



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

Coal Hardness Testing And Physical Properties Analysis Training

Manufacturing, Engineering and Technology / Fabrication and Extraction

Unit Standard 110193 · NQF Level 3 · 5 Credits · 2 Days

COURSE OVERVIEW

This course equips learners with the knowledge and skills to conduct coal hardness testing (e.g., Hardgrove Grindability Index) and analyze physical properties such as moisture, ash content, and calorific value. It ensures accurate characterization of coal for quality control, beneficiation, and combustion efficiency in mining and power generation contexts.

Category	Manufacturing, Engineering and Technology
Subfield	Fabrication and Extraction
Unit Standard	110193
Accreditation	SAQA Accredited · NQF Level 3 · 5 Credits
Duration	2 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply standardized methods (e.g., Hardgrove Grindability Index) to determine coal hardness and grindability.
- Analyze physical properties of coal including moisture, volatile matter, ash content, and fixed carbon using prescribed procedures.
- Evaluate test results against industry specifications to assess coal quality and suitability for end-use.
- Implement quality control measures to ensure accuracy and repeatability of coal testing processes.
- Demonstrate correct calibration and operation of laboratory equipment used in coal physical properties analysis.

WHO SHOULD ATTEND

- This training is designed for laboratory technicians, quality controllers, and mining personnel involved in coal sampling, testing, and quality assurance within the South African coal industry.

COURSE OUTLINE

Day 1: Fundamentals of Coal Hardness and Physical Properties

- Introduction to coal characteristics and quality parameters
- Overview of coal hardness: definition, significance, and factors affecting hardness
- Physical properties: moisture content, ash content, volatile matter, fixed carbon
- Hardgrove Grindability Index (HGI): principle and test method
- Sampling techniques for representative coal samples
- Safety considerations in coal handling and laboratory testing
- Overview of relevant standards (e.g., ISO, ASTM, SANS)
- Data recording and basic interpretation

Day 2: Advanced Testing Techniques and Data Analysis

- Step-by-step procedure for HGI test: equipment setup, sample preparation, and operation
- Proximate analysis: moisture determination, ash content, volatile matter, and fixed carbon calculation
- Correlation between HGI and coal rank, moisture, and ash content
- Quality control: calibration, duplicate testing, and error analysis
- Troubleshooting common issues in hardness and physical property testing
- Data interpretation and reporting for coal quality assessment
- Practical applications in coal mining, beneficiation, and utilization
- Case studies and group discussion

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 **5 NQF credits** at **NQF Level 3**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 15,400.00	R 15,400.00
1	In-House	R 20,000.00	R 20,000.00
1	On-Campus (Pretoria)	R 23,100.00	R 23,100.00

UPCOMING SESSIONS

Start	End	Method	Venue
05 Aug 2026	06 Aug 2026	On-Campus	Dubai, UAE
05 Aug 2026	06 Aug 2026	On-Campus	Mauritius
05 Aug 2026	06 Aug 2026	On-Campus	Lagos, Nigeria
11 Aug 2026	12 Aug 2026	On-Campus	Durban, South Africa
11 Aug 2026	12 Aug 2026	On-Campus	Pretoria, South Africa
11 Aug 2026	12 Aug 2026	On-Campus	Cape Town, South Africa
13 Aug 2026	14 Aug 2026	On-Campus	Mauritius
13 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 110193) 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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