Australian Government

Department of Education, Employment and Workplace Relations

PMBPROD207B Operate calender

Revision Number: 1

PMBPROD207B Operate calender

Modification History

Not applicable.

Unit Descriptor

Unit descriptor
This competency covers the operation of calendering equipment and the resolving of routine problems to procedure.

Application of the Unit

Application of this unit
This competency applies to operators who are required to undertake the routine operation of calender equipment to convert plastic or rubber compound into finished or semi-finished rubber or plastic sheets. It is typically performed by operators working either independently or as part of a work team.
The operator will:

- maintain feed to the calender
- monitor and adjust the calender
- notice any problems and take required action (eg reporting)
- deal with non-conforming products, waste and scrap
- complete logs and reports.

They may record key variables such as machine condition and production rate and reasons for interruptions.

This unit does not include using a mill - see *PMBPROD254B Operate an open mill blender*.

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	PERFORMANCE CRITERIA
ELEMENT	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. Check work requirements.	1.1 Identify work requirements from production plan or request. 1.2 Check product, materials and equipment requirements for job(s). 1.3 Recognise requirements which may not be in accordance with usual practice. 1.4 Ask questions of appropriate person to confirm unusual practice. 1.5 Ensure housekeeping is to requirements. 1.6 Identify hazards associated with the job and take appropriate action. 1.7 Perform other pre-operational checks in accordance with procedures.
2. Start up calendering equipment to procedure.	2.1 Conduct pre-start checks on equipment. 2.2 Start up calendering equipment.
3. Operate equipment to procedures.	3.1 Check process is operating within required limits. 3.2 Check product is in specification and to required quality standard. 3.3 Ensure product is consistently ready for next operation. 3.4 Maintain supply of material(s) as required. 3.5 Complete logs and records as required. 3.6 Collect and segregate scrap, trim and other materials as required. 3.7 Keep equipment and work area clean. 3.8 Shut down calender as required.
4. Respond to routine problems in accordance with procedures.	4.1 Recognise known faults that occur during the operation. 4.2 Identify and take action on causes of routine faults. 4.3 Log problems as required. 4.4 Identify non-routine problems and report to designated person.

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 and ability to implement organization procedures, and relevant regulatory requirements within appropriate time constraints and work standards.
Application of the knowledge of managing risks using the hierarchy of controls applied to the calendering process. 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 calendering equipment and process sufficient for consistent production of quality products, including:

- production workflow sequences and materials demand
- calender adjustments and their effects, such as nip, bowl speed and relative bowl speeds
- reasons for checking process control panels and reporting readings which are outside of normal range of process variability
- the function of calendering equipment, machine components and guides
- accurately monitoring equipment operation and product quality
- correct selection and use of equipment, materials, processes and procedures
- the potential effects of variations in raw materials and equipment operation in relation to product quality and production output
- processing behaviour of polymers and the role of additives
- the effect of unauthorised or emergency shutdown in relation to safety and production requirements
- factors which may affect product quality or production output and appropriate remedies (such as effect of foreign objects on nip area on the compounded materials)
- waste management and knowing the importance of reusing non-conforming products whenever possible.

Competence also includes the ability to:

- plan own work, including predicting consequences and identifying improvements
- identify when the operator is able to rectify faults, when assistance is required and who is the appropriate source for assistance
- identify and describe own role and role of others involved directly in the calendering 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 the required amount of compound required for the product run.

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 a calender
- apply approved procedures.

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

- calendering production standards are met consistently
- all safety procedures are followed.

Assessment method and context

Assessment will occur on calendering 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 all calendering operations within the plastics and rubber sectors. It includes the operation of all relevant additional equipment where that equipment is integral to the calendering process.

It includes calendering of 'solid' polymer as well as using the calender to cover/impregnate fabric, wire or other webs.

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 unit of competency includes use of equipment and tools such as:

- calender
- additional equipment (such as mill knives, thickness gauges, profiling gauges/tools/jigs, nip adjusting bars, strainers and metal detector)
- manual handling equipment
- product take up equipment
- material feeding equipment
- hoists/lifting equipment not requiring any special permits or licences
- basic hand tools
- relevant personal protective equipment.

Hazards

Typical hazards include:

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

Problems

Respond to routine problems means 'apply known solutions to a limited range of predictable problems'. Typical process and product problems may include:

- variations in materials
- contamination of materials
- short scorch products (if rubber)
- initial feeding of pelt/pig
- uneven profiles
- uneven colours
- uneven surface appearance

- variation in compound grain and nerve making a non-homogeneous product
- lay flat and curvature standards.

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

Variables

Key variables to be monitored include:

- operating temperatures
- speed
- nip settings
- materials consistency
- surface finish
- product integrity and general conformance to specifications:
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Unit Sector(s)

Not applicable.