

Job description

The work of an electrician generally encompasses working safely with electricity; ensuring electrical installations are safe and comply with relevant standards and installation tests; selecting equipment that complies with standards; undertaking tests and ensuring electrical protection systems operate as intended and in compliance with standards. The typical jobs performed by an electrician include installation, servicing, maintenance and repair of electrical wiring, equipment, and fixtures. Electricians rely on a wide range of tools and equipment, including hand and power tools, precision measuring tools and equipment, together with diagnostic and electrical measuring equipment.

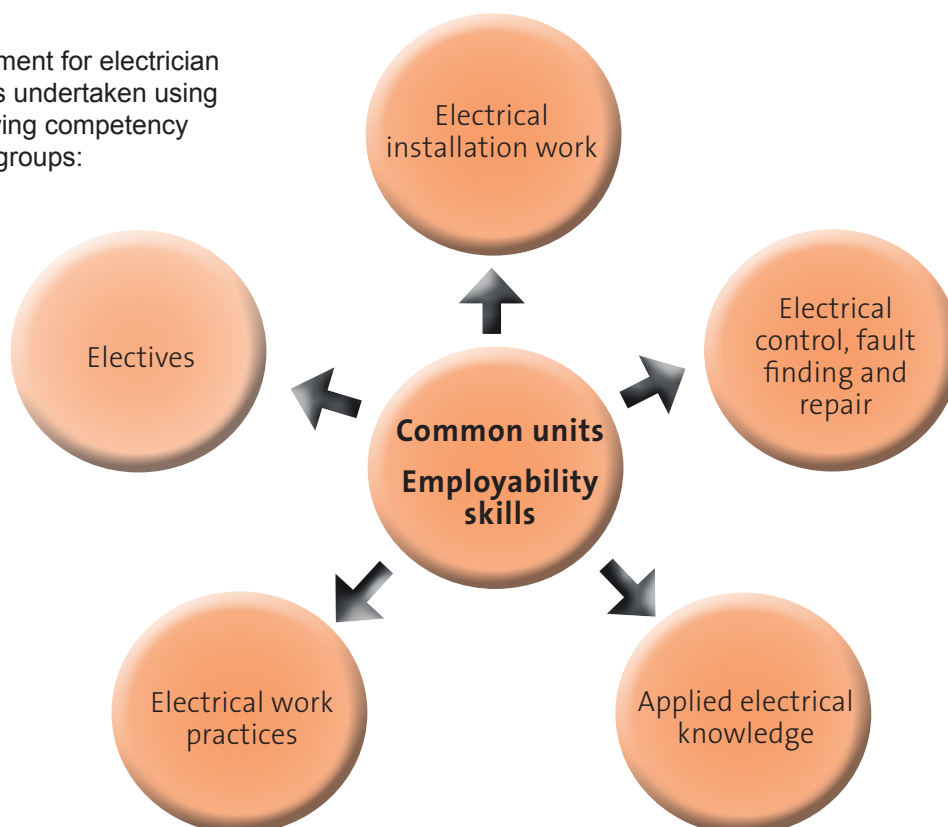
This trade assessment for an electrician is to ensure the applicant can select, install, set up, test, fault find, repair and maintain electrical systems and equipment in building and premises.

Competency assessment

The VETASSESS assessment uses competency groups. These groups consist of units of competency for the Certificate III in Electrotechnology Electrician Trade qualification (UEE30807). They represent groups of tasks, skills and knowledge that are used to assess an applicant's competence in an occupation and are from the Electrotechnology Training Package (UEE07).

The minimum requirement for achievement of the Australian qualification is to demonstrate competence (employment and training evidence) in all of the units of competency. Please read the [Portfolio Builder](#) document for more information about how to complete a competency assessment for an Australian qualification.

The assessment for electrician (general)s is undertaken using the following competency groups:



Common units

Units of competency covering common skills and knowledge will be assessed with each of the competency groups. These common units relate to the workplace occupational health and safety requirements, work processes and procedures, engineering industry standards and requirements to work as an electrician in Australia.

Employability skills

The assessment includes the following employability skills: teamwork; communication; problem solving; planning and organising; learning; technology; self-management; initiative and enterprise. Competency units contain employability skills that will be assessed with each competency group.

Competency groups

The following is a breakdown of the competency groups included in the diagram on page 1.

Common units

The following units of competency are common in all groups for assessment purposes.

- UEENEEC010B Deliver a service to customers
- UEENEEC020B Participate in electrical work and competency development activities
- UEENEEE001B Apply OH&S practices in the workplace
- UEENEEE007B Use drawings, diagrams, schedules and manuals
- UEENEEG005B Verify compliance and functionality of general electric installations
- UEENEEC001B Maintain documentation

Note: The tasks, skills, knowledge and employability skills required for the common units are assessed with the following competency groups.

Electrical installation work

Be able to select, install and arrange – wiring, accessories and associated equipment.

