

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

TSC Category	Rail Systems Maintenance					
TSC	Civil Structure Maintenance					
TSC Description	Implement preventive and corrective maintenance of civil structures					
TSC Proficiency Description	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
	PTP-RSM-1004-1.1	PTP-RSM-2004-1.1	PTP-RSM-3004-1.1	PTP-RSM-4004-1.1		
	Carry out visual inspection on civil structures to perform repair work or report faults	Carry out corrective maintenance and supervision work on civil structures, buildings and fittings	Provide technical support in conducting testing and maintenance of probable and actual defects identified on civil structures and buildings	Implement preventive maintenance regime and corrective action plans for civil structures and buildings and fittings		
Knowledge	<ul style="list-style-type: none"> Visual techniques for identifying structural defects Types of recognisable defects on civil structures, buildings and fittings Severity levels of defects on civil structures, buildings and fittings Organisational procedures and Work Instructions (WI) for civil structures inspection Safety guidelines for civil structure inspection Organisational maintenance documentation and fault reporting procedures 	<ul style="list-style-type: none"> Types of recognisable and latent structural defects Work instructions for repair and replacement work Procedures for performing repair and replacement work and corrective maintenance on civil structures, buildings and fittings Types of tools and equipment for performing repair and replacement work and corrective maintenance on civil structures, buildings and fittings Safety guidelines on use of tools and equipment for performing repair and replacement work and corrective maintenance 	<ul style="list-style-type: none"> Principles of civil structural integrity Methods of mechanical, structural and piping testing Non-destructive testing (NDT) methods Properties of construction materials and susceptibility to damage and wear Effect of damage and wear on the integrity of civil structures Resource planning techniques for maintenance needs Hazards and safety precautions associated with testing Methods of civil structures fault rectification 	<ul style="list-style-type: none"> Principles of civil structural integrity Engineering solutions to rectify structural faults Defect characterisation Factors affecting system-wide structural integrity, structural tests and measurements Factors affecting priority level and completion schedule of maintenance activities Methods of developing structural maintenance plans and method statements Civil structures fault investigation and prevention methods Methods and tools for diagnostic analysis Principle of sustainable construction Functional relationships between civil structures and the overall rail systems 		

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<p>Abilities</p>	<ul style="list-style-type: none"> • Perform preparation work to conduct visual checks on civil structures • Conduct visual inspection in accordance to organisational procedure and WI • Identify types of structural defects from visual inspections • Compare identified structural defects against past records to identify new defects and determine type and severity of defect • Record civil structures, buildings and fittings inspection and report occurrences of potential faults identified 	<ul style="list-style-type: none"> • Interpret work instructions to carry out repair and replacement works on civil structures, buildings and fittings • Verify adherence to work specifications carried out by external contractors • Demarcate and set up safety boundaries for areas of structural repair, replacement and corrective maintenance work • Apply operating and safety measures in operating tools and equipment during repair, replacement and corrective maintenance work • Provide feedback to improve civil structures maintenance work activities • Review documentation of inspection activities • Record and collate documentation of structure maintenance work 	<ul style="list-style-type: none"> • Supervise external contractors in conducting testing on civil structures • Examine structural drawings to ascertain impact of faults • Identify and escalate safety hazards resulting from identified faults • Recommend corrective actions for identified faults based on external contractor's input • Analyse maintenance work documented to identify possible workflow improvements • Inspect completed structural repairs for integrity issues 	<ul style="list-style-type: none"> • Review organisational civil structures maintenance procedures • Recommend the priority levels and completion schedule of civil structures maintenance considering factors such as safety, cost, effectiveness and contract service level requirements • Facilitate civil structures fault investigation • Propose new and/or enhanced preventive maintenance procedures • Monitor overall maintenance progress to ascertain effectiveness of maintenance procedures • Coordinate civil structures maintenance with other rail systems maintenance needs • Review data affecting current and potential civil structures maintenance to determine maintenance requirements 		
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