

**Rubber and plastics tubing, hoses and assemblies for
use with commercial propane, commercial butane and
their mixtures in the vapour phase - Part 1:
Requirements for rubber and plastics tubing and hoses**

EESTI STANDARDI EESSÕNA

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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 13.12.2000.	Date of Availability of the European standard is 13.12.2000.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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ICS 23.040.70

Võtmesõnad: classifications, gas technology, gases, hose assemblies, layers, marking, materials, materials testing, plastic pipes, plastics hose, propane, properties, rubber hoses, rubber technology, specification, specification (approval), specifications, testing,

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English version

**Rubber and plastics tubing, hoses and assemblies
for use with commercial propane, commercial butane
and their mixtures in the vapour phase**

Part 1: Requirements for rubber and plastics tubing and hoses

Tubes, tuyaux et flexibles en caoutchouc et en plastique pour le propane commercial, le butane commercial et leurs mélanges en phase vapeur – Partie 1: Exigences relatives aux tubes et tuyaux en caoutchouc et en plastique

Gummi- und Kunststoffschläuche und -schlauchleitungen mit und ohne Einlagen zur Verwendung mit handelsüblichem Propan, handelsüblichem Butan und deren Mischungen in der Gasphase – Teil 1: Anforderungen an Gummi- und Kunststoffschläuche mit und ohne Einlagen

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CEN

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Contents

	Page
Foreword	2
1 Scope	3
2 Normative references	3
3 Terms and definitions	4
4 Classification	4
5 Construction	5
6 Dimensions	5
7 Requirements of materials	5
8 Performance requirements of tubing and hoses	6
9 Test methods	8
10 Test frequency	11
11 Marking	12
Annex A (informative) A-deviations	14

Foreword

This European Standard 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 June 2001, and conflicting national standards shall be withdrawn at the latest by June 2001.

This European Standard 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).

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

WARNING Due to regulations which are at the time outside the competence of the CEN/CENELEC members (France, Sweden and Italy), this European Standard contains an A-deviation, detailed in annex A (informative).

1 Scope

This European Standard specifies the properties and performance requirements for flexible rubber and plastics tubing and hoses up to a nominal bore of 12,5 for use with commercial propane and butane and mixtures thereof in the vapour phase in appliances, in environments between a minimum ambient temperature of -30 °C and a maximum ambient temperature of +60 °C.

The tests detailed in this standard are also applicable to tubing and hoses which form part of an assembly, such as that used for connecting a cylinder to a regulator.

NOTE 1 Attention is drawn to Part 2 of this standard for details of nipples, couplings and assemblies.

NOTE 2 Flexible rubber and plastics tubing and hoses conforming to this standard may be used where contact with appliances having a maximum surface temperature of 90 °C may occur.

This European Standard does not apply to hoses for welding purposes.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN ISO 176, *Plastics — Determination of loss of plasticizers — Activated carbon method* (ISO 176:1976)

EN ISO 4671, *Rubber and plastics hose and hose assemblies — Methods of measurement of dimensions* (ISO 4671:1984)

EN ISO 4672, *Rubber and plastics hoses — Sub-ambient temperature flexibility tests* (ISO 4672:1988)

EN ISO 7326, *Rubber and plastics hoses — Assessment of ozone resistance under static conditions* (ISO 7326:1991)

EN ISO 8033, *Rubber and plastics hose — Determination of adhesion between components* (ISO 8033:1991)

ISO 1307, *Rubber and plastics hoses for general-purpose industrial applications — Bore diameters and tolerances and tolerances on length* (ISO 1307:1992)

EN ISO 1402, *Rubber and plastics hoses and hose assemblies — Hydrostatic testing* (ISO 1402:1994)

EN ISO 4080, *Rubber and plastics hoses and hose assemblies — Determination of permeability to gas* (ISO 4080:1991)

EN ISO 11758, *Rubber and plastics hoses — Exposure to a xenon arc lamp — Determination of changes in colour and appearance* (ISO 11758:1995)

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

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

ISO 8330, *Rubber and plastics hoses and hose assemblies — Vocabulary*

3 Terms and definitions

For the purposes of this standard the following definitions and those in ISO 8330 apply.

3.1

commercial butane

hydrocarbon product composed predominantly of butanes and/or butenes; the remaining part may consist mainly of propane/propene and pentane/pentane isomers

3.2

commercial propene

hydrocarbon product composed predominantly of propane and/or propene; the remaining part may consist mainly of ethane/ethene and butane/butene isomers

4 Classification

One class of tubing and three classes of hose are specified, the characteristics being given in Table 1.

Table 1 — Classification of tubing and hoses

Class	Working pressure bar ¹⁾	Temperature °C		Reinforced	Permeation requirement mL/m/h
		Minimum	Maximum		
1 (tubing)	0.2	-10	60	No	≤ 15
2 (hose)	10	-20	60	Yes	≤ 25
3 (hose)	20	-20	60	Yes	≤ 25
4 (hose) (for outdoor use only)	20	-30	60	Yes	≤ 75

¹⁾ 1 bar = 0.1 MPa.