Government of Western Australia
Department of Mines, Industry Regulation and Safety
Plumbers Licensing Board

Technical Note

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

Boundary traps

This technical note has been issued to advise the plumbing industry on the installation requirements and configuration of boundary traps. Boundary traps perform a vital role in sewerage networks, protecting the main drains of private properties and the community from harmful sewer gases. Redevelopment of properties in older suburbs has heightened these risks and this technical note may assist licensed plumbing contractors to establish when boundary traps are required in both new subdivisions and redevelopment work areas.

Connection

It is the licensed plumbing contractor's responsibility to determine a "boundary trap area" which is an area where boundary traps are required by the water services provider. As the major water services provider in WA, the Water Corporation may install boundary traps as part of the sewerage infrastructure in a new subdivision.

Before connecting new buildings to the main sewer in new and established suburbs, the licensed plumbing contractor needs to check the size of the sewer and the other situations where boundary traps are required.

Water Corporation boundary trap areas are where junctions are located on:

- sewers that are 300 mm or larger in diameter;
- IO or IS sewers where the downstream sewer is 300 mm or larger in diameter; and
- sewers, regardless of their diameter, that convey a major pumped discharge.

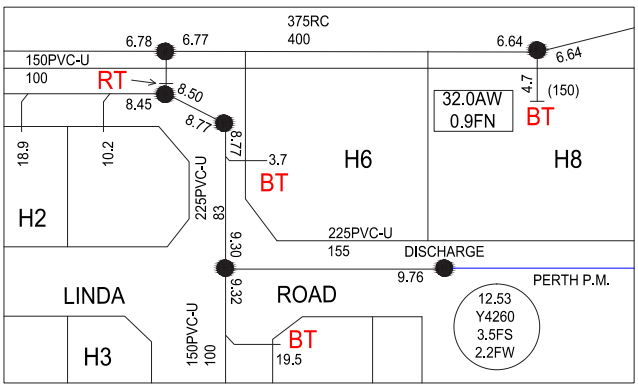

Diagram 1: Water Corporation 'E' plan example

Configuration and construction

A boundary trap may be installed when the connection point is installed as part of the main sewerage infrastructure or at the time a property is connected to the sewer. The type of trap needed will be determined by the depths of both the main drain and main sewer. They can be either:

(a) A 'P' type for inspection shaft rising shafts; or

(b) A running type on grade for inspection shaft square on back configurations.

DN 100 'P' type boundary traps

The photo below shows a specialised DN 100 trap which can be purchased and must be used as a boundary trap. They have a swept outlet in accordance with Water Corporation requirements that allows smoother flow of wastewater.

Photo 1: Specialised DN 100 'P' type boundary trap

Version 5 - July 2023

Level 1, Mason Bird Building, 303 Sevenoaks Street (entrance Grose Avenue), Cannington WA 6107
Postal: Locked Bag 100, East Perth WA 6892

DN 150 ‘P’ type boundary traps

Diagram 2 below shows a ‘P’ type boundary trap of DN 150, constructed using a configuration of approved WaterMarked fittings. This trap shall be fabricated to provide a water seal of 150 mm ± 5 mm and used at the base of an inspection shaft rising shaft.

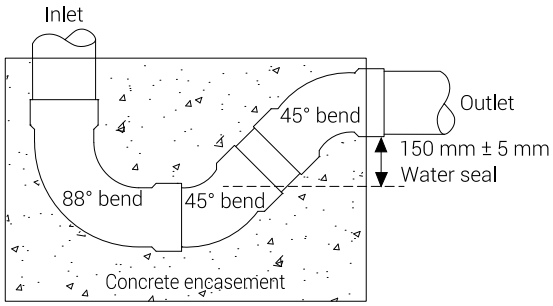

Diagram 2: DN 150 ‘P’ type boundary trap

Running type boundary traps

Boundary traps on grade (running type) in DN 100 and DN 150 can also be constructed using approved WaterMarked fittings as in diagrams 3 and 4.

Diagram 3 below shows a DN 100 running type boundary trap derived from the Water Corporation’s Design Standard DS50. The trap shall be fabricated to provide a water seal of 75 mm ± 5 mm and used only for property connections made on grade.

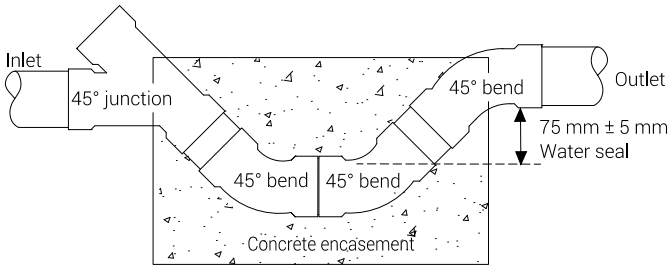

Diagram 3: DN 100 running type boundary trap

Diagram 4 below shows a DN 150 running type boundary trap that is constructed incorporating an 88º bend. The trap shall be fabricated to achieve a water seal of 150 mm ± 5 mm and used only for property connections made on grade.

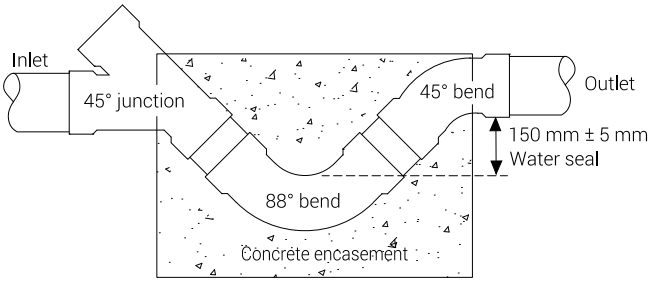

Diagram 4: DN 150 running type boundary trap

Note:

1. Boundary traps larger than DN 150 will require a deeper water seal. For more details contact the Plumbers Licensing Board.

