Australian Government

Assessment Requirements for MEM23140 Determine operational parameters for building HVAC hydronic systems

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM23140A Determine operational parameters for building HVAC hydronic 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:

- interpreting drawings, specifications and manuals and recognising system features and operational modes
- implementing work health and safety (WHS) workplace procedures and practices including risk control measures
- determining operational parameters for building heating, ventilation and air conditioning (HVAC) hydronic systems on at least two occasions, including selecting and testing of pumps and measuring flow rates
- measuring individual component performance on at least two occasions
- communicating technical requirements to others, including preparation of required documents
- dealing with unexpected situations.

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:

- WHS and environmental requirements related to building HVAC hydronic systems
- sources of professional and technical assistance
- system operation features including:
  - closed/open systems
  - pump head/lift and static head (high-rise building)
  - system friction losses
  - net positive suction head
  - system curves
- pumps including:
  - types
  - selection criteria
  - performance characteristics

- valves including:
  - types and applications
  - throttle characteristics
  - flow measurements
  - selection and applications
- ancillary equipment including:
  - bladder tanks
  - coil characteristics
  - heat exchangers (plate, shell and tube, tube in tube)
  - flow measurements
  - flow switchers
  - boilers (types and performance characteristics)
  - types of cooling towers and elementary cooling thermodynamics
- pipe sizing and relationship to system performance
- standard pipe sizes and specifications
- resource requirements
- contingency planning.
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Assessment Conditions

- Assessors must:
  - have vocational competency in determining operational parameters for building HVAC hydronic 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/territory 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