

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

The European Standard EN 13766:2003 has the status of a
British Standard

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National foreword

This British Standard is the official English language version of EN 13766:2003.

The UK participation in its preparation was entrusted to Technical Committee PRI/66, Rubber and plastics tubing, hoses and hose assemblies, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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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 de 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 28 November 2002.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.



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Foreword

This document (EN 13766:2003) 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 August 2003, and conflicting national standards shall be withdrawn at the latest by August 2003.

Annexes A, B, C, D, E, F and G are normative. Annex H is informative.

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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard 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.

It specifies sizes from 25 mm to 250 mm, working pressures from 10,5¹ bar to 25 bar and operating temperatures from – 175 °C to + 45 °C.

¹ 1 bar = 0,1 MPa.

2 Normative references

This European Standard incorporates by dated or undated references, 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 by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 590, *Automotive fuels - Diesel - Requirements and test methods*.

EN 10045-1, *Metallic materials - Charpy impact test - Part 1: Test method*.

EN 10088-1, *Stainless steels — Part 1: List of stainless steels*.

EN 27326, *Rubber and plastics hoses - Assessment of ozone resistance under static conditions (ISO 7326:1991)*.

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

EN ISO 1043-1, *Plastics - Symbols and abbreviated terms - Part 1: Basic polymers and their special characteristics (ISO 1043-1:2001)*.

EN ISO 1746, *Rubber or plastics hoses and tubing - Bending tests (ISO 1746:1998, including technical corrigendum 1:1999)*.

EN ISO 4671, *Rubber and plastics hose and hose assemblies - Methods of measurement of dimensions (ISO 4671:1999)*.

EN ISO 4672, *Rubber and plastics hoses - Sub-ambient temperature flexibility tests (ISO 4672:1997)*.

EN ISO 8031, *Rubber and plastics hoses and hose assemblies - Determination of electrical resistance (ISO 8031:1993)*.

EN ISO 8330:2000, *Rubber and plastics hoses and hose assemblies - Vocabulary (ISO 8330:1998)*.

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN ISO 8330:2000 apply.

WARNING — Persons using this European Standard should be familiar with normal laboratory practice. This standard does not purport to address all the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate health and safety practices and to ensure compliance with any national regulatory conditions.

4 Classification

Hoses are classified according to their usage, working pressure and working temperature range as given in Table 1.

Table 1 — Pressure and temperature range

Pressure/temperature	Class A ^a	Class B ^b	Class A	Class B
	Type 1	Type 1	Type 2	Type 2
Maximum working pressure (bar)	25	20	13	10,5
Proof pressure (bar)	37,5	30	19,5	15,8
Minimum burst pressure (bar)	100	100	52	52,5
Working temperature range (°C)	-50 3 to + 45	-50 3 to + 45	-175 5 to + 45	-175 5 to + 45
^a Class A is for use onshore.				
^b Class B is for use offshore.				

5 Materials and construction

Hoses shall be constructed as shown in Figure 1 and shall consist of the following:

Class A:

- an internal wire helix of stainless steel conforming to EN 10088-1, numbers 1.4306, 1.4401, 1.4404 or 1.4436;
- a multi-ply wall of layers of films and fabrics made of thermoplastics that in combination give the required properties and provide a complete seal;
- an external wire helix of stainless steel conforming to EN 10088-1, numbers 1.4306, 1.4401, 1.4404 or 1.4436.

Class B:

- an internal wire helix of stainless steel conforming to EN 10088-1, numbers 1.4401, 1.4404 or 1.4436;
- a multi-ply wall of layers of films and fabrics made of thermoplastics that in combination give the required properties and provide a complete seal;
- an external wire helix of stainless steel conforming to EN 10088-1, numbers 1.4401, 1.4404 or 1.4436.

NOTE By agreement between manufacturer and purchaser, the outer layer may have colour identification.