

GUERNSEY OIL INSTALLATION GUIDELINES

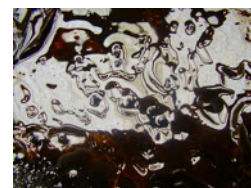
This guidance relates only to liquid oil. For information on the requirements for associated equipment such as the positioning of boilers and flues please refer to the guidance notes produced by the Environment Department.

INTRODUCTION

This document has been produced to give guidance so as to minimise the risk of pollution to the Island's public water supplies as required under 'The Prevention of Pollution (Guernsey) Law, 1989' and to give guidance as to the requirements under 'The Building (Guernsey) Regulations, 2012'.

"**Oil**" is classed as oil of any description and includes any spirits produced from oil of any description.

"**Installation**" means any permanent or temporary, fixed or mobile, domestic or commercial, tank, boiler or pipe intended to hold, carry or convey oil.



PRIOR TO CARRYING OUT ANY WORKS

Guernsey Water - A permit is required from Guernsey Water prior to installation for any new or replacement oil installation (tank, boiler or fuel lines) for any purpose within the controlled area under 'The States Water Supply (Prevention of Pollution) Ordinance, 1966'. To obtain a permit, simply contact Guernsey Water giving details of the proposed installation including a plan.

Environment Department – Building Control approval is required in all cases; however prior approval and an application fee may not be required if your installer and commissioning engineer are OFTEC registered. Some installations will require Planning permission; see the States of Guernsey website for further information: www.gov.gg/ccm/navigation/environment/planning/building-control/ or www.gov.gg/ccm/navigation/environment/planning/development-control/exemptions/

INSTALLATIONS

Oil tanks



Domestic oil storage tanks are often made of plastic, fibreglass, steel or stainless steel. These are permitted up to a capacity of 3,500 litres provided the following criteria are met:

- All top outlet tanks have an isolation valve and anti-siphon device to be fitted inside the secondary containment (Fig.2)
- They meet the requirements of Figures 1-7 at the end of this document

Also, if sited within 10 miles of the sea:

- They have secondary containment of not less than 110% of the capacity of the tank itself (Fig.2)
- They are sited over a catchment pit as detailed overleaf if they have a bottom outlet (Fig.1)

Plastic and glass fibre reinforced plastic (GRP) bunded tanks must not be buried or even partly buried. Bunded tanks with a top outlet do not need to have a catchment pit. Commercial oil storage tanks (including garages) and domestic tanks greater than 3,500 litres require specific approval from Guernsey Water, Building Control and Development Control.

Underground tanks

Underground tanks are permitted with specific approval, either in pre-cast chambers or with concrete encasement. The tank itself must be stainless steel due to the possible ingress of water through the manhole cover. Please note not all covers are watertight and special consideration must be given to the possibility of a tank floating!

Catchment pits

Single skin tanks require a catchment pit which must have a net capacity, beneath the tank, of 110% of the capacity of the tank itself (Fig.1).

Catchment pits must be completely watertight and may be constructed of:

- Concrete Building blocks rendered internally and externally
- Pre-cast reinforced concrete
- Fibreglass

Block built catchment pits must be sited on an impervious 150mm thick concrete base (Fig.3). The joint between the block work and the base should be visible above ground level and the block work must be rendered both inside and out.

Catchment pits must be built independently of existing structures; this means that butting the block work against an existing wall or building is not permitted. Damp courses are not permitted.

Fibreglass catchment pits need to be sited on a concrete pad 100mm thick or 40mm paving slabs.

Suitable steps should be taken to ensure that the effective capacity of the catchment pit is not reduced below 100% of the tank capacity by the accumulation of rainwater or debris. The catchment pit should be inspected on a regular basis and emptied; automatic catchment pit emptying pumps on a float switch are not permitted.

It is recommended that a minimum gap of 150mm is allowed on both sides and at the rear of the tank, with a further gap of 310mm at the gauge end. This is purely to facilitate the removal of rainwater or oil if the tank did lose its contents.

Drainage holes at the base of any catchment pit are **not** allowed. Holes drilled through catchment pit walls at any level to accept oil lines are not permitted.

Tank supports

Tanks that are suspended over catchment pits require adequate support and for most normal sized tanks this means that a minimum of four 50mm x 50mm square box section galvanised iron members are required to ensure that the loading on the base of the tank is equally distributed onto the walls of the catchment pit. Unprotected mild steel angle iron supports are not recommended.



Plastic and GRP tanks must have a support tray fitted in accordance with the manufacturer's instructions. Plastic and GRP bunded tanks require a visible concrete pad foundation of at least 100mm thick.

There must also be a 300mm overhang at both sides and ends (Fig.3).

Tank fittings

All tanks must be fitted with a reliable contents indicator. This can be a flexible site tube fed through an automatic closing valve. The tube must be securely fixed to the top of any tank. Dial gauge indicators can also be used as well as Watchman electronic sensors or other approved products (Fig.1).



