

STN	Zariadenia a príslušenstvo na LPG Prepravné vratné fľaše na LPG iné ako zvarané a spájkované ocelové fľaše Pravidelná kontrola	STN EN 16728+A1 07 8215
------------	---	---

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 11/18

Obsahuje: EN 16728:2016+A1:2018

Oznámením tejto normy sa ruší
STN EN 16728 (07 8215) z augusta 2016

127592

EUROPEAN STANDARD

EN 16728:2016+A1

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2018

ICS 23.020.35

Supersedes EN 16728:2016

English Version

LPG equipment and accessories - Transportable refillable LPG cylinders other than traditional welded and brazed steel cylinders - Periodic inspection

Équipements pour GPL et leurs accessoires - Bouteilles transportables et rechargeables pour GPL autres que celles en acier soudé et brasé - Contrôle périodique

Flüssiggas-Geräte und Ausrüstungsteile - Ortsbewegliche, wiederbefüllbare Flaschen für Flüssiggas (LPG), ausgenommen geschweißte und hartgelötete Stahlflaschen - Wiederkehrende Inspektion

This European Standard was approved by CEN on 2 January 2016 and includes Amendment 1 approved by CEN on 19 April 2018.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents	Page
European foreword	4
Introduction	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	7
4 Requirements for periodic inspection	8
4.1 General	8
4.2 Steel and aluminium cylinders	9
4.3 Over-moulded cylinders	9
4.4 Composite cylinders	9
4.5 Rejected cylinders	9
5 Inspections and tests	11
5.1 General	11
5.2 External visual inspection	11
5.2.1 Preparation for external visual inspection	11
5.2.2 Inspection procedure	11
5.2.3 Rejection criteria	12
5.3 Proof pressure test	12
5.3.1 General	12
5.3.2 Hydraulic proof pressure test	13
5.3.3 Pneumatic proof test and leak test	14
5.4 Check of the internal condition of the cylinder	15
5.4.1 Welded aluminium and steel cylinders of alternative design and construction	15
5.4.2 Check of the internal condition of composite cylinders	15
5.5 Inspection of cylinder threads	16
5.5.1 General	16
5.5.2 Internal threads	16
5.5.3 External threads	16
5.5.4 Damaged threads	16
5.6 Inspection of valves	16
6 Final operations	17
6.1 General	17
6.2 Valving	17
6.3 Tare mass	17
6.4 Marking	17
6.5 Purging	17
7 Repair of cylinders	17
8 Records	18
Annex A (normative) Specific requirements for external visual inspection for welded steel LPG cylinders in accordance with EN 14140 or equivalent standard	19
A.1 General	19
A.2 Procedure for establishing rejection criteria carbon steel cylinders	19
A.3 Rejection criteria for stainless steel cylinders	22

Annex B (normative) Specific requirements for external visual inspection of welded aluminium LPG cylinders.....	24
Annex C (normative) Specific requirements for visual inspection of composite LPG cylinders.....	27
C.1 Establishment of rejection criteria	27
C.1.1 General	27
C.1.2 Procedure.....	27
C.2 Examples of rejection criteria.....	27
C.2.1 Cylinders without a metallic liner	27
C.2.2 Cylinders with a metallic liner	32
Annex D (informative) Conditions for 15-year periodic inspection interval of welded steel cylinders manufactured before 1st January 2015	36
D.1 General	36
D.2 Concept of control.....	36
D.3 Conditions	36
Annex E (informative) Guidance on conditions for 10-year periodic inspection interval of composite cylinders.....	38
Annex F (normative) Specific Periodic inspection procedure for over-moulded cylinders (OMC)	39
F.1 General	39
F.1.1 Introduction.....	39
F.1.2 Valve	39
F.1.3 Marking and records	39
F.2 Periodic inspection	39
F.2.1 General	39
F.2.2 External visual inspection	40
F.2.3 Burst test.....	41
F.2.4 Rejection criteria and annual production sampling.....	42
F.2.5 Periodic inspection tests reports and records.....	43
F.3 Lifetime	44
Annex G (informative) Example of an Over-Moulded Cylinder.....	45
Bibliography	47

EN 16728:2016+A1:2018 (E)**European foreword**

This document (EN 16728:2016+A1:2018) has been prepared by Technical Committee CEN/TC 286 “Liquefied petroleum gas equipment and accessories”, the secretariat of which is held by NSAI.

