



**Australian Government**

# **UETTDRCJ28 Joint and maintain energised low voltage underground polymeric cables**

**Release: 1**

# **UETTDRCJ28 Joint and maintain energised low voltage underground polymeric cables**

## **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 joint and maintain energised low voltage (LV) underground polymeric cables in the electricity supply industry (ESI).

It includes jointing and terminating energised cables using a range of specialised live working equipment, tools and devices, issuing and/or accepting electrical access permits and/or relevant working documentation, and undertaking authorised cable testing procedures.

It also includes the pre-commissioning and/or re-commissioning tests and updating 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 work 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

UETTDRCJ21 Lay ESI electrical cables

UETTDRCJ26 Install and maintain de-energised low voltage underground polymeric cables

UETTDRCJ27 Install and maintain de-energised high voltage underground polymeric cables

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

UETTDRI41 Install network infrastructure electrical equipment

UETTDRI42 Maintain network infrastructure electrical equipment

UETTDRI55 Install and maintain low voltage underground services

## Competency Field

Cable Jointing

## Unit Sector

Not applicable.

## Elements and Performance Criteria

### ELEMENTS

Elements describe the essential outcomes.

#### **1 Prepare to joint and maintain energised LV underground polymeric cables**

### PERFORMANCE CRITERIA

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

- 1.1** Work schedules, 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 jointing and maintenance of energised LV underground polymeric cables 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** WHS/OHS and environmental hazards are identified, risks are assessed and control measures identified in accordance with workplace procedures
- 1.6** Relevant work permits are confirmed 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 Specialist equipment for live working is inspected and confirmed in working order as per requirements and established procedures
    - 1.9 Worksite is prepared to minimise risk, damage to property, commerce and individuals in accordance with workplace procedures
    - 1.10 Traffic management plan is confirmed as being applied in accordance with workplace procedures
- 2 **Carry out jointing and maintenance of energised LV underground polymeric cables**
  - 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 Jointing and maintenance of energised LV underground polymeric cables is completed safely, in agreed timeframes, to quality standards and with a minimum of waste in accordance with workplace procedures
  - 2.4 Cables are prepared for jointing, terminating or maintaining in accordance with construction drawings, manufacturer instructions and workplace procedures
  - 2.5 Authorised cable testing procedures and fault identification and location processes are implemented in accordance with requirements and workplace procedures
  - 2.6 Maintenance, including repair and/or replacement of energised LV underground polymeric cables is carried out in accordance with work schedule, requirements and workplace procedures
  - 2.7 Cables are jointed, terminated or maintained in accordance with construction drawings, manufacturer instructions and workplace procedures
  - 2.8 Unplanned events are responded to in accordance with workplace procedures

|                                                                                         |            |                                                                                                                                                                |
|-----------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                         | <b>2.9</b> | Quality checks of work are undertaken in accordance with workplace procedures                                                                                  |
| <b>3 Complete jointing and maintenance of energised LV underground polymeric cables</b> | <b>3.1</b> | Completed work is checked against work plan, construction plans and drawings for compliance and anomalies are reported in accordance with workplace procedures |
|                                                                                         | <b>3.2</b> | WHS/OHS and environmental incidents are reported in accordance with workplace procedures, as required                                                          |
|                                                                                         | <b>3.3</b> | Worksite is rehabilitated, cleaned up and made safe in accordance with workplace procedures                                                                    |
|                                                                                         | <b>3.4</b> | Tools, equipment and surplus resources are, where appropriate cleaned, checked and returned to storage in accordance with workplace procedures                 |
|                                                                                         | <b>3.5</b> | Relevant work permits are signed off and LV underground polymeric cables are returned to service in accordance with workplace procedures                       |
|                                                                                         | <b>3.6</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 UETTDRCJ28A Joint and maintain energised low voltage underground polymeric cables.

## 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 UETTDRCJ28 Joint and maintain energised low voltage underground polymeric cables

## 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
- jointing and maintaining all of the following:
  - low voltage (LV) polymeric cables
- performing at least two (2) of the following cable joints:
  - tee-off joints
  - straight through joints
  - parallel branch joints
  - parallel joints
- installing at least one (1) of the following:
  - transformers
  - LV switchboards
  - pillars/turrets
  - lighting columns
  - ring main units
  - chamber substations
- installing at least one (1) of the following:
  - busbar/termination boxes
  - links/fuses
  - termination boxes
  - control gear
- using at least one (1) of the following:
  - resin filled boxes
  - polymeric tape
  - heat shrink
  - ‘slip-on’ moulds

- pre-stretched polymeric
- using at least two (2) of the following cable conductor connection methods:
  - compression joints/lugs
  - insulation piercing connectors
  - mechanical connectors
- using all of the following:
  - voltage detecting instruments
  - insulation resistance testers
  - cable identification equipment
  - phase rotation instruments
  - specialised live working equipment/tools
- using all of the following:
  - temporary earth bonding/bridging
  - insulating covers/matting
  - insulating tooling/gloves
- 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:

- standards, codes, Commonwealth, state/territory/local government legislation, supply authority regulations and/or enterprise requirements
- safety precautions specific to working on or near energised LV conductors encompassing:
  - safe working practices and procedures
  - identification of hazards, assessment and control of WHS/OHS risks
  - types, selection, maintenance and use of personal protective equipment (PPE)
- work on or near energised LV polymeric cables encompassing:
  - types and function of specialised tools
  - safe working practices when using specialised tools
  - methods of using specialised tools
  - safe procedures for work on panels and in cubicles on or near energised LV polymeric cables.

## 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 jointing and maintaining energised LV underground polymeric cables
- applicable documentation, including workplace procedures, relevant industry standards, equipment specifications, regulations, codes of practice and operation manuals.

## 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>