The bore of the vent pipe must not be less than 50mm in diameter and at least equal to the bore of the filling pipe. All indicators, filling points and vents must be within the catchment pit area (Fig.1).

Remote fill lines

Remote fill lines should only be installed where the location of the tank makes it impossible for the fuel company to service it. The fill lines must be of a material that is approved for use in an oil installation. If the fill line is underground it must be sleeved in a continuous pipe with no joints (steel sleeving is not permitted).

Above ground fill lines must be made of steel and be environmentally protected to prevent corrosion. A non-return valve must be fitted at the fill point end of the line where it is lower than the tank and measures must be in place to ensure the tank's contents cannot siphon out through the fill line. Fill lines must be adequately supported for the weight of the pipework and oil within the pipeline and be fitted with a screw cap. The fill line must be pressure tested to prove integrity before use.

Location of oil tanks

- **Near a stream** - Tanks may only be installed within close proximity (5 metres) to a stream with the express permission of Guernsey Water, who will advise on suitable material, location and any special conditions.
- **Within a building** – Tanks must not be located in habitable areas and always enclosed in a chamber. The chamber should be directly ventilated to outside, have a minimum of 60 minute fire resistance (larger tank sizes may require an increased resistance time) walls, roof, floor and door, and a self-closing door that opens outwards (must be able to be opened from the inside without the aid of a key).
- **If tank is less than 1.8m from the walls of a building which does not provide a minimum of 30 minutes fire resistance** - Remedial works must be carried out so that a 30 minute fire barrier is provided between the building walls and the oil storage tank. This should project a minimum of 300mm beyond each exposed end of the tank and 300mm above the upper-most part of the tank (Fig. 6.) Also, combustible eaves of a building which are located within 1.8m of the oil storage tank must be protected by a material with a minimum fire resistance of 30 minutes. This material is to extend 300mm beyond the furthest ends of the tank (Fig. 7.)
- **If a tank is less than 760mm from a boundary** – Provide a fire wall between the tank and the boundary or boundary wall, having 30 minutes fire resistance (minimum) on either side. The fire wall or boundary wall should extend at least 300mm higher and wider than the top and sides of the tank.

Foliage

Foliage should be maintained, so that it is a minimum of 600mm from the tank.



Signage

Tanks must have affixed in a prominent position a durable notice containing information on how to respond to an oil escape, so as to reduce to a reasonable level the risk of pollution. These notices are available from Guernsey Water and contain the organisation's contact details, who must be notified in the event of an oil escape.

Oil feed lines from the tank to the boiler

On a gravity fed system (i.e. tank over a catchment pit) a single oil feed line will suffice. On a bunded tank installation a two pipe system would normally be installed, although a single pipe can still be used to the external wall of a property and a tiger loop de-aerator or lifter pump fitted. From this point a two pipe oil system can be used to supply the burner/aga piped in copper.

The oil line(s) from the tank should be laid at a minimum depth of 450mm and piped in copper, although plastic lines made specifically for carrying petroleum spirit are permitted provided they are ultraviolet light resistant. Plastic oil lines are not permitted inside a property or through the casing of an external boiler.



If it is necessary to run oil feed line(s) underground or under floors then these must be sleeved in black polyethylene. The sleeve must terminate above ground level at the burner and the catchment pit, and must be continuous throughout its length with no mechanical joints (microbore-type sleeving pre-fitted to oil lines is not acceptable). Because of the difficulty in servicing the line filter if fitted inside the top lid of a bunded tank, it is permissible to fit this filter to an outside wall of the entry point of the fuel line providing it can easily be seen, and is not covered with soil or vegetation as this may promote and conceal corrosion.

A remote acting fire valve must be fitted to the suction fuel line on the outside of the property at the point of entry; preferably an isolating valve, which should be fitted upstream of the filter and the remote acting fire valve to aid servicing of boiler. There should **not** be any valves fitted on the return oil line back to the tank on a two pipe system - this includes check valves. Soldered joints and push-fit joints are not permitted on copper fuel lines.

Boiler installations

If the boiler is installed outside of a property it must stand on a solid base and be able to contain an oil spillage of at least 12 hours at the rated boiler use. Bunding is not required around boilers in kitchens or utility rooms where spillages would be noticed and rectified quickly. The oil lines entering a boiler casing must be piped in copper at all times. Long-life flexible hoses are to be used from the copper entry point inside the boiler casing to the burner fuel pump. Steel braided flexible hoses as supplied by boiler manufacturers are only guaranteed for one year and must be replaced after one year of boiler running.

This work should be carried out by a suitably qualified boiler service engineer. The remote fire valve probe must be fitted above the burner; some boiler manufactures fit a clip for this purpose. If an external boiler has been installed this must be of an approved type. Building Control are currently producing guidelines for the installation of all new boilers.

External boilers

Wall-hung or freestanding external boilers do not require an additional bund as long as they are sited on or over an impervious base and totally visible where a leak will be easily seen. If the boiler is in a location that does not have an impervious base or is not easily visible it must have a catchpit able to contain an oil spillage of at least 12 hours at the rated boiler use.



