



This technical note has been issued to provide advice on the correct requirements when installing water heaters and water tanks in roof spaces. Adequate support for a water heater or tank filled with water is vital to avoid structural damage to the building. Providing adequate space, removable panels and/or structural elements is paramount to allow ease of maintenance or replacement of water heaters and tanks without compromising the structural integrity of the building. This note should be read in conjunction with the Plumbing Code of Australia (PCA) and the Deemed to Satisfy Provisions in AS/NZS 3500:2015.

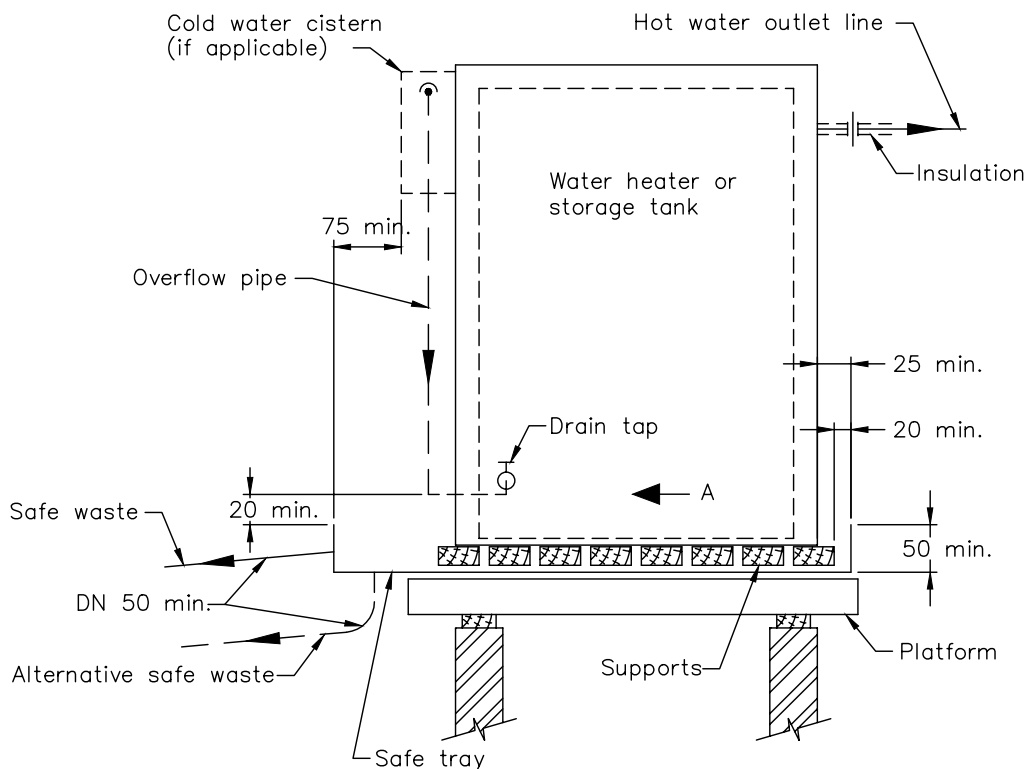


Diagram 1: Typical requirements for water heaters or storage tanks in roof spaces

AS/NZS 3500.4:2015

Section 5 sets out the installation requirements for water heaters in general with specific clauses applying to water heaters and water tanks in roof spaces. The section covers the requirement for a safe tray to protect the building from water damage and providing adequate structural support.

Storage water heaters and cold water storage tanks installed in a roof space (see diagram 1) shall be placed on a safe tray that is supported by a platform of hardwood or other suitable and not less durable material complying with the following requirements:

(a) The safe tray shall drain to its safe waste.

(b) The safe tray shall be placed so that the load of the water heater or cold water storage tank is adequately supported by one or more load-bearing walls that are vertically continuous to a solid foundation, a concrete slab or similar support of comparable strength (see diagram 2). Additional information is stated in AS/NZS 3500.4:2015, clause 5.5.1.

(c) Where the roof is constructed from trusses, the platform supporting a water storage tank shall not be supported from any part of the trusses unless the trusses are specifically designed to carry the load of the water storage tank.

