



Australian Government

**Assessment Requirements for UEERA0099
Install, commission, service and maintain
air conditioning systems**

Release:

Assessment Requirements for UEERA0099 Install, commission, service and maintain air conditioning 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, performance criteria and range of conditions and include the following on at least;

Two separate occasions;

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements
- commissioning a ducted air conditioning system, including the adjustment of supply and fresh air dampers to meet stated design flow rates
- locating and rectifying mechanical faults and electrical faults on air conditioning systems
- maintaining air conditioning systems
- recording values and reporting completion of work
- selecting, replacing, installing and terminating extra-low voltage (ELV) cables within air conditioning systems.
- selecting, replacing, installing and terminating damaged low voltage (LV) cables within air conditioning equipment according to relevant State/Territory legislation and regulations.
- testing for electrical safety compliance.

One occasion;

- installing a ducted split air conditioning system
- installing a non-ducted split air conditioning system.

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:

air distribution, including:

- air control damper types and applications
- common fan types and applications
- duct fitting types and applications
- noise and vibration control methods

- purpose of zoning, including advantages and disadvantages
- relevant legislation, industry standards, codes of practice and regulations
- rigid and flexible duct types and applications
- supply and return air diffuser/grille types and applications

basic ducted split system selection for a residential application, including:

- application of industry recognised check figures watts per square metre (W/m²) and manufacturers data
- basic ductwork dimensioning employing a duct calculator
- drawing a basic ductwork layout map
- manufacturers design specifications and effects of operating the air conditioning system outside these conditions, including high/low ambient temperature and high relative humidity

Current-carrying capacity requirements of installed cables including:

- identification of conductor size based on the maximum current requirement for a given installation condition, including any applicable derating factors
- types of cables and applications
- engaging appropriately qualified person to rectify any non-compliance
- relevant State/Territory legislation, regulations and scope of work

commissioning air conditioning systems requirements and procedures, including:

- basic air balancing techniques
- techniques to determine operating values for a reverse cycle high wall split air conditioning system

common items identified on a preventative maintenance schedule, including the following air conditioning system types:

- high wall splits
- package units
- split ducted

defrost (de-ice) operation, including activation and termination conditions

equipment installation requirements and procedures, including:

- location considerations for outdoor and indoor units, including exposure, prevailing winds and noise regulations
- maintaining structural integrity, including weight being applied and cutting of trusses/beams
- maintenance of fire rating integrity
- reading and interpreting manufacturer instructions
- relevant legislation, industry standards, codes of practice and regulations
- requirements for condensate removal and/or drainage

fault finding and rectification of air conditioning systems requirements and procedures, including:

- typical controller fault codes and use of manufacturer's data
- symptoms and rectification of typical abnormal system conditions
- defrost initiation or termination failure

- earthing short, including load circuit has connected with casing and/or frame
- high side sub-cooling too low/too high
- incorrect phase rotation and scroll compressors
- inefficient compressor, including reduced pumping capacity
- inverter failure, including manufacturers recommended testing procedure
- low side superheat too low/too high
- non-condensables
- open circuit
- refrigerant overcharge and undercharge
- restricted filter drier
- shunted short, including load is internally shorted causing lower resistance

package units, including construction, applications and installation

reading and interpreting single phase wiring and pipe work schematics for a typical cooling only room air conditioner

reading and interpreting single phase wiring and pipe work schematics for a typical reverse cycle high wall split air conditioner

reading and interpreting three phase wiring and pipe work schematics for a typical reverse cycle package unit

relevant standards, codes and requirements applicable to the installation of cables

techniques for replacing and installing cables and wiring systems within air conditioning equipment:

- application of wiring accessories
- cable and conductor terminations
- drawing-in, placing and fixing of cables
- inspecting and testing installed and terminated cables to ensure they comply and are safe to reconnect to the supply
- maintaining fire rating integrity

ventilation, including:

- fresh air requirements in accordance with relevant industry standards
- common methods, including natural, supply and exhaust
- relevant legislation, industry standards, codes of practice and regulations.

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, industry standards, 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>