

CONFIRMED
AUGUST 1988

Specification for

Periodic inspection and maintenance of transportable gas containers for dissolved acetylene

UDC 66.076.5:621.642.17.02:621.772.4:661.715.342

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- British Chemical Engineering Contractors Association
- British Compressed Gases Association*
- British Gas Corporation
- British Insurance (Atomic Energy) Committee
- British Steel Industry*
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- Engineering Equipment Users' Association*
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- Institution of Chemical Engineers*
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- Institution of Mechanical Engineers
- Lloyd's Register of Shipping
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- United Kingdom Atomic Energy Authority
- University of Manchester (Institute of Science and Technology)
- Water-tube Boilermakers' Association
- Welding Institute

The organizations marked with an asterisk in the above list, together with the following, were directly represented on the Technical Committee entrusted with the preparation of this British Standard:

- Aluminium Federation
- British Railways Board
- British Steel Corporation
- British Sub-aqua Club
- Camping Trade Association of Great Britain Ltd.
- Chief and Assistant Chief Fire Officers' Association
- Department of Industry (National Physical Laboratory)
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- Industrial Safety (Protective Equipment) Manufacturers Association
- Institution of Refrigeration
- Institution of Fire Engineers
- Liquefied Petroleum Gas Industry Technical Association (UK)
- Ministry of Defence
- Society of Motor Manufacturers and Traders Limited
- Coopted members

This British Standard, having been prepared under the direction of the Pressure Vessel Standards Committee, was published under the authority of the Executive Board and comes into effect on 27 February 1981

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The following BSI references relate to the work on this standard:
Committee reference PVE/3
Draft for comment 79/79864 DC

ISBN 0 580 11831 2

Amendments issued since publication

Amd. No.	Date of issue	Comments

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Foreword

This British Standard is one of a series based upon recommendations in the report (published 1969) of the Home Office Gas Cylinders and Containers Committee for materials, design, construction, testing, filling and maintenance of containers intended for the conveyance, by road, of permanent and liquefiable gases under pressure. Other British Standards in the series include BS 5045, BS 5355 and BS 5430.

This standard has been prepared under the direction of the Pressure Vessel Standards Committee, at the request of the Health and Safety Executive, in order to satisfy the technical requirements of new legislation currently under consideration for such conveyance. It covers the periodic inspection and maintenance of transportable containers for dissolved acetylene.

The primary object of periodic inspection is to be satisfied that the containers may be reintroduced into service for a further period of time in accordance with 4.1. It is the responsibility of the testing station to ensure that the requirements of this standard are complied with.

Nothing in this standard relieves the owner or filler of a container for dissolved acetylene from their legal obligations under Order of Secretary of State No. 9, dated 23 June 1919, made under the Explosives Act of 1875.

Nothing in this standard relieves the owner or user of a gas container from the obligation to make frequent periodic inspection of his containers and to refer all those in which there is evidence of damage or corrosion for further inspection and testing before the prescribed interval has elapsed.

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 British Standard specifies requirements for the periodic inspection and maintenance of transportable dissolved-acetylene containers of both seamless and welded construction.

2 References

The titles of the publications referred to in this standard are listed on the inside back cover.

3 Definitions

For the purposes of this British Standard the following definitions apply.

3.1

dissolved acetylene

acetylene that is dissolved under pressure in a solvent contained in a porous substance at ambient temperature and is released from the solvent without the application of heat

3.2

solvent-free acetylene

acetylene that is adsorbed on a porous substance at ambient temperature without the addition of solvent and is released from the porous substance without the application of heat

3.3

porous substance

a substance approved by the Health and Safety Executive that fills the container as completely as possible and has no deleterious action on the acetylene, the solvent or the container

3.4

corrosion

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

NOTE Corrosion may take many forms, including:

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

3.5

inspection

a complete visual examination by a competent person

4 General requirements

4.1 All containers shall, before being charged with acetylene, be subjected to periodic inspection in accordance with this standard if they have not been previously inspected within the following intervals:

- a) those containing high-porosity lime silica porous substance: after twelve months of issue into service and thereafter at intervals of five years;

- b) those containing other porous substances: at intervals of every twelve months except those substances for which HM Inspector of Explosives has approved an extended period.

4.2 Containers due for inspection shall be identified primarily from the permanent record maintained by the filler/owner. A secondary method of recognition may be achieved by means of a ring located between the valve and the neck of the container; this ring may either be coloured or be stamped with a date code. As an alternative the date may be stamped on the containers.

4.3 The equipment and methods used for inspecting containers shall comply with the requirements of this standard.

5 Preparation

5.1 Each container shall first be weighed and the reading (W_1) compared with the tare stamped on the container. If W_1 is greater than the tare, this will normally indicate the presence of excess acetylene in the container and the container shall then be depressurized to atmospheric pressure, the contents being discharged in a safe manner. Care shall be taken to ensure that this depressurization is carried out over a period long enough for the removal of all excess acetylene.

NOTE Depressurization should be carried out at an ambient temperature no lower than that at which the container valve will be removed, otherwise there is a possibility that there will be a further discharge of acetylene when the valve is removed.

If there is any doubt, when the valve of a gas container is opened, that the gas is not being released and that the container may still contain residual gas under pressure, the container shall be set aside to be dealt with in accordance with clause 8.

5.2 After depressurization, the container shall be weighed again and the reading (W_2) compared with the stamped tare and with W_1 . If W_2 is not less than W_1 , the valve may be blocked and the container shall be set aside and dealt with as specified in 8.2. If W_2 is less than the stamped tare there has been a loss of solvent. Even if W_2 is the same or less than the stamped tare, there may still be excess acetylene present if there has been a loss of solvent and care shall be taken when removing the valve (see 8.1).

5.3 Each container shall have loose paint, corrosion products, tar, oil or other foreign matter removed from the external surfaces. Care shall be taken to avoid damaging the container.

6 Inadequate markings

Each container shall be checked for compliance with statutory or other requirements and inadequate markings shall be refurbished as necessary.