

**Training Title**

**PIPELINES: DESIGN, INSPECTION & TESTING TRAINING**

**Training Duration**

5 days

**Training Venue and Dates**

REF			04-08 March		
ME047	Pipeline: Design Inspection & Testing	5	2018	\$4,250	Dubai, UAE

In any of the 5 star hotels. The exact venue will be informed once finalized.

**Training Fees**

- 4,250 US\$ per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Buffet Lunch

**TRAINING DESCRIPTION**

The course will review the basic requirements of the ASME B31 Code for Pressure Piping. Topics include: design conditions, pipe sizing, pressure design, flexibility analysis, material, fabrication, examination, testing, and mechanical integrity for existing piping systems, as provided in API 570 Piping Inspection Code.

**TRAINING OBJECTIVES:**

- To provide the participant with a complete and up-to-date overview of the area of Piping Technology
- The participant will learn the design, fabrication, examination and testing requirements of ASME B31
- Familiarizing the participant with the related standards for inspection and repair of piping systems that have been in service, as provided in API 570, Piping Inspection Code
- The participant will gain a deep understanding of the physical phenomena which affect the operation, durability of piping systems
- Participant will learn to calculate the pipe schedule, and pipe size that serve certain application
- Participant will learn different methods of pipe inspection and testing based on related Codes and Standards
- Participant will exposed to different method of checking pipe flexibility

**WHO SHOULD ATTEND**

Engineers and Technicians of mechanical, and chemical engineering background will benefit largely from this workshop. Maintenance, Operation, inspection, and R and D People should also attend this course.

**TRAINING METHODOLOGY:**

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions, and motivate everybody find the right answers. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.

All presentations are made in excellent colorful power point. Very useful Course Materials will be given.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Group Work & Practical Exercises
- 20% Videos & General Discussions

### COURSE OUTLINE :-

The Following Topics will be covered in this course over five days

Basics of Piping  
Pipe Dimensions and Schedule number  
Pipe Manufacturing Methods  
Welded and Seamless Pipes  
Pipe Drawing Symbols  
Types of pipes – application wise  
Standard pipe  
Pressure pipe  
Line pipe

Piping Materials  
Chemical properties  
Mechanical properties  
Physical properties  
Property stability  
Classification of steel  
Steel heat treating practices  
Aging of properties

### Piping Codes and Standards

ASME Boiler and Pressure Vessel Code  
ASME B31: Code for pressure piping  
API Specifications (Spec), Recommended Practices (RP), and Standards (Std.)  
Spec. 5L-90: Specification for Line Pipe  
American Welding Society - AWS Welding Handbook

### Pipeline Design

#### 1. Design Parameters

**Maximum Operating Pressure**

**Flow Rate of Oil or Gas**

**Delivery Pressure**

**Pressure Drop**

**Pumping Power**

**2. Failure Theories**

**3. Design Criteria**

**Maximum Allowable Stress**

**Maximum Allowable Pressure**

**Construction Factor**

**4. Steel Selection**

**5. Pipe Sizing**

**Pipe Diameter**

**6. Pipe thickness calculation**

**Pipe Schedule**

**Pump and Compressor Stations**

**Originating and booster Stations**

**Pump Selection**

**Parallel and Series Operation**

**Pipeline Installation**

**Off-shore and on-shore installations**

**Welding Techniques**

**Welding Processes**

**Welding Procedures**

**Weld Passes**

**Inspection and Testing**

**Visual Inspection**

**Non-Destructive Testing**

**Class designation**

**Hydrostatic testing**

**Pigging for Cleaning and Monitoring**

**Types of Pigs**

**Monitoring Internal Corrosion**

**Pipe Repair**

**Buried pipelines**

**Corrosion and Cathodic Protection**

**Pipe Coating**

**Stress Analysis**

**Flexibility Analysis Methods**

[www.definettraining.com](http://www.definettraining.com)

**Flexibility Analysis Demonstration**  
**Equipment Load Limits**  
**Cold Spring**  
**Elastic Follow-up**  
**Fluid Service Requirements**

**Case Studies, Discussions, Exercises, Role plays & Last Day Review will be carried out.**



[www.definettraining.com](http://www.definettraining.com)

---

**P.O BOX 45304 ABU DHABI U.A.E**  
**T +971 2 626 4455 F +971 2 6275344**  
**training@definettraining.com www.definettraining.com**