SLOVENSKI STANDARD
SIST EN 16631:2015

01-julij-2015

Oprema in pribor za utekočinjeni naftni plin (UNP) - Varnostni ventili za tlačne posode za utekočinjeni naftni plin (UNP) - Zahteve za obnovo

LPG equipment and accessories - Pressure relief valves for LPG pressure vessels - Reconditioning requirements

Flüssiggas-Geräte und Ausrüstungsteile - Sicherheitsventile für Druckbehälter für Flüssiggas (LPG) - Anforderungen an die Instandsetzung

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Équipements pour GPL et leurs accessoires - Soupapes de sécurité pour réservoirs de GPL sous pression - Exigences de reconditionnement

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ICS:

23.020.30	Tlačne posode, plinske jeklenke	Pressure vessels, gas cylinders
23.060.40	Tlačni regulatorji	Pressure regulators

SIST EN 16631:2015 **en,fr,de**

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English Version

LPG equipment and accessories - Pressure relief valves for LPG pressure vessels - Reconditioning requirements

Équipements pour GPL et leurs accessoires - Soupapes de sécurité pour réservoirs de GPL sous pression - Exigences de reconditionnement

Flüssiggas-Geräte und Ausrüstungsteile - Sicherheitsventile für Druckbehälter für Flüssiggas (LPG) - Anforderungen an die Instandsetzung

This European Standard was approved by CEN on 5 March 2015.

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Foreword

This document (EN 16631:2015) 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of an identical text or by endorsement, at the latest by November 2015, and conflicting national standards shall be withdrawn at the latest by November 2015.

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.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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Introduction

Protection of the environment is a key political issue in Europe and elsewhere. Protection of the environment is taken in a very broad sense. What is meant is the total life cycle aspects of, e.g. a product on the environment, including expenditure of energy and during all phases from mining of raw materials, fabrication, packaging, distribution, use, scrapping, recycling of materials, etc.

Provisions have to be restricted to a general guidance. Limit values are specified in national laws. It is recommended that companies using this standard develop an environmental management policy. For guidance see ISO 14000 series.

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 trained specifically for the tasks.

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1 Scope

This European Standard specifies the requirements for the reconditioning, retesting and certification of Pressure Relief Valves (PRVs) for LPG pressure vessels covered under the scope of EN 14129.

This European Standard applies to retesting and reconditioning of PRVs that are carried out in a workshop and does not apply to site adjustment of installed PRVs.

Annex A is an informative annex detailing a sampling approach for PRV requalification which should only be used in case of on-site requalification of series produced pressure vessels fitted with series produced PRVs.

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 751-1, *Sealing materials for metallic threaded joints in contact with 1st, 2nd and 3rd family gases and hot water — Part 1: Anaerobic jointing compounds*

EN 751-2, *Sealing materials for metallic threaded joints in contact with 1st, 2nd and 3rd family gases and hot water — Part 2: Non-hardening jointing compounds*

EN 751-3, *Sealing materials for metallic threaded joints in contact with 1st, 2nd and 3rd family gases and hot water — Part 3: Unsintered PTFE tapes*

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

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EN 14129, *LPG Equipment and accessories — Pressure relief valves for LPG pressure vessels*

ISO 2230, *Rubber products — Guidelines for storage*

3 Terms and definitions

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

3.1
liquefied petroleum gas
LPG
low pressure liquefied gas composed of one or more light hydrocarbons which are assigned to UN 1011, UN 1075, UN 1965, UN 1969 or UN 1978 only and which consists mainly of propane, propene, butane, butane isomers, butene with traces of other hydrocarbon gases

3.2
pressure relief valve
PRV
self-closing valve which automatically, without the assistance of any energy other than that of the vapour concerned, discharges vapour at a predetermined pressure, and operates with a pop action

Note 1 to entry: This is known as a “safety valve” in ADR.

3.3
competent person
person which by combination of appropriate qualification, training, experience, and resources, is able to make objective judgments on the subject

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3.4
setting
operation of adjusting and testing the start to discharge pressure to the nominal set pressure

3.5
reconditioning
operation that includes complete dismantling of the valve, evaluation and replacement of components and reassembly

3.6
pop action
rapid opening of the pressure relief valve sealing element so that the pressure relief valve is fully open, resulting from an increase of inlet pressure creating a sudden increase in force and compression of the spring

3.7
sealing element
non-metallic moveable resilient component which affects a seal by contact with the pressure relief valve seat

4 General

PRVs shall have a storage life of two years after assembly.

All PRVs shall be subjected to inspection in accordance with Clause 6 prior to reconditioning, setting or changing the set pressure.

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PRVs where the set pressure (reset) is to be changed, shall meet the requirements of Clause 9.

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PRVs that have been stored for more than two years, but are less than five years old, shall have the sealing element changed and shall meet the requirements of Clauses 6 and 8.

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PRVs that have been stored for more than five years shall be reconditioned in accordance with Clauses 6, 7 and 8.

PRVs that are to be reconditioned shall be subjected to reconditioning in accordance with Clauses 6, 7 and 8.

5 Materials

5.1 General

Components for reconditioning shall meet the Original Equipment Manufacturer (OEM) specification.

5.2 Lubricants, sealants and adhesives

Lubricants, sealants and adhesives shall be compatible with LPG and not interfere with the operation of the PRV, when used on operating threads and seals. Sealants shall comply with the requirements of EN 751-1, EN 751-2 or EN 751-3.

5.3 Shelf life

5.3.1 Shelf life of components

Metallic components, other than springs (see 5.3.2), have an unlimited shelf life.

Rubber components shall have a storage life of 7 years with the ability to extend this to 10 years when the requirements of ISO 2230 are met.

Lubricants, sealants and adhesives shall have a shelf life in accordance with the manufacturer's instructions.

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5.3.2 Storage life of assembled PRVs

After manufacture PRVs may be stored for up to two years when stored in line with the manufacturer's recommendations. Manufacturers shall ensure that the functional characteristics of the PRV such as opening pressure, reseating pressure, flow capacity, etc. remain in line with the design standard and the specification during this period.

PRVs that exceed this storage period of two years shall have the sealing element replaced and shall be assembled, set and tested in accordance with Clause 8 to ensure correct operation.

PRVs that have been in storage for more than five years shall be reconditioned.

Springs and seals on PRVs that have been in storage for more than five years shall not be reused.

6 Inspection

PRVs shall be subjected to inspection for the following criteria to establish the suitability of the PRV or its components for reuse.

Components which do not meet the following criteria and cannot be safely rectified shall be scrapped:

— stems that have drill holes in the potentially stressed area above the nut;

— bent or damaged stems;

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— bent, deformed, corroded, badly marked, scored or cracked bodies;

— contaminants, foreign matter and corrosion;

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— cross-threaded, damaged or stripped PRV threads;

— indications of having been subjected to excessive heat or having been in a fire;

— foreign matter in visible internal passageways; or

— evidence of abuse or tampering.

PRVs that are to be reconditioned shall also be checked for:

— damaged sealing surfaces and/or any non-metallic sealing elements; and

— non-standard parts.

7 Reconditioning

Each PRV shall be dismantled into its component parts. Each component shall be inspected to ensure its suitability for reuse including meeting the manufacturer's original specification.

Threads shall be cleaned and checked for stripped threads, damage, distortion, cuts, cracks or corrosion. Threads shall be assessed by a competent person to determine if they can be rectified and reused.

Taper threads where the full form thread gauge screws on by more than 1 turn over maximum shall be scrapped. Threads shall be checked using thread gauges.

During reconditioning springs shall not be reused once removed from a PRV.