

SLOVENSKI STANDARD
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Oprema in pribor za utekočinjeni naftni plin (UNP) - Cevovodi in podpore - Tekoča in parna faza UNP

LPG Equipment and Accessories - Pipework systems and supports - LPG in liquid phase and vapour pressure phase

Flüssiggas-Geräte und Ausrüstungsteile - Rohrleitungssysteme und -befestigungen - Flüssigphase und unregelmäßige Gasphase von Flüssiggas (LPG)

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75.200	Oprema za skladiščenje nafte, naftnih proizvodov in zemeljskega plina	Petroleum products and natural gas handling equipment
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LPG Equipment and Accessories - Pipework systems and supports - LPG in liquid phase and vapour pressure phase

Flüssiggas-Geräte und Ausrüstungsteile -
Rohrleitungssysteme und -befestigungen -
Flüssigphase und unregelmäßige Gasphase von Flüssiggas
(LPG)

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 286.

If this draft becomes a European Standard, 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.

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

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prEN 16125:2018 (E)**European foreword**

This document (prEN 16125:2018) has been prepared by Technical Committee CEN/TC 286 “Liquefied petroleum gas equipment and accessories”, the secretariat of which is held by NSAI.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 16125:2015.

The main technical changes include:

- the removal of the environmental annex and associated clauses in favour of a reference to CEN/TS 16765,
- the removal of Annex E (*Manufacturing and type testing of composite pipes*) with the intent of developing a dedicated composite pipe manufacturing standard within CEN/TC 155. At the time of this document going to public enquiry, the proposed project within CEN/TC 155 is under consideration.

At all stages of building and operating pipework systems the use of materials and disposal of waste material may have an effect on the environment. CEN/TS 16765 [15] sets out environmental considerations for this document.

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Introduction

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

This document is intended for users who take on the responsibility for the assembly of the pipework on site.

Protection of the environment is a key political issue in Europe and elsewhere. Protection of the environment is taken in a very broad sense, as in 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.

It is recommended that manufacturers develop an environmental management policy. For guidance see the ISO 14000 [9] series. It has been assumed in the drafting of this document that the execution of its provisions is entrusted to appropriately qualified and experienced people.

All pressures are gauge unless otherwise stated.

NOTE This standard requires measurement of material properties, dimensions and pressures. All such measurements are subject to a degree of uncertainty due to tolerances in measuring equipment, etc. It may be beneficial to refer to the leaflet “measurement uncertainty leaflet (SP INFO 2000 27 uncertainty.pdf)”[14].

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prEN 16125:2018 (E)**1 Scope**

This document specifies the requirements for the design, construction, testing, commissioning, operation and maintenance of LPG pipework in both the liquid phase and at full vapour pressure.

This document is applicable to LPG pipework having a maximum allowable pressure of less than or equal to 25 bar.

This document is applicable to new LPG pipework as well as to replacements of, or extensions to, existing LPG pipework.

This document is not applicable to:

- pipelines and their accessories;
- pipework for the propulsion systems of road vehicles or boats; and
- pipework on ships.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 549, *Rubber materials for seals and diaphragms for gas appliances and gas equipment*

EN 571-1, *Non destructive testing - Penetrant testing - Part 1: General principles*

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*

EN 837 (all parts), *Pressure gauges*

EN 1045, *Brazing - Fluxes for brazing - Classification and technical delivery conditions*

EN 1057, *Copper and copper alloys - Seamless, round copper tubes for water and gas in sanitary and heating applications*

EN 1092-1, *Flanges and their joints - Circular flanges for pipes, valves, fittings and accessories, PN designated - Part 1: Steel flanges*

EN 1254-1, *Copper and copper alloys - Plumbing fittings - Part 1: Fittings with ends for capillary soldering or capillary brazing to copper tubes*

EN 1254-2, *Copper and copper alloys - Plumbing fittings - Part 2: Fittings with compression ends for use with copper tubes*

