

CASTINGS: QUALITY INSPECTION FOR STEEL CASTINGS

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The Quality Inspection for Steel Castings course details some of the more common methods used to evaluate a steel casting for compliance to a customer's specification requirements. Relevant for quality and inspection roles, this course focuses on the most common quality non-conformances observed during the visual inspection of steel castings and standard non-destructive testing (NDT) methods used for casting evaluation.

Credit Hours **2**

Learning Objectives

- Understand the difference between an indication and a non-conformance.
- Determine if something is an indication or non-conformance.
- Identify the most common quality non-conformances observed in steel castings.
- Describe standard non-destructive testing methods for evaluating steel castings.

Table of Contents

I. Non-Conformance Identification

- What is a "Non-conformance"?
- How a Non-conformance is Identified

II. Visual Inspection

- Volumetric Non-Conformances**
 - Hot Tears or Cracks
 - Shrinkage
 - Inclusions
 - Gas Porosity
- Surface Indications**
 - Veining
 - Rat Tails

- Wrinkles, Laps, Folds, and Cold Shut
- Cutting Marks
- Chaplets
- Weld Repair Areas
- Surface Roughness

III. Non-Destructive Testing

- Magnetic Particle Testing (MT, MPI, or MPT)**
- Liquid Penetrant Testing (PT, LPI, FPI, or DPT)**
- Radiographic Testing (RT)**
- Ultrasonic Testing (UT)**
- Leak Testing**

