INTERNATIONAL STANDARD

ISO 20766-18

First edition
2019-10

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

Part 18: Hose

Véhicules routiers — Équipements pour véhicules utilisant le gaz de pétrole liquéfié (GPL) comme combustible —

Partie 18: Tuyauterie

Reference number
ISO 20766-18:2019(E)

© ISO 2019



COPYRIGHT PROTECTED DOCUMENT

© ISO 2019

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

 © ISO 2019 – All rights reserved

Contents

Page

Foreword ..... **iv**

1 Scope **1**

2 Normative references **1**

3 Terms and definitions **2**

4 Markings **2**

5 Construction and assembly **2**
5.1 General specifications 2
5.2 Rubber hose construction 3
5.3 Synthetic hose construction 3
5.4 Couplings for rubber hoses 3
5.5 Couplings for synthetic hoses 4
5.6 Assembly of hose and couplings 4

6 Tests **4**
6.1 Applicability 4
6.2 Hydrostatic strength 5
6.3 Low temperature 5
6.4 High temperature 5
6.5 Tensile strength and elongation 5
6.6 Permeability 6
6.7 Bending test 6
6.7.1 Bending test for rubber hoses 6
6.7.2 Bending test for synthetic hoses 7
6.8 Impulse test 8
6.9 Gas-tightness 9

Bibliography **10**

© ISO 2019 – All rights reserved

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).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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.

© ISO 2019 – All rights reserved

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 2019 – All rights reserved