



LEAFLET 12 – 2017

LIQUID GAS STORAGE TANKS: YOUR RESPONSIBILITIES

Users who own a tank have a legal duty and a responsibility to ensure the equipment is installed, maintained and operated safely. A liquid gas storage tank typically contains liquid nitrogen, oxygen, argon or carbon dioxide and supplies these products to the process as a liquid or a gas. When these tanks are filled by a gas supplier, they will require evidence of compliance with these duties and responsibilities. The gas supplier's responsibilities are laid out in BCGA GN 17 (12).

Before putting a user owned tank in to service, all relevant persons should be familiar with the appropriate legislation and good practices. Suitable insurance should be in place. The following is intended to be a simple guide. For more detailed information refer to the relevant BCGA publications and specific legislation.



Before First Fill

Tank and Equipment. Ensure the tank and associated equipment is compatible with the intended product, the expected pressure and temperature conditions and is in a safe condition for use. The tank should be located, secured and installed in accordance with the relevant BCGA Code of Practice, refer to BCGA CP 26 (7), 36 (8) and 46 (11). Connected pipework should be suitable for the gas and be designed, installed and maintained correctly, refer to BCGA CP 4 (6).

The following pressure equipment related documents are required; the original manufacturer's test certificate, a PER (5) declaration of conformity (if applicable), an Ageing Pressure Equipment Assessment, a Written Scheme of Examination under the PSSR (1) and, if necessary, a Revalidation Certificate. For detailed information refer to BCGA CP 39 (9). Additional documents may be required to comply with other hazardous substance related legislation, for example, DSEAR (3), COMAH (4), COSHH (2), etc. For CO₂ tanks, compliance with BCGA CP 42 (10) is required, including a specific CP 42 (10) risk assessment.

Overpressure Protection Devices. Devices shall be fitted correctly, be appropriately sized, have appropriate set point, correct pressure rating and be within their test period. At least two independent devices are required (this may comprise, for example, a safety relief valve and a bursting disc, or two safety relief valves) to protect the tank. For vacuum insulated tanks a suitable outer jacket relief device shall also be fitted. Additional pressure protection devices may be required on the distribution pipework, refer to BCGA CP 4 (6)

A new gas supplier will assess the tank and its overpressure protection to ensure compatibility with the tanker discharge pump characteristics.

Delivery Area. The tanker delivery area is to be safe and suitable with due regard to local hazards, confined / enclosed spaces, ventilation, construction materials (e.g. tanker standing surface), etc.

Signage and Tank Identification. Appropriate signage is required, including valve identity tags. All are to be legible, in good condition, visible and kept up to date. A data plate shall be permanently attached to the tank. As a minimum, the following information shall be available and clearly marked on the tank:-

- The manufacturer's name.
- A serial number.
- The date of manufacture.
- The design standard, code or CE type approval designation.
- The maximum allowable pressure (or design pressure).
- The minimum allowable pressure.
- The design temperature.

Use and Training. Standard Operating Procedures are to be established and documented. All personnel are to have appropriate training and be competent in their roles.

Emergency Procedures. Emergency Procedures are to be established and documented.

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Subsequent Filling

The installation, the tank and its associated equipment are to be maintained in a safe condition for filling, be fit-for-purpose and remain compliant with the relevant BCGA publications.

Delivery vehicle access and egress is to be kept clear. The area is to be kept secure with regular housekeeping carried out to keep the filling area free of debris, especially combustible material.

All operators are to be competent and wear appropriate Personal Protective Equipment. Where applicable, gas monitors / alarms shall be operational and checked periodically to ensure correct operation. Non-authorised personnel are to be excluded from the area.

Users who own a tank should review with the gas supplier the checks in Section 1, at least annually, to assess its suitability for the continued supply of product.

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Routine Checks

Daily checks are to be carried out by the user including those in BCGA Leaflet 11 (13). They are to check the operation of valves and the general condition of the tank and its associated equipment. Records detailing the completed checks are to be maintained by the user, noting any operational problems encountered and recording these in the technical file with details of the corrective action undertaken.

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Maintenance and Inspection

Appropriate routine maintenance and inspections are to be carried out taking account of the manufacturer's recommendations and the environment in which the tank is located, refer to BCGA CP 39 (9).

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Examination

Statutory examinations are to be carried out in accordance with the Written Scheme of Examination, by a Competent Person, refer to BCGA CP 39 (9).

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Repairs and Modifications

Repairs may only be carried out using suitable components (e.g. materials, pressure rating, cleanliness etc.) within the scope of the original design with the approval of a competent person.

Any repairs requiring hot work or modification to the tank design, shall only be carried out by authorised repair companies with the approval of the authorised competent person or the tank manufacturer. Full details and quality assurance documentation shall be kept in the technical file, refer to BCGA CP 39 (9).

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Revalidation

To ensure the tank remains fit for purpose, a full revalidation should be carried out on vacuum insulated tanks at a frequency not exceeding 20 years. Refer to BCGA CP 39 (9). For mobile vessels not directly covered by road transport regulations, more frequent revalidation may be considered.

Reference Information

1. SI 2000 No. 128, *The Pressure Systems Safety Regulations 2000* (PSSR).
2. SI 2002 No. 2677, *The Control of Substances Hazardous to Health Regulations 2002* (COSHH).
3. SI 2002 No. 2776, *The Dangerous Substances and Explosive Atmospheres Regulations 2002* (DSEAR).
4. SI 2015 No. 483, *The Control of Major Accident Hazards Regulations 2015* (COMAH).
5. SI 2016 No. 1105, *The Pressure Equipment (Safety) Regulations 2016* (PER).
6. BCGA CP 4, *Industrial gas cylinder manifolds and gas distribution pipework (excluding acetylene)*.
7. BCGA CP 26, *Bulk liquid carbon dioxide storage at users' premises*.
8. BCGA CP 36, *Cryogenic liquid storage at users' premises*.
9. BCGA CP 39, *In-service requirements of pressure equipment (gas storage and distribution systems)*.
10. BCGA CP 42, *Implementation of EIGA carbon dioxide standards*.
11. BCGA CP 46, *The storage of cryogenic flammable fluids*.
12. BCGA GN 17, *BCGA policy and guidance for the safe filling of 3rd party owned and/or maintained bulk tanks*.
13. BCGA Leaflet 11, *Safety checks for vacuum insulated storage tanks*.

The tank manufacturer or your gas supplier may be able to provide further technical and safety information.

WARNING – Failure to comply with these minimum requirements may mean you are operating unsafely, illegally, you may not be covered by your insurance and your gas supplier may not fill your tanks.