GOVERNMENT OF WESTERN AUSTRALIA

Department of **Local Government, Industry Regulation and Safety**
Building and Energy

Technical Note

Technical Advice Line 1300 360 897

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Inspection openings for drainage

This technical note has been issued to clarify the requirements for the installation of inspection openings (IO) on drainage plumbing systems in Western Australia (WA).

Inspection openings in drainage plumbing

Drainage plumbing systems are required to have suitable inspection openings installed to allow access for inspection, testing and maintenance purposes.

Inspection openings are required in the following locations as stated in AS/NZS 3500.2:2025, clause 4.7.1 with clause 4.7.1(c) replaced by a WA variation in schedule 11 of the Plumbing Code of Australia:

Except where inspection chambers are provided, inspection openings for maintenance purposes shall be provided–

(a) outside of a building, not further than 2.5 m along each branch drain connecting one or more water closets or slop hoppers;

(b) At intervals of not more than 30 m, with a minimum of one inspection opening on each main drain;

(c) on the downstream end of any branch drain that exits a building, between the building and the junction into the main drain;

(d) on the downstream end of the drain where any drain passes under a building except where waste fixtures only are concerned;

(e) If any new section of drain is connected to an existing drain; and

(f) immediately at or upstream of the upper bend of a jump-up.

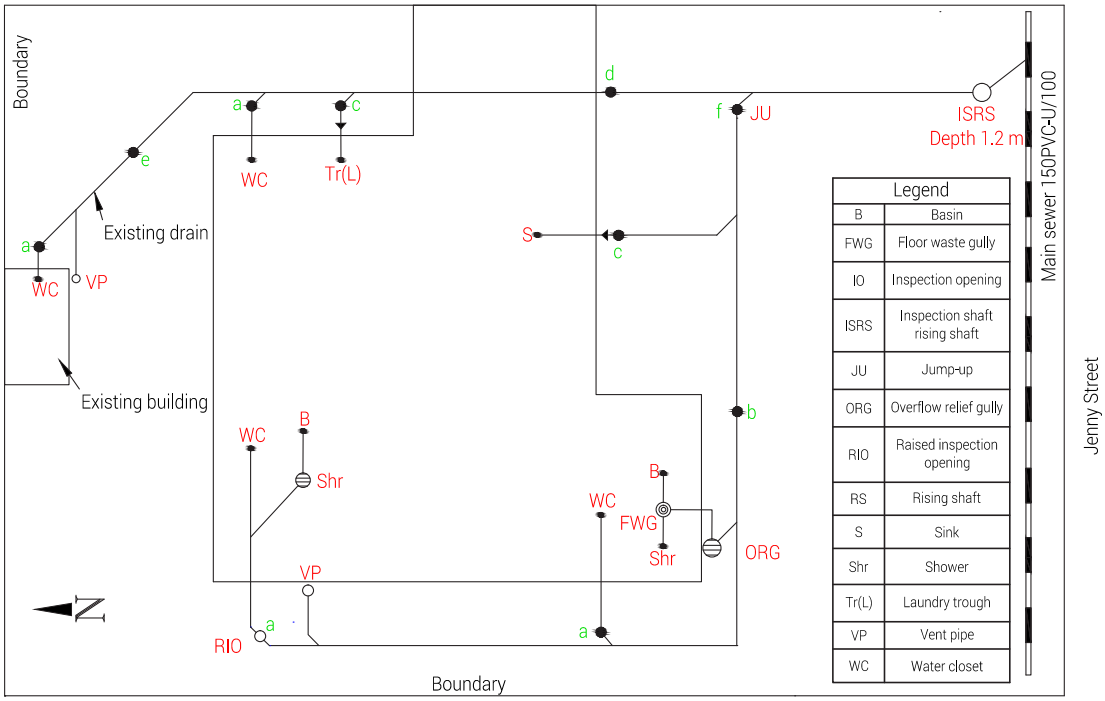


Diagram 1: Shows the location of required inspection openings

Raised inspection openings

AS/NZS 3500.2:2025, clause 4.7.4 requires:

(a) At least one inspection opening shall be raised to finished surface level on each main drain.

(b) Where raised to finished surface level, inspection openings shall be provided with airtight removable caps and protected by a cover and surrounded in such a manner that no traffic or structural loads are transmitted to the drain.

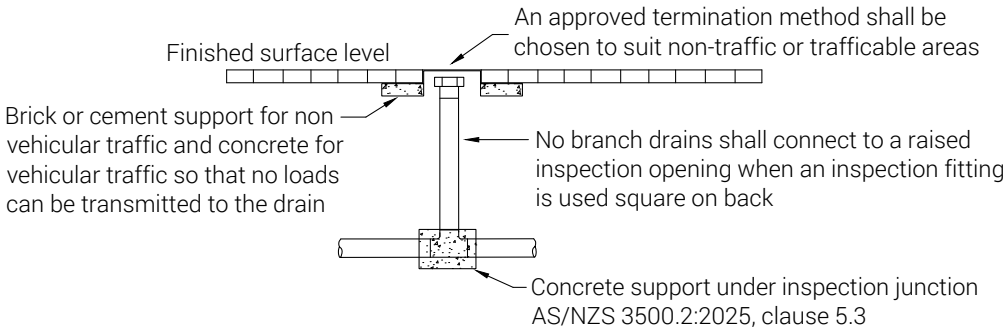


Diagram 2: Typical raised inspection opening

Traditionally, rod ends (RE), as shown in diagram 3, have been installed using a 45° junction and a 45° bend to change the direction of the drain with an access cap on the upstream end of the 45° junction for maintenance and inspection purposes.

