

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

TSC Category	Airport Engineering					
TSC	Airfield Civil Infrastructure Maintenance and Design					
TSC Description	Maintain and enhance airfield civil infrastructure to meet operational requirements of the airports					
TSC Proficiency Description	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
		ATP-APE-2001-1.1	ATP-APE-3001-1.1	ATP-APE-4001-1.1	ATP-APE-5001-1.1	ATP-APE-6001-1.1
		Inspect airfield civil infrastructure and adhere to established standards	Administer maintenance operations to sustain the serviceability of airfield civil infrastructure	Analyse performance of airfield civil infrastructure to recommend maintenance and new design measures	Develop maintenance strategies for airfield civil infrastructure to ensure optimal operating conditions and serviceability	Drive integration of new technologies to current civil infrastructure to meet future needs of the airfield
Knowledge		<ul style="list-style-type: none"> Types of airfield civil infrastructure Types of materials and structures used in the construction of airfield civil infrastructure Techniques for measuring and testing the serviceability of airfield civil infrastructure Technical knowledge in airfield civil infrastructure such as pavement and drainage Common defects in airfield civil infrastructure Routine maintenance and repair procedures of the organisation Local and international guidelines such as International Civil Aviation Organisation (ICAO) and Federal Aviation Authority (FAA) Annex for Aerodromes 	<ul style="list-style-type: none"> Factors affecting the performance and durability of airfield civil infrastructure Maintenance cycles of airfield civil infrastructure Techniques for measuring and testing the serviceability of airfield civil infrastructure Technical knowledge in airfield civil infrastructure such as pavement and drainage Common defects in airfield civil infrastructure Communication channels and procedures related to the maintenance of airfield civil infrastructure Local and international guidelines such as International Civil Aviation Organisation (ICAO) and Federal Aviation Authority (FAA) Annex for Aerodromes 	<ul style="list-style-type: none"> Technical knowledge in airfield civil infrastructure such as pavement and drainage Configuration, dimension and design of airfield civil infrastructure Principles underpinning the structural soundness of airfield civil infrastructure during their projected lifetime Techniques for measuring the efficiency and effectiveness of maintenance programmes Local and international guidelines such as International Civil Aviation Organisation (ICAO) and Federal Aviation Authority (FAA) Annex for Aerodromes 	<ul style="list-style-type: none"> Technical knowledge in airfield civil infrastructure such as pavement and drainage Concepts and theories in airfield civil engineering New international developments in the construction and maintenance of airfield civil infrastructure Local and international guidelines such as International Civil Aviation Organisation (ICAO) and Federal Aviation Authority (FAA) Annex for Aerodromes 	<ul style="list-style-type: none"> Concepts and theories in airfield civil engineering Local and international airport business strategies New technologies used in civil engineering Local and international guidelines such as International Civil Aviation Organisation (ICAO) and Federal Aviation Authority (FAA) Annex for Aerodromes

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Abilities		<ul style="list-style-type: none"> • Inspect airfield surfaces according to Standard Operating Procedures (SOPs) of the organisation • Identify defects during inspections • Document findings from inspections according to requirements in operational logbooks • Coordinate with external contractors to fix identified defects • Complete airfield maintenance works according to procedures of the organisation 	<ul style="list-style-type: none"> • Prepare maintenance schedules for airfield civil infrastructure • Examine the impact of wear and tear and damage on airfield civil infrastructure based on serviceability and performance standards • Adopt mitigating actions to prevent further deterioration of airfield civil infrastructure 	<ul style="list-style-type: none"> • Analyse performance data to measure efficiency and effectiveness of maintenance programmes • Determine actions to address performance gaps identified in maintenance reports • Recommend design improvements to airfield civil infrastructure 	<ul style="list-style-type: none"> • Evaluate the overall serviceability of airfield civil infrastructure • Evaluate the effectiveness of maintenance works in accordance with planned objectives • Develop follow-up actions on the upgrade of airfield civil infrastructure • Develop plans to enhance the overall efficiency and effectiveness of airfield civil infrastructure 	<ul style="list-style-type: none"> • Establish civil infrastructure needs based on the airports' future business strategies • Develop solutions to expand capacity of the airfield • Lead research on potential technologies that can be deployed to revamp airfield civil infrastructure • Quantify cost and impact of implementing new technologies to enhance airfield civil infrastructure
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