

W. M. HUITT CO. TRAINING COURSE - MODULE V

PIPING SYSTEM DESIGN AND ENGINEERING TRAINING

2 Part Course Synopsis 90 Minutes Each

Course Description: This course will provide the novice or experienced Pipe Designer and CAD Operator with the broad, but specific information they need to perform their job more efficiently and effectively. It will provide plant maintenance personnel with a better understanding of regulatory compliance, system ratings, re-testing modified or repaired piping etc. Mechanical, Process, and Utility Engineers will get the information they need to better understand pipe specifications, the piping design process, and its various elements in their interrelationship with piping.

Who Should Attend: This course is useful to the CAD operator with very little experience in piping design to the experienced piping designer who needs to gain more knowledge with Code application and specification development. This course benefits plant maintenance personnel who work with pipelines. It is also of benefit to mechanical, process, and utility engineers who need to gain more detailed knowledge with the various aspects of piping component selection and piping system design.

Abstract of the Online Course

There are four primary segments to this course.

The first 90 minute segment of this 2-Part course will provide the designer, maintenance personnel, and engineer with the basis for understanding industry requirements for Code compliance, Material Standards (ASTM), Manufacturing Standards (ASTM, ASME, MSS), and Government Regulations. It provides a brief history of where industry Standards come from, how they are developed, what their relationship is with the Code of Federal Regulations, and how they affect the specifications and design requirements of a project or an installed system.

The attendee will learn what specifications and guidelines are required for a project, what information is required in those documents, and how to develop them. We will discuss component ratings, component selection, and material selection. Also included will be a discussion on quality self assurance of pipe and components on an international basis.

Some of the topics covered in the second 90 minutes will be pipe routing, pipe bending, slope, steam traps, corrosion allowance, location of process and utility pipe in a pipe rack, welding, supports, piping flexibility, cleaning, testing, validation, and other topics.



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2 Part 3 Hour Course Agenda

Part 1

- I. Setting the foundation of the project and facility with Codes and Standards
- II. MSS Standards
 - a. When to apply them
- III. API Standards
 - a. API publications carry prefixes such as RP, Spec, Bull, TR, Std, and Publ
 - b. What do they mean?
 - c. Do any of the above API publications require compliance in design and/or construction?
- IV. AWWA and CGA
- V. ASTM Standards
 - a. How is the selection of piping material made?
 - b. What is the difference between a Product Specification and a General Requirements Specification?
- VI. Guidelines
 - a. CSI
 - b. ISPE
 - c. API
- VII. ASME Standards
- VIII. Code of Federal Regulations (CFR)
 - a. What do government regulations have to do with piping design & construction?
- IX. Component pressure ratings
 - a. Flanges: assessing the required pressure rating
 - b. Cast fittings threaded: pressure ratings and their application
 - c. Forged fittings socket-weld and Threaded: pressure ratings and their application
- X. Specifications Necessary for a Project.

Part 2

- I. Quality Self Assurance for International Commodities.
- II. Piping Design.
 - a. Pipe routing.
 - b. Locating process and utility pipelines in a pipe rack.
 - c. Piping flexibility.
 - d. Pipe supports
- III. Fabrication of metallic pipe
 - a. Bending pipe.
 - b. Welding pipe.
 - c. Slope in pipelines.
- IV. Piping Installation
 - e. Pipe installation
 - f. Pipeline cleaning
 - g. Pipeline testing
 - h. Pipeline validation

*It will be beneficial to have with you during the online discussion the latest version of ASME B31.3 – Process Piping (2010 for \$380.00US). The Piping Code can be ordered directly from ASME by clicking on the following link or by copying and pasting it to your browser:
[http://www.asme.org/products/codes---standards/process-piping-\(6\)](http://www.asme.org/products/codes---standards/process-piping-(6))