



OIL-WATER SEPARATOR (OWHS)

DESIGN MANUFACTURE SERVICE
SUSTAINABLE ENVIRONMENTAL TREATMENT SOLUTIONS

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Proud Member of:



To Our Customers

Whether you need grease traps, grease extractors, pump stations, pre-treatment devices, rainwater management systems or storm water treatment systems, Halgan's sustainable environmental treatment solution products offers many advantages. They're durable, reliable, and of superior standard. We're also proud of our pre-sales and post-sales technical service, it's about relationships and trust in a team that is on your side.

Company Profile

Halgan Pty Ltd, an Australian owned company, established in 1994, specialises in all aspects of sustainable environmental treatment solutions. From the initial manufacturing of treatment products, with a state of the art rotomoulding machine, right through to the consultation and sales process, **Halgan Pty Ltd** provides a superior product with stringent quality assurance.

For 20 years **Halgan Pty Ltd** has provided pre-treatment products and a dedicated service to plumbers, developers, engineers and merchants. We're proud of the reputation we have earned over that time for "having what you need, when you need it, where you need it".

Mission

To promote a sustainable environment, which is reflected in the products we sell, purchase and use.

Vision

To maintain a leading position in our markets through innovative, environmentally friendly products of the highest quality.

Values



Safety | we protect ourselves and others before all other priorities. Safety is a virtue to be instilled in each of us.



Innovation | we foster a creative environment where employees openly and enthusiastically search for new ways to improve our work.



Spirit of service | we reliably and equitably deliver exceptional products and services to our customers and communities all day, every day.



Empowered teams | we respect, trust, collaborate and communicate – openly embracing problems and conflict as opportunities to create solutions.



Communications | we listen to and share with each other timely, accurate and clear information to ensure effective performance of our work.



Promote professional & personal development | we provide opportunities to encourage each other to reach our highest level of performance within an inclusive, positive, fun work environment.

Company Directory

Halgan Pty Ltd
ABN 69 064 448 157

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Freecall 1800 626 753
ph +61 2 9939 8030
fax +61 2 9939 8027



Brisbane: 141 Magnesium Drive, Crestmead, QLD 4132
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Sales sales@halgan.com.au
General Enquiries info@halgan.com.au



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Halgan Product Advantages

Compact | lightweight

- Manufactured from Polyethylene ensures our products are lightweight, easy to transport and easy to install
- Installation costs are considerably reduced as cranes or heavy haulage equipment isn't required.

Easily transported

- Lightweight units are easily transportable and can be installed in locations that are difficult to access. On site, units are easily handled and manoeuvred.

Durable, acid resistant, long life

- Units are manufactured using the most modern and technically advanced rotomoulding equipment which ensures effective and efficient quality control throughout the manufacturing process
- The polyethylene material used is chemically inert, non-porous and UV stabilised, and does not require additional acid resistant coatings required on most steel and concrete units.
- Polyethylene offers better overall chemical resistance to corrosive acids, bases & salts, and is unaffected by bacteria, fungi or even aggressive naturally occurring soils
- Polyethylene is highly durability against dents, cracks or breaks and has a projected life of over 50 years.
- Units certified by Structural Engineer to Australian and New Zealand Standards in line with the industry's best practice requirements

Easily cleaned

- The smooth wax-like surface of polyethylene products hinders the building up of coagulated oils and fats which allows for quick and thorough cleaning of units and minimal rinse water usage.

Environmentally friendly – Green Star

- Green Star is an internationally recognised sustainability rating system with which Halgan's polyethylene products can contribute towards
- Our products have documentable advantages in materials, energy, transport, emissions, water and land use, and ongoing maintenance cost savings.
- Measurable financial and environmental benefits of Green Star mean Halgan products are the right product of choice

Why Halgan?

Halgan Pty Ltd provides a complete sustainable environmental treatment end-to-end solution, spanning industries as diverse as healthcare, hospitality, property development, construction and mining.

Sharpen your business focus

We take the time to understand our customers' requirements, developing a collaborative approach and building efficiencies into end-to-end processes.

Our systems deliver the benefits of improved profitability due to the smarter thinking that goes into their design.

The strength of a team that is on your side

With a breadth of experience in the industry, our highly trained employees and strong management, makes **Halgan Pty Ltd** a perfect partner for your organisation.

A team with knowledge, understanding and commitment to quality standards and training that prides itself on excelling in the industry.

A personalised way of doing business

What makes our way unique is the way in which we work with our customers, building a strong relationship based on respect, shared knowledge and ongoing support.

That's what we call the **Halgan Way**. The **Halgan Way** is our personalised way of doing business, bringing together the best aspects of partnership, support, smart thinking, continuous improvement and experience.

More than an operational function of business, it's also about relationships and trust in a team that is on your side, whose quality standards and safety records support yours.

Our people make the difference

They make us who we are today, and who we want to be tomorrow.

The team at **Halgan Pty Ltd** partner with clients and collaborate to develop the next generation of innovative solutions to meet your business needs.

Diverse products, focused expertise

We provide innovative and tailored solutions bringing together the best aspects of partnership, support, smart thinking and diversity of experience.

Halgan Pty Ltd offers an extensive product range and technical expertise to provide complete sustainable environmental treatment end-to-end solutions.

1.0 EXECUTIVE SUMMARY

This technical manual sets out the conditions for the installation and maintenance of Halgan™ Oil Water Separators (OWHS) connected to the sewer in **Water Authorities** area of operations. Systems that are installed and maintained in accordance with these conditions will comply with the oil removal requirements of **Water Authorities** for acceptance of non-domestic waste to sewer from retail food premises.

In publishing this technical manual, Halgan™ Pty Ltd (Halgan™) has endeavored to aid designers, engineers, plumbers and regulatory authorities in identifying the products. Halgan™'s objective is to maintain a high level of quality installation and industry awareness. With the public awareness of polluting industries and the strict regulations on trade waste discharges, the company has compiled a range of products to combat these problems. The OWHS and associated products have been through a vigorous and conclusive testing programme in conjunction with major water authorities and councils to prove their performance.

