

SLOVENSKI STANDARD

SIST EN 13807:2017

01-maj-2017

Nadomešča:

SIST EN 13807:2004

SIST EN 13807:2004/AC:2005

Premične plinske jeklenke - Baterijska vozila in MEGC - Načrtovanje, izdelava, označevanje in preskušanje

Transportable gas cylinders - Battery vehicles and multiple-element gas containers (MEGCs) - Design, manufacture, identification and testing

iTeh STANDARD PREVIEW

Ortsbewegliche Gasflaschen - Batterie-Fahrzeuge und Gascontainer mit mehreren Elementen (MEGCs) - Auslegung, Herstellung, Kennzeichnung und Prüfung

[SIST EN 13807:2017](https://standards.itih.si/catalog/standards/sist/63a37c8c-9690-4c35-89de-70b21ce8a113/sist-en-13807-2017)

Bouteilles à gaz transportables - Véhicules-batteries et conteneurs à gaz à éléments multiples (CGEM) - Conception, fabrication, identification et essai

Ta slovenski standard je istoveten z: EN 13807:2017

ICS:

23.020.35	Plinske jeklenke	Gas cylinders
43.020	Cestna vozila na splošno	Road vehicles in general

SIST EN 13807:2017

en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 13807:2017

<https://standards.iteh.ai/catalog/standards/sist/63a37c8c-9690-4c35-89de-70b21ce8a1f3/sist-en-13807-2017>

EUROPEAN STANDARD

EN 13807

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2017

ICS 23.020.35

Supersedes EN 13807:2003

English Version

Transportable gas cylinders - Battery vehicles and multiple-element gas containers (MEGCs) - Design, manufacture, identification and testing

Bouteilles à gaz transportables - Véhicules-batteries et conteneurs à gaz à éléments multiples (CGEM) - Conception, fabrication, identification et essai

Ortsbewegliche Gasflaschen - Batterie-Fahrzeuge und Gascontainer mit mehreren Elementen (MEGCs) - Auslegung, Herstellung, Kennzeichnung und Prüfung

This European Standard was approved by CEN on 21 December 2016.

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-CENELEC Management Centre or to any CEN member.

iTeh STANDARD PREVIEW

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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

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

Contents

	Page
European foreword.....	4
Introduction	5
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions	7
4 Design.....	9
4.1 General.....	9
4.2 Mounting	10
4.2.1 Stability (for battery vehicles only).....	10
4.2.2 Attachment of pressure receptacles to a chassis.....	10
4.2.3 Pressure receptacle supports.....	10
4.2.4 Impact protection.....	11
4.3 Pressure receptacles.....	11
4.4 Valves and fittings.....	11
4.5 Manifold.....	12
4.6 Main valve(s)/connection(s).....	12
4.7 Total assembly	13
5 Manufacturing.....	13
6 Identification	13
6.1 General.....	13
6.2 Product and hazard identification.....	13
6.3 Filling identification.....	14
7 Type approval, inspection and testing	14
7.1 General.....	14
7.2 Type approval of battery vehicle or MEGC.....	14
7.2.1 Design check of the battery vehicle or MEGC.....	14
7.2.2 Testing of the manifold and battery vehicle or MEGC.....	14
7.2.3 Flame resistance of cover sheets.....	14
7.2.4 Conductivity of cover sheets	14
7.3 Initial inspection of fully assembled battery vehicle or MEGC	15
7.3.1 General.....	15
7.3.2 Manifold.....	15
7.3.3 Fully assembled battery vehicle or MEGC	15
7.3.4 Identification	15
8 Documentation.....	15
Annex A (normative) Specific requirements for dissolved acetylene battery vehicles.....	17
A.1 General.....	17
A.2 Design.....	17
A.2.1 Material.....	17
A.2.2 Layout.....	17
A.2.3 Acetylene cylinders and acetylene bundles of cylinders.....	17

