

**SKILLS FRAMEWORK FOR MARINE AND OFFSHORE  
TECHNICAL SKILLS & COMPETENCIES (TSC) REFERENCE DOCUMENT**

<b>TSC Category</b>	Quality Management					
<b>TSC</b>	Quality Engineering Integration					
<b>TSC Description</b>	Incorporate quality principles and methodologies into engineering processes, products, and services from conception to disposal					
<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>MAR-QUA-3004-1.1</b>	<b>MAR-QUA-4004-1.1</b>	<b>MAR-QUA-5004-1.1</b>	<b>MAR-QUA-6004-1.1</b>
			Review quality assurance and quality control (QA/QC) information to highlight potential quality problems	Facilitate quality management within engineering processes	Formulate key performance indicators in line with internal and external customer quality expectations	Set strategies for integration of quality operations with organisation, project goals and business plans
<b>Knowledge</b>			<ul style="list-style-type: none"> <li>Organisational QA/QC procedures</li> <li>Types of data used to gain insight into quality performance</li> <li>Statistical process control (SPC) techniques</li> <li>Events or symptoms that indicate potential quality problems</li> <li>Problem-solving, root cause identification and elimination techniques</li> <li>Warranty claims and legal obligations</li> <li>Functional and technical quality documentation</li> <li>Principles of root cause analysis</li> <li>Types of ships and rigs, terminologies and features</li> </ul>	<ul style="list-style-type: none"> <li>Methods of zero defects, six sigma and other quality management and improvement programmes</li> <li>Types of maintenance strategies and implications for quality systems</li> <li>Methods of conducting customer surveys to establish key quality issues</li> </ul>	<ul style="list-style-type: none"> <li>Organisation's strategies and goals relevant to quality performance</li> <li>Context of operations or projects, such as competitive pressures, market conditions, customer-supplier relationships, regulatory environment, resourcing and labour issues</li> <li>Objective-setting for quality assurance and correction</li> <li>Intervention strategies to reduce quality risks</li> <li>Methods of monitoring effectiveness and sustainability of corrective actions</li> </ul>	<ul style="list-style-type: none"> <li>Quality management integration best-practices</li> <li>Engineering department objectives</li> <li>Stakeholder communication and management</li> <li>Conflict resolution and negotiation techniques</li> <li>Strategic decision-making</li> <li>Organisational alignment</li> </ul>
<b>Abilities</b>			<ul style="list-style-type: none"> <li>Collect and collate QA/QC performance data</li> <li>Ensure quality standards are being met in the design phase in relation to regulations, project specifications and class requirements</li> </ul>	<ul style="list-style-type: none"> <li>Communicate key performance indicators to relevant departments</li> <li>Form quality teams and allocate quality-related responsibilities in relevant departments</li> </ul>	<ul style="list-style-type: none"> <li>Identify customer profiles and requirements</li> <li>Analyse drawings, specifications, procedures and regulatory requirements for projects, products and/or processes to ensure quality standards</li> </ul>	<ul style="list-style-type: none"> <li>Review organisational policies to establish implications for quality management</li> <li>Establish senior leadership expectations and objectives for quality department and</li> </ul>

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			<ul style="list-style-type: none"> <li>Analyse data for quality non-conformances in production against key performance indicators</li> <li>Propose root causes and suggest actions to improve quality</li> <li>Analyse risks to quality from supplier or distributor failure</li> <li>Identify performance levels required to maintain regulatory and commercial contractual compliance</li> <li>Establish short-term contingency procedures to mitigate non-conformances</li> <li>Allocate responsibilities to determine root causes and recommendations for corrective action, as appropriate</li> </ul>	<ul style="list-style-type: none"> <li>Organise budget and resources required for quality management</li> <li>Monitor the integration of quality principles in engineering activities</li> <li>Monitor customer satisfaction according to pre-established parameters</li> <li>Carry out root cause analysis to identify negative effects and hidden flaws in quality management systems (QMS)</li> <li>Formulate corrective and preventive actions using the appropriate tools</li> </ul>	<p>are met in the design phase</p> <ul style="list-style-type: none"> <li>Set quality parameters for design, production and repair outputs</li> <li>Identify potential risks and vulnerabilities to implement quality control points</li> <li>Monitor the effectiveness of actions taken in accordance with organisational procedures</li> <li>Sustain the corrective and/or preventive actions implemented</li> <li>Implement root cause analysis to relevant processes and procedures to mitigate future recurrences of quality issues</li> <li>Establish and review key performance indicators to measure external customer satisfaction</li> </ul>	<p>communicate as appropriate</p> <ul style="list-style-type: none"> <li>Identify impact of quality assurance to the organisation and its projects</li> <li>Determine involvement of quality department in business planning, capability reports and budgeting</li> <li>Leverage quality assurance as a marketing and sales strategy by highlighting benefits to the customers</li> </ul>
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