Mechanical Joint Integrity

This certified programme familiarises your staff with the techniques needed to carry out specialist critical bolting safely.

As an ECITB Approved Training Provider, Atlas has developed the new Mechanical Joint Integrity refresher e-learning course, supporting Stage 3 and 4 of the ECITB Mechanical Joint Integrity training programme.

This training course accredited by the ECITB, can be used by experienced workers as a refresher course, providing employees with the knowledge of the Mechanical Joint Integrity Standards required in preparation for the Technical Test.

Learning Methods

- e-learning

Targeted Participants

This course is aimed at the Oil & Gas, Engineering Construction, Powergen, Renewables, Pharmaceutical, Mining and Nuclear industries. It is aimed at employees responsible for specialist critical bolting, and recommended for all levels of staff to ensure a consistent approach to specialist critical bolting.

Business Benefits of E-learning

- Supporting employees refresh their knowledge prior to sitting the technical test
- These courses are grant aided for ECITB registered employers
- Higher pass rate of the technical test to ensure their is less employee downtime
- Ensure all employees are trained to the same ECITB and EU standard
- Reducing legislative and operation risk
- Supporting performance improvement

Features

- Matches best practice industry guidelines and Mechanical Joint Integrity Standards developed by ECITB
- Supports MJI 10/18 and 19 testing and certification
- Proven e-learning course used by many leading oil and gas companies
- Final assessment configured for your discipline
- Automatic remediation of incorrectly answered questions
- 100% pass mark
- High quality illustration based animations and animated sequences
- Can be deployed by intranet/internet/LMS portal
- SCORM™ compliant

Course Durations

Hand Torque Bolted Connection Techniques - Modules 1 - 7: total course duration = 103 minutes

Hydraulically Torqued Bolted Connection Techniques - Modules 1 - 9: total course duration = 112 minutes

Hydraulically Tension Bolted Connection Techniques - Modules 1 - 9: total course duration = 141 minutes

Hydraulically Torque and Tension Bolted Connection Techniques - Modules 1 – 6 + 9: total course duration = 122 minutes

Course Core Content

- Module 1: Introduction to Mechanical Joint Integrity
- Module 2: Principles of the Equipment Technology
- Module 3: Methods of Tightening
- Module 4: Torque Tightening Theory
- Module 5: Dismantling and Removing Components
- Module 6: Replacing Components

Discipline Specific Content

- Module 7: Hand Torquing - MJI 10
- Module 8: Hydraulic Torquing – MJI 19
- Module 9: Hydraulic Tensioning – MJI 18
Learning Objectives

• Describe the specifications covering dismantling, preparation and securing of bolted connections
• Explain how compliance is checked
• Introduce the bolted mechanical joint
• Explain the different kinds of flanges available
• Provide an overview of nuts and bolt technology
• Show the different gasket types
• Describe the correct installation of gaskets
• Describe uncontrolled tightening
• Describe partially controlled tightening
• Describe fully controlled tightening
• Describe the various measuring tools available for controlled tightening
• Show the effects of too low stresses being used
• Show the effects of too high stresses being used
• Explain how torque is calculated
• Explain that the amount of torque put in is not always transferred to the bolt
• Describe how to reduce friction
• Recognise level and extent of responsibility when dismantling bolted connections
• Specify the type of assets to be dismantled and the methods
• Identify isolations and disconnections that may be required
• Describe methods and techniques required for dismantling
• Identify typical problems and how to resolve them
• Describe the components of typical hand torque equipment
• Explain the operation of typical hand torque equipment
• Give an example of hand torque tightening
• Describe the components of typical hydraulic torquing
• Explain the operation of typical hydraulic torquing
• Give an example of hydraulic torquing
• Describe the components of a typical bolt tensioner
• Explain the operation of a typical bolt tensioner
• Explain load loss when tensioning a bolt
• Give an example of bolt tensioning

To request a demonstration or to purchase this course please contact your Atlas Account Manager or email info@atlasknowledge.com