Halgan

1994-2024 30 YEARS ANNIVERSARY

NZTIWF Conference 2024

Presenter: Kerry Hall

AS 5215:2024

Australian STANDARD

Passive grease arrestors

Introduction

In Australia, having a grease trap standard is crucial for maintaining plumbing and wastewater systems' integrity and efficiency.

Grease traps prevent fats, oils, and grease (FOG) from entering the sewage system, which can cause blockages and environmental damage. A standard ensures food service establishments and other industries comply with best practices, protecting public health, the environment, and infrastructure.

A standardised approach mitigates risks associated with improper FOG disposal, preventing sewage blockages, overflows, and costly repairs. It also reduces water pollution and protects aquatic life, promoting environmental sustainability. Economically, businesses can avoid fines and legal issues, enhancing operational efficiency and reducing maintenance costs.

Challenges in Developing the New Australian Grease Trap Standard

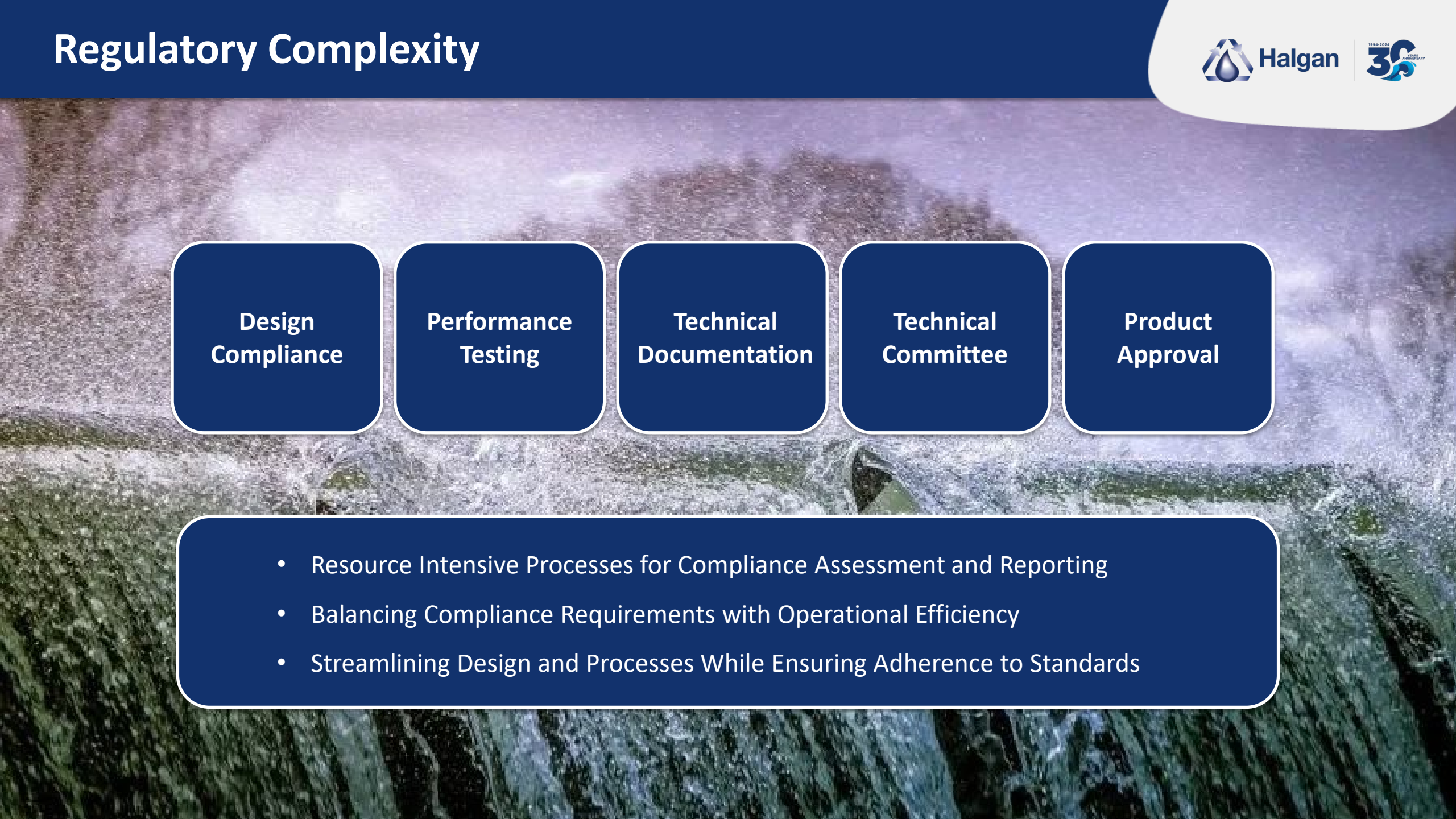
Developing this standard involves several challenges, primarily the complexity of coordinating with different state-based regulators.

Each state and territory has unique regulations, requiring extensive negotiation to harmonize them into a single national standard. Additionally, the committee must address varying requirements of grease trap manufacturers, balancing product diversity with consistent performance and compliance.

Practical implementation and enforcement also pose challenges, necessitating adequate training, resources, and effective communication with stakeholders. In conclusion, while a grease trap standard is vital for public health, environmental protection, and infrastructure efficiency, developing it requires navigating diverse state regulations and accommodating manufacturers' needs.

Through collaboration and strategic planning, Australia can establish a robust grease trap standard for a sustainable and resilient future.

Regulatory Complexity



Design Compliance

Performance Testing

Technical Documentation

Technical Committee

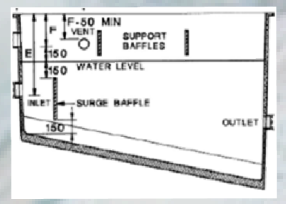
Product Approval

- Resource Intensive Processes for Compliance Assessment and Reporting
- Balancing Compliance Requirements with Operational Efficiency
- Streamlining Design and Processes While Ensuring Adherence to Standards

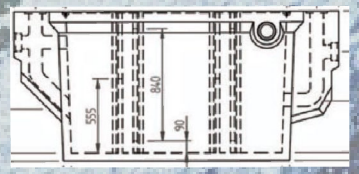
Regulators

- Who are the Regulators
- What do they do.
- What influences policy
- Localized requirements.

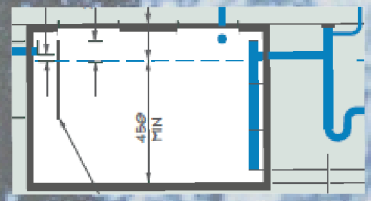
Regulatory Complexity



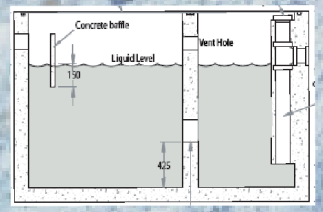
NSW Design – Boat Shape



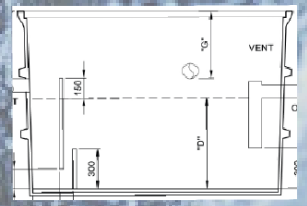
QLD Design – Triple Interceptor



Victorian Design – Drop outlet



SA Design – Twin Chamber system



WA Design – Single Baffle Arrestor

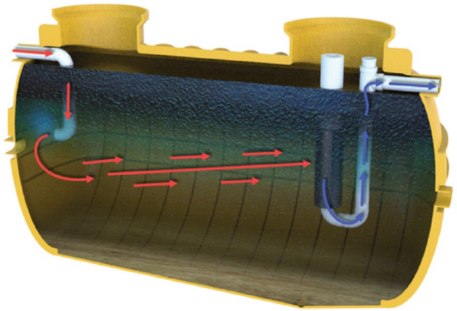
Why is pre-treatment important?

