded and Seamless Lines

- HFI Welding Heat Input, Squeeze Pressure and Bead Trimming
- ERW Seam Normalising and Hook Crack Prevention Controls
- UOE and JCOE Plate Forming and Mechanical Expansion Steps
- Submerged Arc Welding Wire, Flux and Tandem Torch Settings
- Rotary Piercing, Hollow Shell Elongation and Sizing Mill Steps

Day 3: Heat Treatment, Hydrotest, NDT and Mechanical Testing

- Quench and Temper Furnace Cycles for API 5CT Grades
- Hydrostatic Test Pressure, Hold Time and Recorder Chart Review
- Ultrasonic and Electromagnetic Inspection of Pipe Body and Seam
- Tensile, Charpy Impact, Flattening and Guided Bend Test Sampling
- PSL 2 Hardness Survey Plans for Sour and Offshore Service

Day 4: Threading, Coating Lines and Mill Defect Problem Cases

- API 5CT Thread Gauging, Coupling Make-Up and Drift Testing
- Three-Layer Polyethylene and FBE Line Surface Preparation Checks
- Holiday Detection, Coating Thickness and Peel Adhesion Records
- Lack of Fusion, Laminations and Seam Defect Root Causes
- Nonconformance Reports, Weld Repair Limits and Pipe Downgrade Decisions

Day 5: Inspection Walkthrough and Mill Inspection and Test Plan Build

- Case Pipe Order Specification and Mill Capability Review
 - Case Inspection and Test Plan Hold and Witness Points
 - Case Mill Test Certificate Check Against Order Data Sheet
 - Case Third-Party Release Checklist and Pipe Marking Verification
 - Mill Inspection and Test Plan and Release Checklist Completion
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Skills You Will Gain:

- Pipe Mill Route Selection
- Line Pipe Specification Interpretation
- Seam Weld Process Control
- Tubular Heat Treatment Verification
- Hydrostatic and NDT Witnessing
- Mechanical Test Evaluation
- Thread and Coating Inspection
- Mill Certificate Review

Why Attend This Course:

- Deliver a Mill Inspection and Test Plan with a release checklist for a case pipe order to the quality manager and the purchasing lead
- Decide whether a heat, lot or joint can be released, repaired, retested or downgraded using test records and specification limits
- Avoid late order rejections, field seam failures and coating claims by catching defects at the forming, welding, testing and coating stages
- Coach line operators, laboratory technicians and visiting inspectors with the hold point matrix, defect catalogue and certificate checklist

Conclusion:

Back at work, the participant hands the Mill Inspection and Test Plan and release checklist to the quality manager, the purchasing lead and the inspection coordinator. The organisation uses it to agree hold and witness points with the mill, to check certificates before shipment and to decide on repairs, retests and downgrades. After the first order inspected under the plan, the unit should compare rejected joints, retest counts, coating repairs and certificate queries with earlier orders and adjust the hold points and sampling where problems persisted.

Frequently Asked Questions FAQ:

What should participants know before the steel line pipe and OCTG manufacturing course?

Participants should already work in a pipe mill, a test laboratory or an inspection role and be able to read a purchase specification and a mill test certificate. Anonymised order data sheets, test reports or nonconformance reports from their own work help during the case exercise.

How does the steel line pipe and OCTG manufacturing course differ from a pipeline construction or well casing design course?

This course stays inside the mill, from coil, plate or billet to the coated and threaded joint ready for shipment. Pipeline construction courses cover routing, field welding and commissioning, while casing design courses cover load cases and string selection for a well.

Why is the hydrostatic test not enough on its own to accept steel line pipe and OCTG?

A hydrostatic test proves that a joint holds pressure on the day of testing but does not find laminations, small seam flaws or low toughness. Ultrasonic and electromagnetic inspection, mechanical tests and hardness checks are needed to show the pipe will perform in service.

What do participants take back from the steel line pipe and OCTG manufacturing course?

Participants take back a Mill Inspection and Test Plan with a release checklist for a case pipe order, plus a hold point matrix, a seam and body defect catalogue and a certificate review checklist they can adapt to their own orders.
