VICTORIAN BUILDING AUTHORITY

PLUMBING PRACTICE NOTE

Cold Water Plumbing CW 03 | Maximum static water pressure within a building

Audience

The audience/s for this Practice Note include/s:

- ☒ Architects/ Designers
- ☒ Builders
- ☒ Building Surveyors/ Inspectors
- ☐ Engineers
- ☒ Home Owners / Residential Tenants
- ☒ Owner Builders
- ☒ Plumbers
- ☐ Real estate management agents
- ☒ Trades and Maintenance (inc. Electricians)

Purpose

This Practice Note provides guidance on the requirements for maximum static water pressure at any water outlet within a building and water efficient tapware.

The content below provides guidance on:

- Maximum static pressure and testing
- Types of pressure regulating devices
- Flow rate requirements
- Complying with flow rate requirements

For guidance on the plumbing regulatory framework refer to Plumbing Practice Note RF-01 | Regulatory Framework

Abbreviations & Definitions

The abbreviations and definitions set out below are for guidance only. They are not intended to vary those set out in the Building Act 1993, the Plumbing Regulations 2018 or the National Construction Code.

- **AS** – Australian Standard
- **AS/NZS** – Australian/ New Zealand Standard
- **NCC** – National Construction Code 2022, Volume 3
- **Regulations** – Plumbing Regulations 2018
- **WELS** – Water Efficiency Labelling and Standards

Maximum static pressure and testing

The installation of water services within a building must comply with the National Construction Code Volume Three – Section B Water services. The maximum static pressure at any outlet within a building must not exceed 500 kPa. This applies to all new plumbing work and includes heated water outlets.

The best method to check the maximum static pressure is to connect a correctly calibrated pressure gauge to the meter outlet that is located at the property boundary. The static pressure, available from the water authority will be shown on the device. If this reading exceeds 500kPa, a pressure regulating device needs to be installed.

Types of pressure regulating devices

Any currently approved pressure limiting valve or adjustable pressure reducing valve may be used.

The valve can be installed anywhere in the cold-water line, provided the valve is accessible. Where full mains pressure is required at a point/s outside the building, connection of these points can be made upstream of the valve.

It is a performance requirement of the National Construction Code Volume Three – Section B Water services that the maximum flow rate must not exceed 9 L/min of static pressure from a water outlet, connecting a shower, basin, kitchen sink or laundry trough.

Flow rate requirements

Plumbers and builders play an important role in encouraging Australians to use water more efficiently and to ensure that they comply with the maximum water supply flow rates for both hot and cold water.

Therefore, plumbers should only install appropriately approved Water Efficiency Labelling and Standards (WELS) products.

The intent of the requirement is to ensure that, under all operating conditions the flow rate will not exceed 9 L/min. The flow rate should be measured at the shower head or outlet when both, hot and cold taps are in the fully open position.

Where there are separate hot and cold pillar or hob mounted taps, each should also be measured at the outlet in the fully open position.

For mixer taps and tap sets, they should be measured at the outlet, either from:

- the cold tap in the fully open position,
- from the hot tap in the fully open position, or
- the mixed flow from the outlet in the fully open position.

While standards do not prescribe any specific method to control the flow, this can be achieved by using the following:

- WELS rated tapware and shower heads;
- In-line flow regulators; and
- In-tap flow regulators.

The following figures show the three main types of tap controls:

- In-line flow control valves with in - tap flow regulators, refer to Figure 1;
- Separate hot and cold pillar or hob mounted taps, refer to Figure 2;
- A tap set incorporating hot and cold taps with a common outlet, refer to Figure 3;
- Mixer taps with a single lever control and common outlet, refer to Figure 4;

