



**Australian Government**

# **CPCPSN3023A Fabricate and install sanitary stacks**

**Release 1**

## **CPCPSN3023A Fabricate and install sanitary stacks**

### **Modification History**

Prerequisite unit changed  
Minor changes throughout the unit  
Not equivalent to CPCPSN3013A

### **Unit Descriptor**

This unit of competency specifies the outcomes required to fabricate and install sanitary stacks for soil and waste discharges.

### **Application of the Unit**

Site location for work application may be either domestic or 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 | <b>Prepare for work.</b>                   | <p>1.1 Plans and specifications are obtained for the planned work activity.</p> <p>1.2 <b><i>Work health and safety</i></b> (WHS) and <b><i>environmental requirements</i></b> associated with fabricating and installing sanitary plumbing systems are adhered to throughout the work.</p> <p>1.3 <b><i>Quality assurance requirements</i></b> 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 <b><i>statutory and regulatory authorities'</i></b> requirements.</p> <p>1.5 <b><i>Tools and equipment</i></b> for fabricating and installing sanitary plumbing systems, including personal protective equipment, are selected and checked for serviceability.</p> <p>1.6 Work area is prepared to support efficient planning, fabrication and installation of sanitary plumbing systems.</p> |
| 2 | <b>Identify installation requirements.</b> | <p>2.1 Venting requirements are checked for compliance with requirements of relevant Australian standards, plans and specifications.</p> <p>2.2 Stack design and branch positions are checked for compliance with relevant Australian standards, authorities' requirements, job plans and specifications, and relevant <b><i>information</i></b>.</p>  |

- 2.3 Position of sanitary stacks is determined from plans, specifications, relevant Australian standards and site requirements and so as not to cause damage and interference to surrounding structures.
  - 2.4 Quantity and type of *materials* required are calculated from design drawings and specifications and comply with relevant Australian standards and local authorities' requirements.
  - 2.5 Allowances for fabrication and assembly are determined and transferred.
  - 2.6 Materials and equipment are identified, ordered and collected according to workplace procedures.
  - 2.7 Materials and equipment are checked for compliance with relevant Australian standards, docket and order forms, and for acceptable condition.
  - 2.8 *Sustainability principles and concepts* are observed when preparing for and undertaking work process.
- 3 Fabricate, install and test pipe system.**
- 3.1 *Plumbing system* is set out to comply with job plans, specifications and relevant Australian standards.
  - 3.2 Fixings and supports are installed to manufacturer recommendations, relevant Australian standards, plans and specifications.
  - 3.3 Pipes are fabricated, installed and jointed in specified location according to job plans, specifications and relevant Australian standards, without causing damage or distortion to pipework or surrounding environment and other services.
  - 3.4 Pipe system is tested to comply with relevant Australian standards and adjusted.
- 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
  - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
  - follow instructions
  - identify requirements
  - 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 accurately report to appropriate personnel any faults in tools, equipment or materials
- literacy skills to:
  - complete workplace documentation
  - read and interpret:
    - documentation from a variety of sources
    - plans and specifications
  - record plans
- 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
- technology skills to:
  - access and understand site-specific instructions in a variety of media
  - use mobile communication technology

### Required knowledge

- characteristics and the application of different pipe fittings and fixture supports, including fixing and joining techniques
- classification of assembly types and identification of assembly components
- job safety analysis (JSA) and safe work method statements (SWMS)
- levelling and alignment processes

- materials handling processes
- performance measures and characteristics of the materials used in the required soil and waste stack assembly
- process of fabricating and installing sanitary stacks
- processes for accessing information and for calculating material requirements
- product and service standards applicable to the installation
- properties of soil and waste discharges, including temperature and corrosive discharges
- relevant statutory requirements related to installing stacks, discharge pipes and vents
- SI system of measurements
- systems of sanitary plumbing

## Evidence Guide

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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:

- given instructions, locating, interpreting and applying relevant information, Australian standards and specifications to fabricate and install a sanitary stack for a residential building.
- applying safety requirements throughout the work sequence, including electrical safety requirements and the use of personal protective clothing and equipment
- given the plans and specifications, fabricating and installing a sanitary stack system of plumbing, to connect future fixtures from two floor levels; with fixtures to include a WC, bath, basin, shower and floor waste gully at each floor with fabrication of at least two branches in copper tube (minimum of DN50), ensuring:
  - application of sustainability principles and concepts
  - correct identification of location, design and details of proposed installation
  - correct selection and use of appropriate processes, tools and equipment
  - completing all work to specification
  - compliance with regulations, relevant Australian standards and organisational quality procedures and processes
  - communicating and working effectively and safely with others.

**Context of and specific resources** This competency is to be assessed using standard and



**for assessment**

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 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

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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:
  - dirt mounds
  - electricity
  - hazardous materials and substances
  - other machines
  - recently filled trenches
  - surrounding structure and facilities

- traffic control
- trip hazards
- underground services
- use of tools and equipment
- work site visitors and the public
- working at heights
- working in confined spaces
- working in proximity to others
- use of firefighting equipment
- use of first aid equipment
- workplace environment and safety.

***Environmental requirements*** cover water quality management and may include:

- clean-up protection
- stormwater protection
- waste management.

***Quality assurance requirements*** may include:

- environment policy
- 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:

- dropsaw
- hacksaw
- hand and power tools
- heating equipment
- lifting and load shifting equipment, including:
  - chain blocks
  - elevated work platforms
  - forklifts
  - hand trolleys
  - hoists and jacks
  - restricted height scaffolding

- rollers
- measuring equipment
- threading and bending equipment.

**Information** may include:

- charts and hand drawings
- instructions issued by authorised organisational or external personnel
- job drawings
- 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 fabricating and installing sanitary stacks
- signage
- verbal, written and graphical instructions
- work bulletins
- work schedules, plans and specifications.

**Materials** may include:

- copper (Cu)
- polymer
- cast iron
- other approved materials.

**Sustainability principles and concepts:**

- cover the current and future social, economic and environmental use of resources
- may include:
  - efficient energy and water use
  - efficient use and recycling of material
  - correct handling of hazardous materials
  - disposing of waste material to ensure minimal environmental impact
  - selecting appropriate components to ensure

minimal environmental impact.

*Plumbing systems* may include:

- elevated pipework
- fully vented
- fully vented modified
- revass
- single stack
- single stack modified
- other approved methods.

## **Unit Sector(s)**

**Functional area**

**Unit sector** Plumbing and services

## **Custom Content Section**

Not applicable.