

**Specification of Competency Standards**  
**for the Manufacturing Technology Industry**  
**Unit of Competency**

Functional Area - Product Design and Development

Title	Rapid tooling design and manufacture of metal products
Code	106473L4
Range	This unit of competency is applicable to the design and development departments of metal products manufacturing industry. Practitioners should be capable to master rapid tooling of metal products and carry out design and manufacturing
Level	4
Credit	3 (For Reference Only)
Competency	<p>Performance Requirements</p> <ol style="list-style-type: none"> <li>1. Understand relevant knowledge of rapid tooling design and manufacture <ul style="list-style-type: none"> <li>• Understand the types, design features and structure of the rapid tooling of metal products</li> <li>• Understand the market commonly used software of rapid tooling system of metal products</li> <li>• Understand the structures, operation and production parameters regulating methods of rapid tooling manufacturing equipment of all kinds of metal products</li> <li>• Understand the performance of rapid tooling manufacturing equipment of all kinds of metal products, such as the best accuracy, production efficiency, maximum working volume</li> <li>• Understand and select the appropriate rapid tooling process techniques and technologies and processing methods</li> </ul> </li> <li>2. Rapid tooling design and manufacture of metal products <ul style="list-style-type: none"> <li>• Select appropriate materials and manufacture rapid tooling of metal products</li> <li>• Operate all kinds of commonly used software and equipment of rapid tooling system of metal products</li> <li>• According to different requirements, select different rapid tooling technologies, such as aluminium die, Stereo Lithography Appearance (SLA , Direct Metal Laser Sintering (DLMS), manufacture different rapid tooling which have specific requirements on precision and rapid tooling life Stereo Lithography Appearance, SLA</li> </ul> </li> <li>3. Professional handling of rapid tooling design and manufacture of metal products <ul style="list-style-type: none"> <li>• Detailedly consider elements such as safety, risk, productivity, quality, environmental protection and cost, carry out rapid tooling design and manufacture of metal products and meet all aspects of requirements</li> </ul> </li> </ol>
Assessment Criteria	<p>The integrated outcome requirements of this unit of competency are:</p> <ul style="list-style-type: none"> <li>• Capable to set the tooling pattern, mark and identify the techniques and technologies and processing methods of tooling production in accordance with customer s different requirements.</li> <li>• Capable to evaluate different methods, select the appropriate method and provide machining parameters</li> <li>• Capable to explain the methods of selection of the appropriate materials and production methods of rapid tooling</li> <li>• Capable to explain the selection methods of processing techniques in accordance with different precision and rapid tooling life</li> </ul>
Remark	