



**BCGA GUIDANCE NOTE 17**

**BCGA POLICY AND GUIDANCE FOR  
THE SAFE FILLING OF THIRD-PARTY  
OWNED AND / OR MAINTAINED TANKS**

**Revision 2: 2013**

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**British Compressed Gases Association**

**BCGA GUIDANCE NOTE 17**  
**BCGA POLICY AND GUIDANCE FOR THE SAFE**  
**FILLING OF THIRD-PARTY OWNED AND / OR**  
**MAINTAINED TANKS**

**Revision 2: 2013**

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## PREFACE

The British Compressed Gases Association (BCGA) was established in 1971, formed out of the British Acetylene Association, which existed since 1901. BCGA members include gas producers, suppliers of gas handling equipment and users operating in the compressed gas field.

The main objectives of the Association are to further technology, to enhance safe practice, and to prioritise environmental protection in the supply and use of industrial gases, and we produce a host of publications to this end. BCGA also provides advice and makes representations on behalf of its Members to regulatory bodies, including the UK Government.

Policy is determined by a Council elected from Member Companies, with detailed technical studies being undertaken by a Technical Committee and its specialist Sub-Committees appointed for this purpose.

BCGA makes strenuous efforts to ensure the accuracy and current relevance of its publications, which are intended for use by technically competent persons. However this does not remove the need for technical and managerial judgement in practical situations. Nor do they confer any immunity or exemption from relevant legal requirements, including by-laws.

For the assistance of users, references are given, either in the text or Appendices, to publications such as British, European and International Standards and Codes of Practice, and current legislation that may be applicable but no representation or warranty can be given that these references are complete or current.

BCGA publications are reviewed, and revised if necessary, at five-yearly intervals, or sooner where the need is recognised. Readers are advised to check the Association's website to ensure that the copy in their possession is the current version.

This document has been prepared by BCGA Technical Sub-Committee 1. This document replaces BCGA GN 17: Revision 1: 2012. It was approved for publication at BCGA Technical Committee 146. This document was first published on 09/05/2013. For comments on this document contact the Association via the website [www.bcgaco.uk](http://www.bcgaco.uk).

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\* Throughout this publication the numbers in brackets refer to references in Section 6. Documents referenced are the edition current at the time of publication, unless otherwise stated.

# BCGA GUIDANCE NOTE 17

## BCGA POLICY AND GUIDANCE FOR THE SAFE FILLING OF THIRD-PARTY OWNED AND / OR MAINTAINED TANKS

Revision 2: 2013

### 1. INTRODUCTION

BCGA Members as gas suppliers have an obligation under both the Health and Safety at Work etc. Act 1974 (1) and the Management of Health and Safety at Work Regulations (2) to minimise the risks from the operation of filling storage tanks at customer premises. BCGA policy is that no member shall fill a tank until it has been established that it is safe.

The BCGA, through its Technical Committee, offers the following guidance to BCGA members in order to meet the above policy objective at those customer premises where the gas supplier does not have the responsibility for the maintenance and operation of the tank installation.

BCGA has published Leaflet 12 (10) *Liquid gas storage tanks – Your responsibilities*, in support of this Guidance Note. It is a simple user guide that advises users and owners of liquid gas storage tanks on their legal responsibilities and duty of care to ensure that the equipment is maintained and operated safely.

### 2. SCOPE

This document defines a gas supplier's responsibilities when intending to fill a third-party owned tank, used for the storage of refrigerated liquefied gases (typically nitrogen, oxygen, argon and carbon dioxide) at a customer's premises.

### 3. DEFINITIONS

Gas supplier's competent person.	This shall be a person appointed by the gas supplier to assess the installation with regard to compliance with the Pressure Systems Safety Regulations (PSSR) (3), and to ensure that a safe method of filling the tank can be established.
Customer.	The site operator (User).
May.	Indicates an option available to the user of this Guidance Note.
Shall.	Indicates a mandatory requirement for compliance with this Guidance Note.

Should. Indicates a preferred requirement but is not mandatory for compliance with this Guidance Note.

Tank. The complete storage vessel, its accessories and any integral equipment such as refrigeration unit or pressure build vaporiser(s) and fill lines.

