

Thermoplastic multi-layer (non-vulcanized) hoses and hose assemblies for the transfer of liquid petroleum gas and liquefied natural gas - Specification

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

**Thermoplastic multi-layer (non-vulcanized) hoses and
hose assemblies for the transfer of liquid petroleum gas
and liquefied natural gas - Specification**

Tuyaux et flexibles en thermoplastique multicouches
(non vulcanisés) utilisés pour le dépotage de gaz
pétrolier liquide et gaz naturel liquéfié - Spécification

Thermoplastische, mehrlagige (nicht vulkanisierte)
Schläuche und Schlauchleitungen für die Förderung
von Flüssiggas und verflüssigtem Erdgas -
Spezifikation

This European Standard was approved by CEN on 9 November 2018 and includes Amendment 1 approved by CEN on 24 February 2020.

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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.

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European foreword

This document (EN 13766:2018+A1:2020) has been prepared by Technical Committee CEN/TC 218 “Rubber and plastics hoses and hose assemblies”, 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of an identical text or by endorsement, at the latest by November 2020, and conflicting national standards shall be withdrawn at the latest by November 2020.

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 includes Amendment 1 approved by CEN on 24 February 2020.

This document supersedes A1 EN 13766:2018 A1.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1.

The main changes compared to the previous version are as follows:

- the safety warning has been moved from the Scope to Clause 7 “Performance requirements of hoses and hose assemblies”;
- the normative references (Clause 2) have been updated;
- the tolerances for the minimum working temperature in Table 1 “Pressure and temperature range” have been removed;
- in Clause 5, “Materials and construction”, a requirement has been added that the manufacturer shall establish that the materials used are suitable for the cryogenic liquids to be carried;
- the requirement for the electrical resistance between end fittings (Clause 7) has been modified;
- Clause 10 “Marking” has been updated;
- the title of Annex A has been changed to “Method of test for crush recovery” and tolerances for the test force have been added;
- requirements have been added to Annex D “Sequence of hydrostatic tests”;
- in Annex E “Method of test for fitting security”, the wording concerning a “cycle” has been clarified and the requirements for the end of the test after completion of 20 cycles have been rewritten;
- Annex G “Method of test for flammability” has been added;
- the requirements for type tests, routine tests and batch tests (Annexes H and I) have been updated;
- the document has been editorially revised.

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

1 Scope

This document specifies requirements for two types of thermoplastic multi-layer (non-vulcanized) transfer hoses and hose assemblies for carrying liquefied petroleum gas and liquefied natural gas. Each type is subdivided into two classes, one for onshore duties, and the other for offshore.

This document is applicable for hose sizes from 25 mm to 250 mm, working pressures from 10,5 bar to 25 bar and operating temperatures from -196 °C to +45 °C.

NOTE Offshore LNG hose assemblies are also specified in EN 1474-2 [1].

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 10088-3:2014, *Stainless steels - Part 3: Technical delivery conditions for semi-finished products, bars, rods, wire, sections and bright products of corrosion resisting steels for general purposes*

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

EN ISO 527-1, *Plastics - Determination of tensile properties - Part 1: General principles (ISO 527-1)*

EN ISO 1043-1, *Plastics - Symbols and abbreviated terms - Part 1: Basic polymers and their special characteristics (ISO 1043-1)*

EN ISO 1402:2009, *Rubber and plastics hoses and hose assemblies - Hydrostatic testing (ISO 1402)*

EN ISO 4671, *Rubber and plastics hoses and hose assemblies - Methods of measurement of the dimensions of hoses and the lengths of hose assemblies (ISO 4671)*

EN ISO 7326, *Rubber and plastics hoses - Assessment of ozone resistance under static conditions (ISO 7326)*

EN ISO 8031:2009, *Rubber and plastics hoses and hose assemblies - Determination of electrical resistance and conductivity (ISO 8031:2009)*

EN ISO 8330:2014, *Rubber and plastics hoses and hose assemblies - Vocabulary (ISO 8330:2014)*

EN ISO 10619-1, *Rubber and plastics hoses and tubing - Measurement of flexibility and stiffness - Part 1: Bending tests at ambient temperature (ISO 10619-1)*

EN ISO 10619-2, *Rubber and plastics hoses and tubing - Measurement of flexibility and stiffness - Part 2: Bending tests at sub-ambient temperatures (ISO 10619-2)*

EN ISO 13934-1, *Textiles - Tensile properties of fabrics - Part 1: Determination of maximum force and elongation at maximum force using the strip method (ISO 13934-1)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 8330:2014 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>