

# Basic pre-treatment devices – Design, Installation and Accessibility

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This fact sheet applies to trade waste businesses with grease arrestors, settling tanks /pits, cooling or neutraliser pit installations.

Adequately sized basic pre-treatment devices must to be installed at every commercial or industrial trade waste premises where the waste water discharge is likely to contain fat, oils, grease or suspended solids, or to present a pH or a temperature outside the admissible limits.

## Typical requirements

A pre-treatment device shall be installed in a location which is:

- accessible for inspection, service and maintenance operations with adequate clearance space above and around the device
- free of obstructions and potential damage
- not able to be damaged by vehicles or traffic
- safe for the trade waste officers performing auditing or sampling functions, e.g. not in a roadway.

The pre-treatment device should be located outside the building wherever practicable.

## Vertical clearance

The vertical clearance above the arrestor/pit needs to be equal to the maximum depth of the arrestor/pit. Where a grease arrestor/pit is located in a basement with limited space, a minimum distance of 1m above the arrestor/pit is required.

## Safe access

Adequate clearance of minimum 1m around at least two sides of an arrestor shall be provided.

All above ground pre-treatment device installations are required to have a platform and steps manufactured to [Australian Standards 1657-2013](#) to allow safe access for inspection and maintenance of the arrestor.

## Equipment and device cleaning

A water tap with an appropriate backflow prevention device to comply with AS/NZS 3500.1 must be installed/located within 5m of the arrestor/pit for cleaning and maintenance purposes. Further information regarding backflow prevention can be obtained by contacting The Office of Technical Regulator.

# Grease arrestor specific requirements

## Access covers and lids

All covers and lids must conform to the [Australian Standards 3996-2006](#) and comply with the required design loading.

The design of lids must be in accordance with the [Hazardous Manual Task Code of Practice](#), published in February 2016 by Safe Work Australia. The main requirements for covers are summarised below:

- Grease arrestor covers must be suitable for the expected weight loadings, e.g. galvanised checker plate covers for pedestrian traffic and 'Gatic' style covers for vehicular traffic.
- Covers must be removable to allow full access for servicing and maintenance and be appropriately sized to allow safe removal by one person. For example, large checker plate covers should be divided into smaller segments, and 'Gatic' style covers should have 600 mm circular inspection covers. Handles or lifting holes are necessary.
- Gas-tight covers are required for indoor systems to contain odours and may be necessary for outdoor installations.
- Where 600 mm diameter gas-tight inspection covers are fitted a minimum of 600 mm vertical clearance between the underside of the cover and the static water level in the arrestor is necessary to facilitate routine servicing.
- Where 600 mm vertical clearance from static water level cannot be achieved rectangular 'Gatic' style covers shall be used to allow for full access when removed for cleaning purposes. Rectangular 'Gatic' style covers must have integrally cast portholes of minimum 200 mm diameter positioned over each arrestor chamber.

As part of the trade waste auditing process, the pre-treatment device needs to be inspected and the covers are required to be removed to verify oil /grease and solids loadings within the apparatus for compliance.

If the cover of a pre-treatment device cannot be lifted by the attending Trade Waste officer, in order to minimise the risk of injury to our employees, the trade waste customer will be required to:

- arrange for the lid to be opened at a pre-arranged time for inspection; or
- replace the lid with one that can be lifted (if applicable); or
- modify the lid and incorporate portholes (minimum size 200 mm) providing that the integrity of the lid is not compromised.

**In the event that the device does not comply with the above requirements, two trade waste officers will attend site to complete this task. In this case, additional charges apply.**

## Venting of arrestors

Vents are required for all grease arrestors to:

- remove odorous and corrosive gasses from within the arrestor
- create air movement between the induct vent and the upstream vent
- reduce condensation within the arrestor
- assist in the maintenance of water seals in gully traps.

