

Rubber and plastics hoses, tubing and assemblies for use with propane and butane and their mixtures in the vapour phase - Part 1: Hoses and tubings

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 16436-1:2014+A2:2018 sisaldab Euroopa standardi EN 16436-1:2014+A2:2018 ingliskeelset teksti.	This Estonian standard EVS-EN 16436-1:2014+A2:2018 consists of the English text of the European standard EN 16436-1:2014+A2:2018.
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English Version

Rubber and plastics hoses, tubing and assemblies for use
with propane and butane and their mixtures in the vapour
phase - Part 1: Hoses and tubings

Tuyaux, tubes et flexibles en caoutchouc et en plastique
pour utilisation avec le propane, le butane et leurs
mélanges en phase vapeur - Partie 1: Tuyaux et tubes

Gummi- und Kunststoffschläuche und -
Schlauchleitungen mit und ohne Einlage zur
Verwendung mit Propan, Butan und deren Gemischen
in der Gasphase - Teil 1: Schläuche mit und ohne
Einlage

This European Standard was approved by CEN on 6 March 2014 and includes Amendment 1 approved by CEN on 1 October 2015 and Amendment 2 approved by CEN on 13 May 2018.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 16436-1:2014+A2:2018) has been prepared by Technical Committee CEN/TC 181 “Dedicated liquefied petroleum gas appliances”, 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of an identical text or by endorsement, at the latest by March 2019, and conflicting national standards shall be withdrawn at the latest by March 2019.

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This document includes Amendment 1, approved by CEN on 2015-10-01 and Amendment 2, approved by CEN on 2018-05-13.

This document supersedes A2 EN 16436-1:2014+A1:2015 A2.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1 and A2 A2.

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1 Scope

This European Standard specifies the characteristics and performance requirements for tubing and hoses made of either rubber or plastics for use with commercial propane and commercial butane and mixtures thereof, in the vapour phase, for connection of appliances, from:

- pressurized gas container to a regulating device,
- pressurized gas container to an appliance,
- regulating device to an appliance, and
- regulating device to installation pipework,

in environments of a temperature range from $-30\text{ }^{\circ}\text{C}$ to $+70\text{ }^{\circ}\text{C}$. Working pressures are from 0 bar to 30 bar.

Three classes are defined in Table 1 according to the maximum working pressures and minimum ambient temperatures.

This European Standard only covers the tubing or hose part of assemblies. The assemblies themselves will be covered by EN 16436-2.

This European Standard does not apply to hoses for:

- welding purposes (see EN ISO 3821, EN 1327);
- propulsion purposes;
- LPG transfer purposes (see EN 1762).

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.

EN ISO 176, *Plastics — Determination of loss of plasticizers — Activated carbon method (ISO 176)*

EN ISO 1402, *Rubber and plastics hoses and hose assemblies — Hydrostatic testing (ISO 1402)*

EN ISO 4080, *Rubber and plastics hoses and hose assemblies — Determination of permeability to gas (ISO 4080)*

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 8033, *Rubber and plastics hoses — Determination of adhesion between components (ISO 8033)*

EN ISO 8330:2008, *Rubber and plastics hoses and hose assemblies — Vocabulary (ISO 8330:2007)*

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 30013, *Rubber and plastics hoses — Methods of exposure to laboratory light sources — Determination of changes in colour, appearance and other physical properties (ISO 30013)*

ISO 37, *Rubber, vulcanized or thermoplastic — Determination of tensile stress-strain properties*

ISO 105-A02, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour*

ISO 188, *Rubber, vulcanized or thermoplastic — Accelerated ageing and heat resistance tests*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 8330:2008 and the following apply.

3.1

commercial butane

hydrocarbon product composed predominantly of butanes and/or butenes

Note 1 to entry: The remaining part can consist mainly of propane/propene and pentane/pentene isomers.

[SOURCE: ISO 9162]

3.2

commercial propane

hydrocarbon product composed predominantly of propane and/or propene

Note 1 to entry: The remaining part can consist mainly of ethane/ethene and butane/butene isomers.

[SOURCE: ISO 9162]

3.3

tubing

single core of plastic or rubber with no reinforcement or cover

3.4

hose

rubber or flexible thermoplastic lining with a reinforcement made of natural or synthetic textile material applied either spirally wound or braided, and a flexible rubber or thermoplastic outer cover

4 Classification of tubing and hose

One class of tubing and two classes of hose are specified in Table 1 depending on the maximum working pressure and minimal ambient temperatures.

Table 1 — Classification of tubings and hoses

Class	Maximum working pressure bar	Minimum ambient temperature °C
1 (tubing)	0,2	-20
2 (hose)	10	-30
3 (hose)	30	