

STN	Gumové a plastové hadice, rúrky a zostavy na použitie propánu, butánu a ich zmesí v plynnej fáze Časť 1: Hadice a rúrky	STN EN 16436-1+A2 27 8320
------------	--	---

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. 02/19

Obsahuje: EN 16436-1:2014+A2:2018

Oznámením tejto normy sa ruší
STN EN 16436-1+A1 (27 8320) z apríla 2016

128152

EUROPEAN STANDARD

EN 16436-1:2014+A2

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2018

ICS 23.040.70

Supersedes EN 16436-1:2014+A1:2015

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.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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.

CEN members are the national standards bodies of 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 United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN 16436-1:2014+A2:2018 (E)

Contents	Page
European foreword	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	5
4 Classification of tubing and hose	5
5 Materials and construction of tubing and hoses	6
6 Dimensions of tubing and hoses	7
6.1 Inside diameters, wall thicknesses and concentricity	7
6.2 Measurement of ovality	7
7 Properties of materials for tubing, lining and cover of hoses	7
7.1 Tensile strength and elongation at break	7
7.2 Accelerated ageing	8
7.3 Resistance to n-pentane	8
8 Performance requirements of tubing and hoses	8
8.1 Visible defects evaluation	8
8.2 Cleanliness	8
8.3 Pressure requirements	8
8.4 Adhesion in hoses	9
8.5 Resistance to kinking	9
8.6 Resistance to crushing	9
8.7 Low temperature flexibility	9
8.8 Flame propagation	9
8.9 Permeability to propane	9
8.10 Resistance to ozone	10
8.11 UV (xenon arc lamp) test	10
8.12 Loss in mass on heating (for non vulcanized (plastics) materials only)	10
8.13 Durability of the marking	10
9 Marking	10
Annex A (normative) Test methods for tubing and hoses	12
Annex B (informative) A-deviations	18
Bibliography	19

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.

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 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.

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, 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.

EN 16436-1:2014+A2:2018 (E)**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 °C to $+70\text{ °C}$. 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*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN