

Bulk Installations

TANK SITING

Tanks should always be sited and specified in accordance with relevant Codes of Practice listed below. The following guidance contains the basic requirements for tank siting:-

- Where non-standard installations, > 6 x 4000 litre tanks or tanks above 4000 litres are needed, advice should be sought from the National Engineering Department.
- The UKLPG has produced guidance for Bulk Storage at fixed installations. These Codes of Practice have been prepared in consultation with the Health and Safety Executive (HSE) and demonstrate good working practice.
- Bulk tank installations at commercial and industrial premises are subject to a number of legislative requirements including DSEAR and PSSR. Further guidance is given in sections 5.1.4 and 6.5.

Codes which are relevant are:-

- COP 1 Part 1 - Design, Installation and Operation of Vessels located above ground.
- COP 1 Part 2 - Small Bulk Propane Installations for Domestic and similar Purposes.
- COP 1 Part 4 - Buried and Mounded LPG Storage Vessels.

These can be found at [Q:\UKLPG CoPs for Reference Only DO NOT EMAIL TO CUSTOMERS!](#)

Layout of Tanks

Points to consider:-

- Adequate separation distance from buildings, boundaries, etc.
- Accessibility for tank delivery, installation and future removal.
- Protection from physical damage from vehicles, and from livestock where installation is sited in a paddock.
- Adequate ventilation.
- Accessibility for fire fighting.
- Availability of water supply for fire brigade use.
- Suitable access and parking for the tanker.
- A clear line of sight from the tanker.
- Satisfactory routing to avoid abrasion of the delivery hose. Hose should not pass over walls or fences where it may be damaged.
- Tanks should never be installed in buildings, or open pits.
- Tanks should not be sited under trees or branches.
- Storage tanks must not be positioned directly beneath power cables, or near telegraph poles (see 4.3.3).
- Compounds for public access areas.

Flooding

Tanks shall not be sited in areas prone to flooding. Consult the Environment Agency for information regarding the potential risk of flooding.

<http://www.environment-agency.gov.uk/homeandleisure/floods/default.aspx>

For guidance on alternative siting locations consult a CalorForce SGE or Project Engineer before the CGO/DGO is signed.

Separation distances (for above ground tanks)

Table 4.3.1 indicates the minimum separation distances in metres from buildings, boundary, property line or fixed source of ignition. This includes outbuildings, sheds and green houses. The distances refer to the horizontal distance in plan between the tank and the nearest point of the specified feature.

For separation distances for underground tanks see 4.14.3.

Section	Tank Siting	January 2012 – Issue C
Section Number	4.3	National Engineering
Page Number	4.3.1	© Calor Gas Ltd 2012

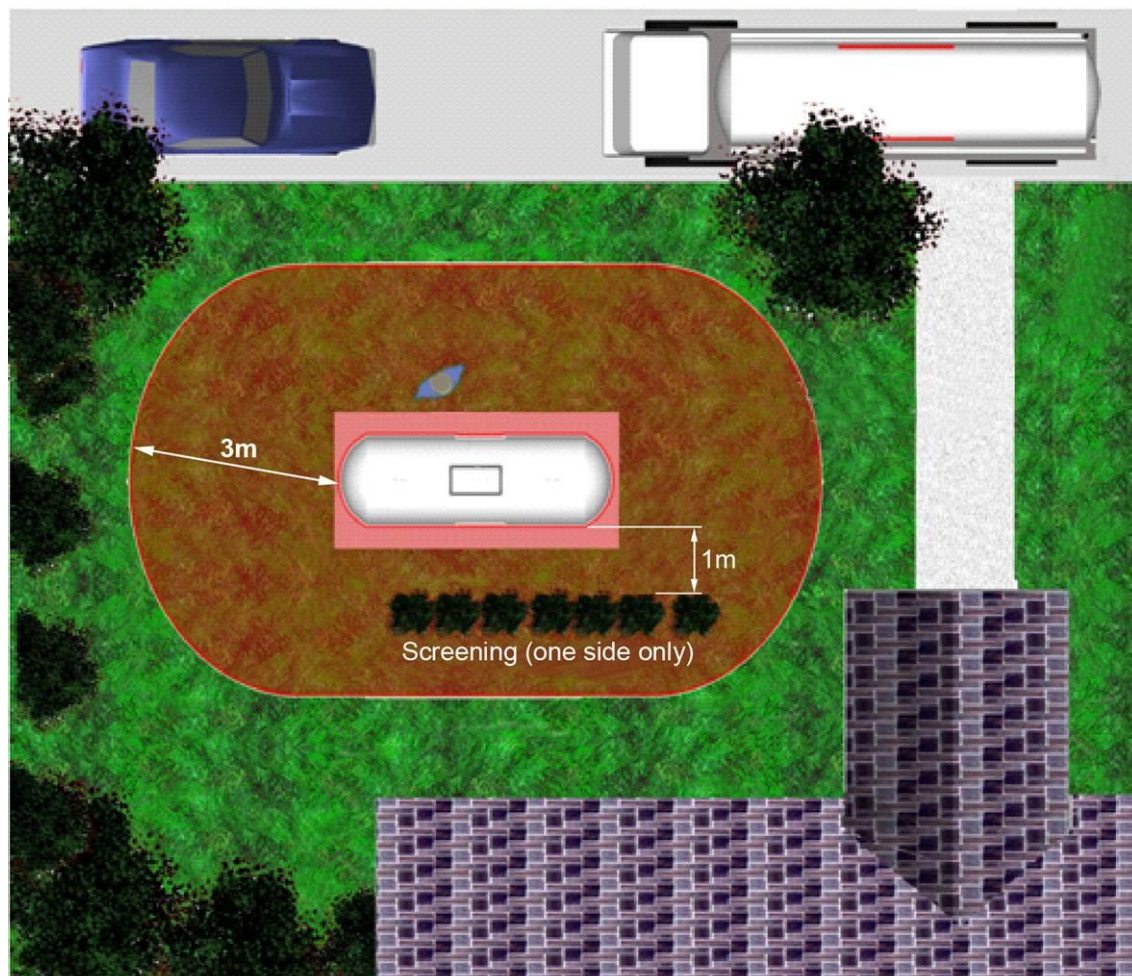
Bulk Installations

Table 4.3.1 - Distances from buildings, boundaries and sources of ignition for above ground tanks

Propane Capacity (Litres)	Minimum safety distances from buildings, boundary, property line or fixed source of ignition (m)	With a fire wall (m)	Max No in a group (m)	Distance between tanks (m)
380	2.5	0.3	3	1
1200	3	1.5	5	1
2000	3	1.5	3	1
3400	7.5	4	6	1
4000	7.5	4	6	1
8000	7.5	4	3	1
24000	15	7.5	4*	1.5

*The limit of 4 x 24,000 litre tanks is in order to keep the storage capacity below COMAH thresholds

Figure 4.3.1 - Typical Domestic tank siting arrangement for a 1200/2000 litre vessel



Section	Tank Siting	January 2012 – Issue C
Section Number	4.3	National Engineering
Page Number	4.3.2	© Calor Gas Ltd 2012

Bulk Installations

Overhead Power Cables

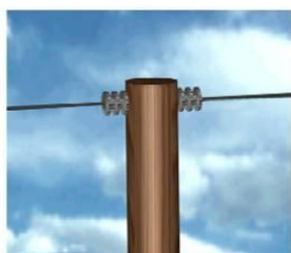
Above and below ground tanks must not be sited directly beneath electrical power cables.

The separation distance between a tank and an overhead cable is dependent upon the power cable voltage. Guidance on the voltage of typical power lines is given below.

Where the voltage is below 1kV the above ground tank's shell or the below ground turret must be located 1.5 metres from a plane drawn vertically downwards from the power cables.

For above ground tanks, Calor will allow a telephone cable to pass above the shell of the tank, provided it is at a sufficient height not to interfere with crane access during installation and the nearest telegraph pole to the tank is at no risk of falling onto the tank.

For below ground tanks, Calor will allow a telephone cable to pass above the turret of a below ground tank, provided it is at a sufficient height not to interfere with crane access during installation.



LOW VOLTAGE

- Voltage less than 1kV.
- Separation distance of 1.5m.

Wooden Poles - vertical mounted conductors.

- small insulators.

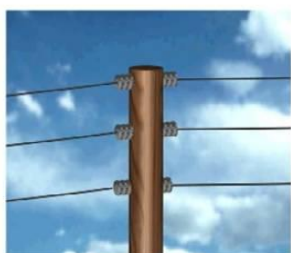


Figure 4.3.2 - Power Cables

Where the voltage is 1kV or greater the distance must be increased to 10 metres.

Where there is any doubt as to the cable voltage, guidance should be obtained from the power supply company (contact information is normally displayed on the pole/pylon).

