



*Training Course:
Installation of Natural Gas Distribution Networks
and Infrastructures*

*29 June - 10 July 2026
Cape Town (South Africa)
DoubleTree by Hilton Cape Town - Upper Eastside*

Training Course: Installation of Natural Gas Distribution Networks and Infrastructures

Training Course code: EN236458 From: 29 June - 10 July 2026 Venue: Cape Town (South Africa) - DoubleTree by Hilton Cape Town - Upper Eastside Training Course Fees: 12000 € Euro

Introduction

Natural gas distribution networks are essential components of modern energy infrastructure, ensuring the safe and efficient delivery of gas to residential, commercial, and industrial consumers. The successful installation of these systems requires a strong foundation in engineering design, construction methodologies, safety standards, and regulatory compliance.

This program, developed by [Global Horizon Training Center](#), provides a comprehensive and practical approach to the installation of natural gas distribution networks. It covers the full lifecycle—from planning and design to construction, testing, commissioning, and operational optimization—while emphasizing safety, quality, and efficiency.

Participants will gain the technical expertise and practical skills needed to manage and execute gas distribution projects in accordance with international standards and industry best practices.

Course Objectives

By the end of this program, participants will be able to:

- Understand the structure and operation of natural gas distribution systems
- Apply engineering principles in pipeline design and installation
- Select appropriate materials and construction techniques
- Implement safety and risk management practices
- Ensure compliance with relevant codes and standards
- Supervise installation and construction activities effectively
- Conduct inspection, testing, and commissioning procedures
- Optimize system performance and maintenance practices

Target Audience

This program is designed for:

- Mechanical and Civil Engineers
- Pipeline and Gas Network Engineers
- Construction and Project Managers
- Maintenance and Operations Personnel
- HSE and Safety Professionals
- Government and Utility Authority Staff

Outline

Day 1: Fundamentals of Natural Gas Distribution Systems

- Properties and characteristics of natural gas
- Structure of gas distribution networks
- Types of systems low, medium, high pressure
- Key components: pipelines, valves, regulators, meters

Day 2: Network Design and System Configuration

- Distribution network configurations radial, looped systems
- Load estimation and demand forecasting
- System planning principles
- Introduction to hydraulic behavior in pipelines

Day 3: Pipeline Design and Engineering Calculations

- Pipeline sizing and flow calculations
- Pressure drop analysis
- Design codes and standards
- Safety factors in pipeline design

Day 4: Route Selection and Surveying

- Route planning and feasibility studies
- Topographical and environmental considerations
- Land use and right-of-way issues
- Surveying and mapping techniques

Day 5: Materials and Corrosion Protection

- Pipe materials steel, PE, PVC
- Material selection criteria
- Corrosion mechanisms
- Coatings and cathodic protection systems

Day 6: Construction and Installation Practices

- Trenching and excavation methods
- Pipe laying techniques
- Welding and fusion processes
- Installation quality standards

Day 7: Equipment Installation and System Integration

- Installation of valves, regulators, and meters
- Pressure regulation stations
- Integration of system components
- Introduction to SCADA and monitoring systems

Day 8: Safety and Risk Management

- Hazard identification and risk assessment
- Safety standards and compliance requirements
- Emergency response planning
- Safe work practices during installation

Day 9: Testing, Inspection, and Commissioning

- Pressure testing methods hydrostatic, pneumatic
- Leak detection techniques
- Commissioning procedures
- Quality assurance and documentation

Day 10: Operation, Maintenance, and Optimization

- Operation of gas distribution systems
- Preventive and corrective maintenance
- Monitoring and control systems
- Troubleshooting and performance improvement
- Final workshop: Designing a gas distribution network project

Registration form on the Training Course: Installation of Natural Gas Distribution Networks and Infrastructures

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