

CONFIRMED
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Specification for

Transportable acetylene containers

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British Gas Corporation	Oil Companies Materials Association*
British Insurance (Atomic Energy) Committee	Process Plant Association*
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Chemical Industries Association*	University of Manchester (Institute of Science and Technology)
Department of Trade (Marine Division)*	Water-tube Boilermakers Association
Engineering Equipment Users Association*	Welding Institute
Health and Safety Executive*	

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	Fire Extinguishing Trades Association
British Railways Board	Home Office
British Steel Corporation	Industrial Safety (Protective Equipment) Manufacturers Association
British Sub-aqua Club	Institute of Refrigeration
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Department of Industry National Physical Laboratory	Ministry of Defence
Department of Industry National Engineering Laboratory	Society of Motor Manufacturers and Traders Limited
Department of Transport	Individual firms

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 30 April 1981

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Foreword

This British 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 current legislation for transportable steel containers for acetylene.

This standard deals with the design, construction and testing of new containers for acetylene by reference to BS 5045-1 and BS 5045-2 and stipulates additional requirements specific to that gas.

This standard conforms to the requirements of ISO 3807 except that:

- a) an additional clause permits the carriage of solvent-free acetylene within specified limits;
- b) the alternative tare has been adopted that requires the inclusion of the mass of acetylene to saturate the solvent at atmospheric pressure and a temperature of 15 °C;
- c) the marking requirements are modified to cater for a) and b) above.

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

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 8, 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.

Section 1. General

1 Scope

This British Standard specifies the basic requirements for dissolved-acetylene containers with a maximum nominal water capacity of 160 litres, the procedure for type testing and the method for determining the porosity of the porous substance. It also specifies conditions for solvent-free acetylene.

It does not include details for the design of the steel container; these are specified in BS 5045-1 and BS 5045-2.

2 References

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

3 Definitions

For the purposes of this standard the following definitions apply.

3.1

dissolved-acetylene container

a container having a valve, and with or without safety devices, containing a porous substance, a solvent for the storage of dissolved acetylene and at least sufficient acetylene to saturate the solvent at atmospheric pressure and at a temperature of 15 °C

3.2

tare

the mass of the container, having a valve (but excluding a valve cover) and with or without safety devices, containing a porous substance, a solvent for the storage of dissolved acetylene (but see clause 9), the acetylene required to saturate the solvent at atmospheric pressure and at a temperature of 15 °C and any valve protection permanently fixed directly to the container

3.3

manufacturer

the company responsible for filling the container with porous substance and, usually, for preparing it for charging with acetylene

NOTE The term "manufacturer" as defined here does not include the manufacturer of the valve referred to in 5.4.

4 Approval

Each design of acetylene container shall be approved for use within the United Kingdom by an Independent Inspecting Authority, to be approved by the Health and Safety Executive (hereinafter referred to as HSE), and such approval shall not be given until it has been demonstrated to the satisfaction of the Independent Inspecting Authority that the design meets the requirements of the type tests listed in Appendix A.

Section 2. Design

5 Container and valve

5.1 The container shall conform to the requirements of BS 5045-1 or BS 5045-2 in respect of design and construction.

5.2 The minimum test pressure (gauge) for the container shall be:

- a) for containers manufactured as specified in BS 5045-1, 52 bar¹⁾ if the containers are fitted with one or more fusible plugs or other pressure relief devices approved by HSE, but 60 bar when pressure relief devices are not fitted;
- b) For containers manufactured as specified in BS 5045-2, 52 bar.

5.3 The valve shall be in accordance with BS 341. Where the valve body is manufactured from an alloy containing copper, the alloy shall not form dangerous acetylides and the copper content shall not exceed 70 %.

5.4 The manufacturer of the valve shall not employ any process that will result in surface enrichment of copper.

6 Porous substance

6.1 The porous substance in the container shall be of such quality that it enables the charged container to pass the safety tests included in Appendix A.

6.2 There shall be no deleterious reaction between the porous substance, the acetylene, the solvent and any materials in contact with acetylene.

7 Solvent

The quantity of solvent charged into the container shall be such that the container can meet the requirements of the tests included in Appendix A.

When acetone is used as the solvent it shall comply with the requirements of BS 509.

¹⁾ 1 bar = 105 N/m² = 100 kPa.