Industrial Trade Waste

- Abattoirs & Rendering plants
- Tanneries
- Refinery
- Chemical plants
- Paint and plastic manufacturers
- Textile
- Food and beverage manufacturers
- Metal finishers
- And many more…

Commercial Trade Waste (Food Business)

- Takeaways
- And many more..
- Restaurants/Cafes, Bistros
- Caterers



Commercial Trade Waste (Other Business)

- Schools
- Office/Commercial
- Laundromats
- Shopping Centres
- Service Industry (i.e.vehicle sales and service)
- Laboratories
- Aged Care
- Hospitals
- And many more…

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Section 1 Scope and general

1.1 Scope

This document specifies definitions, materials of construction, principles of design, marking, testing, sizing and maintenance requirements for passive grease arrestors.

This document applies to grease arrestors intended for use in the separation of —

(a) food solids;

(b) settleable solids; and

(c) fat, oil and grease of plant and animal origin from wastewater via means of gravity and buoyancy.

This document does not apply to the following:

(i) Domestic wastewater.

(ii) Active or mechanical grease arrestors.

(iii) The removal of chemically or mechanically emulsified or dissolved oil and grease.

(iv) Industrial food production or processing (except at the discretion of a relevant authority).

(v) The separation of petroleum hydrocarbons or oils and greases of mineral origin (e.g. fuel, oils and lubricating greases).

(vi) The treatment of wastewater exclusively containing stable emulsions of greases and oils (e.g. whey or dairy).

(vii) The use of bacteria, enzymes or any other biological means as an adjunct to passive grease arrestors.

2.4 Design requirements

2.4.1 General

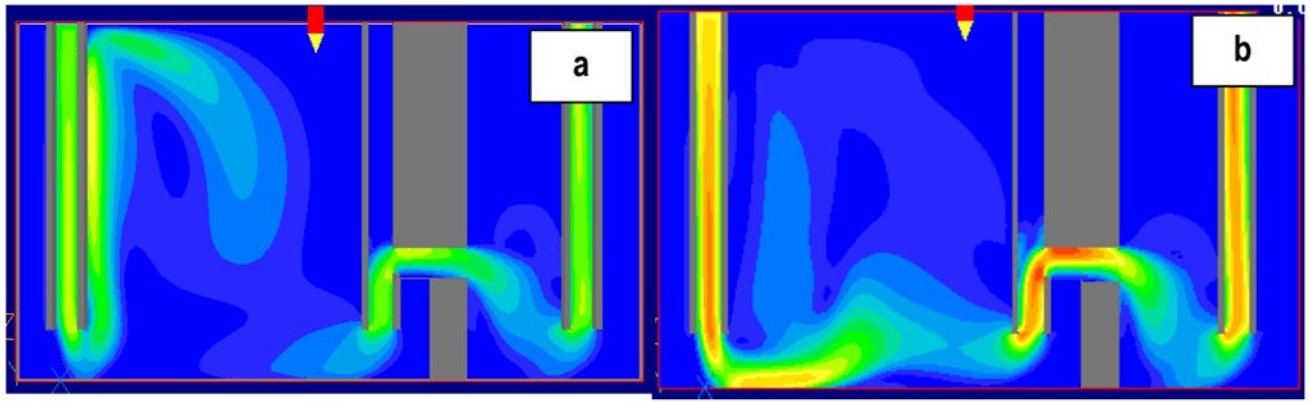
A grease arrestor shall be designed —

(a) to separate FOG and solids from wastewater by gravity, with no mechanical or biological treatment;

(b) to achieve the required separation and retention of settleable solids, fat, oil and grease from wastewater within an influent temperature range 10 °C to 80 °C;

(c) to allow the flow through the separator to be uniform; and

(d) with a minimum operational depth of 500 mm.



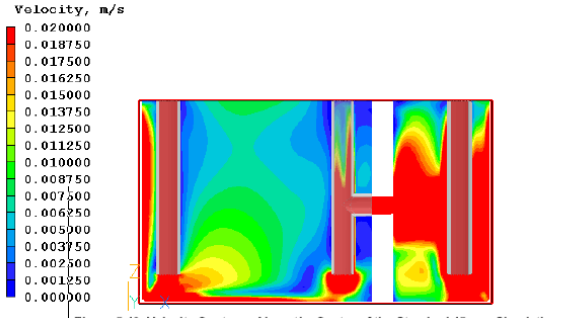
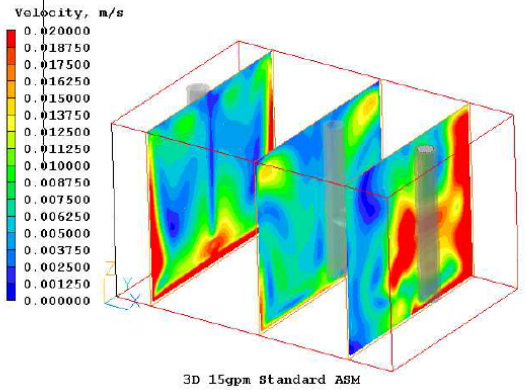


Figure 5-18. Velocity Contours Along the Center of the Standard 15gpm Simulation.



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2.4.3.2 Access openings

A grease arrestor's access openings shall allow for full servicing of all internal components.

Clear access openings for persons and equipment shall be in accordance with AS 3996:2019 Clause 3.3.1.

2.4.3.3 Access covers

2.4.3.3.1 General

An FFL can be of solid ground or of a mezzanine platform structure. For the purposes of this document, both are regarded as trafficable areas.

Wherever practicable, access covers should be designed to be easily and safely removable by one person.

A grease arrestor's access openings shall allow for full servicing of all internal components and cleaning of internal surfaces.

AS 3996:2019

3.3 DIMENSIONS

3.3.1 Clear opening for persons and equipment

Access covers and grates intended for access by persons, such as entering access chambers, shall provide a minimum clear opening in the frame complying with the person entry regulatory requirements in force at the place of installation and shall be in accordance with AS/NZS 2865.

NOTE: Minimum entry apertures in accordance with AS/NZS 2865 are not less than 450 mm long by 400 mm wide if rectangular, not less than 450 mm in diameter if circular, or having major and minor axes not less than 450 mm by 400 mm if elliptical.

