

Section 5

PROVISIONS FOR LIQUID FUEL STORAGE AND SUPPLY

Performance

5.1 In the Secretary of State's view requirements J5 and J6 will be met if:

a) oil and LPG fuel storage installations including the pipework connecting them to the combustion appliances in the buildings they serve are located and constructed so that they are reasonably protected from fires which may occur in buildings or beyond boundaries;

b) oil storage tanks, their ancillary equipment and the pipework connecting them to combustion appliances in buildings used wholly or mainly for private dwellings:

i) are reasonably resistant to physical damage and corrosion and are designed and installed so as to minimise the risk of oil escaping during the filling or maintenance of the tank; and

ii) incorporate secondary containment when there is a significant risk of pollution; and

iii) are labelled with information on how to respond to a leak.

Heating oil storage installations

5.2 Guidance is given in this Approved Document on ways of meeting requirements J5 and J6 when proposing to construct oil storage systems with above-ground or semi-buried tanks of 3500 litres capacity or less, used exclusively for heating oil. Heating oils comprise Class C2 oil (kerosene) or Class D oil (gas oil) as specified in BS 2869:1998. A way of meeting requirements J5 and J6 for such installations would be to follow the relevant recommendations in BS 5410-1:1997, whilst also adopting the guidance in paragraphs 5.4 to 5.12 below.

5.3 Requirement J6 does not apply to oil storage systems where the capacity of the tank exceeds 3500 litres, or where the tank is fully buried or where the building served is not wholly or mainly used as one or more private dwellings. However requirement J5 applies to oil storage systems serving buildings of all descriptions, where the capacity of the tank exceeds 90 litres, with no upper capacity limit on application, and including cases where the tank is buried. For tanks with capacities in excess of 3500 litres, advice on ways of complying with requirements J5 and any other fire precautions legislation, may be sought from the Fire Authority. In England tanks serving buildings which are not wholly or mainly used as private dwellings are likely to be subject to the Control of Pollution (Oil Storage) (England) Regulations 2001 (see paragraph 5.7 below).

Protective measures against fire

5.4 A way of achieving compliance with requirement J5 would be to adopt the guidance given in Table 5.1 which also offers advice on reducing the risk of fuel storage system fires igniting buildings and to make provision against the installation becoming overgrown. This can be achieved with a hard surface beneath the tank such as concrete, or paving slabs at least 42mm thick, extending out at least 300mm beyond the perimeter of the tank (or its external skin if it is of the integrally banded type).

5.5 Fire walls should be built to be stable so as not to pose a danger to people around them. A way of achieving this when constructing masonry walls would be to follow the guidance on wall thickness in relation to height given in *Your garden walls Better to be safe than sorry* (see Page 68).

Table 5.1 : Fire protection for oil storage tanks

Location of tank	Protection usually satisfactory
Within a building.	Locate tanks in a place of special fire hazard which should be directly ventilated to outside. Without prejudice to the need for compliance with all the requirements in Schedule 1, the need to comply with Part B should particularly be taken into account.
Less than 1800mm from any part of a building	a) Make building walls imperforate (1) within 1800mm of tanks with at least 30 minutes fire resistance (2) to internal fire and construct eaves within 1800mm of tanks and extending 300mm beyond each side of tanks with at least 30 minutes fire resistance to external fire and with non-combustible cladding; or b) Provide a fire wall (3) between the tank and any part of the building within 1800mm of the tank and construct eaves as in (a) above. The fire wall should extend at least 300mm higher and wider than the affected parts of the tank.
Less than 760mm from a boundary	Provide a fire wall between the tank and the boundary or a boundary wall having at least 30 minutes fire resistance to fire on either side. The fire wall or the boundary wall should extend at least 300mm higher and wider than the top and sides of the tank.
At least 1800mm from the building and at least 760mm from a boundary	No further provisions necessary

Nc

- 1 Excluding small openings such as air bricks etc.
- 2 Fire resistance in terms of insulation, integrity and stability.
- 3 Fire walls are imperforate non-combustible walls or screens, such as masonry walls or steel screens.