EN 1254-5, *Copper and copper alloys - Plumbing fittings - Part 5: Fittings with short ends for capillary brazing to copper tubes*

EN 1515-1, *Flanges and their joints – Bolting – Part 1: Selection of bolting*

EN 10216-1, *Seamless steel tubes for pressure purposes - Technical delivery conditions – Part 1: Non-alloy steel tubes with specified room temperature properties*

EN 10216-2, *Seamless steel tubes for pressure purposes - Technical delivery conditions – Part 2: Non-alloy and alloy steel tubes with specified elevated temperature properties*

EN 10216-3, *Seamless steel tubes for pressure purposes - Technical delivery conditions – Part 3: Alloy fine grain steel tubes*

EN 10216-4, *Seamless steel tubes for pressure purposes - Technical delivery conditions – Part 4: Non-alloy and alloy steel tubes with specified low temperature properties*

EN 10216-5, *Seamless steel tubes for pressure purposes - Technical delivery conditions – Part 5: Stainless steel tubes*

EN 10217-1, *Welded steel tubes for pressure purposes - Technical delivery conditions – Part 1: Non-alloy steel tubes with specified room temperature properties*

EN 10217-2, *Welded steel tubes for pressure purposes - Technical delivery conditions – Part 2: Electric welded non-alloy and alloy steel tubes with specified elevated temperature properties*

EN 10217-3, *Welded steel tubes for pressure purposes - Technical delivery conditions – Part 3: Alloy fine grain steel tubes*

EN 10217-4, *Welded steel tubes for pressure purposes - Technical delivery conditions – Part 4: Electric welded non-alloy steel tubes with specified low temperature properties*

EN 10217-6, *Welded steel tubes for pressure purposes - Technical delivery conditions – Part 6: Submerged arc welded non-alloy steel tubes with specified low temperature properties*

EN 10217-7, *Welded steel tubes for pressure purposes - Technical delivery conditions – Part 7: Stainless steel tubes*

EN 10226-1, *Pipe threads where pressure tight joints are made on the threads – Part 1: Taper external threads and parallel internal threads - Dimensions, tolerances and designation*

EN 10226-2, *Pipe threads where pressure tight joints are made on the threads – Part 2: Taper external threads and taper internal threads - Dimensions, tolerances and designation*

EN 10253-2, *Butt-welding pipe fittings – Part 2: Non alloy and ferritic alloy steels with specific inspection requirements*

EN 12068, *Cathodic protection - External organic coatings for the corrosion protection of buried or immersed steel pipelines used in conjunction with cathodic protection - Tapes and shrinkable materials*

EN 12266-1, *Industrial valves - Testing of metallic valves – Part 1: Pressure tests, test procedures and acceptance criteria - Mandatory requirements*

EN 12266-2, *Industrial valves - Testing of metallic valves – Part 2: Tests, test procedures and acceptance criteria - Supplementary requirements*

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EN 12542, *LPG equipment and accessories - Static welded steel cylindrical tanks, serially produced for the storage of Liquefied Petroleum Gas (LPG) having a volume not greater than 13 m³ - Design and manufacture*

EN 12799, *Brazing - Non-destructive examination of brazed joints*

EN 13175, *LPG Equipment and accessories - Specification and testing for Liquefied Petroleum Gas (LPG) pressure vessel valves and fittings*

EN 14291, *Foam producing solutions for leak detection on gas installations*

EN 14324, *Brazing - Guidance on the application of brazed joints*

EN 15001-1, *Gas Infrastructure - Gas installation pipework with an operating pressure greater than 0,5 bar for industrial installations and greater than 5 bar for industrial and non-industrial installations – Part 1: Detailed functional requirements for design, materials, construction, inspection and testing*

EN ISO 3183, *Petroleum and natural gas industries - Steel pipe for pipeline transportation systems (ISO 3183)*