- UEENEEG003B Install wiring and accessories for low voltage circuits
- UEENEEG004B Install low voltage electrical apparatus and associated equipment
- UEENEEG007B Select and arrange equipment for general electrical installations
- UEENEEE005B Fix and secure equipment
- UEENEEE002B Dismantle, assemble and fabricate electrotechnology components

Electrical control, fault finding and repair

Be able to develop and connect control circuits, fault find and repair.

- UEENEEE008B Lay wiring and terminate accessories for extra-low voltage circuits
- UEENEEG009B Develop and connect control circuits
- UEENEEG008B Find and repair faults in electrical apparatus and circuits

Applied electrical knowledge

Be able to demonstrate an understanding of electrical principles and fundamentals.

- UEENEEE003B Solve problems in extra-low voltage single path circuits
- UEENEEE004B Solve problems in multiple path D.C. circuits
- UEENEEG001B Solve problems in electromagnetic circuits
- UEENEEG002B Solve problems in single and three phase low voltage circuits

Electrical work practices

Be able to safely work on electrical systems and appliances. (Refer to Attachment A for more details).

- UEENEEE033B Document occupational hazards and risks in electrical work

Electives

Elective areas comprise of units that represent the work context or environment in which an electrician (general) works. They are included specifically to meet particular work organisation and skill requirements of the electrician qualification.

You are required to provide evidence of your skills, knowledge and experience in **ONE** of the following elective areas as part of the assessment process.

Electrical Installations

- UEENEEG013B Install and maintain emergency systems
- UEENEEG010B Find and repair faults in D.C. electrical apparatus and circuits

OR

Voice and Data Communications

- UEENEEF002B Lay and connect cables for multiple access to telecommunication services

OR

Electrical Control

- UEENEEI001B Install and set up transducers and sensing devices
- UEENEEED007B Develop, enter and verify programs for programmable logic controllers using ladder instruction set
- UEENEEED005B Enter and verify operating instructions in microprocessor equipped devices

OR

Electrical Energy Supply

- UEENEEG015B Find and rectify faults in energy supply network equipment

Assessment Outcome

If you **successfully** complete the assessment process you will receive the following:

- an assessment outcome letter from VETASSESS that states you meet the pre-migration skills requirement; this letter may be submitted to Department of Immigration and Citizenship (DIAC) for skilled migration purposes.
- an **Offshore Technical Skills Record (OTSR)** that lists the units of competency in which you have been assessed as having successfully achieved the required technical skills; this shows you are eligible to gain provisional licensing in your trade.

If you are unsuccessful in the assessment process you will be issued:

- a **Record of Assessment** that lists units of competency you have successfully achieved and those that were not achieved.

Offshore Technical Skills Record

The Offshore Technical Skills Record (OTSR) is a form of skills documentation that is issued by VETASSESS on successful completion of the technical component of the relevant units of competency or qualification. It lists the technical skills demonstrated in the practical assessment and any gaps in the Australian skills or knowledge component which needs to be bridged to meet the full standard, for example the Australian Wiring Rules for electrical trades.

The regulators for the Australian Electrical Industry have agreed to provide a provisional (restricted) licence against the OTSR to allow applicants to work, once they arrive in Australia, while they complete the 'Australian knowledge' (gap training) element of each unit.

Registered Training Organisations (RTOs) including TAFE Institutes will view the OTSR as evidence of recognition of your skills contributing to a statement of attainment or qualification. Some RTOs in each State and/or Territory will offer the required gap training to meet the qualification and licensing requirements.

Licensing and industry information

A licence, registration or certification is required in all states and territories for this occupation. For further information regarding any licensing requirements refer to the Licence Matrix on the VETASSESS website or www.immi.gov.au/asri and www.licencerecognition.gov.au.

The OTSR entitles the holder to obtain 'provisional' licensing or registration subject to other non-skills requirements. To obtain a full licence, work experience in Australia and completion of the required Australian content gap training is required.

A 'licensed electrician' means a person who is licensed to undertake unsupervised electrical work in a jurisdiction and undertakes selection, assembling, constructing, installing, testing, fault finding, commissioning, maintaining, repairing, altering, removing, or replacing of electrical equipment and/or electrical installations. It may include supervision or inspection of electrical work.

Information about licensing in each Australian State and Territory is available at:
<http://www.vetassess.com.au/>

Further Information

If you would like detailed information about the units of competency that make up this qualification please refer to the National Training Information Service (NTIS) website:
www.ntis.gov.au/

Attachment A is information about safe working practices for electricians that covers personal protective equipment (PPE), electrical disconnection and reconnection processes. It is recommended that you familiarise yourself with these safety requirements before proceeding to a practical assessment.

Attachment A

Safe working practices for electricians

This electrical safe work practice is a Code of Practice document made under the Australian *Electrical Safety Act 2002*. It gives practical advice on ways to discharge electrical safety obligations. Included in the Code are ways to identify and manage exposure to risks of injury and property damage caused directly or indirectly, by electricity.

Electrical Safe Work Practice is to provide:

- basic procedures and guidance concerning proper personal protective equipment; and
- a process for working on electrical systems.

Wherever electrical equipment is located, the Act imposes an obligation on an electrical worker to:

- comply with instructions for the electrical safety of persons and property to the extent where:
 - the instructions are consistent with those given by the person in control of the electrical equipment;
 - the equipment is provided by the person in control of the electrical equipment for electrical safety purposes; and
 - the worker is properly instructed in the use of the equipment provided;
- not wilfully or recklessly interfere with or misuse anything provided for electrical safety;
- and
- not wilfully place any person, including yourself, in electrical risk.

Personal Protective Equipment (PPE)

Any electrical worker who works in or around energised equipment and has the potential to come into contact with “live” exposed parts must be provided and use Personal Protective Equipment (PPE). The following are basic guidelines for the proper use of electrical PPE.

- PPE should be used whenever you could come into contact with exposed electrical parts.
- Electrical workers are required to wear electrically rated footwear at all times.
- PPE must be designed for the work being performed. You must make sure that electrical gloves, insulated tools, etc. are rated for the voltage levels they will be used around.
- Always inspect your electrical tools and PPE before each use to make sure they are in good condition and will work properly. If you find that a tool has been damaged, or that PPE has tears or holes, you need to replace the item before conducting the assigned work.
- You must wear eye and face PPE, such as face shield and safety glasses, whenever there is a possibility of electrical arcs or explosion.
- All test instruments and equipment (volt, amp and ohm meters) and associated leads, cables, power cords, probes, and connectors must be visually inspected for external defects and damage before the equipment is used.

Electrical Disconnection and Reconnection Process

Disconnection process to be demonstrated on the day of assessment.
(Steps in bold are critical in the process)

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| Personnel to be notified in immediate area that you are to commence disconnection and interruption to supply. |
| Will removal of protective devices affect essential services? |
| Test voltage tester at known 'LIVE' source for correct operation before use. |
| Ensure the frame of the equipment is not 'LIVE' by testing between frame/chassis and the known earth. |
| Test voltage tester at known 'LIVE' source for correct operation after use. |
| Take operational details of appliance. Eg. kW and voltage. |
| Take direction of rotation (DOR) of motor (where applicable). |
| Complete details on danger tags. Eg. Name, date, fault, etc. |
| Affix danger tags to isolation points. Eg. appliance, isolating switch, switchboard, etc. |
| Determine location of appropriate protective device. |
| Do not leave exposed 'LIVE' terminals/conductors at switchboard or appliance. |
| Test voltage tester at known 'LIVE' source for correct operation before use. |
| Before touching appliance conductors, test for 'LIVE' Test between - all conductors and known earth. This test also includes testing for 'LIVE' between the protective earthing conductor and the known earth. |
| The appliance conductors must also be tested for 'LIVE' by testing between all conductors. This includes the protective earthing conductor. |
| Test voltage tester for correct operation on known 'LIVE' source after using it. (Fail only occurs when previous test indicated terminals/conductors were de-energised). |
| Isolate protective device by applying lock-dog and lock or inserting 'dummy' fuse wedge in fuse base. |
| Terminate conductors in approved manner and enclose in junction box. Cable ends must be fully insulated. |
| Affix Danger Tag to terminated conductors enclosed in junction box. |
| Ensure terminated conductors are protected against mechanical damage. |
| Clean up work area and notify personnel. |

**Reconnection process to be demonstrated on the day of assessment.
(Steps in bold are critical in the process)**

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|---|
| Notify personnel of return to work site. |
| Ensure the appliance to be reconnected is of the same operational ratings. Eg. kW, amperes, voltage, etc. |
| Test Insulation Resistance & Continuity tester on both Meg Ohm (500V) and Ohm scale for correct operation. |
| Carry out the insulation resistance test of the appliance. Test between all active and neutral conductors to the earth contact of the appliance. • Not containing sheathed heating elements – Not less than 1 Meg Ω • Containing sheathed heating elements – Not less than 0.01 Meg Ω |
| Before touching final sub-circuit conductors, test for 'LIVE' Test between - all conductors and the known earth. This test also includes testing for 'LIVE' between the protective earthing conductor and the effective earth. |
| The final sub-circuit conductors must also be tested for 'LIVE' by testing between all conductors. This includes the protective earthing conductor. |
| Test voltage tester for correct operation on known 'LIVE' source after using it. (Fail only occurs when previous test indicated terminals/conductors were de-energised). |
| Reconnect final sub-circuit wiring to appliance terminals. |
| Carry out continuity test on final sub-circuit protective earthing conductor from effective earth to frame of appliance. (<i>This test should be carried out after the circuit conductors have been connected to the equipment terminals and before the power has been restored</i>). |
| Notify personnel of restoration of power. |
| Do not leave exposed 'LIVE' terminals/conductors at switchboard or appliance. |
| Remove lock, lock-dog and switch on circuit breaker or insert correct fuse wedge to restore power. |
| Check appliance for correct operation. Eg DOR. (Direction of Rotation). |
| Clean up work area and notify personnel. |

Note: *Testing the voltage tester for correct operation after use is critical when the candidate is going to touch the conductors/components on the belief they are de-energised.*