



**Australian Government**

# **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.

## **Application**

This unit involves the skills and knowledge required to determine operating conditions of vapour compression system.

It includes working safely; determining refrigerant pressures and temperatures, and relevant air and water temperatures using measurement and calculation methods. It also includes working with the three states of matter at each point in the refrigeration cycle (liquid, vapour and liquid-vapour mixture).

The skills and knowledge in this unit will be applied by refrigeration and air conditioning technicians during the commissioning, service and repair of refrigeration and air conditioning systems.

To undertake this unit, the learner must have a Trainee Refrigerant Handling Licence as it includes work on refrigeration and air conditioning equipment that carries the risk of a fluorocarbon refrigerant being emitted.

The skills and knowledge described in this unit require a national Refrigerant Handling Licence as it includes work on refrigeration and air conditioning equipment that carries the risk of a fluorocarbon refrigerant being emitted while decanting the refrigerant or manufacturing, installing, commissioning, servicing, maintaining or decommissioning refrigeration and air conditioning equipment.

The skills and knowledge described in this unit may, in some jurisdictions, also require a licence or permit to practice in the workplace subject to regulations for undertaking refrigeration and air conditioning work. Practice in the workplace and during training is also subject to work health and safety (WHS)/occupational health and safety (OHS) regulations.

## **Pre-requisite Unit**

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

## **Competency Field**

Refrigeration and air-conditioning

## Unit Sector

Electrotechnology

## Elements and Performance Criteria

### ELEMENTS

### PERFORMANCE CRITERIA

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

#### **1 Prepare to determine operating condition of vapour compression system**

- 1.1** WHS/OHS hazards, risk control methods, relevant standards, codes and legislation are obtained and applied in accordance with workplace procedures
- 1.2** Safety hazards which have not previously been identified are assessed, reported and advice on risk control measures is sought from supervisor
- 1.3** System design operating conditions are obtained from documentation or supervisor to determine scope of work to be undertaken
- 1.4** Advice is sought from the supervisor to ensure work is coordinated effectively with others
- 1.5** Materials required for the work are identified and obtained in accordance with workplace procedures
- 1.6** Tools, equipment and testing devices needed to determine operating conditions are obtained and checked for correct operation and safety in accordance with workplace procedures

#### **2 Determine operating condition of vapour compression system**

- 2.1** System operating conditions, including refrigerant pressures and temperatures and ambient temperatures, are measured in accordance with job requirements and workplace safety procedures
- 2.2** Compression system is checked and isolated in accordance with workplace procedures
- 2.3** Actual and specified range of operating conditions are determined from measured and calculated values as they apply to vapour compression system in accordance with workplace procedures

- 2.4 Methods for dealing with unplanned situations/events are discussed with appropriate person/s and documented
  - 2.5 Unplanned events are dealt with safely and with the approval of a relevant person/s
  - 2.6 Operating conditions for vapour compression system are determined without damage to apparatus, circuits, the surrounding environment or services using relevant workplace sustainable energy practices in accordance with workplace procedures
- 3 Complete work and report**
- 3.1 Worksite and equipment are cleaned and made safe in accordance with workplace procedures
  - 3.2 Operating conditions are documented, including identification of any parameter that is not within the specified range for the vapour compression system, in accordance with workplace procedures
  - 3.3 Supervisor is notified of completion of work in accordance with workplace procedures

## Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

## Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

Determining operating conditions of vapour compression system must include at least the following:

- measurement and basic calculation methods of vapour compression system whether used for refrigeration or air conditioning
- suction and discharge pressures
- ambient, evaporator and condensing temperatures
- evaporator and condenser temperature difference

## Unit Mapping Information

This unit replaces and is equivalent to UEENEEJ103A Establish the basic operating conditions of vapour compression systems.

## Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>