## Design/installation

- Where the internal baffles would otherwise seal the chambers within the arrestor, baffles have ventilation holes above the static water level to allow free movement of air.
- An induct vent of not less than DN80 is connected to the outlet chamber of the arrestor. A DN80 or larger high level upstream vent (fitted with a wind driven turbine ventilator for grease arrestors sizes  $\leq 5,000\text{L}$  or hurricane ventilator [Edmonds authorised] for grease arrestors sizes  $> 5,000\text{L}$ ) is connected to the uppermost end of the drainage system gravitating to the arrestor.
- Induct and upstream vents cannot be interconnected.
- A sealed gully breather vent may be interconnected with the induct vent at 300 mm above the lowest fixture connected to the arrestor.
- Vents from arrestors and trade waste drains shall be extended to above roof level, as per AS/NZS 3500.2:2018 Section 6.8.4. Where vents are installed freestanding they must be adequately supported and extended above ground level to a minimum of 3.5m or 150mm above the eave height of adjacent buildings.
- Where extended to above roof level is impractical, an Air Admittance Valve may be used for a branch vent only, provided the valve is made of material that is fit for the purpose and appropriately maintained to ensure effective operation.
- The top of the induct vent pipe is to be installed as high as possible in the wall of the outlet end of the sealed arrestor (see Figure 1). Alternatively the vent can be installed on either side wall of the sealed arrestor but must be as close as practicable to the outlet end wall of the arrestor.
- Where fixed remote suction lines are installed, they shall terminate with a camlock fitting and ball valve adjacent to the grease arrestor and also where the pumping contractor locates their vehicle. Fixed remote suction lines are not permitted inside grease arrestors.
- Charcoal filters are not approved in trade waste installations.

## Other matters

- For stand-alone dischargers, a sampling point (inspection opening) shall be installed (min. 100mm diameter pipe size) and brought to the surface adjacent the inlet of the pre-treatment device, being a grease arrestor, settling pit or neutraliser.
- Where multiple trade waste dischargers are connected to a communal pre-treatment device, being a grease arrestor, settling pit or neutraliser, a sampling point shall be installed (min. 100mm surfaced inspection opening) and located immediately outside the building line of each tenancy or internally at each tenancy, prior to discharging to the main drain.
- All trade waste pre-treatment devices (being an arrestor, silt trap, DAF, etc.) shall connect to the sewerage system via a disconnecter gully, downstream of the device.
- The trade waste disconnecter gully may only accept waste from a single pre-treatment device, with exception to silt traps where multiple silt traps may connect to a single gully.
- Pumped waste to a grease arrestor must enter the gravitating drain at a 45 degree angle to reduce the velocity of the water entering the arrestor.



- The minimum length of the drain gravitating to an arrestor is 500 mm.
- Grease arrestors will require a suitable flow meter installation, to measure the trade waste discharges if the trade waste discharges are generated by a business that:
  - ✓ qualifies for volume and load based charges (annual thresholds limits reached or exceeded e.g.  $\geq 8$ ML volume or  $\geq 8$  tonnes Biochemical Oxygen Demand / Suspended Solids or  $\geq 16$  tonnes Total Dissolved Solids)
  - ✓ discharges into a high demand sewer network (near full capacity).
  - ✓ Requires a pretreatment device greater than 5000L/h
- For information about flow meter installation, see our [Discharge Flow Meters fact sheet](#).
- An appropriate backflow prevention device must be fitted to taps/hoses in the vicinity, which might be used for washing an arrestor. Water hoses must never be immersed in the contents of the arrestor.

## Variations

Variations to the above installation requirements (including installations where increments are to be fitted between the arrestor and ground level) are subject to authorisation by SA Water.

