



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

Raw Materials Testing For Concrete Production Procedures Training

Physical Planning and Construction / Civil Engineering Construction

Unit Standard 116571 · NQF Level 4 · 10 Credits · 7 Days

COURSE OVERVIEW

This course equips learners with the knowledge and skills to perform raw materials testing for concrete production in accordance with industry standards. It covers sampling, testing procedures, and interpretation of results to ensure quality control in concrete manufacturing.

Category	Physical Planning and Construction
Subfield	Civil Engineering Construction
Unit Standard	116571
Accreditation	SAQA Accredited · NQF Level 4 · 10 Credits
Duration	7 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply correct sampling techniques for aggregates, cement, and water used in concrete production.
- Demonstrate proficiency in conducting standard tests such as sieve analysis, moisture content, and compressive strength.
- Analyze test results to determine compliance with specification requirements.
- Evaluate the quality of raw materials and their impact on concrete performance.
- Implement corrective actions based on non-conforming test results.
- Document and report test data accurately for quality assurance records.

WHO SHOULD ATTEND

- This course is designed for laboratory technicians, quality control personnel, and production supervisors involved in concrete manufacturing or construction materials testing.

COURSE OUTLINE

Day 1: Introduction to Raw Materials in Concrete Production

- Overview of concrete and its components
- Cement types and properties (SANS 50197)
- Aggregates: fine and coarse (SANS 1083)
- Water quality requirements (SANS 51008)
- Chemical and mineral admixtures
- Introduction to SANS and SAQA standards
- Laboratory safety and PPE requirements
- Documentation and record-keeping basics

Day 2: Sampling and Preparation of Raw Materials

- Sampling procedures for cement (SANS 5850)
- Sampling aggregates from stockpiles and conveyors
- Water sampling and preservation
- Sample reduction methods: riffing, quartering
- Moisture content determination
- Sample labelling and chain of custody
- Practical exercise: sampling and preparation

Day 3: Physical Testing of Cement and Aggregates

- Cement fineness by sieving (SANS 5852)
- Setting time using Vicat apparatus (SANS 5850)
- Soundness test (Le Chatelier method)
- Aggregate sieve analysis (SANS 3001-AG1)
- Flakiness and elongation index (SANS 3001-AG2)
- Bulk density and voids content
- Practical demonstration and hands-on testing

Day 4: Mechanical and Durability Testing of Aggregates

- Aggregate crushing value (ACV) test (SANS 5841)
- Aggregate impact value (AIV) test
- Los Angeles abrasion test (SANS 5844)
- Water absorption and specific gravity (SANS 5845)
- Soundness test using sodium sulfate (SANS 5846)
- Alkali-silica reactivity (ASTM C1260)
- Data recording and calculation exercises

Day 5: Water and Admixture Testing

- Water pH measurement (SANS 5858)
- Chloride and sulfate content in water
- Total dissolved solids and suspended solids
- Admixture types and functions (SANS 50900)
- Admixture density and solids content
- Setting time and compressive strength with admixtures
- Practical: water and admixture testing

Day 6: Quality Control and Statistical Analysis

- Statistical parameters: mean, standard deviation, range
- Control charts and trend analysis
- Acceptance criteria for raw materials
- Non-conformance reporting and corrective actions
- Calibration of testing equipment
- Inter-laboratory comparison and proficiency testing
- Practical: data analysis from previous days

Day 7: Practical Integration and Assessment

- Full practical assessment: sampling, testing, and reporting
- Compilation of test reports with conclusions
- Review of unit standard outcomes (116571)
- Case studies: common raw material issues
- Feedback and improvement strategies
- Q&A; session and course wrap-up
- Certificate of attendance preparation

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 4**.

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
03 Aug 2026	11 Aug 2026	On-Campus	Pretoria, South Africa
03 Aug 2026	11 Aug 2026	On-Campus	Lagos, Nigeria
04 Aug 2026	12 Aug 2026	On-Campus	Johannesburg, South Africa
05 Aug 2026	13 Aug 2026	On-Campus	Mauritius
06 Aug 2026	14 Aug 2026	On-Campus	Cape Town, South Africa
07 Aug 2026	17 Aug 2026	On-Campus	Dubai, UAE
10 Aug 2026	18 Aug 2026	On-Campus	Abu Dhabi, UAE
11 Aug 2026	19 Aug 2026	On-Campus	Mauritius

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 116571) 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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