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2.4.5.2 Design requirements

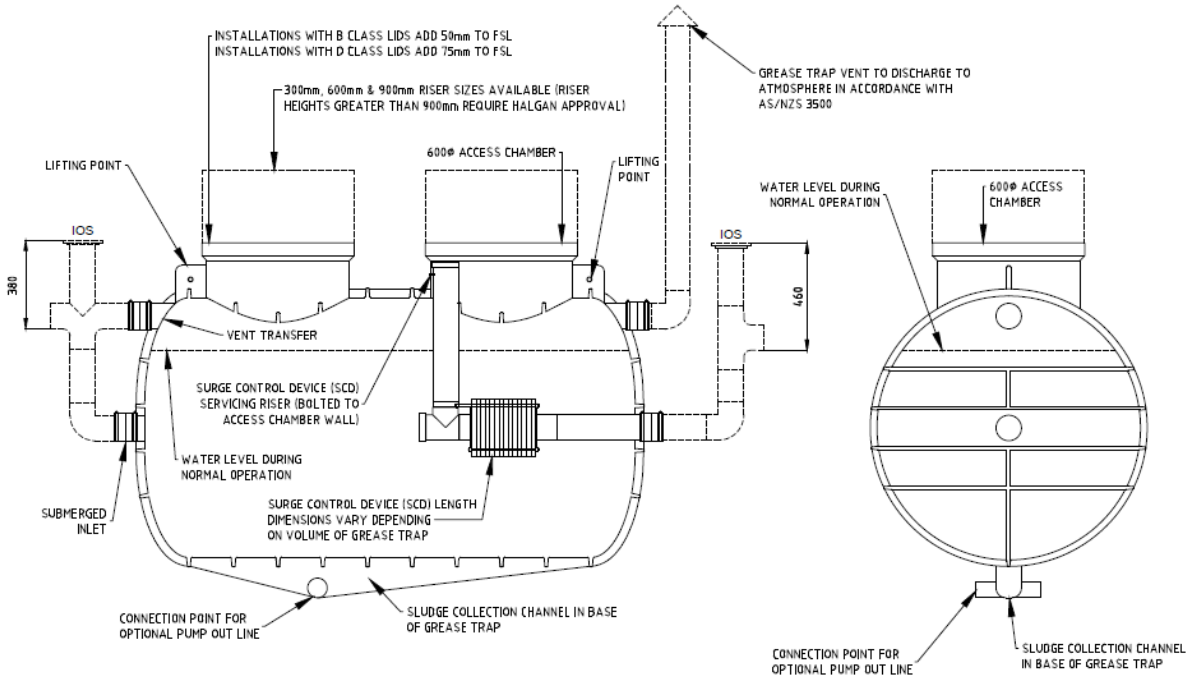
Arrestor vents shall be minimum DN100. Connections shall be compatible with Australian Standard certified pipe fittings.

Vent connection provisions should be fitted by the manufacturer. The invert of the vent shall be —

installed a minimum 70 mm above the grease arrestor operating level and allow for minimum cover in accordance with AS/NZS 3500.2; and located in the wall of the outlet end of the grease arrestor.

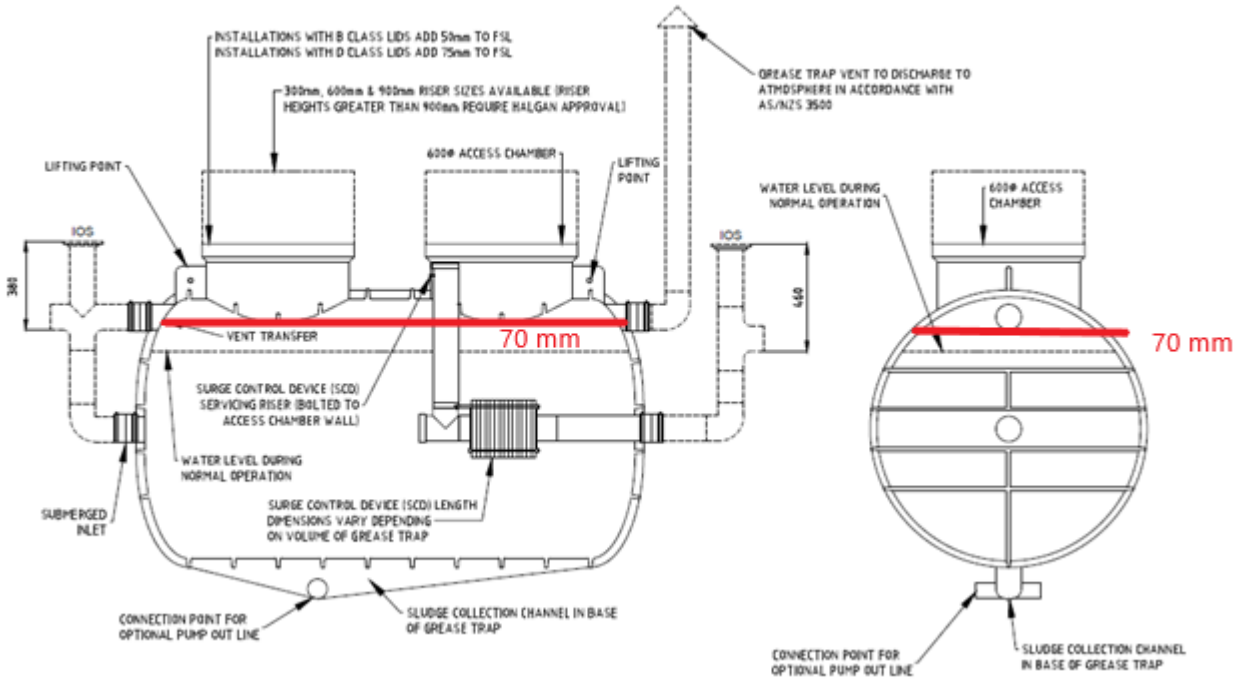
Vent connections that have alternatively been installed on either side wall of the arrestor body shall be as close as practicable to the arrestor's outlet end wall.

Partitions shall not impede ventilation.



2.4.7.2 Total fall through arrestor

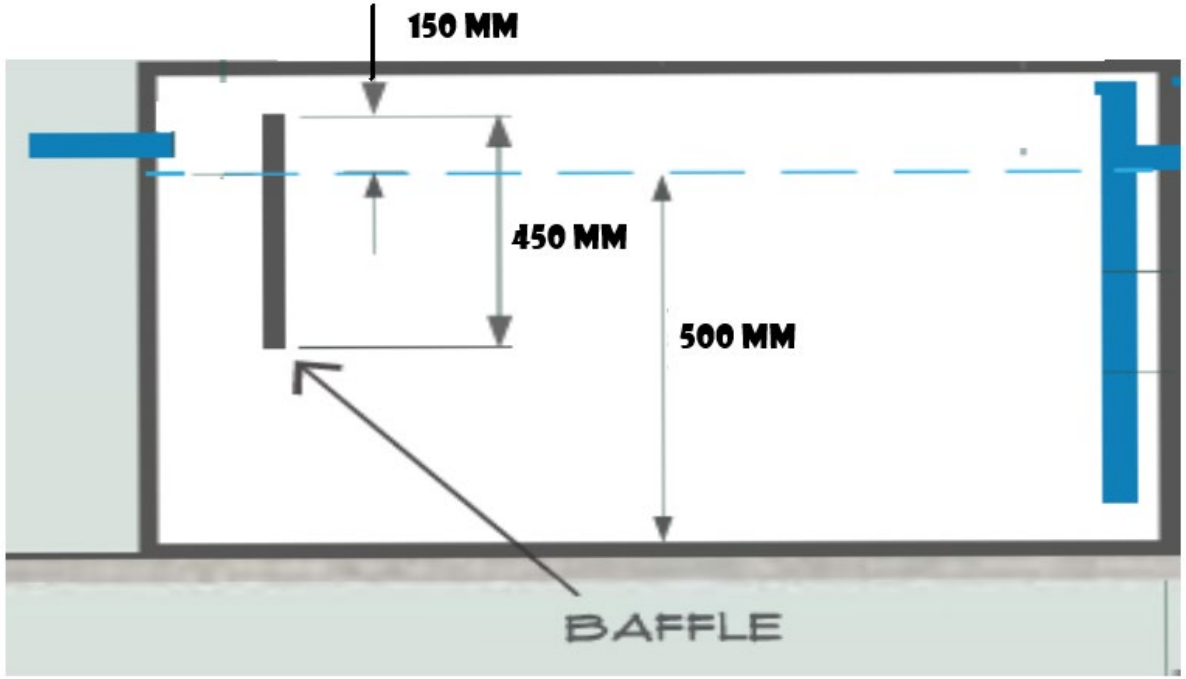
Total fall through the grease arrestor shall be a minimum of 70 mm. The fall shall prevent back-up of wastewater into the upstream drainage at the arrestor's nominal peak flow rate.



