



Australian Government

Department of Education, Employment and Workplace Relations

PMBPROD327B Produce finished tyres

Revision Number: 1

PMBPROD327B Produce finished tyres

Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This competency covers tyre finishing operations and the solving of routine and non-routine problems.

Application of the Unit

Application of this unit

This competency applies to advanced operators who are required to apply knowledge of materials, product purpose and processes to produce finished tyres that meet quality standards and requirements, It also requires using a range of well developed skills requiring some discretion and judgement to recognise and resolve problems. .

The operator will:

- check settings and adjustments of equipment
- check tyres for conformity to job requirements
- monitor equipment operation
- make appropriate adjustments to correct materials, equipment or process variations
- deal with non-conforming products, waste and scrap
- solve equipment and process problems, seeking guidance where necessary or appropriate
- 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 the appropriate equipment and processes to be used from production plan or request. 1.2 Identify quality requirements for tyre type. 1.3 Implement measures to control identified hazards in line with procedures and duty of care.
2. Start up finishing process to procedures.	2.1 Check equipment settings and adjustments are as required. 2.2 Set up date, batch and materials markings to specifications, as required. 2.3 Complete other pre-start checks in accordance with procedures.
3. Finish tyres to specification.	3.1 Operate process equipment, noting key variables. 3.2 Monitor controls/displays/terminals for production/process data. 3.3 Monitor product quality in accordance with procedures. 3.4 Make adjustments to remedy faults and non-conformity to standard as required. 3.5 Collect and reprocess/discard scrap/trim and other materials as well as disposing of reject tyres in accordance with procedures. 3.6 Clean, adjust and lubricate equipment as required. 3.7 Shut down equipment to procedures, in normal or emergency situations.
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 fault 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 and ability to implement organization procedures, quality requirements at each production stage 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 tyre finishing operations. Application of approved hazard control and safety procedures and the use of PPE in relation to handling materials, equipment operation and cleanup, (eg maximum number of tyres to be stacked per stillage).

Skills to identify the range of possible causes of product faults.

Knowledge as basis for solving finishing problems, including:

- different tyre types, their construction and material content
- quality requirements for the different types of tyres
- function and operating principles of equipment, machine components and ancillary equipment
- correct selection and use of equipment, materials, processes and procedures
- characteristics of materials and behaviour in relation to heat, pressure, flow rate and time
- impact of key process variables on product quality and production output
- waste management and importance of re-using non-conforming materials and products wherever possible

Competence also includes the ability to:

- plan own work, including predicting consequences and identifying improvements
- maintain output and product quality using appropriate instruments, controls, test information and readings
- identify and describe own role and role of others involved directly in the process
- identify when assistance is required to solve problems.

Language, literacy and numeracy requirements

This unit requires the ability to read and interpret typical product specifications, job sheets, material labels and machine control panels such as those displaying SPC information.

Writing is required to the level of completing workplace forms and production reports.

For operation of force variation machine, basic statistical knowledge is required to understand concepts of variance and process control as well as to recognise and interpret process control charts.

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 tyre properties and quality requirements in relation to the process requirements and the end product
- make adjustments to the process as required
- identify and take appropriate action on problems and potential problems.

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

- production quality and output standards are met consistently
- all safety procedures are always followed.

Assessment method and context

Assessment will occur on appropriate tyre finishing equipment and will be undertaken in a work-like environment.

Competence in this unit may be assessed:

- by observing tyre finishing operations undertaken in the work place
- 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 operation of tyre finishing processes within the tyre sector. It includes the operation of all relevant additional equipment where that equipment is integral to the 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:

- process electrical/mechanical machine and its major components, eg radial runout machine, x-ray console (manual/auto), vulcaniser, spreader, force variation machine, camera throw out unit, radial run out and lateral run out peak unit, grinders, high point tape, harmonic balance
- process equipment and its major components, eg digital measuring equipment, visual display unit, printer, labelling equipment, inflation panel, inspection station, trimming tools, power tools for tyre repair, repair table, foot pedal, marking chalk and table
- hand tools used in the process, eg hand held trimmers
- material loading machine/equipment used for loading/unloading of tyres may include mechanical crane, chucks, push trolleys, stillages, conveyors, etc
- relevant personal protective equipment, eg radiation discs for x-ray inspection
- relevant protective clothing which may include gloves, safety glasses and appropriate footwear.

Hazards

Typical hazards include:

- dusts/vapours
- slip and fall
- temperature
- hazardous materials
- manual handling hazards, eg loading and unloading tyres from machines/equipment
- machine/equipment operations, eg hand held trimmers, x-ray machines, inflating panels.

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/s recorded in the procedures.

Typical process and product problems may include:

- routine and non-routine product faults, eg excess flash
- machine malfunction
- mould/tooling/die problems

- variations in materials and/or contamination of materials processing problems, eg flow-through of tyres.

Appropriate action for problems outside of area of responsibility may be reporting to an appropriate person.

Appropriate action for problems within area of responsibility includes asking questions and seeking assistance from appropriate persons/sources.

Variables

Key variables to be monitored include:

- temperatures
- speed
- pressures
- colour
- tyre components
- repair standards
- limits for repair
- tyre construction/integrity and general conformance to specification/sample, eg bumps/dips on tyres.
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Unit Sector(s)

Not applicable.