



Accredited Africa Training Institute for Capacity Development

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

Tel: +27 12 004 8389 · Mobile: +27 65 077 6310

Email: apply@aaticd.co.za · Website: www.aaticd.co.za

COURSE BROCHURE

Perform Destructive And Non Destructive Tests On Non Metallics Training

Manufacturing, Engineering and Technology / Manufacturing and Assembly

Unit Standard 120220 · NQF Level 4 · 6 Credits · 3 Days

COURSE OVERVIEW

This course equips learners with the skills to perform destructive and non-destructive tests on non-metallic materials, ensuring material integrity and compliance with industry standards. It covers testing procedures, interpretation of results, and safety protocols critical for quality assurance in various industrial settings.

Category	Manufacturing, Engineering and Technology
Subfield	Manufacturing and Assembly
Unit Standard	120220
Accreditation	SAQA Accredited · NQF Level 4 · 6 Credits
Duration	3 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply appropriate destructive and non-destructive testing methods to non-metallic materials
- Analyze test results to determine material properties and detect defects
- Evaluate material compliance with specifications and standards
- Implement safety procedures during testing operations
- Demonstrate correct use of testing equipment and instruments
- Document and report test findings accurately

WHO SHOULD ATTEND

- This course is designed for technicians, quality control inspectors, and engineers involved in materials testing, manufacturing, or maintenance who need to assess non-metallic materials such as plastics, composites, ceramics, and rubber.

COURSE OUTLINE

Day 1: Fundamentals of Destructive and Non-Destructive Testing on Non-Metallics

- Introduction to non-metallic materials: polymers, composites, ceramics, and elastomers.
- Overview of destructive testing (DT) methods: tensile, compression, flexural, impact, and hardness tests.
- Overview of non-destructive testing (NDT) methods: visual inspection, ultrasonic, radiography, and dye penetrant.
- Principles of material behaviour under stress and failure mechanisms.
- Occupational health and safety (OHS) regulations for testing environments.
- Quality assurance and calibration of testing equipment.
- Selection criteria for DT vs. NDT based on material and application.
- Case studies: typical defects in non-metallics and appropriate testing approaches.

Day 2: Practical Application of Destructive Testing Techniques

- Step-by-step procedure for tensile testing of polymers and composites.
- Compression and flexural testing: setup, execution, and data analysis.
- Impact testing (Izod/Charpy) on non-metallics.
- Hardness testing (Shore, Rockwell) for elastomers and plastics.
- Data recording: load-extension curves, yield strength, elongation.
- Common defects from destructive testing: brittle fracture, delamination, and necking.
- Equipment maintenance and troubleshooting.
- Practical session: perform a set of destructive tests on provided samples.

Day 3: Non-Destructive Testing Techniques and Integration

- Visual inspection and measurement techniques for surface defects.
- Ultrasonic testing: principles, transducer selection, and flaw detection in composites.
- Radiographic testing: X-ray and gamma-ray applications for non-metallics.
- Dye penetrant testing for surface-breaking cracks in ceramics and plastics.
- Comparison of DT and NDT: advantages, limitations, and complementary use.
- Reporting: format, terminology, and compliance with ISO/SA standards.
- Practical session: conduct NDT on test pieces and correlate with DT data.
- Review of SAQA unit standard 120220 assessment criteria and portfolio requirements.

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 **6 NQF credits** at **NQF Level 4**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 17,900.00	R 17,900.00
1	In-House	R 23,300.00	R 23,300.00
1	On-Campus (Pretoria)	R 26,800.00	R 26,800.00

UPCOMING SESSIONS

Start	End	Method	Venue
05 Aug 2026	07 Aug 2026	On-Campus	Cape Town, South Africa
05 Aug 2026	07 Aug 2026	On-Campus	Lagos, Nigeria
10 Aug 2026	12 Aug 2026	On-Campus	Pretoria, South Africa
10 Aug 2026	12 Aug 2026	On-Campus	Mauritius
11 Aug 2026	13 Aug 2026	On-Campus	Abu Dhabi, UAE
11 Aug 2026	13 Aug 2026	On-Campus	Cape Town, South Africa
12 Aug 2026	14 Aug 2026	On-Campus	Durban, South Africa
12 Aug 2026	14 Aug 2026	On-Campus	Dubai, 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 120220) 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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