**It does not include the site distribution pipework or ancillary process equipment.**

#### 4. PRINCIPLES

- The PSSR (3) set out the legal requirements for ensuring that a pressure system is safe and remains safe throughout its service life.
- The customer has responsibility for ensuring that the tank is operated and maintained in accordance with the PSSR (3). He also has an obligation under the Health and Safety at Work etc. Act (1) and the Management of Health and Safety at Work Regulations (2) to ensure safety.
- The customer has a responsibility to ensure the tank is not modified in such a way as to give rise to danger or impair the operation of any protective device or any inspection facility. Reference should be made to the original design approval document.
- The customer has a responsibility for ensuring that the filling of the tank(s) on his site can be accomplished safely, and that all ancillary equipment is maintained in a safe condition.
- The gas supplier has expertise in the safe operation of tanks.
- The gas supplier has responsibility for the safe operation of the delivery vehicle and associated equipment.
- The gas supplier has responsibility for ensuring that bringing the delivery vehicle onto the customer site and filling the tank does not endanger the driver, the customer or the public.
- The gas supplier has responsibility for working with the customer to ensure that the filling location and the tank installation meet the relevant BCGA requirements.

## 5. PROCEDURE

### 5.1 Actions before filling the tank for the first time.

5.1.1 The gas supplier will establish a documented procedure that defines:

- The work process to be followed including the roles and responsibilities.
- The checks to be performed.
- The approval mechanism that the tank is safe to fill.
- The documentation to be maintained.
- The steps to be taken when the tank is deemed unsuitable for filling.

5.1.2 The customer shall ensure that:

- The tank is safe to fill.
  - The tank is fitted with a minimum of two independent pressure relief devices which are always on-line.
  - The tank is protected from overpressure during filling.
- The tank is clearly marked with the product contents.
- The connected pipework system is of a suitable design, safe to allow filling and in accordance with BCGA CP 4 (4).
- The minimum applicable safety distances are enforced. Refer to BCGA CP 26 (6) and BCGA CP 36 (7).
- The delivery vehicle and driver can gain access to the tank safely.
- The customer understands and fulfils his responsibilities under the PSSR (3).
- The tank and its service history are compatible with the product to be filled, e.g. for oxygen service the tank has not been contaminated with any substance which could give rise to danger.
- The requirements of BCGA Guidance Note GN 10 (9) are complied with for carbon dioxide service.

The gas supplier may request written evidence of any of the above.

5.1.3 A list of suggested checks to be performed and a suitable format is given in the attached Appendix 1. Additional checks may be appropriate for specific installations. The customer shall provide sufficient documentary evidence for the gas supplier to establish that the tank is safe to fill. The following data would be expected to be displayed on a data plate permanently attached to the tank in accordance with the PSSR (3).

- The manufacturer's name.
- A serial number to identify the vessel.
- The date of manufacture of the vessel.
- The standard to which the vessel was built.
- The maximum allowable pressure of the vessel.
- The minimum allowable pressure of the vessel where it is other than atmospheric.
- The design temperature.

5.1.4 The gas supplier will establish and agree with the customer:

- The procedures for the safe filling of the tank.
- The process for notifying the gas supplier of changes to the tank installation or its service.

## **5.2 Actions for subsequent deliveries.**

5.2.1 The gas supplier may undertake such checks as they deem reasonable to ensure that the tank remains safe to fill throughout the supply contract.

5.2.2 The gas supplier will ensure that the person filling the tank reports any observed defects. Relevant information from these reports shall be forwarded to the customer for prompt action and notified to the gas supplier's competent person.

5.2.3 The gas supplier should periodically check that the customer is continuing to comply with the PSSR (3), making reference to appropriate BCGA Codes of Practice. If the gas supplier becomes aware that the tank is either in breach of the PSSR (3) or unsafe for any other reason he shall require the customer to take prompt action to bring it into compliance or to make it safe.

5.2.4 For vacuum insulated tanks the gas supplier should periodically check that tanks have been revalidated in accordance with BCGA CP 25 (5) or BCGA CP 39, Module 1 (8).

