



Australian Government

Department of Education, Employment and Workplace Relations

PMC562071C Operate bulk materials handling equipment

Revision Number: 1

PMC562071C Operate bulk materials handling equipment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency covers the operation of the range of equipment used to store and convey bulk, particulate materials.
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Application of the Unit

Application of the unit	This unit of competency covers the operation of conveyor belts, pneumatic conveyors and the like which are moving bulk particulate solids (particulates). It is not intended to apply to conveying packages materials nor to assembly line conveyors. It also covers the storage of bulk particulates, in silos/hoppers or as piles of particulates on the ground. This unit of competency is typically performed by operators working either independently or as part of a work team. It includes the recognition, operation and troubleshooting of routine plant items.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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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.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Operate conveyors	1.1. Recognise the type and number of conveyors 1.2. Identify hazards and implement hazard controls according to procedures 1.3. Start up and shut down the conveyor in a manner appropriate to the conveyor type and duty 1.4. Complete routine checks, logs and paperwork, taking action on unexpected observations, readings and trends 1.5. Convey correct material from and to the correct location as required
2. Manage bulk material storages	2.1. Recognise type of storage facility 2.2. Monitor quality, quantity and location of bulk materials stored 2.3. Transfer stock into, out of and between storage as required 2.4. Supply internal and external customers with correct quality and quantity in a timely manner 2.5. Make effective use of storage capacity available taking account of safety issues
3. Rectify problems	3.1. Identify the range of faults that can occur during the operation 3.2. Determine and rectify fault causes in accordance with established enterprise procedures 3.3. Identify and rectify equipment failure causes in accordance with established enterprise procedures 3.4. Make sure appropriate records and log books of equipment operations are maintained to meet enterprise requirements 3.5. Identify non-routine problems and report according to procedure
4. Carry out maintenance procedures	4.1. Recognise a maintenance need according to procedure 4.2. Isolate materials handling equipment and prepare for maintenance/vessel entry as required 4.3. Complete minor maintenance according to procedures 4.4. Receive plant back from maintenance and check for safe operation 4.5. Prepare plant for the introduction of materials and

ELEMENT	PERFORMANCE CRITERIA
	for operation
5. Control hazards	5.1. Identify hazards in the material handling work area 5.2. Assess the risks arising from those hazards 5.3. Implement measures to control those risks in line with procedures 5.4. Shut down in an emergency as required

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

Required skills include:

- selecting, using and maintaining relevant personal protective equipment (PPE)
- implementing good operating practice
- operating bulk materials handling equipment
- transferring and conveying materials to correct locations
- 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
- principles of operation
- physics of operation
- properties of particulates
- density and bulk density
- methods of resolving problems
- distinguish between causes of problems such as:
 - material
 - instrument
 - equipment (electrical/mechanical)
 - maintenance
- isolate problem to item of equipment
- understanding of the process sufficient to recognise non-standard situations and then determine appropriate action which is consistent with operating guidelines
- relevant OHS and environmental requirements, along with an ability to implement them within appropriate time constraints and in a manner which is relevant to the operation of the bulk materials handling equipment
- enterprise standard operating procedures

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

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. The reasoning process behind the problem analysis and determining the required actions should be assessed. The emphasis should be on the ability to stay out of trouble rather than on recovery from a problem.

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

- early warning signs of equipment in need of attention/with potential problems are recognised
- action is taken to ensure equipment is returned to full performance in a timely manner
- obvious problems in other plant areas are recognised and an appropriate contribution made to a solution
- items initiated are followed through until final resolution has occurred.

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

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	Where the completion of this unit requires working under a permit/clearance then competency must also be established in MSAPMPER200C Work in accordance with an issued permit or other appropriate unit. 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

Equipment may include:

- mechanical conveyors/feeders:
 - travelling stackers
 - belt
 - vibrating
 - screw
 - flight
- pneumatic conveyors:
 - dense phase
 - disperse phase
 - pressure
 - vacuum
- bulk storage:
 - piles
 - bunkers
 - silos
 - bins/hoppers
 - weigh bins/loss in weight bins

Particulate solids

Particulate solids may include:

- cement
- sand
- aggregate
- frit
- cullet
- asphalt (not strictly a particulate solid but included in this unit)
- other

Particulate solid properties include:

RANGE STATEMENT	
	- particle size and shape: reactivity, solubility, colour, health and safety - angle of repose - storage and transport - angle of slide - transport - dusts - hazards and good practice
Typical problems	Typical problems may include: - contamination of stored stock - rat holing and bridging in silos/bins/hoppers - routing issues - equipment problems
Personal protective equipment	All operations must be performed using the appropriate personal protective equipment (PPE), including breathing protection
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 between performance criteria and OHS requirements, the OHS requirements take precedence

Unit Sector(s)

Unit sector	Support
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Competency field

Competency field	
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Co-requisite units

Co-requisite units		

Co-requisite units		