

BS EN 14894:2013



BSI Standards Publication

LPG equipment and accessories — Cylinder and drum marking

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National foreword

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The UK participation in its preparation was entrusted to Technical Committee PVE/19, LPG containers and their associated fittings.

A list of organizations represented on this committee can be obtained on request to its secretary.

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von Flaschen und Fässern

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Foreword

This document (EN 14894:2013) 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of an identical text or by endorsement, at the latest by October 2013, and conflicting national standards shall be withdrawn at the latest by October 2013.

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 14894:2011.

The main technical change to this version is to align the marking requirements with RID/ADR 2013 (see [7] and [8]).

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

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Introduction

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

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.

1 Scope

This European Standard specifies stamp marking requirements for transportable refillable LPG cylinders and metallic drums including:

- Steel LPG cylinders designed and manufactured in accordance with EN 1442, EN 14140, EN 12807 or an equivalent standard or technical code recognised by the Competent Authority.
- LPG metallic drums designed and manufactured in accordance with EN 14893 or an equivalent standard or technical code recognised by the Competent Authority.
- Welded aluminium LPG cylinders designed and manufactured in accordance with EN 13110 or an equivalent standard or technical code recognised by the Competent Authority.
- LPG composite cylinders designed and manufactured in accordance with EN 14427 or an equivalent standard or technical code recognised by the Competent Authority.

NOTE 1 All these types of receptacles are referred to throughout this standard as “cylinders”.

This European Standard does not specify any requirements for product, hazard or safety-phrase labelling of packaging which may be required to meet ADR or other legislative requirements.

NOTE 2 The marking of cylinders is regulated by RID/ADR which take precedence over any clause in this European Standard. The European Directive on Transportable Pressure Equipment 2010/35/EU [9] includes additional marking requirements (π -marking).

2 Terms and definitions

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

2.1

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

2.2

stamp marking

permanent or durable markings affixed to the cylinder

2.3

competent authority

authority designated as such in each country in accordance with national regulation

2.4

inspection body

independent inspection and testing body approved by the competent authority

3 Symbols and abbreviated terms

ADR European Agreement concerning the International Carriage of Dangerous Goods by Road [8]

D durable

P permanent

RID Regulations concerning the International Carriage of Dangerous Goods by Rail [7]

TPED Transportable Pressure Equipment Directive 2010/35/EU [9]

π -marking Pi marking as defined in European Directive on Transportable Pressure Equipment 2010/35/EU [9]

4 Application of stamp markings

4.1 General

4.1.1 Stamp markings consist of manufacturing, operational and certification stamp marks and are listed in Clause 5, Clause 6, Clause 7 and Clause 8. The layout of the marks is covered by 4.3. Additional markings may be applied if required by other regulations or technical standards, or when required by the cylinder owner; provided the layout does not cause any confusion in their interpretation and the clarity of the other mandatory markings is not affected.

4.1.2 Low stress stamp marking methods shall be utilised.

4.1.3 Stamp markings shall be applied to low stress areas.

4.1.4 Stamp marking shall be in accordance with the requirements of EN 14894 and any requirements in the standard to which cylinder or drum is being manufactured.

The marking information may be supplemented and/or duplicated by electronic means or other types of coding where required by the operator.

NOTE 1 The TPED includes additional marking requirements (π -marking).

NOTE 2 The requirements of RID/ADR override any conflicting requirements of this European Standard; this may lead to a temporary noncompliance with EN 14894.

4.2 Workmanship

4.2.1 All stamp markings shall be affixed clearly, legibly and durably on the cylinder and shall remain legible under all foreseeable operating and ageing conditions.

- Markings required to be “permanent” shall be such that they can only be removed with the use of special tools and may be done, for example by hard metal stamping, engraving, casting, embossing, encapsulation or other similar methods.
- Markings required to be “durable” shall be such that they remain visible for the relevant period of time and may be done, for example by printing, external labelling, stencilling, use of valve hand-wheel insert or other similar methods.

Clause 5, Clause 6, Clause 7 and Clause 8 indicate which markings shall be “permanent (P)” and which may be “durable (D)”.

Markings which are permitted to be durable may be permanently applied if so desired.

4.2.2 For metallic cylinders, the markings shall be located on the shoulder, top end or neck of the cylinder or on a permanently affixed component, e.g. shroud, handle(s), foot ring, welded nameplate, etc.