2.4.8 Baffles and partitions

Where included in a grease arrestor design, baffles and partitions shall extend 150 mm above and at least 150 mm below the operational water level of the grease arrestor.

The design shall ensure ventilation is not impeded by the baffles.



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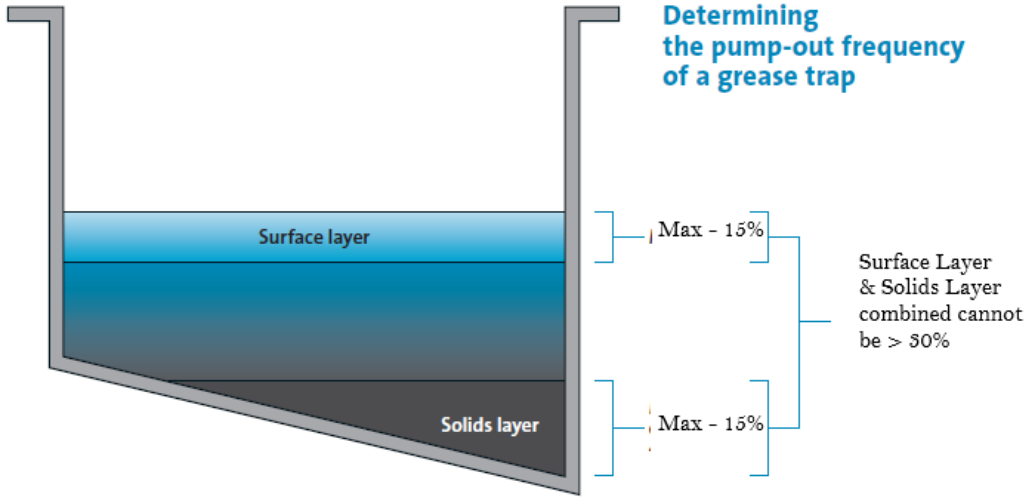
2.4.10 Storage capacity for FOG and solids

Passive grease arrestors shall have —

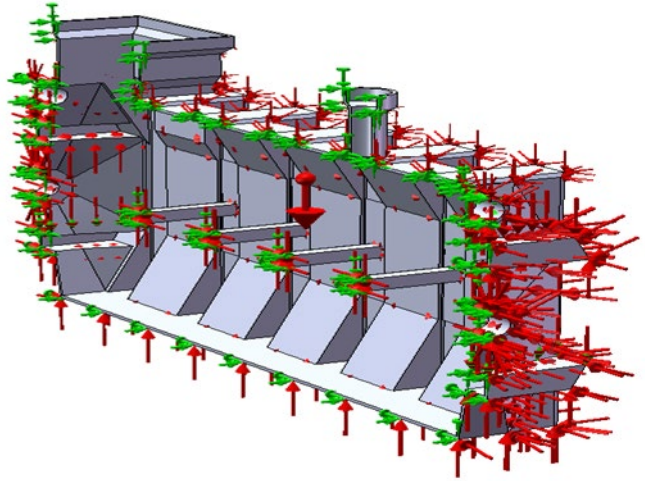
(a) a fat, oil and grease storage capacity of at least 15 % of the arrestor's operating volume; and

(b) a solids storage capacity of at least 15 % of the arrestor's operating volume.

Combined oil, grease and solids storage capacity shall not exceed 30 % of the arrestor's operating volume.



2.5.2 Above-ground grease arrestors:



The structural integrity of an above-ground grease arrestor shall be designed by a qualified professional engineer using FEA and take into account the following:

(a) Integrity during handling, transport and installation.

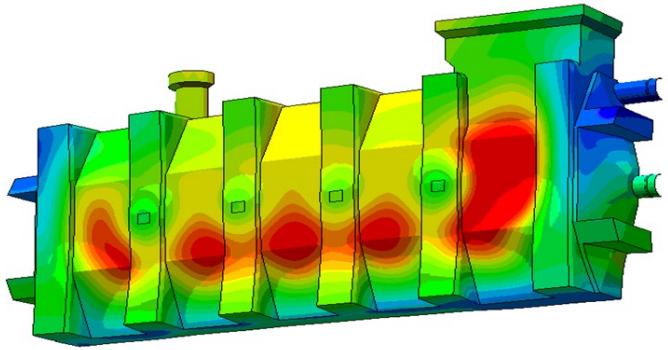
(b) Hydrostatic pressure from the stored liquid.

(c) Environmental loads such as —

(i) wind loads in accordance with AS/NZS 1170.2;

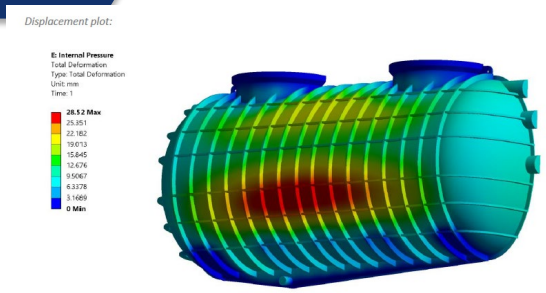
(ii) snow loads in accordance with AS/NZS 1170.3; and

(iii) earthquake loads in accordance with ASCE/SEI 7 and AS/NZS 1170.4.



(d) Degradation during intended lifespan caused by exposure to ultraviolet radiation. All analysis conducted shall be undertaken using a GNA.

Finite Element Analysis (FEA)



Halgans Products have undergone a complete Finite Element Analysis

1. DEFINITIONS

a. Finite Element Analysis FEA. A Mathematical Process of dividing any structure into a number of small elements. The deflection of each element is calculated under the applied load, and results transferred to surrounding elements. The effect of the load on the total structure is calculated by summing the displacement of all elements. Stress levels are calculated for each element from material properties.

2. MATERIALS

a. As per requirements of AS4766 – Note: Buried grease traps do not require UV protection. The grease trap lid will require UV additives.

3. DESIGN

a. The grease trap will conform to relevant requirements of AS4766:2004. Wall Thickness, Floor and Roof Thickness shall comply with Clause 6.2 to 6.5 below.

b. A static analysis of the grease trap structure will apply a Finite Element Analysis of the grease trap under a variable external pressure load compliant with the soil condition as detailed in Appendix A. The worst case soil condition load will be assumed.

c. The design criteria will allow a peak stress no greater than 8.6 MPa.

d. A buckling analysis of the grease trap structure will apply a Finite Element Analysis of the grease trap under a variable external pressure load compliant with the soil condition as detailed in Appendix A. The worst case soil condition load will be assumed.

e. The buckling analysis design criteria will reflect a buckling load factor greater than 1.4. (This equates to a 40% safety margin)

f. Top Load. Underground grease traps will be designed to withstand a top load of 5kN – AS 1546 Appendix H

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3.2 Coatings and linings

3.2.1 General

Coatings and linings may be applied on all surfaces of a grease arrestor as an added protective barrier against influent and ground conditions.

Considerations when choosing a coating or lining that is to be applied to a grease arrestor shall include, but is not limited to the following:

(a) The suitability and durability of the lining adhesive or coating adhesive
(b) specific to grease arrestor applications.
(b) The application methods for the coating or lining.
(c) If damaged, whether the coating or lining can be repaired without any adverse
(d) effects to the structural integrity and functionality of the grease arrestor.

