



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

Fluidised Bed Roaster Commissioning Procedures Training

Manufacturing, Engineering and Technology / Fabrication and Extraction

Unit Standard 110462 · NQF Level 4 · 13 Credits · 10 Days

COURSE OVERVIEW

This course equips learners with the systematic procedures required to commission a fluidised bed roaster safely and efficiently. It covers pre-commissioning checks, start-up sequences, performance verification, and troubleshooting, ensuring compliance with industry standards and operational readiness.

Category	Manufacturing, Engineering and Technology
Subfield	Fabrication and Extraction
Unit Standard	110462
Accreditation	SAQA Accredited · NQF Level 4 · 13 Credits
Duration	10 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply pre-commissioning inspection and safety checklists to fluidised bed roaster systems.
- Demonstrate correct start-up and shutdown sequences for fluidised bed roasters.
- Analyze roaster performance data to verify commissioning criteria are met.
- Implement corrective actions for common commissioning faults and deviations.
- Evaluate system integrity and safety interlocks during commissioning trials.
- Document commissioning results and handover procedures according to site protocols.

WHO SHOULD ATTEND

- This training is designed for process engineers, plant operators, and maintenance technicians involved in the commissioning or operation of fluidised bed roasters in mining, metallurgical, or industrial processing environments.

COURSE OUTLINE

Day 1: Introduction to Fluidised Bed Roasting and Safety

- Overview of fluidised bed roasting technology
- Main components: air supply, burner, bed, cyclones, control system
- Safety protocols: lockout/tagout, PPE, gas detection
- Commissioning phases: pre-commissioning, cold commissioning, hot commissioning
- Documentation and reporting requirements

Day 2: Pre-Commissioning Checks and Mechanical Inspection

- Mechanical inspection procedures for fans, motors, dampers
- Checking air distribution plate holes and bed material
- Burner assembly and gas train inspection
- Sealing points: doors, sight glasses, ductwork
- Pre-commissioning documentation

Day 3: Instrumentation and Control System Verification

- Types of sensors: thermocouples, pressure transmitters, flow meters
- Actuators: control valves, dampers, variable speed drives
- PLC/DCS configuration and I/O check
- Interlock testing: high temperature, low pressure, flame failure
- Loop checks and calibration procedures

Day 4: Cold Commissioning – Air Flow and Pressure Tests

- Air flow measurement using pitot tubes and anemometers
- Pressure drop measurement across distributor plate and bed
- Fan performance verification (speed, current, flow)
- Damper adjustment for even fluidisation
- Recording cold commissioning data

Day 5: Cold Commissioning – Material Handling and Feeding

- Feed system components: hopper, conveyor, rotary airlock
- Level sensor calibration and testing
- Feed rate control via variable speed drives
- Dust collection system: cyclones, bag filters, fans
- Material handling safety and interlocks

Day 6: Hot Commissioning – Burner Light-off and Temperature Ramp

- Burner light-off sequence: purge, pilot, main flame
- Temperature ramp rates and thermal expansion
- Flame scanner and UV detector testing
- Monitoring refractory heating and expansion joints
- Hot commissioning log sheets

Day 7: Hot Commissioning – Process Stabilisation and Tuning

- PID controller tuning: P, I, D effects
- Air-to-fuel ratio adjustment using oxygen analyser
- Bed temperature control via fuel flow and air flow
- Pressure control and bed height management

- Data logging and trend analysis

Day 8: Performance Testing and Optimisation

- Load change response: feed rate and temperature
- Product sampling and analysis: moisture, colour, uniformity
- Energy efficiency: specific fuel consumption, heat loss
- Emissions monitoring: CO, NOx, particulates
- Optimisation strategies for throughput and quality

Day 9: Troubleshooting and Fault Finding

- Common faults: uneven fluidisation, temperature excursions, pressure drops
- Troubleshooting methodology: fault tree analysis, cause-effect
- Using diagnostic software and data historians
- Corrective actions: cleaning, adjustment, replacement
- Reporting and escalation procedures

Day 10: Commissioning Documentation and Handover

- Commissioning report structure: summary, data, deviations
- Certificate of compliance and warranty documentation
- Operating procedures: start-up, shutdown, emergency
- Spare parts and maintenance schedules
- Handover meeting and training for operators

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 **13 NQF credits** at **NQF Level 4**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 35,800.00	R 35,800.00
1	In-House	R 46,500.00	R 46,500.00
1	On-Campus (Pretoria)	R 53,700.00	R 53,700.00

UPCOMING SESSIONS

Start	End	Method	Venue
04 Aug 2026	17 Aug 2026	On-Campus	Mauritius
05 Aug 2026	18 Aug 2026	On-Campus	Cape Town, South Africa
06 Aug 2026	19 Aug 2026	On-Campus	Dubai, UAE
07 Aug 2026	20 Aug 2026	On-Campus	Pretoria, South Africa
07 Aug 2026	20 Aug 2026	On-Campus	Lagos, Nigeria
10 Aug 2026	21 Aug 2026	On-Campus	Durban, South Africa
10 Aug 2026	21 Aug 2026	On-Campus	Mauritius
11 Aug 2026	24 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 110462) 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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