Australian Government

PMBTECH506 Analyse the design of products and tools

Release: 1

INDUSTRY SKILLS COUNCILS
Creating Australia's Future

PMBTECH506 Analyse the design of products and tools

Modification History

Release 1. Supersedes and is equivalent to PMBTECH506B Analyse the design of products and tools

Application

This unit of competency covers the skills and knowledge required to analyse product and tool design to identify possible improvements.

This unit of competency applies to experienced technicians, technologists or those in similar roles who are required to apply in-depth knowledge of materials, process, equipment and problem solving in order to identify product, die/tool and mould design features that impact on performance and make recommendations based on the results.

The technician will have detailed operational and process knowledge but is not required to demonstrate 'hands on' operation of equipment as part of this competency.

This unit of competency does not apply to moulds as used for composites or thermoforming.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

MEM09002B Interpret technical drawing

MSMOPS401 Trial new process or product

Competency Field

Technical

Unit Sector

Not applicable

Elements and Performance Criteria

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
1	**Identify tool components and operating principles**	1.1	Identify the common types of tools and their advantages and limitations
		1.2	Choose appropriate tool components and systems
2	**Interpret tool drawings**	2.1	Identify tool type from drawing
		2.2	Identify tool components from drawing
3	**Identify tool and part features that affect product quality**	3.1	Recognise common product faults due to tool problems
		3.2	Identify the cause of the faults
		3.3	Recommend modifications to tool or material to rectify
4	**Identify product features that affect tool design**	4.1	Recognise good and poor product design features in terms of ease of tool design and manufacture
		4.2	Identify the critical product design features which affect the selection of an appropriate manufacturing technology
		4.3	Identify the critical product design features which affect tool design
5	**Analyse tool design**	5.1	Use the process for the design, manufacture and trialling of tools
		5.2	Use analysis and balancing tools as appropriate to examine optimum tool design
		5.3	Suggest possible improvements to tool or product design

Foundation Skills

This section describes those required skills (language, literacy and numeracy) that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Regulatory framework

The latest version of all legislation, regulations, industry codes of practice and Australian/international standards, or the version specified by the local regulatory authority, must be used.

Applicable legislation, regulations, standards and codes of practice include:

- health, safety and environmental (HSE) legislation, regulations and codes of practice relevant to the workplace, materials and processes being used and products being made
- Australian/international standards relevant to the materials being used and products being made
- any relevant licence and certification requirements.

All operations to which this unit applies are subject to stringent HSE requirements, which may be imposed through state/territory or federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and such requirements the legislative requirements take precedence.

Procedures

All operations must be performed in accordance with relevant procedures.

Procedures are written, verbal, visual, computer-based or in some other form, and include one or any combination of:

- test procedures
- technical specifications
- technical drawings
- emergency procedures
- work instructions
- standard operating procedures (SOPs)
- safe work method statements (SWMS)
- formulas/recipes
- batch sheets
- temporary instructions
- any similar instructions provided for the smooth running of the plant.

Hazards Hazards must be identified and controlled. Identifying hazards requires consideration of:

- hazardous products and materials
- rotational equipment or vibration
- sharp edges, protrusions or obstructions
- slippery surfaces, spills or leaks
- smoke, dust or other atmospheric hazards
- moving machinery
- high temperatures
- other hazards that might arise.

Unit Mapping Information

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Links

MSA Training Package Implementation Guides - http://mskills.org.au/training-packages/info/