



Australian Government

UEERA0081 Select refrigerant piping, accessories and associated controls

Release: 1

UEERA0081 Select refrigerant piping, accessories and associated controls

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 select refrigerant piping, accessories and associated controls.

It includes selecting refrigerant piping, accessories and controls for refrigeration and air conditioning installation to comply with regulations, industry standards and specifications. It also includes developing refrigerant pipe work arrangements; selecting pipe work and fittings, refrigerant flow controls and accessories, and mechanical and electrical control devices based on specifications, industry standards and manufacturer catalogues to determine calculated and deemed-to-comply solutions and documenting selection information.

The skills and knowledge described in this unit may, in some jurisdictions, 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

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

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

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| 1 Prepare to select refrigerant piping, accessories and associated controls | 1.1 Extent and nature of the refrigeration installation is determined from job specifications |
| | 1.2 WHS/OHS and regulatory requirements of the refrigeration system are identified, obtained and applied |
| 2 Develop refrigerant pipe work arrangements | 2.1 Intended location of refrigeration equipment is determined from job specifications and site drawings or deemed-to-comply arrangements |
| | 2.2 Pipe work arrangements are developed to ensure safe and functional operation of the refrigerant system in accordance with workplace procedures |
| | 2.3 Pipe work is arranged to comply with technical industry standards, job specifications and requirements |
| 3 Select refrigerant piping, accessories and associated controls | 3.1 Suitable pipe and tubing are selected for the environment in which it is to be installed in accordance with industry standards |
| | 3.2 Pipe and tubing are sized to meet refrigeration parameters and capacity requirements for the refrigerant to be used |
| | 3.3 Pipe and tubing quantities are determined from equipment location diagrams and job specifications |
| | 3.4 Refrigeration controls and accessories are selected to meet load requirements based on calculated or deemed-to-comply solutions |
| | 3.5 Control devices are selected to meet functional and regulatory requirements |
| | 3.6 Electrical control devices are selected to meet current voltage and ingress protection ratings in accordance with industry standards |
| | 3.7 Evidence is obtained to confirm the selected refrigeration equipment and control devices comply with job requirements and industry standards |
| 4 Document refrigerant piping, accessories and associated controls selection | 4.1 Refrigerant piping, accessories and associated control selections, including calculations, are documented in accordance with workplace procedures |

- 4.2** Refrigeration installation arrangement and specifications for selected items are documented in accordance with workplace procedures and forwarded to appropriate person/s

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.

- Selecting refrigerant pipe/tube, accessories and associated controls must include at least two different refrigeration systems and include the following:
- pipe sizes determined using recommended manufacturers specifications and the total equivalent length calculation methods
 - refrigeration flow controls
 - isolation/access valves
 - filter-dryers
 - sight glasses
 - accessories
 - thermostats
 - pressure controls
 - humidity controls

Unit Mapping Information

This unit replaces and is equivalent to UEENEEJ110A Select refrigerant piping, accessories and associated controls.

Links

Companion Volume implementation guides are found in VETNet - -

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

Assessment Requirements for UEERA0081 Select refrigerant piping, accessories and associated controls

Modification History

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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 environmental and sustainable principles and practices
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements and workplace procedures and practices, including:
 - using personal protective equipment (PPE)
 - using risk control measures
- arranging pipe work to comply with regulatory and functional requirements
- completing relevant documentation
- dealing with unplanned events/situations in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- documenting pipe work arrangements, specifications for items selected and reasons for selections made
- preparing and selecting refrigerant piping, accessories and controls for refrigeration and air conditioning installations in accordance with system load and regulatory requirements, industry standards and workplace procedures, including:
 - planning the refrigerant pipe work route and arrangement in accordance with job specifications
 - reading and interpreting drawings and requirements related to the installation
 - selecting appropriate type, size and quantity of piping and tubing
 - selecting control devices that meet functional requirements
 - selecting refrigeration accessories that meets load requirements.

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:

- refrigerant liquid and vapour flow control selection, including expansion valves, solenoids and pressure regulators

- refrigerant piping layout and routing
- refrigerant piping sizing and accessories selection for suction, discharge and liquid lines
- refrigeration and air conditioning controls and capacity control selection, including pressure controls and thermostats
- relevant environmental and sustainable principles and practices, including:
 - environment protection
 - sustainable energy
 - sustainable resources
- relevant drawings and specifications, including:
 - control diagrams
 - equipment installation requirements
 - equipment layouts and drawings
 - equipment manufacturer specifications and symbols
 - job specifications
 - piping diagrams
 - site drawings
 - wiring diagrams
- relevant equipment, including software applications
- relevant industry standards, codes of practice and regulations
- relevant manufacturer instructions
- relevant problem-solving techniques
- relevant refrigerant piping, accessories and controls for refrigeration and air conditioning installations
- relevant safe work method statements (SWMS)/job safety assessments or risk mitigation processes
- 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 PPE currently used in industry
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

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