

**SLOVENSKI
STANDARD****SIST EN 12542**

december 2010

Oprema in pribor za utekočinjeni naftni plin (UNP) – Stabilne, varjene, jeklene valjaste posode serijske proizvodnje za skladiščenje utekočinjenega naftnega plina (UNP), katerih prostornina ni večja od 13 m³ – Konstruiranje in proizvodnja

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

iTeh STANDARD PREVIEW

Equipements pour gaz de pétrole liquéfié et leurs accessoires – Réservoirs cylindriques fixes, aériens, en acier soudé, fabriqués en série pour le stockage de gaz de pétrole liquéfié (GPL) ayant un volume inférieur ou égal à 13 m³ – Conception et fabrication

<https://standards.itih.ai/catalog/standards/sist/2e344bfl-b56f-4670-ada4-d41a1945dd0d/sist-en-12542-2010>

Flüssiggas-Geräte und Ausrüstungsteile – Ortsfeste, geschweißte zylindrische Behälter aus Stahl, die serienmäßig für die Lagerung von Flüssiggas (LPG) hergestellt werden, mit einem Fassungsvermögen bis 13 m³ – Gestaltung und Herstellung

ICS 23.020.30

Referenčna oznaka
SIST EN 12542:2010 ((sl)en)

Nadaljevanje na straneh od II do V in od 1 do 62

SIST EN 12542 : 2010

NACIONALNI UVOD

Standard SIST EN 12542 ((sl)en), Oprema in pribor za utekočinjeni naftni plin (UNP) – Stabilne, varjene, jeklene valjaste posode serijske proizvodnje za skladiščenje utekočinjenega naftnega plina (UNP), katerih prostornina ni večja od 13 m³ – Konstruiranje in proizvodnja, 2010, ima status slovenskega standarda in je po metodi ponatisa izvirnika z nacionalnim dodatkom privzet evropski standard EN 12542 (en), 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, 2010.

Ta slovenski standard nadomešča slovenski standard SIST EN 12542:2002 in dopolni SIST EN 12542:2002/A1:2005 ter slovenski standard SIST EN 14075:2003 in dopolni SIST EN 14075:2003/A1:2005.

NACIONALNI PREDGOVOR

Evropski standard EN 12542:2010 je pripravil tehnični odbor Evropskega komiteja za standardizacijo CEN/TC 286 Oprema in pribor za utekočinjeni naftni plin.

Pripravo tega standarda sta CEN poverila Evropska komisija in Evropsko združenje za prosto trgovino. Ta evropski standard ustreza bistvenim zahtevam evropske Direktive 97/23/ES.

Odločitev za izdajo tega standarda je dne 14. oktobra 2010 sprejel tehnični odbor SIST/TC TLP Tlačne posode.

NACIONALNI DODATEK

Celotno ozemlje Slovenije spada v III. klimatsko cono. Najnižja temperatura, ki jo je treba upoštevati pri konstruiranju, je –20 °C.

ZVEZA Z NACIONALNIMI STANDARDI

S privzemom tega evropskega standarda veljajo za omejeni namen referenčnih standardov vsi standardi, navedeni v izvirniku, razen standardov, ki so že sprejeti v nacionalno standardizacijo:

SIST EN 287-1 (en)	Preskušanje varilcev – Talilno varjenje – 1. del: Jekla
SIST EN 462-1 (en)	Neporušitveno preskušanje – Kakovost radiografske slike – 1. del: Indikator kakovosti slike (žični zaznavnik) – Ugotavljanje stopnje kakovosti slike
SIST EN 462-2 (en)	Neporušitveno preskušanje – Kakovost radiografske slike – 2. del: Indikator kakovosti slike (stopničasti zaznavnik z luknjami) – Ugotavljanje stopnje kakovosti slike
SIST EN 473:2008 (en, fr, de)	Neporušitveno preskušanje – Kvalificiranje in certificiranje osebja za neporušitvene preiskave – Splošna načela
SIST EN 571-1 (en)	Neporušitveno preskušanje – Preskušanje s penetranti – 1. del: Splošna načela
SIST EN 756 (en)	Dodajni materiali za varjenje – Masivne žice in kombinacije masivnih žic in praškov in cevni strženskih elektrod in praškov za oblačno varjenje nelegiranih in finožrnatih jekel pod praškom – Razvrstitev
SIST EN 837-2 (en)	Merilniki tlaka – 2. del: Priporočila za izbiro in vgradnjo merilnikov tlaka
SIST EN 875 (de)	Porušitveni preskusi zvarov na kovinskih materialih – Udarni preskusi – Položaj preskušanca, smer zareze in preiskava