A.2.4	Cylinder valves	17
A.2.5	Manifold	17
A.2.5.1	General	17
A.2.5.2	Wall thickness of the pipe system.....	17
A.2.5.3	System with wall thickness to withstand detonation and reflection occurring at any point	18
A.2.5.4	System to withstand undisturbed detonation with reinforcements at reflection points	18
A.2.5.5	Design by means of acetylene decomposition testing.....	19
A.2.5.6	Flexible hoses.....	19
A.2.6	Valves (excluding the cylinder valves and the main valve).....	19
A.2.7	Safety devices.....	19
A.2.7.1	Design for configurations	19
A.2.7.2	Type approval requirement for acetylene decomposition blocker	20
A.2.8	Ventilation.....	20
A.3	Identification.....	20
A.3.1	General	20
A.3.2	Colour coding	20
A.3.3	Filling identification	20
A.4	Testing.....	21
Annex B (informative)	Marking of battery vehicles and MEGCs.....	22
B.1	General	22
B.2	Certification marks	22
B.3	Operational marks	23
	Bibliography	24

iTech STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 13807:2017

<https://standards.iteh.ai/catalog/standards/sist/63a37c8c-9690-4c35-89de->

EN 13807:2017 (E)**European foreword**

This document (EN 13807:2017) has been prepared by Technical Committee CEN/TC 23 “Transportable gas cylinders”, the secretariat of which is held by BSI.

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 August 2017, and conflicting national standards shall be withdrawn at the latest by August 2017.

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 13807:2003.

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

This European Standard will be submitted for reference into the technical annexes of the ADR [11].

The main technical changes are:

- a) the requirements for manifolds and flexible hoses were revised;
- b) clarification of the tightness test procedure during the first filling;
- c) the former Annex A was deleted and some of the requirements added to the main text;
- d) the marking following the regulation were shifted to the informative Annex B;
- e) the normative references, the terminology and layout were revised;
- f) adding of requirements for MEGCs.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

For certain applications, transport units known as battery vehicles and MEGCs of non UN pressure receptacles are used to supply greater volumes of gas in a single unit.

A battery vehicle is a vehicle containing pressure receptacles which are linked to each other by a manifold and permanently fixed to a transport unit.

General requirements for the design, construction, equipment, type approval, inspections and tests and marking of battery vehicles are given in Chapter 6.8 and 9 of the ADR. Some specific or additional requirements are given in this European Standard.

In standards, weight is equivalent to a force, expressed in Newton. However, in common parlance (as used in terms defined in this European Standard), the word “weight” continues to be used to mean “mass”, but this practice is deprecated (ISO 80000-4).

In this European Standard, the unit bar is used, due to its universal use in the field of technical gases. It should, however, be noted that bar is not an SI unit, and that the according SI unit for pressure is Pa ($1 \text{ bar} = 10^5 \text{ Pa} = 10^5 \text{ N/m}^2$).

Pressure values given in this European Standard are given as gauge pressure (pressure exceeding atmospheric pressure) unless noted otherwise.

Where there is any conflict between this European Standard and any applicable regulation, the regulation always takes precedence.

ITeH STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 13807:2017](https://standards.iteh.ai/catalog/standards/sist/63a37c8c-9690-4c35-89de-70b21ce8a1f3/sist-en-13807-2017)

<https://standards.iteh.ai/catalog/standards/sist/63a37c8c-9690-4c35-89de-70b21ce8a1f3/sist-en-13807-2017>

EN 13807:2017 (E)**1 Scope**

This European Standard specifies the requirements for the design, manufacture, identification and testing of battery vehicles and multiple-element gas containers (MEGCs) containing cylinders, tubes or bundles of cylinders. It is applicable to battery vehicles and MEGCs containing compressed gas, liquefied gas and mixtures thereof. It is also applicable to battery vehicles for dissolved acetylene. This European Standard is not applicable to battery vehicles and MEGC for toxic gases with an LC₅₀ value less than or equal to 200 ml/m³.