Flues

For information on the requirements for flues please refer to the guidance notes produced by both the Building Control and Development Control sections of the Environment Department.

Figure 1: Open Bunded Oil Tank

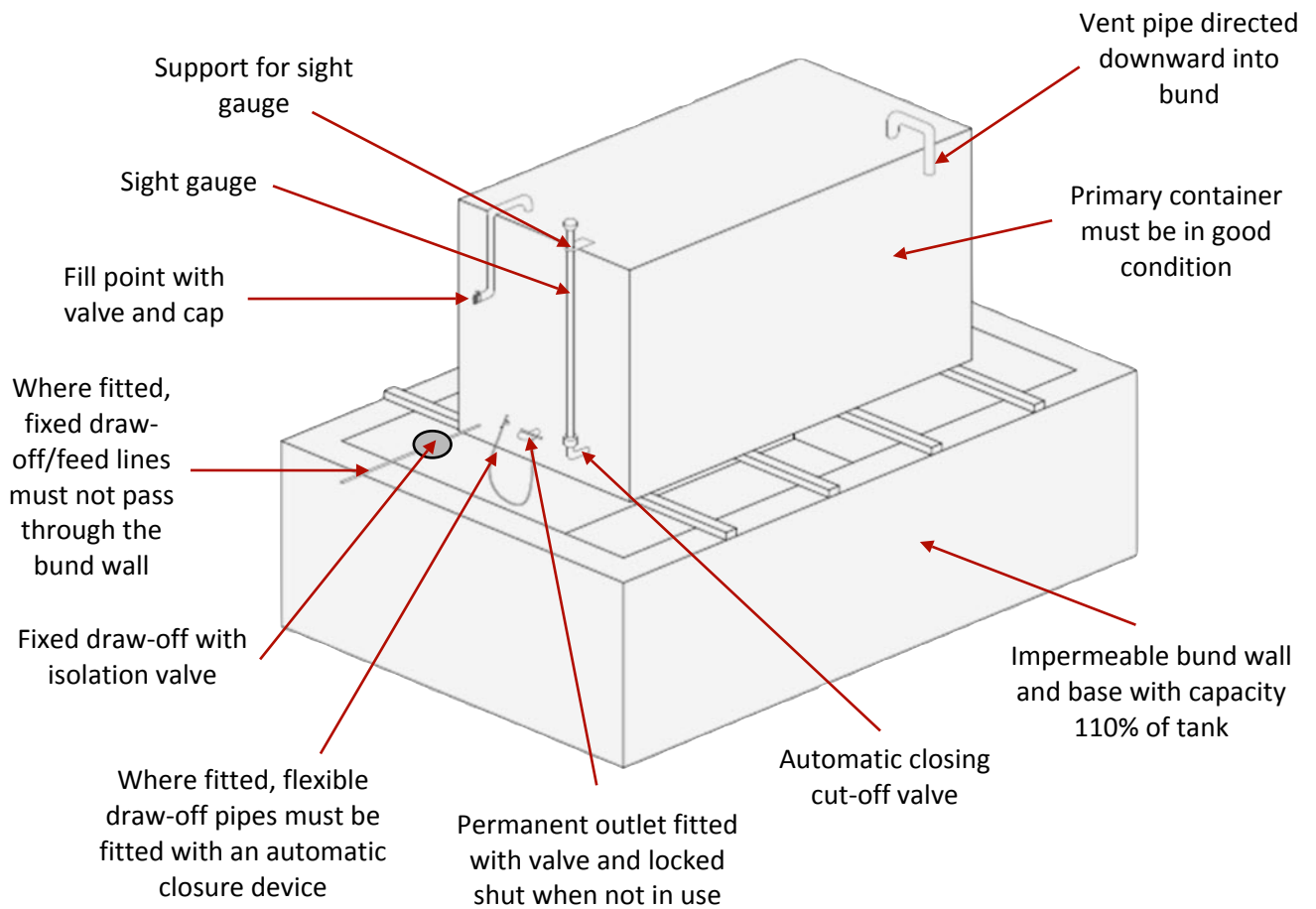


