

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

Functional Area - Product Design and Development

Title	Plastic injection mould assembly and structural design
Code	106570L5
Range	This unit of competency is applicable to design and development departments of the corporations of Tooling Manufacturing Industry. Practitioners should be familiar with the principle of plastic injection mould, capable to integrate customers requirements and relevant international standards, and carry out plastic injection mould assembly and structural design
Level	5
Credit	9 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Understand relevant knowledge of plastic injection mould assembly and structural design</p> <ul style="list-style-type: none"> • Understand the customers requirements on appearance and functions, such as water injection method, ejection method, water injection position and cooling method • Understand relevant international standard of design of plastic injection mould, such as SPI/SPE Standard (SPI/SPE Standard) • Understand the manufacturing process and its features of plastic injection mould, material selection, milling, heat treatment, EDM, wire cutting, grinding, polishing, surface treatment (such as coating), cavity permutation, core and the cooling equipment of sliding position • Understand the coordination and application of all kinds of plastic materials, processing techniques and technologies, and mould steel • Understand all types of injection mould structure, function of inlaying parts, slider design, plastic mode of the gate, and release method and pre/post actions of plastic parts release, such as two-plate mould, three plate mould and hot runner mould • Understand the mechanical action and movement of sliding systems and slider • Understand the application skills of all kinds of the functional systems, and its relationship with the overall structure of the mould • Understand the function and application of all kinds of injection mould components • Understand the mould structure, installation and coordination of components • Understand the types and specifications of surface treatment of the commonly used injection moulds • Understand the manufacturing principles and applications of all kinds of special injection mould, such as Multi-component Moulding, In mould decoration (IMD), In mould Labelling (IML), In mould Assembly (IMA), Insert moulding, Reaction injection moulding (RIM) for Liquid Silicon Rubber (LSR) (Multi-component Moulding) (In mould decoration, IMD) (In mould Labelling, IML) (In mould Assembly, IMA) (Insert moulding) (Reaction injection moulding (RIM) for Liquid Silicon Rubber (LSR)) • Recognise the commonly used types, structures, specifications and working principles of the commonly used equipment of plastic injection moulding <p>2. Carry out plastic injection mould assembly and structural design</p> <ul style="list-style-type: none"> • Examine the precision, shape, quantity and production requirements, select appropriate mould materials, cavity permutation quantity and cooling system design • Formulate the type of mould cup, cavity design, the right size and sufficient strength for mould structure • Examine the precision, shape, quantity and production requirements, select appropriate plastic injection mould functional design • Design the plastic injection mould sliding systems and other relevant sliders • Integrate and formulate the concept design of plastic injection mould

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	<ul style="list-style-type: none"> • According to the appearance and functionality required of different products, select the appropriate mould for surface treatment • Assign all functional design requirements to each members of the design team and carry out management • Lead plastic injection mould design team to complete all functional designs, and integrate all designs into a completed plastic injection mould structural design • Communicate with internal and external customers and stakeholders and achieve consistent standards <p>3. Professional handling of plastic injection mould assembly and structural design</p> <ul style="list-style-type: none"> • Carefully consider elements of safety, risk, capacity, quality, environmental protection and cost etc, carry out plastic injection mould assembly and structural design and also meet all aspects of requirements
Assessment Criteria	<p>The integrated outcome requirements of this unit of competency are:</p> <ul style="list-style-type: none"> • Capable to collect and integrate customers requirements and relevant international standards, formulate plastic injection mould assembly design • Capable to consider the appearance and functions requirements of products, complete the overall structural design of plastic injection mould
Remark	