This European Standard applies also to battery vehicles and MEGCs containing bundles of cylinders connected by a manifold which are dis-assembled from the battery vehicle and filled individually.

This European Standard does not apply to battery vehicles and MEGCs containing pressure drums or tanks.

This European Standard does not specify requirements for the vehicle chassis or motive unit.

This European standard does not cover requirements for sea transportation.

This European Standard is primarily intended for industrial gases other than Liquefied Petroleum Gases (LPG). At the time of publication of this European Standard, there is no European Standard for dedicated LPG battery vehicles.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

- EN 13134, *Brazing - Procedure approval* [SIST EN 13807:2017](https://standards.iteh.ai/catalog/standards/sist/63a37c8c-9690-4c35-89de-70b21cc8a1f3/sist-en-13807-2017)
- EN ISO 9606-1, *Qualification testing of welders - Fusion welding - Part 1: Steels (ISO 9606-1)*
- EN ISO 10286:2015, *Gas cylinders - Terminology (ISO 10286:2015)*
- EN ISO 10297, *Gas cylinders - Cylinder valves - Specification and type testing (ISO 10297)*
- EN ISO 10961, *Gas cylinders - Cylinder bundles - Design, manufacture, testing and inspection (ISO 10961)*
- EN ISO 13585, *Brazing - Qualification test of brazers and brazing operators (ISO 13585)*
- EN ISO 14113, *Gas welding equipment - Rubber and plastics hose and hose assemblies for use with industrial gases up to 450 bar (45 MPa) (ISO 14113)*
- EN ISO 15607, *Specification and qualification of welding procedures for metallic materials - General rules (ISO 15607)*
- EN ISO 15615:2013, *Gas welding equipment - Acetylene manifold systems for welding, cutting and allied processes - Safety requirements in high-pressure devices (ISO 15615:2013)*
- ISO 9090, *Gas tightness of equipment for gas welding and allied processes*
- ISO 1496-3, *Series 1 freight containers — Specification and testing — Part 3: Tank containers for liquids, gases and pressurized dry bulk*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 10286:2015 and the following apply.

3.1

pressure receptacle

cylinder, tube and bundle of cylinders

3.2

battery vehicle

vehicle containing pressure receptacles which are linked to each other by a manifold and permanently fixed to a vehicle such that the assembly is filled, transported and emptied as a single unit

[SOURCE: EN ISO 10286:2015, 211, modified — “elements” replaced by “pressure receptacles” and “such that the assembly is filled, transported and emptied as a single unit” added]

3.3

multiple-element gas container

MEGC

unit containing elements (cylinders, tubes, or bundles of cylinders), which are linked to each other by a manifold and mounted on a frame

3.4

manifold

pipng system for connecting pressure receptacle(s) valves or fittings to the main valve(s) or the main connection(s)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

3.5

pressure receptacle valve

valve that is fitted into a pressure receptacle and to which a manifold is connected

[SIST EN 13807:2017](https://standards.iteh.ai/catalog/standards/sist/63a37c8c-9690-4c35-89de-70b21ce8a1f3/sist-en-13807-2017)

<https://standards.iteh.ai/catalog/standards/sist/63a37c8c-9690-4c35-89de-70b21ce8a1f3/sist-en-13807-2017>

3.6

pressure receptacle fitting

device with no gas shut-off capability which serves to connect a battery vehicle's or MEGC's manifold to its individual pressure receptacle, where a pressure receptacle valve is not fitted

3.7

main connection

means of making a gas connection to a battery vehicle and MEGC

[SOURCE: EN ISO 10286:2015, 266, modified — bundle deleted]

3.8

main valve

valve which is fitted to the manifold of a battery vehicle or MEGC isolating it from the main connection(s)

[SOURCE: EN ISO 10286:2015, 267, modified — battery wagons and bundle deleted]

3.9

tare

<battery vehicle> / <MEGC> weight of the battery vehicle when empty of gas product