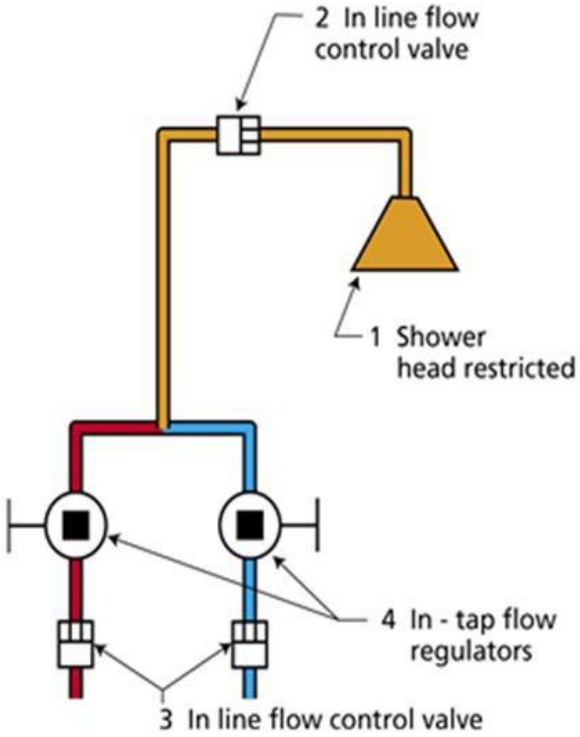

Figure 1: In-line flow control valves

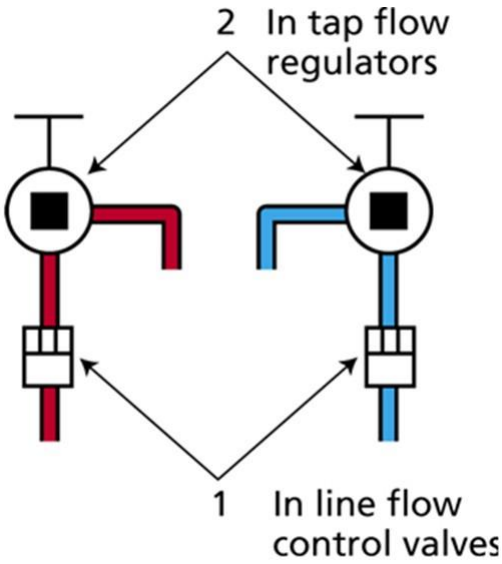

Figure 2: In line flow control valves and in tap flow regulators

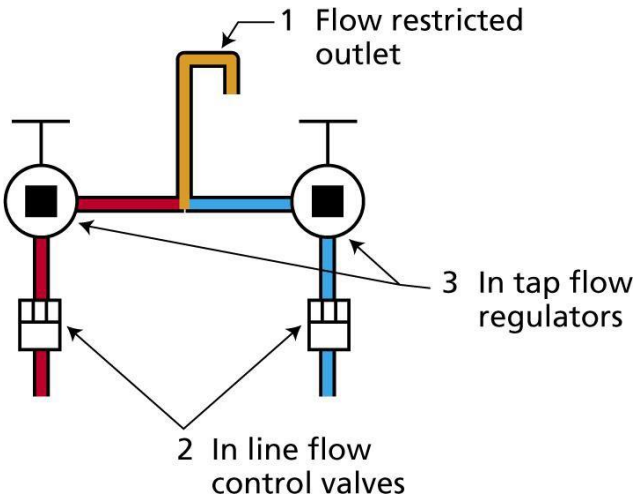

Figure 3: In line flow control valves, in-tap flow regulators or restricted outlets

Explanatory Notes: Figures 2 & 3:

1. WELS compliant tapware
2. Approved in-line flow control valves can be used to the hot and cold supply to the taps.
3. In-tap flow regulators may also be used.

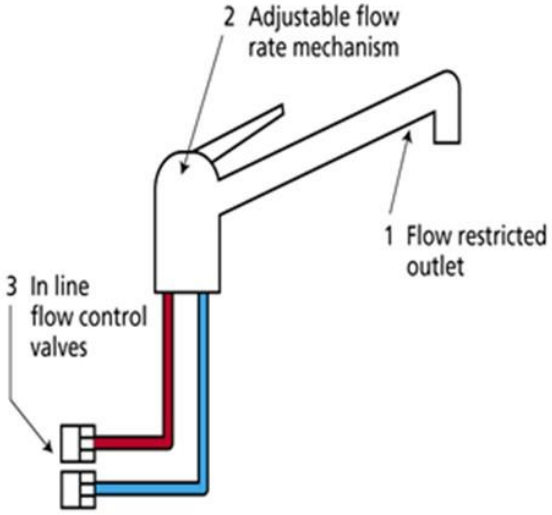

Figure 4: Single lever mixer with incorporated flow restriction

Explanatory Notes: Figure 4:

1. A single lever mixer tap may have the flow restriction incorporated in the outlet by the manufacturer who will label the tap set as complying with WELS.
2. Some manufacturers may provide an adjustable flow rate mechanism within the tap body which can be set on site by the plumber.
3. Approved in-line flow control valves may be used to the hot and cold supply to the tap.

It is a requirement for all tapware to have an approved Watermark & WELS rating to ensure compliance.

Related Documentation

- Building Act 1993
- Plumbing Regulations 2018
- National Construction Code 2022 Volume Three
- AS/NZS 3500.1:2021 - Water services
- AS/NZS 3500.4:2021 – Heated water services
- https://www.waterrating.gov.au/
- https://watermark.abcb.gov.au/

List of Amendments

- Amended to reflect current Plumbing Regulations NCC and Australian Standards
- Update format and content review
- Minor amendments to improve readability

Document history

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Contact Us

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