



## Trade waste applications

This technical note has been produced to provide information on the connection of trade waste pre-treatment apparatus within plumbing installations including fixture discharge pipes, drainage pipework and venting. This technical note is to be read in conjunction with water services provider conditions of connection in the miscellaneous technical note 'A', version 3 - May 2023 and any other water services providers' requirements.

### Vents serving grease arrestors

Although there are other water services providers in Western Australia (WA) who may have differing requirements, WA's major water services provider, the Water Corporation has conditions of connection for trade waste and in particular grease arrestor installations.

- ▶ Whether installed in parallel or series, vents from grease arrestors (DN 80) may interconnect into other grease arrestor vents or be extended independently to atmosphere.
- ▶ When interconnected, the combined grease arrestor vent shall be increased in size in accordance with AS/NZS 3500.2:2021, table 8.5.6.2 and interconnected above the overflow level of the highest fixture connected to the grease arrestors.
- ▶ For example: one (1) DN 80 vent is rated as equivalent to three (3) DN 50 vents. A combination of two (2) DN 80 vents is rated at six (6) DN 50 vents. The correct cross sectional area of the interconnected vents from AS/NZS 3500.2:2021, table 8.5.6.2 must be equal to or greater than six (6) DN 50 vents. Therefore, the correct interconnected vent size shall be DN 100.
- ▶ When combining vents from individual sealed trade waste sampling points and/or sealed disconnecter gullies the same equation and AS/NZS 3500.2:2021, table 8.5.6.2, Size of header vents are applicable.

### AS/NZS 3500.2:2021

AS/NZS 3500.2:2021, clause 6.9.3(c) prohibits vents from arrestor chambers, waste fixtures discharging into disconnecter gullies, bedpan sanitizers and sealed disconnecter gullies being interconnected to other types of vents such as relief, cross, stack or drainage vents.

Vents serving the same application may combine with each other, for example two drainage vents or an upstream drainage vent to a relief vent.

All vents shall terminate in the open air with an approved cowl as per AS/NZS 3500.2:2021, clause 6.9.4.

### Drains to pre-treatment apparatus

Drains serving grease arrestors for example are considered to be main drains and therefore a minimum DN 50 open vent is required at the upstream end of the drain. These vents shall be taken to atmosphere as per AS/NZS 3500.2:2021, clause 6.9.4 or interconnected to other drainage vents. This upstream vent shall be sized in accordance with AS/NZS 3500.2:2021, table 3.9.3.1. Air admittance valves are not permitted unless there is at least one (1) open vent off the main drain serving the arrestor in accordance with AS/NZS 3500.2:2021, clause 6.10.2(a).

Along with these installation requirements for grease arrestors, other conditions of connection are included in guidelines published and updated by the Water Corporation on their website:

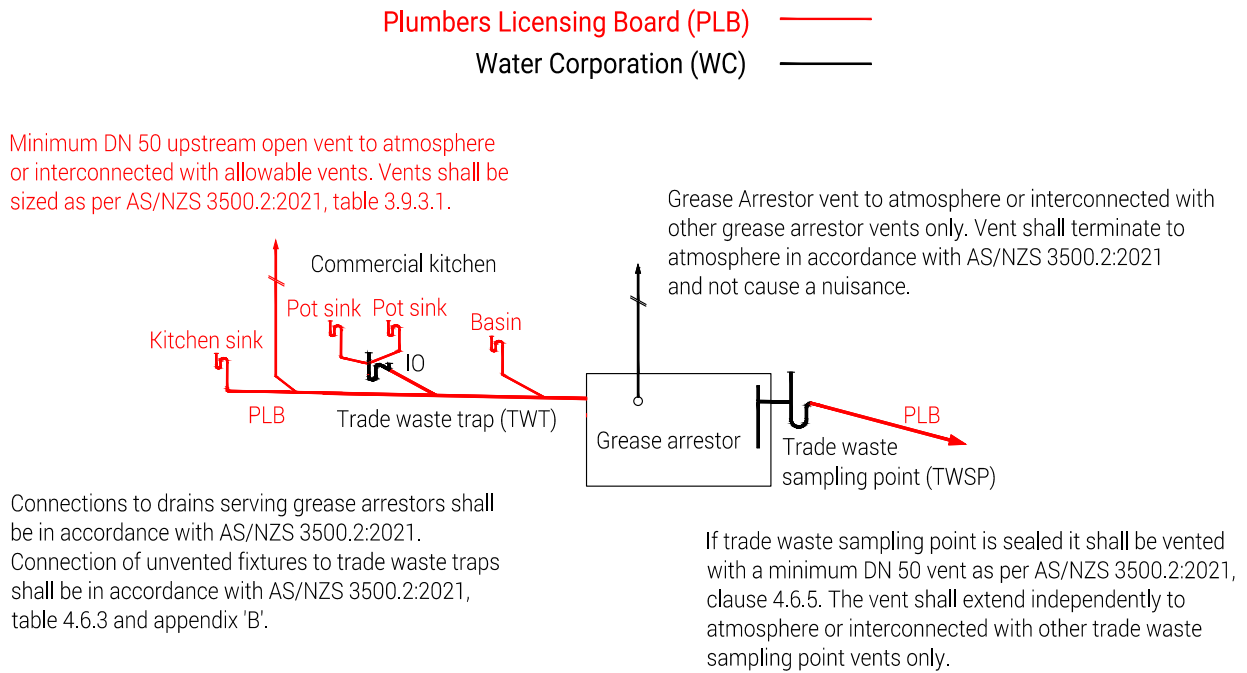
[www.watercorporation.com.au/tradewaste](http://www.watercorporation.com.au/tradewaste)



**Photo 1:** Sealed and vented trade waste sampling point

## Demarcation

The diagram below shows the demarcation between the conditions of connection requirements of a water services provider (Water Corporation) and the prescribed plumbing standards regulated by the Plumbers Licensing Board.



