



Australian Government

UETDRRT003 Install rail traction bonds

Release: 1

UETDRRT003 Install 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 Release 2.0.

Application

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

It includes the preparation and installation of temporary and permanent traction bonds, bonding cables, bonding equipment and hardware whilst undertaking safe working practices on or about the running line/track, identifying and confirming road/rail management plans and electrical permits.

It also includes checks to confirm bonds, bonding cables, bonding equipment and hardware have been correctly installed in accordance with design, ensuring traction bonding is fit for service, and installation data and relevant quality assurance documentation is completed.

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

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

Pre-requisite Unit

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

UEECD0019 Fabricate, assemble and dismantle utilities industry components

UEECD0044 Solve problems in multiple path circuits

UEECD0046 Solve problems in single path circuits

UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications

UEEEL0020 Solve problems in low voltage a.c. circuits

UEEEL0021 Solve problems in magnetic and electromagnetic devices

UETDREL001 Apply environmental requirements

UETDREL004 Operate plant and equipment in the vicinity of live electrical apparatus

UETDREL005 Work safely in the vicinity of live electrical apparatus

UETDRIS007 Install and maintain distribution overhead conductors and cables

UETDRIS012 Install and maintain poles, structures and hardware

UETDRRT002 Install overhead traction components and equipment

UETDRRT004 Install traction overhead wiring systems

Competency Field

Rail Traction

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to install traction bonds

PERFORMANCE CRITERIA

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

- 1.1** Legislation, regulations, standards, codes of practice and organisational workplace requirements for the work to be performed are referred to and confirmed
- 1.2** Required design standards and construction plans are obtained
- 1.3** Plant, tools, equipment, conductors and personal protective equipment (PPE) required for work are determined, obtained and confirmed in working order
- 1.4** Hazards are identified, risks assessed and control measures identified and applied
- 1.5** Work is prioritised and sequenced for completion in accordance with workplace requirements
- 1.6** Work permits are organised in accordance with workplace requirements
- 1.7** Worksite, road or rail management plan is prepared in accordance with workplace requirements
- 1.8** Environmental constraints applicable to the work are identified and control measures applied

2 Perform installation of traction bonds

- 2.1** Legislation, regulations, standards, codes of practice and organisational workplace requirements for the work to

be performed are applied and monitored

- 2.2 Lifting, working at heights and the use of plant, tools, equipment and PPE are carried out in accordance with workplace requirements
- 2.3 Hazard control measures are monitored in accordance with workplace requirements
- 2.4 Work permits are instructed and issued and where appropriate signed in accordance with workplace requirements
- 2.5 Worksite, road or rail management plan is established in accordance with workplace requirements
- 2.6 Cable and surrounds, including rail and other surfaces, are prepared for jointing and terminating in accordance with workplace requirements
- 2.7 Traction bonds and bonding cables are installed and tested in agreed timeframes, to design standards and with minimum waste in accordance with workplace requirements
- 2.8 Incidents or unplanned events are responded to in accordance with workplace requirements
- 2.9 Quality checks of work are undertaken in accordance with workplace requirements to ensure fit for service

3 Complete work and documentation

- 3.1 Completed work is checked against design standards, construction plans and drawings for compliance and anomalies reported in accordance with workplace requirements
- 3.2 Incidents or unplanned events are reported in accordance with workplace requirements
- 3.3 Worksite is rehabilitated, cleaned and made safe in accordance with workplace requirements
- 3.4 Plant, tools and equipment are cleaned, checked, and returned to storage in accordance with workplace requirements
- 3.5 Surplus materials are returned to storage or disposed of in accordance with workplace requirements
- 3.6 Work permits are completed, and overhead traction

bonding is fit for service in accordance with workplace requirements

- 3.7** Work records, reports and documentation are completed in accordance with workplace requirements

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 UET Transmission, Distribution and Rail Sector Training Package Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to UETTDRT23 Install rail traction bonds.

Links

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

Assessment Requirements for UETDRRT003 Install rail traction bonds

Modification History

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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 legislation, regulations, standards, codes of practice and organisational workplace requirements, including:
 - work health and safety (WHS)/occupational health and safety (OHS)
- identifying hazards, assessing risks, identifying, applying and monitoring control measures
- obtaining, inspecting and using relevant personal protective equipment (PPE)
- installing 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
- using at least three (3) of the following types of equipment, tools and testers required for installing rail traction bonds:
 - bonding specific tools
 - crimping devices
 - thermal moulds
 - rail drill
 - bonding fittings
 - explosive power tools
 - meter or tester
- dealing with an unplanned event on at least one (1) occasion
- completing relevant work records, reports and documentation.

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:

- relevant legislation, regulations standards, codes of practice and organisational workplace

requirements, including:

- WHS/OHS
- hazard, risk assessment and risk control requirements, including potential hazards
- types and application of PPE
- safe use of plant, tools and equipment
- application, purpose and types of permits
- traction bond and cables, including:
 - permanent bonding preparation and installation methods
 - applications for permanent bonding
 - components of permanent bonds
 - interface between traction and signalling circuits
- safe working procedures/practices when carrying out permanent bonding, including:
 - PPE
 - electrical and visual testing of the PPE
- installation 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
- installation 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
- events constituting an unplanned event or incident
- procedures for responding to an unplanned event or incident.

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:

- relevant and appropriate materials, tools, facilities, equipment and PPE currently used in industry for installing rail traction bonds

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

Links

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