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 December 2018, and conflicting national standards shall be withdrawn at the latest by December 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document includes Amendment 1 approved by CEN on 19 April 2018.

This document **A1** supersedes EN 16728:2016 **A1** and deals with the periodic inspection requirements for transportable refillable LPG cylinders that are not covered by EN 1440.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** **A1**.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

This European Standard has been submitted for reference into the RID [1] and the technical annexes of the ADR [2].

NOTE These regulations take precedence over any clause of this standard. It is emphasized that RID/ADR are being revised regularly at intervals of two years which may lead to temporary non-compliances with the clauses of this standard.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

The primary objective of the periodic inspection of transportable refillable liquefied petroleum gas (LPG) cylinders is that, on the completion of the tests, the cylinders may be re-introduced into service for a further period of time.

The new designs of LPG cylinders have led to the development of alternative methods of inspection.

This European Standard has been prepared to reflect the current methodology for periodic inspection of LPG cylinders, and is based on extensive operating experience.

This European Standard calls for the use of substances and procedures that can be injurious to health if adequate precautions are not taken. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage.

Protection of the environment is a key political issue in Europe and elsewhere, for CEN/TC 286 this is covered in CEN/TS 16765 [3], and this Technical Specification should be read in conjunction with this standard.

It has been assumed in the drafting of this European Standard that the execution of its provisions is entrusted to appropriately qualified and experienced people.

Where judgements are called for, it has been assumed that they are made by competent persons who have been specifically trained for the tasks.

EN 16728:2016+A1:2018 (E)

1 Scope

This European Standard specifies procedures for periodic inspection and testing, for transportable refillable LPG cylinders with a water capacity from 0,5 l up to and including 150 l.

This European Standard is applicable to the following:

- welded steel LPG cylinders manufactured to an alternative design and construction, see EN 14140 or equivalent standard;
- welded aluminium LPG cylinders, see EN 13110 or equivalent standard;
- composite LPG cylinders, see EN 14427 or equivalent standard;
- over-moulded cylinders designed and manufactured according to EN 1442 or EN 14140, see Annex F.

NOTE The requirements of RID/ADR take precedence over those of this standard in the case of cylinders complying with that regulation, including pi marked cylinders.

This European Standard does not apply to cylinders permanently installed in vehicles.

2 Normative references

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

EN 837-1:1996, *Pressure gauges — Part 1: Bourdon tube pressure gauges — Dimensions, metrology, requirements and testing*

EN 837-3:1996, *Pressure gauges — Part 3: Diaphragm and capsule pressure gauges — Dimensions, metrology, requirements and testing*

EN 1442, *LPG equipment and accessories — Transportable refillable welded steel cylinders for LPG — Design and construction*

EN 10028-7, *Flat products made of steels for pressure purposes — Part 7: Stainless steels*

EN 12816, *LPG equipment and accessories — Transportable refillable LPG cylinders — Disposal*

EN 13110, *LPG equipment and accessories — Transportable refillable welded aluminium cylinders for liquefied petroleum gas (LPG) — Design and construction*

EN 14140:2014, *LPG equipment and accessories — Transportable refillable welded steel cylinders for LPG — Alternative design and construction*

EN 14427:2014, *LPG equipment and accessories — Transportable refillable fully wrapped composite cylinders for LPG — Design and construction*

EN 14894, *LPG equipment and accessories — Cylinder and drum marking*

EN 14912, *LPG equipment and accessories — Inspection and maintenance of LPG cylinder valves at time of periodic inspection of cylinders*

EN ISO 4628-3:2003, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 3: Assessment of degree of rusting (ISO 4628-3:2003)*

EN ISO 14245, *Gas cylinders — Specifications and testing of LPG cylinder valves — Self-closing (ISO 14245)*

EN ISO 15995, *Gas cylinders — Specifications and testing of LPG cylinder valves — Manually operated (ISO 15995)*

ISO 2859-1:1999, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ISO 16269-6:2014, *Statistical interpretation of data — Part 6: Determination of statistical tolerance intervals*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN