



ENGINEERS  
AUSTRALIA

# Subsea Engineering Competency



## SUBSEA ENGINEERING ASSOCIATE

**S-001A**

Achievement of this competency demonstrates a subsea engineering associate has a general understanding of the design, construction, installation, operation, maintenance and repair of subsea systems and how they interact with the environment, other subsea equipment and surface facilities. The associate is able to work within codes and use established engineering practices and procedures, while focusing on specific elements of the system.

The Elements of Competence in this document are based on the Australian Engineering Competency Standards, Stage 2 – The Experienced Engineering Associate. Refer to the Standard for Elements of Competence 1 to 11. The elements 12-16 presented in this document are intended to replace the Technical Proficiency elements presented in the Australian Engineering Competency Standards, Stage 2 document.

Full details are available from the Engineers Australia website; <https://www.engineersaustralia.org.au/Membership/Chartered/Chartered-Help>

<b>ELEMENT OF COMPETENCE ENGINEERING ASSOCIATE</b>	<b>WHAT THIS COMPETENCE MEANS IN PRACTICE</b>	<b>TYPICAL INDICATORS OF ATTAINMENT</b> SELECT THESE OR OTHER INDICATORS OF ATTAINMENT TO DEMONSTRATE THE ELEMENT OF COMPETENCE
12. Knowledge of standardised practices	Means that you understand and apply standard practices to subsea related activities	<ul style="list-style-type: none"> <li>• maintain a working knowledge of technical aids in the field of subsea engineering through in-house and/or industry training (e.g. CSWIP), operator and qualifications (e.g. IMCA, AODC) and on-the-job application</li> <li>• use standards and codes of practice relating to subsea engineering, including IMCA, UKOOA, OGA etc.</li> <li>• use subsea engineering task instructions, procedures, drawings or sketches</li> <li>• apply technical and practical skills using state-of-the-art tools, technologies and information systems</li> </ul>



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13. Local Knowledge	Means that you demonstrate the application of knowledge of national and local regulations and guidelines, and awareness of local environmental conditions.	<ul style="list-style-type: none"> <li>• follow local technical standards for subsea projects</li> <li>• follow company safety systems, standards and procedures</li> <li>• comply with local environmental regulations, standards and codes of practice</li> <li>• follow appropriate codes, standards and specifications for subsea activities</li> <li>• use established locally available resources, components and systems to subsea activities and/or work on subsea facilities</li> </ul>
14. Problem Analysis	Means that you identify, state and analyse engineering problems	<ul style="list-style-type: none"> <li>• identify individual issues that require addressing for subsea problems, identify, develop and apply remediation</li> <li>• work with stakeholders to reach an agreed understanding of the expected capability, reliability, or functionality of the required subsea product, project or system</li> <li>• undertake performance management measurements, condition assessment or trend analysis leading to system availability, reliability or efficiency improvement</li> <li>• describe at least one historical event, the lessons learnt and the changes in work practices arising from the event</li> </ul>



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15. Predictable Operation	Means that you use subsea technological resources skilfully, creatively and reliably	<ul style="list-style-type: none"> <li>• develop the capacity to skilfully apply state-of-the-art subsea tools, materials, resources and information systems</li> <li>• use new and emerging subsea related tools, equipment, engineering applications and systems to create value for customer</li> <li>• provide feedback, suggestions and advice to others on the practical application and potential for improvement of subsea equipment, applications and systems</li> <li>• skilfully operate and maintain tools, resources and information systems to reliably produce, modify or repair subsea equipment or information</li> <li>• predict time, human effort and equipment resources required to undertake subsea activities</li> <li>• use the change management process when required</li> </ul>
16. Evaluation	Means that you evaluate the outcomes of subsea engineering activities	<ul style="list-style-type: none"> <li>• record and monitor subsea project metrics including quality, safety, reliability and maintenance</li> <li>• review, and evaluate the effectiveness of subsea engineering activities</li> <li>• evaluate subsea project or systems performance against the original specification</li> <li>• record and monitor subsea project or systems constructability, availability and maintainability for the lessons learnt process</li> <li>• locate and use technical information correctly to ensure that recommendations are based on reliable and repeatable data</li> </ul>