GOVERNMENT OF WESTERN AUSTRALIA

Department of **Local Government, Industry Regulation and Safety**

Building and Energy

Technical Note

Technical Advice Line 1300 360 897 **www.lgirs.wa.gov.au/building-and-energy**

Miscellaneous technical note B

This technical note has been published to provide information on unintentionally heated cold water, floor wastes and floor waste gullies, flammable insulation in wall cavities and plumbing services in bushfire-prone areas.

Unintentionally heated cold water

The current housing industry practice of installing both cold and heated water pipework in the ceiling space has resulted in reports of unintentional heating of the cold water supply.

Cold water supply pipes exposed to increased ambient temperatures may result in bad tasting drinking water and water wastage as the unintentionally heated water is drawn off from the affected pipework. In some cases, cold water has also been reported at dangerously high temperatures.

Legislation

The issue is currently recognised in the Plumbing Code of Australia 2025 (PCA) under B1P1 Cold water supply installation, as explanatory information only.

AS/NZS 3500.1:2025, clause 5.5.1 has explanatory information in note 4 that installers should consider the negative effects and take precautions to prevent the unintentional heating of cold water pipework.

Solutions and precautions

Possible solutions that should be considered to avoid the unintentional heating of the cold water service would include, but not limited to:

- Burying the cold water service below ground level.
- Applying insulation with a suitable 'R' rating to the cold water pipes in ceiling spaces. Note, this may only delay the unitentional heating of the water.
- Avoiding long runs of unprotected cold water piping in ceiling spaces.
- Avoid exposed water pipes across roof cladding.
- Placing batt type insulation over cold water pipes in ceiling spaces.
- Avoid water pipes on external walls exposed to direct sunlight.

Floor wastes and floor waste gullies

The provisions for floor wastes either, dry untrapped types or floor waste gullies are only mandatory in the following situations:

- Building Code of Australia (BCA) Volume 1, F2D4 states `In a Class 2 or 3 building or the Class 4 part of a building, a bathroom or laundry located at any level above a sole-occupancy unit or public space must have a floor waste'. This can be either a dry untrapped floor waste or a floor waste gully. The floor must be graded to the grate at a minimum continuous fall of 1:80 and a maximum continuous fall of 1:50.
- BCA Volume 1, F2D3 requires a floor waste to be installed where either a slab type urinal with a step or where a wall hung urinal is installed.

Photo 1: Typical floor waste gully for wall hung urinals

Untrapped floor drains

AS/NZS 3500.2:2025, clause 13.26 says that untrapped floor drains may be installed in a wet area and therefore they are not compulsory.

Untrapped floor wastes must not be connect to floor waste gully risers.

Version 4 - May 2026

Level 1, Mason Bird Building, 303 Sevenoaks Street (entrance Grose Avenue), Cannington WA 6107
Postal: Locked Bag 14, Cloisters Square Perth WA 6850

Protection of building elements from wet areas

The BCA, Volume 2 under H4P1 for Class 1 buildings (single dwellings) states that in wet areas, water must be prevented from penetrating behind fittings and linings or into concealed spaces. Examples of acceptable solutions may be the installation of dry untrapped floor wastes, floor waste gullies or using fixtures with integral overflows.

Cavity wall insulation fire risk

A recent incident where flammable wall insulation was ignited has highlighted the need for caution when using tools that produce flames, heat or sparks. A plumber using oxygen/acetylene equipment to repair a leaking copper pipe in a new home ignited the flammable cavity wall insulation.

Insulation is installed in double brick cavity walls in order to achieve an elevated energy efficiency star rating for the building. Unfortunately some of these products are flammable and care should be taken to ensure any work in the vicinity of these combustible materials does not result in a fire.

Precautions

When performing hot works in close proximity to combustible materials the following precautions are recommended:

- Prior to carrying out hot works, identify any potential combustible materials in close proximity, including reading the manufacturer's material safety data.
- Temporarily remove and replace combustible material after hot work is completed or take steps to shield any such materials from the source of ignition.
- Ensure suitable firefighting equipment is available including as a minimum a fire extinguisher of the correct type.

These precautions are particularly important when the ignition of insulation material causes a fire in a position that is difficult to extinguish.

Fire in a cavity wall has the potential to damage electrical wiring and other combustible service pipes and the fire may also spread rapidly into the roof space.

Plumbing services in bushfire-prone areas

When carrying out plumbing work on residential buildings in bushfire-prone areas, licensed plumbing contractors are encouraged to liaise with the builder to ensure any specific requirements that apply to the plumbing installation are met.

The PCA 2025, B1D4 and B2D10 states that cold and heated water services in a designated bushfire-prone area must be in accordance with AS 3959 Construction of buildings in bush-fire prone ares.

All cold and heated above ground exposed water piping shall be metallic.

PCA 2025, C1D4 and C2D5 states that sanitary and drainage systems in areas designated as bushfire-prone must be in accordance with AS 3959.

Vent pipes that penetrate roof sheets shall be non-combustible sealed at the roof. The material used to seal the penetration shall be non-combustible.

Consultation between all parties in the early stages of the building process will minimise the likelihood of the plumbing work being non-compliant and having to be rectified.

Notes

The technical note series is issued by Building and Energy to assist the plumbing industry to comply with the Plumbers Licensing and Plumbing Standards Regulations 2000 (the Regulations) applicable to plumbing work in Western Australia.

Each technical note is to be read in conjunction with Part 6 of the Regulations that currently adopt the Plumbing Code of Australia (PCA) as the standards that apply to the carrying out of plumbing work in WA. The PCA contains specific deemed to satisfy provisions and applies AS/NZS 3500:2025, parts 1, 2 and 4 to plumbing work. PCA, schedule 11 applies variations to certain matters to suit the state's building approach and other local conditions.

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