3.2.2 Technical documentation

Technical documentation containing the following information shall be sourced from the supplier of the coating or lining:

(a) The adhesive and durability characteristics of the coatings or lining when
(b) used in specified applications.
(b) The correct method of application of the material supplied.

Section 4 Functional performance

4.1 General

Grease arrestors shall meet the performance criteria related to —

(a) hydraulic retention time (see Clause 4.2); and

(b) operational solids and TOG discharge concentrations (see Clause 8.1).

The performance requirements for passive grease arrestors shall be consistent with the sizing methodology outlined in Clause 6.3.3.

4.2 Performance — Hydraulic retention time

4.2.1 Requirement

An arrestor shall achieve a hydraulic retention time of ≥ 30 min at its nominal peak flow rate (L/s).

4.2.2 Nominal peak flow rate

The nominal peak flow rate of a grease arrestor designed, manufactured, installed and maintained in accordance with this document, is deemed to be as follows:

Nominal peak flow rate (L/s) = Arrestor volume (L) Hydraulic retention time (s)

(1)where: Hydraulic retention time(s) = 1 800 s

EXAMPLE An arrestor has an operation volume of 3 000 L.

$$\text{Arrestor peak flow rate (s)} = \frac{3000\text{L}}{1800\text{s}} = 1.67\text{L/s}$$

Nominal peak flow rate for this arrestor (consistent with the methodology in Section 6) is 1.67 L/s.

Water Utilities Product Live Testing for Approvals.

CASE STUDY – HUNGRY JACKS

Model: MGTS5000A

Business Name: Hungry Jacks

Address: 35 Hindley Street, Adelaide SA

Owner: N/A

Installed: MGTS5000A above.

Type of process: Fast Food outlet

Number of Staff: 15

Number of Seats: N/A

Hours of operation: Monday to Sunday 24 hrs

Dishwashers Installed: N/A

Undersink Units: N/A

Pumpout frequency: 12 weeks

Installation Date: March 2014

Temperature: N/A

Surcharge Level: N/A

Litres per Day Discharge: 6000 – 8000 litres

Laboratory: Australian Water Quality Care

Sampling Protocol: Samples collected by SA Water. Sample collection – 24 hour composite sampler deliver a minimum of 50 sub samples on time proportional basis.

Sampling start one week after effluent discharge starts. The samples are to be taken at varying frequencies of pumping/cleaning out intervals, with a minimum of three composite sets of inlet and outlet samples for analysis.

CASE STUDY – HUNGRY JACKS

Sample results:

Hungry Jacks - Tenancy No 2, 35 Hindley Street, Adelaide

Grease Arrester details - 5000 lt MGT S Series

24h composite samples
AWQC
SP: 47888 - TW - HALGAN GREASE ARRESTOR

									Wastewater characteristics
Sampler set up date	Sample pick up date	Sample No.	Crust depth (mm)	Solids Depth (mm)	SS (mg/L)	Reduction (%)	Grease (mg/L)	Reduction (%)	
Start Discharge	27/09/2013								
9/10/2013	10/10/2013	T1 Inlet			878		358		
9/10/2013	10/10/2013	T1 Outlet			250	71.5%	170	52.5%	
6/11/2013			100	50					
6/11/2013	7/11/2013	T2 Inlet			832		1000		
6/11/2013	7/11/2013	T2 Outlet			239	71.3%	110	89.0%	
4/12/2013	5/12/2013	T3 Inlet			3460		4488		
4/12/2013	5/12/2013	T3 Outlet			304	91.2%	146	96.7%	
				Average % Reduction		78.0%		79.4%	
				Average TOG discharge		142			
				Average TSS Discharge		264.3			

25.1 Case Study 2 Salt and Batter Pebble Beach Shopping Centre, The Village, Sandstone Point Queensland -

Model: MGT 2000
Installation: Below ground in loading dock.
Type of Process: Fish and Chips takeaway
Commercial Fixtures: 2 Commercial double bowl sink, 1 medium dishwasher, 1 basins, 1 cleaners sink, 2 floor wastes, 1 potato peeler.
Hours of Operation: 7 days per week. Monday to Friday, Lunch/Dinner, Saturday/Sunday Breakfast,Lunch and Dinner.
Pump Out Frequency: 8 weeks
SAMPLING PROTOCOL: Sampling conducted by Cab Water trade waste officer. Samples are combination of grab samples and automatic sampler operating for 24 hours..Timing of the sampling was 2-4 weeks after the installation of the Modular Grease Trap and the next sample within one week of due pump out.
Laboratories:
Cabwater Scientific Services. 67 Weier Road, Morayfield, QLD. P.H. 07 5420 0720
ALS Laboratory Group. 32 Shand Street, Stafford, QLD. P.H. 073243 7222.

Analytical Results:
TOG, SS, BOD and COD unit mg/l. PH, PH units.

DATE	LABORITORY	PH	TOG	SS
3/09/2007	Cab Water	4.82	67	410
10/09/2007	Cab Water	5.18	24	171
1/10/2007	Cab Water	5.01	35	157
16/10/2007	Cab Water	5.89	50	120
5/12/2007	ALS		48	294
5/12/2007	Cab Water	4.89	35	335
28/02/2008	ALS		124	228
28/02/2008	Cab Water		49	284
26/6/2008	ALS		12	284
26/6/2008	Cab Water	5.08	25	221

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7.1.3 Internal locations

7.1.3.1 General

Arrestors in internal locations shall be installed in ventilated areas.

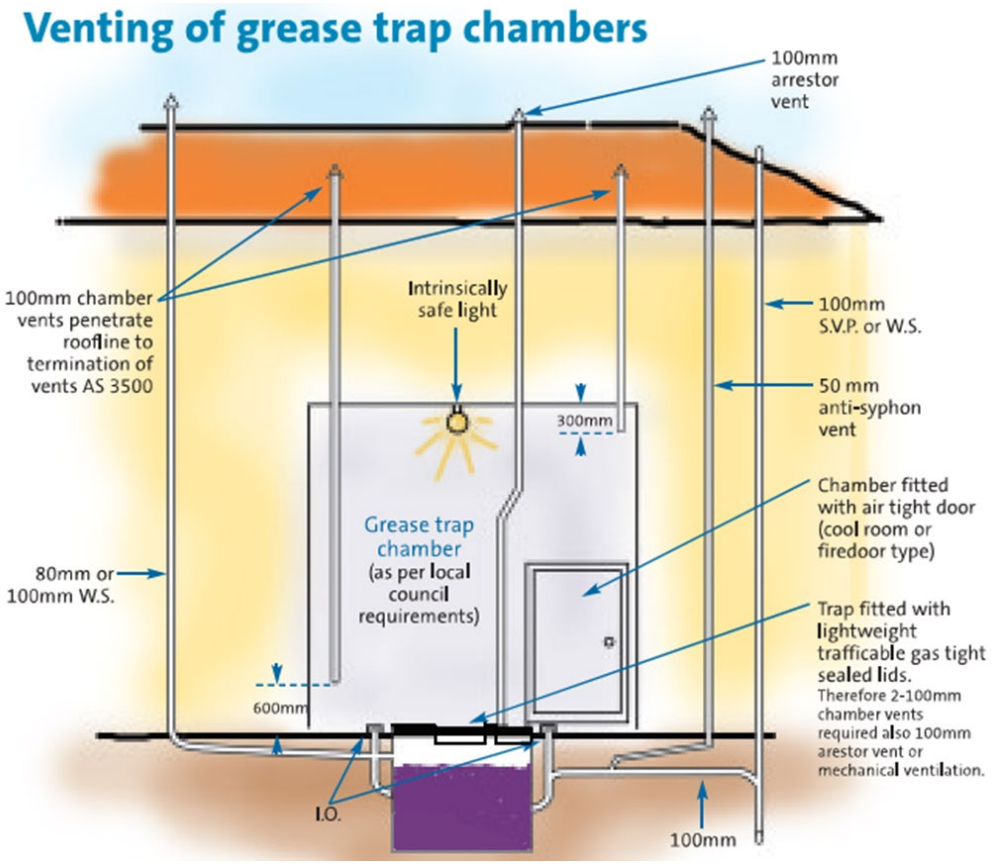
Where arrestors are located internally in a dedicated ventilated room, the room shall be atmospherically separated from the rest of the building.