Installation, location and venting

Boundary traps within properties shall be installed in the main drain, located at or near the point of connection to the main sewer and installed in accordance with AS/NZS 3500.2:2021, clause 4.4.

The main drain that incorporates a boundary trap must have an upstream and downstream vent in accordance with AS/NZS 3500.2:2021, clause 3.9.1.

Where a downstream boundary trap vent is required by AS/NZS 3500.2:2021, clause 3.9.1(a), it shall be installed as follows —

(a) the vent may be connected to the rising shaft, the inspection shaft or main drain not more than 10m from the boundary trap riser and no other fixture is connected between the vent and the boundary trap riser, see diagrams 5 and 6.

(b) the vent is sized in accordance with clause 3.9.3.1(d) so that the fixture unit loading on the main drain determines the size of the vent with the minimum size of not less than DN 50.

(c) low level vents shall comply with clause 3.9.2.3 as shown on page 3 in diagram 7 as options 1 or 2.

Photo 2: Example of low level vent termination

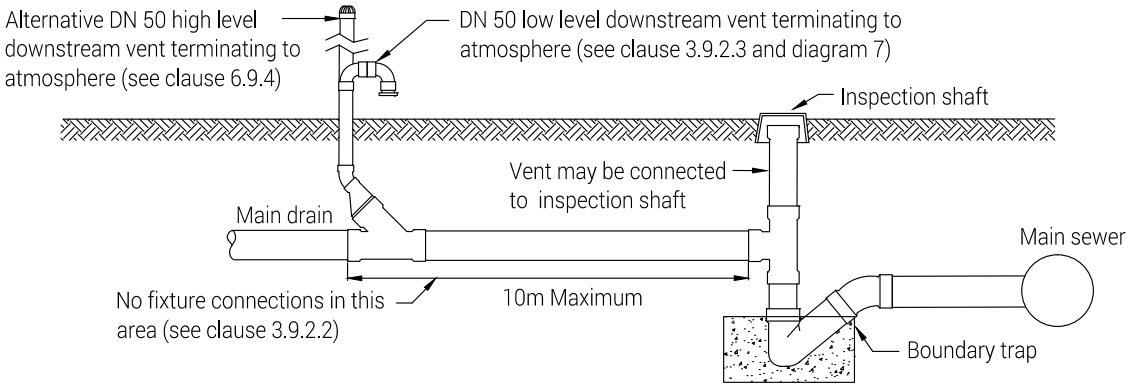

Diagram 5: Boundary trap installation ('P' type)

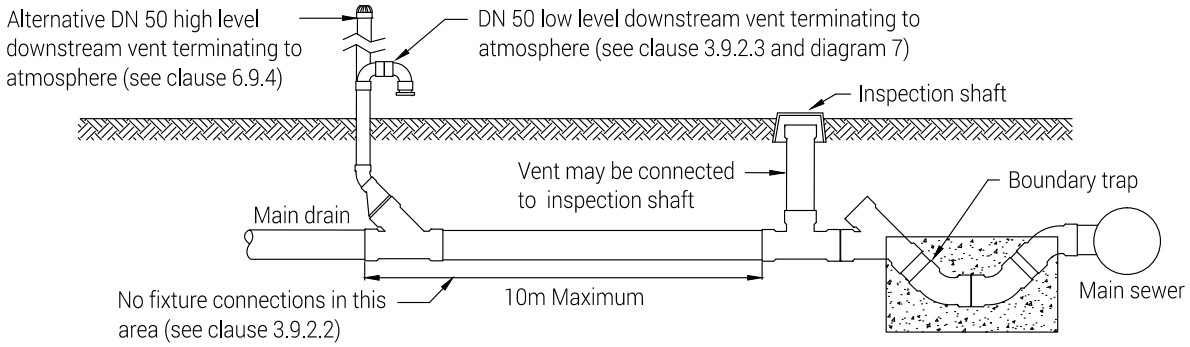

Diagram 6: Boundary trap installation (running type)

Termination of low level vents

Low level vents serving boundary traps can be constructed using approved WaterMarked fittings and terminate using options 1 or 2 as shown below, Air admittance valves cannot be used as downstream vents on boundary traps.

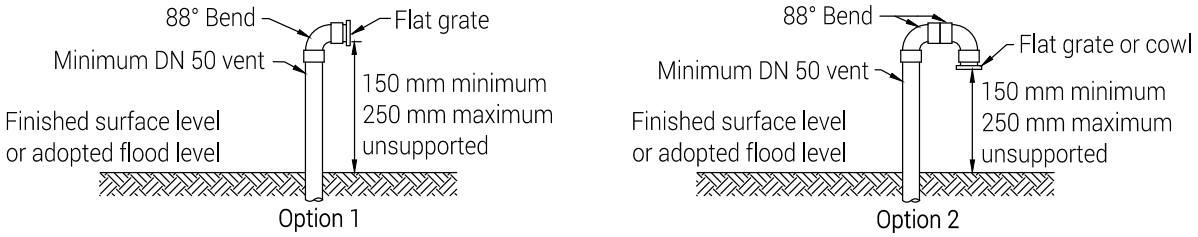

Diagram 7: Options for low level vent termination

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 3500:2021, parts 0, 1, 2 and 4 but modified in certain matters to suit the State's building approach and other local conditions.

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 2023 Department of Mines, Industry Regulation and Safety