



Australian Government

UEEEL0048 Install and maintain emergency lighting systems

Release: 1

UEEEL0048 Install and maintain emergency lighting systems

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 install and maintain emergency lighting systems in buildings and premises.

It includes preparing, installing and maintaining emergency systems by working safely, using installation and maintenance industry standards, and completing required documentation.

The skills and knowledge described in this unit require a licence or permit to practice in the workplace where work is carried out on electrical installations which are designed to operate at voltages greater than 50 volt (V) alternating current (a.c.) or 120 V direct current (d.c.).

Competency development activities in this unit are subject to regulations directly related to licensing. Where a licence or permit to practice is not held, a relevant contract of training, such as an Australian Apprenticeship, may be required.

Additional and/or other conditions may apply in some jurisdictions subject to regulations related to electrical work. Practice in the workplace and during training is also subject to work health and safety (WHS)/occupational health and safety (OHS) regulations.

Pre-requisite Unit

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

UEECD0019 Fabricate, assemble and dismantle utilities industry components

UEECD0020 Fix and secure electrotechnology equipment

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

UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work

UEEEL0003 Arrange circuits, control and protection for general electrical installations

UEEEL0020 Solve problems in low voltage a.c. circuits

UEEEL0023 Terminate cables, cords and accessories for low voltage circuits

UEEEL0018 Select wiring systems and cables for low voltage general electrical installations

UEEEL0005 Develop and connect electrical control circuits

UEEEL0019 Solve problems in direct current (d.c.) machines

UEEEL0021 Solve problems in electromagnetic devices

UEEEL0014 Isolate, test and troubleshoot low voltage electrical circuits
UEEEL0008 Evaluate and modify low voltage heating equipment and controls
UEEEL0009 Evaluate and modify low voltage lighting circuits, equipment, and controls
UEEEL0010 Evaluate and modify low voltage socket outlets circuits
UEEEL0024 Solve problems in alternating current (a.c.) rotating machines
UEEEL0025 Test and connect transformers
UEEEL0012 Install low voltage wiring, appliances, switchgear and associated accessories
AND
UEECD0043 Solve problems in direct current circuits
OR
UEECD0044 Solve problems in multiple path circuits
UEECD0046 Solve problems in single path circuits

Competency Field

Electrical

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to install and maintain emergency lighting system

PERFORMANCE CRITERIA

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

- 1.1** WHS/OHS requirements and workplace procedures for a given work area are identified and applied
- 1.2** Hazards are identified, risks assessed and control measures implemented
- 1.3** Safety hazards not previously identified are noted on job safety sheet and risk control measures are implemented
- 1.4** Installation/maintenance is prepared in consultation with others affected by work and sequenced appropriately

- 1.5 Nature and location of work is determined from documentation and/or appropriate person/s
 - 1.6 Location of apparatus and associated equipment is planned within the constraints of the building structure, significant and regulations
 - 1.7 Advice is sought from appropriate person/s to ensure work is coordinated effectively with others
 - 1.8 Material needed for the installation work is obtained in accordance with workplace procedures and checked against job requirements
 - 1.9 Tools, equipment and testing devices needed for installation work are obtained in accordance with workplace procedures and checked for correct operation and safety
 - 1.10 Preparatory work is checked to ensure no damage has occurred and complies with job requirements and specifications
- 2 **Install and maintain emergency lighting system**
 - 2.1 WHS/OHS risk control measures and workplace procedures for carrying out the work are followed
 - 2.2 Need to test or measure live electrical work is determined in accordance with WHS/OHS workplace procedures
 - 2.3 Circuits/machines/plants are checked and isolated in accordance with workplace procedures
 - 2.4 Emergency lighting systems and associated equipment are installed and maintained to comply with technical industry standards, job specifications and requirements with sufficient access to affect terminations, adjustment and maintenance
 - 2.5 Wiring is terminated at apparatus and associated equipment in accordance with manufacturer specifications and functional and regulatory requirements
 - 2.6 Methods for dealing with unplanned situations are discussed with appropriate person/s and documented
 - 2.7 Unplanned situations are responded to safely and with the approval of authorised person/s

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| | 2.8 | Quality inspections and checks of installed apparatus are undertaken in accordance with workplace procedures |
| | 2.9 | Problems are solved using sustainable energy principles and without damaging apparatus, the surrounding environment or services in accordance with workplace procedures |
| 3 Complete and report installation and maintenance activities | 3.1 | WHS/OHS work completion risk control measures and procedures are followed |
| | 3.2 | Worksite is cleaned and made safe in accordance with workplace procedures |
| | 3.3 | Final checks are made to ensure installed and maintained apparatus conforms to job requirements and specifications |
| | 3.4 | Completed work is documented and appropriate 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.

Unit Mapping Information

This unit replaces and is equivalent to UEENEEG189A Install and maintain emergency lighting systems.

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 UEEEL0048 Install and maintain emergency lighting systems

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology 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 implementing risk control measures
- applying sustainable energy principles and practices
- checking installed apparatus
- completing and reporting installation and maintenance activities
- consulting with relevant person/s
- installing electrical wiring and equipment for centrally supplied systems
- installing emergency lighting systems
- isolating circuits/machines/plants
- locating apparatus and equipment
- maintaining emergency lighting systems
- preparing to install and maintain emergency systems
- terminating wiring.

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:

- battery systems used in emergency lighting, including types of batteries and their characteristics, recharging arrangements and procedures for testing emergency lighting
- communication techniques
- design of emergency escape luminaire installation
- electrical wiring and equipment for centrally supplied systems
- emergency lighting and exit sign luminaires
- design of emergency escape luminaire installations, including:
 - provision of acceptable emergency escape luminaires
 - installations employing direct and indirect lighting
 - lighting of stairways and identification and marking of emergency escape luminaires

- emergency lighting control systems, including wired and wireless control
- emergency lighting installation and maintenance, including:
 - arrangements and control
 - labelling of devices operation of emergency lighting
- emergency power supplies for single and centrally supplied systems, including:
 - emergency power source, batteries and their installation, battery charger assembly, inverters and alarm systems
- installation and maintenance workplace procedures for single point systems, including battery replacement and cleaning of emergency luminaires
- installation of electrical wiring and equipment for centrally supplied systems, including:
 - circuit voltage-drop
 - protection against over current and the electrical installation against fire
 - segregation or identification of sub-mains and arrangement of final sub-circuits
- inspection of electrical wiring and equipment for centrally supplied and single point systems, including:
 - the required procedures for six and twelve-monthly inspections
 - maintenance and inspection requirements and relevant industry compliance standards, including AS/NZS 2293 Emergency lighting and exit signs for buildings series, and Building Code of Australia (BCA)
 - information required for operating and maintaining the system
 - maintenance manual
 - provision for the recording of maintenance
- quality assurance processes
- requirements for self-contained emergency escape luminaires and exit signs, including:
 - arrangement and control, electrical requirements and control equipment
 - batteries and battery chargers
 - self-contained automatic discharge testing facilities
 - suitability for operating temperatures
- sustainable energy principles and practices
- unplanned events and problem-solving techniques.

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.

Links

Companion Volume implementation guides are found in VETNet - -

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