



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

Vertical Converter Slag Bath Creation Process Training

Manufacturing, Engineering and Technology / Fabrication and Extraction

Unit Standard 110141 · NQF Level 3 · 6 Credits · 3 Days

COURSE OVERVIEW

This course equips learners with the knowledge and skills to create and manage a vertical converter slag bath in a pyrometallurgical environment. It covers the principles of slag bath formation, process parameters, and safety considerations, enabling learners to optimize converter operations and ensure product quality.

Category	Manufacturing, Engineering and Technology
Subfield	Fabrication and Extraction
Unit Standard	110141
Accreditation	SAQA Accredited · NQF Level 3 · 6 Credits
Duration	3 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply the principles of slag bath formation in a vertical converter to achieve desired process conditions.
- Analyze process parameters such as temperature, flux additions, and oxygen flow to control slag bath characteristics.
- Evaluate the effects of slag bath composition on metal recovery and converter refractory life.
- Implement safe operating procedures for slag bath creation, including hazard identification and risk mitigation.
- Demonstrate the ability to troubleshoot common slag bath issues, such as foaming or freezing.
- Design a slag bath creation plan for a given converter charge, considering raw material variability.

WHO SHOULD ATTEND

- This course is designed for process operators, metallurgical technicians, and production supervisors involved in converter operations within the metals and minerals processing industry.

COURSE OUTLINE

Day 1: Fundamentals of Slag Bath Creation

- Introduction to vertical converters and their role in pyrometallurgy.
- Slag chemistry: oxides, fluxes, and slag properties.
- Equipment overview: converter vessel, tuyeres, lance, and cooling systems.
- Thermodynamics of slag-metal reactions and temperature control.
- Raw materials: scrap, fluxes, and additives.
- Safety: PPE, gas hazards, molten metal handling, emergency procedures.
- Environmental considerations: dust, fume, and slag disposal.

Day 2: Slag Bath Creation Process and Control

- Step-by-step slag bath creation: charging, melting, flux addition.
- Process control parameters: temperature, oxygen flow, lance position.
- Slag foaming causes and mitigation strategies.
- Sampling and analysis of slag and metal.
- Quality control: slag basicity, viscosity, and metal recovery.
- Preventive maintenance of tuyeres and refractory.
- Record keeping and shift handover procedures.

Day 3: Practical Integration and Assessment

- Simulated start-up sequence on training rig or virtual simulator.
- Real-time data acquisition and parameter adjustment exercises.
- Slag sampling techniques and on-site analysis.
- Emergency scenarios: power failure, lance blockage, slag overflow.
- Assessment: written test and practical demonstration.
- Review of key learnings and Q&A;

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 3**.

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
03 Aug 2026	05 Aug 2026	On-Campus	Dubai, UAE
03 Aug 2026	05 Aug 2026	On-Campus	Johannesburg, South Africa
04 Aug 2026	06 Aug 2026	On-Campus	Pretoria, South Africa
04 Aug 2026	06 Aug 2026	On-Campus	Mauritius
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

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 110141) 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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