



## Flow and return lines from solar water heaters

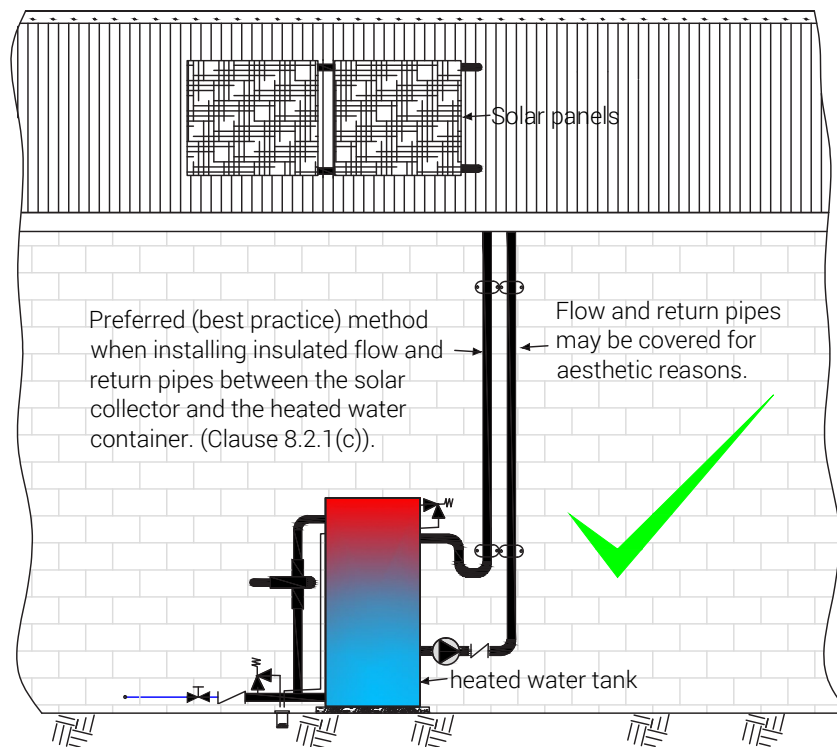
This technical note has been issued to advise the plumbing industry of the mandatory requirements and best practice when installing flow and return lines from solar water heaters/panels on the roof to auxiliary water heaters or storage tanks at finished surface level.

### Installation

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

AS/NZS 3500.4:2018, 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.



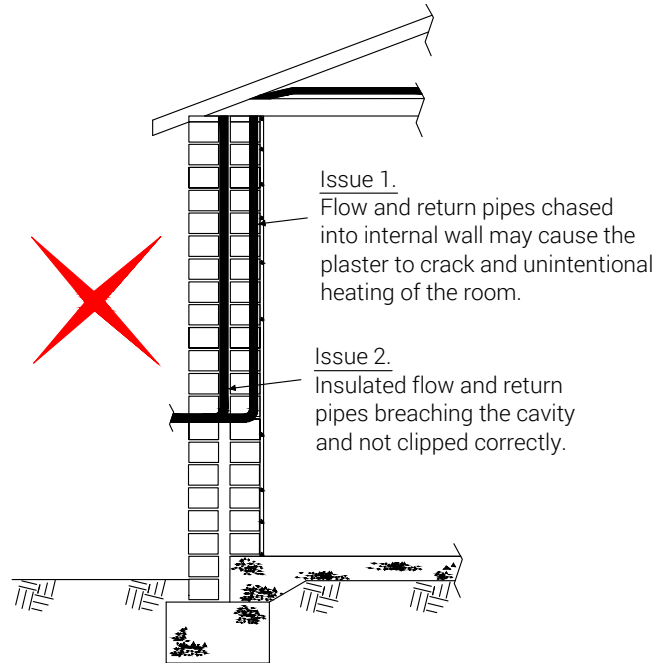
**Diagram 1:** Typical flow and return lines fastened to external wall serving solar panels

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 3500.4:2018, table 4.4.4.

## 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

## Temperature control when replacing solar water heaters

The Plumbers Licensing and Plumbing Standards Regulations 2000, under regulation 49 modifies AS/NZS 3500.4:2018, clause 1.11.2. The modification means that it is compulsory to provide temperature control when an existing solar water heater is replaced with a new solar water heater, regardless of make and model.

### Notes

The technical note series is issued by the Plumbers Licensing Board 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) and the deemed to satisfy provisions of AS/NZS 3500:2018, Parts 0, 1, 2 and 4 but modified in certain matters to suit the State's building approach and other local conditions.

### Copies

Technical notes are published at [www.dmirs.wa.gov.au/building-commission](http://www.dmirs.wa.gov.au/building-commission) Printed copies may be made available on request by telephone (08) 6251 1377 or email [plbedu@dmirs.wa.gov.au](mailto:plbedu@dmirs.wa.gov.au)

### Disclaimer

The material published by the Department of Mines, Industry Regulation and Safety (Plumbers Licensing Board) is provided voluntarily as a service to the plumbing industry. The information and advice provided is made available in good faith and is derived from sources believed to be reliable and accurate at the time of publication. The information is provided solely on the basis that readers will be responsible for making their own assessment of the matters discussed therein and are advised to verify all relevant representations, statements and information. Changes in circumstances after a document has been published may impact on the accuracy of the information. No assurance is given as to the accuracy of any information or advice contained after publication. This publication may be reproduced or copied without charge for research and educational purposes with due acknowledgement of the source.

© July 2019 Department of Mines, Industry Regulation and Safety