

PD386
Design of Bolted Flange Joints

Day One

- Codes Addressing Flange Design
 - Discuss how the various Code sections address the design of flange joints and the applicability of flange standards
 - Vessels: ASME Section VIII, Div 1, Div 2; Section I; Section III
 - Piping: ASME B31.3, B31.1, B31.4, B31.8
- Flange Standards
 - Discuss the ASME flange standards, their basis, applicability and how they are used within the structure of the ASME Codes and Standards
 - ASME B16.5
 - ASME B16.47 (API, MSS)
- Strength Design Methods
 - Raised face flanges: ASME design methodology and basis
 - Flanges with metal-to-metal contact outside of the bolt circle: ASME design methodology and basis
 - Flanges with full-face gaskets: published methods for design
 - Design for external loads: discuss various methods of designing for external loads
- Design for Leakage
 - PVRC method: background and basis of the PVRC research on flange design for leakage including ASME design methodology and basis
 - New proposed code rules: overview of the new ASME design rules currently under development
- Flange Joint Analysis
 - Methods of flange joint analysis, interaction between the flange, bolts, and gasket
 - Behavior of flange joints: apply principles discussed by the use of a computer program
 - Examples: troubleshooting field problems