



Australian Government

PMBPROD337A Prepare heavy off-the-road tyres for repair

Release 1

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Modification History

Release 1 - New unit of competency

Unit Descriptor

This unit of competency covers the skills and knowledge needed to prepare tyres defined by AS 4457.2-2008 Earth-moving machinery - Off-the-road wheels, rims and tyres - Maintenance and repair – Tyres (or its authorised replacement) or similar tyres for repair.

Application of the Unit

This competency is typically performed by operators applying knowledge of materials, knowledge and basic understanding of the tyre design, product purpose and processes to the preparation of tyres for repair. They will also validate the decision to repair the tyre once the injury has been exposed. It also requires the use of some discretion and judgment to recognise and resolve a range of problems.

This unit should be interpreted in line with AS 4457.2-2008 Earth-moving machinery - Off-the-road wheels, rims and tyres - Maintenance and repair – Tyres.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

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| 1 | Prepare for job | 1.1 | Move tyre into position |
| | | 1.2 | Secure tyre ready for preparation |
| | | 1.3 | Select and prepare required tools |
| | | 1.4 | Check and wear required personal protective equipment (PPE) |
| 2 | Expose injury | 2.1 | Identify the number of injuries, their positions and the correct order of preparation |
| | | 2.2 | Remove loose tyre materials |
| | | 2.3 | Remove all foreign material in area of the injury |
| | | 2.4 | Skive injury to required size and shape |
| | | 2.5 | Inspect exposed injury and validate repair decision |
| 3 | Prepare injury | 3.1 | Buff exposed rubber to required standard |
| | | 3.2 | Inspect any exposed steel and/or fabric cords |
| | | 3.3 | Determine any remedial action required |
| | | 3.4 | Prepare steel and/or fabric cords as required |
| | | 3.5 | Review for hidden injuries |
| | | 3.6 | Measure and record dimensions of injury as required |
| | | 3.7 | Make any required decisions about the repair |
| | | 3.8 | Strip liner and prepare inner surface, as required, using appropriate hazard controls |
| 4 | Complete repair preparation | 4.1 | Shape, as required, and final-buff to standard |
| | | 4.2 | Clean injury area ready for further process steps |
| | | 4.3 | Complete any required paperwork |

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- using skiving, rotary cutting and buffing tools
- taking measurements
- using required inspection equipment
- communicating effectively
- working safely in accordance with operational requirements and safe systems of work
- reading and interpreting typical product specifications, job sheets and material labels as provided to operators
- writing to the level of completing workplace forms and production reports

Required knowledge

Required knowledge includes:

- organisational procedures
- heavy off-the-road (HOTR) tyre construction
- methods of identifying injury position, lug/position identification
- tyre injury repair preparation methods
- hazards and hazard controls associated with HOTR tyre repair preparation
- reporting procedures

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria required skills and knowledge range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Critical aspects for assessment and evidence are:

- tyre injury is identified and appropriate action for preparation/inspection determined
- consistent application of preparation, inspection and testing standards
- safety procedures are always followed.

Context of and specific resources for assessment

Assessment will occur on an HOTR tyre repair facility. 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.

Method of assessment

Competence in this unit may be assessed:

- by observation over a range of tyre preparation/inspection procedures undertaken in the workplace
- 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 appropriate practical/simulation assessment will be combined with targeted questioning to assess the required knowledge, and theoretical assessment will be combined with appropriate practical/simulation or similar assessment.

Guidance information for assessment

Assessment processes and techniques must be appropriate to the language, competency and safety requirements of the site and consistent with workplace systems or procedures.

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.

Tyre securing methods

Tyre securing methods may include, but are not limited to:

- mounts and stands
- chocks
- wall or floor mounted frames, manually, electrically or hydraulically operated

Required tools

Required tools may include, but are not limited to:

- rotary gouging and cutting equipment
- knives and other blade cutting tools
- surface preparation tools, such as contour and doughnut wheels
- rotor saw
- pin wheel
- rotary and hand wire brushes
- buffing and wire wheels
- rotary stones
- rotary rasps and other finishing tools

Foreign material

Foreign material that may contaminate the injury area or cause a health risk must be removed (e.g. spray paint used to mark tyres). This will include removing any rocks or other foreign material

Injuries to tyres

Injuries to tyres may include, but are not limited to:

- cuts, abrasion, splits, cracks and crazing
- separations within the structure
- deformities both surface and internal
- penetrations into and through the casing/carcass

Location of repairs

Repairs may be undertaken to the:

- tread or crown, including steel components
- shoulder
- sidewall
- bead area
- liner
- body cords

Injuries

Injuries may include, but are not limited to:

- injuries which do not need repair and should be

- returned to the customer to be used as is
- injuries which should be repaired
 - injuries which are beyond repair and so the tyre should be scrapped

Hidden injuries

Hidden injuries may include, but are not limited to:

- cuts
- oxidation
- separations

Standards

Standards may include, but are not limited to:

- AS 4457.2-2008 Earth-moving machinery - Off-the-road wheels, rims and tyres - Maintenance and repair – Tyres
- Rubber Manufacturer's Association of America (RMA)
- Supplier standards, such as technical data sheets and manuals
- internal organisational standards

Procedures

Procedures may be written, verbal, computer-based or in some other form. They may include, but are not limited to:

- all work instructions
- standard operating procedures
- formulas/recipes
- batch sheets
- temporary instructions
- any similar instructions provided for the smooth running of the plant
- good operating practice as may be defined by industry codes of practice

Procedures would be expected to comply with any relevant government regulations.

Paperwork

Paperwork may be paper or electronic-based

Appropriate action

Appropriate action includes, but is not limited to:

- determining problems needing action
- accessing and applying relevant technical and plant data
- applying appropriate problem solving techniques to determine possible fault causes
- rectifying problem using appropriate solution within area of responsibility

- following through items initiated until final resolution has occurred
- reporting problems outside area of responsibility/ability to designated person

Health, safety and environment (HSE)

All operations to which this unit applies are subject to stringent HSE requirements, which may be imposed through state or federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between Performance Criteria and HSE requirements, the HSE requirements take precedence.

Unit Sector(s)

Not applicable.

Custom Content Section

Not applicable.