



PRE-FILL INSPECTION OF CUSTOMER OWNED CYLINDERS

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1. Introduction

Gases companies are often presented with cylinders for filling that are owned by customers or other third-party organisations. This publication proposes a sequence of checks that these cylinders should pass through before filling to ensure the safety of the gas company personnel who fill them and that the filled cylinder is legal and safe for eventual use by the end user. It does not give guidance on open pool cylinders where the ownership of the cylinder is not clearly defined.

2. Scope and purpose

2.1 Scope

This publication should be used by gas company personnel responsible for filling cylinders owned by customers or other third parties. It describes guidelines for a series of checks needed to ensure that such cylinders are filled in accordance with operating procedures and that the cylinders are safe and legal to use by the end-user.

It does not cover pre-fill inspection checks carried out by gases companies on their own cylinders or on those they regularly fill for established customers. These shall be in accordance with ISO 24431, *Gas cylinders -- Seamless, welded and composite cylinders for compressed and liquefied gases (excluding acetylene) -- Inspection at time of filling* and, ISO 11755 . *Transportable gas cylinders - Cylinder bundles for permanent and liquefied gases (excluding acetylene) Inspection at time of filling*, and ISO 11372, *Gas Cylinders – Acetylene Cylinders – Filling Conditions and Filling Inspections*. [1,2,3]¹

2.2 Purpose

This publication describes how to identify:

- customer owned cylinders that are already authorised for filling;
- customer owned cylinders that require approval to be filled;
- cylinders without obvious owners, for example “Pool” cylinders; and
- cylinders that arrive on site which are not intended to be filled, for example cylinders from other gases companies or cylinders that are to be scrapped.

3. Definitions

3.1 Publication terminology

3.1.1 Shall

Indicates that the procedure is mandatory. It is used wherever the criterion for conformance to specific recommendations allows no deviation.

3.1.2 Should

Indicates that a procedure is recommended.

3.1.3 May

Indicates that the procedure is optional.

3.1.4 Will

Is used only to indicate the future, not a degree of requirement.

¹ References are shown by bracketed numbers and are listed in order of appearance in the reference section.

3.1.5 Can

Indicates a possibility or ability.

3.2 Technical definitions

3.2.1 Competent person

Responsible person within a gas company who has knowledge of the technical and legislative requirements for filling and using gas cylinders so as to be able to decide if a gas cylinder can be filled.

3.2.2 Customer

Person or organisation requesting that a cylinder be filled by the gas company.

3.2.3 Cylinder

In this publication it denotes a cylinder package. This could be an individual cylinder with its associated valve and guard and/or cap but may also refer to a bundle of cylinders.

3.2.4 Cylinder ownership definitions

3.2.4.1 Customer owned cylinder

The customer owns the cylinder and is responsible for ensuring that the cylinder is retested appropriately.

NOTE These cylinders are marked with the customer name or other appropriate identification on the cylinder

3.2.4.2 Vagrant cylinder

Cylinders that arrive on a gas company site, but which do not belong to the gas company carrying out the filling or a customer and are not contracted to be filled. These cylinders have a clear sign of ownership.

3.2.4.3 Open pool cylinders

Open Pool cylinders do not have established ownership to one customer or gas supplier. They were either

- Originally purchased by a customer from a gas supplier, cylinder manufacturer, or third party or
- . Many cylinders were purchased by gas companies when entering this market without documentation and clear markings.

These cylinders are swapped with another open pool cylinder after use at either an agent or gas supplier. These cylinders should have neutral ownership ensuring that they have not been in illicit trade. The original ownership of the cylinder is no longer traceable.

3.2.5 End user

Person(s) who will use the gas.

3.2.6 Owner

Person or organisation that is the legal owner of the cylinder.

4. Process for approval

4.1 Overview

The authorisation process is shown in Figure 1. The protocol for assessing cylinders as suitable for filling has three main sections. The section to be used depends on whether responsible ownership of the cylinder can be established.

The summary of the requirements are that:

- No customer owned cylinder shall be filled before it has been authorised;
- Vagrant cylinders shall be quarantined and returned to their owners if possible;
- Open pool cylinders should be reviewed separately from this publication and in accordance to the gas company's defined procedures.

4.2 Previously authorised customer owned cylinders (green protocol/box 1)

These are any cylinders that:

- are not owned by the gas company, but
- have been previously authorised for refilling by the competent person acting for the gas company carrying out the filling.

NOTE: The pre-authorisation procedure is initially the same as for non-approved customer owned cylinders (see 4.4) but is only required the first-time cylinders are presented for filling.

