



Subsea Engineering Competency Profile

SUBSEA CONTROL SYSTEM MANUFACTURING ELECTIVE

SC-003

This competency demonstrates a subsea engineer has expert knowledge of the processes and activities to manufacture, factory test and transport subsea elements of subsea control systems.

ELEMENT OF COMPETENCE	WHAT THIS COMPETENCE MEANS IN PRACTICE	TYPICAL EXAMPLES OF EVIDENCE
<p>Expert knowledge of:</p> <ul style="list-style-type: none"> • The manufacture, assembly and testing of the elements of subsea control systems • Relevant international standards associated with the design, manufacture and testing of subsea control systems • The functional role of sub-components and how they interact with the assembly, including electronic modules, valves, connectors, flow meters and other sensors and instrumentation • Resolution of manufacturing defects and errors • The impact that manufacturing and testing has upon the performance of the control system during the design, installation and operation phases <p>Working knowledge of:</p> <ul style="list-style-type: none"> • International standards relating to lifting, welding, coating and painting, cathodic protection and quality assurance • Quality control management systems applicable to the manufacture, test and transportation of subsea control systems 	<p>Can provide technical support to the design, manufacture, testing and transportation of subsea control systems.</p> <p>Capable of:</p> <ul style="list-style-type: none"> • Compliance / implementation of quality control requirements • Managing components / materials procurement • Specifying / implementing test methods • Setup and operation of surface electrical and hydraulic test units • Interpreting test results and performing troubleshooting • Providing technical support to a subsea team • Leading reviews and identifying potential issues during the design and manufacturing phases of subsea control system • Participating in root cause failure analysis and feedback learnings into product design and manufacture 	<p>Refer to only as many Indicators of Attainment as you need to demonstrate the Element of Competence</p> <p>Can describe in detail the processes to manufacture the control system from raw materials and sub-components through to final assembly, test and transport.</p> <p>Has experience leading the manufacturing and testing of subsea control systems representing either the manufacturer's or client's perspective. This includes:</p> <ul style="list-style-type: none"> • Qualification, validation and verification activities • Risk based assessments of manufacturing activities • Materials planning and plant scheduling • Key manufacturing activities • Manufacturing quality control including materials traceability and identification and resolution of non-conformances • Testing activities. • Interpretation of test results including dimensional, electrical and hydraulic measurements



ENGINEERS
AUSTRALIA

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<ul style="list-style-type: none">• The key materials available and their limitations, including austenitic and duplex steels, elastomers, and carbon steel• Manufacturing process reviews and improvement• Destructive and non-destructive testing of components and assemblies• Control fluids and their cleanliness requirements• Handling, transportation, installation and commissioning of subsea control systems Awareness of: <ul style="list-style-type: none">• ROV and diver interface requirements		