SIST EN 876 (de)	Porušitveni preskusi zvarov na kovinskih materialih – Vzдолžni natezni preskus materiala zvara talilnih zvarnih spojev
SIST EN 895 (de)	Porušni preskus zvarnih spojev na kovinskih materialih – Prečni natezni preskus
SIST EN 970 (de)	Varjenje, vizualni pregled zvarnih spojev pri talilnem varjenju
SIST EN 1290:1999 (en)	Neporušitvene preiskave zvarov – Preiskava zvarov z magnetnimi delci
SIST EN 1321 (de)	Porušitveni preskusi zvarov na kovinskih materialih – Makroskopska in mikroskopska preiskava zvarov
SIST EN 1418 (de)	Varilno osebje – Preskušanje za odobritev osebja za popolnoma mehanizirano talilno in uporabno varjenje kovinskih materialov
SIST EN 1435:1998 (de)	Neporušitvene preiskave zvarnih spojev – Radiografski pregled zvarnih spojev
SIST EN 1708-1 (en, fr, de)	Varjenje – Opisi zvarnih spojev na jeklu – 1. del: Tlačne komponente
SIST EN 1712:1999 (en)	Neporušitvena preiskava zvarov – Ultrazvočna preiskava zvarnih spojev – Stopnje sprejemljivosti
SIST EN 1713:1999 (en)	Neporušitvena preiskava zvarov – Ultrazvočna preiskava – Karakterizacija indikacij v zvarih
SIST EN 1714:1999 (de)	Neporušitvene preiskave zvarnih spojev – Pregled zvarnih spojev z ultrazvokom
SIST EN 10025-2 (en)	Vroče valjani izdelki iz konstrukcijskih jekel – 2. del: Tehnični dobavni pogoji za nelegirana konstrukcijska jekla
SIST EN 10028-2 (en)	Ploščati izdelki iz jekel za tlačne posode – 2. del: Nelegirana in legirana jekla s specificiranimi lastnostmi pri povišanih temperaturah
SIST EN 10028-3 (en)	Ploščati jekleni izdelki za tlačne posode – 3. del: Variva drobnozrnata jekla, normalizirana
SIST EN 10028-5 (en)	Ploščati jekleni izdelki za tlačne posode – 5. del: Variva drobnozrnata jekla, toplotnomehansko valjana
SIST EN 10204:2004 (en)	Kovinski izdelki – Vrste certifikatov kontrole
SIST EN 12517-1:2006 (en)	Neporušitveno preskušanje zvarnih spojev – 1. del: Ocenjevanje zvarnih spojev na jeklu, niklju, titanu in njihovih zlitinah z radiografijo - Stopnje sprejemljivosti
SIST EN 13445-2 (en)	Neogrevane tlačne posode – 2. del: Materiali
SIST EN 13445-3 (en)	Neogrevane tlačne posode – 3. del: Konstruiranje
SIST EN 13636 (en)	Katodna zaščita vkopanih kovinskih rezervoarjev in pripadajočih cevovodov
SIST EN 14717 (en)	Varjenje in sorodni postopki – Kontrolni vprašalnik v zvezi z okoljem
SIST EN 14784-1 (en)	Neporušitveno preskušanje – Industrijska računalniška radiografija s hranjenjem na fosforjih slikovnih ploščah – 1. del: Klasifikacija sistemov
SIST EN 14784-2 (en)	Neporušitveno preskušanje – Industrijska računalniška radiografija s hranjenjem na fosforjih ploščah – 2. del: Splošna načela za preskušanje kovinskih materialov z uporabo rentgenskih žarkov in žarkov gama