Figure 2: Totally Enclosed Bunded Oil Tank

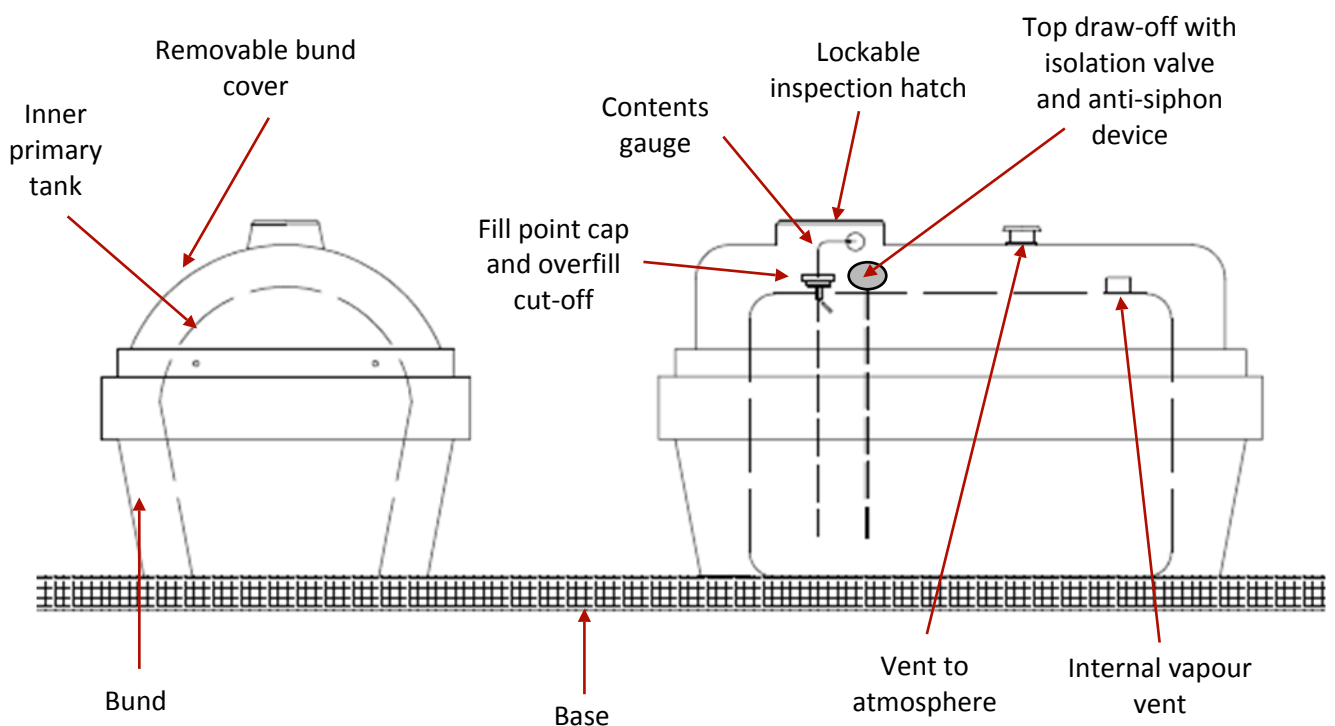


Figure 3: Oil Tank Installation Near Combustible Buildings & Boundaries

Clearance required when additional protection is not provided

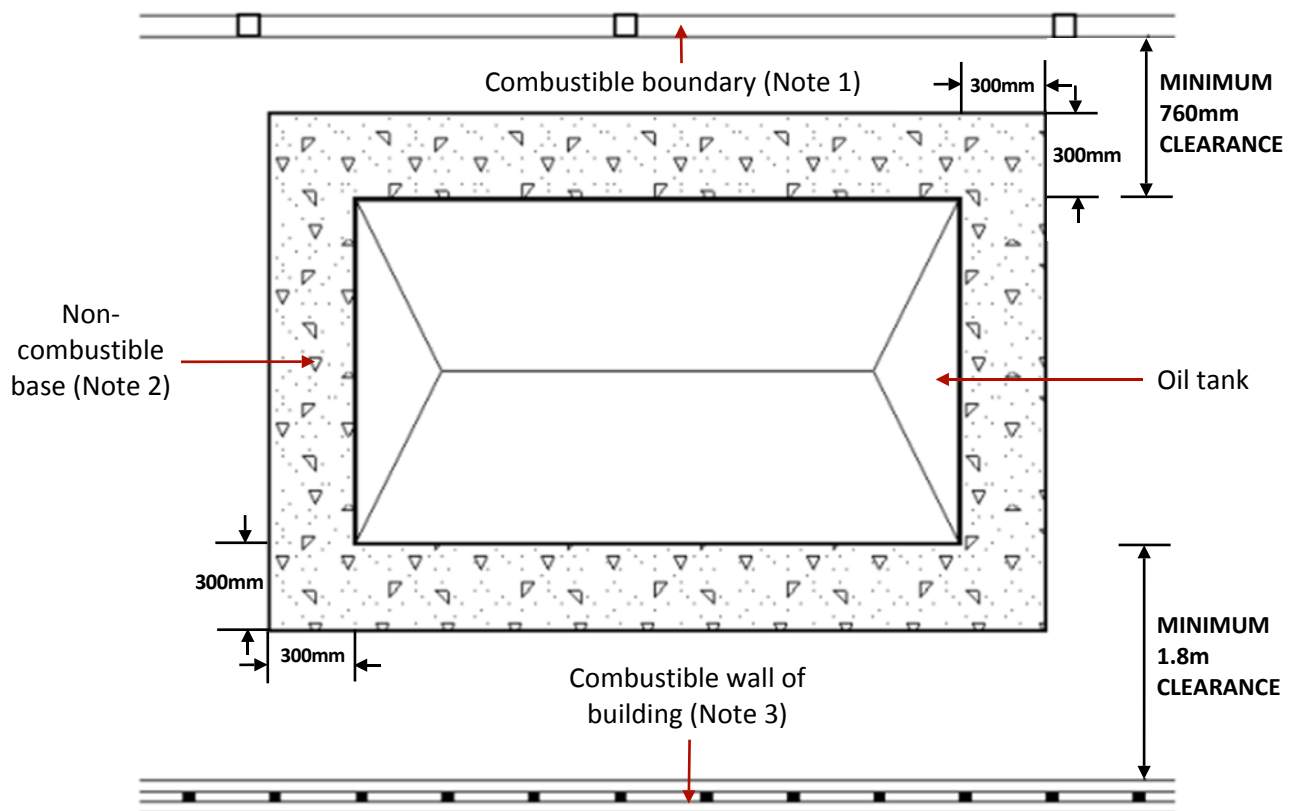


Figure 4: Oil Tank Installation Near Combustible Buildings & Boundaries