Halgan™ would like the opportunity to thank the water authorities who have given us their support and encouragement.

To avoid problems the OWHS requires meticulous attention to the installation procedure. It is important that the installer be aware of the special installation requirements of the OWHS system. The specifications and installation requirements in this Technical Manual should be strictly followed.

Every care has been taken to ensure accuracy in the preparation of this publication. Details other than installation and maintenance requirements have been issued for guidance only and no liability can be accepted for any consequences that may arise as a result of their application.

Halgan™ is continually researching and developing new products. This manual will be updated as such changes are agreed with **Water Authorities**.

References to the National Plumbing and Drainage Standard AS/NZS3500.

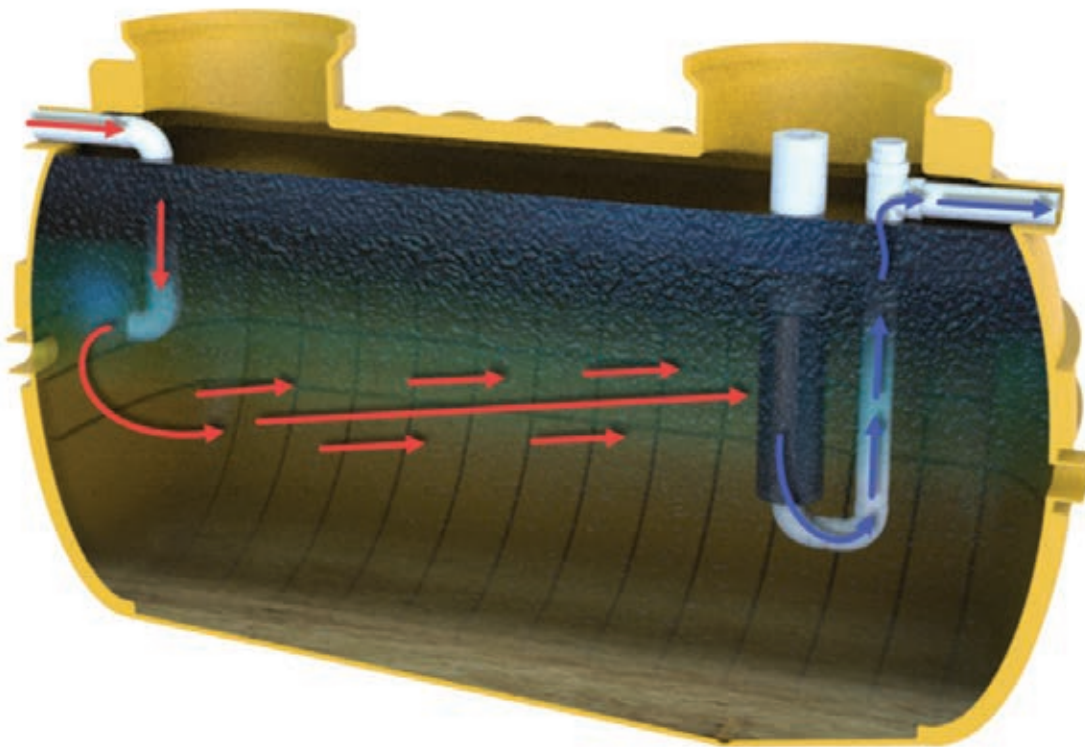
2.0 DESIGN & APPROVALS

2.1 DESIGN

Halgan™ Oil/Water Separator designed to separate oil, fuel and water for a multiple of commercial, industrial applications. The process is ideal for pre-treatment before discharging into the sewer system or prior to other physical, chemical and biological treatment methods.

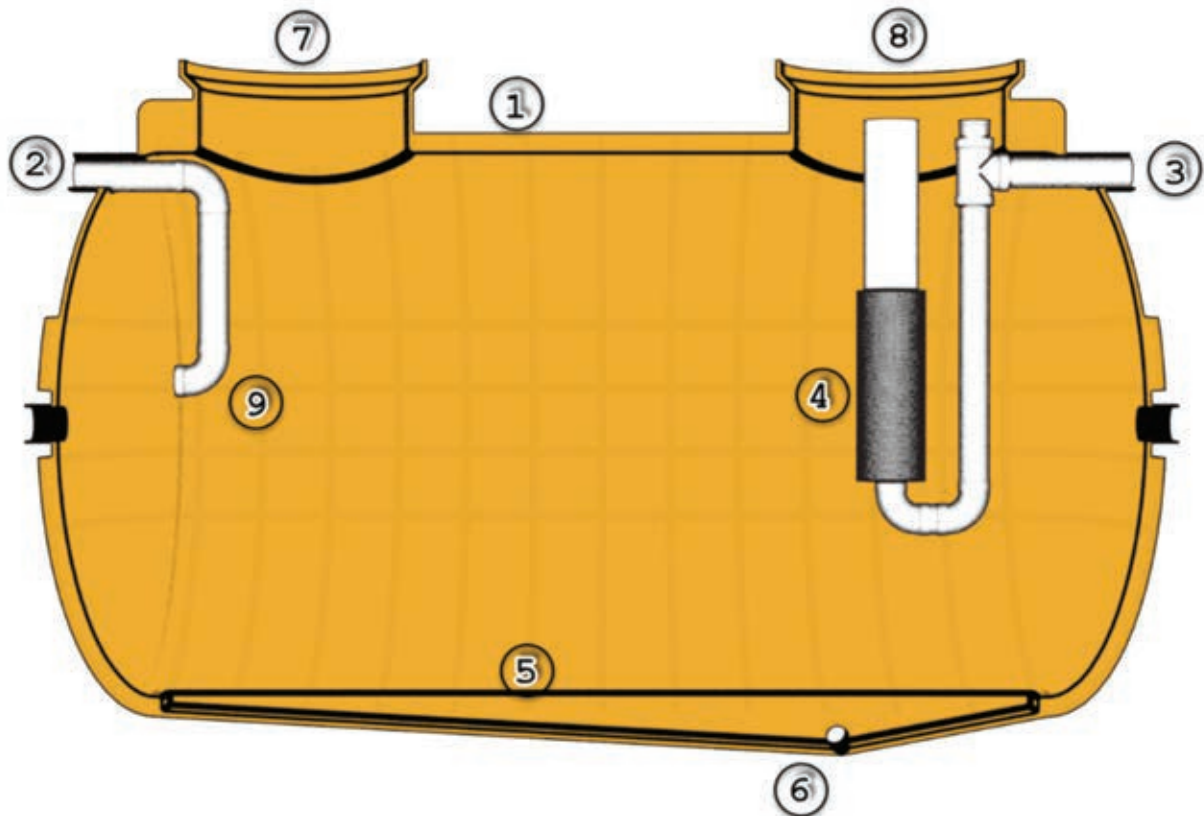
Wastewater containing oil and fuel is drained from floor, area or channel drains and into the separator. The wastewater then enters the separator through a hydraulically engineered inlet which aides in calming and evenly dispersing the incoming wastewater. As the wastewater, slowly and evenly flows through the main body of the separator, the heavier sludge and sediment are separated from the wastewater and sink to the bottom of the chamber while at the same time the lighter oils and fuels are separated from the wastewater and rise to the surface. The specially designed outlet allows the cleaned wastewater to exit the separator without allowing any of the separated sludge/oils and fuels from leaving the separating chamber.

