



ASME IX Online

HSB, a Munich Re company, is a technology-driven company built on a foundation of specialty insurance, engineering, and technology, all working together to drive innovation in a modern world.

HSB's ASME IX Online training provides introduction for welding and brazing

Our online format facilitates learning with informative text, graphics, and quizzes at a time convenient for the student. Students have 180 days to complete the course and up to three attempts to pass the course per subscription.

Prerequisites:

Basic understanding of welding processes and their implementation.

ASME Section IX Lesson Topics

Section IX and Welding Basics

Lesson 1 - Key Topics:

- Scope of the ASME Code Section IX
- Welding processes
- Electrode identification
- Types of welds and tests used to qualify welders
- Weld procedure tests

The ASME System and Section IX Basics

Lesson 2 - Key Topics:

- Evolution of the ASME Code
- The Organization of, and Code Paragraph Numbering System
- Article I of Section IX
- Procedure Qualification Record (PQR) - Basics
- Welding Procedure Specification/Performance Qualification Basics
- Weld Test Positions: Groove Welds

- Weld Test Positions: Fillet Welds
- Weld Test Basics
- Tension Tests
- Guided-Bend Tests
- Notch-Toughness Tests
- Fillet-Weld Tests
- Testing by Radiography
- Stud-Weld Tests

Welding Procedure Qualifications

Lesson 3 - Key Topics:

- Welding Procedure Specifications (WPS)
- Procedure Qualification Records (PQR)
- P-Numbers (Material Groupings)
- Responsibilities for Welding Procedure Qualifications
- Procedure Qualification Test Requirements
- Preparation of Test Coupons
- Corrosion-Resistant Weld Metal Overlay
- Electron/Laser Beam Welding
- Hard-Facing Weld Metal Overlay
- Joining Composite/Clad Metals
- Applied Linings
- Welds With Buttering

Essential Variables

Lesson 4 - Key Topics:

- The Role of Essential Variables in Procedure Qualifications
- Determining Qualified Thickness Limits
- Determining the Type and Number of Tests Required
- Welding Variable Tables (Procedure Qualifications)
- QW-252 through QW-265
- Nonessential Variables: Joints (QW-402)
- Essential Variables: Base Metals (QW-403)
- Essential Variables: Filler Metals (QW-404)
- Nonessential Variables: Position (QW-405)
- Essential Variables: Preheat (QW-406)
- Essential Variables: Postweld Heat Treatment (PWHT) (QW-407)
- Essential/Nonessential Variables: Electrical Characteristics (QW-409)
- Essential/Nonessential Variables: Technique (QW-410)
- Special Process Essential Variables

Supplementary Essential Variables

Lesson 5 - Key Topics:

- Supplementary Essential Variables Defined
- Base Metals
- Filler Metals
- Positions
- Preheat
- Postweld Heat Treatment (PWHT)
- Electrical Characteristics
- Nonessential Variables

Lesson 6 - Key Topics:

- Nonessential Variables Defined
- Joints
- Filler Metals
- Positions
- Preheat
- Electrical Characteristics Technique

Welding Performance Qualifications

Lesson 7 - Key Topics:

- General Requirements for Welding Performance Qualification
- Key Terms and Definitions
- Responsibility for Welding Performance Qualification
- Purpose of Welding Performance Qualifications
- Performance Qualification Tests
- Identification of Welders and Welding Operators
- Type of Tests
- Determining Qualified Thickness Limits
- Determining the Number and Type of Tests Required
- Determining Qualified Diameter Limits
- Welding Positions and Performance Qualification
- Welder Combination Processes
- Performance Qualification Using Radiography
- Welding Operator Qualifications
- Welding Performance Continuity

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