



Australian Government

Department of Education, Employment and Workplace Relations

PMBPROD263B Operate retread curing equipment

Revision Number: 1

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Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This competency covers the operation of tyre curing equipment in retreading workplaces where pre-vulcanised tread is laid on the retread tyre.

Application of the Unit

Application of this unit

This competency applies to operators who are involved in curing retread tyres assembled from a prepared carcass and a pre-vulcanised tread. This competency is typically performed by operators working independently.

The operator:

- takes product off the machine
- checking product for quality and conformity to specifications
- checks raw material feed
- notices any problems and takes required action (eg reporting)
- deal with non-conforming products, waste and scrap
- complete logs and reports.

This unit does not include retread processes where the green extruded tread is laid onto the buffed casing. This unit also does not include:

- inspection - see *PROD324 Inspect tyres for retreading*
- preparation - see *PROD266 Prepare tyre casings for retreading*
- laying retreads - see *PROD325A Lay on tyre retreads*
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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	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. Check production plan.	1.1 Identify work requirements from production plan or request. 1.2 Check product, materials and equipment meet 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 Identify hazards associated with the job and take appropriate action. 1.6 Perform other pre-operational checks in accordance with procedures.
2. Prepare retreads for curing to procedures.	2.1 Check stretch height and roundness of tyres. 2.2 Insert equipment used to pressurise inside of tyre to specifications. 2.3 Place tyre within rubber envelope.
3. Start up retread curing equipment to procedures.	3.1 Conduct pre-start checks. 3.2 Start up retread curing equipment.
4. Operate equipment to procedures.	4.1 Check process is operating within required limits. 4.2 Check product is in specification and to required quality standard. 4.3 Ensure product is consistently ready for next operation. 4.4 Maintain supply of material(s) as required. 4.5 Complete logs and records as required. 4.6 Collect and segregate scrap, trim and other materials as required. 4.7 Keep equipment and work area clean. 4.8 Pause machine cycle and perform emergency stop, as required.
5. Respond to routine problems in accordance with procedures.	5.1 Recognise known faults that occur during the operation. 5.2 Identify and take action on causes of routine faults.

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.
	5.3 Log problems as required. 5.4 Identify non-routine process 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 an operational knowledge of the materials, equipment and process sufficient to recognise out of specification products, process problems and materials faults. For example high pressure is required to secure the retread and cushion gum to the casing to ensure adequate bonding. Therefore the correct amount of pressure applied by such equipment as envelopers and sealing rings needs to be monitored.

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 retread curing 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 retread curing equipment and main components sufficient for consistent production of quality products including:

- production workflow sequences and materials demand
- the reasons for checking process control panels and reporting readings which are outside of normal range of process variability
- accurately monitoring equipment operation and product quality
- the potential effects of variations in raw materials and equipment operation in relation to quality of product
- processing behaviour of polymers and the role of additives
- waste management and knowing the importance of reusing non-conforming products wherever possible
- correct selection and use of equipment, materials, processes and procedures
- explain the effect of unauthorised or emergency shutdown in relation to safety and production requirements
- identify factors which may affect product quality or production output and appropriate remedies.

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 retreading process.

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, e.g. 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 retread curing equipment
- apply approved procedures.

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

- retread curing production standards are met consistently
- all safety procedures are followed.

Assessment method and context

Assessment will occur on an industrial retread curing machine(s) equipment and will be undertaken in a work-like environment.

Competence in this unit may be assessed:

- by using appropriate, industrial retread curing equipment requiring demonstration of operation and emergency stop procedures
- 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 unit includes curing operations in retreading operations. Curing is mainly of bonding agents.

This competency applies to most work environments within the tyre retreading sector, but does not include retread processes where the green extruded tread is laid onto the buffed casing. It includes the operation of all relevant additional equipment where that equipment is integral to the retreading 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:

- autoclave (such as electric and steam curing chambers)
- envelopers
- sealing rings
- prepared casings
- relevant personal protective equipment.

Hazards

Typical hazards include:

- manual handling
- noise
- humidity
- temperatures (such as from air and steam)
- fumes/vapours
- hazards from high pressures
- stationary and moving machinery, parts and components

Problems

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

- equipment malfunction
- high humidity in curing oven
- air not being extracted properly from the envelope
- air blinding of steam equipment
- material contamination
- contaminated treads
- poorly prepared/contaminated casing
- poor quality bonding material
- curing time/cycle

- incorrect temperature settings
- incorrect air pressure settings.

Typical product problems may include:

- poor product finish
- poor binding of retread to buffed casing
- excessive trim/spue
- out of round/eccentric.
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Unit Sector(s)

Not applicable.