

**TI/131**

**TECHNICAL ADVICE ON  
THE SITING OF OIL CLASS 1 TYPE  
OIL STORAGE INSTALLATIONS  
FOR SINGLE FAMILY DWELLINGS**



**Registration  
Services**

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(Please note this information sheet is available from the OFTEC website free of charge, [www.oftec.org](http://www.oftec.org))

# OIL FIRING TECHNICAL ASSOCIATION

TI/131

## TECHNICAL ADVICE ON THE SITING OF OIL CLASS 1 TYPE OIL STORAGE INSTALLATIONS FOR SINGLE FAMILY DWELLINGS

### 1. General

Class 1 oil storage installations are those serving single family dwellings where the oil storage is of no more than 3,500 litres, and the boiler output does not exceed 45 kW.

Care must be taken in the siting of an oil storage tank, whether inside or external to a building, or underground, by considerations of not only safety but also the aesthetic quality of the installation, and the needs of filling, maintenance and possible head of oil for the burner.

Recommendations on the siting of oil storage tanks are given in BS 5410 : Part 1 : 1997. The Building Standards for Scotland, and Regulations for England and Wales and for the Republic of Ireland require compliance with the British Standard. In Northern Ireland the Building Regulations do not cover the installation of oil storage tanks.

Tanks for larger houses with a capacity in excess of 3,500 litres, or where the boiler output exceeds 45 kW, have different requirements, and reference should be made to BS 5410 : Part 2 : 1978 and OFTEC Technical Information Note TI/136.

### 2. Tanks

Oil tanks must be of good quality. They should be properly installed and maintained by an OFTEC Registered Technician.

Plastic tanks should comply with OFTEC Standard OFS T100. Steel tanks should comply with OFTEC Standard OFS T200. Information on installation work is given in OFTEC Technical Book 3.

### 3. Bunds

A bund is a container within which the tank sits, and which is capable of holding 110% of the contents of the tank in the event of a leakage or spillage during filling.

Where a bund is required, this can be provided by using an integrally banded oil storage tank or constructing a masonry or concrete bund.

Masonry or concrete bunds must be constructed to the requirements of CIRIA report 163.

Storage tanks for domestic premises do not have to be provided with a bund unless they are installed internally, or they hold more than 2,500 litres, as long as the installation can pass the risk assessment OFTEC Technical Sheet TI/133.

No drain-off cocks or openings of any type should be made in the bund wall other than to permit a fuel draw-off pipe to pass through to a fixed appliance, i.e. boiler,

cooker, air heater etc. Any water in the bund should be pumped out and disposed of safely.

#### **4. External installations**

A tank installed outside should either be such as specifically designed by the manufacturer as being suitable without the need for protection, or installed in an enclosure which will provide permanent weather protection.

Although it is considered to be very unlikely that a fire could be started by a domestic oil tank and its contents, it does need, however, to be protected from a fire that may originate in a nearby building. Therefore, tanks with a capacity not exceeding 3400 litres should normally be fitted not less than 1.8 metres from a building, and not less than 760mm from the site boundary. Not less than 1.8 metres from a flue outlet.

Where these clearances cannot be achieved, the protection measures noted in BS 5410 : Part 1 : 1997 must be provided by means of a 30 minutes fire-resistant wall which extends at least 300mm above and beyond the ends of the tank

Illustrations of the clearances are given in Drawings 1 to 6.

It will be necessary to protect exposed eaves forming part of a roof within 1.8 metres of the top of an oil storage tank to provide a 30 minute resistance to fire. Cladding should be applied to the eaves in order to prevent fire spreading to the roof.