This method only allows inspection and access to the downstream section of the drain. Clean out points (COP), diagram 4, and raised inspection openings (RIO) incorporated an 88° bend to raise the access point to finished surface level.

These methods of providing access into a drain suited traditional drain rods and mechanical drain cleaning machines where the blockage was cleaned towards the downstream end of the drain.

The operation of modern jetting machines and drain cameras can be assisted by a conducive configuration of drainage fittings to ensure correct and safe use when clearing and inspecting drains, see diagrams 5 and 6.

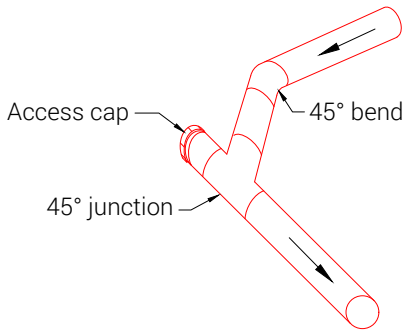


Diagram 3: Traditional style rod end (RE)

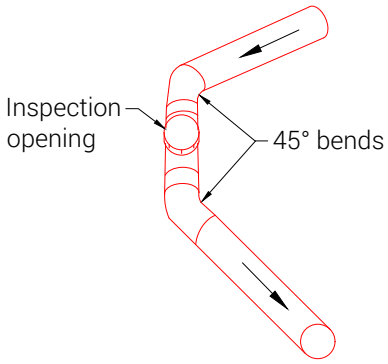


Diagram 5: Preferred method of providing access

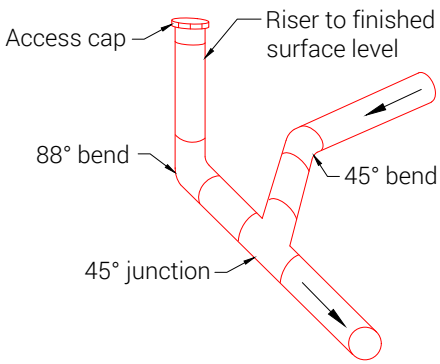


Diagram 4: Traditional style raised clean out point (COP)

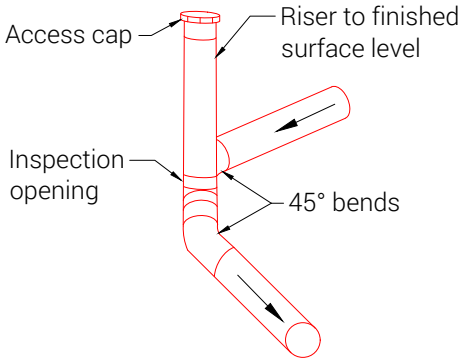


Diagram 6: Preferred method of providing raised access into drain

Size of inspection openings

AS/NZS 3500.2:2025, clause 4.7.2 requires that the size of inspection openings in drains shall be;

(a) the same size as the drain for inspection openings up to DN 150; or

(b) not less than DN 150 for drains larger than DN 150.

Types of inspection openings

AS/NZS 3500.2:2025, clause 4.7.3 states that inspection openings may be of the following forms:

(a) Inspection branches or square junctions.

(b) Inspection chambers in accordance with clause 4.8.

(c) Reflux valves.

Inspection chamber and maintenance shafts

The installation of inspection chambers is optional and they are mainly used in large commercial applications. Inspection chambers may be constructed in situ in accordance with AS/NZS 3500.2:2025, clause 4.8 or prefabricated off site.

Maintenance shafts

Maintenance shafts may be installed as an alternative or in conjunction with inspection chambers.

They are required in multi-unit developments by AS/NZS 3500.2:2025, clause 14.2.2, although inspection chambers may be used as an alternative.

Notes:

1. Where IOs are concealed under paved surfaces consideration should be given to raising the IO to finished surface level as good plumbing practice.
2. The section of drain that carries the most fixture units is considered the main drain and must have a raised inspection opening, preferably at the upstream end of the drain. If any external branch drains are required to be vented as a result of any one of the following conditions:
   (i) The drain length exceeds 10 metres.
   (ii) The drain loading exceeds 30 fixture units.
   (iii) The drain receives the discharge from more than two (2) water closets.

   It is best plumbing practice to also consider it a main drain and raise an inspection opening to finished surface level.
3. The choice between inspection chambers verses maintenance shafts should be done in consultation with the owner of the building.
4. 88° or sweep junctions can only be used in the following locations;
   (i) the connection of a branch into a stack;
   (ii) the connection of a graded branch to the top of a jump-up;
   (iii) The connection of a graded branch to an inspection shaft rising shaft; or
   (iv) the connection of a waste pipe to a disconnector or floor waste gully riser.

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 (WA).

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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