EN ISO 5817, *Welding - Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) - Quality levels for imperfections (ISO 5817)*

EN ISO 9454-2, *Soft soldering fluxes - Classification and requirements – Part 2: Performance requirements (ISO 9454-2)*

EN ISO 9606-1, *Qualification testing of welders - Fusion welding – Part 1: Steels (ISO 9606-1)*

EN ISO 9712:2012, *Non-destructive testing - Qualification and certification of NDT personnel (ISO 9712:2012)*

EN ISO 10380, *Pipework - Corrugated metal hoses and hose assemblies (ISO 10380)*

EN ISO 10497, *Testing of valves - Fire type-testing requirements (ISO 10497)*

EN ISO 16810, *Non-destructive testing - Ultrasonic testing - General principles (ISO 16810)*

EN ISO 17636-1, *Non-destructive testing of welds - Radiographic testing – Part 1: X- and gamma-ray techniques with film (ISO 17636-1)*

EN ISO 17637, *Non-destructive testing of welds - Visual testing of fusion-welded joints (ISO 17637)*

EN ISO 17638, *Non-destructive testing of welds - Magnetic particle testing (ISO 17638)*

EN ISO 17640, *Non-destructive testing of welds - Ultrasonic testing - Techniques, testing levels, and assessment (ISO 17640)*

EN ISO 17672, *Brazing - Filler metals (ISO 17672)*

EN ISO 17292, *Metal ball valves for petroleum, petrochemical and allied industries (ISO 17292)*

ASME B31.3, *Process piping*

ASME B31.4, *Pipeline transportation systems for liquids and slurries*

ASME B16.5, *Pipe Flanges and Flanged Fittings: NPS 1/2 through NPS 24 Metric/Inch Standard*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

accessible

capable of being reached for inspection, removal or maintenance without the removal of permanent structures

3.2

brazed joint

joint obtained by the joining of metal parts with alloys which melt at temperatures that is generally higher than 450 °C, but less than the melting temperatures of the joined parts

3.3

commissioning

preparation for safe service

3.4

competent person

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

3.5

composite pipe

pipe manufactured from thermoplastic and/or stainless steel which is also reinforced with stainless steel or other non-metallic materials and has an outer thermoplastic protective cover

3.6

fitting

pressure containing component fitted to an LPG pressure system

3.7

flexible pipe

pipe that can be bent by hand to any radius above a set minimum without any change in performance

3.8

hydrostatic relief valve

self-closing valve which automatically, without the assistance of any energy other than that of the fluid concerned, discharges fluid at a predetermined pressure

prEN 16125:2018 (E)**3.9****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

3.10**maximum allowable pressure**

maximum pressure for which the equipment is designed

Note 1 to entry: All pressures are gauge pressures unless otherwise stated.

3.11**mechanical jointing**

joint in which gas tightness is achieved by compression with or without a seal

Note 1 to entry: This joint can be readily disassembled and reassembled.

3.12**nominal diameter****DN**

numerical designation of the size of a component, which is a convenient round number, approximately equal to the manufacturing dimensions in millimetres (mm)

EXAMPLE DN 50.

3.13**non-return valve**

valve designed to close automatically to restrict reverse flow

3.14**pipeline**

piping or a system of piping designed for the conveyance of any fluid or substance to or from an installation (onshore or offshore) starting from and including the last isolation device located within the confines of the installation, including all the annexed equipment designed specifically for pipelines

Note 1 to entry: This definition is extracted from 2014/68/EU (PED) [16].

3.15**pipework**

pressure containing enclosure used for the conveyance of LPG consisting of pipe, pipe fittings, valves and other accessories

3.16**purging**

displacing LPG with a non-flammable gas, steam or water or the reverse procedure

3.17**road tanker**

rigid vehicle, semi-trailer or trailer comprising of one or more fixed pressure vessels

Note 1 to entry: Referred to as fixed tanks (tank-vehicles) and demountable tanks in the ADR.