TSC Category	Engineering Construction, Operations and Maintenance					
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 timeframe					
TSC Proficiency Description	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**	**Level 6**
		EGS-QUA-2020-1.1-1	**EGS-QUA-3020-1.1-1**	**EGS-QUA-4020-1.1-1**		
		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 required follow-up actions		
Knowledge		• Methods of structural and non-destructive (NDT) testing • Types of structural and non-destructive testing (NDT) techniques • Types of structural testing instruments and their application • 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 and personal protective equipment (PPE)	• Methods of structural and non-destructive testing (NDT) • Physical properties of materials • Electrical conductivity • Magnetic permeability • Procedures for carrying out testing • Tools, equipment, techniques and systems verification checks necessary to carry out testing • Interpretation of NDT results • Types of flaws and defects identifiable through NDT • Maintenance and storage procedures for testing equipment • Hazards and safety precautions associated with testing	• Defect characterisations • Influence of various parameters on different tests and measurements • Engineering services industry, national and international standards, regulatory codes and practices • Methods and procedures for reporting test results • Non-destructive testing (NDT) codes, standards and specifications • NDT certification requirements • Effect of damage in relation to the integrity of the component to withstand stresses • 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		• Identify inspection areas for testing using	• Select appropriate test and methodology to be used	• Interpret codes, standards, specifications and procedures for NDT		

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		appropriate procedures and tools • Select and use suitable personal protective equipment appropriate to the job requirements • Prepare inspection areas for structural tests in accordance with the 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	• Select testing equipment in accordance with quality standards and procedures • Carry out structural 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 • Review test results to identify flaws and defects for rectification • Suggest potential safety hazards resulting from identified faults • Update documents according to approved format and is legible, accurate and complete	• Detect defects to assess and classify them in accordance with national and international codes and standards • 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 • Conduct training for NDT Level I and II personnel for certification in the various NDT methods • Communicate new NDT inspection procedures to stakeholders		