



**Australian Government**

# **UETTD RRT24 Maintain rail traction bonds**

**Release: 1**

# UETTDRT24 Maintain rail traction bonds

## Modification History

Release 1. This is the first release of this unit of competency in the UET Transmission, Distribution and Rail Sector Training Package.

## Application

This unit involves the skills and knowledge required to maintain rail traction bonds in the electricity supply industry (ESI).

It includes maintaining and repairing temporary and permanent traction bonds, bonding cables and using safe working practices on or about the running line/track. It also includes isolating systems and circuits in accordance with work plans, identifying and implementing traffic management plans, issuing/accepting electrical permits, inspecting and checking equipment and associated hardware are in a safe condition to test and/or return to service, recommissioning tests to ensure integrity of bonding system prior to return to service and updating of system data/maintenance records.

The application of the skills and knowledge described in this unit may require a licence/registration to practice in the workplace.

Other conditions may apply under state and territory legislative and regulatory licensing requirements which must be confirmed prior to commencing this unit.

## Pre-requisite Unit

Common Unit Group

UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace

UEENEEE102A Fabricate, assemble and dismantle utilities industry components

UEENEEE104A Solve problems in d.c. circuits

UEENEEE105A Fix and secure electrotechnology equipment

UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

UEENEEG101A Solve problems in electromagnetic devices and related circuits

UEENEEG102A Solve problems in low voltage a.c. circuits

UETTDREL11 Apply sustainable energy and environmental procedures

UETTDREL12 Operate plant and equipment near live electrical conductors and apparatus

UETTDREL16 Working safely near live electrical apparatus

UETTDNIS52 Install and maintain poles, structures and associated hardware

UETTDRT24 Install and maintain poles, structures and overhead conductors and cables

UETTDRT21 Install traction overhead wiring systems

UETTDRT22 Maintain traction overhead wiring systems

UETTDRT23 Install rail traction bonds

UETTDRT27 Install overhead traction components and equipment

UETTDRT28 Maintain overhead traction components and equipment

## Competency Field

Rail Traction

## Unit Sector

Not applicable.

## Elements and Performance Criteria

### ELEMENTS

Elements describe the essential outcomes.

#### **1 Prepare for maintenance of traction bonds**

### PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1.1** Work schedules, construction plans, drawings, workplace procedures and material lists are received and confirmed
- 1.2** Job requirements and workplace procedures are identified and communicated with relevant personnel
- 1.3** Work health and safety (WHS)/occupational health and safety (OHS), environmental and workplace procedures for the maintenance of traction bonds are obtained and confirmed for the purposes of the work to be performed
- 1.4** Work is prioritised and sequenced for completion within acceptable timeframes following consultation with relevant personnel and in accordance with workplace procedures
- 1.5** Hazards are identified, WHS/OHS risks assessed and control measures identified in accordance with workplace procedures
- 1.6** Relevant work permits are obtained, understood and

signed in accordance with workplace procedures

- 1.7** Plant, equipment, tools and personal protective equipment (PPE) required for work are identified, obtained and confirmed in working order
- 1.8** Worksite is prepared to minimise risk, damage to property, commerce and individuals in accordance with track protection officer and/or network control officer and workplace procedures
- 1.9** Personnel participating in work are fully briefed and responsibilities confirmed in accordance with workplace procedures
- 1.10** Traffic management plan is identified and implemented in accordance with workplace procedures
- 1.11** Environmental constraints applicable to work are identified and control measures applied

## **2 Perform maintenance of traction bonds**

- 2.1** WHS/OHS, sustainable energy and environmental principles and practices are monitored and followed to reduce incidents in accordance with workplace procedures
- 2.2** Requirements for lifting and/or climbing and/or working at heights and the use of power tools/equipment are followed in accordance with workplace procedures
- 2.3** Systems and circuits are checked, isolated and proved safe to work on in accordance with workplace procedures
- 2.4** Maintenance and repair of traction bonds and bonding cables are completed in agreed timeframes, to quality standards and with a minimum of waste in accordance with workplace procedures
- 2.5** Cable and surrounds, including rail and other surfaces, are prepared for jointing and terminating in accordance with workplace procedures
- 2.6** Maintenance testing is performed in accordance with the work schedule, job requirements and workplace procedures
- 2.7** Unplanned events are responded to in accordance with workplace procedures

- |                                                 |            |                                                                                                                                                                            |
|-------------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                 | <b>2.8</b> | Quality checks of work are undertaken in accordance with workplace procedures                                                                                              |
| <b>3 Complete maintenance of traction bonds</b> | <b>3.1</b> | Completed work is checked against work schedule, construction plans and drawings for compliance and anomalies are reported in accordance with workplace procedures         |
|                                                 | <b>3.2</b> | Worksite is rehabilitated, cleaned up and made safe in accordance with workplace procedures                                                                                |
|                                                 | <b>3.3</b> | Tools, equipment and surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with workplace procedures              |
|                                                 | <b>3.4</b> | Relevant work permits are signed off and the system that has undergone the maintenance of a traction bond/s is returned to service in accordance with workplace procedures |
|                                                 | <b>3.5</b> | Work records, reports and/or documentation are completed in accordance with workplace procedures                                                                           |

## Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

## Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the Companion Volume Implementation Guide.

## Unit Mapping Information

This unit replaces and is equivalent to UETTDRT24A Maintain rail traction bonds.

## Links

UET Training Package Companion Volume Implementation Guide is found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=229bace1-b7bc-4653-9300-dffb13ecfad7>

# Assessment Requirements for UETTDRT24 Maintain rail traction bonds

## Modification History

Release 1. This is the first release of this unit of competency in the UET Transmission, Distribution and Rail Sector Training Package.

## Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least two separate occasions and include:

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including the use of risk control measures
- applying sustainable energy principles and practices
- diagnosing and correcting simple faults in traction bonds that includes at least two (2) of the following types of connecting bond cables and components:
  - covered or bare aluminium bonds
  - copper bonds
  - steel bonds
  - steel rail
- maintaining and repairing traction bonds that includes at least three (3) of the following types of connecting bond cables and components:
  - bonding specific tools
  - crimping devices
  - thermal moulds
  - rail drill
  - bonding fittings
  - explosive power tools
  - portable hand tools
- dealing with unplanned events on at least one (1) occasion.

## Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- traction bond and cables, including:
  - temporary and permanent bonding methods
  - applications for temporary and permanent bonding

- components of temporary and permanent bonds
- interface between traction and signalling circuits
- safe working procedures/practices when carrying out temporary and permanent bonding, including:
  - personnel protective equipment (PPE)
  - electrical and visual testing using PPE
- installation and removal of temporary traction bonds and cables, including:
  - types and purpose of tools and equipment
  - installation and removal methods
  - testing for electrical integrity of bonds and cables
- maintenance of traction bond, including:
  - types and components
  - types and function of tools and equipment
  - maintenance/repair procedures
  - inspection and recording procedures
- diagnosis and correction of simple faults in specific traction bonds, including:
  - types and causes
  - determination of appropriate corrective actions
  - repair and replace procedures
- installation and removal of permanent traction bonds and cables, including:
  - types and purposes of tools and equipment
  - installation and removal methods
  - testing for electrical integrity of bond, cables and equipment
- maintenance and repair of permanent traction bonds, cables and equipment.

## Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated conditions involving realistic and authentic activities that replicate operational workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, facilities, equipment and PPE currently used in

industry for maintaining rail traction bonds

- applicable documentation, including workplace procedures, relevant industry standards, equipment specifications, regulations, codes of practice and operation manuals.

## **Links**

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