SLOVENSKI STANDARD
SIST EN 12493:2013+A1:2014/oprA2:2017

01-januar-2017

Oprema in pribor za utekočinjeni naftni plin (UNP) - Varjene tlačne posode cestnih cistern iz jekla za UNP - Konstruiranje in proizvodnja - Dopolnilo A2

LPG equipment and accessories - Welded steel pressure vessels for LPG road tankers - Design and manufacture

Flüssiggas-Geräte und Ausrüstungsteile - Geschweißte Druckbehälter aus Stahl für Straßentankwagen für Flüssiggas (LPG) - Auslegung und Herstellung

Équipements pour GPL et leurs accessoires - Réservoirs sous pression en acier soudés des camions-citernes pour GPL - Conception et construction

Ta slovenski standard je istoveten z: **EN 12493:2013+A1:2014/prA2**

ICS:

23.020.32	Tlačne posode	Pressure vessels
43.080.10	Tovornjaki in priklopniki	Trucks and trailers

SIST EN 12493:2013+A1:2014/oprA2:2017 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English Version

LPG equipment and accessories - Welded steel pressure vessels for LPG road tankers - Design and manufacture

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

This draft amendment A2, if approved, will modify the European Standard EN 12493:2013+A1:2014. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

This draft amendment was established by CEN 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN 12493:2013+A1:2014/prA2:2016) 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 has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

1 Modification to the Introduction

Replace the second paragraph with the following one:

"Protection of the environment is a key political issue in Europe and elsewhere; for CEN/TC 286 this is covered in CEN/TS 16765 [6]. The Technical Specification should be read in conjunction with this European Standard. CEN/TS 16765 provides guidance on the environmental aspects to be considered regarding equipment and accessories produced for the LPG industry and the following is addressed:

a) design;

b) manufacture;

c) packaging;

d) use and operation;

e) disposal.".

2 Modification to Clause 1, Scope

After NOTE 3, add the following new NOTE 4:

"NOTE 4 This European Standard is intended for LPG only, however for other liquefied gases see EN 14025.".

3 Modifications to Clause 2, Normative references

3.1 Replacement of EN 287-1

Delete the whole reference to EN 287-1:

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

Between the references to EN ISO 9016 and EN ISO 9712, add the following reference to EN ISO 9606-1:

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

3.2 Replacement of EN 444

Delete the whole reference to EN 444:

*"*EN 444, *Non-destructive testing — General principles for radiographic examination of metallic materials by X- and gamma-rays".*

Between the references to EN ISO 5178 and EN ISO 5817:2007, add the following reference to EN ISO 5579:

"EN ISO 5579, *Non-destructive testing — Radiographic testing of metallic materials using film and X- or gamma rays — Basic rules (ISO 5579)*".

3.3 Replacement of EN 462-1

Delete the whole reference to EN 462-1:

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

Between the references to EN ISO 17640 and EN ISO 19232-2, add the following reference to EN ISO 19232-1:

"EN ISO 19232-1, *Non-destructive testing — Image quality of radiographs — Part 1: Determination of the image quality value using wire-type image quality indicators (ISO 19232-1)*".

4 Modification to 5.2, Minimum thickness

Replace the last paragraph (that was added through the previous amendment):

"〚A1〛The minimum shell thickness shall not be less than calculated according to ADR (paragraph 6.8.2.1.17 of the 2015 edition of ADR). 〚A1〛"

with the following numbered entry:

"**5.2.4** The minimum shell thickness shall not be less than calculated in accordance with the ADR.".

5 Modifications to 5.3, Surge plates

Replace the numbered entry 5.3.2 with the following one:

"**5.3.2** The distance between surge plates shall not exceed 4 m.".

Delete the whole numbered entry 5.3.7.

6 Modification to 5.4, Doubler plates

Replace the third paragraph with the following paragraph:

"Doubler plates shall be provided with vent holes or test sockets they shall be closed with threaded plugs after testing.".

7 Modification to 5.5, Stresses due to motion

After the words "total mass", *delete the words* "times gravity" *in the four listed items in the 1st paragraph thus:*

"

— in the direction of travel: twice the total mass*;*

— at right-angles to the direction of travel: the total mass;

— vertically upwards: the total mass;

— vertically downwards: twice the total mass.".

