

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

Functional Area - Product Manufacturing

Title	Carry out advanced plastic forming
Code	106523L4
Range	This unit of competency is applicable to the production department of the plastic industry corporation. Practitioners should be capable to carry out all kinds of advanced plastic forming in accordance with engineering diagrams, such as micro injection, multi-color and multi-component injection moulding and multilayerblow moulding
Level	4
Credit	6 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Understand the techniques and technologies of advanced plastic forming</p> <ul style="list-style-type: none"> • Recognise the techniques and technologies of all kinds of advanced plastic forming, such as Fluid-Assisted Injection Moulding (Gas-Assisted or Water-Assisted), multi-color and multi component injection moulding, Co-injection Moulding, Thin Walled-injection Moulding, Microcellular Foam Injection Moulding, Micro Injection Moulding and Rapid heating and cooling injection • Understand the common defect causes of the techniques and technologies of advanced plastic forming, such as colour difference, stranded gas , injection lines, weld lines, surface peeling, anti-stress white / stress cracking, isosbestic point near sprue, and the effects of the record grooves • Understand the factors affect the techniques and technologies of advanced plastic forming, such as materials selection, pre-processing handling of plastics, maintenance of machinery and inspection, post-processing handling of plastics injection parts and packaging, structures and maintenance of tools, using auxiliary equipment and environmental control • Understand all principles, final effect and applications of the techniques and technologies of advanced plastic forming • Understand the parameter setting methods of advanced plastic forming and master the rapid adjustment and control skills with the actual materials, tooling and mechanical conditions • Understand the meaning of the parameters setting of advanced plastic forming, such as mould locking force, ejection force, injection pressure retaining time and filling time • Understand the types, structures, size, selection conditions, application methods, and safety guidelines of all advanced plastic forming machines • Understand the types, materials, specifications and selection conditions of all kinds of plastic tooling • Understand all kinds of techniques and technologies of advanced plastic forming, such as product design, specific mould design, forming techniques and technologies, mechanical requirements, application of materials, compatibility between materials, freezing time, application areas and restrictions • Understand the processing machinery maintenance and troubleshooting methods of other plastic machines <p>2. Capable to apply the techniques and technologies of advanced plastic forming in the production process and carry out evaluation and improvements</p> <ul style="list-style-type: none"> • Examine the production effectiveness of all kinds of techniques and technologies of advanced plastic forming • In accordance with the shape and the final effects of plastic products, select the appropriate techniques and technologies of advanced plastic forming and apply it to the existing production lines

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	<ul style="list-style-type: none"> • In accordance with engineering design, select the appropriate machinery, tools and mechanical parameters, so as to carry out advanced plastic forming and obtain the expected final results • Carry out all kinds of techniques and technologies of advanced plastic forming • Operate all kinds of advanced plastic forming machines • Analyse the quality problems of the techniques and technologies of advanced plastic forming and carry out improvements • Record the relevant parameters of technologies and techniques of injection and production records • Determine and manage the performance and life of machinery and tooling, preventively maintain machinery and equipment and carry out troubleshooting <p>3. Professional handling of advanced plastic forming</p> <ul style="list-style-type: none"> • Follow safety guidelines and codes of practice of plastic forming technology, in accordance with the design drawings, carry out forming
Assessment Criteria	<p>The integrated outcome requirements of this unit of competency are:</p> <ul style="list-style-type: none"> • Capable to evaluate and apply the techniques and technologies of advanced plastic forming in the production line • Capable to carry out technological analysis of advanced plastic forming, review the applicable technologies and techniques, the required materials and restrictions, showing the problems of advanced plastic forming technology and make improvements
Remark	