British Standard 5410 : Part 1 : 1997 does not require tanks installed externally to be fitted with bunds unless its absence creates a hazardous situation. OFTEC has published a Risk Assessment as TI/133, which lists the requirements to be met if a tank is not to be fitted with a bund. The risk assessment must be completed in all cases. The assessments of a risk that would require a bund to be provided are:

1. Tank capacity in excess of 2,500 litres
2. Tank within 10 metres of controlled water
3. Tank located where spillage could run into an open drain or to a loose fitting manhole cover
4. Tank within 50 metres of a borehole or spring
5. Tank over hard ground or hard surfaced ground that could enable spillage run-off to reach controlled water
6. Tank located in a position where the vent pipe outlet is not visible from the fill point
7. Tank supplying heating oil to a building other than a single family dwelling
8. Any other potential hazard individual to the site

It should be noted that foliage intended to screen an external tank should be restricted to a distance of 600mm from the tank.

#### **5. Internal installations**

Internal oil storage tanks should never be installed in a habitable area, and should always be contained within an enclosed chamber. These chambers comprise a fully enclosed ventilated space, and must have 60 min. fire resisting walls, roof and floor, and a self-closing door that opens outwards. The door must be able to be opened from the inside without the aid of a key. The chamber must act as a bund, so the door should not open below the top of the bund level. An alternative means of providing for bunding in a chamber is to use an integrally bunded tank. The chamber then only has to provide for fire protection, and can have a full size 60 minute fire

door. The chamber should be ventilated directly to the open air, preferably by natural means such as air bricks.

Space for access to the tank must be provided in the chamber. In the case of steel tanks, this means total, all round access for painting. Any electrical lighting should be of the bulkhead type with the switches mounted externally.

An oil storage tank may be installed in a garage, and advice on this is given in Technical Information Sheet TI/127.

## **6. Underground installations**

Underground tanks may be located closer to an adjacent building than 1.8 metres, and closer to a boundary than 760mm, without additional protection.

All tanks to be used underground must be specially constructed to withstand the pressure on them from the outside that will occur. GRP tanks in either single or double skinned versions are suitable for underground use, and polyethylene models are also available. Where steel tanks are used, they should be of the double skinned type.

In all cases, the main problem to be considered when tanks are buried is the potential buoyancy of a tank should the water table in the area rise above the level of the oil.

All underground oil storage tanks should be fitted with overfill protection.

