



Australian Government

CPCPMS3034A Install medical gas pipeline systems

Release 1

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Modification History

Prerequisite unit updated

Changes to performance criteria, required skills and knowledge, range statement and critical aspects

Not equivalent to CPCPMS3014A

Unit Descriptor

This unit of competency specifies the outcomes required to install and test medical gas pipeline systems.

Application of the Unit

Site location for work application is commercial and may be a new work site or an existing structure being renovated, extended, restored or maintained.

Licensing/Regulatory Information

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-Requisites

CPCPCM2043A Carry out WHS requirements

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

- | | | |
|---|-------------------------------|--|
| 1 | Prepare for work. | <p>1.1 Plans and specifications are obtained and work requirements are identified.</p> <p>1.2 <i>Work health and safety</i> (WHS) and <i>environmental requirements</i> associated with installation of medical gas pipeline system are adhered to throughout the work.</p> <p>1.3 <i>Quality assurance requirements</i> are identified and adhered to according to workplace requirements.</p> <p>1.4 Tasks are planned and sequenced in conjunction with others involved in or affected by the work and <i>statutory and regulatory authorities'</i> requirements.</p> <p>1.5 <i>Tools and equipment</i>, including personal protective equipment, are selected and checked for serviceability.</p> <p>1.6 Work area is prepared to support efficient installation of medical gas pipeline systems.</p> |
| 2 | Identify system requirements. | <p>2.1 Configuration of system is checked for compliance with plans, specifications, standards, authorities' requirements and relevant <i>information</i>.</p> <p>2.2 Position of pipes, supports, fixings and terminals are determined from plans and specifications or site requirements, so as not to cause damage or interference to surrounding structures.</p> <p>2.3 Allowances for fabrication or assembly are determined and transferred.</p> <p>2.4 Quantity and type of <i>materials</i>, including <i>types of</i></p> |

- medical gas pipelines** required, are calculated from plans and specifications.
- 2.5 Materials are identified, ordered and collected according to workplace procedures.
- 2.6 Materials and equipment are checked for compliance with standards, docket and order form, and for acceptable condition and **faults are reported**.
- 3 Fabricate, install, purge and test pipeline system.
- 3.1 **Medical gas pipeline system** is set out to comply with plans, specifications, standards and authorities' requirements.
- 3.2 Fixings and supports are installed to comply with plans, specifications, standards, authorities' requirements and manufacturer recommendations.
- 3.3 Pipe system and terminal units are positioned and labelled in compliance with plans, specifications, standards and manufacturer requirements.
- 3.4 Pipeline system is installed in specified location without damage or distortion to pipework, surrounding environment or other services.
- 3.5 Pipeline system is pressure tested to comply with job specification, regulatory authorities' requirements, standards and regulations, and details are recorded in required format.
- 3.6 Pipeline system is purged according to standards and authorities' requirements.
- 3.7 **Sustainability principles and concepts** are applied throughout the installation.
- 4 Clean up.
- 4.1 Work area is cleared and materials disposed of, reused or recycled according to legislation, regulations, codes of practice and job specification.
- 4.2 Tools and equipment are cleaned, checked, maintained and stored according to manufacturer recommendations and workplace procedures.
- 4.3 Documentation is completed according to workplace

requirements.

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- communication skills to:
 - access information
 - determine requirements
 - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
 - follow instructions
 - report faults
 - use language and concepts appropriate to cultural differences
 - use and interpret non-verbal communication, such as hand signals
- initiative and enterprise skills to identify and report to appropriate personnel any faults in tools, equipment or materials
- literacy skills to:
 - complete workplace documentation
 - document pipeline system pressure test
 - read and interpret:
 - documentation from a variety of sources
 - plans and specifications
- numeracy skills to apply measurements and calculations
- planning and organising skills to:
 - plan and sequence tasks with others
 - plan and set out work

teamwork skills to work with others to action tasks and relate to people from a range of cultural and ethnic backgrounds and with varying physical and mental abilities

- technical skills to:
 - determine system requirements
 - install, test and purge a medical gas pipeline system
- technology skills to:
 - access and understand site-specific instructions in a variety of media
 - use mobile communication technology

Required knowledge

- job safety analysis (JSA) and safe work method statements (SWMS)

- WHS regulations relevant to medical gas pipeline systems
- personal protective equipment requirements and use
- pressure testing procedures and equipment
- processes and requirements of installing, testing and purging medical gas pipeline systems
- SI system of measurement

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

This unit of competency could be assessed in the workplace or a close simulation of the workplace environment providing that simulated or project-based assessment techniques fully replicate plumbing and services workplace conditions, materials, activities, responsibilities and procedures.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

A person who demonstrates competency in this unit must be able to provide evidence of:

- locating, interpreting and applying relevant information, standards and specifications to install medical gas pipeline systems
- applying safety requirements throughout the work sequence, including equipotential bonding procedures and the use of personal protective clothing and equipment
- given the plans and specifications, installing and testing at least three medical gas pipeline systems (each with a different medical gas) from a manifold system to terminal units and fittings, ensuring:
 - application of sustainability principles and concepts
 - cleanliness and sterility of finished system
 - correct identification of requirements and details of proposed installation
 - correct selection and use of appropriate processes, tools and equipment
 - completion of all work to specification
 - compliance with regulations, standards and organisational quality procedures and processes
 - communicating and working effectively and safely with others.

