

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

TSC Category	Rail Systems Maintenance					
TSC	Rail Track Maintenance					
TSC Description	Implement preventive and corrective maintenance activities of rail track					
TSC Proficiency Description	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
	PTP-RSM-1025-1.1	PTP-RSM-2025-1.1	PTP-RSM-3025-1.1	PTP-RSM-4025-1.1		
	Carry out scheduled preventive maintenance on rail track	Conduct rail track corrective maintenance and replacement	Investigate and locate faults on rail track to locate faults and recommend rectification methods	Diagnose root causes of rail track failure and review maintenance plans to prevent fault recurrence		
Knowledge	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Different types of rail tracks, rail track equipment and components Types of measuring devices, tools and equipment for rail track maintenance Methods of rail track cant, gauge, alignment and geometry measurement 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Impact of environment and rolling stock wheel-to-track alignment on rail tracks Rail metallurgy and rolling contact fatigue 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 assessment on rail track and rail track and rail track equipment Functional relationships between rail track and other engineering disciplines 		

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

	<p>Manufacturer (OEM) technical manuals</p> <ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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 				
Abilities	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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 		

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

	of potential faults identified	equipment during maintenance work <ul style="list-style-type: none"> Record and collate documentation of rail track maintenance work 		<ul style="list-style-type: none"> Develop assessment procedures to check the condition of rail track equipment Coordinate rail track maintenance with other rail systems maintenance needs 		
--	--------------------------------	---	--	---	--	--