Pukapuka Aratohu mō ngā Tūtohu Ipu Hīnu

Guidebook for Prescribed Grease Traps

2023

Te Kaunihera ō Taranaki ki Te Tonga
South Taranaki District Council

Pukapuka Aratohu mō ngā Tūtohu Ipu Hinu
Guidebook for Prescribed Grease Traps

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Introduction

Food scraps, cooking oil shortening, lard, butter, margarine, gravy, and food products such as mayonnaise, salad dressings and sour cream are all sources of Fats, Oils, and Grease (FOG).

FOG poured down kitchen drains clogs our wastewater pipes, causing overflows and costly repairs.

In 2017 the South Taranaki District Council (Council) introduced its Trade Waste Bylaw, which required businesses that discharge liquid trade waste into the Council's wastewater network to have pre-treatment that meets the Council's standards and conditions.

Implementation of the Bylaw started in 2018 when the Council required such businesses to be consented as trade waste dischargers.

Appropriately sized **grease traps** are recommended as an effective pre-treatment because they separate the FOG generated by kitchens and food preparation areas before the liquid waste enters the wastewater network.

During inspections we have found that some grease traps were not properly designed, installed or maintained. We want to make it easier for you to obtain (and keep) your consent, so we have put this booklet together to inform you about your responsibilities under the Trade Waste Bylaw and provide guidance on the proper design, function, size and maintenance of your grease trap.

The below pictures 1 - 4 are examples of poorly maintained grease traps

Picture 1

Picture 2

Picture 4

Picture 3

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1. Why are Fats, Oil and Grease (FOG) a problem in wastewater treatment?

When FOG is discharged into the wastewater system, they combine with food and other sanitary wastes, then congeal and harden in the pipes. Along with unpleasant odours, FOG-related blockages can cause wastewater overflows or burst wastewater pipes that are costly to repair.

Figure: CCTV view of a wastewater pipe blocked by FOG

2. Why is a grease trap important?

A grease trap is important because it separates the FOG before the liquid waste enters the wastewater network.

Grease traps use the physical principle; that FOG are lighter than water and will rise to the surface and heavy debris will fall to the bottom of the trap when the mixture is allowed to settle for a period under undisturbed conditions. This is called passive separation.

3. What is a prescribed grease trap?

A prescribed grease trap is any grease trap that is approved by the Council to install for your business. The Council will advise you on the size of grease trap required with the minimum cleaning frequency. It is important for you to get your grease trap approved by the Council before installing it to ensure you have the correct size and correct maintenance plan so you can comply with the Trade Waste Bylaw.

4. Who needs to have a prescribed grease trap?

A prescribed grease trap is needed by all commercial kitchens serving hot foods. You can contact us on tradewaste@stdc.govt.nz if you are not sure on your grease trap requirements.

5. Why is grease trap size important?

The longer the wastewater stays in the trap, the better the separation. The wastewater will also cool within the trap, which increases the amount of grease that will stay in the unit.

Under the Acceptable Solutions and Verification Methods for the New Zealand Building Code, Clause G13 Foul Water standard, it is mandatory to have a grease trap with a minimum of 100 litres working capacity to ensure that the wastewater is retained long enough inside the grease trap to allow for FOG separation. If the grease trap is too small, there will be

insufficient separation of FOG, resulting in FOG discharge into the wastewater system.

6. Why is it necessary to maintain the grease trap?

As the amount of FOG and solids increases inside the grease trap, the working capacity of the grease trap decreases, retention time decreases, temperature remains high and physical separation is impaired. This results in FOG and solids entering the wastewater system. To prevent this, grease traps must be regularly maintained by removing both the top grease layer and the settled solids at the base of the grease trap.

7. What is the cleaning frequency of the grease trap?

If the scum of separated FOG in the grease trap's first section is 50mm or greater, the grease trap should be pumped out. In a three-section grease trap; if the first and second sections are filled with FOG it should be immediately pumped out. If all the sections within the grease trap are filled with FOG, this indicates that the grease trap has ceased to function.

A grease trap should be pumped out every two to three months. The number of times you should do this will be stated in your trade waste consent. If you find you need to pump your grease trap out more often, this indicates that the grease trap's capacity may be insufficient and likely needs to be upgraded.

The entire contents of the grease trap should be pumped out.

8. Who is responsible to clean the grease trap?

It is the responsibility of the trade waste consent holder to pump out the grease trap by engaging a trade waste consented contractor/sucker trucks.

9. What is the proper way to clean the grease trap?

The grease trap should be pumped out using a sucker truck that has a valid Council - issued Trade Waste Consent.

The Sucker Truck should perform the pumping procedure as follows:

1. Remove the lid from the top of the grease trap
2. Place a suction hose into the compartment
3. Begin sucking out the content
4. Scrape the inside of the compartment to remove any FOG and solids that are stuck to the inside surface
5. Continue pumping out until all the liquids and solids are removed
6. Do not use degreasers to clean the grease trap
7. Do not use hot water to clean the grease trap as this will only make the solidified FOG soluble and harder to remove.

