

1. Title	Perform manual metal arc welding (MMAW)/shielded metal arc welding (SMAW) at specified positions
2. Code	EMCUIN316A
3. Range	Perform MMAW/SMAW at specified positions of common carbon steel, high carbon steel or stainless steel, in electrical and mechanical welding workshops or work sites.
4. Level	3
5. Credit	20
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Knowledge of MMAW/ SMAW</p> <ul style="list-style-type: none"> <li>◆ Understand the applications of electrodes of arc welding</li> <li>◆ Know about properties of different type of metals, such as carbon steel and stainless steel</li> <li>◆ Understand the technical requirements of different steels on different electrodes</li> <li>◆ Understand the impact of different parameters, such as current, welding speed, angle and size of electrode</li> <li>◆ Understand the type and functions of MMAW/SMAW and arc characteristics</li> <li>◆ Understand the importance of weld joint</li> <li>◆ Understand the classification, specifications and standards of different electrodes, such as high tensile steel and low alloy steel</li> <li>◆ Understand the welding residues stresses</li> <li>◆ Understand how to avoid weldment distortion</li> <li>◆ Understand relevant code of practice for MMAW/ SMAW</li> </ul> <p>6.2 Methods and procedures of operating MMAW/ SMAW</p> <ul style="list-style-type: none"> <li>◆ Capable to apply MMAW/SMAW in the following tasks: <ul style="list-style-type: none"> <li>• Perform two sides double V groove weld at flat position</li> <li>• Perform two sides double V groove weld at horizontal position</li> <li>• Perform two sides fillet weld at horizontal/vertical position</li> <li>• Perform two sides double V groove weld at vertical up position</li> <li>• Perform two sides fillet weld at vertical up position</li> <li>• Perform two sides double V groove weld at overhead position</li> <li>• Perform two sides fillet weld at overhead position</li> </ul> </li> </ul> <p>6.3 Professionalism in MMAW/ SMAW</p> <ul style="list-style-type: none"> <li>◆ Capable to perform MMAW/ SMAW according to relevant safety guidelines and code of practice</li> </ul>

7. Assessment Criteria	The integrated outcome requirements of this unit of competency are: <ul style="list-style-type: none"><li>(i) Capable to complete MMAW/SMAW at specified positions by different jointing methods, without causing obvious surface weld defects;</li><li>(ii) Capable to identify the classification, specifications and applications of different electrodes; and</li><li>(iii) Capable to perform MMAW/SMAW safely.</li></ul>
8. Remarks	The credit value of this unit of competency is set on the presumption that the person already possesses the competency of EMCUIN225A “Basic manual metal arc welding (MMAW)/shielded metal arc welding (SMAW)”.