Context of and specific resources for assessment

This competency is to be assessed using standard and authorised work practices, safety requirements and environmental constraints.

Assessment of essential underpinning knowledge will

usually be conducted in an off-site context.

Assessment is to comply with relevant regulatory or Australian standards' requirements.

Resource implications for assessment include:

- an induction procedure and requirement
- realistic tasks or simulated tasks covering the minimum task requirements
- relevant specifications and work instructions
- tools and equipment appropriate to applying safe work practices
- support materials appropriate to activity
- workplace instructions relating to safe work practices and addressing hazards and emergencies
- material safety data sheets
- research resources, including industry-related systems information.

Reasonable adjustments for people with disabilities must be made to assessment processes where required. This could include access to modified equipment and other physical resources, and the provision of appropriate assessment support.

Method of assessment

Assessment methods must:

- satisfy the endorsed Assessment Guidelines of the Construction, Plumbing and Services Training Package
- include direct observation of tasks in real or simulated work conditions, with questioning to confirm the ability to consistently identify and correctly interpret the essential underpinning knowledge required for practical application
- reinforce the integration of employability skills with workplace tasks and job roles
- confirm that competency is verified and able to be transferred to other circumstances and environments.

Validity and sufficiency of evidence requires that:

- competency will need to be demonstrated over a period of time reflecting the scope of the role and the practical requirements of the workplace
- where the assessment is part of a structured learning experience the evidence collected must relate to a

number of performances assessed at different points in time and separated by further learning and practice, with a decision on competency only taken at the point when the assessor has complete confidence in the person's demonstrated ability and applied knowledge

- all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence.

Assessment processes and techniques should as far as is practical take into account the language, literacy and numeracy capacity of the candidate in relation to the competency being assessed.

Supplementary evidence of competency may be obtained from relevant authenticated documentation from third parties, such as existing supervisors, team leaders or specialist training staff.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Work health and safety is to be according to commonwealth, state and territory legislation and regulations and may include:

- handling of materials
- hazard control
- personal protective clothing and equipment prescribed under legislation, regulations and workplace policies and practices
- safe operating procedures, including recognising and preventing hazards associated with:
 - hazardous materials and substances
 - identifying and testing for electrical hazards
 - service lines
 - surrounding structures and facilities
 - trip hazards
 - use of tools and equipment
 - work site visitors and the public
 - working at heights
 - working in proximity to others

- use of firefighting equipment
- use of first aid equipment
- workplace environment and safety.

Environmental requirements may include:

- clean-up protection
- ozone protection
- waste management.

Quality assurance requirements may include:

- Environment Protection Authority (EPA)
- internal company quality assurance policy and risk management strategy
- International Standards Organisation
- site safety plan
- workplace operations and procedures.

Statutory and regulatory authorities include:

- commonwealth, state or territory, and local authorities administering applicable Acts, regulations and codes of practice.

Tools and equipment may include:

- hand and power tools
- heating and bending equipment
- silver brazing equipment.

Information may include:

- charts and hand drawings
- instructions issued by authorised organisational or external personnel
- manufacturer specifications and instructions
- material safety data sheets (MSDS)
- memos
- organisation work specifications and requirements
- plans and sketches
- regulatory and legislative requirements, particularly those pertaining to:
 - building codes
 - WHS and environmental requirements
 - plumbing regulations
- relevant Australian standards
- safe work procedures relating to installing medical gas pipeline systems

- signage
- verbal, written and graphical instructions
- work bulletins
- work schedules, plans and specifications.

Materials for installing medical gas pipeline systems are to include:

- fittings and supports
- labels
- pipe materials
- purging gases
- terminal units.

Types of medical gas pipelines may include:

- carbon dioxide
- medical breathing air
- medical suction
- mixtures of medical gases
- nitrous oxide
- standard oxygen
- surgical tool gas.

Fault reporting:

- may be written or verbal
- is to be according to company's workplace procedures.

Medical gas pipeline system includes:

- fixtures and labels
- gas pipeline
- terminal units and fittings.

Sustainability principles and concepts:

- cover the current and future social, economic and environmental use of resources
- may include:
 - efficient use of material
 - efficient energy retention
 - selecting appropriate products and components to ensure minimal environmental impact.

Unit Sector(s)

Functional area

Unit sector Plumbing and services

Custom Content Section

Not applicable.