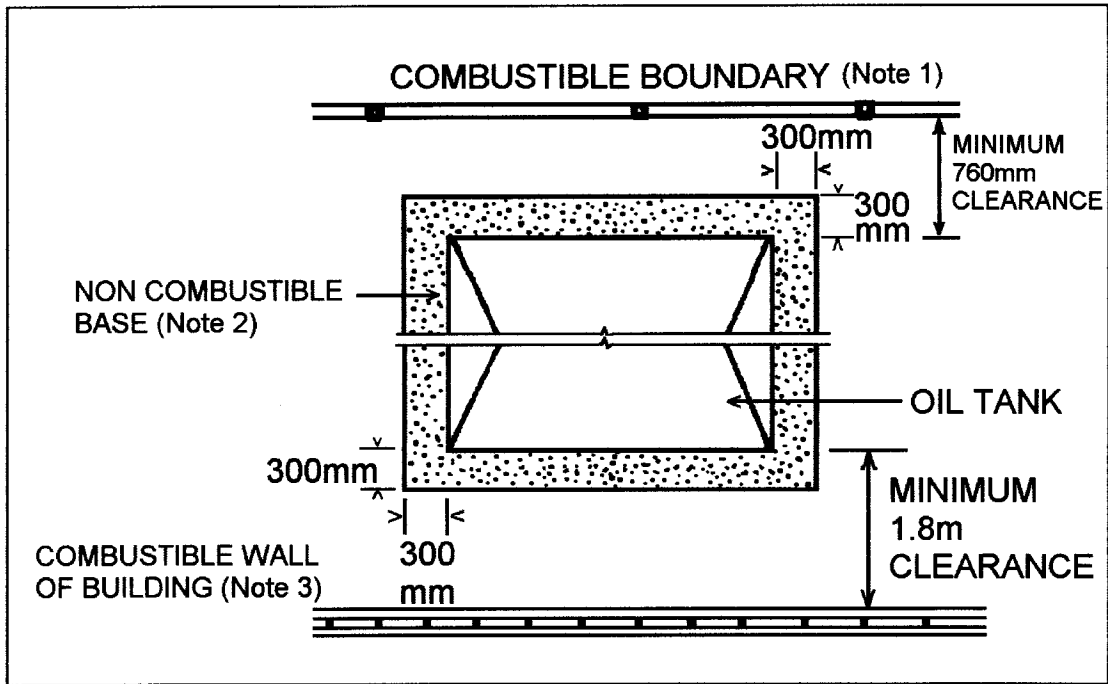
## **7. Flues**

Terminating positions must be at least 1.8 metres distant from oil storage tank unless a wall with at least 30 minutes fire resistance and extending 300mm higher and wider than the tank is provided between the tank and the terminating position.

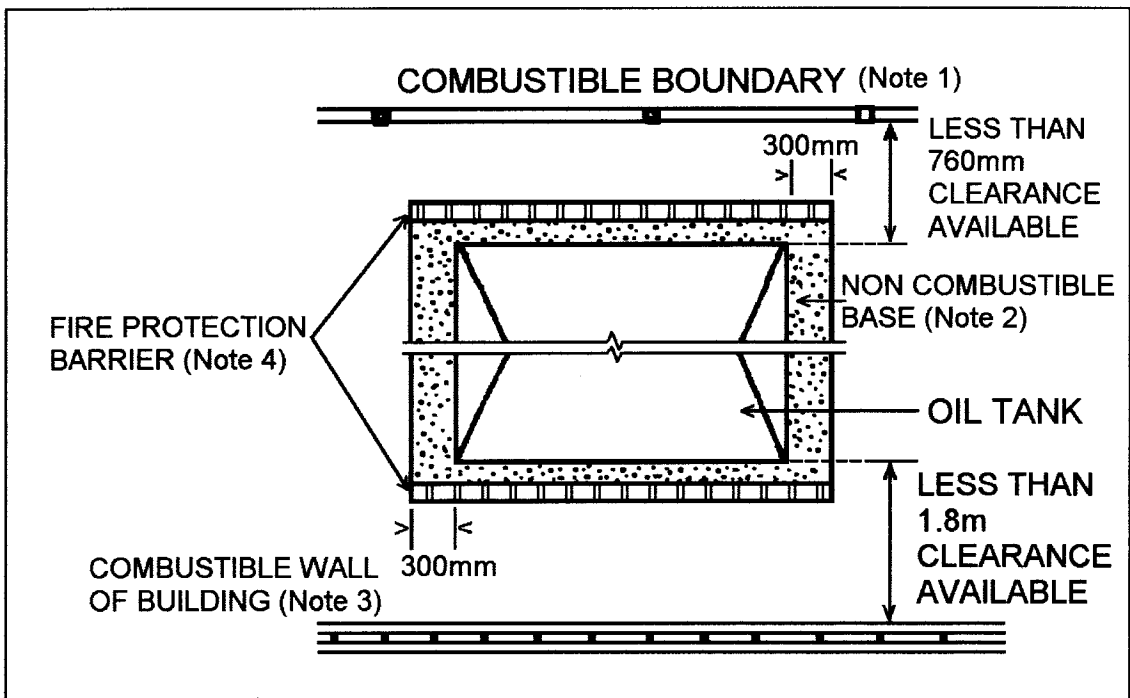
## **8. Clearances**

A space should be left around steel tanks for maintenance, i.e. painting. In respect of plastic tanks, a clearance of 60mm should be left to allow for flexing. Any foliage should be at least 600mm away from all tanks.