10. Is a building consent required for a grease trap?

Yes, a building consent is required for the installation or alteration of a grease trap and associated plumbing and drainage work.

As per Acceptable Solutions of Building Code, G13/AS2 Drainage; Section 3.4.7 ***"Other types of grease traps such as those that separate or digest grease must be approved by the network utility operator as required by G14/VM1 1.2."***

This means that if any food outlet provider wants to install a grease trap different from the design outlined in this handbook (same design in the building code) they need to apply for a building consent.

10.1 How can customers obtain a Building Consent?

You need to apply for a building consent through our website www.southtaranaki.com or contact us on 0800 111 323.

You will need to provide the following information about the proposed grease trap when you apply to us.

1. Design
2. Supplier
3. Working capacity
4. Material type
5. Location of the grease trap (floor plan)
6. Number of seats for customers present in the food outlet (if any)
7. If there are no seats, the size of all sanitary fixtures and appliances (sinks, dishwashers etc) that will be connected to the grease trap, but the size of the grease trap should not be less than 100L

- If you are not sure on any of the information needed, you can email our Trade Waste Officer on tradewaste@stdc.govt.nz
- The grease trap should be always accessible for inspection
- The Trade Waste Officer does not need to pre-arrange a time to inspect

Grease Trap Technical Specification

Fabrication

a. Working Volume
The working capacity of the grease trap informs the volume of effluent (liquid waste) that will be separated/settled in grease trap. The working volume of a grease trap is measured from the water level set by the outlet pipe height.

b. Sizing
The capacity of a grease trap shall be at least twice the capacity of all sanitary fixtures and sanitary appliances discharging to it, and in no case less than 100 litres.

For restaurants and cafes, the capacity of the grease trap shall be at least 5 litres for each person for whom seating is provided, and in no case less than 100 litres. If a hot food serving outlet has no seats to determine the size of the grease trap, a minimum of 100 litres grease trap should be installed.

c. Materials
The following materials can be used to fabricate the grease trap:

- **Concrete** – precast or constructed.
- **Stainless Steel** – Food Type 316 (1.6mm minimum gauge), food grade stainless to be used if the grease trap will be inside the food preparation area.
- **Polyethylene** – PE or HDPE.
- If any other type of material is used, prior approval needs to be obtained from the Council's Building Control team.

Alternative Designs
Alternative designs for grease traps (including overseas manufactured units) that a business wishes to use should get prior approval from the Council before purchase and installation.

Installation

All plumbing works must be done according to New Zealand Building Code Clause G13 Foul Water.

a. Positioning of the Grease Trap
The grease trap should be placed as close as practicable to the fixture(s) being served. The grease trap should be easily accessible for inspection, cleaning and removal of accumulated grease always.

The grease trap can be installed indoors or outdoors.

If the grease trap is placed outdoors:

- Ensure that it is as close as possible to the building. If the fats travel longer, it may solidify and create blockages within the buildings/premises internal pipe works.
- Ensure it can withstand external loads being placed on it (for example; vehicles and people).
- If the grease trap is buried and the top is level with the ground, all piping for vents and inspection points must not disrupt other utility connections, hinder vehicles or people. The grease trap must have removable lids that are airtight.
- If the grease trap is buried and not flush with the ground level, then it must be at least 100mm above the ground level to prevent water run-off from seeping into the grease trap.
- If it is placed in an area with limited space, ensure that it has airtight lids and proper venting.

b. Pipework

- Installation and maintenance of all pipework must be performed by a licensed plumber.
- Inspection points are to be installed at both inlet and outlet pipe works.
- The water level inside the trap will be determined by the level of the outlet pipe.
- The inlet and outlet piping inside and outside the grease trap must be completed according to the NZ Building Code.
- All subsurface drainage, vents, inlets and outlets must be a minimum of 100mm in diameter.
- Any waste pumped to a grease trap must be piped using uPVC SN6 Series 1 for 100mm and 50mm pipes.
- All square junctions for the inlet and outlet must be glued into place according to the NZ Building Code.

c. Venting

All grease traps must be properly vented.