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SIST EN ISO 636 (en, fr, de)	Dodajni materiali za varjenje – Palice, žice in čisti vari pri varjenju nelegiranih in drobnozrnatih jekel po TIG – Razvrstitev (ISO 636:2004)
SIST EN ISO 2560 (en, fr, de)	Dodajni materiali za varjenje – Oplaščene elektrode za obločno varjenje nelegiranih in drobnozrnatih jekel – Razvrstitev (ISO 2560:2009)
SIST EN ISO 5173 (en, fr, de)	Porušitveno preskušanje zvarnih spojev na kovinskih materialih – Upogibni preskusi (ISO 5173:2009)
SIST EN ISO 5817:2007 (en, fr, de)	Varjenje – Talilno zvarjeni spoji na jeklu, niklju, titanu in njihovih zlitinah (varjenje s snopom izključeno) – Stopnje sprejemljivosti nepopolnosti (ISO 5817:2003, popravljena verzija:2005 vsebuje tehnični popravek 1:2006)
SIST EN ISO 6520-1:2008 (en, fr, de)	Varjenje in sorodni postopki – Klasifikacija geometrijskih nepopolnosti v kovinskih materialih – 1. del: Talilno varjenje (ISO 6520-1:2007)
SIST EN ISO 14021 (en)	Okoljske označbe in deklaracije – Okoljsko samodeklariranje (okoljsko označevanje II. vrste) (ISO 14021:1999)
SIST EN ISO 14024 (en)	Okoljske označbe in deklaracije – Okoljsko označevanje I. vrste – Načela in postopki (ISO 14024:1999)
SIST EN ISO 14025 (en, fr, de)	Okoljske označbe in deklaracije – Okoljsko označevanje III. vrste – Načela in postopki (ISO 14025:2006)
SIST EN ISO 15609-1:2005 (en)	Popis in kvalifikacija varilnih postopkov za kovinske materiale – Popis varilnega postopka – 1. del: Obločno varjenje (ISO 15609-1:2004)
SIST EN ISO 15613:2004 (en)	Popis in kvalifikacija varilnih postopkov za kovinske materiale – Razvrščanje na podlagi predproizvodnega preskusa varjenja (ISO 15613:2004)
SIST EN ISO 15614-1:2004 (en)	Specifikacija in razvrščanje varilnih postopkov za kovinske materiale – Preskus postopka varjenja – 1. del: Obločno in plinsko varjenje jekel in obločno varjenje niklja in nikljevih zlitin (ISO 15614-1:2004)
SIST EN ISO 17632 (en, fr, de)	Dodajni materiali za varjenje – Polnjene žice za obločno varjenje nelegiranih in drobnozrnatih jekel po MIG/MAG – Razvrstitev (ISO 17632:2004)
SIST EN ISO 17635 (en, fr, de)	Neporušitveno preskušanje zvarov – Splošna pravila za kovinske materiale (ISO 17635:2010)
SIST EN ISO 17638 (en, fr, de)	Neporušitveno preskušanje zvarnih spojev – Preskušanje z magnetnimi delci (ISO 17638:2003)
SIST EN ISO 23277:2010 (en, fr, de)	Neporušitveno preskušanje zvarnih spojev – Preskušanje zvarnih spojev s penetranti - Stopnje sprejemljivosti (ISO 23277:2006)
SIST EN ISO 23278:2010(en, fr, de)	Neporušitveno preskušanje zvarnih spojev – Preskušanje zvarnih spojev z magnetnimi delci - Stopnje sprejemljivosti (ISO 23278:2006)
SIST ISO 9162 (en)	Naftni proizvodi – Goriva (razred F) – Utekočinjeni naftni plini – Specifikacije

OSNOVA ZA IZDAJO

- privzem standarda EN 12542:2010 (en)

PREDHODNE IZDAJE

- SIST EN 12542:2002 (en)
- SIST EN 12542:2002/A1:2005 (en)
- SIST EN 14075:2003 (en)
- SIST EN 14075:2003/A1:2005 (en)

