



Australian Government

Department of Education, Employment and Workplace Relations

PMBPROD246C Hand mix materials

Revision Number: 1

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Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This competency covers the application of knowledge of materials, product purpose and processes to the hand mixing of materials.

Application of the Unit

Application of this unit

This competency applies to operators who hand mix materials in support of the production process. It does not apply to the composites sector. The key factors are the selection and mixing of the right material within the appropriate timeframe and to the consistency and uniformity required, ensuring there is no contamination of the materials. This competency is typically performed by operators working either independently or as part of a work team. It includes:

- checking job sheets for work to be done and identifying the priority in which jobs/product will be made/completed
- following approved hazard minimisation procedures for any hazards connected with materials and process, using work instructions, labels and materials safety data sheets, and in accordance with OHS legislative responsibilities
- planning which jobs have the higher priority
- selecting and obtaining the correct materials in the correct quantities
- using the correct mixing container and hand mixers
- checking materials to ensure no contamination
- adding, mixing and removing the material within the appropriate safety guidelines
- completing logs and reports.
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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
1. Identify the requirements for hand mixing of materials.	<p>Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.</p> <p>1.1 Identify materials to be included in the hand mixing process.</p> <p>1.2 Identify hand mixing equipment and components used in the mixing process.</p> <p>1.3 Identify characteristics of the blended material produced in relation to the impact on the production process and final product quality.</p> <p>1.4 Compare stages in the mixing process with the quality requirements for the product.</p>
2. Pre-plan hand mixing operations.	<p>2.1 Identify work requirements from workplace approved operating procedures.</p> <p>2.2 Identify equipment and processes used for materials measurement, preparation, mixing and for the delivery of material to production area.</p> <p>2.3 Identify materials, including base raw materials and required additives.</p> <p>2.4 Identify hazards connected with materials and process from observation of workplace reference materials including materials safety data sheets and equipment instructions.</p> <p>2.5 Identify appropriate measures to minimise risks from the identified hazards.</p> <p>2.6 Plan task sequences within scope of authority.</p>
3. Check hand mixing set-up.	<p>3.1 Identify equipment information, required quality specifications and standard operating procedures</p> <p>3.2 Check materials for conformity with workplace operational requirements.</p> <p>3.3 Discard non-conforming materials or make adjustments to blending operations in accordance with workplace procedures.</p> <p>3.4 Identify changes in materials at each stage of the blending process.</p>
4. Conduct hand mixing operations.	<p>4.1 Monitor hand mixing operations noting materials quantity and product quality.</p> <p>4.2 Make adjustments to remedy faults and non-conformity to product blend standards where</p>

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.
	<p>applicable.</p> <p>4.3 Move materials to point of use and pour in the appropriate manner.</p> <p>4.4 Collect and reuse material which is able to be reprocessed and deal with waste and scrap in accordance with workplace procedures.</p> <p>4.5 Complete equipment cleanup and waste management in accordance with workplace procedures.</p>
5. Respond to product quality improvement requests.	<p>5.1 Monitor hand mixing process and note conditions which may affect product quality standards.</p> <p>5.2 Report process variations within workplace procedures.</p> <p>5.3 Note and implement authorised changes in standard operating procedures and specifications.</p>

Required Skills and Knowledge

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

Application of knowledge of the materials, equipment and process sufficient to recognise out of specification products, process problems and materials faults.

Knowledge of organisation procedures and relevant regulatory requirements along with the ability to implement them within appropriate time constraints and work standards.

Competence includes the ability to:

- apply and/or explain: impact of incorrect or faulty materials; production workflow sequences and materials demand; correct selection and use of equipment, materials, processes and procedures; hazards of the materials and process and appropriate hazard control procedures
- distinguish between causes of faults such as: wrong raw materials/additives/catalyst; incorrect quantity of materials/additives/catalyst; contaminated materials/additives/catalyst; inadequate mixing; incorrect setting times/temperature/composition
- plan tasks, including identifying times and locations in the blending process where checks for product quality are required; production outputs are most appropriately made; ongoing materials input, waste management and work area housekeeping requirements are considered; and any required supplementary equipment for product quality testing is acquired
- original manufacturer instructions and guidelines for the use of the specified materials (MSDS)
- relevant procedures relating to safe working practices prescribed for the materials
- local OHS legislation and/or regulations
- site-specific instructions based on production requirements.

Language, literacy and numeracy requirements

This unit requires the ability to read and interpret typical product specifications, job sheets and material labels as provided to operators.

Writing is required to the level of completing workplace forms.

Basic numeracy is also required, eg to determine that mixtures might comprise 2 parts of A, 8 parts of B; and 20 parts of C; for a total mix comprising 30 parts.

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

A holistic approach should be taken to the 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.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

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

- recognise the importance of material properties and qualities
- apply approved procedures
- take appropriate action to resolve faults or report faults to appropriate personnel
- explain and implement emergency shutdown procedures
- plan and set up work before beginning the hand mixing process.

Consistent performance should be demonstrated. For example, look to see that:

- production standards are met consistently
- mixing produces a consistent product
- timing of mixing batches is consistent with production needs.

Assessment method and context

Assessment will occur using industrial materials and equipment and will be undertaken in a work-like environment.

Competence in this unit may be assessed:

- on a processing plant, allowing for operation under all normal and a range of abnormal conditions
- in a situation allowing for the generation of evidence of the ability to respond to problems
 - by using a suitable simulation and/or a range of case studies/scenarios
 - through a combination of these techniques.

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 operators working either independently or as part of a work team.

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.

Tools and equipment

This competency includes use of equipment and tools such as:

- hand carts and trolleys
- knives and other bag opening equipment
- hoists/lifting equipment not requiring any special permits or licences
- mixing spatulas or paddles
- portable electrical paddle mixers
- relevant personal protective equipment.

Hazards:

Typical hazards include:

- spills and splashing
- noxious fumes and vapours
- hazardous materials
- manual handling hazards.

Problems:

Respond to/rectify 'non-routine problems' means 'apply known solutions to a variety of predictable problems'. Typical process and product problems may include:

- incorrect material composition
- over or under mixing
- broken mixing equipment
- temperature variations.
- variations in materials
- contamination of materials
- variations in setting times.

Variables:

Key variables to be monitored include:

- atmospheric conditions
- sequencing of material additions to the mix
- volumes /mass of materials being mixed
- mixing time
- amount of moisture.
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Unit Sector(s)

Not applicable.