



NSAI
Standards

Irish Standard
I.S. EN 12493:2020

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

I.S. EN 12493:2020

Incorporating amendments/corrigenda/National Annexes issued since publication:

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National Foreword

I.S. EN 12493:2020 is the adopted Irish version of the European Document EN 12493:2020, LPG equipment and accessories - Welded steel pressure vessels for LPG road tankers - Design and manufacture

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In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

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EUROPEAN STANDARD

EN 12493

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2020

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Supersedes EN 12493:2013+A2:2018

English Version

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

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

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

This European Standard was approved by CEN on 16 November 2020.

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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.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents		Page
European foreword.....		4
Introduction		5
1	Scope	6
2	Normative references	6
3	Terms and definitions	8
4	Materials	9
4.1	Environmental.....	9
4.2	Suitability	9
4.3	Pressure retaining parts.....	9
4.4	Non-pressure retaining parts	9
4.5	Welding consumables.....	9
4.6	Non-metallic materials (gaskets)	10
4.7	Inspection documents for materials	10
5	Pressure vessel design	10
5.1	Design conditions.....	10
5.2	Minimum thickness	10
5.3	Surge plates.....	11
5.4	Doubler plates.....	12
5.5	Stresses due to motion	12
5.6	Self-supporting pressure vessels.....	12
5.7	Vacuum conditions	12
5.8	Pressure vessel mountings.....	12
5.9	Internal pipework.....	13
6	Openings	13
6.1	General.....	13
6.2	Reinforcement of openings.....	13
6.3	Threaded connections.....	13
6.4	Manhole	13
7	Non-pressure retaining parts	14
7.1	Attachment welds	14
7.2	Position of attachment welds	14
8	Workmanship and construction	14
8.1	General.....	14
8.2	Environment.....	14
8.3	Control of materials.....	14
8.4	Acceptable weld details	15
8.5	Heat treatment and forming	15
8.6	Welding.....	17
8.7	Repairs to pressure envelope and direct attachment welds.....	19
9	Construction and workmanship of internal pipework	19
10	Manufacturing tests and examinations	19
10.1	General.....	19
10.2	Mechanical testing	20

10.3	Non-destructive testing	21
10.4	Non-destructive testing for welds	21
10.5	Qualification of non-destructive testing personnel	22
10.6	Visual examination of welds	22
10.7	Acceptance criteria	23
10.8	Safety precautions at the hydraulic test	23
11	External corrosion protection and finishing	23
11.1	External protection	23
11.2	Finishing operations	23
12	Marking	23
13	Records and documentation	23
13.1	Documentation obtained by the manufacturer	23
13.2	Records prepared by the manufacturer	23
13.3	Retention and supply of documents	24
Annex A (normative) Guidance on selection of materials grades		25
Annex B (normative) Reference temperatures for design		26
Annex C (informative) Alternative reference temperatures for design		27
Annex D (normative) Design		28
Annex E (informative) Example of joints		43
Annex F (normative) Allowable tolerances		47
Annex G (normative) Heat treatment		52
Annex H (informative) Typical method for measurement of shell peaking		53
Annex I (informative) Choice of non-destructive test methods for welds		56
Annex J (normative) Hydraulic pressure test		57
Bibliography		58

EN 12493:2020 (E)

European foreword

This document (EN 12493:2020) has been prepared by Technical Committee /TC 286 “LPG 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 2021, and conflicting national standards shall be withdrawn at the latest by June 2021.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 12493:2013+A2:2018.

The following main changes have been introduced during this revision:

- removal of Annex I, Welding imperfections and test specimens;
- addition of normative reference to EN 12972.

This document has been submitted for reference in:

- the RID and/or;
- the technical annexes of the ADR.

NOTE These regulations take precedence over any clause of this document. It is emphasized that RID/ADR are being revised regularly at intervals of two years which may lead to temporary non-compliances with the clauses of this document.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

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

Protection of the environment is a key political issue in Europe and elsewhere. For CEN/TC 286 this is covered in CEN/TS 16765 [7] *LPG equipment and accessories — Environmental considerations for CEN/TC 286 standards*; which should be read in conjunction with this document. The Technical Specification 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.

It is recommended that manufacturers develop an environmental management policy. For guidance, see EN ISO 14000 series (see [8], [9] and [10]).

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

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 gauged unless otherwise stated.

NOTE This document 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 might be beneficial to refer to the leaflet “measurement uncertainty leaflet” SP INFO 2000 27 [15].

EN 12493:2020 (E)

1 Scope

This document specifies minimum requirements for materials, design, construction and workmanship procedures, and tests for welded LPG road tanker pressure vessels and their welded attachments manufactured from carbon, carbon/manganese and micro alloy steels.

There is no upper size limit as this is determined by the gross vehicle weight limitation.

This document does not cover pressure vessels for pressure vessel containers.

NOTE 1 In the context of this document, the term “road tanker” is understood to mean “fixed tanks” and “demountable tanks” as defined in ADR.

NOTE 2 The equipment for the pressure vessels and the inspection and testing after assembly is covered by EN 12252 and EN 14334, respectively.

NOTE 3 The design type of the road tanker is subject to approval by the competent authority, as required by ADR.

NOTE 4 This document is intended for LPG only; however, for other liquefied gases see EN 14025.

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

EN 10025-2, *Hot rolled products of structural steels — Part 2: Technical delivery conditions for non-alloy structural steels*

EN 10028-2, *Flat products made of steels for pressure purposes — Part 2: Non-alloy and alloy steels with specified elevated temperature properties*

EN 10028-3, *Flat products made of steels for pressure purposes — Part 3: Weldable fine grain steels, normalized*

EN 10204, *Metallic products — Types of inspection documents*

EN 12972:2018, *Tanks for transport of dangerous goods — Testing, inspection and marking of metallic tanks*

EN 13445-3, *Unfired pressure vessels — Part 3: Design*

EN 14717, *Welding and allied processes — Environmental check list*

EN ISO 148-1, *Metallic materials — Charpy pendulum impact test — Part 1: Test method (ISO 148-1)*

EN ISO 3452-1, *Non-destructive testing — Penetrant testing — Part 1: General principles (ISO 3452-1)*

EN ISO 3834-2, *Quality requirements for fusion welding of metallic materials — Part 2: Comprehensive quality requirements (ISO 3834-2)*

EN ISO 4136, *Destructive tests on welds in metallic materials — Transverse tensile test (ISO 4136)*

EN ISO 5173, *Destructive tests on welds in metallic materials — Bend tests (ISO 5173)*

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