



المركز العالمي للتدريب والتطوير
International Centre For Training & Development



Piping Material Selection & Rating Classification



ACTVET
Abu Dhabi Centre for
Technical and Vocational
Education and Training
مركز أبوظبي
للتعليم والتدريب
الтехни والمهني

GInI GLOBAL
INNOVATION
INSTITUTE
Authorized Innovation Provider®

**Project
Management
Institute**
Registered
Education
Provider



International Association
for Health and Occupational Safety
and the Environment

EFQM
Member



Course Introduction:

Piping systems and pipelines need to be monitored on continuous basis to make sure that they are in good working conditions. Deterioration of a piping is a must due to different mode of failure mechanisms. Different types of corrosion, cracks, and pipe stressing are some examples of these deterioration effects. To figure out the actual condition of the piping and pipelines, inspection and testing is a must. Different testing and inspection methods are involved to cover different types of piping deterioration. Examining and evaluation the testing and inspection findings will help determining the interval of inspection, the type of repair, alterations, or rerating and even the retirement of the system. Buried pipelines usually have their own special methods of inspection.

Course Objective:

Upon successful completion of this course, the delegates will be able to:

- Understand the mode of deterioration of piping systems and pipelines
- Identify the basic requirements and preparations for piping systems and Pipelines inspection tasks
- Practice how to calculate corrosion rate, interval of inspection and similar parameters of piping inspection
- Recognize the different methods of piping and pipeline inspection Evaluate and analyze the Inspection Data
- Identify different methods of piping and pipeline repairs, alteration and re-rating

Who Should Attend?

This course is intended for mechanical engineers, process plant and pipeline/piping engineers and inspectors responsible for design, installation, operation, integrity and maintenance of piping systems and pipelines are encouraged to attend this course.

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Outline:

Part 1:

Modes of Deterioration and Failure

- Mechanical and Metallurgical Failure

- Uniform or Localized Loss of Thickness
- High Temperature Corrosion
- Environment-Assisted Cracking

Part 2:

Inspection and Testing Practices

- Risk-Based Inspection
- Types of Corrosion and Cracking
- Types of Inspection and Surveillance
- Thickness Measurement Locations
- Thickness Measurement Methods
- Pressure Testing of Piping Systems
- Material Verification and Traceability
- Inspection of Valves
- Inspection of Welds in-Service
- Inspection of Flanged Joints

Part 3:

Frequency and Extent of Inspection

- Piping Service Classes
- Inspection Intervals
- Extent of Visual External and CUI Inspection
- Extent of Thickness Measurement Inspection
- Extent of Small-Bore Auxiliary Piping and Threaded Connections Inspections

Part 4:

Inspection Data Evaluation and Analysis

- Corrosion Rate Determination
- Maximum Thickness Determination
- Retirement Thickness Determination
- Assessment of Inspection Findings
- Piping Stress analysis

REPAIRS, ALTERATION AND RERATING

- Repair and Alterations
- Welding and hot Tapping
- Rerating

Part 5:

INSPECTION OF BURIED PIPING

- Types and Methods of Inspection
- Frequency and extent of Inspection
- Repair to Buried Systems

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Fees:

To be advised as per the course location. This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session