The room shall be ventilated to open air by means of either —

(a) mechanical ventilation; or

(b)two vent pipes no less than DN 100 located as far as practical diagonally opposite each other— one at high level and one at low level.

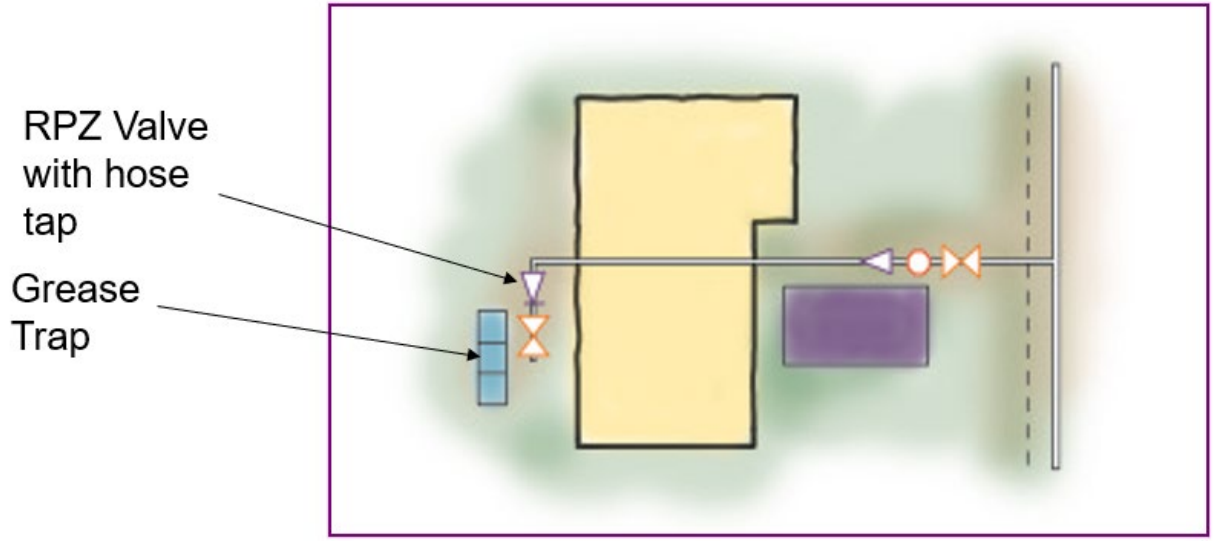
NOTE Internal installations may require local authority and building code approval.



7.1.4 Hose tap and backflow prevention device

A hose tap fitted with a backflow prevention device shall be provided as close as practicable to the grease arrestor.

NOTE 1 Where possible, the hose tap should be provided within 5 m of a grease arrestor.
NOTE 2 Fire hose reels are not a replacement for the hose tap.
The backflow prevention device fitted to the hose tap shall —
(a) be selected and installed in accordance with AS/NZS 3500.1: and
(b) conform to AS/NZS 2845.1.



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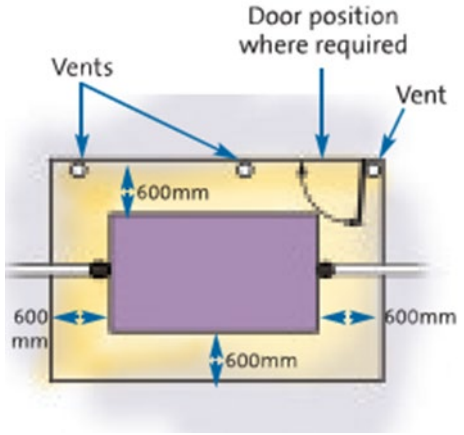
7.3 Installation depth

The installed depth of an arrestor inclusive of riser shall be a maximum of 3 m.
Where installation unavoidably requires greater depth, a relevant authority should be consulted for authorization.

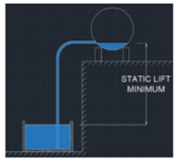
NOTE Installed depth is measured from the deepest part of the arrestor body to the FFL.

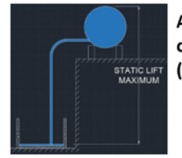


7.5 Minimum vertical clearance

The minimum vertical clearance above the top access cover of an installed grease arrestor shall be
(a) a minimum of 1 m for above-ground installations; and
(b) equal to the depth of the grease arrestor, and not less than
(c) 1 m for in-ground installations.
NOTE All installations should provide vertical clearance equal to the depth of the arrestor where possible.

VACUUM TRUCK STATIC LIFT CAPABILITY
Should be confirmed with all Liquid Waste Contactors
Allow 6.5m static Lift capability unless advised otherwise by Liquid Waste Contractor.





All tanker vacuum pumps vary in size and condition
(wear and leaks = loss of efficiency)

RESIDUAL HEAD (SYSTEM VACUUM less MAX. STATIC LIFT = RESIDUAL HEAD) (m)	FLOW RATE (l/sec)	EQUIVELENT LENGHTH OF HORIZONTAL HOSE/PIPEWORK Includes 20% allowance for fittings and valves. (m)	VELOCITY (m/sec)
0.5 (0.049 bar)	3.10	20	0.77
1 (0.098 bar)	3.26	40	0.74
1.5 (0.147 bar)	3.30	60	0.75
2 (0.196 bar)	3.16	90	0.71
2.5 (0.245 bar)	3.21	100	0.72
3 (0.294 bar)	3.51	110	0.79
3.5 (0.343 bar)	3.50	130	0.72
4 (0.392 bar)	3.75	130	0.84

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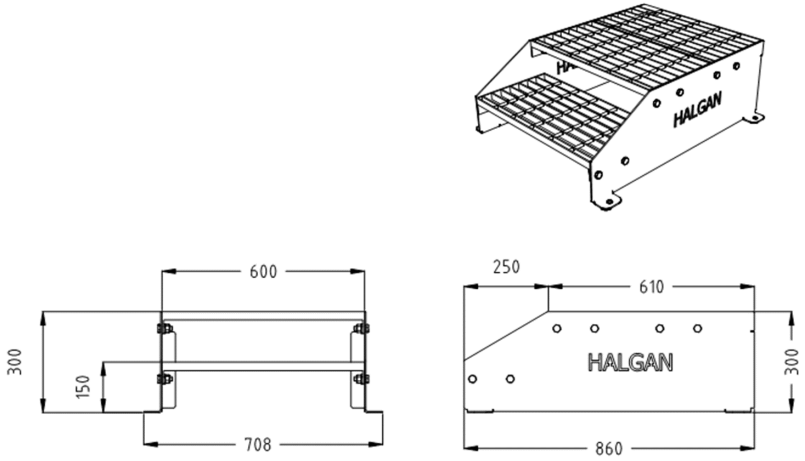
7.6 Platforms and steps

All above-ground grease arrestor installations higher than 1.2 m, shall be installed with an access platform that is in accordance with AS 1657.

