



Australian Government

Department of Education, Employment and Workplace Relations

PMBPROD221B Operate rotational moulding equipment

Revision Number: 1

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Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This competency covers the operation of equipment, including both rotating and 'rock and roll' modes, and the resolving of routine problems to procedure. It does not cover open flame equipment. (see *PMBPROD284B - Operate open flame moulding equipment*)

Application of the Unit

Application of this unit

This competency applies to operators who are required to undertake the routine operation of rotational moulding equipment. The key factors are the making of products to meet quality standards and workplace requirements. This competency is typically performed by operators working either independently or as part of a work team.

It includes:

- checking job sheets for work requirements
- 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
- monitoring rotational moulding equipment operation and reporting process variations
- checking product for quality and conformity to specifications discarding non-conforming products ensuring discarded materials are reused where possible and waste and scrap is disposed of in accordance with workplace instructions
- identifying and taking action on routine process problems
- 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	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.

Elements and Performance Criteria

ELEMENT ELEMENT	PERFORMANCE CRITERIA
1. Check work requirements.	<p>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.</p> <p>1.1 Identify work requirements from production plan or request.</p> <p>1.2 Check product, materials and equipment meet requirements for job(s).</p> <p>1.3 Recognise requirements which may not be in accordance with usual practice.</p> <p>1.4 Ask questions of appropriate person to confirm unusual 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 procedures.</p>
2. Operate rotational moulding equipment to procedures.	<p>2.1 Check process is operating within required limits.</p> <p>2.2 Check product is in specification and to required quality standard.</p> <p>2.3 Ensure product is consistently ready for next operation.</p> <p>2.4 Maintain supply of material(s) as required.</p> <p>2.5 Demould products and store as required</p> <p>2.6 Complete logs and records as required.</p> <p>2.7 Collect and segregate scrap, trim and other materials as required.</p> <p>2.8 Keep equipment and work area clean.</p> <p>2.9 Pause machine cycle and perform emergency stop, as required.</p>
3. Respond to routine problems to procedures.	<p>3.1 Recognise known faults that occur during the operation.</p> <p>3.2 Identify and take action on causes of routine faults.</p> <p>3.3 Log problems as required.</p> <p>3.4 Identify non-routine process and quality problems and take appropriate action.</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.

Knowledge of and skills in the operation of rotational moulding equipment and main components sufficient for consistent production of quality products including:

- operation of rotational moulding equipment and components
- effects of shrinkage on material colour
- production workflow sequences and materials demand
- reasons for checking process control panels and reporting readings which do not conform to the work instructions
- approved hazard control and safety procedures and the use of PPE in relation to handling materials
- equipment operation and cleanup
- potential effects of variations in raw materials and equipment operation in relation to quality of product
- waste management and importance of reusing non-conforming products wherever possible
- correct selection and use of equipment, materials, processes and procedures
- plan own work, including predicting consequences and identifying improvements
- monitor equipment operation and product quality
- 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 rotational moulding process
- identify factors which may affect product quality or production output and appropriate remedies
- use PPE, safely handle products and materials, read relevant safety information and apply safety precautions appropriate to the task
- pause equipment, or shut down equipment in abnormal circumstances
- explain the effect of unauthorised or emergency shutdown in relation to safety and production requirements
- distinguish between possible causes of routine rotational moulding faults such as: incorrect quantity of materials; contaminated materials/additives; equipment faults; mould damage; temperature/time faults; rotation speed/motion problems; wrong raw materials/additives; incorrect quantity of materials/additives; machine failure.

Language, literacy and numeracy requirements

This unit requires the ability to read and interpret typical product specifications, job sheets, procedures, 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:

- 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.

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

- rotational moulding production standards are met consistently
- upstream and downstream communication is timely
- effective operating procedures and work instructions are read and interpreted correctly
- problems are identified and appropriate action is taken (ie the problem is fixed or reported)
- all safety procedures are followed.

Assessment method and context

Assessment will occur on industrial rotational moulding 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 tools
- material loading equipment used for loading of raw materials
- relevant personal protective equipment.

Hazards

Typical hazards include:

- spills
- noise, light, energy sources
- humidity, air temperature, radiant heat, hot moulds
- hazardous substances
- stationary and moving machinery, parts and components
- manual handling hazards.

Problems

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

- equipment malfunction
- variations in temperature, pressure, rotation
- variations in materials or contamination of materials
- mould damage

- routine rotational moulding faults
- machine malfunction
- mould/tooling problems
- variations in materials and/or contamination of materials.

Variables

Key variables to be monitored include

- procedures for removing, fitting and setting moulds
- materials used in the rotational moulding process
- process temperatures
- cleanliness
- characteristics of melt flow.
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Unit Sector(s)

Not applicable.