SLOVENSKI STANDARD

SIST EN 12816:2011

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Oprema in pribor za utekočinjeni naftni plin (UNP) - Premične, ponovno polnljive jeklenke za utekočinjeni naftni plin (UNP) - Trajno izločanje iz uporabe

LPG equipment and accessories - Transportable refillable LPG cylinders - Disposal

Flüssiggas-Geräte und Ausrüstungsteile - Ortsbewegliche wiederbefüllbare Flüssiggas-Behälter - Entsorgung

Equipements et accessoires pour GPL - Bouteilles transportables et rechargeables pour GPL - Elimination

Ta slovenski standard je istoveten z: EN 12816:2010

ICS:

13.030.50	Recikliranje	Recycling
23.020.30	Tlačne posode, plinske jeklenke	Pressure vessels, gas cylinders

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

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ICS 13.030.50; 23.020.30

Supersedes EN 12816:2001

English Version

LPG equipment and accessories - Transportable refillable LPG cylinders - Disposal

Équipements et accessoires pour GPL - Bouteilles transportables et rechargeables pour GPL - Élimination

Flüssiggas-Geräte und Ausrüstungsteile - Ortsbewegliche wiederbefüllbare Flaschen für Flüssiggas (LPG) - Entsorgung

This European Standard was approved by CEN on 20 November 2010.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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Foreword

This document (EN 12816:2010) 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 June 2011, and conflicting national standards shall be withdrawn at the latest by June 2011.

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 supersedes EN 12816:2001.

The main technical changes in this revision are the:

- inclusion of cylinders manufactured from composite materials and aluminium;
- addition of an environmental checklist Annex A.

Users of this standard, prepared in the field of application of Article 118A of the EC Treaty, should be aware that standards have no formal legal relationship with Directives that may have been made under Article 118A of the Treaty. In addition, national legislation in the Member states may contain more stringent requirements than the minimum requirements of a Directive based on Article 118A. Information on the relationship between the national legislation implementing Directives based on Article 118A and this EN may be given in a national foreword of the national standard implementing this standard EN.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This European Standard specifies a method for safe handling and disposal of refillable LPG cylinders, of water capacity 0,5 litres up to and including 150 litres, that have been received into filling/maintenance/requalification plants from customers, waste collection depots, etc.

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

Protection of the environment is a key political issue in Europe and elsewhere. Protection of the environment is taken in a very broad sense. The standard takes into consideration the total lifecycle aspects of the activities involved in complying with the standard. These activities include all phases such as scrapping, recycling of materials, etc.

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

1 Scope

This European Standard specifies methods for the safe gas freeing and disposal of refillable LPG cylinders manufactured from steel, composite materials and aluminium, of water capacity 0,5 litres up to and including 150 litres.

This European Standard is applicable to the following:

— welded and brazed steel LPG cylinders with a specified minimum wall thickness (see EN 1442 and EN 12807 or equivalent standard);

— welded steel LPG cylinders without specified minimum wall thickness (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).

This European Standard is intended to be applied to cylinders complying with ADR (including pi marked cylinders) and also to existing non ADR cylinder populations.

2 Normative references

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

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

3 Terms and definitions

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

3.1
liquefied petroleum gas
LPG
mixture of predominantly butane or propane with traces of other hydrocarbon gases classified in accordance with UN number 1965, hydrocarbon gases mixture, liquefied, NOS or UN number 1075, petroleum gases, liquefied

NOTE In some countries, UN numbers 1011 and 1978 may also be designated LPG.

3.2
gas free
with an LPG concentration in air less than 20 % of the lower explosive limit

3.3
disposal
discarding of LPG cylinders in the form of scrap material after gas freeing

3.4
cylinder disposer
organisation responsible for disposal of an LPG cylinder

3.5
purging
displacing LPG with a non-flammable gas, steam or water

3.6
evacuation
removal of the LPG from the cylinder by the use of a vacuum

4 Gas freeing of cylinders

4.1 Cylinder disposers shall remove LPG from cylinders by:

— returning to an LPG storage tank via a suitably designed pump/compressor system, or

— flaring through a purpose designed flare stack fitted with a flame arrestor as required, or

— venting through a purpose designed high level vent, in a controlled manner, that ensures that the vented gas is diluted to less than 20 % of the lower explosive limit before it reaches ground level, or any potential source of ignition, or

— a combination of any of these options.

For safety and environmental protection reasons the first option is preferable. However it is recommended that, at a minimum, the liquid contents of cylinders should always be returned to an LPG storage tank.

4.2 Equipment used for removal of LPG shall be capable of removing liquid LPG from any cylinder however full. It should also be capable of removing LPG vapour so that the internal pressure is reduced to atmospheric.

4.3 Cylinders shall be made gas free by a safe means, for example:

— evacuation, or

— purging.

NOTE 1 Where water is the purging fluid, waste water should be recycled where possible for further purging applications.

NOTE 2 Where possible, the recovery of the gas should be maximised in a closed loop system and stored for re-use.

4.4 Any flammable liquids remaining in the cylinder (e.g. oily residues) shall be removed and disposed of in a suitable manner before the cylinder can be considered gas free.

4.5 Cylinders shall be checked to ensure that they are depressurised and gas free prior to disposal.

4.6 Valves and other fittings shall be:

— scrapped and recycled, or

— inspected/reconditioned in accordance with EN 14912 for re-use.

5 Disposal of cylinders

5.1 Disposal shall only take place after a cylinder is made gas free and the cylinder valve has been removed.

5.2 Cylinders shall be made unserviceable for storing LPG by any of the following methods:

- mechanical crushing;
- mechanical shredding;
- piercing holes of 50 mm diameter or more, in at least two places;
- irregular cutting of the neck of the cylinder;
- irregular cutting of the body of the cylinder, into two or more pieces.

NOTE Noise levels from the above methods should be evaluated and measures put in place to minimise the impact upon the external environment.

5.3 Cylinders made unserviceable in accordance with 5.2 shall be considered as scrap material for disposal and recycled in order to maximise the re-use of scrap material and minimise the total energy life cycle of the cylinders. The cylinder disposer shall endeavour to minimise wastage of material by selecting the most appropriate scrapping method.

NOTE Any coatings on cylinders may affect recycling methods and should be taken into account.

5.4 Composite cylinders shall be disposed of in accordance with the manufacturers' instructions, e.g. the recycling of thermoplastic parts and metallic liners, the grinding of thermoset parts.