

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

Functional Area - Product Design and Development

Title	Metal die casting and foundry die functional design
Code	106471L4
Range	This unit of competency is applicable to the design and development departments of Manufacturing Technology Industry. Practitioners should be capable to carry out metal die casting and foundry die functional design in accordance with the integrated and structural design of metal die casting and foundry die
Level	4
Credit	6 (For Reference Only)
Competency	<p>Performance Requirements</p> <ol style="list-style-type: none"> 1. Understand relevant knowledge of metal die casting and foundry die functional design <ul style="list-style-type: none"> • Understand the customer's requirements on appearance and functions • Understand relevant international standards of metal die casting and foundry die functional design • Understand all kinds of functional systems of metal die casting and foundry die • Understand the impact of different methods of water gap and parting methods on appearance and functions of metal die casting products • Understand and carry out die casting interval channel design and setup balance interval channel • Understand the application of binder on green sand casting and dry sand casting, such as clay, water, vinyl ester polymer and liquid glass • Understand the application of the release agent of metal die casting and foundry die • Understand the commonly used types and specifications of surface treatment of metal die casting and foundry die • Recognise the commonly used types, structures, specifications and working principles of the commonly used equipment of metal die casting and foundry die 2. Carry out metal die casting and foundry die functional design <ul style="list-style-type: none"> • According to metal die casting and foundry design integration, carry out all kinds of functional design of die casting die, including gating system, runner and product removal method • According to the integration of foundry die functional design, carry out all kinds of die casting and foundry die functional design, including heating systems, cooling systems, the runner system, Flow mark, cold slug well, exhaust road, product launch devices, vacuum systems and mould temperature control system • Set the appropriate tolerance and processing, so as to reach the requirements of cumulative tolerance limits mould, sliding or fixed workpiece, and provide appropriate description of all workpiece drawing • Select all kinds of die-casting mould and all kinds of mould standard parts • According to the requirements of different products, select the appropriate die and steel • According to different functional design requirements, select the appropriate die surface treatment • Communicate with internal and external customers and stakeholders and achieve consistent standards 3. Professional handling of metal die casting and foundry die functional design <ul style="list-style-type: none"> • Detailedly consider elements such as safety, risk, productivity, quality, environmental protection and cost, carry out metal die casting and foundry die functional design and meet all aspects of requirements

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Assessment Criteria	The integrated outcome requirements of this unit of competency are: <ul style="list-style-type: none">• Capable to set the appropriate tolerance and processing in accordance with the integrated and structural design of metal die casting and foundry die functional design, complete the metal die casting and foundry die functional design• Capable to draw all workpiece drawing, provide appropriate instructions and ensure the content is accurate
Remark	