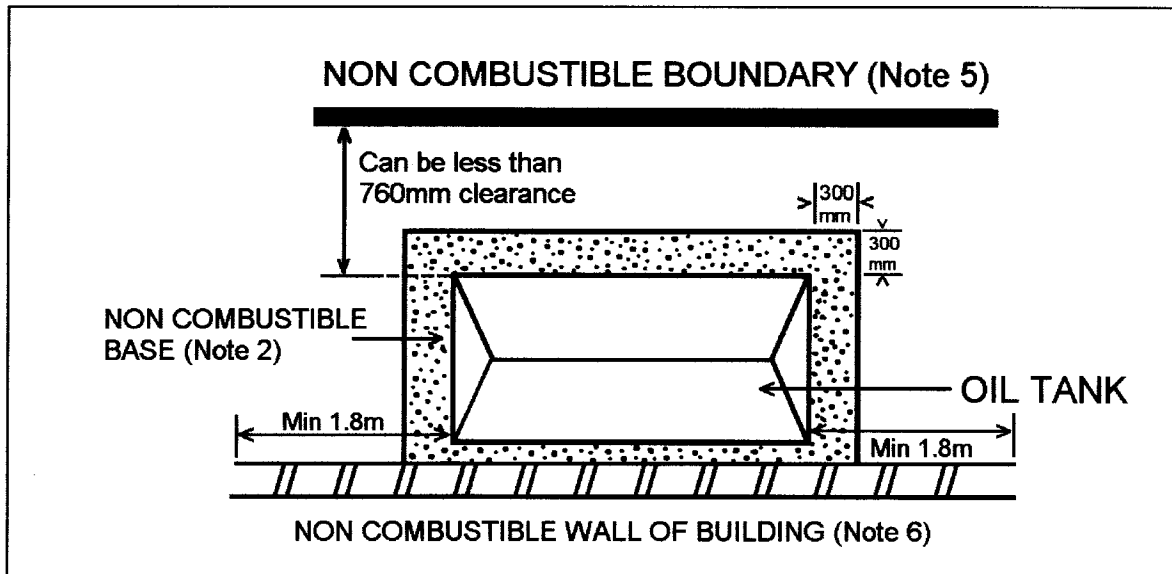
**Drawing 1 Class 1 tank installation near combustible buildings and boundaries  
Clearances required when additional protection is not provided**



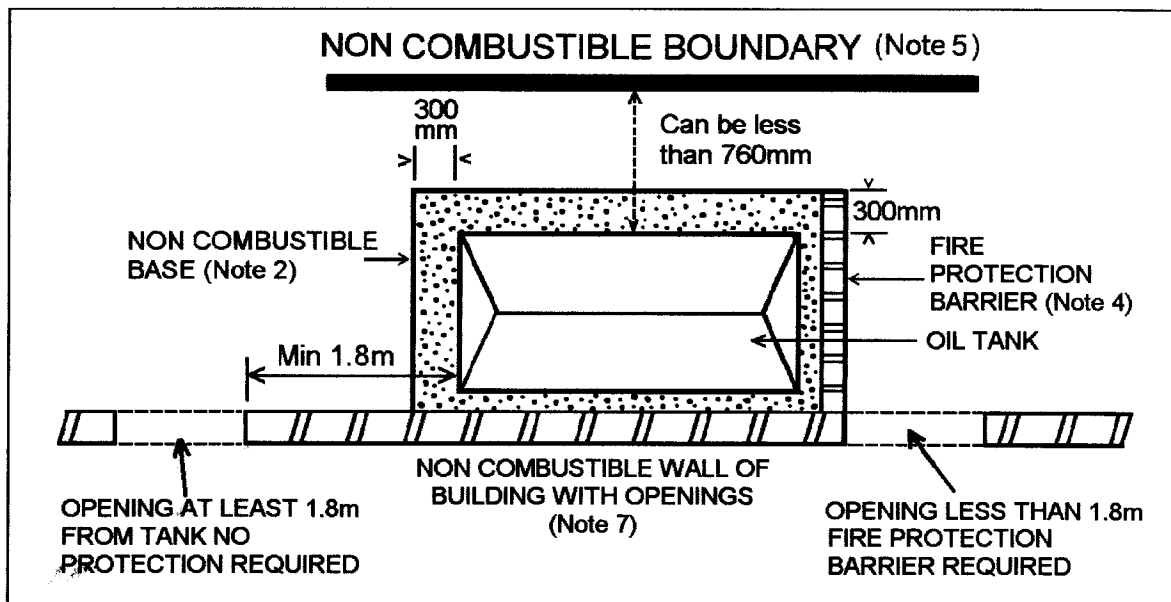
**Drawing 2 Class 1 tank installation near combustible buildings and boundaries  
Protection required where clearances in drawing 2.2(a) are not provided**



