



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@aatikd.co.za · Website: www.aatikd.co.za

COURSE BROCHURE

Maintain Rail Turnouts And Turnout Components Training

Physical Planning and Construction / Civil Engineering Construction

Unit Standard 119982 · NQF Level 3 · 12 Credits · 9 Days

COURSE OVERVIEW

This course equips learners with the knowledge and skills to maintain rail turnouts and turnout components safely and effectively. It covers inspection, adjustment, and repair procedures to ensure compliance with railway standards and operational reliability.

Category	Physical Planning and Construction
Subfield	Civil Engineering Construction
Unit Standard	119982
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

- Inspect rail turnouts and components to identify wear, damage, or misalignment using appropriate tools and techniques.
- Apply maintenance procedures to adjust, repair, or replace turnout components such as switch blades, crossings, and check rails.
- Demonstrate safe work practices in accordance with railway safety regulations and standard operating procedures.
- Analyze turnout functionality to diagnose faults and determine corrective actions.
- Implement record-keeping procedures for maintenance activities and component lifecycle tracking.

WHO SHOULD ATTEND

- Railway maintenance technicians, track inspectors, and infrastructure personnel responsible for the upkeep of rail turnouts and associated components.

COURSE OUTLINE

Day 1: Introduction to Rail Turnouts and Safety

- Overview of rail turnouts: definitions and applications
- Types of turnouts: simple, crossover, diamond crossings
- Components: switch blades, stock rails, frog, guard rails, point machines
- Safety standards: OHS Act, railway safety regulations
- PPE requirements and hazard identification
- Basic track geometry terminology

Day 2: Turnout Components and Their Functions

- Detailed study of switch blades, stock rails, and heel blocks
- Frog types: fixed, spring, movable point frogs
- Guard rails and check rails: purpose and alignment
- Fastening systems: clips, bolts, baseplates
- Technical drawings: reading plans and cross-sections
- Defect recognition: wear, cracks, deformation

Day 3: Inspection Techniques and Condition Assessment

- Inspection schedules and checklists
- Visual inspection methods: walking, crawling
- Measuring tools: gauge, track gauge, straight edge, calipers
- Assessment criteria for switch blades, frogs, and stock rails
- Documentation: inspection reports, defect logs
- Prioritization matrix for maintenance actions

Day 4: Maintenance Procedures for Switches and Stock Rails

- Switch blade adjustment: throw, clearance, and alignment
- Stock rail maintenance: gauge face wear, bolt tightening
- Lubrication of moving parts: point machines, slide chairs
- Flangeway gap measurement and correction
- Replacement procedures for switch blades
- Safety precautions during maintenance

Day 5: Frog and Guard Rail Maintenance

- Frog inspection: wing rails, point, and running surface
- Guard rail adjustment: spacing, height, and wear
- Welding techniques for frog point buildup
- Replacement of frog and guard rail components
- Alignment checks after maintenance
- Record keeping for frog maintenance

Day 6: Fastening Systems and Geometry Correction

- Fastener types: elastic clips, bolts, washers
- Torque specifications and tightening sequences
- Gauge adjustment: widening and narrowing methods
- Cross-level and twist correction
- Geometry measurement tools: electronic gauge, string line

- Standard tolerances for turnout geometry

Day 7: Troubleshooting and Defect Rectification

- Common faults: switch binding, poor gauge, worn frog
- Root cause analysis techniques
- Corrective actions: shimming, grinding, replacement
- Interaction with signalling: point machine adjustment
- Emergency repairs and temporary fixes
- Case studies of turnout failures

Day 8: Practical Application and Workshop

- Hands-on inspection of a full turnout
- Simulated maintenance: switch adjustment, frog repair
- Team-based fault-finding exercise
- Use of tools and equipment in a workshop setting
- Time management and workflow planning
- Safety briefings and toolbox talks

Day 9: Assessment and Integration

- Practical assessment: inspect and maintain a turnout
- Written test on theory and procedures
- Report writing: defect summary, maintenance recommendations
- Maintenance planning: prioritisation and scheduling
- Feedback session and course evaluation
- Certification requirements and career pathways

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
04 Aug 2026	14 Aug 2026	On-Campus	Johannesburg, South Africa
05 Aug 2026	17 Aug 2026	On-Campus	Mauritius
06 Aug 2026	18 Aug 2026	On-Campus	Cape Town, South Africa
07 Aug 2026	19 Aug 2026	On-Campus	Dubai, UAE
10 Aug 2026	20 Aug 2026	On-Campus	Abu Dhabi, UAE
11 Aug 2026	21 Aug 2026	On-Campus	Durban, South Africa
11 Aug 2026	21 Aug 2026	On-Campus	Mauritius
12 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 119982) 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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