The coalescence filter is integrated into the system. This coalescence filter is located near the outlet of the separator and aides in separating the finer/more difficult to separate oil/fuel droplets from the wastewater. These fine droplets reach the coalescence filter where they combine with other fine droplets creating larger drops which then release from the coalescence filter and rise to the surface of the separator. Generally, incorporating a coalescing filter expected to achieve a concentration of less than 5mg/l of oil under standard test conditions. Class 1 must be specified when discharging to sewer systems.



2.2 OWHS DESIGN PRINCIPLES

Halgan™ Oil Water Separator is pre-treatment device is designed to help commercial and industrial customers meet the license requirements of, Environmental departments, Councils and Water Authorities.



1. Compact light weight design Certified to AS/NZ1546.1
2. Inlet connection accept 110, 160, 200, 250 and 315 mm HDPE pipe.
3. Outlet treated Liquid Trade Waste to <5mg/l discharging to sewer system.
4. Coalescing filter material located for simple cleaning. Unit can be cleaned by normal water pressure.
5. Patented servicing channel designed for quick and easy maintenance. No confine space entry required or expensive maintenance cost.
6. Remote pumpout line connection point at base of servicing channel for difficult site applications.
7. Access lids available in Class B and Class D rating. Extension risers available
8. Large diameter access for ease of maintenance.
9. Inlet design to reduce the inflow velocity, provide uniform flow pattern, avoid short circuits allow oils and solids to settle.

2.3 FEATURES AND BENEFITS.

Halgan™ Oil Water Separator is pre-treatment device is designed to help commercial and industrial customers meet the license requirements of, Environmental departments, Councils and Water Authorities.

- Designed to BS EN 858 – 1 and BS EN 858 -2
- Our vessels are Certified to AS/NZ 1546.1
- Manufactured using Australian Standards Compliant Polyethylene material.
- Acid and Hydrocarbons resistant providing long service life.
- Light weight design for ease of handling, installation and maintenance.
- Range of extension riser available from 300 mm to 900 mm.
- Pipe size available from 100 mm to 315 mm.
- Ease of maintenance with patented servicing channel.
- Finite Element Analysis on vessels
- Lower disposal costs due to patent servicing channel on the base of the vessel.
- Low maintenance costs with easy to clean/durable interior.
- Light weight, heavy duty construction.
- Coalescing filter easily cleaned and replaced.

2.3 BS EN 858 DESIGN REQUIREMENTS

Separator systems are used in a wide variety of situations to fulfill a number of different requirements. It is important to establish why a separator system is needed and what specific function it is expected to fulfill before selecting the appropriate size and type of installation.

- a. To treat waste water (trade effluent) from industrial processes, vehicle washing, cleansing of oil covered parts or other sources, e.g. petrol station forecourts;
- b. To treat oil contaminated run-off from impervious areas, e.g. car parks, roads, factory yard areas;
- c. To retain any spillage of light liquids and to protect the surrounding area.

3.0 OWHS MODEL APPLICABILITY

Model	OWHS 1000	OWHS 1500	OWHS 2000	OWHS 3000	OWHS 4000	OWHS 5000
Type of Premises	Refer to Note: 1.	Refer to Note: 1.	Refer to Note: 1.	Refer to Note: 1.	Refer to Note: 1.	Refer to Note: 1.
Maximum flow (litres per hour)	1000	1500	2000	3000	4000	5000
Peak flow rate l/s	1.5	3	4.5	6	7.5	9

Note 1

- Mechanical Workshops
- Refuelling bays
- Electrical substations
- Above ground Fuel storage areas
- Service stations
- Vehicle Washing bays
- Automatic car wash
- Terminals
- Heavy vehicle and equipment wash down areas
- Transmission stations
- Refineries
- Mine sites
- Car detailing
- Lawnmower repairs

4.0 Classes of Separators:

Class	Maximum permissible content of residual oil Mg/l	Typical separating technique
I	5.0	Coalescing separator
II	100	Gravity separator

5.0 DETAILED LOCATION AND INSTALLATION REQUIREMENTS

5.1 GENERAL

5.1.1 Location

The OWHS is to be installed in a location that will not cause a nuisance, will not obstruct fire access, and in which it will not be damaged by vehicles or traffic or vandalised and which allows ease of access for maintenance.

5.1.2 Surcharge Relief Point

The OWHS must not be used as a surcharge point. An extra surcharge gully or reflux valve may be required.