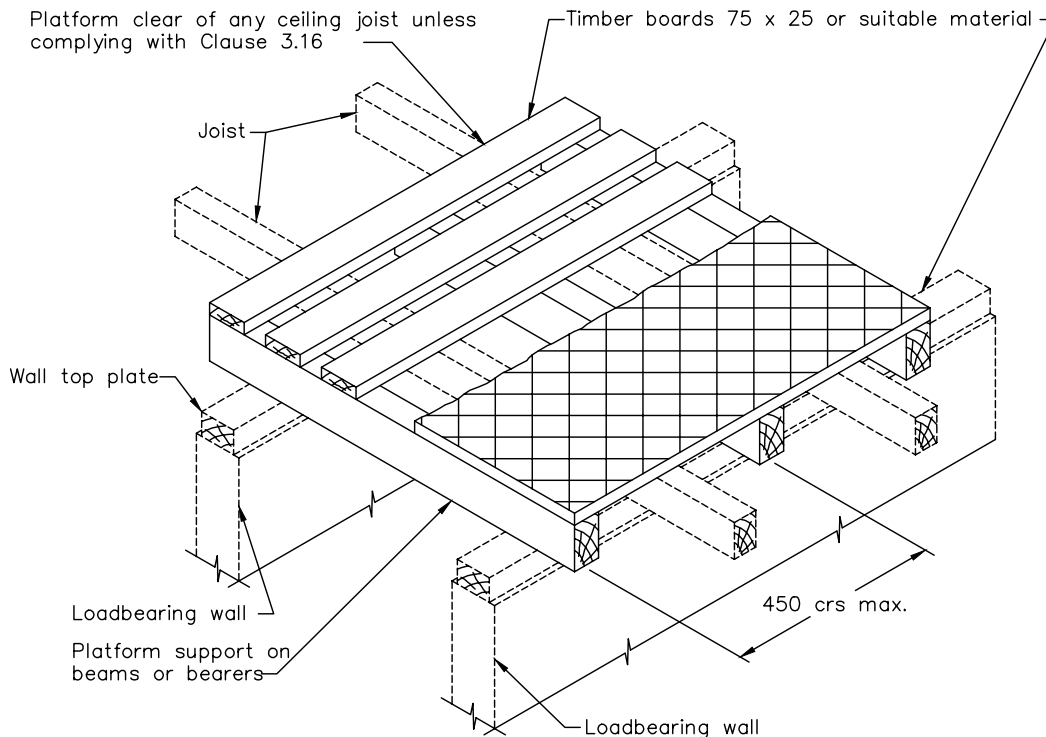


Diagram 2: Typical requirements for support

Accessibility and clearances

AS/NZS 3500.4:2015 clause 5.3.2 states that water heaters or storage tanks shall be located and oriented in accordance with the following:

- The rating plate and instruction notice shall be in a visible position.
- Unobstructed access shall be available to the burner, heating units, controls, cold water storage tanks and other apparatus requiring maintenance.
- All valves and the easing gear on a relief valve shall be readily accessible.
- There shall be 150mm minimum clearance from the end of the easing gear of temperature/pressure-relief valves to allow for valve removal.
- The heater shall be subsequently removable without major structural alteration to the building or major alteration to the piping.

Concealed water storage tanks

All water containers, cold water storage tanks, cold water storage tank-fed water heaters or storage water heaters that are installed in roof spaces, in cupboards or otherwise concealed shall be placed on safe trays complying with clause 5.4.3. The safe trays shall be drained by safe wastes complying with clause 5.4.4.

Safe trays may be installed without safe wastes when mains pressure water heaters are installed, provided an approved shut-off device is fitted adjacent to the cold water inlet and upstream of any expansion control valve (see clause 5.4.1).

Unconcealed water storage tanks

Unconcealed water storage tanks, installed inside buildings on or above a floor surface that is impervious to water and suitably drained to a trapped or untrapped floor drain or an external doorway, do not require safe trays.

Safe tray construction

Safe trays shall be fabricated from materials that comply with the requirements of clause 2.5.1. This includes safe trays manufactured from plastic material (see diagram 3). Safe trays do not require WaterMark certification although they must be fit for purpose. Any proprietary fittings supplied with the tray for the connection of the safe waste or safety relief valve drains must be used for that purpose.



Diagram 3: Typical compliant pre-made safe tray

Safe wastes

The minimum sizes of safe wastes shall be—

- (a) DN 25 for safe trays in under-sink situations; or
- (b) DN 50 for all other situations.

Each safe waste shall comply with the following:

- (a) It shall have a continuous fall to its discharge point.
- (b) It shall include support in the vicinity of the tray and at intervals not greater than 1m horizontally and 2.4m vertically.
- (c) The discharge position shall comply with the following:
 - (i) Where discharging outside the building, it shall discharge to a point within the property boundaries, which is readily visible from within the property, clear of doors, windows and other openings and is unlikely to cause injury to people or damage to property.
 - (ii) Where discharging inside the building, it shall discharge to a readily visible position that is unlikely to cause injury to people or damage to property.

- (iii) Where cold water storage tanks or cold water storage tank-fed water heaters are outside the building, it shall discharge to a readily visible position.

NOTES:

1. Wherever practicable, clearance should be allowed for removal and replacement of anodes, where fitted.
2. There are further requirements for cold water storage tank-fed water heaters under AS/NZS 3500.4:2015, clause 4.11.
3. Drain lines from expansion control or temperature pressure-relief valves shall not discharge into a safe tray.
4. Safe wastes may discharge to floor waste gully risers maximum length 10m.
5. Connection of safe wastes to safe trays shall be completed using WaterMark certified fittings in a tradesman like manner. Fittings must not be cut down as this is an unapproved modification and not compliant to the prescribed plumbing standards.

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 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 3500:2015 Parts 1, 2 and 4 but modified in certain matters to suit the State's building approach and other local conditions.

Feedback

The Plumbers Licensing Board welcomes your feedback. If you have any questions on this technical note or any suggestions on any areas of plumbing work that the technical notes should cover, please contact the Board's Senior Technical Officer on (08) 6251 1377.

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