**Diagram 1:** Demarcation between Plumbers Licensing Board and water services providers' requirements

## Connection of pot, laboratory and utility sinks

Licensed plumbers need to be aware that the requirements of AS/NZS 3500.2:2021, clause 6.5.4 and clause 13.18.4 do not allow pot, laboratory and utility sinks to be connected with a double bowl connector in fixture pairs or as multiple outlets. These sanitary fixtures need to be connected individually through separate fixture traps.

The Water Corporation's grease arrester sizing guidelines indicate that pot sinks have a fixture unit rating of 5, whether single or double. This fixture unit rating only applies to the sizing of a grease arrester and not the connection of pot sinks to drainage systems. Hydraulic consultants need to be aware of these conditions when designing trade waste systems to avoid any conflicts with the prescribed plumbing standards during installation by the licensed plumbing contractor, see diagram 2.

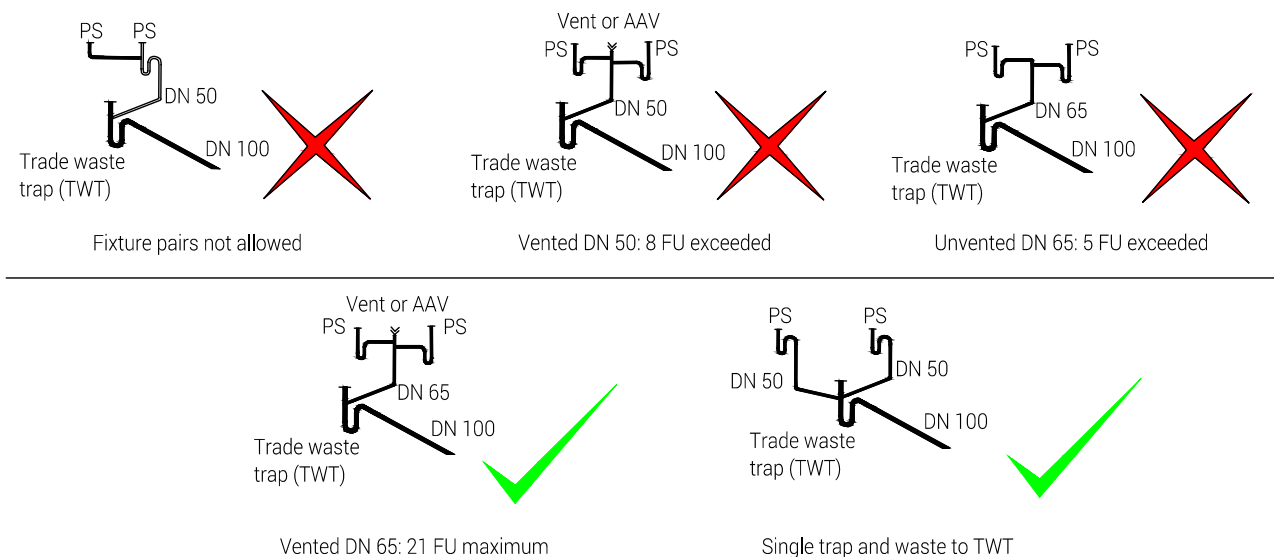
## Size of common discharge pipes

AS/NZS 3500.2:2021, table 8.2.2(A) allows only 8 fixture units to be connected to a vented DN 50 common discharge pipe at a grade of 2.5% or 1:40. Whereas 21 fixture units can be connected to a vented DN 65 common discharge pipe at a grade of 2.5% or 1:40.

Therefore the minimum size of a vented common discharge pipe for the connection of two (2) pot sinks individually trapped is DN 65 at minimum grade as per AS/NZS 3500.2:2021, table 8.2.2(A). The extract below covers common discharge pipes connected directly to drains, sanitary stacks, disconnector gullies and trade waste traps.

### Maximum fixture unit load for vented common discharge pipes

Grade (% - ratio)	Nominal size of vented common discharge pipes (DN)			
	40	50	65	100
5.00 or 1:20	6	15	51	367
3.35 or 1:30	5	10	29	248
2.50 or 1:40	4	8	21	182
2:00 or 1:50	N/A	N/A	N/A	142
1.65 or 1:60	N/A	N/A	N/A	115



**Diagram 2:** Connections of pot sinks (PS) to discharge pipes at minimum grade

## Provision for hot discharges

Maximum temperatures of liquids discharging into the main sewer are set by water services providers and maximum temperature ratings of discharge pipe materials must be considered. For example, continuous discharge of high temperature water, from a commercial dishwasher into PVC-U pipework may result in softening/deterioration of the material. Therefore it is recommended that high temperature resistant materials such as polypropylene, polyethylene or copper are used as the type of pipework from the source of the hot discharge.

### Notes:

1. In a commercial kitchen, the best way to distinguish pot or utility sinks from domestic sinks is to ask the following question: Does the sink look like my kitchen sink at home?
  - (i) If **yes** the sink can be connected using a double bowl connector and single fixture trap.
  - (ii) If **no** the sink is a pot or utility sink and cannot be connected using a double bowl connector through a single fixture trap. Therefore each bowl must have its own individual fixture trap and wastepipe in accordance with the prescribed plumbing standards.
2. Main drains to pre-treatment apparatus and wet wells require the same upstream venting considerations as shown in diagram 1. The category of vents should be considered before any vents are combined.
3. The open upstream vent will be required to be increased in size for the installation of larger capacity pre-treatment apparatus, for example a 4000 litre grease arrestor will require a DN 65 vent because the drain into the grease arrestor can have a maximum of 52 fixture units discharging into it.

### 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.

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