8 Modification to 8.6.5, Qualification of welders and welding operators

In the first paragraph of 8.6.5, replace EN 287-1 with EN ISO 9606-1 thus:

"Welders shall be approved in accordance with EN ISO 9606-1 and welding operators in accordance with EN ISO 14732.".

9 Modification to 8.9.2, Repair of surface imperfections in the parent metal

In the last paragraph, replace EN 287-1 with EN ISO 9606-1 thus:

"Repairs that involve depositing of a weld metal shall be carried out in accordance with a welding procedure qualified in accordance with EN ISO 15614-1. Welders shall be qualified in accordance with EN ISO 9606-1.".

10 Modification to 8.9.3, Repair of weld imperfections

In the last paragraph, replace EN 287-1 with EN ISO 9606-1:

"Repairs shall be carried out in accordance with a welding procedure qualified in accordance with EN ISO 15614-1. Welders shall be qualified in accordance with EN ISO 9606-1.".

11 Modifications to 10.4.1, Radiographic testing

11.1 Replacement of EN 444 with EN ISO 5579

In the 1st paragraph, replace EN 444 with EN ISO 5579 thus:

"Radiographic examinations shall be carried out in accordance with EN ISO 5579 and EN ISO 17636-1 and EN ISO 17636-2 (class B).".

11.2 Replacement of EN 462-1 with EN ISO 19232-1

In the 2nd paragraph, replace EN 462-1 with EN ISO 19232-1:

"Radiographic sensitivity shall conform to EN ISO 19232-1 and EN ISO 19232-2.".

12 Modifications to 10.8, Stress limitation and safety precautions at the hydraulic test

12.1 Modification to the title

Replace the title "Stress limitation and safety precautions at the hydraulic test" *with* "Safety precautions at the hydraulic test".

12.2 Deletion of the 1st paragraph

Delete the 1st paragraph.

13 Modification to 13.2, Records prepared by the manufacturer

In list item f), replace EN 287-1 with EN ISO 9606-1 thus:

"f) a list of the welders and records of their approval tests conforming to EN ISO 9606-1;"

14 Modifications to D.1, Design stresses

In D.1.1, replace Formula (D.1) with the following revised formula:

"

$$f = R_{eH} / 1,5 \qquad \text{(D.1)}$$

".

In D.1.1, replace Formula (D.2) with the following revised formula:

"

$$f = R_{m} / 2,4 \qquad \text{(D.2)}$$

".

15 Modification to D.2, Design pressure

Delete the 2nd paragraph:

"The following calculations give the required minimum thickness, e_{min}, for rigid single tankers and semi-trailers, for tanker plus full trailer combinations. The calculated minimum thickness, e_{min}, should be multiplied by the greater of:

a) 1,0; or

b) $1 + \frac{0,6\left(65 - T_r\right)}{65}$

T_r is the reference temperature for developed pressure given in Table B.1 or Table C.1.".

16 Modification to D.3.1, Cylindrical shell calculation

Add the following paragraph at the end of this subclause:

"The minimum thickness shall not be less than that calculated in accordance with the ADR.".

17 Modification to D.3.2.1, Minimum thickness

Replace the whole content of this subclause with the following paragraph

"Dished ends may be torispherical, ellipsoidal or hemispherical. The minimum thickness shall not be less than that calculated in accordance with the ADR.".

18 Modification to D.4, Nozzle reinforcement

At the end of the numbered entry D.4.2, add the following paragraph:

"The distance between openings or branches (measured from the outside of the branches, pads, or compensation plates) may be reduced by using the relevant compensation calculations from EN 13445-3.".

19 Deletion of Annex L (informative), Environmental checklist

Delete the whole Annex L.

20 Modifications to the final Bibliography

Just after Bibliographical Entry [4] about EN 13109, add the following reference to EN 14025:

"

[5] EN 14025, *Tanks for the transport of dangerous goods — Metallic pressure tanks — Design and construction*".

Just after Bibliographical Entry [5] (old numbering) about EN 14334, add the following reference to CEN/TS 16765: