

SVENSK STANDARD

SS-ISO 20766-18:2019

Vägfordon – Komponenter för bränslesystem för gasol (LPG) –
Del 18: Slang (ISO 20766-18:2019, IDT)

Road vehicles – Liquefied petroleum gas (LPG) fuel systems
components –
Part 18: Hose (ISO 20766-18:2019, IDT)



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Den internationella standarden ISO 20766-18:2019 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av ISO 20766-18:2019.

The International Standard ISO 20766-18:2019 has the status of a Swedish Standard. This document contains the official English version of ISO 20766-18:2019.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 41, *Specific aspects for gaseous fuels*.

A list of all parts in the ISO 20766 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Road vehicles — Liquefied petroleum gas (LPG) fuel systems components —

Part 18: Hose

1 Scope

This document specifies general information regarding the hose component of liquefied petroleum gas fuel, intended for use on the types of motor vehicles as defined in ISO 3833. It provides general design principles and specifies requirements for instructions and marking. It also specifies test requirements for the hose.

This document is applicable to vehicles (mono-fuel, bi-fuel or dual-fuel applications) using gaseous fuels in accordance with ISO 9162. It is not applicable to the following:

- a) fuel containers;
- b) stationary gas engines;
- c) container mounting hardware;
- d) electronic fuel management;
- e) refuelling receptacles.

Fully metal bendable hoses are excluded from this document.

NOTE 1 It is recognized that miscellaneous components not specifically addressed herein can be examined for compliance with the criteria of any applicable part of ISO 20766, including testing to the appropriate functional tests.

NOTE 2 All references to pressure in this document are considered gauge pressures unless otherwise specified.

NOTE 3 This document applies to devices which have a service pressure in the range of 110 kPa (Butane rich at 20 °C) and 840 kPa (Propane at 20 °C), hereinafter referred to in this document. Other service pressures can be accommodated by adjusting the pressure by the appropriate factor (ratio).

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.

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

ISO 527-2, *Plastics — Determination of tensile properties — Part 2: Test conditions for moulding and extrusion plastics*

ISO 1307:2006, *Rubber and plastics hoses — Hose sizes, minimum and maximum inside diameters, and tolerances on cut-to-length hoses*

ISO 1436, *Rubber hoses and hose assemblies — Wire-braid-reinforced hydraulic types for oil-based or water-based fluids — Specification*

ISO 4080, *Rubber and plastics hoses and hose assemblies — Determination of permeability to gas*

ISO 20766-1, *Road vehicles — Liquefied petroleum gas (LPG) fuel systems components — Part 1: General requirements and definitions*

ISO 20766-2, *Road vehicles — Liquefied petroleum gas (LPG) fuel systems components — Part 2: Performance and general test methods*

DIN 7643, *Compression couplings — Hollow screws for ring-type banjos*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 20766-1 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

4 Markings

Every hose shall bear, at intervals of not greater than 0,5 m, the following clearly legible and indelible identification markings consisting of characters, figures or symbols.

- a) the manufacturer's or agent's name, trademark or symbol;
- b) the model designation (part number);
- c) the working pressure and temperature range;
- d) the year and month of fabrication;
- e) the size and type-marking.

The following additional markings are recommended:

- the direction of flow (when necessary for correct installation);
- the type of fuel;
- the electrical ratings (if applicable);
- the symbol of the certification agency;
- the type approval number;
- the serial number or date code;
- a reference to this document.

NOTE Every coupling bears the trade name or mark of the assembling manufacturer.

5 Construction and assembly

5.1 General specifications

5.1.1 The hose shall be so designed as to withstand maximum operating pressure as applicable.

5.1.2 The hose shall be so designed as to withstand temperatures between the minimum operating temperature and the maximum operating temperature.

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5.1.3 The inside diameter of the hose shall be in compliance with of ISO 1307:2006, Table 1.

5.2 Rubber hose construction

5.2.1 The hose shall embody a smooth-bore tube and a cover of suitable synthetic material, reinforced with one or more interlayer(s).

5.2.2 The reinforcing interlayer(s) shall be protected by a cover against corrosion. If for the reinforcing interlayer(s) corrosion-resistant material is used (i.e. stainless steel) a cover is not required.

5.2.3 The lining and cover shall be smooth and free from pores, holes and strange elements. An intentionally provided puncture in the cover shall not be considered as an imperfection.

5.2.4 The cover shall be intentionally perforated to avoid the forming of bubbles.

5.2.5 When the cover is punctured, and the interlayer is made of a non-corrosion resistant material, the interlayer shall be protected against corrosion.

5.3 Synthetic hose construction

5.3.1 The synthetic hose shall embody a thermoplastic tube and a cover of suitable thermoplastic material, oil and weatherproof, reinforced with one or more synthetic interlayer(s). If for the reinforcing interlayer(s) a corrosion-resistant material is used (i.e. stainless-steel) a cover is not required.

5.3.2 The lining and the cover shall be free from pores, holes and strange elements. An intentionally provided puncture in the cover shall not be considered as an imperfection.

5.3.3 If the synthetic hose is made out of one material and/or one layer it shall comply with all testing listed in [Table 1](#) for both liner and cover.

5.4 Couplings for rubber hoses

5.4.1 The couplings shall be made from steel or brass and the surface shall be corrosion resistant.

5.4.2 The coupling burst pressure in mounted position shall never be less than the tube or hose burst pressure. The coupling leakage pressure in mounted position shall never be less than the tube or hose leakage pressure.

5.4.3 The couplings shall be of the crimp-fitting type.

5.4.3.1 The swivel-nut shall be provided with Unified National Fine (UNF) thread.

5.4.3.2 The sealing cone of swivel-nut type shall be of the type with a half vertical angle of 45°.

5.4.3.3 The couplings can be made as swivel-nut type or as quick-connector type.

5.4.3.4 It shall be impossible to disconnect the quick-connector type without specific measures or the use of dedicated tools.

5.5 Couplings for synthetic hoses

5.5.1 The couplings shall be made from steel or brass and the surface shall be corrosion resistant.