OPOMBE

- Povsod, kjer se v besedilu standarda uporablja izraz “evropski standard”, v SIST EN 12542:2010 to pomeni “slovenski standard”.
- Nacionalni uvod in nacionalni predgovor nista sestavni del standarda.
- Ta nacionalni dokument je istoveten EN 12542:2010 in je objavljen z dovoljenjem

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EUROPEAN STANDARD

EN 12542

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2010

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Supersedes EN 12542:2002, EN 14075:2002

English Version

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

Equipements pour gaz de pétrole liquéfié et leurs accessoires - Réservoirs cylindriques fixes, aériens, en acier soudé, fabriqués en série pour le stockage de gaz de pétrole liquéfié (GPL) ayant un volume inférieur ou égal à 13 m³ - Conception et fabrication

Flüssiggas-Geräte und Ausrüstungsteile - Ortsfeste, geschweißte zylindrische Behälter aus Stahl, die serienmäßig für die Lagerung von Flüssiggas (LPG) hergestellt werden, mit einem Fassungsvermögen bis 13 m³ - Gestaltung und Herstellung

This European Standard was approved by CEN on 26 June 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 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 Management Centre has the same status as the official versions.

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

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Foreword

This document (EN 12542:2010) 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 February 2011, and conflicting national standards shall be withdrawn at the latest by February 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 12542:2002, EN 14075:2002.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

The main technical changes in this revision include:

- widening of the Scope to include requirements for underground tanks;
- addition of environmental considerations;
- reference to the latest welding standards; and
- introduction of radioscopy as a permitted alternative to radiographic examination of welds.

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.

EN 12542:2010 (E)**Introduction**

This European Standard 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.

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.

NOTE 1 Annex J indicates which clauses in this standard address environmental issues.

Provisions should be restricted to a general guidance. Limit values are specified in national laws.

It is recommended that manufacturers 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.

All pressures are gauge pressures unless otherwise stated.

NOTE 2 This European 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)".

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1 Scope

This European Standard specifies requirements for the design and manufacture of static welded steel cylindrical tanks, serially produced for the storage of liquefied petroleum gas (LPG) with a volume not greater than 13 m³ and for installation above or below ground.

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 edition of the referenced document (including any amendments) valid at the time of publication of this standard applies.

EN 287-1, *Qualification test of welders — Fusion welding — Part 1: Steels*

EN 462-1, *Non-destructive testing — Image quality of radiographs — Part 1: Image quality indicators (wire type) — Determination of image quality value*

EN 462-2, *Non-destructive testing — Image quality of radiographs — Part 2: Image quality indicators (step/hole type) — Determination of image quality value*

EN 473:2008, *Non-destructive testing — Qualification and certification of NDT personnel — General principles*

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

EN 756, *Welding consumables — Solid wires, solid wire-flux and tubular cored electrode-flux combinations for submerged arc welding of non alloy and fine grain steels — Classification*

EN 837-2, *Pressure gauges — Part 2: Selection and installation recommendations for pressure gauges*

EN 875, *Destructive tests on welds in metallic materials — Impact tests — Test specimen location, notch orientation and examination*

EN 876, *Destructive tests on welds in metallic materials — Longitudinal tensile test on weld metal in fusion welded joints*

EN 895, *Destructive tests on welds in metallic materials — Transverse tensile test*

EN 970, *Non-destructive examination of fusion welds — Visual examination*

EN 1321, *Destructive tests on welds in metallic materials — Macroscopic and microscopic examination of welds*

EN 1418, *Welding personnel — Approval testing of welding operators for fusion welding and resistance weld setters for fully mechanized and automatic welding of metallic materials*

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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

serially produced tanks

more than one tank manufactured in the same factory to a common design using the same material and manufacturing procedure and produced with no major interruption within a given period of time

3.3

manufacturer

manufacturer of the tank unless otherwise specified

3.4

yield strength

upper yield strength R_{eH} or, for steels that do not exhibit a definite yield, the 0,2 % proof strength $R_{p0,2}$

3.5

Pressure Equipment Directive

PED

Directive 97/23/EC of the European Parliament and of the Council of 29 May 1997 on the approximation of the laws of the Member States concerning pressure equipment

3.6

design pressure

gauge pressure used in design formulae