

Technical Solution Sheet 6.09

6: Hot Water Plumbing

Temperature Pressure Relief (TPR) Valve Drain Lines

AIM

The aim of this technical solution is to clarify some of the requirements relating to the installation of drain lines from Temperature Pressure Relief (TPR) valves. Substandard installation of drain lines is a common fault, and practitioners should familiarize themselves with the correct installation requirements.

NOTE: This technical solution should be read in conjunction with *AS/NZS 3500.4: plumbing and drainage part 4: heated water services* and other technical solutions.

PLUMBING REGULATIONS 2008

The *Plumbing Code of Australia* (PCA) is adopted by and forms part of the *Plumbing Regulations 2008*. Part B2 of the PCA specifies the objectives and performance requirements related to the installation of heated water services. *AS/NZS 3500.4* is a “deemed to satisfy” document listed in Part B2 of the PCA and contains a section on “Temperature Pressure Relief and expansion control valve drain lines”.

TPR VALVE DRAIN LINE GENERAL INSTALLATION REQUIREMENTS

1. **Material**
 - Must be copper or other suitable material.
2. **Size**
 - Must be the same size as the TPR valve outlet for the length of the drain.

3. **Length**

- Must comply with Table 1.

Note:

If these lengths cannot be met, a tundish must be provided in a position where the lengths can be met.

4. **Fall**

- Must fall continuously to the termination point.

TABLE 1 - MAXIMUM RELIEF DRAIN LENGTH

Maximum Relief Drain length	Maximum Number of Bends >45°
9m	3
8m	4
7m	5
6m	6

5. **Interconnection of drain lines**

- The only form of interconnection permitted is with the drain line from a cold expansion valve fitted to the same water heater.
- Drain lines from multiple relief valves shall not be interconnected but may discharge over a tundish on a common drain line.

6. **No taps, valves or other restrictions in drain line.**

7. **Discharge must be readily discernable (visible).**

8. **Must not discharge directly to a safe-tray (see Figure 5).**

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9. Termination

- **AS/NZS 3500.4** does not specify a termination distance but introduces a performance measure to eliminate risk of injury to the operator during the activation of the TPR valve (see Figures 1, 2 and 3) the discharge must:
 - Not damage buildings.
 - Be directed away from building footings.
 - Not pose a risk of injury to persons (see Figures 1 and 5).
 - A gravel pit may only be used subject to the above and must be minimum 100mm diameter in a paved surface.
 - The TPR drain must discharge 75mm minimum or 300mm maximum above the gravel pit.

- Where discharge is to an overflow relief gully (ORG) it must be 75mm minimum or 300mm maximum above the ORG and must not obstruct the operation of the ORG grate.

10. Other issues

- Where a water heater is being changed over, the plumbing practitioner must ensure that any existing drain line complies with the above requirements.
- In the situation where a previous water heater TPR valve drained over the outlet of the safe tray, provision must be made to ensure there is no risk of damage to the safe tray waste pipe or the existing safe tray (see Figure 4).

