



Australian Government

Department of Education, Employment and Workplace Relations

PMBPROD319C Build up rollers

Revision Number: 1

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Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This unit applies to employees required to apply knowledge of materials, product purpose and processes to the operation of roller building equipment. It typically applies to the rubber sector.

This competency is typically performed by all advanced operators working either independently or as part of a work team.

Application of the Unit

Application of this unit

This competency applies to operators who build rubber (or similar) rollers. The key factors are the use of the right materials and the building of a roller of the right density and dimensions.

The operator will:

- plan the job
- identify hazards and take appropriate action
- build the roller in a consistent manner and to specification
- identify roller building faults and correct
- discard non-conforming products, ensuring re-use and recycling where possible
- solve routine and non-routine wire drawing equipment and 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

The required outcomes described in this unit contain applicable Employability Skills. The Employability Skills Summary of the qualification(s) in which this unit is packaged will assist in identifying Employability Skill requirements.

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 ELEMENT	PERFORMANCE CRITERIA 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. Plan own work requirements.	1.1 Identify procedures, equipment and processes used for production process and upstream and downstream operations from production plan or request. 1.2 Select appropriate compound, adhesives and solvent type to meet product specifications. 1.3 Identify other materials required. 1.4 Recognise hazards and take appropriate action. 1.5 Identify and check emergency stops, guards and controls. 1.6 Identify requirements for materials, quality, production and equipment checks. 1.7 Identify materials, waste management and housekeeping needs.
2. Check roller building process set-up and materials.	2.1 Check roller building settings, stop bars and pressure wheel adjustments for conformity to procedures. 2.2 Check materials for conformity with requirements. 2.3 Measure and cut rubber sheet. 2.4 Discard or re-sand non-conforming materials to procedures.
3. Build rubber rollers.	3.1 Number rollers to procedures. 3.2 Sand off excess rubber to ensure a good metal surface for adhesion. 3.3 Take measurements and compare with specifications. 3.4 Trim edges flush with rollers and minimise waste. 3.5 Use plates to restrict flow of rubber during curing. 3.6 Monitor roller building operations, noting adhesion, rubber build-up, overlap, product quality, production outputs, equipment operating temperatures. 3.7 Make adjustments to remedy faults and non-conformity to production standards. 3.8 Collect and re-use material which is able to be reprocessed and deal with waste and scrap to procedures. 3.9 Complete equipment cleanup, lubrication, adjustment and waste management to procedures.

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.
	3.10 Compare product quality including thickness and product integrity with process specifications for green rubber product.
4. Anticipate and solve problems.	4.1 Recognise a problem or a potential problem. 4.2 Determine problems needing priority action. 4.3 Refer problems outside area of responsibility to appropriate person, with possible causes. 4.4 Seek information and assistance as required to solve problems. 4.5 Solve problems within area of responsibility. 4.6 Follow through items initiated until final resolution has occurred.

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 material and equipment conditions which may lead to out of specification production.

Knowledge of organisation procedures and relevant regulatory requirements along with 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 the roller building process. Application of approved hazard control, safety procedures, the use of PPE in relation to handling materials, equipment operation and clean-up.

Knowledge as a basis for solving processing and material problems, including:

- identifying the function of roller building equipment, machine components and the materials used
- identifying faulty cores/mandrels
- describing changes to materials at the stages of production conducted by the employee
- explaining the impact of roller building machine temperature, pressure and adhesive flash off time on product quality and production output
- identifying and describe own role and the roles of others involved directly in the roller building process
- deciding if they (the operator) are able to rectify the fault or if assistance is required
- explaining the effect of unauthorised or emergency shutdown of equipment on the roller building process
- explaining the nature of the mechanical, hydraulic, pneumatic, electrical and electronic principles which influence the roller building equipment operation and product development
- explaining the impact that chemical reactions/mechanical processes have on changing the state, form and condition of the materials
- polymer properties and their interactions with process conditions
- relationships between polymer properties and process conditions
- changes to polymer properties to better suit process requirements.
- product problems related to polymer properties
- product problems related to process conditions
- adjustments to process conditions to meet polymer and product requirements.

Competence also includes the ability to:

- plan own work sequence, including identification of key checkpoints for equipment monitoring, product quality checks and monitoring of supplies and downstream operations
- monitor equipment operation and product quality
- identify factors which may influence product quality and production output and appropriate remedies
- make appropriate authorised alterations to own work plan and equipment to maintain both product quality and required production output
- locate, interpret and apply relevant information and maintain workplace records
- identify and safely handle products and materials, read relevant safety information and apply safety precautions appropriate to the task
- apply and/or explain impact of incorrect or faulty materials.

Language, literacy and numeracy requirements

This unit requires the ability to read and interpret typical product specifications, job sheets and material labels as provided to operators.

Writing is required to the level of completing workplace forms.

Basic numeracy is also required to interpret specifications and lay out geometric shapes.

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:

- identify critical materials properties and roller building process characteristics in relation to the process requirements and the end product
- plan own work process within workplace procedures and explain the reasons for the steps in the process
- take appropriate action to observe equipment, materials and products for out of specification results, make adjustments and identify problems to be reported

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

- production quality and output standards are met consistently
- problems are anticipated from process observations
- problems are efficiently resolved
- the process runs consistently and smoothly.

Assessment method and context

Assessment will occur on industrial roller building equipment in a work-like environment.

Competence in this unit may be assessed:

- by using appropriate, industrial roller building equipment
- 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 the production/building of rubber rollers in the rubber industry. It includes the operation of all relevant additional equipment where that equipment is integral to the roller building process.

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:

- hand carts and trolleys
- knives and other sheet cutting equipment
- hoists/lifting equipment not requiring any special permits or licences
- solvent application/wiping gear
- hand tools used in the roller building process
- relevant personal protective equipment.

Hazards

Typical hazards include:

- solvent
- vapours
- hazardous materials
- manual handling hazards
- knife hazards.

Problems

'Anticipate and solve problems' means resolve a wide range of routine and non-routine problems, using product and process knowledge to develop solutions to problems which do not have a known solution/a solution recorded in the procedures.

Typical process and product problems may include:

- variations in materials or wrong materials
- contamination of materials
- contamination of core/spindle
- porous, damaged or unsuitable core/spindle
- processing problems, including incorrect building.

Variables

Key variables to be monitored include:

- operating temperatures
- speed
- colour
- cushion specification
- cycle time
- output rate
- product integrity and general conformance to specification/sample.
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Unit Sector(s)

Not applicable.