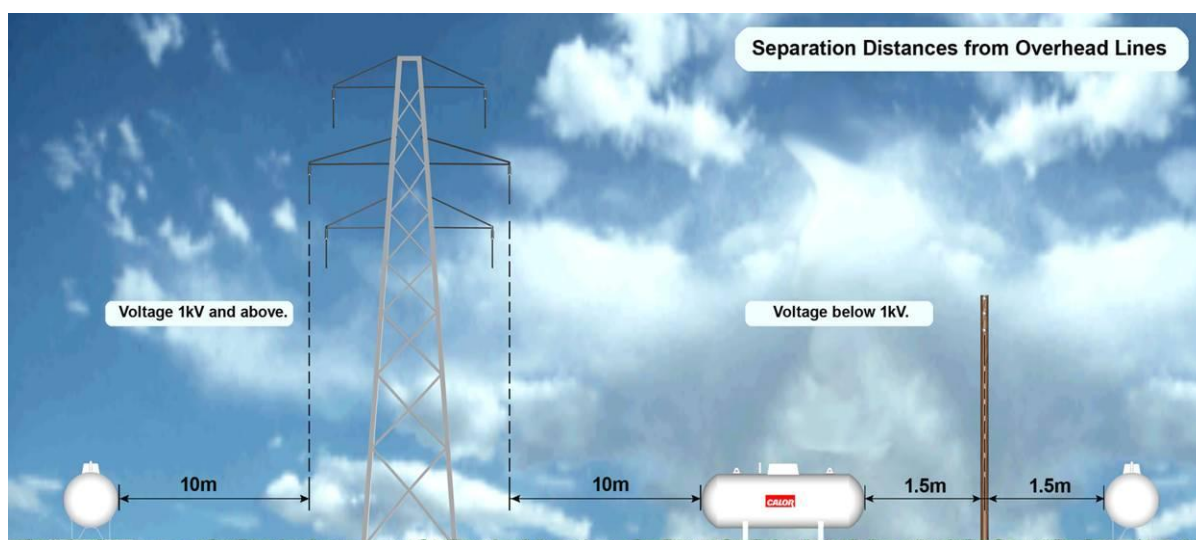


Figure 4.3.3 - Siting of above ground tanks where overhead power cables exist

Section	Tank Siting	January 2012 – Issue C
Section Number	4.3	National Engineering
Page Number	4.3.3	© Calor Gas Ltd 2012

Bulk Installations

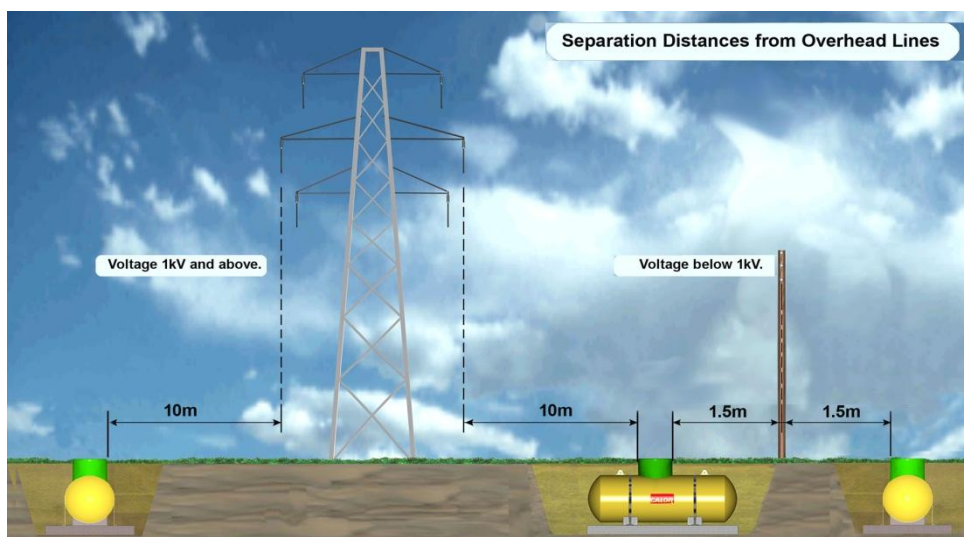


Figure 4.3.4 - Siting of below ground tanks where overhead power cables exist

Distances from other hazardous Flammable Liquids

The proximity of other hazards such as Domestic Heating Oil, Diesel tanks etc shall be taken into account. These products are stored in a liquid form but each substance has its own flash point.

Definition

The flash point of a substance is the minimum temperature at which a liquid gives off sufficient flammable vapour to ignite momentarily on the application of a source of ignition.

Table 4.3.2 – Guidance on separation distances and flash points of common flammable liquids that may be found at customers premises

Flashpoint of flammable liquid	Minimum separation distances
	LPG tanks up to and including 60 tonnes
< 32° C (e.g. Petrol)	6m to bund wall
32° C - 65° C (e.g. Kerosene, Diesel, Gas oil) Storage tank size up to 3000 Litres of flammable liquid	Appropriate distance in Table 1 for LPG tank or 3m to the tank/bund whichever is the lesser
32° C - 65° C (e.g. Kerosene, Diesel, Gas oil) Storage tank size over 3000 Litres of flammable liquid	3m to the bund wall or diversion wall and 6m to the tank

Further reference may be obtained from COP 1 Part 1: (Table 1 and 2).

Note:-

- Where the above separation distances would exceed the boundary distance for LPG storage, liaison between the parties will be necessary. LPG vessels should not be located in a flammable liquids banded area.
- Liaison with HSE may be required where LPG is to be stored with other hazardous or combustible materials.

Section	Tank Siting	January 2012 – Issue C
Section Number	4.3	National Engineering
Page Number	4.3.4	© Calor Gas Ltd 2012