Oil supply pipe systems: means of automatic isolation

5.6 A way of meeting the requirement would be to install fuel pipework which is resistant to the effects of fire and to fit a proprietary fire valve system in accordance with the relevant recommendations in BS 5410-1:1997, Sections

8.2 and 8.3.

Provisions where there is a risk of oil pollution

5.7 The Control of Pollution (Oil Storage) (England) Regulations 2001 (SI 2001/2954) come into force on 1 March 2002. They apply to a wide range of oil storage installations in England, but they do not apply to the storage of oil on any premises used wholly or mainly as one or more private dwellings, if the capacity of the tank is 3500 litres or less.

5.8 Requirement J6 applies to oil storage tanks of 3500 litres or less serving combustion appliances in buildings used wholly or mainly as private dwellings. In such cases, secondary containment should be provided where there is a significant risk of oil pollution. For the purposes of requirement J6, there is a significant risk of pollution if the oil storage installation:

a) has a total capacity of more than 2500 litres; or

b) is located within 10m of inland freshwaters or coastal waters; or

c) is located where spillage could run into an open drain or to a loose fitting manhole cover; or

d) is located within 50m of sources of potable water, such as a wells, bore-holes or springs; or

e) is located where oil spilled from the installation could reach the waters listed above by running across hard ground; or

f) is located where tank vent pipe outlets cannot be seen from the intended filling point.

5.9 Inland freshwaters include streams, rivers reservoirs and lakes, as well as ditches and ground drainage (including perforated drainage pipes) that feed into them.

5.10 When secondary containment is considered necessary, a way of meeting the requirement would be to:

a) provide an integrally bundled prefabricated tank; or

b) construct a bund from masonry or concrete in accordance with the general guidance in *Above Ground Oil Storage Tanks: PPG2* and the specific advice in *Masonry Bunds for Oil Storage Tanks* or *Concrete Bunds for Oil Storage Tanks*, as appropriate (see Page 68). However:

i) where the bund walls are part of the walls of a chamber or building enclosing the tank, any door through such walls should be above bund level; and

ii) specialist advice should be sought where the bund has a structural role as part of a building.

5.11 Bunds, whether part of prefabricated tank systems or constructed on site, should have a capacity of at least 110% of the largest tank they contain.

5.12 An oil storage installation should carry a label in a prominent position giving advice on what to do if an oil spill occurs and the telephone number of the Environment Agency's Emergency Hotline (see Page 66).

LPG storage installations

5.13 LPG installations are controlled by legislation enforced by the HSE or their agents. Factors which determine the amount of building work necessary for a LPG storage installation to comply include its capacity, whether or not tanks are installed above or below ground and the nature of the premises they serve. A storage installation may be shown to comply with the legislation by constructing it in accordance with an appropriate industry Code of Practice, prepared in consultation with the HSE. However, for an installation of up to 1.1 tonne capacity, whose tank stands in the open air, following the guidance in this Approved Document and the relevant guidance in Approved Document B, will normally ensure that no further building work is needed to comply with other legislation.

Tank location and protective measures

5.14 For LPG storage systems of up to 1.1 tonne capacity, comprising one tank standing in the open air, a way of meeting the requirement J5 would be to comply with the relevant recommendations in the LP Gas Association CODE OF PRACTICE 1 *Bulk LPG Storage at Fixed Installations Part 1* (see Page 66 and 68) whilst also adopting the following guidance:

5.15 The LPG tank should be installed outdoors and not within an open pit. The tank should be adequately separated from buildings, the boundary (see Paragraph 0.4(4)) and any fixed sources of ignition to enable safe dispersal in the event of venting or leaks and in the event of fire to reduce the risk of fire spreading. A way of meeting the requirements in normal situations would be to adopt the separation distances in Table 5.2 and Diagram

5.1 which also offers advice on reducing the risk of LPG storage fires igniting the building. Drains, gullies and cellar hatches within the separation distances should be protected from gas entry.