Protection required where clearances in Figure 3 are not provided

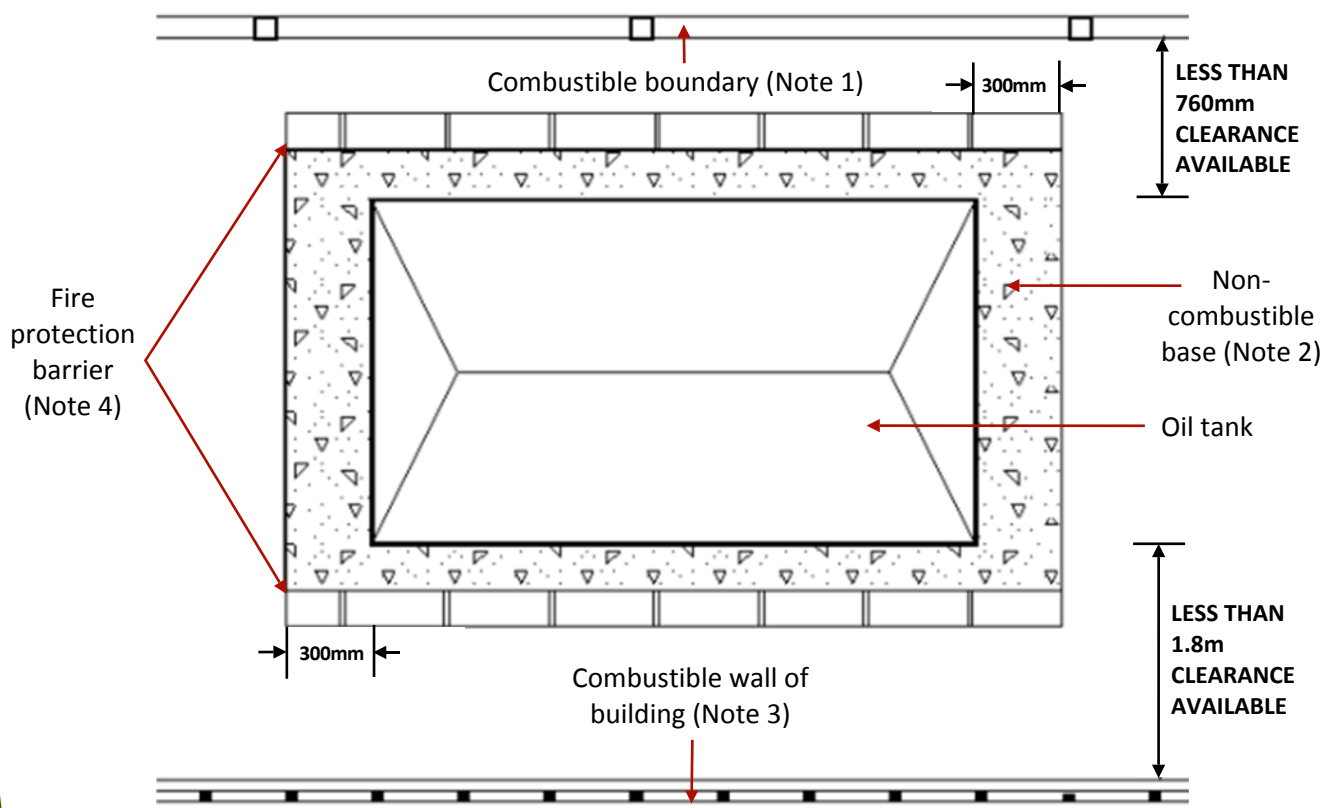


Figure 5: Oil Tank Installation Near Non-Combustible Buildings & Boundaries

Building wall without openings, no added protection required