FIGURE 1 - OPERATOR AT RISK

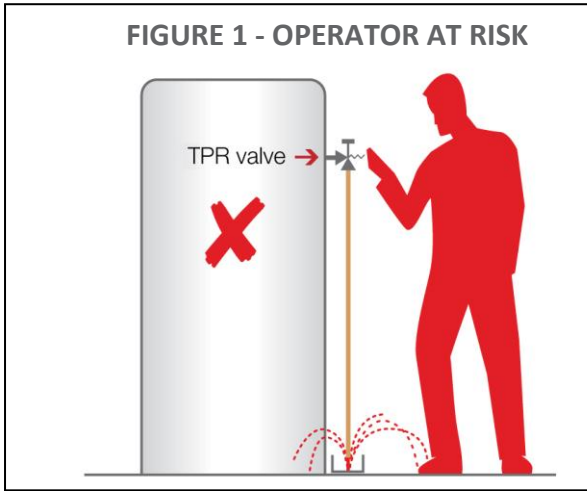


FIGURE 2 - OPERATOR SAFE

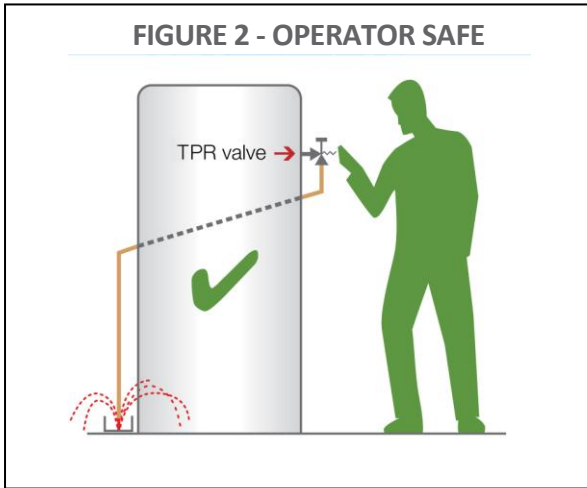
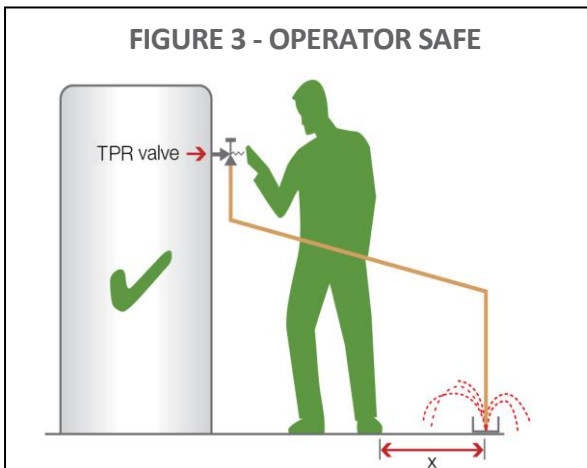
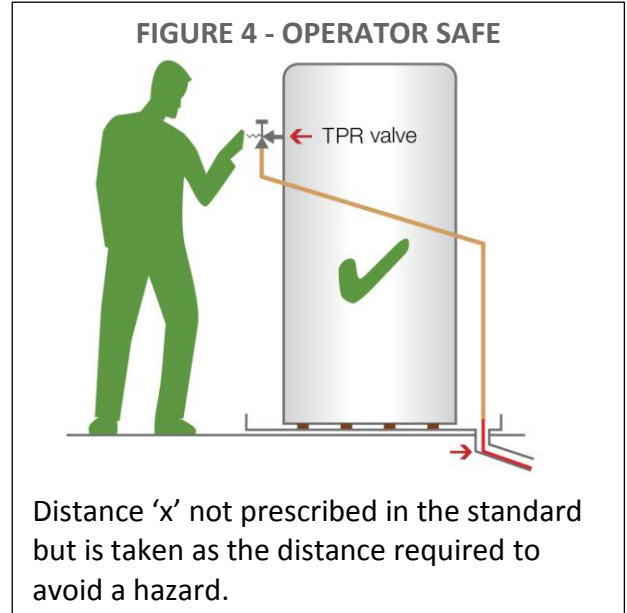


FIGURE 3 - OPERATOR SAFE



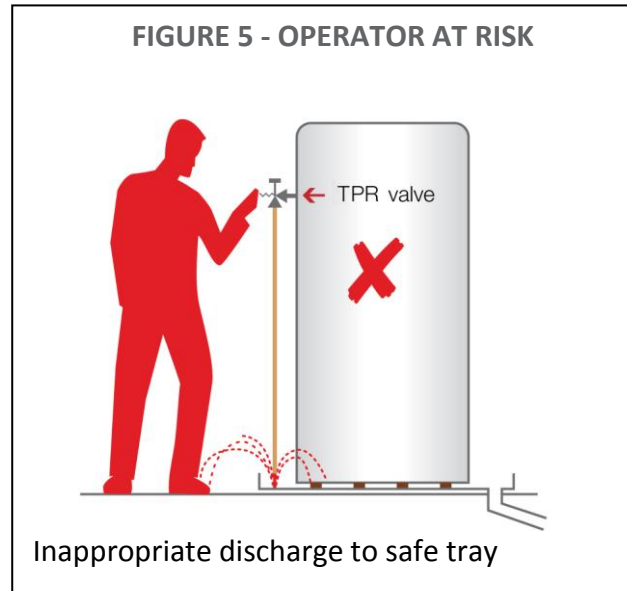
Distance 'x' not prescribed in the standard but is taken as the distance required to avoid a hazard.

FIGURE 4 - OPERATOR SAFE



Distance 'x' not prescribed in the standard but is taken as the distance required to avoid a hazard.

FIGURE 5 - OPERATOR AT RISK



Inappropriate discharge to safe tray