



Australian Government

**Assessment Requirements for UEERA0080
Select basic commercial refrigeration
system equipment, components and
accessories**

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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 one occasion and include:

- arranging pipe work to comply with regulatory and functional requirements
- selecting appropriate type, size and quantity of pipe and tubing
- selecting refrigeration equipment and components that meets load requirements
- selecting automatic control devices that meet functional and regulatory requirements
- documenting pipe work arrangement, specification for items selected and reasons for the selections made
- dealing with unplanned events
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements and workplace procedures and practices, including using risk control measures
- applying sustainable energy principles and practices.

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:

- basic commercial refrigeration system equipment, components, accessories selection, piping selection, safe working practices and relevant standards, codes and regulations, including:
 - calculation of capacity in heat exchangers:
 - $Q = UA (LMTD)$
 - $Q = mc\Delta t$
 - $Q = m \Delta h$
 - evaporators:
 - commercial types and applications
 - coil bypass factor
 - effects of evaporator TD on space humidity

- effects of air circulation on product conditions
- selection criteria and selection tables
- condensers:
 - commercial types and applications
 - effects of ambient conditions
 - condenser control
 - heat rejection factor
 - condenser TD
 - selection criteria and selection tables
- compressors:
 - types and applications
 - capacity
 - displacement
 - volume flow rate
 - theoretical capacity
 - total volumetric efficiency
 - effect of operating conditions, including suction pressure drop and superheating
 - actual capacity
 - power
 - theoretical requirement
 - effects of operating conditions
 - actual requirements
 - post defrost loads
 - pull down torque requirements, high, medium and low back pressure compressors
 - selection tables, motor selection
- refrigerant flow controls:
 - types, operation and applications
 - effects from sub-cooling
 - distributor types, operation and applications
 - selection tables
- system load balance point:
 - graphical representation
- line sizing and design:
 - quick selection tables
 - velocity tables
 - pressure drop in lines and fittings
 - oil migration stabilisation
 - refrigerant velocity
 - effect of varying system capacity

- oil traps
- risers
- liquid migration
- automatic controls:
 - fin spacing, suction temp to evaporator suction
 - hot-gas bypass valves
 - electronic control of valves programmable logic controller (PLC) control
 - refrigerant regulating valves
 - solenoid valves
 - condenser pressure regulating valves
 - evaporator pressure regulating valves
 - crankcase pressure regulating valves
 - cycling controls
 - pressure-stats
 - thermostats
 - defrost controls
 - monitoring and alarm controls
 - refrigeration automation systems
 - control strategies
 - control modes
- relevant industry standards, including industry practices and technologies
- relevant job safety assessments or risk mitigation processes
- relevant manufacturer specifications
- relevant WHS/OHS legislated requirements
- 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, 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>