



Australian Government

Department of Education, Employment and Workplace Relations

PMBTECH303A Make minor modifications to products

Revision Number: 1

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Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This competency covers the minor modification of products in a laboratory or using pilot equipment and then monitoring initial factory trials. This competency would typically be done by an advanced operator either working alone for a minor modification or with other relevant person(s) for a major modification or a new product.

This competency covers minor modifications to existing products to develop an updated version of an existing product or a 'new' product which is strongly based on an existing product. Processes may also need to be modified, but again this modification of process will be minor and based on established practice.

A minor modification will be based on an existing product and will produce a modified product of similar specification. Changes may include things like small changes to sizes, shapes, surface finish. Changes may include minor modification to tooling but will not normally include new or significantly redesigned tooling.

Application of the Unit

Application of this unit

This competency applies to operators who are required to modify products and demonstrate that an appropriate product and manufacturing process has been developed.

It includes:

- confirming the product specification
- making trial or prototype products
- interpreting the test results
- modifying the product design
- verifying/modifying the product and manufacturing process during initial factory trials.

Note that while this unit of competency requires initial factory trials of the modified product, some laboratory (or similar) testing of the product will also be required. This is not part of this unit as the testing may be performed by another person.

PMLTEST300B Perform basic tests (or other suitable test unit) may be used for the testing competency if required.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisites

This unit has **no** prerequisites.

Employability Skills Information

Employability Skills

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

ELEMENT	PERFORMANCE CRITERIA
Elements describe the essential outcomes of a unit of competency	Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT ELEMENT	PERFORMANCE CRITERIA Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.
1. Confirm requirements of modified/new product.	1.1 Check that specifications for new product are complete and unambiguous. 1.2 Clarify items which are unclear or beyond the normal scope of work. 1.3 Investigate the type of changes/modifications which are likely to meet these requirements. 1.4 Clarify any possible issues if processes, plant, equipment or tooling outside the plant's normal range are likely to be required. 1.5 Identify tests required on trial product.
2. Identify similar existing product(s).	2.1 Identify existing product(s) with similar specifications. 2.2 Estimate required changes to existing product(s). 2.3 Check practicality of proposed changes. 2.4 Check HSE impacts of proposed changes. 2.5 Draft initial product design and manufacturing process.
3. Prepare trial products.	3.1 Identify and control all hazards for pilot/trial production. 3.2 Identify and check all required plant and equipment. 3.3 Obtain and prepare all required materials and tooling. 3.4 Make trial product and obtain sample(s). 3.5 Interpret test results. 3.6 Modify product design/manufacturing process and repeat trials as required.
4. Check initial factory trial.	4.1 Check availability of required resources and plant availability. 4.2 Ensure all authorities and permissions have been obtained. 4.3 Check all hazard controls have been implemented. 4.4 Monitor factory trial manufacture of product. 4.5 Obtain sample(s) and interpret test results. 4.6 Modify product design/manufacturing process and

ELEMENT	PERFORMANCE CRITERIA
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	repeat factory trial as required.
5. Complete trial	5.1 Complete all required records and reports. 5.2 Check any changes to resources and procedures have been incorporated into standard procedures. 5.3 Ensure any additional HSE or skill requirements have been included in future plans.

Required Skills and Knowledge

This describes the essential skills and knowledge and their level required for this unit.

Competence in this unit requires knowledge of:

- product features and their impact on product properties
- tests which might be used and the applicability of the different tests for different product properties
- relevant manufacturing methods and the impacts of different methods/processes on product properties
- relevant existing products and their properties
- requirements for factory trialling and scaling up from laboratory/pilot scale
- suppliers of materials and tooling
- sources of information about materials and tooling.

Language, literacy and numeracy requirements

This unit requires the ability to read and interpret technical specifications and literature and to communicate with all relevant stakeholders.

Writing product design specifications, processing instructions and similar documents.

Numeracy is required to interpret technical specifications and test results and to calculate quantities and proportions required for the specification, make adjustments and then to scale up to factory trials.

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

This unit may be best assessed either through a portfolio of products developed/ modified, or the use of projects to develop/modify a range of existing products.

Critical aspects

It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to:

- clarify the requirements of the modified product
- make an initial design and process and justify that initial design and process
- modify the design/process based on test data and justify the modifications
- make final adjustments for the scaled up product to work successfully in the factory

Consistent performance should be demonstrated through the evidence from several formula modifications requiring different types of changes.

Context of assessment

Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge. A holistic approach should be taken to the assessment.

Competence in this unit may be assessed:

- on the plant
- using questions to assess knowledge
- in a laboratory/pilot plant
- by using a suitable simulation and/or a range of case studies/scenarios
- through a combination of these techniques.

Method of assessment

In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment. Assessors need to be aware of any cultural issues that may affect responses to questions.

Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Specific resources for assessment

This section should be read in conjunction with the Range Statement for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required.

Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

Context

This competency applies to advanced operators who modify products. They will typically be based in a laboratory or similar pilot/product development area but will also have responsibility in the factory for monitoring new products and ensuring that modified products are suitable when released for standard production.

An operator working at this level would typically be responsible to a more senior operator and would work closely with them on new products and major modifications of existing products. The operator would not be expected to develop a new product or make a major modification to an existing product unless under the direction of a more senior operator.

Procedures

All operations are performed in accordance with procedures.

Procedures means all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.

Health, Safety and Environment (HSE)

All operations are subject to stringent health, safety and environment requirements, which may be imposed through State or federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and HSE requirements, the operator needs to ensure the HSE requirements take precedence.

Tests

Tests includes the normal range of physical, chemical and environmental (weathering) tests which might be applied to the product.

Trial product

The trial product may be full sized, or a scale version. Trial production will typically be 'one off' or small run compared to final production which will occur in normal run sizes under normal conditions.

Unit Sector(s)

Not applicable.