<table>
<thead>
<tr>
<th>TSC Category</th>
<th>Rail Systems Maintenance</th>
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<tbody>
<tr>
<td>TSC</td>
<td>Rail Track Maintenance</td>
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<tr>
<td>TSC Description</td>
<td>Implement preventive and corrective maintenance activities of rail track</td>
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<thead>
<tr>
<th>TSC Proficiency Description</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
<th>Level 6</th>
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<tbody>
<tr>
<td>PTP-RSM-1025-1.1</td>
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<td>PTP-RSM-4025-1.1</td>
<td>Diagnose root causes of rail track failure and review maintenance plans to prevent fault recurrence</td>
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<tr>
<td>Carry out scheduled preventive maintenance on rail track</td>
<td>Conduct rail track corrective maintenance and replacement</td>
<td>Investigate and locate faults on rail track to locate faults and recommend rectification methods</td>
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**Knowledge**

- Different types of rail tracks, equipment and components
- Types of measuring devices, tools and equipment for rail track maintenance
- Methods of rail track cant, gauge, alignment and geometry measurement
- Types of defects and signs of failures for rail track, rail track equipment and components
- Organisational procedures for track procession and setting up of possession area
- Operating mechanisms of engineering trains and train-mounted equipment
- Procedures for servicing rail track, rail track equipment and component in accordance to organisation maintenance procedure, Work Instructions (WI) and Original Equipment
- Rail track structural drawing
- Requirements of train alignment
- Methods and equipment for rail grinding
- Methods and equipment to lay and relay rail tracks
- Types of defects and signs of failures for rail track, rail track equipment and components
- Non-destructive testing (NDT) methods
- Procedures to repair and replace rail track equipment and components
- Rail track structural drawing
- Requirements of train alignment
- Methods and equipment to lay and relay rail tracks
- Common fault symptoms in rail track
- Rail metallurgy and rolling contact fatigue
- Methods of locating and rectifying faults
- Types of troubleshooting techniques, equipment and tools
- Noise compliance protocols
- Safety guidelines on use of tools and equipment in troubleshooting rail track

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### Manufacturer (OEM) technical manuals
- Safety guidelines on use of tools and equipment for preventive maintenance on rail track
- Types and usage of Personal Protective Equipment (PPE) for rail track maintenance
- Organisational maintenance documentation and fault reporting procedures

### Abilities
- Perform preparation work to conduct preventive maintenance on rail track
- Carry out track possession and set up possession area
- Carry out measurement of cant, gauge, alignment and geometry of rail track
- Operate engineering trains and train-mounted maintenance equipment
- Follow organisational maintenance procedures, WI to carry out preventive maintenance on rail track, rail track equipment and component
- Identify and mark out potential rail track defects areas
- Adhere to safety guidelines and operating instructions for tools and equipment during maintenance work
- Record rail track maintenance activities and report occurrences
- Interpret work orders and prepare for corrective maintenance
- Carry out rail track possession procedures and set up possession area
- Apply defect identification procedures to verify identified rail track defects and determine causes of track defects
- Apply rail repair, replacement and/or rail grinding methods to rectify rail track defects according to prescribed method statements and tasks
- Restore rail track to operational conditions and specifications
- Inspect rail track maintenance activities performed to verify that the rail tracks are within specification limits
- Apply operating and safety measures in operating tools and
- Use troubleshooting tools, equipment and methods to locate and analyse causes of rail track faults
- Recommend corrective actions for identified faults on rail track
- Manage noise level during maintenance work in compliance with the government regulations
- Implement safety and operating procedures on tools and equipment usage during maintenance work
- Analyse maintenance work documented for rail track to identify possible workflow improvements so as to prevent fault recurrence
- Establish structured failure investigation and specify functional testing requirements
- Apply failure investigation methods to diagnose root cause failure of rail tracks
- Review organisational rail track maintenance procedures
- Propose new and/or enhanced maintenance procedures and/or WI in reference to OEM technical recommendations
- Monitor overall maintenance progress of rail track to ascertain effectiveness of maintenance procedures
- Develop long-term solutions by analysing diagnostic data to prevent faults and failures recurrence
- Develop troubleshooting, rectification and fault analysis methods

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| of potential faults identified | equipment during maintenance work | • Record and collate documentation of rail track maintenance work | • Develop assessment procedures to check the condition of rail track equipment | Coordinate rail track maintenance with other rail systems maintenance needs |