



Australian Government

Assessment Requirements for UEERA0002

Analyse the psychrometric performance of HVAC/R systems

Release: 1

Assessment Requirements for UEERA0002 Analyse the psychrometric performance of HVAC/R 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 on at least one occasion and include:

- understanding the psychrometric performance issues
- forming effective strategies for analysing refrigeration and air conditioning systems performance
- obtaining psychrometric performance parameters, specifications and performance requirements appropriate to each situation
- evaluating the results of the analysis
- documenting analysis details of all findings, calculations and assumptions
- documenting justification of actions to be implemented in accordance with professional standards
- dealing with unplanned events
- applying problem-solving techniques
- 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:

- heating, ventilation and air conditioning/refrigeration (HVAC/R) psychometrics, safe working practices and relevant standards, codes and regulations, including:
 - fundamentals and terms:
 - sensible heat factor (conditioned space and grand total)
 - quantity of air
 - effective surface temperature
 - bypass factor
 - coil characteristics:

- processes
- sensible cooling
- cooling and dehumidification
- sensible heating
- spray processes:
 - saturation efficiency
 - processes
 - adiabatic/evaporative cooling
 - cooling and humidification
 - sensible cooling
 - chemical dehumidification process: dehumidification and heating
 - cooling tower characteristics: humidification and cooling
 - indirect evaporative cooling process
- system analysis:
 - partial load
 - reheat control
 - bypass control
 - volume control
 - dump back systems
 - low velocity coils
- psychrometric formulae and charts:
 - properties of air
 - gas constants
 - derivation of air constants
 - combined gas laws
 - Dalton's law of partial pressures
 - carrier's equation
 - psychrometric property tables
 - air mixing equations
 - air quantity equations
- problem-solving techniques
- psychrometric physical and thermodynamic properties of gas-vapor mixtures, including psychrometric principles
- relevant job safety assessments or risk mitigation processes
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- typical psychrometric performance issues.

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>