JUPITER PRIME
Consulting • Training • Advisory
جوبيتر برايم للاستشارات والتدريب

COURSE BROCHURE

Boiler, Pressure Vessel and Process Piping Code Application Training Course

1 – 5 February 2027
New York

Boiler, Pressure Vessel and Process Piping Code Application Training Course

Ref: 1324_49651 **Date:** 1 – 5 February 2027 **Location:** New York **Fees:** 9500 GBP

Boiler, Pressure Vessel and Piping Code Application is a 1-week training course for mechanical engineers, inspectors and integrity engineers who must read and apply boiler, pressure vessel and piping codes, and it ends with a code compliance checklist for one vessel or piping system. Ageing plant, tighter inspection intervals and fewer experienced code specialists make correct code interpretation a daily integrity question. The course is delivered by Jupiter Prime Training.

Why Pressure Vessel and Piping Code Application Matters Now

Two forces shape code work today. Ageing boilers, drums and process lines are being kept in service longer, so repair and alteration decisions arrive more often. Experienced code specialists are retiring. An organisation that reads the codes well avoids unsafe rerating and costly rework; one that reads them badly risks rejected fabrications and loss of containment. The course rests on the boiler, pressure vessel and piping codes and on ISO 55001 for asset management.

Who Gains Most from Pressure Vessel and Piping Code Application

- Engineers who specify design pressure, temperature and corrosion allowance for new vessels and lines
- Inspectors who witness welding, examination and pressure testing during fabrication
- Integrity engineers who judge remaining wall thickness and approve repairs or rerates
- Reviewers who check vendor calculations, data reports and nameplate stamping
- Maintenance engineers who plan alterations to boilers, heat exchangers and piping circuits

Mixed groups from engineering, inspection and maintenance gain most, because they leave sharing one reading of code clauses and one way of recording evidence.

Pressure Vessel and Piping Code Capabilities

Participants move from locating the right code section to defending a design, weld or test result against its clauses.

- Navigate code sections, divisions and mandatory appendices — selecting the governing rules for a component
- Calculate minimum required shell, head and pipe wall thickness — rerating and replacement decisions
- Specify welding procedure and welder qualification requirements — fabrication contractors and inspectors
- Apply examination and hydrostatic or pneumatic test rules — release of equipment to service
- Assess repairs and alterations against the original construction code — the owner and authorised inspector
- Build an evidence trail of data reports and test records — audits and insurance reviews

Key Pressure Vessel and Piping Code Terms

- Maximum allowable working pressure MAWP — the highest pressure permitted at the top of a vessel at its stated temperature.
- Joint efficiency — a factor reflecting weld type and examination extent, used to reduce allowable stress in thickness calculations.
- Corrosion allowance — extra wall thickness added above the calculated minimum to cover expected metal loss in service.
- Welding procedure specification WPS — a written document giving the qualified variables a welder follows for a production weld.
- Hydrostatic test — a pressure test using water above design pressure to prove strength and leak tightness before service.
- Manufacturer's data report — the signed record of design, materials, examination and testing that accompanies a code-built item.

Pressure Vessel and Piping Code Application Day by Day

Day 1: Code Structure and Scope

- Boiler and Pressure Vessel Code Sections — Choosing the Governing Section
- Piping Code Books for Power and Process Lines — Scope Boundaries
- Code Editions, Addenda and Interpretations — Edition of Record Decisions
- Owner, Manufacturer and Inspector Roles — Responsibility for Code Compliance
- Material Specifications and Allowable Stress Tables — Material Selection Limits

Day 2: Design Rules and Calculations

- Internal Pressure Formulas for Shells and Heads — Minimum Wall Thickness
- Nozzle Reinforcement and Opening Rules — Branch Connection Acceptance
- External Pressure and Vacuum Charts — Stiffening Ring Requirements
- Piping Flexibility and Thermal Expansion Limits — Support and Loop Layout
- Flange Ratings and Pressure–Temperature Tables — Component Class Selection

Day 3: Fabrication and Welding Requirements

- Welding Procedure Specification and Qualification Record — Contractor Approval
- Welder Performance Qualification — Assigning Qualified Welders to Joints
- Post-Weld Heat Treatment Rules — Thickness and Material Triggers
- Weld Joint Categories and Efficiencies — Radiography Extent Decisions
- Fit-Up and Dimensional Tolerances — Hold Points Before Closure

Day 4: Examination, Testing and In-Service Changes

- Radiographic and Ultrasonic Examination Acceptance — Weld Repair Calls
- Hydrostatic and Pneumatic Test Procedures — Safe Test Pressure Setting
- Overpressure Protection and Relief Valve Sizing — Set Pressure Limits
- Repair, Alteration and Rerating Rules — Return-to-Service Approval
- Data Reports, Nameplates and Stamping — Records for Insurers and Auditors

Day 5: Practising the Code Compliance Checklist

- Thickness Verification Against Design Calculations — Applying Day 2 Formulas
- Weld Procedure and Welder Record Audit — Applying Day 3 Requirements
- Test and Examination Record Review — Applying Day 4 Acceptance Rules
- Gap Ranking for Repairs and Rerates — Owner Action Priorities
- Code Compliance Checklist for a Vessel or Piping System — Completed Work Product

Applying Pressure Vessel and Piping Code Application After the Course

- Run a thickness and MAWP check on one boiler drum or process vessel due for inspection, using the design formulas taught.
- Audit the welding procedure, welder and hydrotest records of one recent piping modification against the code edition of record.

Pressure Vessel and Piping Code Application Questions FAQ

What is boiler, pressure vessel and piping code application, and why does it matter now?

It is the practice of applying construction codes to design, weld, examine and test pressure equipment. It matters now because ageing plant needs more repair and rerating decisions while fewer experienced code specialists remain to make them.

Which roles gain most from pressure vessel and piping code application training?

Mechanical engineers, inspectors and integrity engineers gain most. Anyone who signs off calculations, welds or pressure tests uses the methods directly.

How does pressure vessel and piping code application differ from a risk-based inspection course?

It focuses on construction code rules for design, fabrication and testing. A risk-based inspection course ranks equipment by likelihood and consequence of failure to set intervals, while this course checks whether equipment meets its code.

What do you bring back from pressure vessel and piping code application training?

You bring back a code compliance checklist for one vessel or piping system. It links thickness, welding, examination and test evidence to the governing clauses and ranks the gaps that need repair or rerating.

Pressure Vessel and Piping Code Application: The Way Forward

The code compliance checklist first informs whether a vessel or line can stay in service at its current rating or needs repair. Integrity engineers own it, inspectors fill it during examinations, and maintenance planners use its gaps to schedule work. After its first use, revisit how the code edition of record is tracked.