



Flow and return lines from solar water heaters

This technical note has been issued to advise the plumbing industry of the mandatory requirements and best practice when installing flow and return lines from solar water heaters/panels on the roof to auxiliary water heaters or storage tanks at finished surface level.

Installation

Several issues have been identified in relation to plumbers installing insulated heated water pipes in wall cavities or internal wall chases.

AS/NZS 3500.4:2025, clause 6.3.6 states that plastic pipes and fittings shall not be used between the collector and the container unless supplied as an integral component of the solar water heater system.

AS/NZS 3500.4:2025, clause 8.2.1(c) and (f) require the following pipework be insulated:

- ▶ The primary flow and return pipes, including valves, between an auxiliary heater and a storage water heater.
- ▶ On a solar water heater installation, the pipework between a solar pre-heater and an in-line supplementary water heater.

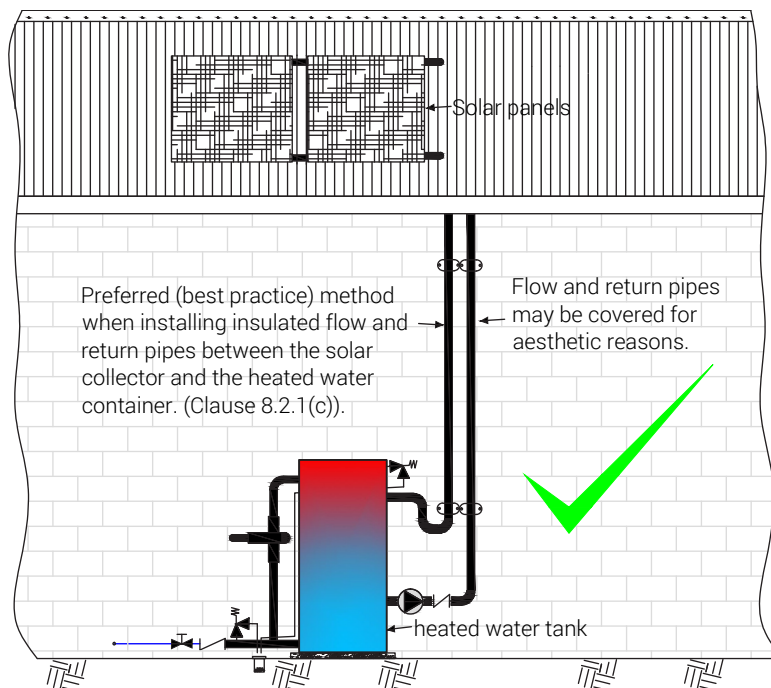


Diagram 1: Typical flow and return lines fastened to external wall serving solar panels

To avoid breaching the building and plumbing standards, licensed plumbing contractors are advised to install any insulated heated water pipework on the external wall of buildings, secured in accordance with AS/NZS 3500.4:2026, table 4.5.4.

Identified issues

Issues have been identified with insulated pipework placed in wall chases and wall cavities including;

- ▶ Cracks appearing in plaster.
- ▶ Unintentional heating of rooms.
- ▶ Pipework with insufficient clipping that may result in water hammer.
- ▶ Potential breaching of the cavity between the internal and external leaves of brickwork resulting in moisture entering the building.

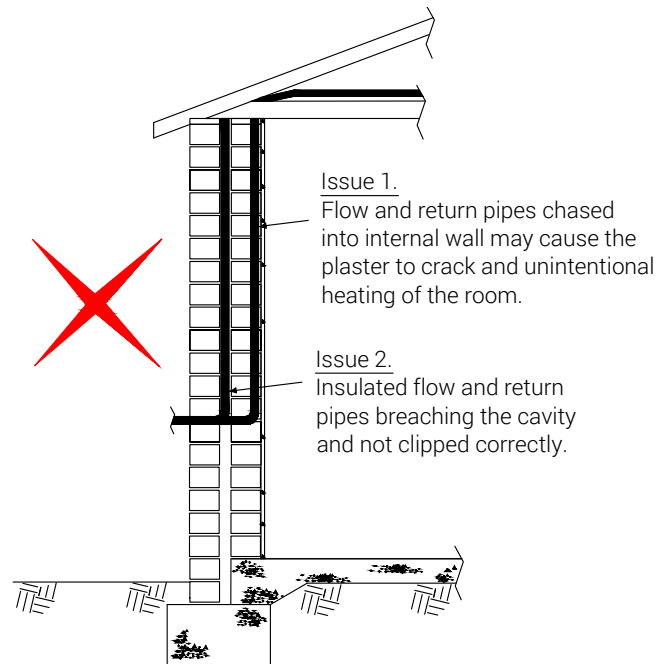


Diagram 2: Issues with flow and return lines serving solar panels

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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