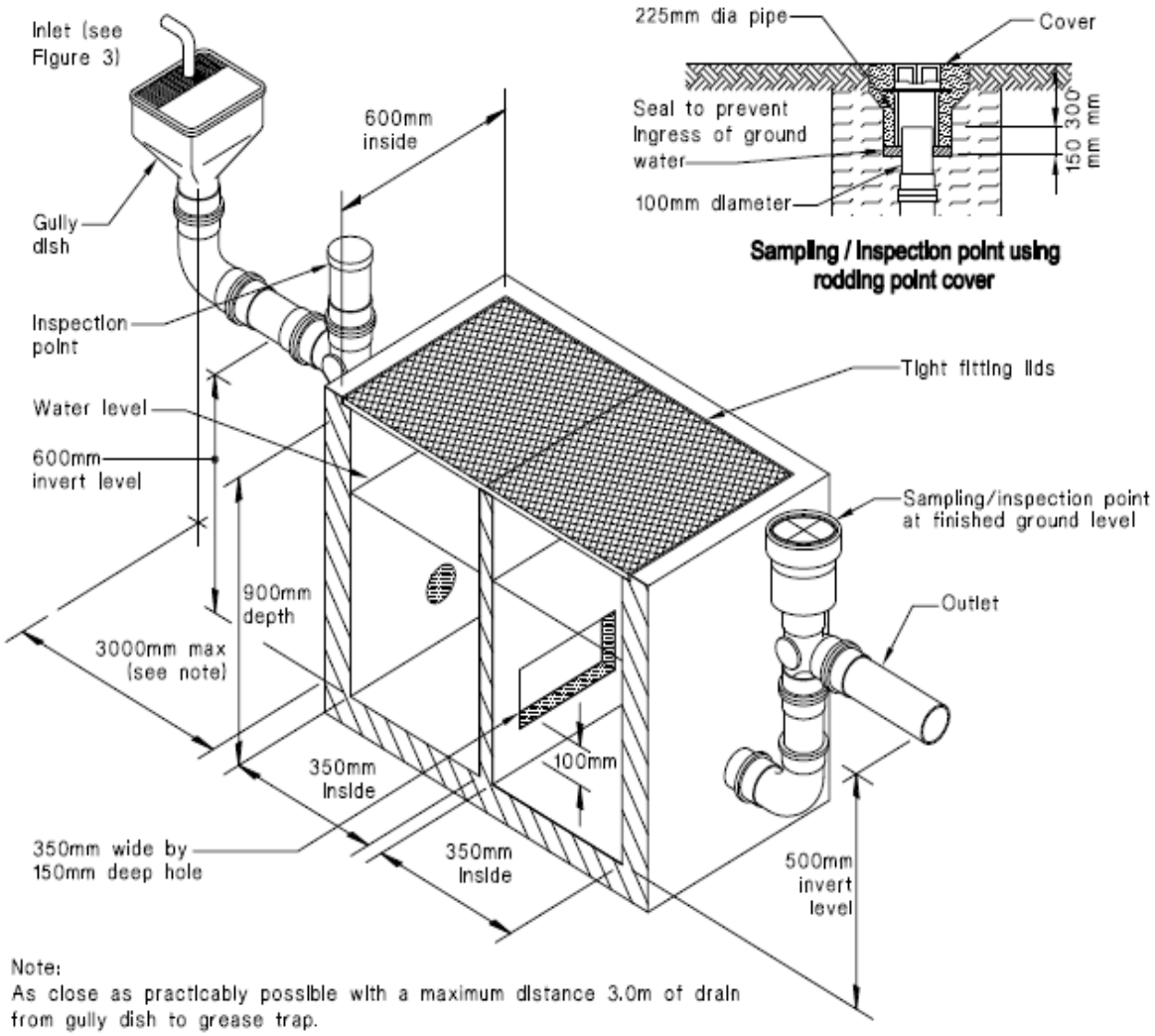
Plumbers must ensure that the vents are installed properly so that siphoning does not occur within the chambers of the grease trap.

Picture: A properly maintained grease trap

Whether it is a 2-chamber or 3-chamber grease trap, the final chamber that connects to the sewer line should not have any fats.

Grease Trap Design

This design is for maximum of 150L capacity grease trap.



Source: Acceptable Solution G13/AS2 of New Zealand Building Code

Table 1: Grease Trap Minimum Size Requirements

Commercial process	Number of seats/ beds	Minimum pre treatment working volume
Cafeteria and canteen serving hot meals		100 L
Take-aways – no seats		100 L
Snack bar – coffee lounge		No pretreatment if no hot food
Restaurant	1-20	100 L
Restaurant	21-40	200 L
Restaurant	41-80	400 L
Restaurant	400-599	3000 L
Restaurant	600-799	4000 L
Restaurant	800-1000	5000 L
Kitchen – hospital, nursing home	1-20	100 L
Kitchen – hospital, nursing home	21-40	200 L
Kitchen – hospital, nursing home	41-80	400 L
Kitchen – hospital, nursing home	81-100	500 L
Kitchen – hospital, nursing home	More than 100	1000 L
KFC		1000L – 3000L
McDonalds		1000 L – 3000 L
Pizza Restaurant with fried chicken		1000 L
Butcher		500L
Function Centre	1-20	100 L
Function Centre	21-40	200 L
Function Centre	41-80	400 L
Function Centre	81-100	500 L
Function Centre	More than 100	1000 L

Source: Acceptable Solution G13/AS2 of New Zealand Building Code

Note:

- Businesses can install a bigger sized grease trap to decrease the frequency of pumping out and having provisions for extension of the business.
- Businesses should also install basket arrestors/sink strainers to avoid the unnecessary loading of waste into the grease trap.
- Businesses can use innovative technologies to separate the grease but are NOT allowed to dose any enzymes or chemicals to breakdown the grease or use any technology that may affect the Council's treatment system.

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www.southtaranaki.com

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