



Accredited Africa Training Institute for Capacity Development

Unit FO409, Hatfield Plaza · 1122 Burnett St, Hatfield 0028 · Pretoria, Gauteng · South Africa

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COURSE BROCHURE

Wastewater Reticulation Pipes Fittings Valves Knowledge Training

Physical Planning and Construction / Civil Engineering Construction

Unit Standard 115908 · NQF Level 2 · 10 Credits · 7 Days

COURSE OVERVIEW

This course equips learners with the knowledge and skills required to understand and work with wastewater reticulation systems, including pipes, fittings, and valves. It is designed to ensure safe and efficient operation, maintenance, and installation practices within municipal and industrial wastewater networks.

Category	Physical Planning and Construction
Subfield	Civil Engineering Construction
Unit Standard	115908
Accreditation	SAQA Accredited · NQF Level 2 · 10 Credits
Duration	7 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Identify and describe the types, materials, and applications of pipes used in wastewater reticulation systems.
- Explain the function and selection criteria for various fittings and valves in wastewater networks.
- Apply safety procedures and regulations when working with wastewater reticulation components.
- Demonstrate the correct installation and maintenance techniques for pipes, fittings, and valves.
- Analyze common faults and troubleshooting methods in wastewater reticulation systems.
- Evaluate the impact of system design on operational efficiency and environmental compliance.

WHO SHOULD ATTEND

- This course is intended for technicians, operators, and supervisors involved in the installation, maintenance, and management of wastewater reticulation systems in municipal or industrial settings.

COURSE OUTLINE

Day 1: Introduction to Wastewater Reticulation Systems

- Overview of wastewater reticulation systems and their importance
- South African legislation: SANS standards, Water Services Act, and local by-laws
- Basic hydraulic principles: gravity flow, pipe gradients, and flow rates
- System components: pipes, fittings, valves, manholes, and pump stations
- Safety protocols and personal protective equipment (PPE) in wastewater operations

Day 2: Wastewater Reticulation Pipes

- Pipe materials: uPVC, HDPE, concrete, ductile iron, and GRP
- Pipe classes, nominal diameters, and pressure ratings (PN)
- Joining methods: solvent cement welding, electrofusion, mechanical joints, and flanged connections
- Pipe installation: trenching, bedding, and backfilling requirements
- Common pipe defects: cracks, abrasion, chemical attack, and root intrusion
- Pipe handling, storage, and transport best practices

Day 3: Fittings for Wastewater Reticulation

- Types of fittings: bends, tees, reducers, couplings, adaptors, and saddles
- Material selection: matching fittings to pipe materials (e.g., uPVC fittings, HDPE electrofusion fittings)
- Installation techniques: solvent cement, mechanical, and flanged connections
- Fittings for special applications: flexible couplings, expansion joints, and repair clamps
- Common fitting failures: joint leaks, stress cracking, and improper alignment
- Quality control and testing of fittings

Day 4: Valves in Wastewater Systems

- Valve types: gate valves, globe valves, butterfly valves, check valves, and air release valves
- Valve materials: cast iron, ductile iron, stainless steel, and coated valves
- Valve operation: manual, gear-operated, and automated actuators
- Installation: valve chambers, positioning, and isolation requirements
- Maintenance: packing, seat replacement, and lubrication
- Troubleshooting: leaks, sticking, and corrosion
- Air release and vacuum valves: function and sizing

Day 5: System Design and Hydraulic Considerations

- Hydraulic design: Manning's equation, flow velocity, and self-cleansing velocities
- Pipe sizing and gradient calculations for gravity systems
- Manhole design: spacing, drop manholes, and benching
- Pump stations: wet well design, pump types, and control systems
- Storage and overflow structures
- Reading and interpreting reticulation layout drawings and isometrics

Day 6: Installation, Testing, and Commissioning

- Pipe laying: alignment, gradient control, and support
- Joining procedures: solvent cement, electrofusion, and mechanical joint assembly
- Backfilling: compaction requirements and testing
- Pressure testing: hydrostatic test procedures and acceptance criteria
- Leakage testing: water loss measurement and allowable leakage rates

- Commissioning: flushing, disinfection (if potable), and system handover
- Safety during installation: trench safety, confined space entry, and lifting operations

Day 7: Maintenance, Troubleshooting, and Practical Integration

- Preventive maintenance: inspection schedules, cleaning, and valve exercising
- Troubleshooting: blockages, infiltration, exfiltration, and odour complaints
- Repair techniques: pipe bursting, relining, and spot repairs
- Emergency response: sewer overflows, burst pipes, and pump failures
- Case studies: typical reticulation challenges in South African municipalities
- Documentation: maintenance logs, incident reports, and asset registers
- Integration: linking pipes, fittings, and valves into a cohesive system management approach

ASSESSMENT & CERTIFICATION

Delegates are assessed through exercises and a final test. A mark of **50% or above** earns an **AATICD Certificate of Completion**, issued digitally with a unique verification code. This course carries **10 NQF credits** at **NQF Level 2**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 28,200.00	R 28,200.00
1	In-House	R 36,700.00	R 36,700.00
1	On-Campus (Pretoria)	R 42,300.00	R 42,300.00

UPCOMING SESSIONS

Start	End	Method	Venue
07 Aug 2026	17 Aug 2026	On-Campus	Cape Town, South Africa
10 Aug 2026	18 Aug 2026	On-Campus	Pretoria, South Africa
11 Aug 2026	19 Aug 2026	On-Campus	Abu Dhabi, UAE
12 Aug 2026	20 Aug 2026	On-Campus	Durban, South Africa
12 Aug 2026	20 Aug 2026	On-Campus	Mauritius
13 Aug 2026	21 Aug 2026	On-Campus	Cape Town, South Africa
14 Aug 2026	24 Aug 2026	On-Campus	Dubai, UAE
17 Aug 2026	25 Aug 2026	On-Campus	Abu Dhabi, UAE

Contact us if no suitable date is listed — on-demand sessions can be arranged for groups.

HOW TO GET A QUOTE OR APPLY

1. **Get an instant quotation online:** visit www.aaticd.co.za, open the page for this course (Unit Standard 115908) and click **Get A Quote / Apply**. Select your training method and number of delegates – your quotation is generated immediately and emailed to you with the course brochure attached.
2. **Apply by email:** send the course title, your preferred training method (Online, In-House or On-Campus Pretoria), the number of delegates and your preferred dates to apply@aaticd.co.za – our team will reply with a formal quotation.
3. **Apply by phone or WhatsApp:** call +27 12 004 8389 or WhatsApp +27 65 077 6310 and we will prepare your quotation and reserve your seats.
4. **Confirm your booking:** accept the quotation and settle the invoice. As soon as payment is confirmed your delegates are enrolled and receive their AATICD LMS login details by email, along with joining instructions for their chosen training method.

Group discounts apply automatically – the more delegates you enrol, the lower the price per delegate. No payment is required to request a quotation.

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