



Australian Government

CPCPPS5015B Inspect plumbing and drainage systems

Release 1

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Modification History

Addition of sustainability content to performance criterion
Minor editorial changes throughout
Equivalent to CPCPPS5015A

Unit Descriptor

This unit of competency specifies the outcomes required to conduct inspections of hydraulic systems for a range of residential, commercial and industrial buildings to ensure compliance with Australian and New Zealand standards and local authority and operational performance requirements.

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.

Licensing/Regulatory Information

Inspections of hydraulic systems must comply with Australian and New Zealand standards and local authority and operational performance requirements.

Pre-Requisites

Nil

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

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|---|---|---|
| 1 | Specify local authority inspection requirements. | <p>1.1 Local authority inspection requirements for <i>hydraulic systems</i> are specified according to legislation and standards.</p> <p>1.2 <i>Approved materials</i> are specified for different applications.</p> <p>1.3 Installation requirements are specified in compliance with manufacturer manuals and regulatory requirements.</p> |
| 2 | Develop inspection procedures. | <p>2.1 <i>Administrative procedures</i> for <i>inspection projects</i> are developed.</p> <p>2.2 <i>Inspection checklists</i> are developed.</p> |
| 3 | Conduct inspections | <p>3.1 Communication channels are established with relevant site personnel and stakeholders.</p> <p>3.2 Inspection routes and schedules are planned and detailed.</p> <p>3.3 Work health and safety (WHS) guidelines and <i>sustainability principles and concepts</i> are applied to inspections, and personal protective equipment is worn.</p> <p>3.4 Inspections are conducted to assess compliance with regulatory requirements and professional workmanship standards.</p> <p>3.5 On-site <i>as-constructed plans</i> are hand sketched and measurements are taken.</p> |

- 3.6 ***Dispute-resolution techniques*** are implemented as necessary when non-compliance is identified.
 - 3.7 ***Testing procedures*** are implemented.
 - 3.8 Inspection and testing results are accurately recorded.
- 4 **Prepare reports.**
 - 4.1 ***Inspection reports*** are prepared using on-site records, including as-constructed plans.
 - 4.2 Recommendations are detailed and reported.
 - 4.3 Rectification schedules are produced.
- 5 **Enforce compliance.**
 - 5.1 Breaches of relevant regulation or standard are detailed.
 - 5.2 Infringement notices are issued and relevant follow-up procedures are implemented.
 - 5.3 In cases of non-compliance, ***enforcement action*** is implemented with infringement notices.
- 6 **Maintain records.**
 - 6.1 Inspection diary is maintained.
 - 6.2 Inspection records are processed according to established administrative procedures.

Required Skills and Knowledge

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

Required skills

- communication skills to:
 - establish communication channels
 - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
 - use language and concepts appropriate to cultural differences
 - use and interpret non-verbal communication, such as hand signals
- literacy skills to:
 - develop administrative procedures and checklists
 - issue infringement notices
 - maintain records
 - prepare inspection reports
 - read and interpret:
 - documentation from a variety of sources
 - manufacturer manuals and regulations
 - plans, specifications and drawings
 - record inspection and testing results
- numeracy skills to apply measurements and calculations
- planning and organising skills to plan and set out work
- technical skills to inspect hydraulic systems for a range of residential, commercial and industrial buildings to ensure compliance with Australian and New Zealand standards and local authority and operational performance requirements

Required knowledge

- common terminology and definitions used in the design of plumbing and drainage systems
- nature of materials used and effects of performance under various conditions
- principles of technology used in the design of plumbing and drainage systems
- 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

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 local authority inspection requirements for hydraulic systems according to legislation and standards
- developing administrative procedures for inspection projects
- implementing dispute-resolution techniques
- conducting compliance inspections
- taking relevant measurements and sketching on-site as-constructed plans
- implementing testing procedures
- preparing inspection reports
- detailing breaches to regulations or standards
- maintaining an inspection diary.

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
- 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 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.

Hydraulic systems include:

- fire services
- gas services
- mechanical services
- sanitary plumbing and drainage
- stormwater drainage
- trade waste
- water supply.

Approved materials are identified from Australian and New Zealand standards and include:

- fittings
- fixtures
- pipes.

Administrative procedures must include:

- file management
- inspection allocation
- inspection records
- logging inspections.

Inspection projects include:

- hydraulic consultant
- local authority
- plumbing supervisor.

Inspection checklists:

- include:
 - approved installation methods
 - authorised materials
 - project section
- comply with:
 - Australian and New Zealand standards
 - distances
 - limitations
 - National Construction Code
 - other regulatory requirements.

Sustainability principles and concepts:

- cover the social, economic and environmental use of resources to meet current and future needs
- may include:
 - selecting appropriate components and material
 - choosing efficient products
 - using material efficiently
- storing and disposing of hazardous material to ensure minimal environmental impact.

As-constructed plans include layout of:

- fire services pipework
- gas pipework
- mechanical services pipework
- sanitary plumbing and drainage pipework
- stormwater pipework
- trade waste drainage systems
- water supply pipework.

Dispute-resolution techniques include:

- active listening techniques
- non-threatening body language
- power neutral relationships
- other recognised dispute avoidance and resolution techniques.

Testing procedures include:

- air pressure tests
- compliance checklist
- gas leak detection

- hydrostatic tests
- mirror tests
- quality assurance (QA) audit
- sound testing.

Inspection reports include:

- defect
- inspection
- performance
- quality assurance.

Enforcement action includes:

- fines
- legal action
- notification to plumbing licensing body
- penalties.

Unit Sector(s)

Functional area

Unit sector Plumbing and services

Custom Content Section

Not applicable.