

<b>STN</b>	<b>Fľaše na plyny. Návratné bezšvové oceľové fľaše s vodnou kapacitou od 150 litrov do 3 000 litrov. Návrh, konštrukcia a skúšanie (ISO 11120: 2015).</b>	<b>STN EN ISO 11120</b>  07 8525
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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)

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 06/15

Obsahuje: EN ISO 11120:2015, ISO 11120:2015

Oznámením tejto normy sa ruší  
STN EN ISO 11120 (07 8525) z januára 2001

**120929**

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Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, odbor SÚTN, 2015  
Podľa zákona č. 264/1999 Z. z. v znení neskorších predpisov sa môžu slovenské technické normy rozmnožovať a rozširovať iba so súhlasom Úradu pre normalizáciu, metrológiu a skúšobníctvo SR.

English Version

## 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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COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

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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of an identical text or by endorsement, at the latest by August 2015, and conflicting national standards shall be withdrawn at the latest by August 2015.

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 ISO 11120:1999.

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

According to the CEN-CENELEC Internal Regulations, the national standards organizations 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

### **Endorsement notice**

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

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

*Bouteilles à gaz — Tubes en acier sans soudure rechargeables d'une  
contenance en eau de 150 l à 3000 l — Conception, construction et essais*





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Published in Switzerland

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: [Foreword — Supplementary information](#).

The committee responsible for this document is ISO/TC 58, *Gas cylinders*, Subcommittee SC 3, *Cylinder design*.

This second edition cancels and replaces the first edition (ISO 11120:1999), which has been technically revised by the following:

- [Annex A](#) "Typical chemistry groupings for seamless steel tubes" is informative;
- nickel chromium molybdenum steel has been added in [6.1.1](#) and [Annex A](#) as Group V;
- reduction of maximum sulfur content in [6.2.2](#) from 0,020 % to 0,010 %; also the sum of sulfur and phosphorus is reduced from 0,030 % to 0,025 %;
- the modification of ultrasonic provisions for ultrasonic examination in [8.3](#) to include ultrasonic examination for wall thickness and for imperfections also on the supplied tubing;
- "Type Approval Procedure" has been introduced in [Clause 9](#);
- the provisions for design of tubes for embrittling gases have been revised.

It also incorporates ISO 11120:1999/Amd 1:2013.

## 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*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**