



Australian Government

CPC50412 Diploma of Plumbing and Services

Release: 2

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Modification History

Version Comment

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| 1 | Revised qualification deemed not equivalent to CPC50408
A number of core and elective units updated and deemed not equivalent to previous version
Elective units revised resulting in a number of unit identifier changes |
| 2 | Update superseded imported units from elective list with equivalent current unit for: <ul style="list-style-type: none">• BSBCUS501C to BSBCUS501• BSBFIM501A to BSBFIM501• BSBMGT515A to BSBMGT517• BSBWOR502B to BSBWOR502 This version released with CPC08 Version 9.3. |

Description

This qualification provides an outcome for:

- specialist and senior plumbers, fire services professionals and air conditioning and mechanical services professionals with advanced technical skill requirements
- experienced professionals who are pursuing management roles within the plumbing and services industry.

Occupational titles may include:

- Senior plumber
- Fire services technician
- Air conditioning and mechanical services technician
- Plumbing manager.

The qualification has core and elective unit of competency requirements that cover common skills for the plumbing industry, as well as specialist streams:

The plumbing industry strongly affirms that training and assessment leading to recognition of skills must be undertaken in a real or very closely simulated workplace environment and this qualification requires all units of competency to be delivered in this context.

Completion of the general induction training program specified by the National Code of Practice for Induction Training for Construction Work (ASCC 2007) is required before entering a construction work site. Achievement of unit CPCCOHS1001A covers this requirement.

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

Employability skill	Industry/enterprise requirements for this qualification include:
Communication	• Interprets a range of complex documents, including plans and specifications, technical and hand drawings, charts, material safety data sheets, briefs, legislative and regulatory requirements, industry codes and standards, manufacturers' requirements, trade and technical manuals, and programs, • Drafts detailed system specifications, including material, joining and installation requirements; testing and commissioning schedules; project expenditure schedules; operations and maintenance manuals; safety procedures; control requirements; local authority inspection requirements for hydraulic systems; compliance reports; final cost reports; water and energy audit reports; technical plumbing system reports; and various quality control check lists • Understands industry terminology, industry estimating and costing systems, and financial principles • Communicates effectively with a range of people, including suppliers, staff, clients, subcontractors, local authority personnel, and negotiates industrial relations issues • Researches documentation relevant to systems' design • Gives clear hand and voice signals • Negotiates and prepares sewer contracts, and varies and documents schedules as required
Teamwork	• Works with others to plan, coordinate and complete tasks • Supervises sewerage system installation • Supervises staff in identifying building or construction costs • Works interactively with others to achieve a safe work site • Uses appropriate dispute resolution procedures
Problem solving	• Conducts cost-benefit analysis of material and design options • Performs complex financial calculations, including rise and fall calculations • Resolves problems relating to project delays • Performs various calculations relating to measuring sanitary plumbing and drainage systems, velocities and flow, pressures, water volumes, catchment areas and run off, sizing of water heaters, pipe sizes and storage capacities

Employability skill	Industry/enterprise requirements for this qualification include:
	- Identifies typical faults and takes corrective action - Identifies site safety and environmental health risks and takes preventative measures - Rectifies service clashes through design modifications
Initiative and enterprise	- Designs complex sanitary plumbing and drainage systems; cold water systems; stormwater and roof drainage systems; hot water systems; sewerage systems; rising mains systems; pump stations; fire compliant ducting systems and hydraulic services; water storage and sprinkler systems; smoke alarm systems; fire hydrant and hose reel systems; hydronic heating and cooling systems; gas bulk storage systems; industrial gas systems; gas reticulation systems; solar water heating systems; grey water use systems; rainwater collection, storage, distribution and re-use systems; irrigation systems; trade waste pre-treatment systems; pump systems; siphonic stormwater drainage systems; vacuum sewerage systems - Identifies strategies for conserving and recycling water, harvesting and re-using rainwater - Evaluates alternative solutions to improve plumbing systems and makes appropriate recommendations - Effectively implements project quality management
Planning and organising	- Scopes the extent of work required - Monitors building or construction costs, including identifying critical phases of project expenditure and cash flows - Plans systems' pipework layout and details systems' componentry as well as duct and penetration plans - Ensures current building codes and standards are applied - Coordinates service penetrations - Organises site meetings - Manages hazard management procedures - Establishes and reviews OHS, welfare and risk management processes - Establishes policy on plant and equipment usage - Manages personnel, resources, supply of materials and on-site operations