EN 13807:2017 (E)**3.10****maximum gross weight**

<battery vehicle> / <MEGC> tare of the battery vehicle plus the maximum weight of the gas products contained within the battery vehicle / MEGC

3.11**maximum permissible filling weight**

for liquefied gases (e.g. SF₆) sum of the minimum guaranteed water capacity of all pressure receptacles of the battery vehicle or MEGC multiplied with the filling ratio of the gas contained

3.12**working pressure**

<compressed gas> settled pressure of a compressed gas at a uniform reference temperature of 15 °C in a full battery vehicle or MEGC

[SOURCE: EN ISO 10286:2015, 736, modified —“cylinder” replaced by “battery vehicle or MEGC”]

3.13**developed pressure**

pressure developed by the gas contents in a battery vehicle or MEGC at a uniform temperature of T_{\max}

Note 1 to entry: T_{\max} is the expected maximum uniform temperature in normal service as specified in international or national cylinder filling regulations.

[SOURCE: EN ISO 10286:2015, 733, modified —“cylinder” replaced by “battery vehicle or MEGC”]

3.14**helium test gas**

leak testing gas mixture containing not less than 2 % helium

SIST EN 13807:2017

<https://standards.iteh.ai/catalog/standards/sist/63a37c8c-9690-4c35-89de-70b21ce8a113/sist-en-13807-2017>

3.15**acetylene battery vehicle**

assembly of acetylene cylinders or acetylene bundles of cylinders connected to a manifold and securely mounted onto a vehicle chassis such that the assembly is transported and emptied as a single unit

3.16**acetylene battery vehicle type A**

acetylene cylinders or acetylene bundles of cylinders that are removed each time from the vehicle and filled individually

3.17**acetylene battery vehicle type B**

acetylene cylinders or acetylene bundles of cylinders that are filled and emptied for a prescribed number of re-fillings without removal from the vehicle

3.18**home station of the acetylene bundle of cylinders**

location (name of the company, address and telephone number) where the documentation is kept

3.19**tare**

<acetylene battery vehicle> sum of the tare weights of the individual cylinders (see EN ISO 3807) or bundles of cylinders (see EN ISO 13088) plus the weight of the associated pipework, fittings, supports and the chassis

3.20**maximum gross weight**

<acetylene battery vehicle> sum of the total weight of the individual filled cylinders or the maximum gross weight of the individual acetylene bundles of cylinders plus the weight of the associated pipework, fittings, supports and the vehicle chassis

3.21**maximum acetylene content**

<acetylene battery vehicle> sum of the specified maximum weight of acetylene including saturation acetylene in the pressure receptacles

3.22**dimensioning pressure**

<acetylene battery vehicles> pressure taking into account the pressure increase caused by the decomposition of acetylene

Note 1 to entry: It is used for the dimensioning of the manifold, hoses, valves and fittings.

3.23**working pressure**

<acetylene battery vehicles> pressure equal to the working pressure stamped on the individual pressure receptacles of the battery vehicle

iTeh STANDARD PREVIEW
(standards.iteh.ai)
<https://standards.iteh.ai/catalog/standards/sist/63a37c8c-9690-4c35-89de-70b21ce8a1f3/sist-en-13807-2017>

3.24**maximum filling pressure**

<acetylene battery vehicles> highest pressure which is allowed in an acetylene battery vehicle manifold during filling

Note 1 to entry: It is 25 bar gauge, see A.2.5.3.

3.25**acetylene decomposition blocker**

safety device, which stops acetylene decomposition

4 Design**4.1 General**

All pressurized components shall be designed to operate in the temperature range of at least – 20 °C to + 65 °C. Where higher or lower service temperatures are required, any additional requirements shall be agreed between the manufacturer and purchaser.

NOTE 1 Local temperature conditions can necessitate higher or lower service temperatures.

NOTE 2 Additional requirements can be required for adapted equipment and/or tests.

Materials for parts which are in contact with the gas shall be selected in accordance with the relevant European Standards on compatibility (i.e. the EN ISO 11114- series).