5.1.3 Sampling Points

Sampling points shall be provided at the outlet of the OWHS. If below ground, risers shall be extended to ground level and fitted with a gas tight inspection box. The sampling points can also be used for clean out points.

5.1.4 Piping Material

Copper pipe and fittings shall not be used in trade waste installation as per AS/NZS 3500.

5.1.5 Cleansing Agents

Only cleansing agents which form temporary stable emulsions with light liquid and then demulsify after the cleansing process should be used.

5.1.6 Non-Standard Installations

Certain installations or position of installations that are unusual due to particular circumstances or matters not covered by this specification or local codes may be submitted to Halgan™ for consideration. Water Authority trade waste approval for these situations will be considered on an individual basis.

5.1.7 Health Requirements

The OWHS shall be designed and installed in such a way as not to cause a danger to health arising from leakage, blockage or surcharging.

5.1.8 Fire Resistance Level

The OWHS is to be installed to maintain the Fire Resistance Level (F.R.L.) as specified in the Building Code of Australia.

5.1.9 Safety

The carrying out of work covered in this Technical Manual shall comply with the safety requirements of the relevant Authorities.

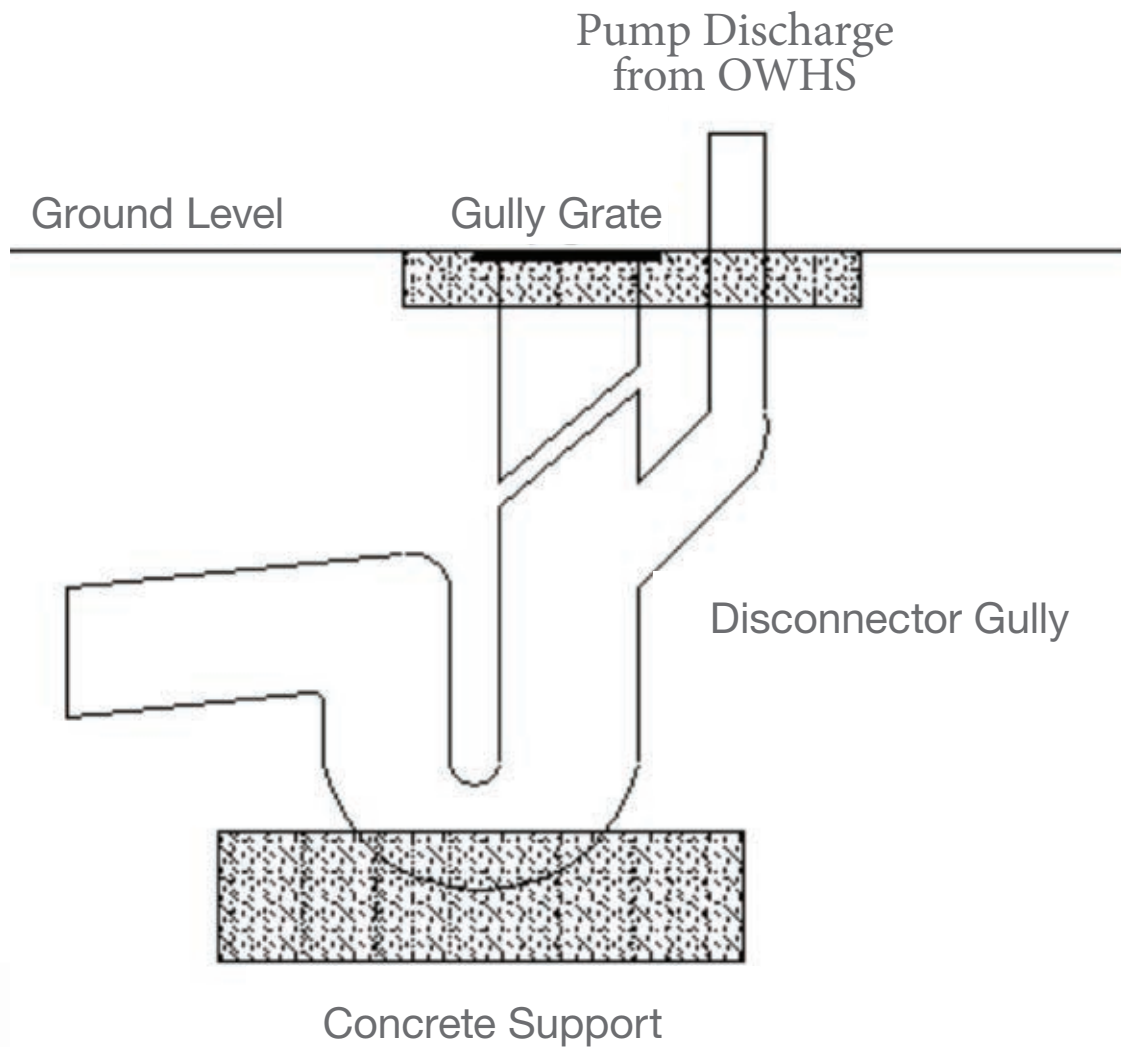
5.1.10 Hose Tap and Backflow Prevention Requirements

A hose tap fitted with a Back Flow Protection Device (RPZD valve as per AS/NZS 3500) must be provided within 5 m of the OWHS for cleaning purposes.

5.1.11 Pumped Discharge from OWHS

Refer to AS/NZS 3500 part 2, Pumped Discharge from Waste Fixtures for typical pumped discharge to sewer from OWHS.

