### TSC Category
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Rail Systems Maintenance
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### TSC
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Rolling Stock Brake Systems Maintenance
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### TSC Description
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Implement preventive and corrective maintenance activities of rolling stock brake systems
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### TSC Proficiency

<table>
<thead>
<tr>
<th>Description</th>
<th>Level 1</th>
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<tr>
<td>Carry out scheduled preventive maintenance work on rolling stock brake systems</td>
<td>Conduct corrective maintenance on rolling stock brake systems</td>
<td>Troubleshoot faulty rolling stock brake systems to locate faults and recommend rectification methods</td>
<td>Diagnose root causes of rolling stock brake systems failure and review maintenance plans to prevent fault recurrence</td>
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### Knowledge

- Operating principles, functions and features of rolling stock brake systems and components
- Types of rolling stock brake and components that includes:
  - Brake control equipment
  - Friction brake equipment
  - Wheel slip protection equipment
  - Emergency brake equipment
- Procedures for servicing rolling stock brake systems and components in accordance to organisational maintenance procedures, Work Instructions (WI) and/or Original Equipment Manufacturer (OEM) technical manuals
- Types and usage of tools and equipment for carrying out preventive maintenance on rolling stock brake systems
- Safety guidelines on use of tools and equipment
- Operating principles, functions and features of rolling stock brake systems and components
- Types of rolling stock brake systems and components that includes:
  - Brake control equipment
  - Friction brake equipment
  - Wheel slip protection equipment
  - Emergency brake equipment
- Principles of dynamic and regenerative braking
- Electro-pneumatic, pneumatic and mechanical rail brake operating principles
- Common fault symptoms in rolling stock brake systems and components
- Principles of collision and derailment
- Methods of locating and rectifying faults
- Types and usage of troubleshooting techniques, equipment and tools
- Safety guidelines for usage of tools and equipment in troubleshooting rolling stock brake systems
- Factors affecting rolling stock brake systems and components performance
- Principles of collision and derailment
- Failure investigation and prevention methods
- Methods and tools for diagnostic analysis
- Organisational maintenance procedures, Work Instructions (WI) and Original Equipment Manufacturer (OEM) technical recommendations
- Types and methods of functional tests on rolling stock brake systems and components
- Functional relationships between rolling stock brake systems, other rolling stock systems, plant equipment and the overall rail system
| SKILLS FRAMEWORK FOR PUBLIC TRANSPORT  
TECHNICAL SKILLS AND COMPETENCIES (TSC) REFERENCE DOCUMENT |
|----------------------------------------------------------|

| for preventive maintenance on rolling stock brake systems | • Types and usage of Personal Protective Equipment (PPE) for rolling stock brake systems  
• Organisational maintenance documentation and fault reporting procedures | assemble rolling stock brake systems and components | • Procedures for conducting system performance and identifying faults on rolling stock brake systems and components  
• Types and usage of tools and equipment for carrying out corrective maintenance  
• Safety guidelines on use of tools and equipment for corrective maintenance | | |
|----------------------------------------------------------|

| Abilities | • Perform preparation work to conduct maintenance on rolling stock brake systems  
• Follow organisational maintenance procedures, WI and/or OEM technical manuals to carry out preventive maintenance on rolling stock brake systems and components  
• Perform functionality checks on rolling stock brake systems and components  
• Adhere to safety guidelines and operating instructions for tools and equipment during maintenance work  
• Record rolling stock brake systems maintenance activities and report occurrences of potential faults identified | • Interpret work orders and prepare for corrective maintenance  
• Apply fault identification procedures to determine causes of rolling stock brake systems and/or components faults  
• Dismantle rolling stock brake systems and components for corrective maintenance  
• Carry out rectification, repair and/or replacement of faulty components  
• Reassemble and reinstate rolling stock brake systems and components  
• Perform functional tests to determine operability of rolling stock brake systems and components  
• Apply operating and safety measures in operating tools and equipment during maintenance work | • Use troubleshooting tools, equipment and methods to locate and analyse causes of rolling stock brake systems faults  
• Recommend corrective actions for identified faults on rolling stock brake systems  
• Implement procedures on safe usage of tools and equipment during maintenance work  
• Analyse maintenance work documented for rolling stock brake systems to identify possible workflow improvements to prevent fault recurrence | • Establish structured failure investigation and specify functional testing requirements  
• Apply failure investigation methods to diagnose root cause failure of rolling stock brake systems and components  
• Review organisational rolling stock brake systems maintenance procedures  
• Propose new and/or enhanced maintenance procedures and/or WI in reference to OEM technical recommendations  
• Monitor overall maintenance progress of rolling stock brake systems to ascertain effectiveness of maintenance procedures  
• Develop solutions by analysing diagnostic data to prevent faults and failures recurrence | | |
| • Record and collate documentation of rolling stock brake systems maintenance work | • Develop troubleshooting, rectification and fault analysis methods  
  • Coordinate rolling stock brake system maintenance with other rail systems maintenance needs |