

# Building and Plumbing Newsflash 625

## Plumbing Code of Australia 2022 – Junctions installed in sanitary plumbing and drainage systems at grade

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### Purpose

To inform industry about the compliance requirements under the Plumbing Code of Australia (PCA) 2022 when installing junctions on grade as part of a sanitary plumbing or drainage system.

### Background

Since the commencement of the Plumbing Code of Australia 2022 (PCA) on 1 May 2023, the Australian Standard (AS/NZS 3500:2021 – Plumbing and Drainage series) has been adopted as a primary reference document of the PCA.

For sanitary plumbing and drainage systems installations, Part 2 of the standard (AS/NZS 3500.2:2021) includes new requirements that certain junctions installed as part of a sanitary plumbing or drainage system be elevated to an incline of 15 degrees.

These requirements were included following industry research into the backwash effect of junctions installed at grade. Research found that junctions when installed at grade were causing solids to become stranded, which can lead to blockages in pipes and backwash into the branch drain.

### Requirements for junctions installed at grade

#### Sanitary drainage

Part 2 of the standard includes an existing requirement for sanitary drainage systems (clause 4.9.1.1), that the junction used to connect any drain to a graded drain shall have an upstream angle of 45 degrees.

As a new requirement (clause 4.9.1.2) requires that where an equal junction<sup>1</sup> is installed to connect a DN<sup>2</sup>100 branch drain with another DN 100 drain, both of which are installed on grade, the entry level of the branch drain shall be elevated at an incline of no less than 15 degrees above the horizontal.

#### Sanitary plumbing

Part 2 of the standard includes an existing requirement (clause 6.6.2.4.1) that graded discharge pipes installed as part of a sanitary plumbing system shall be joined with each other by means of a 45 degrees junction.

As a new requirement for sanitary plumbing systems, (clause 6.6.2.4.2) requires that where an equal junction is installed to connect a DN 100 branch pipe with another DN 100 pipe, both of which are installed on grade, the entry level of the branch pipe shall be elevated at an incline of no less than 15 degrees above the horizontal.

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<sup>1</sup> An equal junction is one which has the same DN size on all three connection ends to a junction fitting.

<sup>2</sup> Nominal size (DN) is a numerical designation of size, which is common to all components in a piping system other than components designated by outside diameters or by thread size. It is a convenient round number for reference purposes and is only loosely related to manufacturing dimensions (AS/NZS 3500.0:2021).

## Explanatory information

The new requirements apply to instances when installing sanitary drainage or sanitary plumbing on grade and are subject to the following:

