

**SKILLS FRAMEWORK FOR PUBLIC TRANSPORT  
TECHNICAL SKILLS AND COMPETENCIES (TSC) REFERENCE DOCUMENT**

<b>TSC Category</b>	Rail Systems Maintenance					
<b>TSC</b>	Track Tamping Vehicle Maintenance					
<b>TSC Description</b>	Implement preventive and corrective maintenance activities of track tamping vehicle					
<b>TSC Proficiency Description</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Level 4</b>	<b>Level 5</b>	<b>Level 6</b>
	<b>PTP-RSM-1039-1.1</b>	<b>PTP-RSM-2039-1.1</b>	<b>PTP-RSM-3039-1.1</b>	<b>PTP-RSM-4039-1.1</b>		
	Carry out scheduled preventive maintenance on track tamping vehicles	Conduct corrective maintenance on track tamping vehicles	Troubleshoot faults on track tamping vehicles to locate faults and recommend rectification methods	Diagnose root causes of track tamping vehicle failure and review maintenance plans to prevent fault recurrence		
<b>Knowledge</b>	<ul style="list-style-type: none"> <li>Operating principles and functions of track tamping vehicles and on-board equipment</li> <li>Procedures for servicing track tamping vehicles and on-board equipment in accordance to organisational maintenance procedures, Work Instructions and/or Original Equipment Manufacturer (OEM) technical manuals</li> <li>Types of tools and equipment for carrying out preventive maintenance on track tamping vehicles and on-board equipment</li> <li>Safety guidelines on use of tools and equipment for preventive maintenance on track tamping vehicles</li> <li>Types and usage of Personal Protective Equipment (PPE) for track tamping vehicle maintenance</li> <li>Organisational maintenance</li> </ul>	<ul style="list-style-type: none"> <li>Operating principles and functions of track tamping vehicles and on-board equipment</li> <li>Common failures of track tamping vehicles and on-board equipment</li> <li>Procedures to identify faults on track tamping vehicle and on-board equipment</li> <li>Procedures to dismantle, rectify, repair, replace, and re-assemble track tamping vehicle systems, on-board equipment and components</li> <li>Types of tools and equipment for carrying out corrective maintenance on track tamping vehicles and on-board equipment</li> <li>Safety guidelines on use of tools and equipment for corrective maintenance on track tamping vehicle</li> <li>Types and usage of Personal Protective Equipment (PPE) for</li> </ul>	<ul style="list-style-type: none"> <li>Fundamentals of track geometry alignment</li> <li>Types of track lateral and longitudinal error</li> <li>Common fault symptoms of track tamping vehicle systems and on-board equipment</li> <li>Methods of locating and rectifying faults</li> <li>Types of troubleshooting techniques, equipment and tools</li> <li>Safety guidelines for usage of tools and equipment to execute track tamping vehicle troubleshooting</li> </ul>	<ul style="list-style-type: none"> <li>Fundamentals of track geometry alignment</li> <li>Types of track lateral and longitudinal error</li> <li>Factors affecting track tamping vehicles and on-board equipment performance</li> <li>Failure investigation and prevention methods</li> <li>Methods and tools for diagnostic analysis</li> <li>Organisational maintenance procedures, Work Instructions (WI) and Original Equipment Manufacturer (OEM) technical recommendations</li> <li>Kinematics and dynamic features of track tamping vehicles</li> <li>Collision and derailment safety procedures</li> <li>Types and methods of functional tests on track tamping vehicles and on-board equipment</li> <li>Functional relationships between track tamping vehicles and the overall rail system</li> </ul>		

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	documentation and fault reporting procedures	track tamping vehicle maintenance • Organisational maintenance documentation and fault reporting procedures				
<b>Abilities</b>	<ul style="list-style-type: none"> <li>• Perform preparation work to conduct maintenance on track tamping vehicles and on-board equipment</li> <li>• Follow organisational maintenance procedures, WI and/or OEM technical manuals to carry out preventive maintenance on track tamping vehicles and on-board equipment</li> <li>• Carry out track tamping vehicles and on-board equipment functional checks</li> <li>• Adhere to safety guidelines and operating instructions for tools and equipment during maintenance work</li> <li>• Record track tamping vehicle maintenance activities and report occurrences of potential faults identified</li> </ul>	<ul style="list-style-type: none"> <li>• Interpret work orders and prepare for corrective maintenance</li> <li>• Apply fault identification procedures to determine causes of track tamping vehicles and on-board equipment faults</li> <li>• Dismantle track tamping vehicle systems and on-board equipment for corrective maintenance</li> <li>• Rectify, repair and/or replace faulty components</li> <li>• Reassemble and reinstate track tamping vehicles and on-board equipment</li> <li>• Conduct functional tests to determine operability of track tamping vehicles and on-board equipment</li> <li>• Apply operating and safety measures in operating tools and equipment during maintenance work</li> <li>• Record and collate documentation of track tamping vehicle maintenance work</li> </ul>	<ul style="list-style-type: none"> <li>• Use troubleshooting tools, equipment and methods to locate and analyse causes of track tamping vehicles and on-board equipment faults</li> <li>• Recommend corrective actions for identified faults on track tamping vehicle systems, on-board equipment and components</li> <li>• Implement procedures on safe usage of tools and equipment during maintenance work</li> <li>• Analyse maintenance work documented for track tamping vehicles to identify possible workflow improvements so as to prevent fault recurrence</li> </ul>	<ul style="list-style-type: none"> <li>• Establish structured failure investigation and specify functional testing requirements</li> <li>• Perform fault tree analyses to diagnose root cause failure of track tamping vehicle systems and on-board equipment</li> <li>• Review organisational track tamping vehicle maintenance procedures</li> <li>• Propose new and/or enhanced maintenance procedures and/or WI in reference to OEM technical recommendations</li> <li>• Monitor overall maintenance progress of track tamping vehicles to ascertain effectiveness of maintenance procedures</li> <li>• Analyse diagnostics data to develop long-term solutions to prevent faults and failure reoccurrence</li> <li>• Develop long-term solutions by analysing diagnostic data to prevent faults and failures recurrence</li> <li>• Develop test procedures for track tamping vehicle functional checks</li> <li>• Coordinate track tamping vehicle maintenance tasks in conjunction with</li> </ul>		

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