Figure 1

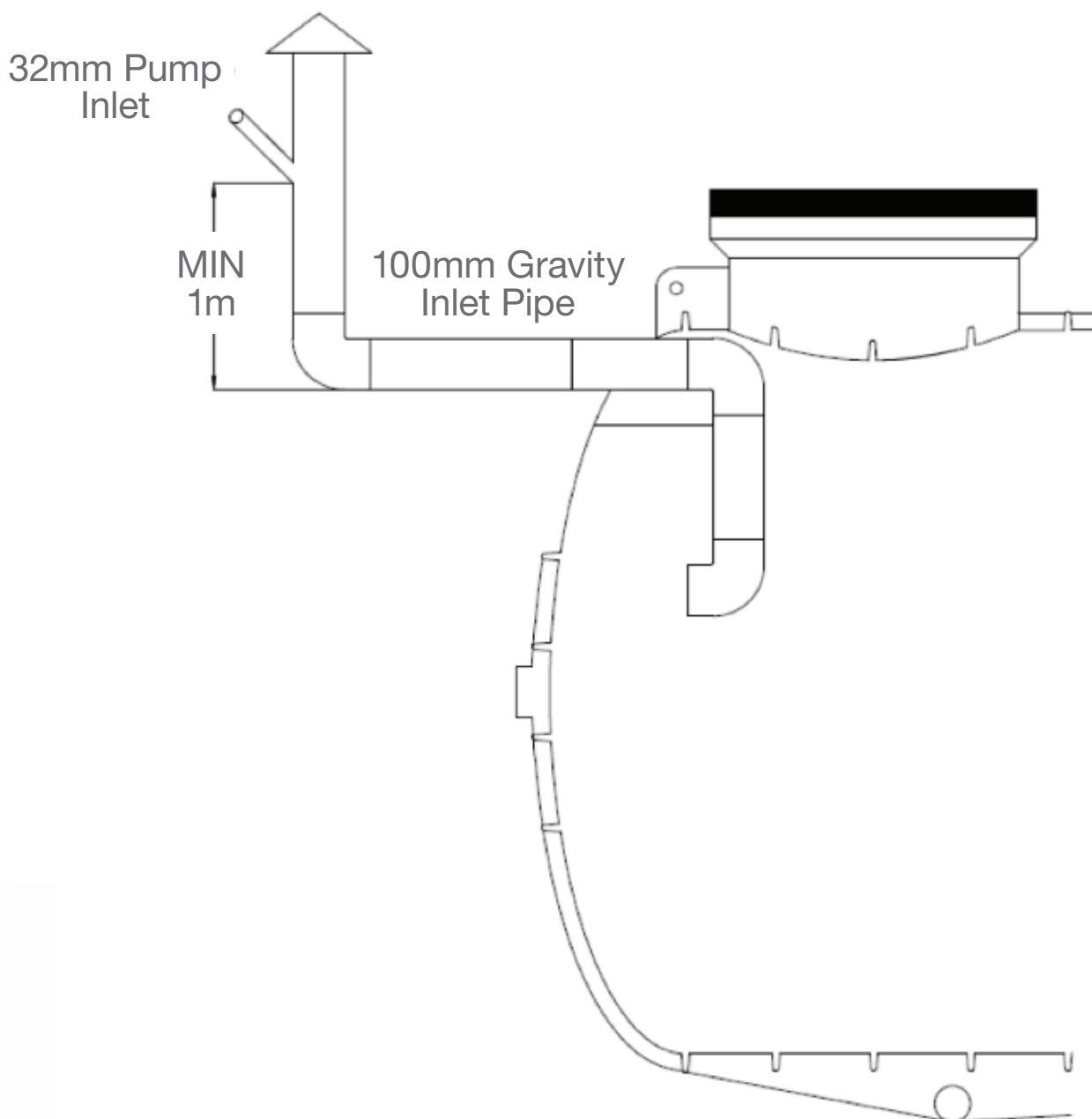


5.1.12 Pump Discharge to OWHS

The 32 mm discharge line from the Halgan™ Pumpstation has to be connected to the vertical riser of the inlet line to the OWHS. Waste must enter the OWHS chamber by gravity.

Figure 2

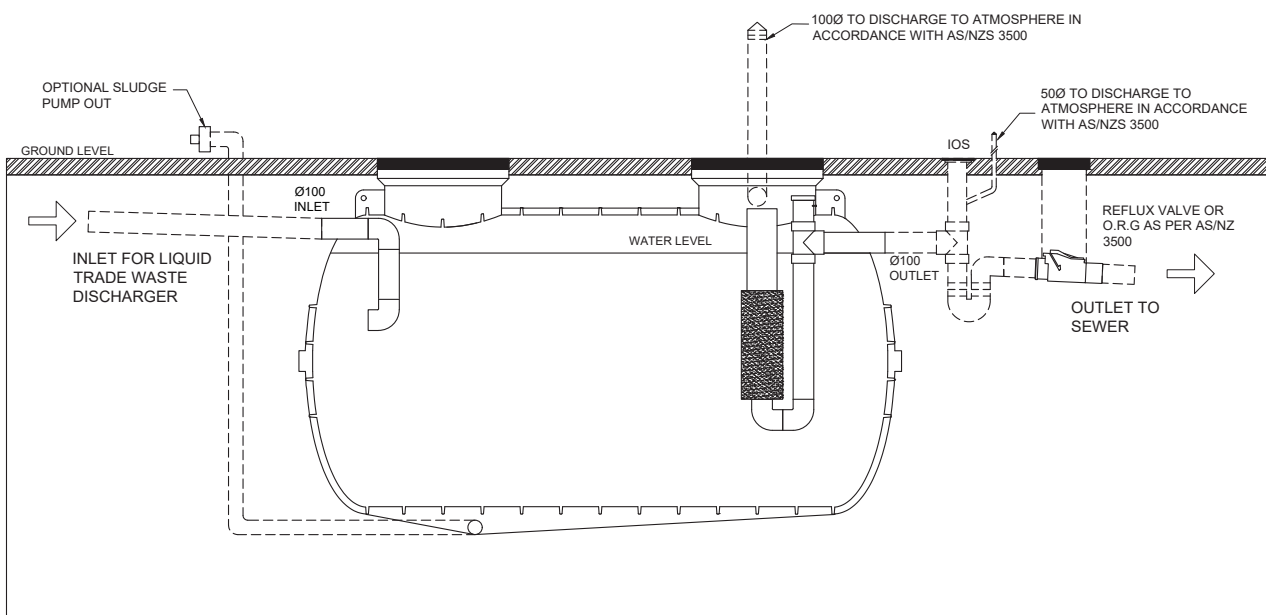
100ø Vent to Discharge to Atmosphere in Accordance with AS/NZS 3500



5.1.13 Typical Drainage Layout for OWHS

The OWHS must not be used as an overflow relief point. An extra overflow gully or reflux valve may be required. The drainage line upstream from the OWHS shall have an overflow relief gully as per the AS/NZS 3500. A 100 mm high/low level vent is required from the main chamber and a 100 mm high-level vent is required on the inlet line. Refer to AS/NZS 3500 Part 2.

