



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

Water Reticulation Systems Cleaning and Disinfection

Physical Planning and Construction / Civil Engineering Construction

Unit Standard 254062 · NQF Level 2 · 12 Credits · 9 Days

COURSE OVERVIEW

This course equips learners with the knowledge and skills required to clean and disinfect water reticulation systems effectively. It covers the principles of water reticulation, the importance of hygiene, and the procedures for ensuring safe and potable water supply. Participants will understand the regulatory requirements and best practices for maintaining water quality in reticulation networks.

Category	Physical Planning and Construction
Subfield	Civil Engineering Construction
Unit Standard	254062
Accreditation	SAQA Accredited · NQF Level 2 · 12 Credits
Duration	9 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Demonstrate knowledge of water reticulation systems and their components.
- Apply cleaning and disinfection procedures to water reticulation systems.
- Analyze water quality test results to ensure compliance with health standards.
- Implement safety measures during cleaning and disinfection operations.
- Evaluate the effectiveness of disinfection methods and adjust as required.

WHO SHOULD ATTEND

- This course is intended for water treatment plant operators, maintenance technicians, and environmental health practitioners responsible for the cleaning and disinfection of water reticulation systems in municipal, industrial, or commercial settings.

COURSE OUTLINE

Day 1: Introduction to Water Reticulation Systems and Regulatory Framework

- Overview of water reticulation systems: pipes, reservoirs, valves, hydrants
- Key legislation: SANS 241, SANS 10252, Water Services Act
- Health risks associated with contaminated water
- Principles of water quality management
- Introduction to cleaning and disinfection methods
- Safety, health, and environmental considerations

Day 2: Water Quality Parameters and Sampling

- Physical parameters: turbidity, colour, temperature
- Chemical parameters: pH, chlorine residual, conductivity
- Microbiological parameters: total coliforms, E. coli
- Sampling points and frequency
- Sample collection, preservation, and transport
- Record keeping and documentation

Day 3: Cleaning Methods for Water Reticulation Systems

- Hydraulic flushing: principles and procedures
- Air scouring and water jetting
- Swabbing: foam swabs, chemical swabs
- Pigging: types of pigs, launching and receiving
- Pre-cleaning inspection and system isolation
- Wastewater management during cleaning

Day 4: Disinfection Principles and Chlorination

- Disinfection theory: inactivation of microorganisms
- Chlorine chemistry: free chlorine, combined chlorine
- Chlorine dosing calculations
- Breakpoint chlorination
- Chlorine residual testing: DPD method
- Safety: chlorine gas hazards, PPE, emergency procedures

Day 5: Advanced Disinfection Methods and Alternative Technologies

- Ultraviolet (UV) disinfection: principles, lamp types, dose
- Ozone disinfection: generation, contact, by-products
- Chloramination: formation of monochloramine
- Peracetic acid and chlorine dioxide
- Disinfection by-products and regulatory limits
- Multi-barrier approach in water treatment

Day 6: Cleaning and Disinfection Procedures for Reservoirs and Tanks

- Types of reservoirs: ground, elevated, service
- Cleaning sequence: drain, sediment removal, high-pressure wash
- Disinfection: chlorination of reservoir surfaces
- Confined space entry: permits, gas monitoring, rescue
- Rinsing and refilling procedures

- Post-disinfection water sampling and testing

Day 7: Pipeline Disinfection and Commissioning

- Pre-commissioning cleaning: swabbing, flushing
- Chlorine dosing: tablet method, continuous injection
- Contact time and residual monitoring
- Flushing after disinfection
- Bacteriological sampling and criteria for acceptance
- Commissioning reports and record keeping

Day 8: Emergency Response and Troubleshooting

- Common issues: low chlorine residual, turbidity spikes, biofilm
- Troubleshooting chlorination equipment
- Emergency disinfection procedures
- Boil water notices and public communication
- Incident investigation and root cause analysis
- Preventive maintenance planning

Day 9: Quality Assurance, Documentation, and Course Review

- Quality assurance plans and audits
- Standard operating procedures (SOPs)
- Record keeping: logs, checklists, reports
- Regulatory compliance and certification
- Case studies and group discussions
- Course assessment and feedback

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 **12 NQF credits** at **NQF Level 2**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 33,300.00	R 33,300.00
1	In-House	R 43,300.00	R 43,300.00
1	On-Campus (Pretoria)	R 50,000.00	R 50,000.00

UPCOMING SESSIONS

Start	End	Method	Venue
04 Aug 2026	14 Aug 2026	On-Campus	Mauritius
05 Aug 2026	17 Aug 2026	On-Campus	Cape Town, South Africa
06 Aug 2026	18 Aug 2026	On-Campus	Dubai, UAE
07 Aug 2026	19 Aug 2026	On-Campus	Pretoria, South Africa
07 Aug 2026	19 Aug 2026	On-Campus	Lagos, Nigeria
10 Aug 2026	20 Aug 2026	On-Campus	Durban, South Africa
10 Aug 2026	20 Aug 2026	On-Campus	Mauritius
11 Aug 2026	21 Aug 2026	On-Campus	Cape Town, South Africa

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 254062) 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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