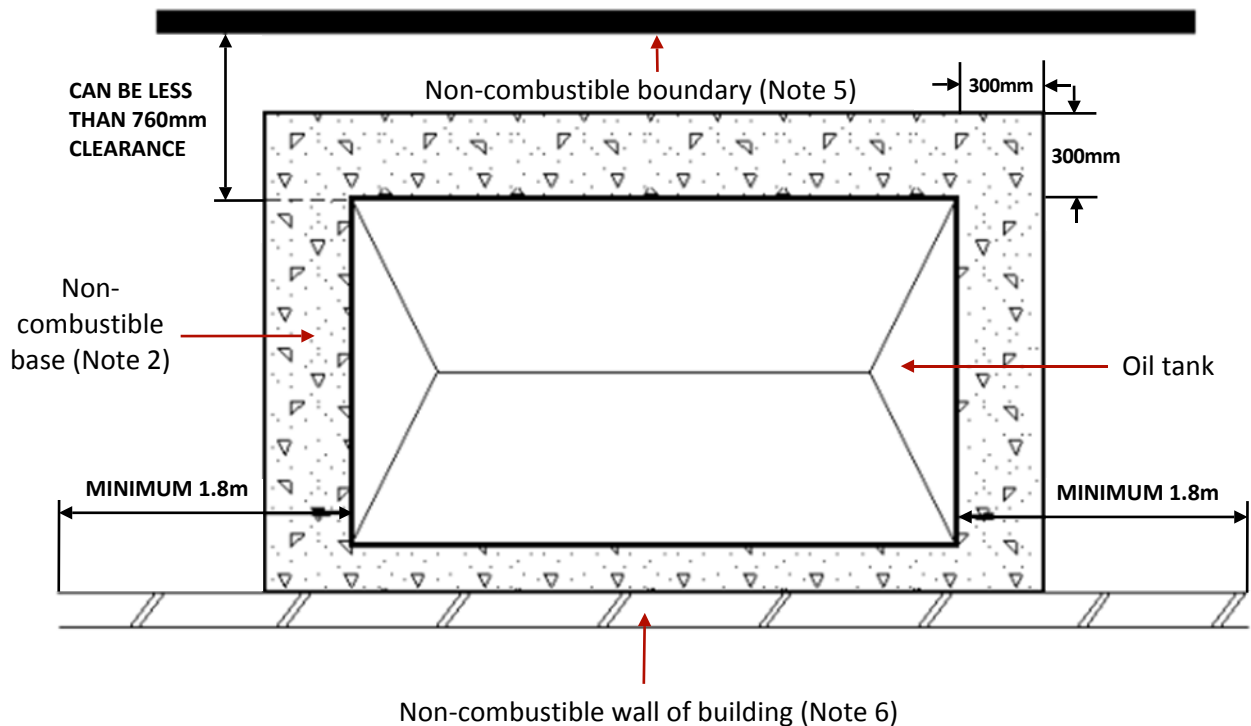


Figure 6: Oil Tank Installation Near Non-Combustible Buildings & Boundaries

Building wall with openings, opening protection required

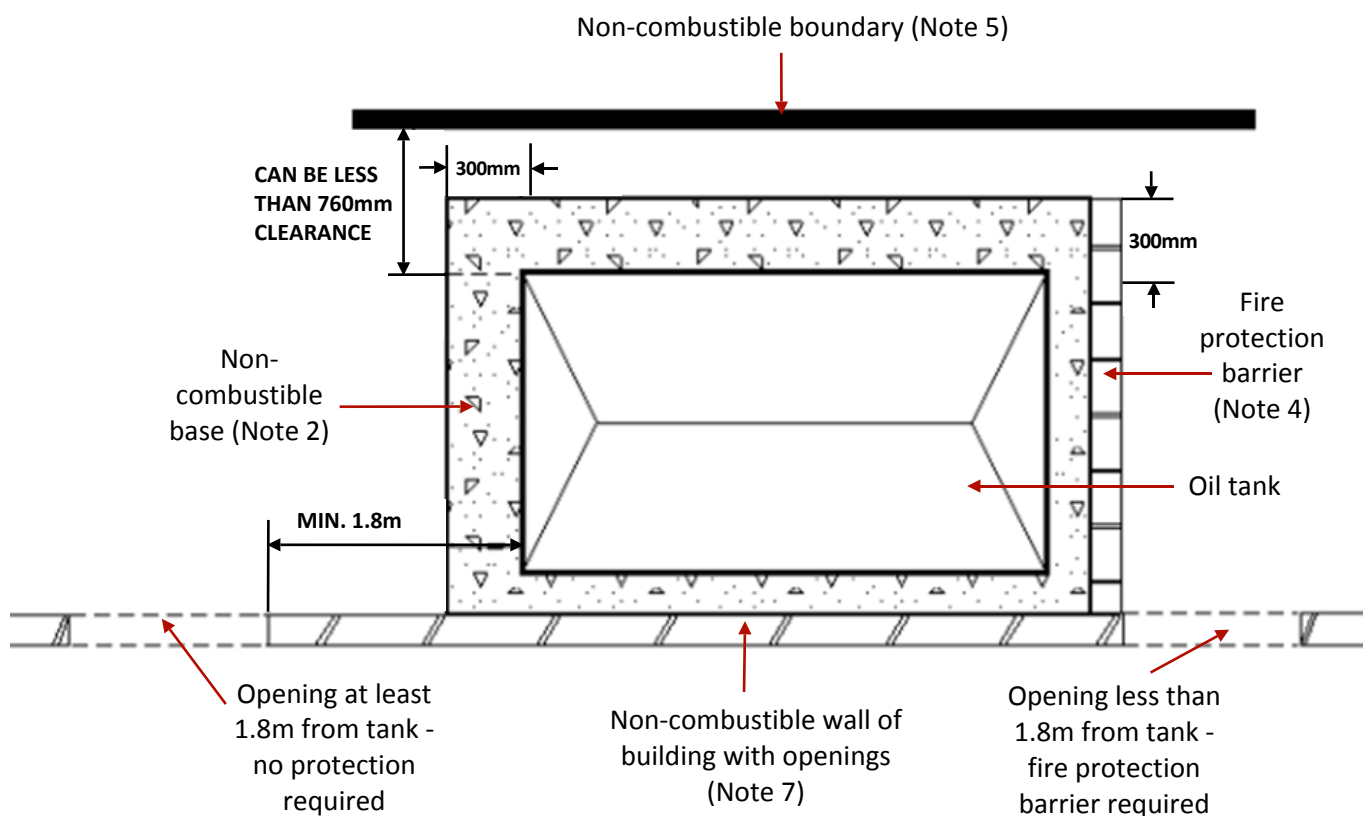
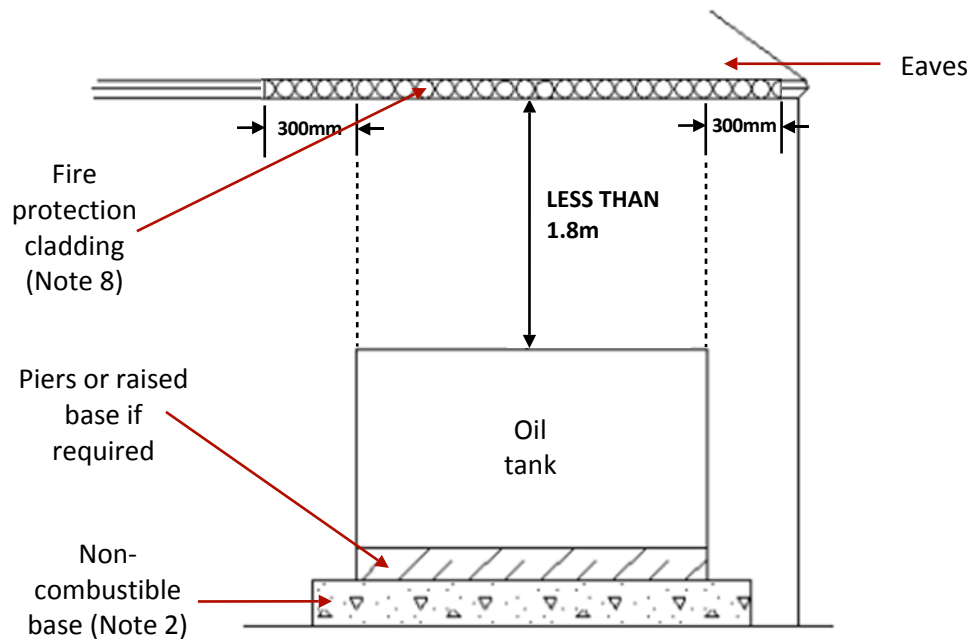
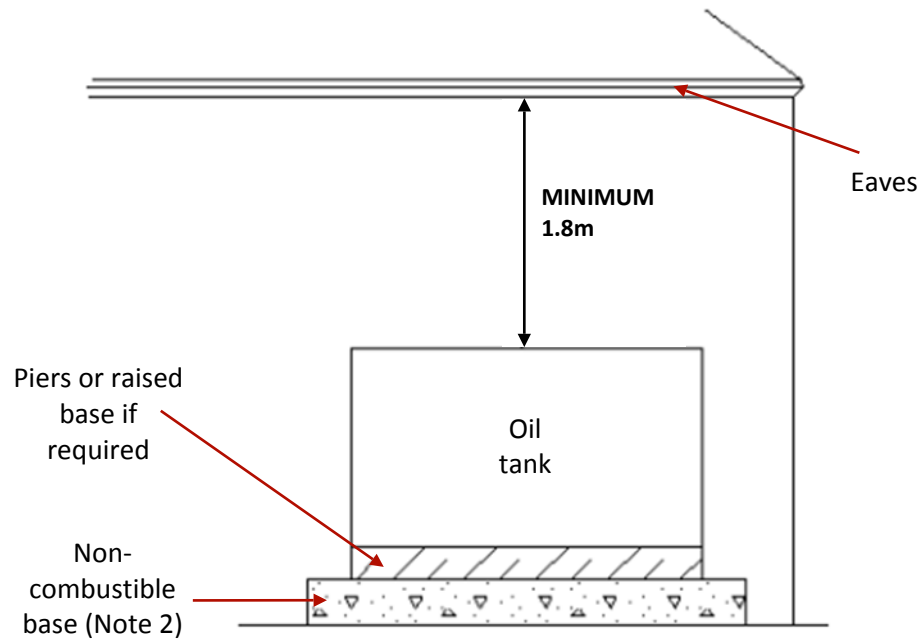


Figure 7: Oil Tank Installation Under Eaves

Without protection of eaves



Consequences

Please note that failure to comply with these conditions as set out by Guernsey Water and the Environment Department may lead to the oil tank not being filled and/or prosecution.