NOTE Arrestor height is measured from FFL to the top of the arrestor's access cover.



7.7.3 Pumped flow to an arrestor

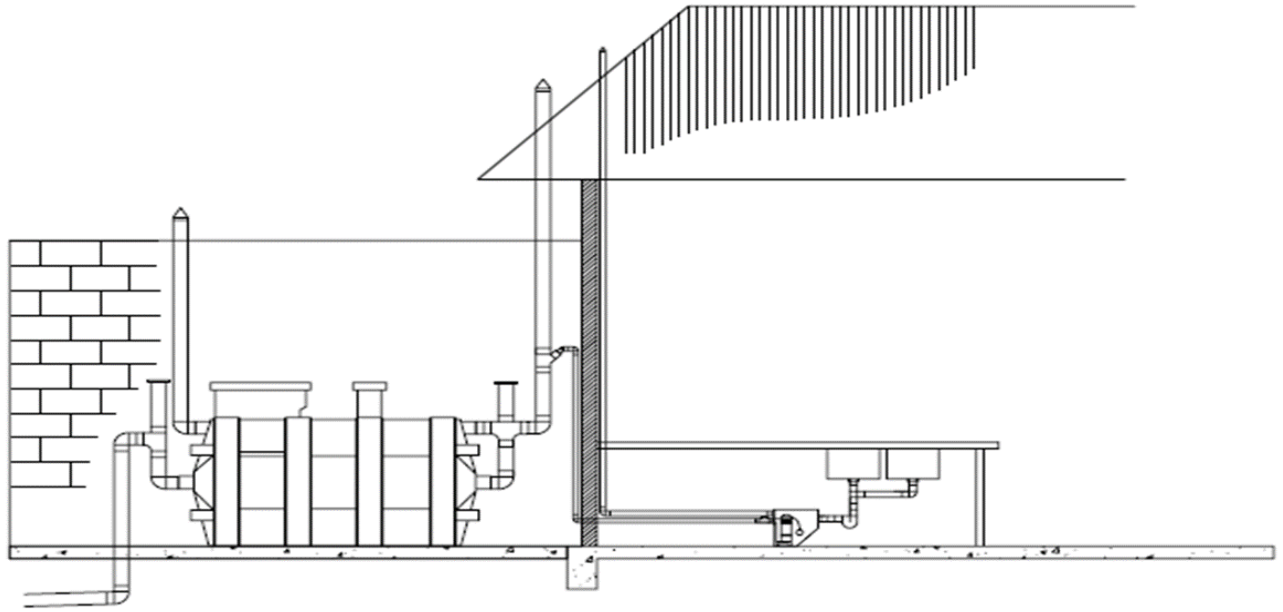
Where wastewater is pumped to a grease arrestor, the drainage shall be gravity fed for at least 1 m at a diameter of 100 mm and at a grade not greater than 1:60 before entering the arrestor.

The volumetric flow rate of the pump shall not exceed the nominal flow rate of the arrestor or the maximum discharge flow rate (L/s) allowed on the particular sewer connection, whichever is the lowest.

NOTE 1 In vacuum sewer areas, the maximum discharge rate is determined by a relevant authority.

Where a pumped system is used, the pump vessel shall be serviced in accordance with grease arrestor schedule requirements.

NOTE 2 The pump vessel should have a storage capacity not greater than 50 L.



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Section 8 Operational performance and maintenance
8.1 Operational performance — Oil and grease discharge

8.1.1 General
When sampled and tested in accordance with the methods outlined in Clauses 8.1.2 and 8.1.3, a grease arrestor operating within the scope of this document shall achieve the following:
(a) For non-emulsified total oil and grease — an operational (sampled in situ) discharge concentration not greater than 200 mg/L.
(b) For suspended solids — an operational (sampled in situ) discharge concentration not greater than 600 mg/L.

NOTE A relevant authority may require more or less stringent operational performance provided this is consistent with the relevant authority's sewer acceptance criteria or relevant trade waste standards.

8.2.1.3 Servicing frequency for undersized grease arrestors

The sizing methodology outlined in Clause 6.3.3 shall be used to determine whether an installed and functioning grease arrestor is undersized.

If approved by a relevant authority, an undersized grease arrestor currently in service may still be used by proportionately increasing the servicing frequency in accordance with Table 1 or as specified by a relevant authority.

Table 1 — Service frequency for undersized grease arrestors

Installed arrestor capacity as % of required arrestor capacity	Service frequency (weeks)
Where < 50 %	Arrestor to be replaced with an appropriately sized arrestor in accordance with Clause 6.3.3.
50 to 60 %	4
> 60 to 70 %	6
> 70 % and < 100 %	8

EXAMPLE Determining required service frequency for an undersized grease arrestor.

Using the sizing method outlined in Clause 6.3.3, a food service business with an installed 2 000 L grease arrestor is shown to require a 3 000 L arrestor. Therefore, the installed grease arrestor is deemed to be undersized.

The following steps can determine service frequency for the undersized grease arrestor:

(a) Calculate the installed arrestor capacity as a percentage of the required capacity using the following equation:

$$\text{Installed arrestor capacity as \% of required capacity} = \left(\frac{a}{b}\right) \times 100 \quad (3)$$

$$= \left(\frac{2000}{3000}\right) \times 100$$

$$= 67\ \%$$

where:

a = the installed arrestor capacity

b = the required arrestor capacity

(b) Determine servicing frequency by referring to Table 1.

Using Table 1, the grease arrestor needs to be serviced every six weeks.

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Passive grease arrestor sizing methodology

A.1 Scope

This appendix outlines the discharge unit-based sizing methodology for estimating the required size of grease arrestors needed for installation.

A.2 Principle

The methodology is based on the relationship between discharge unit ratings, probability of fixture usage and flow rates outlined in EN 12056-2. It is reliant on assigning discharge flowrates to all fixtures that drain to the grease arrestor.

This document may not assign a discharge unit or flow rating to a certain fixture. If that is the case, the methodology allows for the calculation of discharge units and flow ratings from the fixture manufacturer's specified discharge flow rates.

Table A.2 — Default discharge unit ratings for intermittent-flow fixtures

Intermittent-flow fixtures	DU rating (L/s)
Bain-marie	0.02
Bratt pan	0.05
Floor waste	As per fixture rating
Hand basin (WELS 4 to 6 Star tap)	0.075
Noodle cooker	0.05
Sink (single with WELS 4 to 6 Star tap)	0.125
Sink (double with WELS 4 to 6 Star tap)	0.125
Sinks (other with WELS 4 to 6 Star tap)	0.125
Sink (single with unrated or WELS 1 to 3 Star tap)	0.20
Sink (double with unrated or WELS 1 to 3 Star tap)	0.20
Sinks (other with unrated or WELS 1 to 3 Star tap)	0.20
Tilting pot/kettle	0.05
Tap (unrated or WELS 1 to 3 Star)	0.20
Tap (WELS 4 to 6 Star)	0.125

Table A.3 — Default discharge unit ratings for continuous and cyclic flow fixtures

Continuous-flow fixtures	DU rating (L/s)
Combi-oven	0.05
Dishwashing machine (under-counter)	0.03
Dishwashing machine (hood or door)	0.10
Dishwashing machine (conveyor or flight)	0.15
Glass-washing machine (under-counter)	0.05
Glass-washing machine (hood or door)	0.10
Wok (traditional per burner)	0.10
Wok (waterless)	< 0.1 (effectively 0)
Other	Use maker's specification

Table A.4 — Conversion of flowrate Q_{tot} (L/s) to nominal grease arrestor size

Total discharge flowrate Q_{tot} (L/s)	Calculated arrestor volume (L)	Nominal arrestor size (L)
0.10	180	550
0.15	270	
0.20	360	
0.25	450	
0.30	540	

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Passive grease arrestor sizing methodology – State Requirements

South East Water

healthy water for life

Food and Oil Interceptor (FOI) Sizing Criteria

The sizing criteria outlined on this document is a guide only.
In an effort to prevent this sizing criteria from being misinterpreted Food and Oil Interceptors (FOI's) i.e. grease traps, must NOT be installed without formal approval from Trade Waste South East Water. South East Water will issue formal sizing requirements after a completed Trade Waste Application form has been received. Food and Oil Interceptors installed without formal approval and found to not comply will need to be replaced.

