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COURSE BROCHURE

# Pipeline Girth Welding Procedures and Quality Control Training Course

30 May – 3 June 2027
Cairo

# Pipeline Girth Welding Procedures and Quality Control Training Course

**Ref:** 2894_110481 **Date:** 30 May – 3 June 2027 **Location:** Cairo **Fees:** 4000 GBP

Pipeline Girth Welding Procedures and Quality Control is a 1-week training course for pipeline welding engineers and inspectors who qualify procedures, approve welders and judge finished joints, and who leave with a welding procedure and quality control plan for one spread. Faster construction schedules, mechanised welding and higher-strength line pipe raise the cost of every rejected joint. Jupiter Prime Training delivers this girth welding course.

## Why Pipeline Girth Welding Procedures and Quality Control Matters Now

Three pressures now meet at the girth weld. Contractors push for higher daily joint counts, which favours mechanised and pulsed processes that need tighter parameter control. Owners specify stronger, thinner line pipe that is less forgiving of hydrogen, heat input and misalignment. Inspection teams are moving from film radiography to automated ultrasonic scanning, which changes how flaws are sized and accepted. A spread that handles these well keeps repair rates low and the line ready for testing; one that handles them badly faces cut-outs, delays and joints that crack in service.

## Who Gains Most from Pipeline Girth Welding Procedures and Quality Control

- Engineers who write and qualify welding procedures for line pipe and fittings
- Inspectors who witness test welds and approve welder qualification coupons
- Specialists who interpret radiographic and ultrasonic records against acceptance limits
- Supervisors who control consumables, preheat and parameters on the spread
- Owner representatives who sign off repair welding and joint records

A construction contractor or pipeline owner that sends its welding, inspection and field supervision staff together gains most.

## Pipeline Girth Welding Procedures and Quality Control Capabilities

Participants move from checking welds after the fact to controlling the variables that make each joint sound.

- Specify essential variables and qualification ranges for a girth weld procedure — procedure approval
- Design a welder qualification and requalification scheme for a spread — contractor and owner
- Calculate heat input and preheat needs for higher-strength pipe — field welding supervisors
- Weigh radiographic and automated ultrasonic testing for flaw detection — inspection planning
- Apply acceptance criteria to recorded indications and decide on repair — joint release
- Build repair welding limits and records for each joint — integrity and handover teams

## Key Pipeline Girth Welding Procedures and Quality Control Terms

- Girth weld — a circumferential butt weld joining two lengths of pipe end to end in the field.
- Procedure qualification record — the documented test weld and results that prove a welding procedure produces sound joints.
- Essential variable — a welding condition whose change requires the procedure to be qualified again.
- Heat input — the energy delivered per unit length of weld, set by current, voltage and travel speed.
- Automated ultrasonic testing — scanning a weld with mechanised ultrasonic probes to detect and size internal flaws.
- Repair weld — a weld made after removing a rejected flaw, limited in number and length per joint.

## Pipeline Girth Welding Procedures and Quality Control Day by Day

### Day 1: Girth Weld Processes and Joint Design

- Manual Cellulosic and Low-Hydrogen Electrodes — Choosing Root and Fill Methods
- Mechanised Gas Metal Arc Systems — Speed Versus Parameter Control
- Bevel Geometry and Line-Up Clamps — Root Quality and Misalignment Limits
- Line Pipe Grade and Wall Thickness — Weldability and Cracking Risk
- Consumable Selection and Storage — Strength Matching and Moisture Control

### Day 2: Procedure Qualification

- Preliminary Procedure Specification — Setting Ranges Before the Test Weld
- Essential Variable Tables — When a Change Forces Requalification
- Test Weld Coupons — Tensile, Nick-Break and Bend Specimen Layout
- Hardness and Toughness Testing — Limits for Sour and Cold Service
- Preheat, Interpass and Heat Input Records — Controlling Hydrogen Cracking

### Day 3: Welder Qualification and Spread Control

- Welder Qualification Tests — Position, Diameter and Process Coverage
- Requalification Triggers — Repair Rate Trends and Process Gaps
- Parameter Monitoring on Mechanised Spreads — Detecting Drift Early
- Weather Shelters and Joint Cleanliness — Protecting the Root Pass
- Joint Numbering and Traceability Logs — Linking Welder, Pipe and Result

### Day 4: Non-Destructive Testing, Acceptance and Repair

- Film and Digital Radiography — Image Quality and Flaw Recognition
- Automated Ultrasonic Scanning — Zone Discrimination and Flaw Sizing
- Workmanship Acceptance Criteria — Length, Depth and Type of Indication
- Fitness-Based Acceptance Limits — When Engineering Assessment Applies
- Repair Welding Procedures — Excavation, Rewelding and Retesting Limits

## Day 5: Practising the Welding Procedure and Quality Control Plan

- Onshore Gas Line Spread — Applying Process and Procedure Choices
- Water Injection Line in Higher-Strength Pipe — Applying Heat Input Checks
- Ultrasonic Record Review — Applying Acceptance and Repair Decisions
- Peer Challenge of Inspection Frequency — Defending Cost and Coverage
- Welding Procedure and Quality Control Plan — Issuing Procedures, Tests and Hold Points

## Applying Pipeline Girth Welding Procedures and Quality Control After the Course

- Compare the essential variables in one current procedure with field parameter logs and flag any joints welded outside qualified ranges.
- Analyse the repair rate by welder and joint position for one spread and propose requalification or parameter changes.

## Pipeline Girth Welding Procedures and Quality Control Questions FAQ

### What is pipeline girth welding procedures and quality control, and why does it matter now?

It is the qualification of girth weld procedures and welders and the testing that proves each field joint is sound. Faster mechanised welding and stronger line pipe make tight control of each variable essential.

### Which roles gain most from pipeline girth welding procedures and quality control?

Welding engineers and weld inspectors gain most. Non-destructive testing specialists, spread supervisors and owner representatives who release joints also benefit.

### How does pipeline girth welding procedures and quality control differ from a general welding inspection course?

It focuses on field girth welds on line pipe, from procedure tests to ultrasonic acceptance. A general welding inspection course covers many joint types in plants and structures.

### What do you bring back from pipeline girth welding procedures and quality control?

You bring back a welding procedure and quality control plan for one spread. It sets procedures, welder tests, inspection methods, acceptance limits and repair rules.

## Pipeline Girth Welding Procedures and Quality Control: The Way Forward

The welding procedure and quality control plan first informs which procedures and welder tests a new spread must complete before production welding starts. Welding engineers, inspectors and owner representatives use it to agree hold points and acceptance limits. After its first use, revisit the inspection method and repair limits against the spread's own repair rate.