



Australian Government

PMC552002C Operate equipment to blend/mix materials

Revision Number: 1

PMC552002C Operate equipment to blend/mix materials

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency covers the selection and blending/mixing of materials using blending/mixing equipment. It involves loading and unloading equipment, monitoring the process, maintaining a safe work environment and conducting routine maintenance.
------------------------	---

Application of the Unit

Application of the unit	This unit of competency applies to operators who are responsible for selecting and blending a variety of materials to produce a variety of products. This competency does NOT cover concrete mixing nor asphalt mixing for which the specific competencies <i>PMC552060C Batch mix concrete</i> and <i>PMC552065B Prepare asphalt</i> should be used. If manual handling forms part of this job then regulatory obligations will require competency in <i>PMBHAN103C Shift materials safely by hand</i>. This competency is typically performed by operators working either independently or as part of a work team. At all times they would be liaising and cooperating with other members of the team.
--------------------------------	--

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
-----------------------------	--

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
---	--

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine blend/mix requirements	1.1. Check work schedule/job specification/job card 1.2. Identify customer requirements and set parameters in accordance with standard procedures 1.3. Select correct type and quantity of materials 1.4. Meet all special requirements and specifications 1.5. Identify any material handling problems and take action in accordance with standard procedures 1.6. Update material records as appropriate
2. Control hazards	2.1. Identify hazards from the materials 2.2. Identify other hazards in blending/mixing work area 2.3. Assess the risks arising from those hazards 2.4. Implement measures to control those risks in line with procedures
3. Blend/mix materials	3.1. Set up, start and operate blending/mixing equipment as required by specifications and standard procedures 3.2. Prepare and add materials to blender/mixer as required by specification and standard procedures 3.3. Check that materials prepared match requirements 3.4. Use ancillary equipment as required according to standard procedures 3.5. Ensure equipment is operated in accordance with established enterprise procedures 3.6. Blend/mix materials to obtain required results
4. Monitor and record operation	4.1. Monitor equipment performance in accordance with work instructions and manufacturer's specifications 4.2. Monitor non-conforming product against customer specifications 4.3. Adjust and control equipment to ensure correct product quality 4.4. Complete final inspection checks 4.5. Complete appropriate records and logs
5. Rectify routine problems	5.1. Identify the range of faults that can occur during the operation 5.2. Determine and rectify fault causes in accordance with procedures/work instructions 5.3. Identify and rectify equipment failure causes in accordance with procedures/work instructions

ELEMENT	PERFORMANCE CRITERIA
	5.4.Ensure appropriate records and log books of equipment operations are maintained to meet procedures/work instructions 5.5.Identify non-routine problems and report to designated person
6. Maintain blending/mixing plant and area	6.1.Keep area and equipment clean and in good order 6.2.Unload and shut down equipment as required 6.3.Respond to routine faults according to enterprise procedures 6.4.Report non-routine faults according to enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- recognising conditions which will lead to out of specification product
- implementing the enterprise's procedures within time constraints and in a manner relevant to the correct use of the equipment
- conveying information relevant to the operation clearly and effectively
- maintaining appropriate levels of quality assurance
- reading and numeracy to interpret workplace documents and technical information

Required knowledge

Required knowledge includes:

- hazards associated with the process
- application of the hierarchy of control in controlling the hazards
- selection, use and maintenance of relevant personal protective equipment (PPE)
- material handling requirements
- principles of blending/mixing these products
- impact of variations in materials on final product
- impact of blending/mixing on final product
- impact of variations in product specification of the blending/mixing process
- properties of the mix
- equipment limitations and impact on blending/mixing efficiency and effectiveness
- enterprise production schedules
- underlying causes of faults such as precipitated by:
 - material
 - equipment
 - blending/mixing time/technique

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency.

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

It is essential that the equipment be understood and that the importance of critical material properties, settings and readings is known.

Competence must be demonstrated in the operation of all ancillary equipment to the level required for this unit of competency.

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action.

Consistent performance should be demonstrated. In particular look to see that:

- hazards are identified and controlled
- blend/mix properties are kept within limits
- quality is monitored to minimise wastage
- process measurements/observations are continually made
- all OHS requirements are followed
- problems are anticipated and appropriate action is taken (i.e. problem fixed or reported).

Context of and specific resources for assessment

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations.

Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

Simulation or case studies/scenarios may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual plant and will include 'walk-throughs' of the relevant competency components. A bank of scenarios/case studies/what ifs and questions will be required to probe

EVIDENCE GUIDE	
	the reasoning behind observable actions.
Method of assessment	In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units. It may also be appropriate to assess this unit in conjunction with: • MSAC112003A Undertake manual handling. Individual enterprises may choose to add prerequisites and co-requisites relevant to their processes.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the language and literacy capacity of the candidate and the work being performed.

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. Bold italicised wording, if used in the performance criteria, is detailed below. 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) may also be included.

Procedures

All operations are performed in accordance with standard procedures and work instructions.

Equipment and unit operations

All such items of equipment and unit operations must form part of a discrete blending/mixing system. These may include:

- pumps (lubrication and cooling pumps)
- utilities and services
- heat exchangers (intercoolers)
- vibration monitoring
- other equipment integral to the operation of the compressor system

Typical problems

Typical problems may include:

- equipment malfunction
- material handling such as equipment failure and blockages
- material property variation
- blend/mix tolerance
- uniform dispersion of minor ingredients/additives
- blending/mixing to special requirements/colour
- mixing sequence
- matching mixes produced with production requirements
- monitoring and adjusting process conditions
- recognising and acting on potential and actual problems
- quality problems including customer requirements

Occupational health and safety (OHS)

All operations are subject to stringent OHS requirements and these must not be compromised at any time. Where there is an apparent conflict

RANGE STATEMENT

	between performance criteria and OHS requirements, the OHS requirements take precedence
--	---

Unit Sector(s)

Unit sector	Operational/technical
--------------------	-----------------------

Competency field

Competency field	
-------------------------	--

Co-requisite units

Co-requisite units		