

Gas cylinders - Refillable seamless steel tubes of water capacity between 150 l and 3000 l - Design, construction and testing (ISO 11120:2015)

## EESTI STANDARDI EESSÕNA

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EUROPEAN STANDARD

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Gas cylinders - Refillable seamless steel tubes of water capacity  
between 150 l and 3000 l - Design, construction and testing (ISO  
11120:2015)

Bouteilles à gaz - Tubes en acier sans soudure  
rechargeables d'une contenance en eau de 150 l à 3000 l -  
Conception, construction et essais (ISO 11120:2015)

Gasflaschen - Wiederbefüllbare nahtlose Großflaschen aus  
Stahl mit einem Fassungsraum zwischen 150 l und 3 000 l -  
Auslegung, Bau und Prüfung (ISO 11120:2015)

This European Standard was approved by CEN on 4 October 2014.

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## Foreword

This document (EN ISO 11120:2015) has been prepared by Technical Committee ISO/TC 58 "Gas cylinders" in collaboration with 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of an identical text or by endorsement, at the latest by August 2015, and conflicting national standards shall be withdrawn at the latest by August 2015.

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This document supersedes EN ISO 11120:1999.

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### Endorsement notice

The text of ISO 11120:2015 has been approved by CEN as EN ISO 11120:2015 without any modification.

# Contents

	Page
Foreword.....	v
Introduction.....	vi
<b>1 Scope.....</b>	<b>1</b>
<b>2 Normative references.....</b>	<b>1</b>
<b>3 Terms and definitions.....</b>	<b>1</b>
<b>4 Symbols.....</b>	<b>2</b>
<b>5 Inspection and testing.....</b>	<b>3</b>
<b>6 Materials.....</b>	<b>3</b>
6.1 General requirements.....	3
6.2 Controls on chemical composition.....	4
6.3 Heat treatment.....	5
6.4 Mechanical properties.....	5
6.5 Failure to meet test requirements.....	5
<b>7 Design.....</b>	<b>6</b>
7.1 Calculation of cylindrical shell thickness.....	6
7.2 Design of tube ends.....	6
7.3 Design drawing.....	7
<b>8 Construction and workmanship.....</b>	<b>7</b>
8.1 General.....	7
8.2 Surface imperfections.....	7
8.3 Ultrasonic examination.....	7
8.4 End closure (fitting).....	7
8.5 Dimensional tolerances.....	7
8.5.1 Out-of-roundness.....	7
8.5.2 Outside diameter.....	7
8.5.3 Straightness.....	8
8.5.4 Eccentricity.....	8
8.5.5 Length.....	8
8.5.6 Water capacity.....	8
8.5.7 Mass.....	8
<b>9 Type approval procedure.....</b>	<b>9</b>
9.1 General requirements.....	9
9.2 Prototype tests.....	9
9.3 Type approval test report.....	10
9.4 Type approval certificate.....	10
<b>10 Batch tests.....</b>	<b>10</b>
10.1 General requirements.....	10
10.2 Mechanical tests.....	10
10.2.1 General requirements.....	10
10.2.2 Tensile test.....	11
10.2.3 Impact testing.....	11
10.3 Interpretation of results.....	11
<b>11 Tests on every tube.....</b>	<b>11</b>
11.1 General.....	11
11.2 Hydraulic test.....	12
11.2.1 Proof pressure test.....	12
11.2.2 Volumetric expansion test.....	12
11.3 Hardness testing.....	12
11.4 Visual inspection.....	13