Figure 3



5.2 INSTALLATION REQUIREMENTS

5.2.1 General

The OWHS is to be installed in a location that will not cause a nuisance, obstruct fire access, cannot be vandalised or be damaged by vehicles. The OWHS must have ease of access to pumpout point for maintenance. A hose tap fitted with a back-flow Protection Device (RPZD valve as per AS/NZS 3500) must be provided within 5 m of the OWHS for cleaning purposes.

5.2.2 Installation above ground

The OWHS is to be supported on a 100 mm thick concrete pad or on 98% compacted level ground with 10 mm aggregate base. Optional extra stand is available for the OWHS. All pipes connecting to the OWHS shall be fully supported; there should be no stress on the tank connections. All storm water must be diverted away from OWHS to prevent undermining of supports or foundations.

5.2.3 Installation below ground

All connections to the Halgan™ Oil Water Separator shall be in accordance with the appropriate authorities. Any excavation exceeding 1.5 m in depth shall comply with the construction safety Acts and Regulations. Before backfilling, the Halgan™ Oil Water Separator must be filled with water.

5.2.3.1 Excavation Dimensions

The excavated hole width shall be kept as narrow as practicable. The depth shall be not greater than 150 mm than the required depth. A 75 mm clearance is required at the sides of tank.

5.2.3.2 Over excavation

Where an excavation has been deeper than necessary, the excess depth shall be filled either with bedding material compacted to achieve a compaction of 98% or concrete.

5.2.3.3 Water charges ground

Installations in areas subject to flooding & ground water is only permitted when the level of water does not exceed the height of the middle of the vessels. In heavy clay-like soils, the installation is only permitted when there is sufficient drainage underneath the body of the tank.

5.2.3.4 Bedding material

The bedding material must be granular with a maximum aggregate size of 10 mm and not compacted. The bedding material shall encase the whole tank. Bedding/backfill shall be thoroughly compacted by tampering at 300 mm layers.

5.2.3.5 Final Backfill

The final backfill material shall comply with the following:

- (a). Spoil from the excavation of the trench may be used.
- (b). Foreign material such as builder's waste, bricks, rocks and concrete shall not be used.
- (c). The backfill shall restore the excavated hole as near as practicable to the normal ground.

5.2.4 Relief Overflow Point

The OWHS is not to be used as a surcharge point. An extra surcharge gully may be required or a reflux valve installed. Refer to figure in AS/NZS 3500 Part 2. The drainage line upstream from the OWHS shall have an overflow relief gully as per the AS/NZS 3500.

5.2.5 Protection Barricades

The protection barricades shall be installed to protect the OWHS from physical damage. The posts shall be manufactured from 80 mm galvanised tube (refer to material specification) with a sealing cap at the top. A 400 mm white strip shall be painted at the top of the post. The posts will be 1300 mm long and approximately 800 mm apart.

- Concrete Installation - The post shall be 1300 mm long with a 200 x 200 mm base plate fixed to the concrete with four 12 x 50 mm concrete anchors.
- Installation in Bitumen & In Ground - A hole shall be excavated 400 x 400 x 400 mm deep. The base shall be encased in concrete. The post will be 1700 mm long and have bituminous paint applied to the section enclosed in concrete. The concrete shall be finished in a way that water cannot settle around the base. Before backfilling, the Halgan™ Oil Water Separator must be filled with water.

5.2.6 Venting

The high-level vent on the inlet line shall be 100 mm. The high-level vent shall terminate above the roofline and a high/low vent from the chamber as per AS/NZS 3500. Refer to AS/NZS 3500 Part 2.

5.2.7 Vacuum Pumpout Line (optional extra)

Note: Consult with pumpout contractor and Customer Service Representative for correct location. The vacuum pumpout line is used by the cleaning contractor to pump out the OWHS in restricted site applications. A 50 mm M.I. quick release coupling with dust caps is supplied with the unit. The vacuum line has to be extended to the external of the building for ease of access. The lines must be as straight and short as possible. Where bends are necessary, only long radius bends should be used. The size of the vacuum line pipe can be 50 mm for the first 6 metres and 80 mm thereafter. The piping and fittings material can either be class 12 pressure pipe or galvanised pipe. A 600 mm long x 600 mm wide x 200 mm deep access area is required around the quick release coupling for ease of connection. The pump out lines are not to terminate within the OWHS but rather to terminate at a suitable location close to the OWHS. The ends of the pump out line should have cam lock caps fitted.

5.2.8 Access Lids

General - The polyethylene OWHS with the polyethylene lid can be installed in a non trafficable areas, eg garden beds etc. The top of the polyethylene access lid and access port shall finish 100 mm above ground level with a minimum 100 mm x 100 mm concrete edge strip. In trafficable areas the access lid shall be gas tight and installed flush with the ground.

5.2.9 Duty of Access Lids

All covers are manufactured to Australian Standards 3906 and comply with the required design loading.

For above ground application the access lid is 600 mm in diameter and manufactured from high-density polyethylene lid.

All other application the access lid shall be 600 x 600 mm round, cast iron, gas tight, concrete infill or cast iron (light lift) lid and frame. Refer to appendix 1 for cast iron access installation requirements.

5.2.10 Vented Chambers

Refer to AS/NZS 3500.

6.0 MAINTENANCE

To prevent pollution and minimise your costs, you need to manage your separator effectively. To make this easy, all parts of the separator that have to be regularly maintained must be accessible at all times.