Employability skill	Industry/enterprise requirements for this qualification include:
Self management	Manages own work to ensure compliance with relevant codes and standards
Learning	- Establishes safety induction processes - Uses appropriate mechanisms to inform others of applicable standards and codes
Technology	- Uses computers to design and detail plumbing and drainage systems; cold water systems; stormwater and roof drainage systems; hot water systems; fire sprinkler systems; fire hydrant and hose reel systems; hydronic systems; gas bulk storage systems; industrial gas systems; gas reticulation systems; solar water heating systems; grey water use systems; rainwater collection, storage, distribution and re-use systems; irrigation systems; trade waste pre-treatment systems; pump systems; siphonic stormwater drainage systems; and vacuum sewerage systems - Understands technological principles in the design of hydraulic systems; cold water reticulation and hydrant/hose reel systems; sewer systems; hydronic systems; gas bulk storage systems; industrial gas systems; gas reticulation systems; solar water heating systems; grey water use systems; rainwater collection, storage, distribution and re-use systems; irrigation systems; trade waste pre-treatment systems; pump systems; siphonic stormwater drainage systems; vacuum sewerage systems; and trade waste pre-treatment systems - Uses calculators and two-way radios - Uses relevant tools and equipment

Packaging Rules

To achieve this qualification, the candidate must demonstrate competency in 12 units of competency, which are to be chosen as follows:

- 2 common core units
- all units from one of the following three options:
 - Fire services:

- 4 Group A Fire services core units
- 6 elective units
- Plumbing and services management:
 - 5 Group B Plumbing and services management core units
 - 5 elective units
- Air conditioning and mechanical services:
 - 4 Group C Air conditioning and mechanical services core units
 - 6 elective units.

The elective units chosen:

- could include:
 - core units not already chosen from Groups A, B or C
 - Group D General electives
 - no more than 2 units from Group B Plumbing and services management electives
- may be from other qualifications in CPC08 or another current Training Package or state accredited course, provided no more than:
 - 1 unit is from a Diploma qualification
 - 1 unit is from a Certificate IV qualification
- should ensure the integrity of the AQF alignment, and contribute to a valid, industry-supported vocational outcome.

NB: The plumbing and services stream has an entry requirement of the Certificate IV in Plumbing and Services or an equivalent qualification.

Some units in this qualification may have prerequisite requirements, which must be met when packaging the qualification. Users are referred to the list of CPC08 units with prerequisite unit requirements available in this Training Package for this purpose.

Core units

Common core

BSBOHS504B	Apply principles of OHS risk management
BSBPMG505A	Manage project quality

Group A Fire services: core

CPCCSV6010A	Apply fire technology to buildings up to three storeys
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CPCPFS5010A	Design fire-compliant hydraulic services
CPCPFS5011A	Design fire sprinkler systems
CPCPFS5012A	Design fire hydrant and hose reel systems

Group B Plumbing and services management: core

CPCPCM5010A	Design complex sanitary plumbing and drainage systems
CPCPCM5011A	Design complex cold water systems
CPCPCM5012A	Design complex stormwater and roof drainage systems
CPCPCM5013A	Design complex (non-solar) heated water systems
CPCPCM5014A	Design sewer infrastructure systems

Group C Air conditioning and mechanical services: core

CPCPMS5010A	Design steam generation and distribution systems
CPCPMS5011A	Design air conditioning and ventilation systems
CPCPMS5012A	Design sound attenuated hydraulic services
CPCPMS5013A	Design hydronic heating and cooling systems

Elective units**Group B Plumbing and services management: electives**

BSBCUS501	Manage quality customer service
BSBFIM501	Manage budgets and financial plans

BSBPMG508A	Manage project risk
BSBMGT517	Manage operational plan
BSBWOR502	Lead team effectiveness
CPCCBC4034A	Apply codes and standards to building trade and services contracting
CPCCBC5002A	Monitor costing systems on medium rise building and construction projects
CPCCBC5010B	Manage construction work

Group D General electives

CPCPPS5000B	Design gas bulk storage systems
CPCPPS5001B	Design industrial gas systems
CPCPPS5002B	Design gas reticulation systems
CPCPPS5009B	Analyse and report on technical plumbing systems
CPCPPS5011B	Coordinate services and penetrations within a building
CPCPPS5014A	Locate and maintain piping systems
CPCPPS5015B	Inspect plumbing and drainage systems
CPCPPS5023A	Design solar water heating systems
CPCPPS5024A	Conduct a water audit and identify water-saving initiatives
CPCPPS5025A	Design grey water re-use systems
CPCPPS5026A	Design rainwater collection, storage, distribution and re-use systems
CPCPPS5027A	Design irrigation systems
CPCPPS5028A	Design trade waste pre-treatment systems
CPCPPS5030A	Design pump systems
CPCPPS5032A	Design siphonic stormwater drainage systems
CPCPPS5033A	Design vacuum sewerage systems
CPCSUS5001A	Develop workplace policies and procedures for sustainability

Custom Content Section

Not applicable.