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# Rubber and plastic hoses and hose assemblies with internal vapour recovery for measured fuel dispensing systems - Specification

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## EESTI STANDARDI EESSÕNA

#### NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 13483:2005 sisaldab Euroopa standardi EN 13483:2005 ingliskeelset teksti.	This Estonian standard EVS-EN 13483:2005 consists of the English text of the European standard EN 13483:2005.
Käesolev dokument on jõustatud 22.06.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.	This document is endorsed on 22.06.2005 with the notification being published in the official publication of the Estonian national standardisation organisation.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.
Käsitlusala: This document specifies the requirements for hose assemblies with vapour recovery for delivery systems on petrol filling stations.	<b>Scope:</b> This document specifies the requirements for hose assemblies with vapour recovery for delivery systems on petrol filling stations.
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# **EUROPEAN STANDARD** NORME EUROPÉENNE **EUROPÄISCHE NORM**

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English version

## Rubber and plastic hoses and hose assemblies with internal vapour recovery for measured fuel dispensing systems -**Specification**

Tuyaux et flexibles à récupération interne de vapeur pour un système de livraison mesurée carburant - Spécification Gummi- und Kunststoffschläuche und -schlauchleitungen mit innenliegender Gasrückführung für Zapfsäulen an Tankstellen - Anforderungen

This European Standard was approved by CEN on 21 March 2005.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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



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

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## Foreword

This document (EN 13483:2005) 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 2005, and conflicting national standards shall be withdrawn at the latest by November 2005.

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

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

#### 1 Scope

This document specifies the requirements for hose assemblies with vapour recovery for delivery systems on petrol filling stations.

The hose assemblies with vapour recovery for delivery systems on petrol filling stations shall be capable of withstanding anticipated mechanical, thermal and chemical stressing and shall be resistant to the combustible liquids used in these applications as well as their vapour and vapour air mixtures. The assemblies shall be constructed in such a way that actions during normal operation cannot give rise to dangerous electrostatic charges nor shall there be any reduction in the performance of the vapour recovery.

The assemblies are intended for use at ambient temperatures between -30 °C and +55 °C for normal temperature class and -40 °C and +55 °C for low temperature class at a working pressure  $\leq 16$  bar<sup>1</sup>). Hoses may be constructed from rubber or thermoplastic elastomer (TPE) and this document specifies the requirements for three types of hoses in two categories and two classes of hose assemblies for measured fuel dispensing systems, including oxygenated fuels ( $\leq 15$  % oxygenated compounds) with internal vapour recovery tubing or hose.

NOTE This document does not apply to multi chamber fuel dispensing hoses.

#### 2 Normative references

The following referenced documents are indispensable for the application 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 26801, Rubber or plastics hoses — Determination of volumetric expansion (ISO 6801:1983).

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

EN 28033, Rubber and plastics hose — Determination of adhesion between components (ISO 8033:1991).

EN 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 4671, Rubber and plastics hose and hose assemblies — Methods of measurements of dimensions (ISO 4671:1999).

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).

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 554, Standard atmospheres for conditioning and/or testing — Specifications.

<sup>1) 1</sup> bar = 0,1 MPa

ISO 1746, Rubber or plastics hoses and tubing — Bending tests.

ISO 1817, Rubber, vulcanised — Determination of the effect of liquids.

ISO 4649, Rubber, vulcanized or thermoplastic — Determination of abrasion resistance using a rotating cylindrical drum device.

#### 3 Terms and definitions

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

#### Hose assembly

fuel hose complete with an internal vapour tubing or vapour hose and fitted with couplings

#### 4 Classification

Hoses for this application shall be divided into three types:

Type 1, textile reinforced;

Type 2, textile and helical wire reinforced; or

Type 3, fine wire reinforced.

Hoses for this application shall be divided into two categories:

Category M: electrically bonded

Category  $\Omega$ : electrically conductive

Hoses for this application shall be divided into two temperature classes:

Normal temperature class with an ambient working temperature of -30 °C to +55 °C

Low temperature class (LT) with an ambient working temperature of -40 °C to +55 °C

#### 5 Materials and construction

#### 5.1 Fuel hose

The fuel hose shall consist of the following:

- a smooth, fuel resistant lining of rubber or thermoplastic elastomer (TPE);
- a suitable reinforcement, related to type;
- a non-corrugated fuel and weather resistant rubber or TPE cover.

Hose assemblies shall be capable of conducting an electrical charge from coupling to coupling.

When this capability is provided by means of metallic bonding wires, not less than two (metallic) bonding wires shall be embedded in the hose and the metal used shall have a high resistance to fatigue and corrosion.