## More information

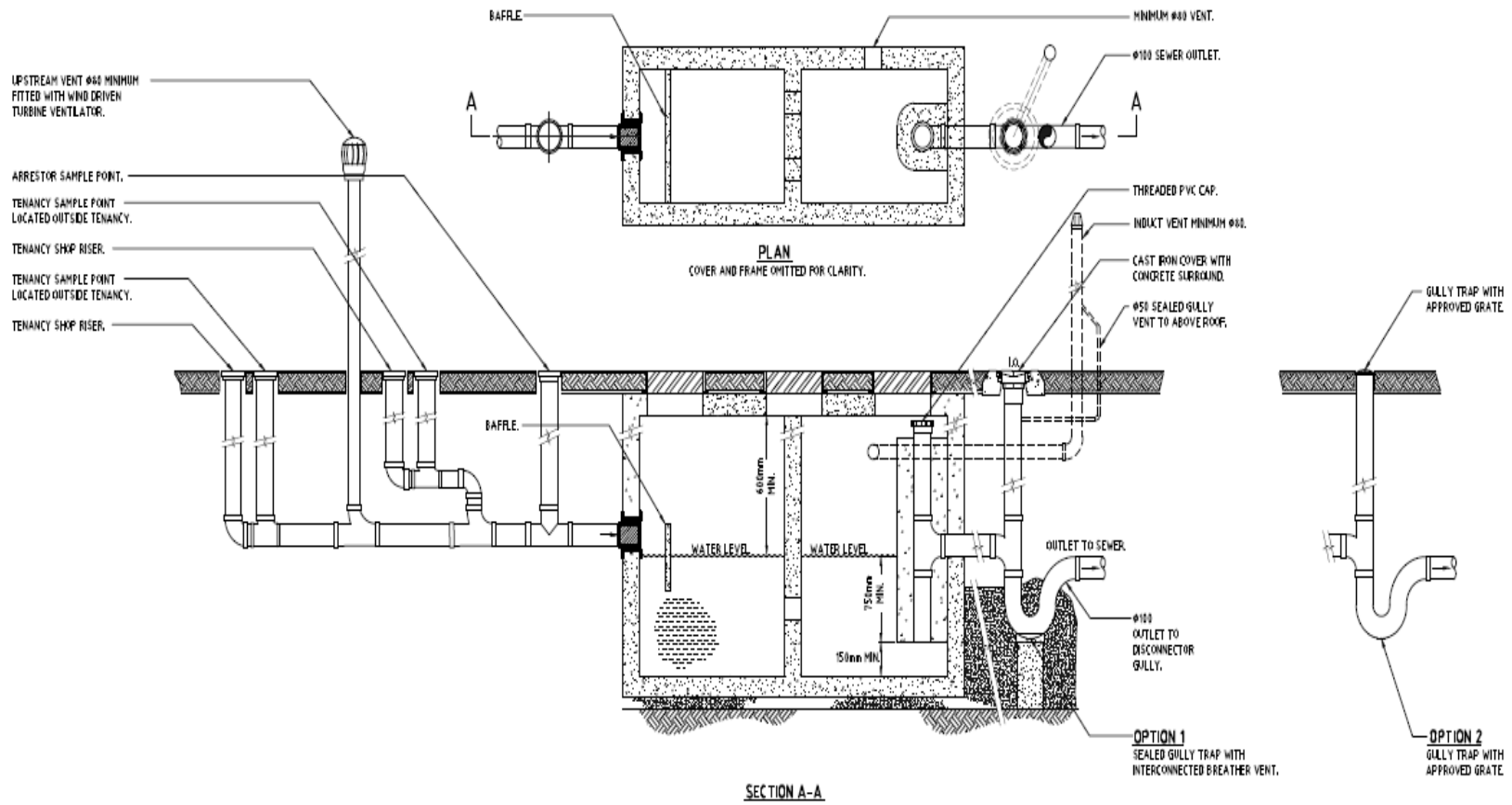
Mains Water Protection (AS/NZS 3500.1:2018)

[Australian Standards 1657-2013](#)

[Australian Standards 3996-2006](#)

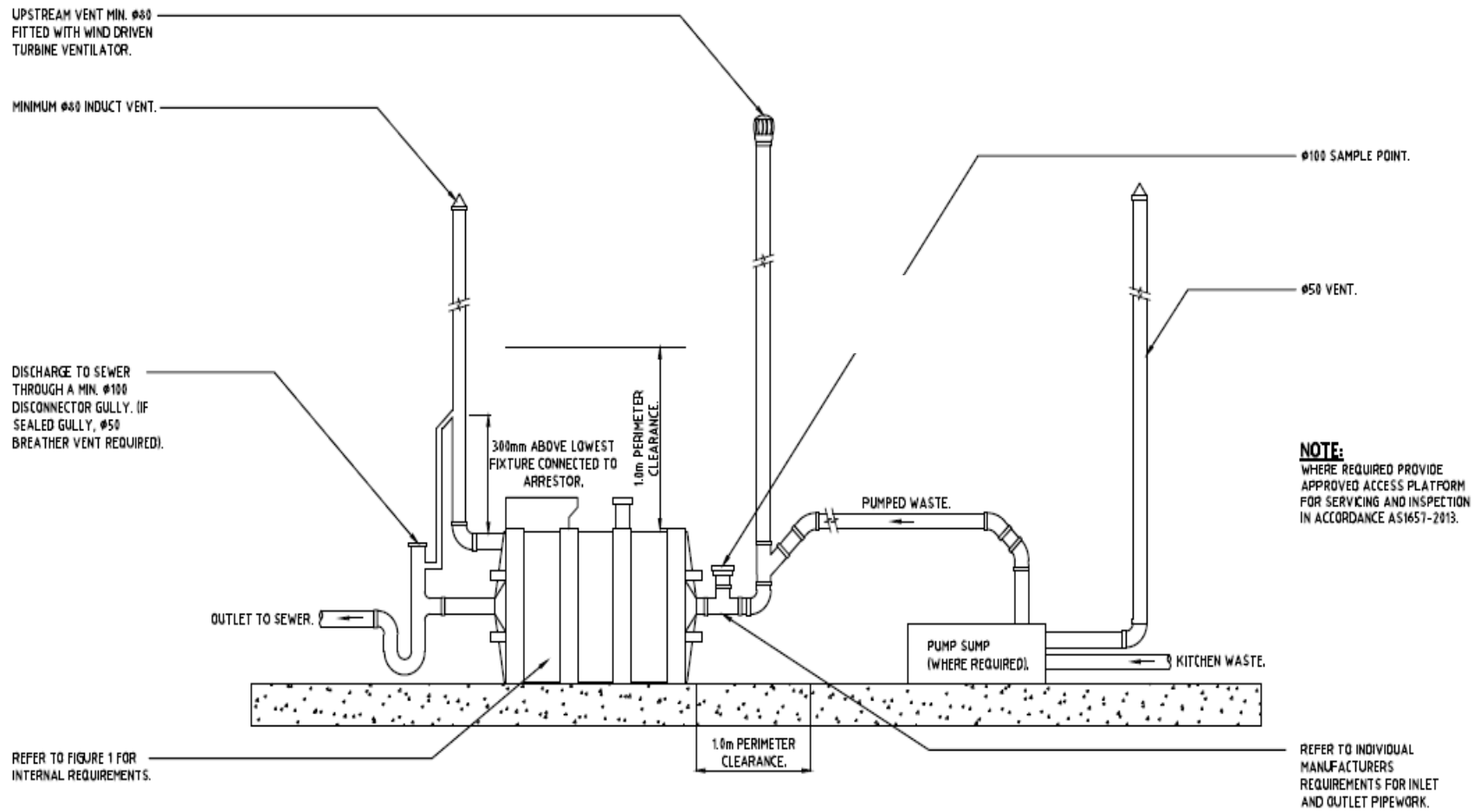
[Hazardous Manual Task Code of Practice](#), published in February 2016 by Safe Work Australia

# Figure 1: below ground trade waste grease arrester detail



- NOTES:**
1. VENT TERMINATIONS MUST COMPLY WITH AS/NZS 3500.2:2015 SECTION 6.6.4.
  2. SEALED GULLY BREATHER MAY INTERCONNECT WITH INDUCT VENT ONLY, 300mm ABOVE LOWEST FIXTURE CONNECTED TO ARRESTOR.
  3. #100 WIND DRIVEN TURBINE VENT FITTED TO UPSTREAM TRADE WASTE HEAD VENT ABOVE ROOF.
  4. WHERE MULTIPLE TRADE WASTE DISCHARGERS ARE CONNECTED TO A COMMUNAL GREASE ARRESTOR, A SAMPLING POINT SHALL BE INSTALLED MIN. 100mm SURFACED INSPECTION OPENING (SIO) AND LOCATED IMMEDIATELY OUTSIDE THE BUILDING LINE OF EACH TENANCY OR INTERNALLY AT EACH TENANCY, PRIOR TO DISCHARGING TO THE MAIN DRAIN.
  5. TAP WITH TESTABLE DOUBLE CHECK VALVE REQUIRED WITHIN 5.0m OF ARRESTOR.
  6. ARRESTOR NOT TO BE LOCATED IN ROADWAYS.
  7. ALL COVERS AND LIDS MUST CONFORM WITH AS3996-2016 AND COMPLY WITH THE REQUIRED DESIGN LOADING.

**Figure 2: typical grease arrester installation above ground pumped discharge**



**NOTES:**

1. VENT TERMINATIONS MUST COMPLY WITH AS/NZS 3500.2:2015 SECTION 6.8.4.
2. SEALED GULLY BREATHER MAY INTERCONNECT WITH INDUCT VENT ONLY, 300mm ABOVE LOWEST FIXTURE CONNECTED TO ARRESTOR.
3. INDUCT AND UPSTREAM VENTS CANNOT BE INTERCONNECTED.