



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **PMBPROD254C Operate an open mill blender**

**Revision Number: 1**

## **PMBPROD254C Operate an open mill blender**

### **Modification History**

Not applicable.

### **Unit Descriptor**

#### **Unit descriptor**

This competency covers the operation of open mill blenders, Banbury dump mills and similar equipment.

### **Application of the Unit**

#### **Application of this unit**

This competency applies to operators who use open mill blenders/mixers to compound rubber. This competency is typically performed by operators working in the rubber industry.

The operator will:

- check product for quality and conformity to specifications
- break down bales of crude rubber
- adding and mixing the correct amount of the correct materials in the correct order
- mixing efficiently
- slabbing, stripping off or otherwise removing mixed rubber from the mill
- identify and taking action on routine predictable process problems
- complete 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

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
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. Check work requirements.	<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 work requirements from production plans of workplace procedures.</p> <p>1.2 Check product, materials and equipment meet requirements for job(s).</p> <p>1.3 Recognise hazards and implement necessary steps to ensure safety.</p> <p>1.4 Ask questions of appropriate person to confirm usual practice.</p> <p>1.5 Ensure housekeeping is to requirements.</p> <p>1.6 Identify hazards associated with the job and take appropriate action.</p> <p>1.7 Perform other pre-operational checks in accordance with workplace procedures.</p>
2. Check process set-up.	<p>2.1 Check safety gates and guards are in position and working.</p> <p>2.2 Check materials are correct.</p> <p>2.3 Complete pre-start checks.</p>
3. Operate open mill blender to procedures.	<p>3.1 Start, operate and stop mill as required by procedures.</p> <p>3.2 Band, cut, fold and work rubber as needed.</p> <p>3.3 Add materials evenly at correct rate and time and blend in.</p> <p>3.4 Check open mill blender operations.</p> <p>3.5 Make adjustments to remedy faults and non-conformity to product blend standards where applicable.</p> <p>3.6 Collect and reuse material which is able to be reprocessed.</p> <p>3.7 Deal with waste and scrap in accordance with procedures.</p> <p>3.8 Clean, adjust and lubricate equipment as required.</p>
4. Respond to routine problems in accordance with procedures.	<p>4.1 Recognise known faults that occur during the operation.</p> <p>4.2 Identify and take action on causes of routine faults.</p> <p>4.3 Log problems as required.</p>

<b>ELEMENT</b> ELEMENT	<b>PERFORMANCE CRITERIA</b> Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
	4.4 Identify non-routine problems and quality problems and take appropriate action.

## 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. For example scorchy lumps, uneven mixing or neryv slabs.

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

Application of the knowledge of managing risks using the hierarchy of controls applied to compound materials using an open mill blender. Application of approved hazard control and safety procedures and the use of PPE in relation to handling materials, equipment operation and cleanup.

Knowledge of and skills in the operation of an open mill blender and its main components sufficient for the consistent production of quality products including:

- production workflow schedule and material demand
- accurate monitoring of equipment operation and product quality
- function and operating principles which influence the open mill blender equipment operation and product blending
- the impact that chemical reactions/mechanical processes have on changing the state, form and condition of the materials
- purpose of developing elasticity and controlling temperatures
- effects of mastication, differential speed, overheating
- focus of operation of work systems and equipment
- correct use of equipment, processes and procedures
- explain the impact of open mill blender machine speed, pressure, time and temperature have on finished product quality, production process and output
- accurately monitor equipment operation and product quality
- waste management and knowing the importance of reusing/working away non-conforming products wherever possible.

Competence also includes the ability to:

- plan own work, including predicting consequences and identifying improvements
- identify the role that friction plays in the blending of product
- describe causes and effects of variations in blended batches
- identify and describe own role and the roles of others involved in the open mill blender process.

### Language, literacy and numeracy requirements

This unit requires the ability to read and interpret typical product specifications, job sheets, procedures, basic machine control panels, material labels and safety information as provided to operators.

Writing is required to the level of completing workplace forms.

Basic numeracy is required, eg to determine that two 25 kg bags are needed to make up a requirement for 50 kg.

## 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:

- apply the required skills and knowledge to operate an open mill blender.
- apply approved procedures.

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

- production standards are met consistently
- problems are identified and appropriate action is taken (ie the problem is fixed or reported)
- all safety procedures are adhered to.

### **Assessment method and context**

Assessment will occur on an open mill blender equipment and will be undertaken in a work-like environment.

Competence in this unit may be assessed:

- by using an appropriate, open mill blender
- 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 mainly to the rubber industry, but may also be relevant in the plastics industry. It includes the operation of all additional equipment where that equipment is integral to the mill blending process.

This competency would typically apply to the mixing of rubbers (or plastics), but may be applied to other materials mixed on an open mill blender. It also applies to the use of an open mill for operations where mixing/blending is incidental to the process such as slabbing off, stripping etc.

### Procedures

All operations are performed in accordance with procedures.

Procedures include 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:

- mills
- mill knives
- nip adjusting bars
- bale hooks
- relevant personal protective equipment.

### Hazards

Typical hazards include:

- cuts
- nip hazards
- material hazards
- burn hazards
- manual handling hazards.

### Problems

'Respond to routine problems' means 'apply known solutions to a variety of predictable problems'. Typical process problems may include:

- power failures
- incorrect machine adjustments
- incorrect quantities of materials
- incorrect blending times
- equipment breakdowns
- short scorch products
- forming the initial band
- adjusting bank size for efficient mixing.



Typical product problems many include:

- variations in materials
- contamination of materials
- lack of a homogeneous product.

Appropriate action for non-routine problems may be reporting to designated person or other action specified in the procedures.

## **Unit Sector(s)**

Not applicable.