4.2.3 If markings are applied after completion of manufacture or following periodic inspection, by stamping or engraving onto the pressure parts of the cylinder, it shall be demonstrated by fatigue and burst tests in accordance with the original design standard or equivalent, that failure does not initiate in the markings.

4.2.4 For composite cylinders, permanent markings may be affixed by use of a printed label encapsulated by either placing it under the resin or by covering it with a permanent transparent coating, on the shoulder or the sidewall of the cylinder (see 4.3).

4.2.5 The characters in the stamp markings shall be at least 5 mm in height. On cylinders with an outside diameter less than 140 mm, this height may be reduced, but in no case shall the characters be less than 2,5 mm in height.

4.2.6 The π -mark, where applicable, shall have substantially the same vertical dimension as the other stamp markings but shall not be less than 5 mm. If the mark dimensions are changed, the proportions of the drawing shall be maintained.

NOTE The proportions of the π -mark are specified in the conformity marking drawing in the TPED.

4.2.7 The UN number and the letters "UN" shall be:

- a) at least 12 mm high for cylinders of greater than 60 l water capacity;
- b) at least 6 mm in height for cylinders of 60 l water capacity or less; and
- c) be of an appropriate size for cylinders of 5 l or less.

4.3 Arrangements for stamp marking

4.3.1 The markings for manufacturing, operation and certification shall be arranged in three groups as specified in Clause 5, Clause 6 and Clause 7, where the manufacturing marks shall be the top grouping, the operational be the middle grouping and the certification marks be the bottom grouping.

4.3.2 The arrangement of additional markings specified in Clause 8, shall be such as to avoid confusion with the markings specified in 4.3.1.

4.3.3 Where relevant, the certification marks of Table 4, e.g. the conformity reassessment mark and the TPED conformity mark, shall be applied before or after the certification stamp markings in accordance with Table 3.

NOTE Possible locations of the markings are given in Annex A.

4.3.4 When an identity plate (or label for composite cylinders) is used, all the stamp markings may be on a single plate or label together with any additional markings, provided the layout does not cause any confusion in their interpretation.

5 Manufacturing stamp markings

This grouping of stamp markings shall be permanently applied in the sequence listed in Table 1.

Table 1 — Manufacturing stamp markings

Mark	Specification	Status	Example
Country mark (of manufacture) ^a	Capital letters	Mandatory ^b	CH
Manufacturer's mark	Capital letters Manufacturer's identity, logo, symbol or other mark registered with the competent authority	Mandatory	GASCYL
Manufacturing serial number	Alphanumeric code assigned by the manufacturer to clearly identify the cylinder	Mandatory	A76128
^a The distinguishing signs for motor vehicles in international traffic as described in the Vienna Convention on Road Traffic (1968) shall be used. ^b This marking is not required when the country of manufacture is the same as the country of approval.			

6 Operational stamp markings

This grouping of stamp markings shall be permanently applied in the sequence listed in Table 2.

Table 2 — Operational stamp markings

Mark	Specification	Status	Example
Test pressure	The prefix "PH" followed by the value of the test pressure which has been used by the manufacturer for the design of the cylinder, in bar, and the letters "BAR"	Mandatory	PH 30 BAR
Water capacity	The minimum water capacity guaranteed by the cylinder manufacturer, in litres, followed by the unit "L" The capacity shall be expressed to three significant digits, rounded down to the last digit. If the value of the water capacity is an integer, the digits after the decimal point may be neglected.	Mandatory	12,8 L

7 Certification stamp markings

This grouping of stamp markings shall be permanently applied in the sequence listed in Table 3.

Table 3 — Certification stamp marks

Mark	Specification	Status	Example
Technical standard	Identification of the relevant standard to which the cylinder is designed, manufactured and tested	Mandatory	EN 1442
Country mark (of approval)	Capital letter(s) identifying the country of approval using the character of the distinguishing signs of motor vehicles in international traffic ^a The country of approval shall be the country that approved the body which inspected the individual receptacle at the time of manufacture.	Mandatory	F
Inspection body mark	Identity mark or stamp of the inspection body that is registered with the competent authority of the country authorising the marking	Mandatory	# or 1234
Initial inspection date	Date of initial inspection (at the time of manufacture/certification) shown as the year (4 digits) and month (2 digits) separated by a slash ("/")	Mandatory	2013/04
^a The distinguishing signs for motor vehicles in international traffic as described in the Vienna Convention on Road Traffic (1968) shall be used.			

