

**Transportable gas cylinders -
Specification for the design and
construction of refillable transportable
seamless normalized carbon
manganese steel gas cylinders of water
capacity up to 0,5 litre for compressed,
liquefied and dissolved gases and up to
1 litre for carbon dioxide**

Transportable gas cylinders - Specification for the design and construction of refillable transportable seamless normalized carbon manganese steel gas cylinders of water capacity up to 0,5 litre for compressed, liquefied and dissolved gases and up to 1 litre for carbon dioxide

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 13293:2003 sisaldab Euroopa standardi EN 13293:2002 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.02.2003 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 13293:2003 consists of the English text of the European standard EN 13293:2002.</p> <p>This document is endorsed on 18.02.2003 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: This draft standard sets out minimum requirements for the material design, construction and workmanship, manufacturing processes and tests at manufacture of refillable seamless normalized gas cylinders made from carbon manganese steel of water capacities up to and including 0,5 litre for permanent, liquefiable and dissolved gases and up to 1 litre for carbon dioxide use only</p>	<p>Scope: This draft standard sets out minimum requirements for the material design, construction and workmanship, manufacturing processes and tests at manufacture of refillable seamless normalized gas cylinders made from carbon manganese steel of water capacities up to and including 0,5 litre for permanent, liquefiable and dissolved gases and up to 1 litre for carbon dioxide use only</p>
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ICS 23.020.30

Võtmesõnad: definitions, design, gas cylinders, gas holders, manganese steels, materials, minimum requirements, mobile, normalized, production, re-usable, reusable equipment, seamless, specification (approval), specifications, steel cylinders, steels, testing

ICS 23.020.30

English version

Transportable gas cylinders - Specification for the design and construction of refillable transportable seamless normalized carbon manganese steel gas cylinders of water capacity up to 0,5 litre for compressed, liquefied and dissolved gases and up to 1 litre for carbon dioxide

Bouteilles à gaz transportables - Spécifications pour la conception et la fabrication de bouteilles à gaz rechargeables et transportables sans soudure en acier au carbone manganèse normalisé, de capacité de l'eau jusqu'à 0,5 litre à gaz comprimés, liquéfiés et dissous et jusqu'à 1 litre au carbone dioxide

Ortsbewegliche Gasflaschen - Konstruktion und Aufbau von wiederbefüllbaren ortsbeweglichen Gasflaschen aus nahtlosem normalgeglühtem Kohlenstoff-Mangan-Stahl mit einem Fassungsraum bis 0,5 Liter für verdichtete, verflüssigte und unter Druck gelöste Gase und bis 1 Liter für Kohlendioxid

This European Standard was approved by CEN on 12 August 2002.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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

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Foreword

This document EN 13293:2002 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 April 2003, and conflicting national standards shall be withdrawn at the latest by April 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 has been submitted for reference into the RID and/or the technical annexes of the ADR. Therefore in this context the standards listed in the normative references and covering basic requirements of the RID/ADR not addressed within the present standard are normative only when the standards themselves are referred to in the RID and/or the technical annexes of the ADR.

For relationships with EC directives, RID and ADR see informative annex C, which is an integral part of this document.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

The purpose of this standard is to provide a specification for the design, manufacture and testing of refillable, transportable seamless steel gas cylinders.

The specifications given are based on knowledge of, and experience with, materials, design requirements, manufacturing processes and control during manufacture, of cylinders in common use in the countries of the CEN members.

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1 Scope

This European Standard specifies minimum requirements for the material design, construction and workmanship, manufacturing processes and tests at manufacture of refillable seamless normalized gas cylinders made from carbon manganese steel of water capacities up to and including 0,5 litre for compressed, liquefiable and dissolved gases and up to 1 litre for carbon dioxide.

This standard is applicable to cylinders manufactured from normalized carbon manganese steel with an R_m value of less than 850 MPa.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate place in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 1089-1:1996, *Transportable gas cylinders - Gas cylinder identification (excluding LPG) - Part 1: Stampmarking*.

EN 10002-1, *Metallic materials - Tensile testing - Part 1: Method of test at ambient temperature*.

EN 10028-1, *Flat products made of steels for pressure purposes - Part 1: General requirements*.

EN ISO 11114-1:1997, *Transportable gas cylinders - Compatibility of cylinder and valve materials with gas contents - Part 1: Metallic materials (ISO 11114-1:1997)*.

EN ISO 13341:1997, *Transportable gas cylinders — Fitting of valves to gas cylinders (ISO 13341:1997)*.

3 Terms, definitions and symbols

For the purposes of this European Standard, the following terms, definitions and symbols apply.

3.1 Terms and definitions

3.1.1

yield stress

value corresponding to the lower yield stress R_{eL} or, for steels that do not exhibit defined yield, the 0,2 % proof stress $R_{p0,2}$

3.1.2

normalizing

heat treatment in which a cylinder is heated to a uniform temperature above the upper critical point (AC_3 , as defined in EN 10052) of the steel and then cooled in still air

3.1.3

batch

quantity of cylinders plus cylinders for destructive testing, defined in Table 3, of the same nominal diameter, thickness and design made from the same cast of steel and subjected to the same heat treatment for the same duration of time. The length of the cylinder in a heat treatment batch may vary by up to 20 %

3.1.4

burst pressure

highest pressure reached in a cylinder during a burst test