



Australian Government

Assessment Requirements for MEM234016

Design refrigeration systems

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM234016A Design refrigeration systems.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include:

- establishing required features of plant and equipment
- confirming parameters of the brief or contract and providing initial advice based on discipline knowledge, standards, work health and safety (WHS), regulatory and risk assessment requirements
- researching latest trends and techniques in design of refrigeration systems
- investigating faults in existing designs and proposing solutions
- measuring, modelling and calculating using appropriate techniques, software and validation techniques
- innovating and creating solutions, incorporating systems thinking, continuous improvement and constraint and contingency management
- designing refrigeration systems and system components on at least two occasions
- evaluating solutions against design criteria, ensuring conformity to WHS requirements
- applying safe working practices and procedures
- communicating, negotiating and reviewing with stakeholders and client throughout the process to obtain agreement on proposal and sign-off on design
- documenting design with required drawings, specifications and instructions.

Note: Where a volume and/or frequency is not specified, demonstration must be provided at least once.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- contemporary refrigeration system design methods
- research and investigation methods
- techniques for:
 - continuous improvement
 - problem-solving and decision-making
 - root cause analysis (RCA) or failure mode and effects analysis (FMEA) or design review based on failure mode (DRBFM), and Pareto analysis

- WHS, regulatory and environmental requirements for work areas and refrigerated spaces
- standards, codes of practice, risk management and organisational procedures related to heating, ventilation, air conditioning and refrigeration (HVAC/R) design, installation, operation and maintenance
- design brief parameters
- general refrigeration systems and components
- commercial and industrial refrigeration systems and components
- refrigeration system analysis, arrangement and simulation software including their use and validation
- principles of food storage technology
- controlling and managing risks associated with food storage
- food processing techniques, including types of heat and chill processing techniques.
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Assessment Conditions

- Assessors must:
 - have vocational competency in designing refrigeration systems at least to the level being assessed with relevant industry knowledge and experience
 - satisfy the assessor requirements in the Standards for Registered Training Organisations 2015 or its replacement and comply with the National Vocational Education and Training Regulator Act 2011, its replacement or equivalent legislation covering VET regulation in a non-referring State as the case requires.
- Where possible assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions that cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required including relevant workplace procedures, product and manufacturing specifications.
- 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.
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Links

Companion Volume Implementation Guides are available on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>