

This is a preview of "ISO 15501-1:2012". [Click here to purchase the full version from the ANSI store.](#)

Second edition
2012-04-01

Road vehicles — Compressed natural gas (CNG) fuel systems —

Part 1: Safety requirements

Véhicules routiers — Systèmes d'alimentation en gaz naturel comprimé (GNC) —

Partie 1: Exigences de sécurité



Reference number
ISO 15501-1:2012(E)

© ISO 2012

This is a preview of "ISO 15501-1:2012". [Click here to purchase the full version from the ANSI store.](#)



COPYRIGHT PROTECTED DOCUMENT

© ISO 2012

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

This is a preview of "ISO 15501-1:2012". [Click here to purchase the full version from the ANSI store.](#)

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Requirements	3
4.1 Design	3
4.2 Refuelling connection	5
4.3 Leakage control	5
4.4 Mounting of the cylinder(s)	5
4.5 Heat protection	6
4.6 Minimizing risk of gas ignition	6
4.7 Venting system	6
5 Instructions for use	7
6 Marking	7
Annex A (informative) Technical solutions to functional requirements	8
Annex B (informative) Examples of compressed natural gas (CNG) on-board fuel systems	9
Bibliography	11

This is a preview of "ISO 15501-1:2012". [Click here to purchase the full version from the ANSI store.](#)

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 15501-1 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 25, *Vehicles using gaseous fuels*.

This second edition cancels and replaces the first edition (ISO 15501-1:2001), which has been technically revised.

ISO 15501 consists of the following parts, under the general title *Road vehicles — Compressed natural gas (CNG) fuel systems*:

- *Part 1: Safety requirements*
- *Part 2: Test methods*

This is a preview of "ISO 15501-1:2012". [Click here to purchase the full version from the ANSI store.](#)

Introduction

For the purposes of this part of ISO 15501, all fuel system components in contact with natural gas have been considered suitable for natural gas as defined in ISO 15403.

When applying this part of ISO 15501, it is to be understood that a safety device that prevents overfilling of the vehicle's fuel system is part of the refuelling station. The pressure gauge is not considered a safety component.

Where necessary, technical solutions to functional requirements are given in Annex A.

This part of ISO 15501 makes reference to a service pressure of 20 MPa¹⁾ [200 bar²⁾] for natural gas used as fuel, settled at 15 °C. It is possible to accommodate other service pressures by adjusting the pressure using the appropriate factor (ratio). For example, a 25 MPa (250 bar) service pressure system will require pressures to be multiplied by 1,25.

1) 1 MPa = 1 N/mm².

2) 1 bar = 0,1 MPa = 10⁵ Pa.