

KRÜOGEENANUMAD. VOOLIKUD

Cryogenic vessels - Hoses (ISO 21012:2018)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 21012:2018 sisaldab Euroopa standardi EN ISO 21012:2018 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 21012:2018 consists of the English text of the European standard EN ISO 21012:2018.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 12.12.2018.	Date of Availability of the European standard is 12.12.2018.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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ICS 23.020.40, 83.140.40

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English Version

Cryogenic vessels - Hoses (ISO 21012:2018)

R?ipients cryog?iques - Tuyaux flexibles (ISO
21012:2018)

Kryo-Beh?ter - Schlauchleitungen (ISO 21012:2018)

This European Standard was approved by CEN on 15 November 2018.

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

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European foreword

This document (EN ISO 21012:2018) has been prepared by Technical Committee ISO/TC 220 "Cryogenic vessels" in collaboration with Technical Committee CEN/TC 268 "Cryogenic vessels and specific hydrogen technologies applications" the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by June 2019, and conflicting national standards shall be withdrawn at the latest by June 2019.

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 12434:2000.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZA, 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, 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.

Endorsement notice

The text of ISO 21012:2018 has been approved by CEN as EN ISO 21012:2018 without any modification.

Annex ZA (informative)

Relationship between this European Standard and the Essential requirements of EU Directive 2014/68/EU (Pressure equipment Directive) aimed to be covered

This European Standard has been prepared under a Commission's standardization request M/071 to provide one voluntary means of conforming to essential requirements of 2014/68/EU (Pressure equipment Directive).

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that Directive, and associated EFTA regulations.

Table ZA.1 — Correspondence between this European Standard and Annex I of Directive 2014/68/EU (Pressure equipment Directive)

Essential Requirements of Directive 2014/68/EU	Clause(s)/sub-clause(s) of this EN	Remarks/Notes
2.2.1	4.1	Design
4	4.2	Materials
1.1	4.3	Cleanliness
2.2.3 (b)	4.4	Mechanical properties
2.2.4	5	Hose sample test
3.2.2	6.2	Proof test
3.3	7	Marking

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

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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).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by ISO/TC 220, *Cryogenic vessels*.

This second edition cancels and replaces the first edition (ISO 21012:2006), which has been technically revised.

This edition includes the following significant changes with respect to the previous edition:

- Subclause [4.2](#): Added “any austenitic stainless steel hoses shall be annealed after formation for hydrogen service.”;
- Subclause [4.4.3](#): Replaced shall with should;
- Subclause [4.4.3](#): Replaced 50 000 cycles with 10 000 cycles;
- Subclause [4.4.3](#): Added “This test is only required if the flexible hose is subject to multiple wide/significant moves when under pressure.”;
- Subclause [5.3.2.1](#): Replaced 50 000 cycles with 10 000 cycles;
- Subclause [5.3.2.2](#): Replaced 50 000 cycles with 10 000 cycles;
- [Annex B](#): Changed from Normative to Informative;
- [Annex C](#): Changed from Normative to Informative;
- [Annex C](#): Changed last sentence in second last paragraph to “Sufficient liquid nitrogen shall be used to ensure the flexible hose assembly reaches liquid nitrogen temperature.”.