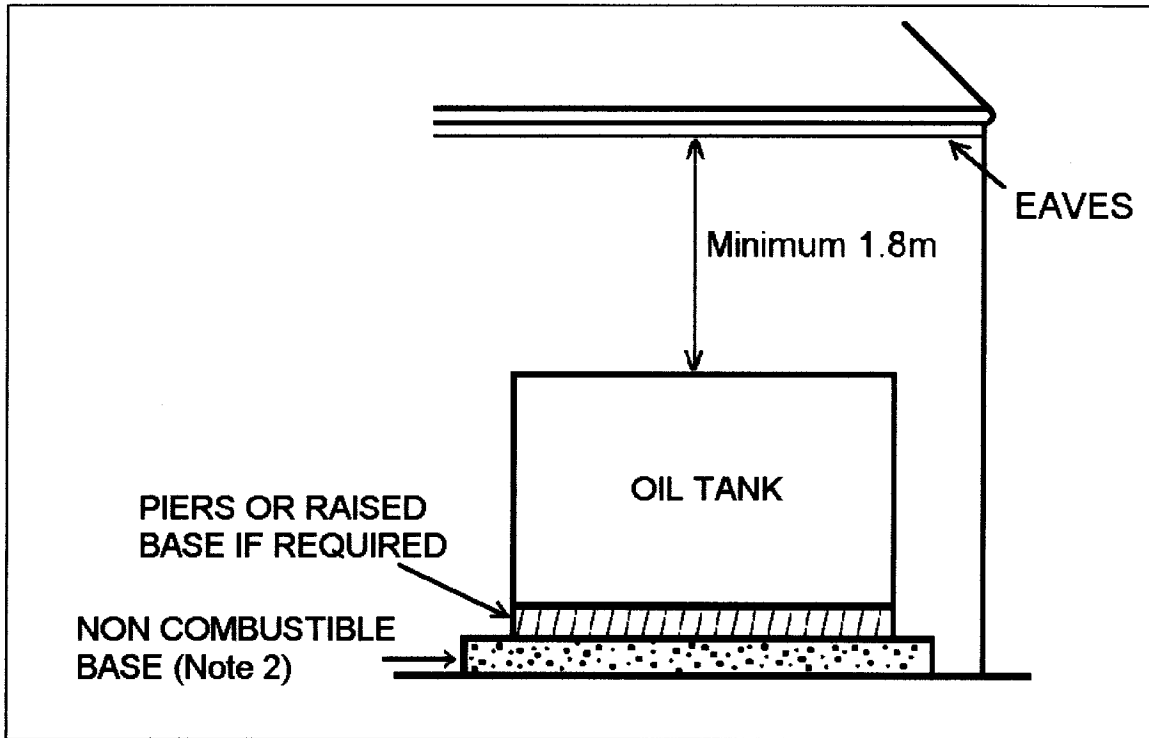
**Drawing 3 Class 1 tank installation near non combustible buildings and boundaries**  
**Building wall without openings. No added protection required**