- 5.2.5 Where a gas supplier discovers an immediate safety issue when requested to fill a third party owned tank the gas company shall refuse to fill the tank and suspend deliveries until the tank is safe to fill. Where the customer is unwilling to rectify the defect BCGA Report Form A, shown in Appendix 2, shall be completed with details of the safety deficiency. A copy shall be supplied to the customer and a copy forwarded to the BCGA (Technical Manager) for communication to other gas suppliers.
- 5.2.6 The BCGA may engage with the customer to offer advice, as appropriate, with the aim of assisting them in making the tank compliant and safe to fill.
- 5.2.7 When the safety deficiency is corrected to the satisfaction of a gas supplier, deliveries may recommence and the BCGA informed accordingly.
- 5.2.8 The BCGA will maintain a list of member companies to be informed in the event of this situation arising.
- 5.2.9 The customer is required to advise and seek agreement from the gas supplier of any planned modification or alteration to the tank and its surroundings prior to such work taking place. The customer is also required to advise and seek agreement if any alteration to his process conditions may affect the operation of the tank.

## 6. REFERENCES

<b>Document Number</b>	<b>Title</b>
1.	The Health and Safety at Work etc. Act, 1974.
2. SI 1999 No. 3242	Management of Health and Safety at Work Regulations, 1999.
3. SI 2000 No. 128	Pressure Systems Safety Regulations 2000 (PSSR).
4. BCGA Code of Practice 4	Industrial gas cylinder manifolds and gas distribution pipework (excluding acetylene).
5. BCGA Code of Practice 25	Revalidation of cryogenic static storage tanks.
6. BCGA Code of Practice 26	Bulk liquid carbon dioxide storage at users' premises.
7. BCGA Code of Practice 36	Cryogenic liquid storage at users' premises.

- |     |                                    |   |
|-----|------------------------------------|---|
| 8.  | BCGA Code of Practice 39, Module 1 | In-service requirements of cryogenic storage system at user premises. |
| 9.  | BCGA Guidance Note 10              | Implementation of EIGA Carbon Dioxide Standards                       |
| 10. | BCGA Leaflet 12                    | Liquid gas storage tanks – Your responsibilities.                     |

Further information can be obtained from:

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|---|--|
| UK Legislation                              | <a href="http://www.legislation.gov.uk">www.legislation.gov.uk</a> |
| Health and Safety Executive                 | <a href="http://www.hse.gov.uk">www.hse.gov.uk</a>                 |
| British Compressed Gases Association (BCGA) | <a href="http://www.bcga.co.uk">www.bcga.co.uk</a>                 |

**First fill assessment form**

An example of a first fill assessment form for a third party owned and maintained tank.