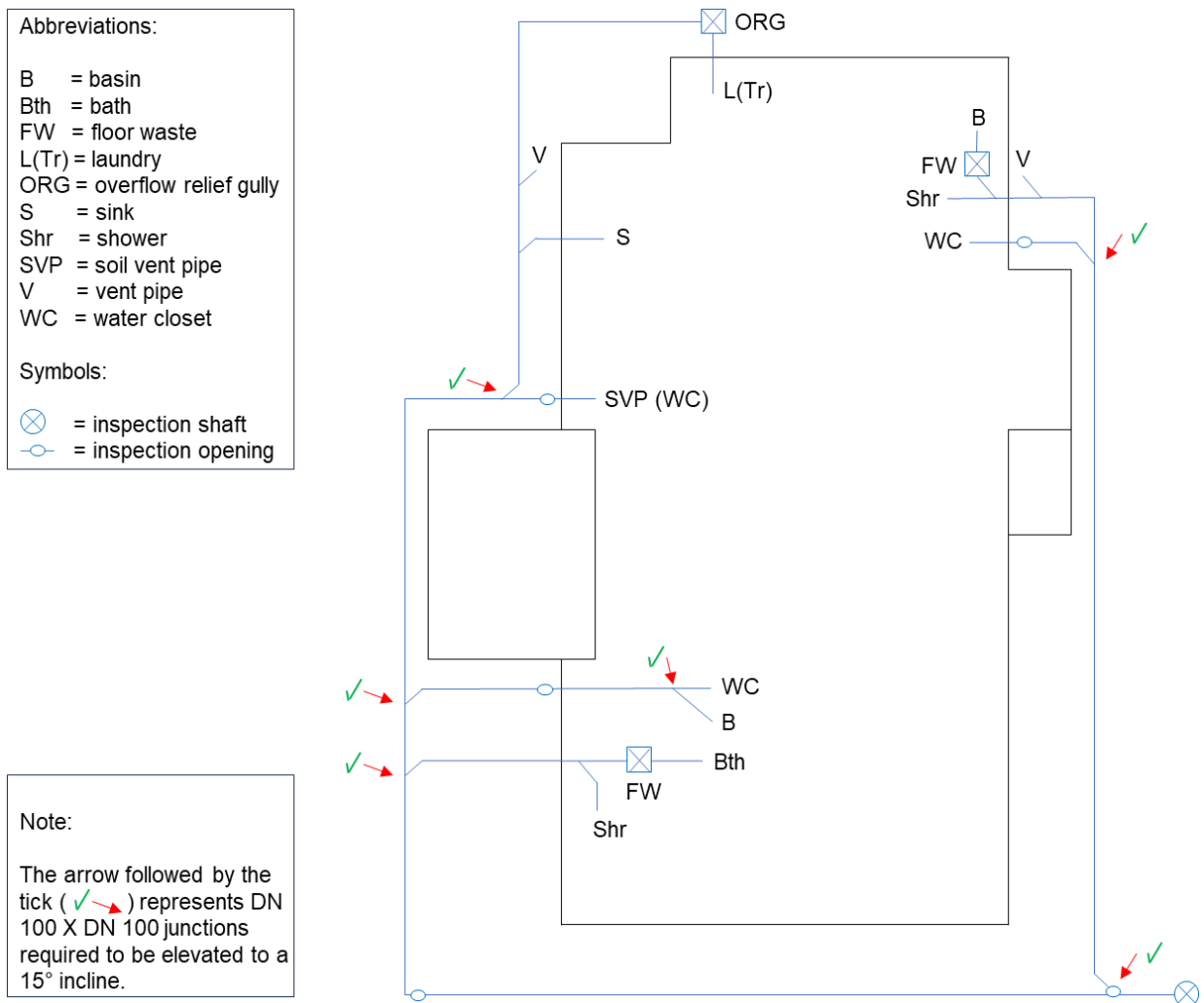
- All new DN 100 x DN 100 x 45 degree junctions installed on grade are to be installed with the entry-level of the branch to be elevated at an incline of no less than 15 degrees above the horizontal where a Water Closet (WC) pan is intended to be installed upstream of either the main drain or branch drain connected to a junction.

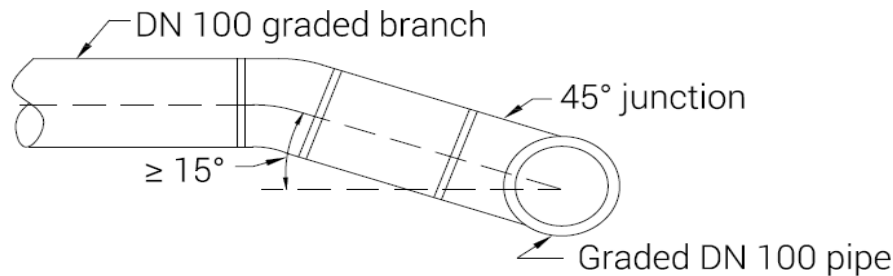
Positioning the junction a minimum of 15 degrees above the horizontal removes the probability of the partial backwash of discharge into the branch drain which can lead to solids to become stranded causing blockages in the drain.

For clarification, the relevant clauses are not prescribing the use of a 15 degree fitting bend be connected to the arm of the junction. If required, any combination of fittings can be used to change the grade of a branch drain upstream of the inclined junction.

## Typical installation

**Figure 1** - Typical installation showing junctions installed as part of a sanitary drainage installation required to be elevated to a 15 degree incline



**Figure 2** – Example of an inclined junction

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## Exclusions

A junction is not required to be installed with a 15 degree incline to the branch where:

- a junction is installed as part of a repair or extension to an existing drainage installation
- there are no WC pans connected upstream of a junction on either the branch drain or main drain
- at least one entry to the junction is of a size other than DN100 including for example a DN100 X DN 65 junction or DN 150 X DN 100 junction.

Where sufficient height is available in existing installations to avoid the potential for blockages, it is recommended the requirements of clause 4.9.1.2 or 6.6.2.4.2 be followed.

## Additional considerations

In parts C1D2 and C2D2 (Deemed-to-Satisfy Provisions) the PCA states that the invert level of a trap or gully must be a minimum of 10 millimetres higher than the soffit of the pipe to which it connects. This means a junction serving floor waste or disconnecter gullies may also have to be installed on an incline.

Where applicable, junctions installed at grade must also comply with the requirements prescribed in clause 4.9.1.1, 6.6.2.1 and 6.6.2.4.1.

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