11.5	Dimensional inspection.....	13
11.5.1	Thickness.....	13
11.5.2	Diameter and length.....	13
11.5.3	Water capacity and mass.....	13
11.5.4	Neck threads and openings.....	13
11.6	Ultrasonic non-destructive test.....	13
<b>12</b>	<b>Special requirements for tubes for embrittling gases.....</b>	<b>14</b>
12.1	General.....	14
12.2	Materials.....	14
12.3	Design.....	14
12.4	Construction and workmanship.....	14
12.4.1	General.....	14
12.4.2	Surface imperfections.....	14
12.5	Mechanical tests.....	15
12.5.1	Tensile and impact tests.....	15
12.5.2	Hardness test.....	15
<b>13</b>	<b>Inspection certificate.....</b>	<b>15</b>
<b>14</b>	<b>Marking.....</b>	<b>16</b>
<b>Annex A</b>	<b>(informative) Typical chemistry groupings for seamless steel tubes.....</b>	<b>17</b>
<b>Annex B</b>	<b>(normative) Ultrasonic examination.....</b>	<b>18</b>
<b>Annex C</b>	<b>(informative) Description and evaluation of manufacturing imperfections and conditions for rejection of seamless steel tubes at time of final inspection by the manufacturer.....</b>	<b>23</b>
<b>Annex D</b>	<b>(informative) Acceptance certificate.....</b>	<b>29</b>
<b>Annex E</b>	<b>(informative) Type approval certificate.....</b>	<b>31</b>
<b>Annex F</b>	<b>(informative) Bend stress calculation.....</b>	<b>32</b>
<b>Bibliography</b>	<b>.....</b>	<b>33</b>

## Introduction

This International Standard provides a specification for the design, manufacture, inspection and testing of tubes at the time of manufacture for worldwide usage. The objective is to balance design and economic efficiency against international acceptance and universal utility.

This International Standard aims to eliminate concern about climate, duplicate inspections and restrictions currently existing because of lack of definitive International Standards. It does not reflect on the suitability of the practice of any nation or region.

This International Standard addresses the general requirements on design, construction and initial inspection and testing of pressure receptacles of the United Nations *Recommendations on the Transport of Dangerous Goods: Model Regulations*.

It is intended to be used under a variety of regulatory regimes, but it is suitable for use with the conformity assessment system for UN pressure receptacles of the above-mentioned Model Regulations.

# Gas cylinders — Refillable seamless steel tubes of water capacity between 150 l and 3000 l — Design, construction and testing

## 1 Scope

This International Standard specifies minimum requirements for the material, design, construction and workmanship, manufacturing processes, examinations and tests at manufacture of refillable quenched and tempered seamless steel tubes of water capacities exceeding 150 l up to and including 3 000 l for compressed and liquefied gases exposed to extreme world-wide ambient temperatures, normally between  $-50\text{ }^{\circ}\text{C}$  and  $+65\text{ }^{\circ}\text{C}$ .

This International Standard is applicable to tubes with a maximum tensile strength,  $R_{ma}$ , of less than 1 100 MPa. These tubes can be used alone or in batteries to equip trailers or multiple element gas containers (ISO modules or skids) for the transportation and distribution of compressed gases.

This International Standard is applicable to tubes having an opening at each end.

## 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.

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

ISO 148-2, *Metallic materials — Charpy pendulum impact test — Part 2: Verification of testing machines*

ISO 148-3, *Metallic materials — Charpy pendulum impact test — Part 3: Preparation and characterization of Charpy V-notch test pieces for indirect verification of pendulum impact machines*

ISO 9712, *Non-destructive testing — Qualification and certification of NDT personnel*

ISO 6506-1, *Metallic materials — Brinell hardness test — Part 1: Test method*

ISO 6506-2, *Metallic materials — Brinell hardness test — Part 2: Verification and calibration of testing machines*

ISO 6506-3, *Metallic materials — Brinell hardness test — Part 3: Calibration of reference blocks*

ISO 6892-1, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature*

ISO 11114-1, *Gas cylinders — Compatibility of cylinder and valve materials with gas contents — Part 1: Metallic materials*

ISO 11114-4, *Transportable gas cylinders — Compatibility of cylinder and valve materials with gas contents — Part 4: Test methods for selecting metallic materials resistant to hydrogen embrittlement*

ISO 13769, *Gas cylinders — Stamp marking*

## 3 Terms and definitions

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