

Technical Solution Sheet 5.05

5: Cold Water Plumbing

Hot Water from Cold Taps

AIM

The aim of this technical solution is to inform practitioners about plumbing regulations relating to the maximum temperature for cold drinking water, and to provide guidance on installing cold water plumbing to comply with the regulations.

PLUMBING REGULATIONS 2008

The *Plumbing Code of Australia* (PCA) is adopted by and forms part of the *Plumbing Regulations 2008*. Part B1 of the PCA specifies the objectives and performance requirements related to the installation of cold water services. [AS/NZS 3500.1: Plumbing and drainage Part 1: Water services](#), is a “deemed to satisfy” document listed in Part B1 of the PCA and contains a section on “Installation of cold water services”.

[AS/NZS 3500.1](#) states that, “to prevent any unreasonable rise in the temperature of the cold water delivered to fixtures located within a building, pipes and fittings installed above the ground should be protected against the heating effects of solar radiation or other heat sources”.

The *Plumbing Regulations 2008* states that, “Drinking water that is not intentionally heated must be delivered at a temperature of less than 40 degrees Celsius”.

BACKGROUND

During the summer months the Victorian Building Authority receives a number of complaints from consumers regarding the temperature of cold water supply.

Generally, the complaints relate to high temperature cold water delivery. In some installations, the temperatures are exceeding 50 degrees Celsius which is higher than the maximum permitted heated water delivery to ablutionary fixtures.

The high temperature cold water can be caused by the ambient heat around cold water pipes in enclosed roof and wall spaces. Other factors that contribute to the problem are dark coloured roofs, and little or no roof space ventilation.

SOME HINTS IN ACHIEVING COMPLIANCE

- Any pipe-work under a concrete slab or in a confined floor space must comply with Section 5 of [AS/NZS 3500.1](#) (see Figures 1 and 2).
- Where buildings have sub-floor access then install the piping network in this location (see Figure 2).
- Where possible avoid installing cold water piping in ceiling spaces where the roof coverings are a dark colour and where there is limited flow - through ventilation (see Figure 3).
- Avoid installing cold water piping directly below roof coverings (see Figure 3).
- Avoid installing cold water piping in external cavity walls facing north or west, or at least keep pipe-work away from the external wall cladding. Keep pipes running horizontally and near the base of wall cavities (see Figures 1 and 2).

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Regardless of pipe material, any hot or cold pipe must be lagged with quality industrial lagging material where a temperature increase from solar radiation can be expected.

FIGURE 1 - PREFERRED WATER SERVICE LOCATION

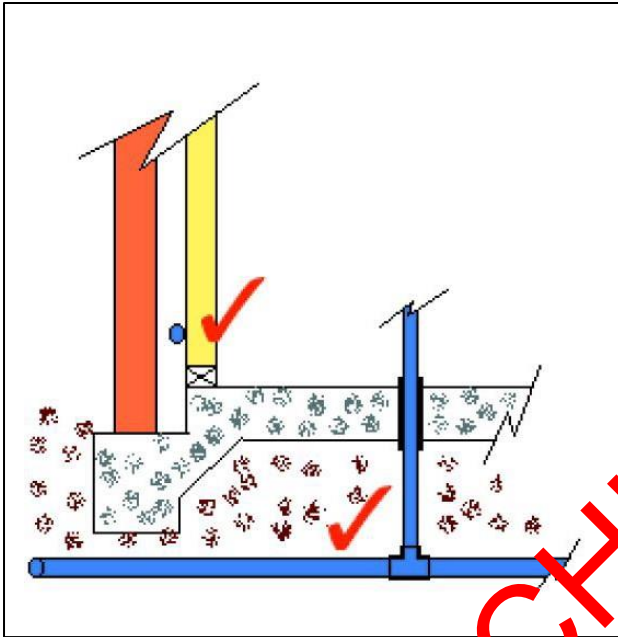


FIGURE 2 - PREFERRED WATER SERVICE LOCATION

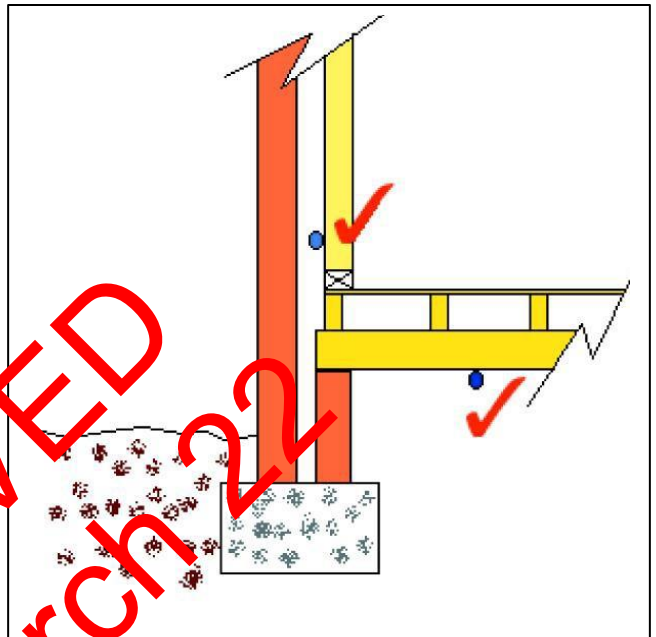
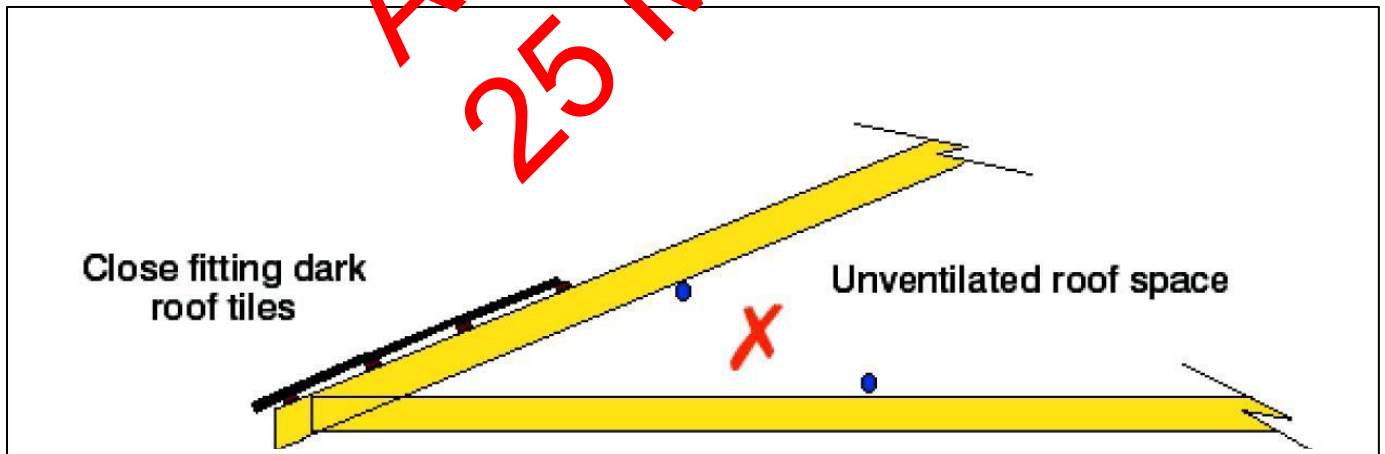


FIGURE 3 - INAPPROPRIATE WATER SERVICE LOCATION



Note:

Installations in ceiling spaces with limited flow through ventilation and dark coloured roof coverings should be avoided wherever possible.