



Subsea Engineering Competency Profile

WELDING AND NON-DESTRUCTIVE TESTING ELECTIVE

MC-005

This competency demonstrates a subsea engineer understands different welding and NDT methods for the design, fabrication, inspection and repair of subsea systems.

ELEMENT OF COMPETENCE	WHAT THIS COMPETENCE MEANS IN PRACTICE	INDICATORS OF ATTAINMENT
<p>Working knowledge of welding processes and non-destructive testing methods for subsea systems, including their limitations:</p> <ul style="list-style-type: none"> • Welding metallurgy for carbon steel pipe and/or CRA solid, clad and lined pipe • Manual and mechanised welding processes for carbon steel pipe and/ or CRA solid, clad and lined pipe • Hyperbaric welding • Autogenous welding (for small bore tubing) • Dimensional control • Welding preparation and inspection • Welding procedure essential variables • Inspection techniques and their applications • Welding consumables • Welding procedure qualification and associated mechanical testing • Specific requirements for sour service applications (corrosion testing, hardness surveys, etc.) • Welder qualification requirements • Weld flaws acceptance criteria and repair methods 	<p>Develops specifications, manages or implements welding and non-destructive testing procedures, from the qualification stage up to fabrication or inspection/ maintenance / repair, with support from a Materials & Welding Engineer and/or a non-destructive testing specialist.</p> <p>Recognises appropriate welding and non-destructive testing methods in relation to a subsea system and in accordance with design and code requirements.</p> <p>Engages and interfaces with materials, welding and non-destructive testing specialists for expert advice; as well as specify and manage welding or non-destructive testing scope of work; and interpret results of the work that has been performed.</p> <p>Can identify and describe machining, fabrication, welding and NDT processes and their limitations.</p>	<p>Refer to only as many Indicators of Attainment as you need to demonstrate the Element of Competence</p> <p>Has specified welding and NDT requirements for two or more subsea projects, covering carbon steel and CRA materials.</p> <p>Has managed the interface with designers, materials, welding and NDT specialists and interpreted results associated with weld flaws and acceptance criteria e.g. repair philosophy following IMR campaign or technical challenges and issues during welding fabrication and NDT inspection of subsea systems.</p>



ENGINEERS
AUSTRALIA

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Working knowledge of welding and weld inspection issues that may occur throughout the lifecycle of a subsea system.	Resolves welding and weld inspection issues that may occur throughout the lifecycle of a subsea system.	Has worked in development and operations phases of project(s).