Manufacturer:	<input type="text"/>	Serial Number:	<input type="text"/>	
Manufacturer's Type Number:	<input type="text"/>	Date of Manufacture:	<input type="text"/>	
Tank Capacity	<input type="text"/>	Design Code	<input type="text"/>	
Test Pressure	<input type="text"/>	Design Pressure	<input type="text"/>	
Maximum and Minimum Design Temperature		Maximum	<input type="text"/>	Minimum <input type="text"/>
Inspection Authority	<input type="text"/>			
Pressure Vessel Construction Material	<input type="text"/>			
<b>Tank Pressure Relief Valve - Model, Size and Set Point</b>				
Model	<input type="text"/>	Size	<input type="text"/>	Set Point <input type="text"/>
Model	<input type="text"/>	Size	<input type="text"/>	Set Point <input type="text"/>
Model	<input type="text"/>	Size	<input type="text"/>	Set Point <input type="text"/>
Model	<input type="text"/>	Size	<input type="text"/>	Set Point <input type="text"/>
Tank Bursting Disc Size and Set Point		Size	<input type="text"/>	Set Point <input type="text"/>
		Size	<input type="text"/>	Set Point <input type="text"/>
State date pressure relief devices last serviced or changed. <input type="text"/>				
Is a Pressure Relief Changeover Valve fitted?				Yes <input type="checkbox"/> No <input type="checkbox"/>
Can the operation of the above valve isolate all the pressure relief devices?				Yes <input type="checkbox"/> No <input type="checkbox"/>
If 'YES' state method to ensure tank is always protected from over pressure.				
<input type="text"/>				
During normal operation are there at least two independent pressure relief devices always 'on line' to the tank?				Yes <input type="checkbox"/> No <input type="checkbox"/>
If 'NO' state how the tank can be operated safely				
<input type="text"/>				
Is a trycock fitted?				Yes <input type="checkbox"/> No <input type="checkbox"/>
If no state method of ensuring tank cannot be over filled.				
<input type="text"/>				
Is a tank pressure gauge fitted?				Yes <input type="checkbox"/> No <input type="checkbox"/>
Is a level/contents gauge fitted?				Yes <input type="checkbox"/> No <input type="checkbox"/>
Do all vents discharge to a safe location away from the operator?				Yes <input type="checkbox"/> No <input type="checkbox"/>
Do all vents terminate to prevent the possibility of blockage?				Yes <input type="checkbox"/> No <input type="checkbox"/>
Are thermal relief valves fitted where liquid could be trapped?				Yes <input type="checkbox"/> No <input type="checkbox"/>
Are all piping and fitting materials compatible with the product?				Yes <input type="checkbox"/> No <input type="checkbox"/>
Are fill couplings secure, undamaged and suitable for intended product?				Yes <input type="checkbox"/> No <input type="checkbox"/>
Are all valves used for filling and venting operations operable?				Yes <input type="checkbox"/> No <input type="checkbox"/>
Is the tank protected from overpressure during filling?				Yes <input type="checkbox"/> No <input type="checkbox"/>
If 'NO' give details of how protection is achieved.				
<input type="text"/>				

BCGA requires that in accordance with BCGA CP 25 (5) a full revalidation shall be carried out on vacuum insulated tanks at a frequency not exceeding 20 years.

Has a revalidation certificate been issued and evidence provided? Yes  No

Next revalidation due at:

Has a PSSR (3) examination been carried out in accordance with a Written Scheme of Examination and evidence provided? Yes  No

Date of next examination

Are the tank supports (wheels, foundations, tank legs) in good condition? Yes  No

Is the tank clearly labelled with the product contents? Yes  No

State product:

Has evidence been provided that the system is of a suitable design and safe to allow filling? Yes  No

If 'NO' detail action to be taken.

During filling, is the customers downstream application protected? Yes  No

If 'NO' detail action to be taken.

Is the dedicated fill location suitable, sufficient and in accordance with BCGA CP 26 (6) & CP 36 (7)? Yes  No

Are the minimum applicable safety distances enforced? Yes  No

**BCGA Report Form A**

This form is to be used to inform the BCGA of a tank that is unsafe to fill and that the customer is unwilling to rectify.

**The following details a tank that has been identified as unsafe to fill that the customer is unwilling to rectify.**

**PLEASE NOTE: This form will be sent to the BCGA who, after due investigation, will advise their member companies of the safety concerns.**

**Site Details.** Enter details of the site on which the tank is located.

Customer name:	
Site address: (including Post Code)	
Contact Name:	
Contact Tel:	
Contact E-mail:	

**Tank details.** Enter details of the defective tank.

Serial number:	
Product:	
Volume:	
Date of report:	
Location:	

**Details of defect.** Enter details of the defect.

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**Category of defect.** Please tick at least one of the categories below to indicate the category of the defect.

Relief devices, for example, not fitted, outlet plugged.	<input type="checkbox"/>
Any damage to the installation that affects safety.	<input type="checkbox"/>
No method to establish tank level.	<input type="checkbox"/>
No method to establish tank pressure.	<input type="checkbox"/>
Materials / components not compatible with product, temperature or pressure.	<input type="checkbox"/>
No current PSSR (3) inspection certificates.	<input type="checkbox"/>
Other equipment or plant in the area which compromises safety.	<input type="checkbox"/>

**Reporting BCGA Member details.** Please complete the required details below.

Company Name:	
Address: (including Post Code)	
Contact Name:	
Contact Tel:	
Contact E-mail:	

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**British Compressed Gases Association**

[www.bcga.co.uk](http://www.bcga.co.uk)