Gas cylinders - Refillable seamless aluminium alloy gas cylinders - Design, construction and testing (ISO 7866:2012)

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 7866

September 2012

ICS 23.020.30

Supersedes EN 1975:1999

English Version

Gas cylinders - Refillable seamless aluminium alloy gas cylinders - Design, construction and testing (ISO 7866:2012)

Bouteilles à gaz - Bouteilles à gaz sans soudure en alliage d'aluminium destinées à être rechargées - Conception, construction et essais (ISO 7866:2012)

Gasflaschen - Wiederbefüllbare nahtlose Gasflaschen aus Aluminiumlegierungen - Auslegung, Bau und Prüfung (ISO 7866:2012)

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Ref. No. EN ISO 7866:2012: E

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Foreword

This document (EN ISO 7866:2012) has been prepared by Technical Committee ISO/TC 58 "Gas cylinders" in collaboration with Technical Committee CEN/TC 23 “Transportable gas cylinders” the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2013, and conflicting national standards shall be withdrawn at the latest by March 2013.

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Contents

Page

Foreword v

Introduction vi

1 Scope 1

2 Normative references 1

3 Terms and definitions 1

4 Symbols 2

5 Inspection and testing 4

6 Materials 4
6.1 General requirements 4
6.2 Thermal treatments 5
6.3 Test requirements 6
6.4 Failure to meet test requirements 6

7 Design 7
7.1 General requirements 7
7.2 Calculation of cylindrical shell thickness 7
7.3 Design of ends (heads and bases) 7
7.4 Neck design 8
7.5 Foot rings 11
7.6 Neck rings 11
7.7 Design drawing 11
7.8 High-strength and/or low-elongation gas cylinder designs 11

8 Construction and workmanship 11
8.1 General 11
8.2 End forming 11
8.3 Wall thickness 12
8.4 Surface imperfections and defects 12
8.5 Neck threads 12
8.6 Out-of-roundness 12
8.7 Exposure to heat 13
8.8 Straightness 13
8.9 Mean diameter 13

9 Type approval procedure 13
9.1 General requirements 13
9.2 Prototype tests 14
9.3 Type approval certificate 15

10 Batch tests 15
10.1 General requirements 15
10.2 Tensile test 17
10.3 Bend test and flattening test 18
10.4 Hydraulic burst test 19
10.5 Test requirements for high-strength and/or low-elongation gas cylinder designs 21

11 Gas cylinder tests and examinations 22
11.1 General 22
11.2 Hydraulic test 22
11.3 Hardness test 23
11.4 Leakage testing 23

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11.5 Examination for neck folds **23**
11.6 Marking verification **23**
11.7 Aluminium alloy gas cylinder surface features at time of manufacture **23**

12 Certification **24**

13 Marking **25**

Annex A (normative) **Corrosion tests** **26**

Annex B (normative) **Test method to determine the sustained-load cracking resistance of aluminium alloy gas cylinders** **36**

Annex C (informative) **Typical type approval certificate** **43**

Annex D (informative) **Acceptance certificate** **44**

Annex E (normative) **Specific requirements for gas cylinders made of high-strength and/or low-elongation aluminium alloy** **46**

Annex F (informative) **Description and evaluation of manufacturing surface imperfections and conditions for rejection of seamless aluminium alloy gas cylinders at time of product acceptance** **52**

Annex G (normative) **Batch size** **59**

Annex H (normative) **Specific provisions for acetylene cylinder shells** **60**

Bibliography **61**

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Introduction

The purpose of this International Standard is to provide a specification for the design, manufacture, inspection and testing of a seamless aluminium alloy gas cylinder for worldwide usage. The objective is to balance design and economic efficiency against international acceptance and universal utility.

This International Standard aims to eliminate the concern about climate, duplicate inspections and restrictions currently existing because of lack of definitive International Standards. This International Standard should not be construed as reflecting on the suitability of the practice of any nation or region.

Following publication, this International Standard will be submitted for reference in the UN Recommendations on the Transport of Dangerous Goods – Model Regulations.

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Gas cylinders — Refillable seamless aluminium alloy gas cylinders — Design, construction and testing

1 Scope

This International Standard specifies minimum requirements for the material, design, construction and workmanship, manufacturing processes and tests at time of manufacture of refillable seamless aluminium alloy gas cylinders of water capacities up to and including 150 litres for compressed, liquefied and dissolved gases for worldwide use (normally up to +65 °C).

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 6506-1, *Metallic materials — Brinell hardness test — Part 1: Test method*

ISO 6508-1, *Metallic materials — Rockwell hardness test — Part 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T)*

ISO 6892-1, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature*

ISO 7438, *Metallic materials — Bend test*

ISO 7539-6:2011, *Corrosion of metals and alloys — Stress corrosion testing — Part 6: Preparation and use of pre-cracked specimens for tests under constant load or constant displacement*

ISO 10461, *Gas cylinders — Seamless aluminium-alloy gas cylinders — Periodic inspection and testing*

ISO 11117, *Gas cylinders — Valve protection caps and valve guards — Design, construction and tests*

ISO 13341, *Gas cylinders — Fitting of valves to gas cylinders*

ISO 13769, *Gas cylinders — Stamp marking*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
artificial ageing
heat treatment process in which the solute phase is precipitated to give an increased yield strength and tensile strength

3.2
bar·litres
product of the test pressure (in bars) and the water capacity (in litres)

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