

What is Mechanical Services work?

A guide to read before you apply for registration

Do you have the **skills, knowledge and experience** to apply for registration as a plumbing practitioner in Mechanical Services work? To help you, this guide explains some of the typical tasks of Mechanical Services work. If you are asked to an assessment interview, some of your interview questions will be based on this information.

Get to know the regulation

Under Part 4 of the *Plumbing Regulations 2018*, Mechanical Services work is:

(1a) the construction, installation, replacement, repair, alteration, maintenance, testing or commissioning of a mechanical heating, cooling or ventilation system in a building, which is associated with the heating, cooling or ventilation of that of that building, including

- (i) any valve, regulator, register, pipe, duct, flue, tank, heating or cooling pipe or surface, boiler, burner, solid fuel heater, coil or other item that is used in the system*
- (ii) in the case of a cooling tower, any water pipe, valve, pump, automated dosing device or automated bleeding device or any other mechanical component that affects the cooling tower's cooling water flow rate or wastewater disposal; and*
- (iii) roof sheeting and roof flashing that is necessary for the purpose of any work described in this subregulation; and*
- (iv) until 18 November 2019, any single head split system.*

(b) the construction, installation, replacement, repair, alteration, maintenance, testing or commissioning of any fixed component used in the reticulation system for the supply or removal of a medical gases from gas source to the wall outlet; and

(c) on and from 18 November 2019, the installation, commissioning and any incidental design work that is associated with the installation and commissioning of;

- (i) any part of a single head split system; or*
- (ii) a ceiling cassette system; or*
- (iii) an add-on condenser unit for the ducted system –*
- (iv) That is associated with the heating and cooling of a building; and*

(d) any design work that is incidental to, or associated with, any work described in paragraphs (a) and (b).

Get to know the regulation

Under Part 4 of the *Plumbing Regulations 2018*, Mechanical Services work **does not include**:

- (a) gasfitting work; or*
- (b) any work on a cooling tower drift eliminator; or*
- (c) any treatment of cooling or heating water; or*
- (d) any cleaning of a cooling tower*
- (e) disassembly or reassembly of a flue terminal for the purposes of cleaning a solid fuel heater; or*
- (f) the connection or disconnection of a system referred to in subregulation (1) from a water supply other than disconnection of the system other than disconnection of the system from a water supply at an isolating valve adjacent to a mechanical component of that system.*

Typical Mechanical Services work

Mechanical Services plumbing work involves mechanically heating, cooling and ventilating residential and commercial buildings. It also includes plumbing work for medical gas equipment.

The work is highly specialised and technical. Experienced Mechanical Services plumbers typically do the following work (and more):

- Installing, replacing, repairing, altering, maintaining, testing or commissioning:
 - single head split systems, ceiling cassette systems and add-on condenser units for ducted systems
 - hydronic heating systems
 - solid fuel heaters
 - space heaters
 - ducted heating units and their related ductwork (which could be flexible or solid ductwork)
 - extraction or ventilation systems and related ductwork

- Fabricating ductwork (that is, sheet metal fabrication and folding)
- Installing, maintaining and testing medical gas systems used in a range of settings such as hospitals and veterinary clinics
- Installing roof flashing around installed systems
- Insulating piping used for hot water or steam pipes.

What do Mechanical Services plumbers need to know and do?

Plumbers need critical knowledge and skills to protect the health and safety of the building occupants. What does this mean for you?

As a registered practitioner, you must be able to understand and apply the compliance requirements of Mechanical Services plumbing work. These requirements include:

- AS 2896 Medical gas systems
- AS/NZS 3666 Air handling and water systems
- AS1668 Use of ventilation and air-conditioning in buildings
- HB 276-2004 A guide to good practice for energy efficient installation of residential, heating, cooling and air-conditioning plant and equipment
- relevant aspects of the National Construction Code.

To undertake Mechanical Services work to a safe and competent standard, you must also be able to:

- Work safely at heights, including on scaffolding or elevated work platforms, and when using other access equipment such as ladders
- Read and interpret plans
- Carry out oxy-acetylene and manual metal arc welding (with mild steel pipes, brazed brass flanges, or copper or steel pipes), and know how to weld safely.

What competencies and experience do you need?

The VBA publishes a set of units of competency for each class of plumbing work. Each unit of competency describes a work outcome, all the knowledge and skills needed to do the work to the expected standard, and how they should be assessed.

The Victorian Building Authority (VBA) uses the units of competency to assess your skills and experience if you apply to register in a class of plumbing work.

To be eligible to register in the Mechanical Services class, you must be able to show:

- you have the relevant competencies PLUS recent and relevant experience in work related to the Mechanical Services class of plumbing, **or**
- you have knowledge equal to the competencies of Certificate III for Mechanical Services work, PLUS at least four years of experience while working under supervision of a plumber who is licensed in Mechanical Services work.

Before applying for registration, please read the current approved units of competency for Mechanical Services.

Units of Competency for Mechanical Services work

- Carry out interactive workplace communication (CPCPCM2039A)
- Read plans and calculate plumbing quantities (CPCPCM2040A)
- Work effectively in the plumbing and services sector (CPCPCM2041A)
- Carry out WHS requirements (CPCPCM2043A)
- Handle and store plumbing materials (CPCPCM2045A)
- Use plumbing hand and power tools (CPCPCM2046A)
- Carry out levelling (CPCPCM2047A)
- Provide basic emergency life support (HLTFA211AP)
- Work safely on roofs (CPCPCM2055A)

- Cut and join sheet metal (CPCPCM2048A)
- Mark out materials (CPCPCM2050A)
- Weld using oxy-acetylene equipment (CPCPCM2052A)
- Cut with Oxy-LPG / Acetylene equipment (CPCPCM2049A)
- Fabricate and install non-ferrous pressure piping (CPCPCM3023A)
- Weld using manual metal arc welding equipment (CPCPCM2053A)
- Flash penetrations through roofs and walls (CPCPCM3021A)
- Assemble mechanical services components (CPCPMS2021A)
- Fabricate and install steel pressure piping (CPCPMS3031A)
- Select and fit insulation and sheathing (CPCPMS3032A)
- Install small bore heating systems (CPCPMS3033A)
- Install medical gas pipeline systems (CPCPMS3034A)
- Install and test ducting systems (CPCPMS3035A)
- Install air handling units (CPCPMS3036A)
- Install air conditioning control equipment (CPCPMS3038A)
- Maintain mechanical services equipment (CPCPMS3039A)
- Install and maintain evaporative air cooling systems CPCPMS3040A
- Prepare and connect refrigerant tubing and fittings (UEENEEJ102A)
- Position, assemble and start up single head split air conditioning and water heating heat pump systems (UEENEEJ105A)
- Recover, pressure test, evacuate, charge and leak test refrigerants – split systems (UEENEEJ172A).

Your next step

If you think you have the required skills, knowledge and experience in Mechanical Services work, then go to the [VBA website](#) to learn how to apply for registration in this work class.