4.2.1 Ownership status

The customer shall be known to the gas company and its ownership of the gas cylinders shall be proven.

Cylinders shall be identified as pre-authorised for the gas company to refill by the following:

- Displaying an approved current periodic inspection stamp and gas company identification, for example, inspection ring, label or stamp; or
- Being listed locally in approved documentation, work instructions or databases. Cylinder details can be listed by individual serial number, cylinder type/ manufacturer/ specification or by other identification details, such as an agreed stamp mark in accordance with local requirements or practices.

If customer owned cylinders (pre-authorised) are identified as above, they may be re-filled without re-submitting them to the non-authorised cylinder procedure.

4.3 Non-authorised customer owned cylinders and open pool cylinders (yellow protocol/box 2)

These are cylinders that are:

- not owned by the gas company; and
- not previously authorised customer owned cylinders.

4.3.1 Approval for filling

Customer owned cylinders shall only be filled after being authorised by the competent person, in accordance to a national approval procedure (if existing). This authorisation may be either:

- for a one-off fill, leaving the cylinder to require re-authorisation for subsequent fills, or
- as an on-going approval of the cylinder for refilling. In this case the cylinder becomes a pre-authorised customer owned cylinder on its next fill (see 4.2).

4.3.2 Approval procedure

The procedure for approval of customer owned cylinders requires the filling station to:

- Record and retain records of the data marked on the cylinder;
- Send the following information to the competent person for filling permission:
 - name of cylinder owner;
 - cylinder manufacturer and to which standard the cylinder was designed and manufactured;
 - test pressure of the cylinder and its water capacity;
 - periodic test station stamp and date of last test;
 - gas service;
 - valve type, manufacturer (and pressure relief device if fitted);
 - porous material and solvent type (acetylene cylinders only);
 - cylinder serial number; and
 - whether the request is for a one-off fill or for the cylinder to have on-going approval as a pre-authorised customer owned cylinder.

The competent person shall review the information presented, the relevant national and international standards, and consult documentation such as EIGA Doc 86, *Gas cylinders and valves with restricted use in the EU* [4], to find out if the cylinder and or valve are of a type not permitted for filling.

The competent person shall also check and confirm the material compatibility of the cylinder and valve according to ISO 11114-1, *Gas Cylinders - Compatibility of Cylinder & Valve Materials with Gas Contents - Part 1 Metallic Materials* [5] and ISO 11114-2 *Gas Cylinders - Compatibility of Cylinder & Valve Materials with Gas Contents - Part 2 Non Metallic Materials* [6], for the intended gas to be filled.

The decision of the competent person regarding rejection, one-off or on-going permission is to be confirmed in writing and include instructions for maximum filling pressure or maximum filling weight, periodic inspection requirements, adaptor requirements, any additional filling procedures or safety precautions to be taken. A copy shall be retained by the gas company site carrying out the inspection and testing work.

4.4 Vagrant cylinders (brown protocol/box 3)

Vagrant cylinders shall not be filled.

- If the ownership can be established the owner should be informed and arrangements agreed for example regarding whether they give their permission for the cylinder to be filled, returned to them empty, commercial terms.

If ownership cannot be established, then cylinders should be removed from circulation and treated in accordance with local procedures unless they are part of an open pool population. If they are part of an open pool population, then these cylinders should be treated with the gas companies' defined procedures.

Open pool cylinders are also treated in brown protocol / box 3



Figure 1 Process Overview

5. References

Unless otherwise stated the latest edition shall apply.

- [1] ISO 24431, *Gas cylinders -- Seamless, welded and composite cylinders for compressed and liquefied gases (excluding acetylene) -- Inspection at time of filling*, www.iso.org
- [2] ISO 11755, *Transportable gas cylinders - Cylinder bundles for permanent and liquefied gases (excluding acetylene) Inspection at time of filling*, www.iso.org
- [3] ISO 11372, *Gas Cylinders – Acetylene Cylinders – Filling Conditions and Filling Inspections*, www.iso.org
- [4] EIGA Doc 86, *Gas Cylinders and Valves with Restricted Use in the EU*, www.eiga.eu
- [5] ISO 11114-1, *Gas Cylinders - Compatibility of Cylinders & Valve Materials with Gas Contents - Part 1 Metallic Materials*, www.iso.org
- [6] ISO 11114-2, *Gas Cylinders - Compatibility of Cylinders & Valve Materials with Gas Contents - Part 2 Non Metallic Materials*, www.iso.org
- [7] EN 1919, *Transportable gas cylinders - Cylinders for liquefied gases (excluding acetylene and LPG Inspection at time of filling)*, www.cen.eu