

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

Functional Area - Product Design and Development

Title	Plastic parts design for production, assembling, dismantling, and surface treatment
Code	106478L4
Range	This unit of competency is applicable to the design and development departments of plastics products manufacturing industry. Practitioners should be capable to master all kinds of plastic product design and manufacturing process, coordinate with plastic parts design for production, assembling, dismantling, and surface treatment
Level	4
Credit	6 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Understand the plastic product design and manufacturing process</p> <ul style="list-style-type: none"> • Understand the properties of plastic materials and products, using corresponding appropriate production methods, such as injection moulding, blow moulding, vacuum molding, plastic extruding and rotational moulding • Understand all methods of welding of plastic parts, such as Laser Welding, Vibration Welding and Ultrasonic Vibration Understand all kinds of methods of mechanical assembly of plastic parts, such as press-fits, snapfits, staking or using screws or rivets • Understand all kinds of in-mould assembly methods of plastic parts, such as Multi-component Moulding, Insert Moulding and Co-injection Moulding • Understand all kinds of solvent or adhesive of plastic parts • Understand the assembly tolerances of plastic parts • Recognise the foundation tooling structure and design methods • Recognise the priority of production speed and assembly required for design, and the involved production fixtures and tools • Recognise all kinds of surface treatment methods and technologies, such as spraying coating, Electroplating, In-Mould Decoration, laser and Plasma Treatment <p>2. Plastic parts design for production, assembling, dismantling, and surface treatment</p> <ul style="list-style-type: none"> • Design each component in accordance with the assembly tolerances • According to the requirements of product functions, customer and cost, design a minimum and the most simple process to complete the entire processing and assembly of the plastic parts • According to the structure and surface treatment of plastic parts, select a suitable production methods and tooling, improve the production efficiency and product quality • Recommend suitable surface treatment methods, so as to meet the required effects • Produce completed drawings and list out product specifications and BOM to other departments to process <p>3. Professional handling of plastic parts design for production, assembling, dismantling, and surface treatment</p> <ul style="list-style-type: none"> • Detailedly consider elements such as safety, risk, productivity, quality, environmental protection and cost, carry out plastic parts design for production, assembling, dismantling, and surface treatment and 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 produce completed drawings and list out product specifications and BOM to other departments to process • Capable to design appropriate production methods, tools and fixtures, so as to improve the production efficiency

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