



Australian Government

Department of Education, Employment and Workplace Relations

CPCPPS5014A Locate and maintain piping systems

Release: 1

CPCPPS5014A Locate and maintain piping systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit of competency specifies the outcomes required to specify procedures to locate and maintain piping systems. The unit requires a range of applications, including pipefreezing equipment and procedures, sewer and drain camera equipment and procedures, under-road boring equipment and procedures, robotic sewer repair, chemical grout systems and procedures, and high-pressure drain cleaning equipment and procedures.
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Application of the Unit

Application of the unit	This unit of competency supports development of skills and knowledge required for competent workplace performance in a consultancy or supervisory capacity in relation to plumbing services and hydraulics.
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units	Nil
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Employability Skills Information

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

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Specify pipe and service locating equipment and procedures.	1.1. Applications for pipe and service locating equipment are specified. 1.2. Pipe and service locating equipment is specified for specific applications. 1.3. Operating procedures are specified for the selected equipment. 1.4. Safety procedures are specified for the selected equipment.
2. Specify pipe-freezing equipment and procedures.	2.1. Applications for pipe-freezing equipment are specified. 2.2. Pipe-freezing equipment is specified for specific applications. 2.3. Operating procedures are specified for the selected equipment. 2.4. Safety procedures are specified for the selected equipment.
3. Specify sewer and drain camera equipment and procedures.	3.1. Applications for sewer and drain camera equipment are specified. 3.2. Sewer and drain camera equipment is specified for specific applications. 3.3. Operating procedures are specified for the selected equipment. 3.4. Safety procedures are specified for the selected equipment.
4. Specify under-road boring equipment and procedures.	4.1. Applications for under-road boring equipment are specified. 4.2. Under-road boring equipment is specified for specific applications. 4.3. Operating procedures are specified for the selected equipment. 4.4. Safety procedures are specified for the selected equipment.
5. Specify robotic sewer repair and chemical grout systems and procedures.	5.1. Applications for robotic sewer repair and chemical grout systems are specified. 5.2. Robotic sewer repair and chemical grout systems are specified for specific applications. 5.3. Trenchless pipe repair systems are specified for specific applications. 5.4. Operating procedures are specified for the selected

ELEMENT	PERFORMANCE CRITERIA
	equipment.
	5.5. Safety procedures are specified for the selected equipment.
6. Specify high-pressure drain cleaning equipment and procedures.	6.1. Applications for high-pressure drain cleaning equipment are specified.
	6.2. High-pressure drain cleaning equipment is specified for specific applications.
	6.3. Operating procedures are specified for the selected equipment.
	6.4. Safety procedures are specified for the selected equipment.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

Required skills for this unit are:

- communication skills to:
 - confirm job specifications and client requirements
 - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
 - read and interpret drawings, specifications and documentation from a variety of sources
 - use language and concepts appropriate to cultural differences
 - use and interpret non-verbal communication, such as hand signals
- maintaining piping systems
- numeracy skills to apply measurements and calculations
- organisational skills, including the ability to plan and set out work
- specifying procedures to locate piping systems
- 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.

Required knowledge

Required knowledge for this unit is:

REQUIRED SKILLS AND KNOWLEDGE

- common terminology and definitions used in the specification of piping system maintenance procedures
- nature of materials used and effects of performance under various conditions
- principles of technology in the specification of piping system maintenance procedures
- requirements of state regulatory authorities, Australian standards and manufacturer specifications, including hazards identified in relation to devices and systems used
- workplace safety requirements, including relevant statutory regulations, codes and standards.

Evidence Guide

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:

- specifying equipment and procedures to be used for the location of pipes and services
- specifying pipe-freezing equipment and procedures
- specifying sewer and drain camera equipment and procedures
- specifying under-road boring equipment and procedures
- specifying robotic sewer repair and chemical grout systems and procedures
- specifying high-pressure drain cleaning equipment and procedures.

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, including design brief drawings, specifications, codes, design concepts and construction schedules

EVIDENCE GUIDE

- tools and equipment appropriate to applying safe work practices, including computers, software and calculators
- workplace instructions relating to safe working 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

EVIDENCE GUIDE

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

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.

Applications for pipe and service locating equipment include:

- burst water pipes
- excavations where existing services may be located
- locating existing services for new connections.

Locating equipment includes:

- electronic detection equipment
- metal detectors
- sound detection equipment.

Operating procedures include:

- defining the application, equipment operation and equipment limitations.

Safety procedures include:

- access restrictions
- electrical safety
- equipment safety requirements
- excavation safety
- personal protective equipment.

RANGE STATEMENT

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|---|--|
| <i>Pipe-freezing equipment</i> include: | <ul style="list-style-type: none"> • applications where interruption to water supply is not an option • burst water mains • maintenance • repairs. |
| <i>Sewer and drain camera</i> uses include: | <ul style="list-style-type: none"> • inspection of pipework • location of damaged pipework • root intrusion identification. |
| <i>Under-road boring equipment</i> uses include: | <ul style="list-style-type: none"> • installation of new services where damage to roads and structures is undesirable or cost prohibitive • replacement of services. |
| <i>Robotic sewer repair and chemical grout systems</i> include re-lining of: | <ul style="list-style-type: none"> • damaged sewers • stormwater drains • water mains. |
| <i>Trenchless pipe repair systems</i> include: | <ul style="list-style-type: none"> • polyethylene sleeves • stainless steel sleeves • other pipelining materials. |
| <i>High-pressure drain cleaning equipment</i> includes blocked: | <ul style="list-style-type: none"> • manholes • sewers • stormwater drains. |

Unit Sector(s)

Unit sector Plumbing and services

Co-requisite units

Co-requisite units Nil

Functional area

Functional area