Every six months, or in accordance with manufacturer's instructions, experienced personnel should:

- Physically inspect the integrity of the separator and all mechanical parts
- Assess the depth of accumulated oil and silt
- Service all electrical equipment such as alarms and separator management systems if applicable
- Check the condition of any coalescing device and replace it if necessary

Some heavily used or high-risk sites might require more frequent inspections.

Keep a detailed log of when the separator is inspected, maintained, emptied and serviced. Also, record specific events relating to the separator system such as cleaning, repairs, accidents and incidents.

All sites should empty their separator as soon as a significant quantity of oil and/or silt has built up. The retained waste, including the silt, must be removed and the separator must be refilled with clean water before being put back in to service to prevent damage and to prevent oil passing through it. In addition to normal emptying of the separator, it will also need to be emptied right away if oil or silt levels exceed 90 per cent of the storage volume of the separator and the alarm is activated. When the oil or silt reaches this level or after a spillage, employ a registered waste removal company to empty the separator. For all waste removal operations, you must make sure that the waste removal company has experience in emptying separators and that they do not allow any of the contents to escape from the outlet during emptying.

6.1 HOUSEKEEPING

Housekeeping practices have to be implemented in the kitchen preparation area. The correct housekeeping practices will help maintain a good quality discharge from the Halgan™ Oil Water Separator and keep pump out frequency at an economically level. If the Halgan™ Oil Water Separator System is abused by the excessive discharge of oil, grease and food products, it will result not only in increased pump out costs, but also risk an overflow and health or environmental consequences and penalties.

6.1.1 Involved House Keeping Signs

The housekeeping signs located in the cleaning and preparation area. The signs have to be visible to all the staff at all times. The purpose of the house keeping sign is to bring to the staff member's attention the correct practices.

6.1.2 Staff Training

Every new staff member will have to be trained in the correct housekeeping practices. The training sessions should outline the following practices - do not pour oil down the drains, place oil in recycling bins provided, do not use excessive water. Do not allow string, grit, rubber bands, plastic etc to go down the drains. Dry sweep the floor before mopping, implement dry cleaning methods.

7.0 HOLDING VESSEL SPECIFICATION

7.1 POLYETHYLENE MATERIAL SPECIFICATIONS – EN 858-1 STANDARD

- Density not less than 935 kgm³ when measured in accordance with ISO 1183.
- Melt mass-flow rate, under a normal load of 21.6 N at a temperature of 190 Oc, shall be between 1.0 g/10 min and 5.0 g/10 min, measured in accordance with ISO 1133.
- Tensile stress at yield shall be greater than 15 MPa.
- Tensile strain at yield shall be less than 25%.
- Tensile stain at break shall be greater than 200%
- U.V. stability in accordance with ISO 877.

7.2 OIL – WATER SEPARATOR VESSEL.

Certified to AS/NZ 1546.1 Holding tank Standard.

7.3 HALGAN™ CERTIFICATION.



Certificate of Approval

This certificate confirms that the company below complies with the following standard(s):

Company Name	Halgan Pty Ltd	Client ID	100896
Company Other Name		Type of Certification	Product Certification; System 5
Certification Standard	AS/NZS 1546.1-2008 : On-site domestic wastewater treatment units - Septic tanks		
Scheme	Global-Mark Product Conformance Scheme		
Certification Review Date	6/03/2015	Certification Expiry Date	6/03/2020
Certificate Issue Date	24/07/2015	Certificate Last Update Date	1/12/2016

APPROVED COMPANY/SITE ADDRESS(ES):
22 Ethel Street Brookvale 2100 NSW Australia
141 Magnesium Drive Crestmead 4132 QLD Australia

This certification remains valid until the above mentioned expiry date and subject to the organisation's continued compliance with the certification standard, and Global-Mark's Terms and Conditions. This Certificate of Approval remains the property of Global-Mark Pty Ltd, Company Number: ACN 108-087-634. The use of the Accreditation Mark indicates accreditation by the Joint Accreditation System of Australia and New Zealand in respect to those activities covered by JAS-ANZ accreditation. Refer to www.jas-anz.org/registry for verification.



Certification Manager



Unique Certificate Code: CEFA59E7C9DF8CEBCA25806A0067D5D
Global-Mark Pty Ltd, 407, 32 Dells Road, North Ryde NSW 2113, Australia - Copyright 2005



9.0 WARRANTY CARD

HALGAN™ PTY LTD, 22 Ethel Ave, Brookvale NSW 2100

PH. 612 9939 8030, FAX. 612 9939 8027

Halgan™ Oil Water Separator warranty card to be completed and returned to Halgan™ Pty Ltd.

PRODUCT WARRANTY REGISTRATION CARD

NAME: _____

ADDRESS: _____

TYPE OF BUSINESS: _____

NAME OF PURCHASING AGENT: _____

AGENT ADDRESS: _____

DATE OF PURCHASE: _____

PRODUCT MODEL NO.: _____

CONDITIONS OF WARRANTY

Halgan™ Pty Ltd warrants that all Halgan™ products are free from defects. Any apparent fault will be rectify free of charge by Halgan™ Pty Ltd or by any of Halgan™'s authorised agents within appropriate time limits herein set out provided that

- The customer produces the original invoice or other purchase document as proof of the purchase date.
- All costs of installation, cartage, freight, travelling expenses and insurance are paid by the claimant.
- Halgan™ Pty Ltd and its Authorised Dealers will not be liable for any consequential loss or damage whatsoever or howsoever arisen.
- The Product being precision equipment has not been misused or adjusted.
- The equipment has been installed correctly and is used in accordance with the Halgan™ Pty Ltd specifications issued with the product.
- Nothing in these Conditions of Warranty shall be deemed to restrict any warranty required to be given under the Trade Practices Act (Commonwealth) or any consumer legislation of any State of Australia.

12 MONTH WARRANTY

- Full warranty on mechanical and electrical components.

