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**Gas cylinders — Inspection of  
the cylinder installation, and  
requalification of high pressure  
cylinders for the on-board storage of  
natural gas as a fuel for automotive  
vehicles**

*Bouteilles à gaz — Inspection de l'installation des bouteilles, et  
requalification des bouteilles haute pression pour le stockage du gaz  
naturel, utilisé comme carburant, à bord des véhicules automobiles*



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# Contents

Page

<b>Foreword</b>	<b>iv</b>
<b>Introduction</b>	<b>v</b>
<b>1 Scope</b>	<b>1</b>
<b>2 Normative references</b>	<b>1</b>
<b>3 Terms and definitions</b>	<b>1</b>
<b>4 Background information</b>	<b>4</b>
4.1 General	4
4.2 Cylinder types and descriptions	4
4.3 Required marking information	5
<b>5 Inspection body and inspectors</b>	<b>5</b>
<b>6 Inspection equipment</b>	<b>6</b>
<b>7 Cylinder, valve and pressure relief device inspection</b>	<b>6</b>
7.1 Inspection interval	6
7.2 Conditions requiring immediate inspection	6
7.3 Preparation for inspection	7
7.4 Cylinder inspection	8
7.5 Additional inspection of metal cylinders — CNG-1 and metallic areas of CNG-2, CNG-3 and the metal bosses of CNG-4	13
7.6 Additional inspection requirements for composite cylinders (CNG-2, CNG-3 and CNG-4)	15
7.7 Valve and pressure relief device inspection	16
7.8 Cylinder marking	17
7.9 Cylinder inspection record/checklist	18
7.10 Cylinder final acceptance/rejection	18
7.11 Component final acceptance/rejection	19
<b>8 Installation and mounting inspection</b>	<b>20</b>
8.1 Installation and mounting of Natural Gas Vehicle fuel cylinders	20
8.2 Cylinder installation inspection	20
<b>9 Condemned cylinders</b>	<b>22</b>
9.1 General	22
9.2 Condemned cylinders	22
9.3 Destruction process	22
<b>Annex A (informative) Depressurization and purging of CNG fuel cylinders</b>	<b>24</b>
<b>Annex B (informative) Conditions and usage that may warrant more frequent inspections</b>	<b>26</b>
<b>Annex C (informative) Inspection checklist example</b>	<b>27</b>
<b>Annex D (informative) Considerations for hydrostatic test and internal inspection</b>	<b>29</b>
<b>Bibliography</b>	<b>31</b>

## 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 19078 was prepared by Technical Committee ISO/TC 58, *Gas cylinders*, Subcommittee SC 4, *Operational requirements for gas cylinders*.

This second edition cancels and replaces the first edition (ISO 19078:2006), with the following main technical revisions:

- a) The scope clarifies the rework of some types of rejected cylinders;
- b) The periodicity of inspection has been removed from this International Standard. The user is referred to the requirements of ISO 11439 for this information;
- c) Damage levels and criteria are more clearly defined and better align with ISO 11439;
- d) [Clause 7.11](#) was renamed to better clarify its intent;
- e) [Table 2](#) includes acceptance and rejection conditions for gas tight housing;
- f) Reference to ISO 25760 for valve removal has been added; and
- g) Annex A, Inspector qualifications (informative), and Annex F, Composite matrix (informative), were removed.

## Introduction

This International Standard sets out requirements regarding the periodic visual examination and inspection of natural gas fuel cylinders installed in vehicles and the condition of their installation. These cylinders are designed to store natural gas at high pressures.

Where there is any conflict between this International Standard and any applicable regulation, the regulation always takes precedence.



# Gas cylinders — Inspection of the cylinder installation, and requalification of high pressure cylinders for the on-board storage of natural gas as a fuel for automotive vehicles

## 1 Scope

This International Standard specifies the requirements for the inspection, installation and requalification of high pressure cylinders, designed and manufactured in accordance with the requirements of ISO 11439, for the on-board storage of natural gas as a fuel for automotive vehicles.

It provides criteria, in the absence of guidance from the cylinder or vehicle manufacturer, for the acceptance (including any allowed rework) or rejection (including any allowed rework or destruction) of a cylinder and its installation.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 11439, *Gas cylinders — High pressure cylinders for the on-board storage of natural gas as a fuel for automotive vehicles*

ISO 15500-13, *Road vehicles — Compressed natural gas (CNG) fuel system components — Part 13: Pressure relief device (PRD)*

ISO 15500-15, *Road vehicles — Compressed natural gas (CNG) fuel system components — Part 15: Gas-tight housing and ventilation hose*

ISO 15501-1, *Road vehicles — Compressed natural gas (CNG) fuel systems — Part 1: Safety requirements*

ISO 15501-2, *Road vehicles — Compressed natural gas (CNG) fuel systems — Part 2: Test methods*

ISO 25760, *Gas cylinders — Operational procedures for the safe removal of valves from gas cylinders*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 3.1

#### **abrasion**

damage to an area of the cylinder or its installation equipment caused by scraping, wearing, vibration or rubbing away of the material by friction

Note 1 to entry: Abrasion can be the result of many cycles of something rubbing lightly on the surface of the cylinder or its installation equipment, or due to a few cycles, perhaps only one, of heavy rubbing.

### 3.2

#### **impact**

blow to the surface of the cylinder that can significantly damage and/or indent the surface (e.g. cutting, gouging)

Note 1 to entry: Impact can also induce such damage as delaminations, which are not readily apparent through visual examination.