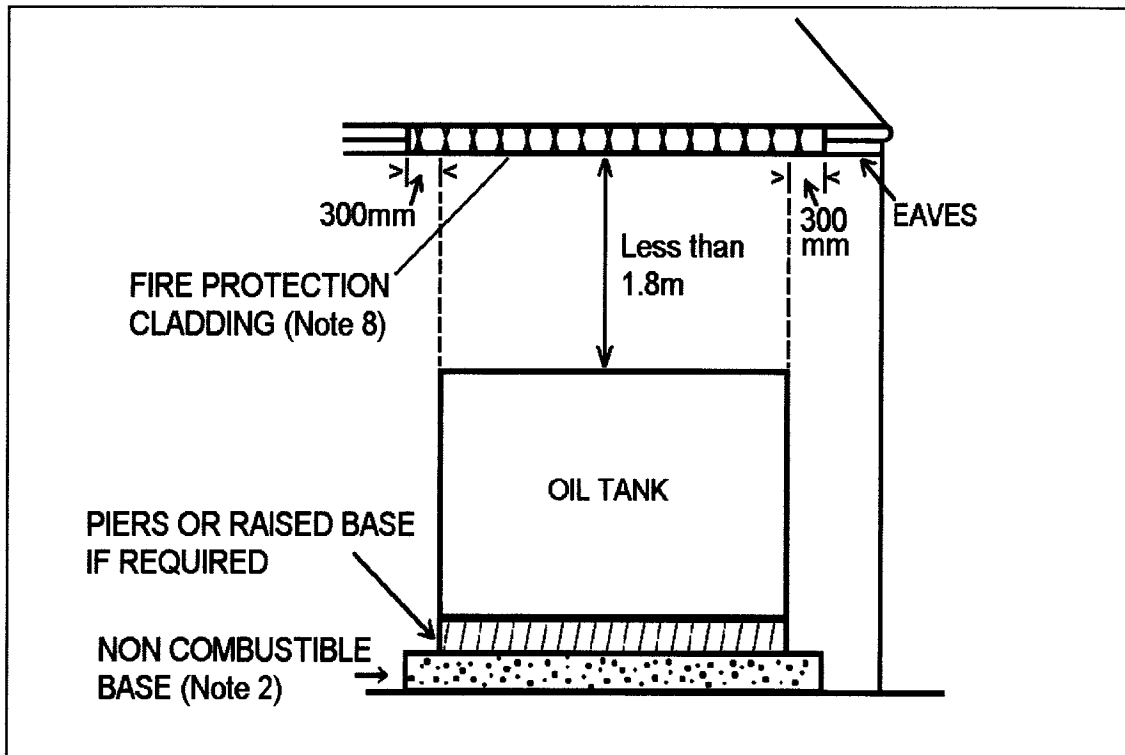
**Drawing 4 Class 1 tank installation near non combustible buildings and boundaries**  
**Building wall with openings. Opening protection required**



**Drawing 5 Class 1 tank installations under eaves. Without protection of eaves**



**Drawing 6 Class 1 tank installations under eaves. With protection of eaves**



## **Notes to Drawings of Class 1 type oil storage installations**

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 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, extends 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.



**A combustible boundary** is defined as being:

- 1 A boundary marked by a combustible fence or wall or hedge of vegetation.
- 2 A boundary marked by a solid, continuous, non-combustible fence or wall which does **not** extend at least 300mm longer than the tank on each side and 300mm higher than the tank for the whole of its length + 600mm, as above.
- 3 A boundary which does not incorporate a fence or wall, or is not solid and continuous, and is wholly or in part open to the neighbouring property.

Further information is available in the series of OFTEC Technical Books:

1. Safe Working Practices for Oil Firing Technicians
2. Oil Firing Commissioning and Service Technicians Manual
3. Installation requirements for Oil Fired Boilers and Oil Storage Tanks
4. Domestic Heating Systems Design and Operating Principles

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