



Australian Government

UEECD0025 Lay wiring/cabling and terminate accessories for extra-low voltage (ELV) circuits

Release: 1

UEECD0025 Lay wiring/cabling and terminate accessories for extra-low voltage (ELV) circuits

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Application

This unit involves the skills and knowledge required to lay wiring/cabling and terminate accessories for extra-low voltage (ELV) circuits.

It includes preparing to lay, laying wiring/cabling and connecting accessories for ELV circuits. It also includes completing and reporting work activities.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

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

UEECD0020 Fix and secure electrotechnology equipment

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

Competency Field

Cross Discipline

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to lay wiring/cabling and connect accessories for

PERFORMANCE CRITERIA

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

1.1 Work health and safety (WHS)/occupational health and safety (OHS) requirements and workplace procedures are identified and applied

ELV circuits

- 1.2** Hazards are identified, risks are assessed and control measures are implemented
 - 1.3** Safety hazards not previously identified are reported on job safety assessment and advice on risk control measures is sought from the work supervisor
 - 1.4** Location of work is obtained from relevant person/s to determine scope of work
 - 1.5** Advice is sought from relevant person/s to ensure work is coordinated with others
 - 1.6** Sources of materials required for work are determined in accordance with workplace procedures
 - 1.7** Tools, equipment and testing devices required for work are obtained in accordance with workplace procedures and checked for correct operation and safety
- 2 Lay wiring/cabling and connect accessories for ELV circuits**
 - 2.1** WHS/OHS workplace risk control measures for carrying out the work are followed
 - 2.2** Circuits/machines/plant are checked as isolated in accordance with workplace procedures
 - 2.3** Wiring and accessories are installed to comply with industry standards and job specifications with sufficient excess to affect terminations
 - 2.4** Accessories are installed straight and square in the required locations and within acceptable tolerances
 - 2.5** Cables and conductors are terminated at accessories in accordance with manufacturer specifications and relevant industry standards
 - 2.6** Cables installed for future service are marked and terminated in compliance with relevant industry standards and workplace procedures
 - 2.7** Unplanned events are responded to in accordance with workplace procedures and approval of immediate supervisor
 - 2.8** Cable installation and termination is carried out without wasting materials, damaging apparatus, circuits or the

surrounding environment using sustainable energy practices

3 Complete and report work activity

- 3.1** WHS/OHS completion risk control measures and workplace procedures are followed
- 3.2** Worksite is cleaned and made safe in accordance with workplace procedures
- 3.3** Work completion is documented and relevant person/s notified 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 UEE Electrotechnology Training Package Companion Volume Implementation Guide.

Laying wiring/cabling and connecting accessories for ELV power and control cabling systems circuits must include:

- at least one of the following wiring/cabling systems:
 - unenclosed thermoplastic sheathed (TPS) cable
 - enclosed thermoplastic insulated (TPI) or sheathed cables
- at least three of the following wiring/cabling systems:
 - single cable
 - flexible cable
 - flexible cord
 - shielded cable
 - ribbon cable
 - other similar and like cable

Unit Mapping Information

This unit replaces and is equivalent to UEENEEE108A Lay wiring/cabling and terminate accessories for extra-low voltage (ELV) circuits.

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

Assessment Requirements for UEECD0025 Lay wiring/cabling and terminate accessories for extra-low voltage (ELV) circuits

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, performance criteria and range of conditions on at least two separate occasions and include:

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including implementing risk control measures
- applying sustainable energy principles and practices
- cleaning worksite
- completing and reporting work activities
- dealing with unplanned events/situations in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- determining nature of work activities
- installing cables and accessories to specifications
- laying wiring/cabling and connecting accessories for extra-low voltage (ELV) circuits
- marking cables for future service using workplace procedures
- notifying and documenting completion of work using workplace procedures
- obtaining location of work
- preparing to lay wiring/cabling and connecting accessories for ELV circuits
- reporting safety hazards not previously identified on job safety assessment
- seeking advice from relevant person/s
- selecting appropriate tools, equipment, testing devices, cables and accessories
- sourcing materials required for work activities
- terminating cables, conductors and accessories to manufacturer specifications and requirements.

Knowledge Evidence

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

- cable protection and support method and accessories, including:
 - requirements to protect and support cables adequately - protection against mechanical damage, protection from adverse temperatures and corrosion and protection from

magnetic field that may affect the performance of the cable

- cable support and protection devices, accessories and typical applications - metallic and non-metallic conduits, duct and trunking, cable ladder and tray, cable clips and ties and related accessories
- installation techniques - cable installation equipment and cable drawing and hauling techniques
- basic cable and conductor terminations, including:
 - insulation removal and replacement
 - conductor handling and cable terminations including general aspects and soldering involving pins on electronic components and stranded conductors carrying current up to 25 amperes (A)
 - application of connecting devices for conductors and terminals
 - continuity through connections and insulation resistance testing
 - stress release on cables/conductors
- environmental and heritage regulation effecting electrotechnology work, including:
 - purpose of environmental and heritage regulation
 - typical issues affecting electrotechnology services and systems
 - meeting requirements
- environmental regulations effecting electrotechnology work
- ELV wiring
- techniques for installing cables in buildings, structures and premises, including:
 - building construction method and construction sequence
 - typical cable routes through buildings, structures and premises
 - building codes affecting the installation of cables in buildings, structures and premises - limitation on penetration structural elements and maintenance of fire protection interiority
 - cable segregation requirements
- technical industry standards, regulations and codes of practice related to ELV work, including:
 - limitation imposed by regulations
 - how to read and apply a standard
- aspects of technical standards that apply to extra-low voltage work types of cables used in the electrotechnology industry and their application, including:
 - structural components of cables and their purpose - conductors and conductor material, insulation, sheathings and servings
 - application of various cables types
 - cable variates - single cables, flexible cables, flexible cords, shielded cables, armoured cables, ribbon cables, other similar and like cables
 - typical characteristics and use of power circuit cables and control circuit cables
- relevant job safety assessments, including risk control measures
- relevant manufacturer specifications
- relevant tools, equipment and testing devices
- relevant WHS/OHS legislated requirements

- relevant workplace documentation
- relevant workplace policies and procedures
- sustainable energy principles and practices.

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 workplace operational situations that replicate 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, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

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