8 Other stamp markings

Where applicable, the following markings shall be applied permanently or durably as indicated in Table 4. The sequence of markings need not follow that of the table. Any such markings shall be located so as to avoid confusion with the markings listed in Clause 5, Clause 6 and Clause 7.

Enough space for additional stamp markings, if required by the distributor or the user, shall be provided (see 4.2.2 and 4.2.3). Such markings shall not be in contradiction with all the other required markings (see 4.3.2).

Table 4 — Other stamp markings (1 of 2)

P or D ^a	Mark	Specification	Status	Examples
D	The date of next periodic inspection	The year of the next periodic inspection indicated by digits or an appropriate coding system marked at the time of initial or periodic inspection	Optional	18
D ^b	The date of last periodic inspection	<p>The character(s) identifying the country authorising the body performing the periodic inspection</p> <p>This marking is not required if the body is approved by the competent authority of the country approving manufacture.</p> <p>The identification mark or stamp of the body authorised by the competent authority for performing periodic inspection and test</p> <p>The date of the periodic inspection and test, the year (2 or 4 digits) followed by the month (2 digits) separated by a "slash" (i.e. "/") of the last periodic inspection</p> <p>These markings shall appear consecutively in the sequence given.</p> <p>For cylinders with periodic inspection interval of 10 years or more, the month need not be indicated.</p> <p>For cylinders required to conform to TPED the inspection body identification number shall be required to follow the inspection date mark.</p>	Mandatory	<p>CH</p> <p># or 1234</p> <p>CH # 13/12 or # 2013/12</p> <p># 13</p> <p># 13/12 1234 or # 13 1234</p>
P	Conformity reassessment mark (for existing cylinders)	The date of the periodic inspection carried out following successful reassessment accompanied by the π -mark, followed by the identification number of the inspection body (inspection or approved body as defined in the TPED)	Mandatory - if applicable	2013/12 π 1234 or π 1234 2013/12
P	Product restriction mark	Indication of any limitations in the grade of LPG to be filled	Mandatory - if applicable	BUTANE ONLY
D	ADR 15 year inspection interval mark	This marking is required for and only permitted for cylinders granted a 15 year periodic inspection interval in accordance with the requirement of the ADR	Mandatory	P15Y
P	Standard specific marks	Any additional marking required by the technical standard including any limitations of use, heat treatment (S, N or U), etc.	Mandatory - if applicable	<p>NOT SUITABLE FOR VACUUM</p> <p>MAXIMUM VALVE TORQUE 100 Nm</p>

Table 4 — Other stamp markings (2 of 2)

P or D ^a	Mark	Specification	Status	Examples
P	TPED conformity (at time of manufacture)	As specified in TPED with the π -mark followed by the identification number of the inspection body	Mandatory - if applicable	π 1111
D	Tare mass plus Maximum filling mass or Gross mass	The sum of the mass of the finished cylinder, the mass of the valve including a dip tube where fitted, and the mass of all other parts which are permanently attached to the cylinder when it is being filled (e.g. fixed valve guard, coating, etc.) This may be durably indicated on an information disk, a label attached to the cylinder or equivalent process, where filling is by mass. Maximum mass permitted to be filled as determined in accordance with ADR or Product related markings, the values of which shall be established in accordance with ADR Where gross mass is shown, this shall be clearly identified as such if it can be confused with the tare weight.	Mandatory ^c	12,9 kg 13 kg 25,9 kg
D	Product name		Mandatory	UN1965 BUTANE or UN 1965 MIXTURE C

