



Australian Government

**Assessment Requirements for UEERA0036
Establish the basic operating conditions of
vapour compression systems**

Release: 1

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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 on at least two separate occasions and include:

- applying relevant work, health and safety (WHS)/occupational health and safety (OHS) requirements, including using risk control measures
- applying safe working practices and relevant industry standards, codes of practice and regulations
- applying sustainable energy principles and practices
- completing documentation and reporting requirements
- dealing with unplanned events/situations in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- determining operating conditions of vapour compression system
- documenting operating conditions
- identifying conditions of a refrigerant at various locations in the vapour compression system
- measuring and calculating actual and specified range of operating condition values, including recording measurements
- selecting and using appropriate measuring devices correctly
- using calculation methods accurately.

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:

- operating condition of vapour compression systems, including:
 - basic vapour compression systems operation and major components
 - common refrigerant metering devices, including capillary tube, thermostatic expansion (TX) valve, electronic expansion valve, function, types and applications
 - condenser function, types and applications
 - cooling tower function, types and applications
 - evaporator function, types and applications

- hazards and risk control measures
- heat and heat transfer
- liquid receiver function, types and applications
- pressure, scales and measurement devices
- refrigerant conditions, including saturation, superheat, sub-cooling and pressure/temperature relationships
- refrigerant leak detector types, applications, hazards and safe working practices, care and maintenance, and leak detection procedures
- refrigeration compressor function, types and applications
- refrigeration compressor oil function, types and applications
- risk management principles and processes
- safe handling techniques, including safety data sheets (SDS)/material safety data sheets (MSDS)
- sensible and latent heat
- service gauge manifold hose fitting, purging, pressure reading and removal
- service gauge types, applications, care and maintenance, reading and calibration
- sustainable energy principles and practices
- system access fittings types, care, maintenance and connection
- temperature and relative humidity, scales and measurement devices
- vapour compression system operating conditions and pressure, temperature, state and enthalpy graphs
- vapour compression system symbols/diagrams, design ambient and storage/space conditions
- working safely with refrigeration vapour compression system relevant industry standards, codes of practice, regulations and WHS/OHS legislated requirements
- relevant manufacturer specifications
- relevant risk mitigation processes
- relevant workplace documentation
- relevant workplace policies and procedures.

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>