

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

TSC Category	Quality Management					
TSC	Structural Testing					
TSC Description	Execute non-destructive structural tests to ensure integrity and reliability of structural components against standards and product specifications based on determined test methods, criteria, equipment, and timeframes					
TSC Proficiency Description	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
		MAR-QUA-2006-1.1	MAR-QUA-3006-1.1	MAR-QUA-4006-1.1		
		Prepare inspection areas for structural testing	Conduct structural testing on equipment and systems according to test plans and procedures	Analyse structural testing results and determine nature and extent of defects and follow-up actions required		
Knowledge		<ul style="list-style-type: none"> • Methods of mechanical, structural, piping and heat, ventilation and air conditioning (HVAC) testing • Types of structural testing techniques • Types of structural testing instruments and their applications • Types of cleaning and preparation methods and processes • Visual assessment techniques relevant to structural tests • Types of discontinuities and their consequences • Relevant workplace safety and health (WSH) regulations and requirements 	<ul style="list-style-type: none"> • Methods of non-destructive testing • Physical properties of materials • Electrical conductivity • Magnetic permeability • Procedures for carrying out testing • Tools, equipment, techniques and system verification checks necessary to carry out testing • Basic maintenance and storage procedures for testing equipment • Hazards and safety precautions associated with testing 	<ul style="list-style-type: none"> • Defect characterisation • Influence of various parameters on different tests and measurements • Marine and offshore industry, national and international standards, regulatory codes and practices • Methods and procedures for reporting test results • Effect of damage in relation to the integrity of components or ships to withstand stresses encountered at sea • Repair methods and material characteristics for timber, fibre reinforced plastics and metal surfaces and structures • Techniques for reinforcement and support • Methods of testing to re-establish integrity • Pre-delivery procedures 		
Abilities		<ul style="list-style-type: none"> • Identify inspection areas for testing using appropriate procedures and tools 	<ul style="list-style-type: none"> • Select appropriate tests and methodologies to be used 	<ul style="list-style-type: none"> • Detect defects to assess and classify them in accordance with national 		

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		<ul style="list-style-type: none"> • Prepare inspection areas for structural tests in accordance with relevant legal and safety requirements • Visually assess inspection areas for obvious discontinuities • Adhere to relevant WSH risk control measures when conducting structural tests • Check equipment for defects, then maintain and store equipment in accordance with quality standards and manufacturer's instructions 	<ul style="list-style-type: none"> • Select testing equipment in accordance with quality standards and procedures • Carry out structural and piping testing in accordance with legal and safety requirements • Check structural testing equipment for defects, then maintain and store equipment in accordance with quality standards and manufacturer's instructions • Suggest potential safety hazards resulting from identified faults 	<p>and international codes and standards</p> <ul style="list-style-type: none"> • Confirm defects in accordance with organisational procedures and industry practices • Report test results to relevant stakeholders in accordance with organisational procedures and customer service requirements • Analyse the structural and piping defects to determine next actions • Determine specifications for repair and replacement work in accordance with delivery requirements 		
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