

Rubber and thermoplastics hoses and hose assemblies
for liquid or gaseous chemicals - Specification

EESTI STANDARDI EESSÕNA

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English Version

Rubber and thermoplastics hoses and hose assemblies for liquid or gaseous chemicals - Specification

Tuyaux et assemblages flexibles en caoutchouc et en
matériaux thermoplastiques pour substances
chimiques liquides ou gazeuses - Spécifications

Gummi- und Kunststoffschläuche und -
schlauchleitungen für flüssige oder gasförmige
Chemikalien - Anforderungen

This European Standard was approved by CEN on 13 December 2020.

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European foreword

This document (EN 12115:2021) 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of an identical text or by endorsement, at the latest by July 2021, and conflicting national standards shall be withdrawn at the latest by July 2021.

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 supersedes EN 12115:2011.

In comparison with EN 12115:2011 the following changes have been made:

- the scope now excludes hose assemblies for anhydrous ammonia (EN ISO 5771);
- the normative references have been updated;
- in subclause 14.3, “Identification of hose assemblies”, a permission has been added that bands may be replaced by permanently adhered labelling bearing the same information, e.g. coloured labels at the coupling;
- a warning has been added at the beginning of informative Annex F, “Resistance to chemicals conveyed” to explicitly point out that the Annex has not been changed compared to EN 12115:2011;
- an environmental checklist (informative Annex G) has been added;
- the document has been editorially revised.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This document has been prepared to provide minimum acceptable requirements for the satisfactory performance of flexible rubber and thermoplastics hoses and hose assemblies with unspecified reinforcement and linings of different types of synthetic rubbers and thermoplastics, for each chemical substance conveyed.

A list of hose lining material resistant to specific chemical substances, identified by CAS number, is given as Annex F (informative). This list is for informational purposes only.

1 Scope

This document specifies requirements for two types of hose assemblies (Types D and SD) and four grades based on electrical properties with hoses made of rubber or thermoplastics and hose fittings made of metal designed to convey liquid or gaseous chemical substances, hereinafter termed the “chemicals conveyed”.

The hose assemblies are intended for use with chemicals conveyed in the temperature range of $-20\text{ }^{\circ}\text{C}$ to $+65\text{ }^{\circ}\text{C}$ at a working pressure $\leq 10\text{ bar}^1$.

NOTE 1 This document sets out requirements for these hose assemblies to ensure that users are not exposed to danger from fire or explosion and that the environment is protected against contamination or damage.

NOTE 2 Other temperatures and working pressures than those given above can be agreed with the manufacturer, provided that the marking on the hose (see 14.1) states this and the requirements of Table 5 and all the other requirements are met.

NOTE 3 Other diameters than those given in this document can be agreed with the manufacturer.

NOTE 4 This document also provides guidance on the storage of hose assemblies (Clause 15).

NOTE 5 The attention of users is drawn to Annex F concerning the selection of lining material related to the chemical(s) to be conveyed by the hoses and/or hose assemblies.

This document does not apply to hose assemblies for:

- aircraft refuelling (EN ISO 1825);
- fuel dispensing (EN 1360);
- oil burners (EN ISO 6806);
- refrigerant circuits;
- fuel truck delivery (EN 1761);
- liquid petroleum gases (LPG) (EN 1762, EN 16436-2);
- fire-fighting (EN ISO 14557);
- oil suction and discharge (EN 1765);
- rotary drilling (EN ISO 6807);
- fuel dispensing with vapour recovery systems (EN 13483);
- anhydrous ammonia (EN ISO 5771).

This document does not apply to multilayer hose assemblies (EN 13765 and EN 13766).

¹ 1 bar = 0,1 MPa.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 10244-2, *Steel wire and wire products - Non-ferrous metallic coatings on steel wire - Part 2: Zinc or zinc alloy coatings*

EN 10270-1, *Steel wire for mechanical springs - Part 1: Patented cold drawn unalloyed spring steel wire*

EN 10270-2, *Steel wire for mechanical springs - Part 2: Oil hardened and tempered spring steel wire*

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

EN 10088-3:2014, *Stainless steels - Part 3: Technical delivery conditions for semi-finished products, bars, rods, wire, sections and bright products of corrosion resisting steels for general purposes*

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 7233, *Rubber and plastics hoses and hose assemblies - Determination of resistance to vacuum (ISO 7233)*

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

EN ISO 8031:2020, *Rubber and plastics hoses and hose assemblies - Determination of electrical resistance and conductivity (ISO 8031:2020)*

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

EN ISO 8330:2014, *Rubber and plastics hoses and hose assemblies - Vocabulary (ISO 8330:2014)*

EN ISO 10619-1, *Rubber and plastics hoses and tubing - Measurement of flexibility and stiffness - Part 1: Bending tests at ambient temperature (ISO 10619-1)*

EN ISO 10619-2:2018, *Rubber and plastics hoses and tubing - Measurement of flexibility and stiffness - Part 2: Bending tests at sub-ambient temperatures (ISO 10619-2:2017)*

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 1817, *Rubber, vulcanized or thermoplastic - Determination of the effect of liquids*

ISO 4649:2017, *Rubber, vulcanized or thermoplastic - Determination of abrasion resistance using a rotating cylindrical drum device*

BS 3592-1:1986, *Steel wire for hose reinforcement - Specification for coated round and flat steel wire for rubber hose reinforcement*