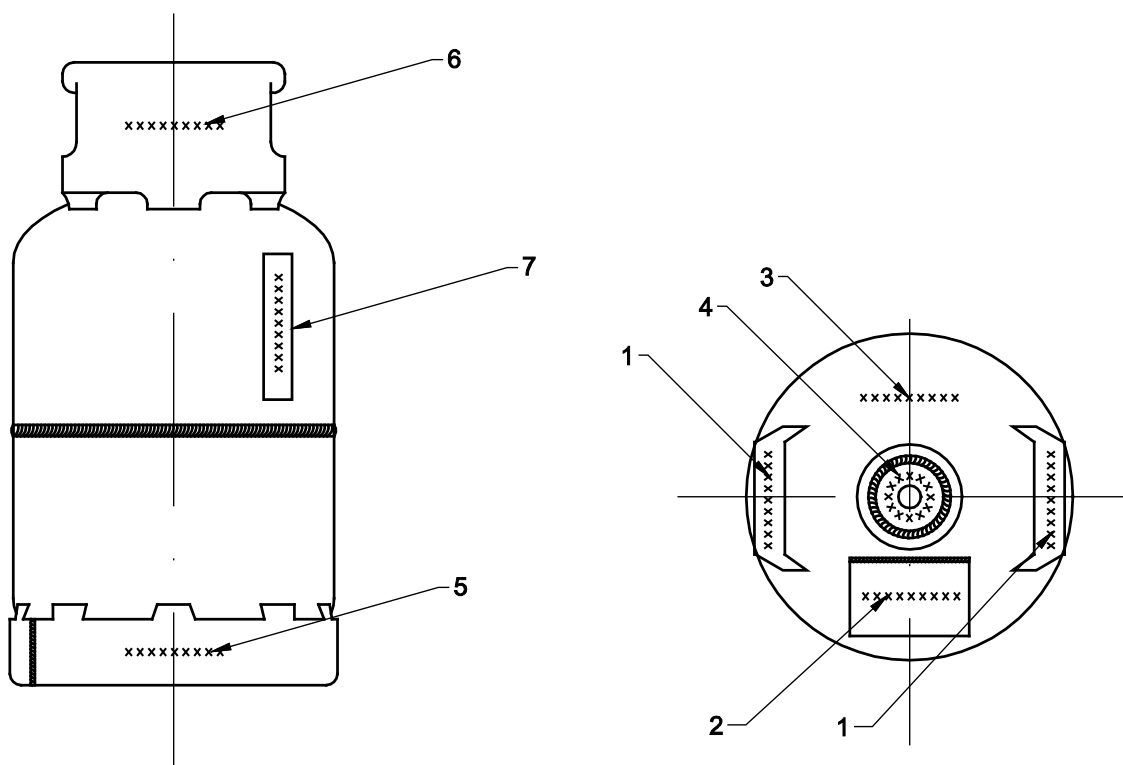
^a P means permanently applied and D means durably applied.

^b These marks may be engraved on a ring of an appropriate material affixed to the cylinder when the valve is installed and which is removable only by disconnecting the valve from the cylinder.

^c This mandatory requirement is met by the indication of either the tare weight plus maximum filling mass or the gross mass.

Annex A (informative)

Locations of markings



Key

- 1 marking on handle
- 2 marking on permanently attached nameplate
- 3 marking on the cylinder body or for composite cylinders, label placed under the resin or transparent coating
- 4 marking on neck ring
- 5 marking on foot ring
- 6 marking on shroud
- 7 label placed under the resin or transparent coating for composite cylinders only

The permanent marking on LPG cylinders should be in 3 groups and displayed in one or more of the above positions depending on the design and size of the cylinder and the remaining space for markings.

RID/ADR requires that all manufacturing markings (see Clause 5) are located in one group. Operational markings (see Clause 6) shall also be located in a single group. Certification markings (see Clause 7) shall also be located in a single group. These groups may be located together or in different locations on the cylinder.

Figure A.1 — Examples of alternative locations, stamp markings

Bibliography

- [1] EN 1442, *LPG equipment and accessories — Transportable refillable welded steel cylinders for LPG — Design and construction*
- [2] EN 12807, *LPG equipment and accessories — Transportable refillable brazed steel cylinders for liquefied petroleum gas (LPG) — Design and construction*
- [3] EN 13110, *LPG equipment and accessories — Transportable refillable welded aluminium cylinders for liquefied petroleum gas (LPG) — Design and construction*
- [4] EN 14140, *LPG equipment and accessories — Transportable refillable welded steel cylinders for LPG — Alternative design and construction*
- [5] EN 14893, *LPG equipment and accessories — Transportable Liquefied Petroleum Gas (LPG) welded steel pressure drums with a capacity between 150 litres and 1 000 litres*
- [6] EN 14427, *Transportable refillable fully wrapped composite cylinders for Liquefied Petroleum Gases (LPG) - Design and Construction*
- [7] Regulations concerning the International Carriage of Dangerous Goods by Rail (RID), appearing as Appendix C to the Convention concerning International Carriage by Rail (COTIF), Vilnius, 3 June 1999, as amended
- [8] European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), Geneva, 30 September 1957, as amended
- [9] Directive 2010/35/EU of the European Parliament and of the Council on transportable pressure equipment, Brussels, 16 June 2010, as amended

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