Commercial Waste – eg. restaurant, take away, bar, delicatessen, butcher, kebab shop, coffee shop, fish and chip shop, chicken shop, pizza shop, Asian take away, bakery, take away, catering, child care centre, etc.

Seating capacity method
Determine the Food and Oil Interceptor size based on the seating capacity shown in Table 1.

Table 1

Seating Capacity	*Standard Food and Oil Interceptor Sizes*
0 to 40	600 litre
41 to 70	1100 litre
71 to 200	2000 litre
201 to 500	3000 litre
501 to 800	4000 litre
801 to 1000	5000 litre

Fixture allowance method
Determine the Food and Oil Interceptor size based on fixtures in the food preparation / kitchen area and other food and oil generating areas such as bin storage and cleaners rooms shown in Table 2.

Table 2

Fixtures in the food preparation / kitchen areas	*Allowance per Fixture*
Single Sink	100 litres
Double Sink	200 litres
Pot sink (deep bowl)	150 litres
Milk Sink (for coffee machines)	50 litres
Cleaners sink	50 litres
Hand Basin in kitchen area	50 litres
Domestic Dishwasher	200 litres
Commercial Dishwasher	500 litres
Tunnel Dishwasher	Determined on application
Glass Washers#	100 litres
Wok Table (waterless) without continuous water flow	100 litres per burner
Wok Table with continuous water flow	200 litres per burner
Steam 'Combi' oven	600 litres
Bin wash area	200 litres
Floor waste (food preparation area)	50 litres per floor waste outlet
Bain Marie	50 litres
Exhaust Canopy with auto / manual flushing	Determined on application
Gas vat BBQ for duck & pork (per BBQ)	500 litres
Pasta Cooker *	100 litres
Brat Pan *	100 litres
Stock Pots *	100 litres
Mixing Bowls *	100 litres
Soup Pots *	100 litres
Steamers *	100 litres

Bar areas can and should discharge direct to sewer. If the bar is connected to the Food and Oil Interceptor then an allowance of 100L is to be made in sizing the Food and Oil Interceptor.
* Where units are fixed and washed in place.

Sydney WATER

Minimum pre-treatment requirements for retail food processes

Commercial process	*Minimum pre-treatment	In-floor and in-sink bucket traps
Cafeteria, canteen (and school hot meals)	1,000 L	yes
Take-away, including food court shops	1,000 L	yes
Charcoal chicken	1,000 L	yes
Wastesafe only, including school domestic science	1,000 L	yes
Snack bar – coffee lounge – hot foods	1,000 L	yes
Restaurant (1-69 seats)	1,000 L	yes
Restaurant (70-199 seats)	1,500 L	yes
Restaurant (200-399 seats)	2,000 L	yes
Restaurant (400-599 seats)	3,000 L	yes
Restaurant (600-799 seats)	4,000 L	yes
Restaurant (800-1000 seats)	5,000 L	yes
Kitchen – hospital, nursing home (1-69 beds)	10,00 L	yes
Kitchen – hospital, nursing home (70-199 beds)	1,500 L	yes
Kitchen – hospital, nursing home (200-399 beds)	2,000 L	yes
Kitchen – hospital, nursing home (400-599 beds)	3,000 L	yes
Kitchen – hospital, nursing home (600-799 beds)	4,000 L	yes
Kitchen – hospital, nursing home (800-1000 beds)	5,000 L	yes
McDonalds	1,500 L – 5,000 L	yes
Pizza Shop	1,000 L	yes
KFC	2,000 L	yes
Function centre (1-69 seats)	1,000 L	yes
Function centre (70-199 seats)	1,500 L	yes
Function centre (200-399 seats)	2,000 L	yes
Function centre (400-599 seats)	3,000 L	yes
Function centre (600-799 seats)	4,000 L	yes
Function centre (800-1000 seats)	5,000 L	yes
Red Rooster	1,500 L	yes
Delicatessen with hot food < 12 kL/day	1,000 L	yes
Hungry Jacks	1,500 L	yes
Supermarket with chicken cooker	1,500 L plus grease removal device	yes

Trade Waste PUB 23C

Sizing of grease arrestors for the retail food industry

The size of a grease arrestor is critical in ensuring the wastewater discharged from a greasy waste producer (i.e. restaurant, café or fast food take away business), has the optimum conditions for efficient suspended solids, fat, oil and grease removal. Two methods can be used to determine the appropriate size of a grease arrestor and both are based on ensuring the wastewater has a minimum retention time of one hour.

Please note: Water Corporation has a minimum grease arrestor size of 500 litres. Larger sizes are available and all approved grease arrestors can be viewed on our approved products list found on our website. Please note: Grease arrestors larger than 2000L cannot be installed in series. Customers wishing to install larger grease arrestors should seek our approval before installation.

Method 1 – Fixture Unit Rating Method

Add the fixture unit ratings (see Table 1) for all fixtures that feed into the grease arrestor and multiply this by 100L. Check where this calculated volume lies in the 'Calculated Grease Arrestor Size Range' (Table 2 below) to determine the corresponding 'Recommended Grease Arrestor Size'.

Table 1: Fixture Unit Ratings

Fixture	Fixture Unit Rating	Fixture	Fixture Unit Rating
Steamer	1	Kitchen sink	3
Wok (per burner)	1	Double kitchen sink	3
Hand basin	1	Pot sink	5
Rinse sink	3	Double pot sink	5
Combi Ovens	5		

Table 2: Minimum Grease Arrestor Size

Maximum Number of Fixture Units	Calculated Grease Arrestor Size Range	Minimum Grease Arrestor Size
7	100 L – 700L	500L
13	701 L – 1300L	1000L
17	1301 L – 1700L	1500L
26	1701 L – 2600L	2000L
52	2601 L – 5200L	2 x 2000L, 4000L
78	5201L – 7800L	6000L

Method 2 - Peak Flow Rates

Where the hourly peak wastewater flow rate is known, it can be used to determine the recommended grease arrestor size. Compare the peak hourly flow with the 'Calculated Grease Arrestor Size Range' in Table 2 to determine the corresponding 'Recommended Grease Arrestor Size'.

WATER CORPORATION

Influences

Key Strategies for Overcoming Challenges:

- Integration of Regulatory Expertise into Standards Process
- Engagement from suppliers and manufacturers
- Engagement from design engineers
- Investigating international trends.
- Extensive consultation and comments with the industry.

The Experience

- 5 years to complete.
- Over 1000 public comments
- Interim standard published

Any Questions?