



Australian Government

Assessment Requirements for UEEEL0009 Evaluate and modify low voltage lighting circuits, equipment and controls

Release: 2

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Modification History

Release 2. This is the second release of this unit of competency in the UEE Electrotechnology Training Package.

Workplace evidence requirements updated in Performance Evidence and Assessment Conditions.

Assessor requirements updated in Assessment Conditions.

Error in Knowledge Evidence corrected.

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

- # applying work health and safety (WHS)/occupational health and safety (OHS) workplace procedures, including:
 - # identifying and assessing hazards and risks, and implementing control measures
- # checking circuits are isolated in accordance with workplace procedures and regulatory requirements
- # determining the operating parameters of existing lighting circuits and equipment
- modifying existing lighting circuits and their controls to comply with specified operating parameters, including drawing and connecting lighting circuits that incorporate:
 - one-way
 - two-way
 - # intermediate switching of light points using the loop at the light/switch methods of thermoplastic sheathed (TPS) wiring
- # developing lighting circuits and equipment to comply with a specified function and operating parameters
- # determining the cause of low illuminance level in existing lighting circuits and equipment
- determining conditions causing existing lighting circuits and equipment to be unsafe
- # connecting lighting equipment and controls
- # identifying faulty components in luminaires and auxiliary/control equipment from test results
- # testing luminaires and auxiliary/control equipment for serviceability
- ensuring all work complies with relevant Australian Standards and legislation
- completing work and documenting activities.

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:

- loop at the light method of wiring lighting circuits
- loop at the switch method of wiring lighting circuits
- installation methods of accessories and wiring for a lighting circuit incorporating one-way, two-way and intermediate switching of lighting points using the loop at the light/switch method of TPS wiring
- TPS cabling requirement for the loop at the light/switch circuit
- correct operation of the installed circuits including testing for compliance with industry standards
- emergency and evacuation lighting and lighting control, including:
 - factors and requirements of emergency and evacuation lighting concerning illumination levels, luminaire positioning and operating period
 - characteristics of maintained, non-maintained and sustained emergency lighting systems
 - arrangement of batteries in point and central bank emergency lighting supply systems
 - lighting control methods
- principles of lighting technology, including:
 - basic electrical terminology
 - colour theory
 - lighting techniques
- local Supply Authority requirements for maintaining high power factor
- terminology, principles and standards relevant to lighting (energy efficiency as per National Construction Code (NCC))
- types of luminaires:
 - different types of luminaires, their features and purpose
 - operation of different types of luminaires
 - expected lamp life, colour rendering and efficacy for typical types of different types of luminaires
- lighting circuits, equipment and controls used for the following applications:
 - commercial
 - industrial
 - domestic
- lighting layout in terms of visual comfort and relevant Australian Standards
- Australian Standards and local requirements for lighting
- light-emitting diode (LED) lighting and its applications
- Neon, Argon and Xenon lighting and their applications
- comparison of incandescent, low intensity discharge, high intensity discharge, LED and other types of lighting
- fire protection – residential fire and smoke alarms, including:

- types of fire and smoke alarms
- regulations and standards requirements regarding residential fire and smoke alarms
- locations for residential fire and smoke alarms
- wiring methods for residential fire and smoke alarms
- operation of typical residential fire and smoke alarms
- identifying faults in luminaires and auxiliary/control equipment, including circuit and wiring diagrams of common lighting circuits, including:
 - common fault symptoms and associated causes
 - common faults in luminaires and auxiliary/control equipment
 - techniques for repairing/replacing faulty lighting components
- input and output parameters of equipment incorporating electronic components for; controlling/switching lighting, auxiliary control equipment, energy measurement and control, rectifying and inverting electrical supplies
- hazards and safety requirements related to equipment incorporating electronic components used in electrical systems
- relevant manufacturer specifications.

Assessment Conditions

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

Assessors must also hold the occupational licence for the jurisdiction the assessment is occurring where the activity being assessed requires a licence to practice.

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 suitable workplace operational situations where it is appropriate to do so, where this is not appropriate, assessment must occur in suitable 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, facilities, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, equipment specifications, regulations, relevant industry standards, codes of practice and operation manuals.

In addition, evidence of Performance Evidence items of this unit marked with a hash (#) must be gathered in authentic workplace operational conditions (not simulated) before final determination of competence in this unit can be made.

Links

Companion Volume Implementation Guides are found in VETNet -

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