NOTES ON DRAWINGS



1. Combustible boundary (has less than 30 minutes fire resistance).
2. Non-combustible base. Covers area beneath tank and extends 300mm outside the tank on all sides except:
 - Where the tank is next to a non-combustible wall (minimum 30 minutes fire resistance);
 - Where the tank is located over an existing non-combustible surface.
3. Combustible wall of building (has fire resistance of less than 30 minutes to internal fire).
4. Fire protection barrier (non-combustible, minimum fire resistance of 30 minutes, extends to non-combustible wall, 300mm beyond exposed end of tank and 300mm higher than the tank).
5. Non-combustible boundary (has minimum fire resistance of 30 minutes). Must extend 300mm higher than the tank and 300mm beyond both ends of the tank.
6. Non-combustible wall of building (has minimum fire resistance of 30 minutes). Any part of the wall within 1.8m of the tank must have a fire resistance to internal fire of not less than 30 minutes and have no openings other than airbricks.
7. If the wall has openings closer than 1.8m to tank then a fire protection barrier 300mm higher than the tank and 300mm beyond the tank can be fitted. The non-combustible building wall and the barrier must protect the tank from fire coming through the opening.
8. Fire protection to combustible eaves must provide a minimum resistance to fire of 30 minutes, and extend the length of the eaves over the tank with an additional 300mm at both ends). The cladding of the eaves is to prevent fire spreading to the roof from the area of the tank.

REGULAR MAINTENANCE

It is essential that oil tank owners are aware that the secondary containment needs to be regularly checked for water or signs of an oil leak.

Catchment pits can build up with water and need to be emptied periodically to ensure the capacity of the secondary containment is not compromised. It is advised where possible to install a bunded tank as the risk of pollution is greatly reduced.

It is highly recommended that if work is carried out on the oil installation that you request the installer checks the rest of the system to ensure it complies with the current standards.

POLLUTION

If an oil leak has occurred or is suspected call Guernsey Water **immediately** (tel. 239500 at any time day or night).

Guernsey Water looks favourably on timely notification and rectification before considering legal proceedings.

DEFECTS

Oil installations may not be compliant with this guidance due to incorrect installation or defects developing over time. Guernsey Water, Environment Department and the oil companies check oil installations for compliance with the guidance and will notify the property owner if a defect is found.



Different time scales have been allocated for remediation depending on the severity of the defect as detailed in the table below:

Time Scale	Fault	Extra Action
Immediate	<ul style="list-style-type: none"> - Weeping/Leaking tank - Leaking fuel lines - Severely corroded tank - Severely corroded tank supports - Secondary containment filled with water/debris 	If needed, temporary oil tank to be installed. Inform GW
2 months	<ul style="list-style-type: none"> - Secondary containment not 110% of tank capacity or not present - Bottom outlet bunded tank with no catch pit - Tank supports sound but made of inappropriate material or less than 4 supports - Tank develops a bulge or lean greater than 10° - Drain valves or pipe work passing through walls or base - Above ground remote filling line plastic without UV protection 	
3 months	<ul style="list-style-type: none"> - Oil feed lines with soldered joints - Underground oil feeds not sleeved in a continuous length or not visible 	
6 months	<ul style="list-style-type: none"> - External boiler does not have a bund to contain oil for 12 hours of rated use - Underground remote filling line not sleeved in continuous length 	
9 months	<ul style="list-style-type: none"> - Tank fittings not within catch pit - Catch pit walls not independent of adjoining building - Catch pit block work not rendered on both sides - Joint between concrete base and block work walls not visible above ground - Partially buried tank where solid base is not visible - Relevant shut off or non-return valves not fitted 	
When installation replaced	<ul style="list-style-type: none"> - Boiler not approved for use - Boiler not easily visible - Floor standing boiler installed on impervious base 	
When next filled	<ul style="list-style-type: none"> - Guernsey specific spill response sticker on oil tank 	

Fire risk – the below fire risks are controlled by the Building Regulations and contraventions may be followed up by the Environment Department and enforcement action taken:

- Fire risk as described in the guidance i.e. not 1.8 meters from opening, etc;
- Relevant fire valves not fitted;
- Non copper oil lines entering the building.

Please Note: In determining the time period for remediation the highest risk fault determines the time scale allowed for the required works for the whole installation i.e. a tank that develops a bulge and also has unsleeved oil feed lines will be given 6 months to complete both aspects of the required works.

GUERNSEY WATER

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Updated: 25/02/14