Accredited Africa Training Institute for Capacity Development
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COURSE BROCHURE

Assemble And Fit Small Steelwork To Overhead Track Equipment Steel Structures Under Isolated And Earthed Conditions Training

Physical Planning and Construction / Civil Engineering Construction

Unit Standard 120218 · NQF Level 3 · 12 Credits · 9 Days

COURSE OVERVIEW

This course equips learners with the skills to assemble and fit small steelwork to overhead track equipment steel structures under both isolated and earthed conditions, ensuring compliance with safety regulations and industry standards. It covers the identification of hazards, correct use of personal protective equipment, and adherence to safe work procedures for working at heights and with live or isolated electrical systems.

Category	Physical Planning and Construction
Subfield	Civil Engineering Construction
Unit Standard	120218
Accreditation	SAQA Accredited · NQF Level 3 · 12 Credits
Duration	9 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS — verifiable online

LEARNING OUTCOMES

- Interpret engineering drawings and specifications for assembling small steelwork to overhead track equipment structures.
- Apply safety procedures for working under isolated and earthed conditions, including lock-out/tag-out and earthing practices.
- Select and use appropriate tools, equipment, and personal protective equipment for steelwork assembly.
- Assemble and fit small steelwork components to overhead track structures, ensuring alignment and structural integrity.
- Test and verify the assembled steelwork for compliance with specifications and safety requirements.
- Demonstrate teamwork and communication skills during the assembly process.

WHO SHOULD ATTEND

- This course is intended for artisans, electricians, riggers, and technicians involved in the installation, maintenance, or repair of overhead track equipment and steel structures in industrial or mining environments.

COURSE OUTLINE

Day 1: Introduction to Overhead Track Equipment and Steel Structures

- Overview of overhead track equipment and steel structures
- Types of steel: mild steel, high-strength steel, and galvanised steel
- Basic principles of load-bearing structures
- Introduction to earthing and isolation concepts
- Safety standards and regulations (OHS Act, SANS 10089
- Personal protective equipment (PPE) requirements
- Site safety and hazard identification
- Documentation and quality control basics

Day 2: Reading and Interpreting Engineering Drawings

- Types of drawings: general arrangement, detail, and assembly drawings
- Reading dimensions, weld symbols, and surface finish marks
- Using measuring tools: tape measure, callipers, spirit level
- Tolerances and fit requirements for steelwork
- Bill of materials and part identification
- Practical exercise: interpreting a sample drawing
- Common errors in reading drawings
- Quality checks for dimensional accuracy

Day 3: Material Handling and Preparation

- Material selection: profiles, plates, and fasteners
- Inspection for rust, cracks, and dimensional deviations
- Cutting methods: oxy-fuel, plasma, and mechanical cutting
- Drilling and tapping for bolted connections
- Grinding and edge preparation for welding
- Handling and storage of steel components
- Practical exercise: cutting and drilling steel sections
- Safety precautions during material preparation

Day 4: Bolted Connections and Temporary Assembly

- Types of bolts: high-strength, structural, and anchor bolts
- Torque specifications and tightening methods
- Use of washers, nuts, and locking devices
- Temporary assembly techniques: tack welding and clamps
- Alignment checks using plumb bobs and levels
- Practical exercise: bolting a simple steel frame
- Inspection criteria for bolted connections
- Documentation of assembly steps

Day 5: Welding Fundamentals for Steelwork Assembly

- Welding processes: MMAW, GMAW, FCAW for structural steel
- Welding parameters: current, voltage, travel speed
- Electrode and filler metal selection
- Welding positions: flat, horizontal, vertical, overhead
- Practical exercise: fillet weld on a T-joint

- Weld defect identification: porosity, cracks, undercut
- Weld inspection methods: visual and dye penetrant
- Safety in welding: fumes, fire, and electrical hazards

Day 6: Assembly of Overhead Track Steel Structures

- Sequence of assembly: columns, beams, brackets
- Levelling and alignment techniques using laser levels
- Installation of track rails and joint plates
- Temporary bracing for structural stability
- Practical exercise: assembling a gantry structure
- Checking for squareness and plumb
- Adjustments and rework procedures
- Safety during assembly at height

Day 7: Earthing and Isolation Requirements

- Earthing systems: TN, TT, IT for steel structures
- Earthing conductors: copper, steel, and connections
- Isolation of track sections: insulated joints and gaps
- Practical exercise: installing earthing bonds
- Testing earth resistance using a clamp-on meter
- Isolation verification and lockout/tagout
- Compliance with SANS 10142-1 and OHS Act
- Documentation of earthing and isolation

Day 8: Inspection, Testing, and Quality Control

- Visual inspection checklist for steelwork
- NDT methods: magnetic particle and ultrasonic testing
- Load testing procedures: static and dynamic
- Interpretation of test results
- Practical exercise: inspecting a completed assembly
- Filling out inspection reports and test certificates
- Non-conformance reporting and corrective actions
- Final quality review

Day 9: Practical Integration and Assessment

- Full assembly project: from drawing to completed structure
- Application of earthing and isolation in the project
- Time management and work planning
- Final practical assessment: assemble and fit steelwork
- Written assessment: multiple choice and short questions
- Feedback and review of performance
- Certification requirements and next steps
- Course evaluation and closure

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 **12 NQF credits** at **NQF Level 3**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 33,300.00	**R 33,300.00**
1	In-House	R 43,300.00	**R 43,300.00**
1	On-Campus (Pretoria)	R 50,000.00	**R 50,000.00**

UPCOMING SESSIONS

Start	End	Method	Venue
03 Aug 2026	13 Aug 2026	On-Campus	Dubai, UAE
04 Aug 2026	14 Aug 2026	On-Campus	Pretoria, South Africa
04 Aug 2026	14 Aug 2026	On-Campus	Lagos, Nigeria
05 Aug 2026	17 Aug 2026	On-Campus	Johannesburg, South Africa
06 Aug 2026	18 Aug 2026	On-Campus	Mauritius
07 Aug 2026	19 Aug 2026	On-Campus	Cape Town, South Africa
10 Aug 2026	20 Aug 2026	On-Campus	Pretoria, South Africa
11 Aug 2026	21 Aug 2026	On-Campus	Abu Dhabi, 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 120218) 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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