

Periodic inspection, testing and maintenance of transportable gas containers (excluding dissolved acetylene containers) —

**Part 6: Specification for seamless steel
and aluminium alloy containers having
a water capacity of less than 0.5 litre**

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Pressure Vessel Standards Policy Committee (PVE/-) to Technical Committee PVE/3, upon which the following bodies were represented:

- Aluminium Extruders' Association
- Aluminium Federation
- Associated Offices Technical Committee
- British Compressed Gases Association
- British Fire Consortium
- British Fire Protection Systems Association Ltd.
- British Gas plc
- British Soft Drinks Association Ltd.
- Department of Trade and Industry [Mechanical Engineering and Manufacturing Technology Division (Mmt)]
- Department of Trade and Industry (National Engineering Laboratory)
- Department of Transport (Marine Directorate)
- Engineering Equipment and Materials Users' Association
- Fire Extinguishing Trades Association
- Health and Safety Executive
- Home Office
- Industrial Safety (Protective Equipment) Manufacturers' Association
- Institute of Refrigeration
- Institution of Chemical Engineers
- LP Gas Association
- Ministry of Defence
- Coopted members

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Contents

	Page
Committees responsible	Inside front cover
Foreword	ii
1 Scope	1
2 References	1
3 Definitions	1
4 General requirements	1
5 Procedure for prefill inspection and periodic inspection	3
6 Marking	6
7 Painting and internal coating	6
8 Containers rejected for further service	6
Annex A (normative) Procedure to be adopted when a container valve is thought to be obstructed	8
Annex B (normative) Rejection limits	8
Annex C (informative) Hydraulic proof pressure test	8
Figure A.1 — Device for detecting obstructed gas container valves	
Figure C.1 — Example of hydraulic proof pressure test equipment	10
Table 1 — Intervals between periodic inspection	2
Table 2 — Recommended test date discs for containers	3
Table B.1 — Rejection limits relating to physical and material defects in the container shell	8
Table B.2 — Rejection limits for gas containers at time of inspection	8
Table B.3 — Rejection limits for gas containers resulting from external corrosion	9
List of references	Inside back cover

Foreword

This Part of BS 5430 has been prepared under the direction of the Pressure Vessel Standards Policy Committee. It is one of a series relating to the periodic inspection, testing and maintenance of transportable gas containers.

This Part covers the periodic inspection, testing and maintenance of transportable seamless steel and aluminium alloy gas containers having a water capacity of less than 0.5 l. Other Parts of BS 5430 include:

- *Part 1: Specification for seamless steel containers of water capacity 0.5 litres and above;*
- *Part 2: Specification for welded steel containers of water capacity 1 L up to 150 L;*
- *Part 3: Specification for seamless aluminium alloy containers of water capacity 0.5 L and above.*

It has been assumed in the drafting of this standard that it will be used and applied by those who are appropriately qualified and experienced.

Attention is drawn to the need to ensure compliance with all regulations as they affect the gas container including

- Food Safety Act 1990 (as amended)
- The Highly Flammable Liquids and Liquefied Petroleum Gases Regulations 1972 (SI.1972 No.917, as modified by SI 1978 No. 209).
- The Pressure Systems and Transportable Gas Container Regulations 1989.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This Part of BS 5430 specifies requirements for the prefill and periodic inspection, testing and maintenance of refillable transportable seamless steel and aluminium alloy gas containers of water capacity less than 0.5 l. It does not apply to dissolved acetylene containers, nor to small carbon dioxide cartridges used in fire extinguishers. A procedure for the inspection of the cylinders at the time of refilling is also included.

This standard applies to gas containers manufactured to BS 5045-6 or other equivalent specifications or standard.

NOTE There are some gases which are not suitable to be filled into steel containers, and some not suitable to be filled into aluminium alloy containers. Where there is doubt about the compatibility of the gas with the container, advice should be sought from a competent person.

2 References

2.1 Normative references

This Part of BS 5430 incorporates, by dated or undated reference, provisions from other publications. These normative references are made at the appropriate places in the text and the cited publications are listed on the inside back cover. For dated references, only the edition cited applies; any subsequent amendments to or revisions of the cited publication apply to this Part of BS 5430 only when incorporated in the reference by amendment or revision. For undated references, the latest edition of the cited publication applies, together with any amendments.

2.2 Informative references

This Part of BS 5430 refers to other publications that provide information or guidance. Editions of these publications current at the time of issue of this standard are listed on the inside back cover, but reference should be made to the latest editions.

3 Definitions

For the purposes of this Part of BS 5430 the following definitions apply.

3.1

liquefiable gas

a gas that is liquefiable by pressure at $-10\text{ }^{\circ}\text{C}$ but which is completely vaporized at $17.5\text{ }^{\circ}\text{C}$ at 1 013 mbar¹⁾

NOTE Certain toxic substances that are liquid at 1 013 mbar pressure at $0\text{ }^{\circ}\text{C}$ but that are completely vaporized at or below $30\text{ }^{\circ}\text{C}$ at that pressure are treated as low pressure liquefiable gases and are included in Table 1.

3.2

high pressure liquefiable gas

a gas that has a critical temperature between $-10\text{ }^{\circ}\text{C}$ and $70\text{ }^{\circ}\text{C}$ inclusive

3.3

low pressure liquefiable gas

a gas that has a critical temperature above $70\text{ }^{\circ}\text{C}$

3.4

permanent gas

a gas that has a critical temperature below $-10\text{ }^{\circ}\text{C}$

3.5

corrosion

a chemical reaction on material that results in the removal of the surface of the material

NOTE Corrosion may exist in many forms, such as:

- a) chemical attack where the metal is dissolved by the reagents (such attack may be general over the complete surface, localized (causing pitting), or a combination of the two);
- b) rusting caused by the combined action of moisture and an oxidizing medium, e.g. air.

3.6

inspection

an examination by a competent person using appropriate equipment

3.7

competent person

a competent person is one who, through training, practical experience and an understanding of the equipment, is able to verify that the requirements of this standard are met

3.8

testing station

suitably equipped premises, staffed by competent persons, to undertake the periodic inspecting and testing of gas containers, in accordance with this standard

3.9

independent inspecting authority

an inspecting organization approved by the Health and Safety Executive in accordance with regulation 16 (2) of The Pressure Systems and Transportable Gas Container Regulations 1989, for the purpose of verification of the design of containers to British Standards specifications BS 5045-1, BS 5045-2, BS 5045-3 and BS 5045-6

4 General requirements

4.1 Containers shall not be refilled unless they have been inspected and tested as necessary, in accordance with this standard.

¹⁾ 1 bar = 10^5 N/mm^2 = 100 kPa.