7 YEAR WARRANTY

- Full warranty on polyethylene tanks.


WARRANTY EXCLUSIONS

- Normal user adjustments or customers instruction on the Product's operation.
- Products purchased overseas / interstate - not designed or approved in the installed area.
- Normal user adjustments or customer instruction on the Product's operation.
- Abnormal product performance caused by any ancillary equipment, interference or other external factors.
- Servicing of product.
- Any mileage or travelling charges outside the Service Dealer's normal service area.

10.0 HALGAN™ OIL WATER SEPARATOR COMPLIANCE PLATE

The compliance plate will be located inside the access lid of each unit of a OWHS assembly. The SCD model details not applicable to OWHS system. The model number must have an "A" or "B" after it to designate an 'above ground'; model or 'below ground' model. The plate will be manufactured from polyethylene. The compliance plate is heat sealed onto the polyethylene material and shall be permanently attached to each OWHS body prior to leaving the factory.

COMPLIANCE PLATE	HALGAN PTY LTD	PH 1800 626 753
Date : _____	Serial No: _____	
Product: _____		
Model No: _____	SCD Model No: _____	
Volume : _____	Rating: _____	
Authorisation No: _____		



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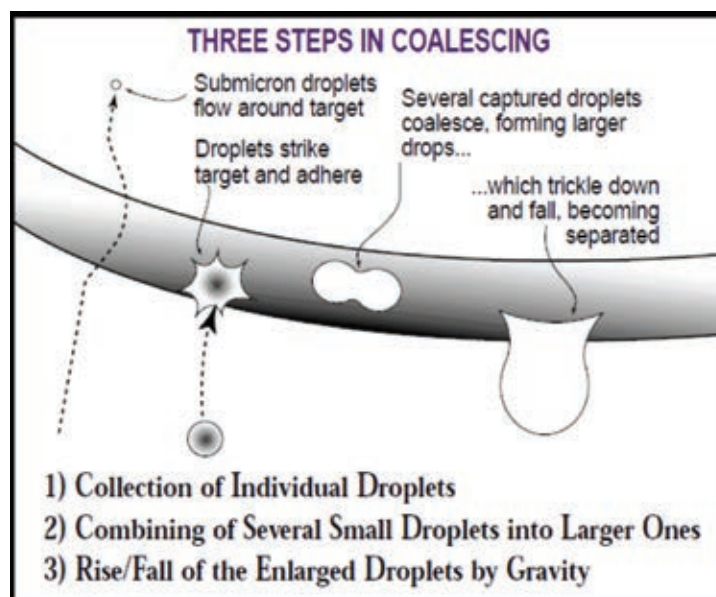
11.0 COALESCING FILTER

The coalescing filter is integrated into the Halgan™ Oil Water Separator system. This coalescence filter is located near the outlet of the separator and aides in separating the finer/more difficult to separate oil/fuel droplets from the wastewater. These fine droplets reach the coalescence filter where they combine with other fine droplets creating larger drops which then release from the coalescence filter and rise to the surface of the separator. Generally, incorporating a coalescing filter and are designed to achieve a concentration of less than 5mg/l of oil under standard test conditions. Class 1 must be specified when discharging to sewer systems.

11.1 BASIC DESIGN CONCEPT FOR COALESCING FILTERS

Light Liquid Coalescing Filters are used to accelerate the merging of many droplets to form lesser number of droplets, but with a greater diameter. This increases the buoyant forces in the Stokes Law equation. Settling of the larger droplets requires considerably less residence time. The process exhibit a three-step method of operation as in Figure 1.

The Coalescing Filter depend primary on Direct Interception where multiplicity of cells in the filter collects fine droplets as they travel in the laminar flow stream. The Filter can generally capture smaller droplets than other methods that depend on Stokes Settling like corrugated plate separators.



11.1 COALESCING FILTER MATERIAL

Unique three-dimensional open cell structure. Resistance to oil and petrol and chemicals. Cell count 8 per 25 mm, test method AS2282..

11.1.2 Typical Properties

- a) Density 28,000 g/m³ nominal
- b) Tensile Strength 110 kPa min
- c) Elongation 280% min
- d) Tear Resistance 800 N/m min

12.0 INSTALLATION OF CAST IRON ACCESS COVERS (APPENDIX 1)

12.1 INTRODUCTION

In the IN-SITU method, the cover set is supported by the formwork or the OWS Access Lid until the in-situ concrete is strong enough to withstand construction loads. The in-situ concrete must support the full width of the frame.

Halgan™ covers are individually fitted to ensure a gas-tight fit. Covers and frames are not intended to be rated at not less than 28 MPa for the supporting walls and for cover infilling.

12.2 PREPARATION

Ensure that the usage class is suitable for the traffic application – refer to AS3996.

Before fixing the cover into position on the formwork, clean and grease all mating surfaces of the cover set and check that the product is correctly assembled.

If the cover is bolted or riveted to the frame, the cover may be supported directly by the formwork, otherwise, nails can be driven into the formwork so that the frame is supported at the correct level.

Before concreting commences, check that the cover is fully seated in the frames.

If the cover was fitted by installation bolts, these will have to be removed prior to the infilling covers. This means that infilling will have to be delayed until the concrete supporting the frame has cured.



12.3 CONCRETING

Place the concrete in-situ and vibrate well so that the concrete which supports the full width of the frame and fills the frame cells is well compacted and will reach the specified MPa. Honeycombed or bony concrete under the frame will reduce the capacity of the cover and may cause it to fail at relatively low loads. If infill covers are supplied the concrete infilling is at the same time.

Screed off the excess concrete and finish the surface as required. The ribs and edges of the cover and frame should be visible.

Allow the concrete to cure before removing the cover and the formwork – premature stripping may damage the supporting concrete and distort the frame.

After the concrete has cured, remove the cover, mark the pit number on the underside of the cover (do not mix the covers) and strip the formwork.

Clean and grease all mating surfaces of the cover and frame before replacing the cover.

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