SVENSK STANDARD
SS-ISO 22760-1:2020

Vägfordon – Komponenter i bränslesystem för dimetyleter (DME) –
Del 1: Allmänna krav och definitioner (ISO 22760-1:2019, IDT)

Road vehicles – Dimethyl Ether (DME) fuel system components –
Part 1: General requirements and definitions
(ISO 22760-1:2019, IDT)

Svenska Institutet för Standarder

Language: engelska/English
Edition: 1

Svenska Institutet för Standarder

Upplysningar om sakinnehållet i standarden lämnas av Svenska institutet för standarder, telefon 08 - 555 520 00. Standarder kan beställas hos SIS som även lämnar allmänna upplysningar om svensk och utländsk standard.

Standarden är framtagen av kommittén för Motorer i bilar, SIS/TK 220.

Har du synpunkter på innehållet i den här standarden, vill du delta i ett kommande revideringsarbete eller vara med och ta fram andra standarder inom området? Gå in på www.sis.se - där hittar du mer information.

Fastställd: 2020-01-20
ICS: 43.060.40

Svenska Institutet för Standarder

Den internationella standarden ISO 22760-1:2019 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av ISO 22760-1:2019.

The International Standard ISO 22760-1:2019 has the status of a Swedish Standard. This document contains the official English version of ISO 22760-1:2019.

Contents

Page

Foreword ..... **v**
1 Scope **6**
2 Normative references **6**
3 Terms and definitions **6**
4 Construction and assembly **9**
5 Electrical equipment and wiring **10**
6 Instructions **10**
7 Marking **11**
Bibliography **12**

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 22760 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 — Dimethyl Ether (DME) fuel system components —

Part 1: General requirements and definitions

1 Scope

This document specifies general requirements and definitions of Dimethyl Ether (DME) fuel system components, intended for use on the types of motor vehicles defined in ISO 3833. It also provides general design principles and specifies requirements for instructions and marking.

This document is applicable to vehicles (mono-fuel, bi-fuel or dual-fuel applications) using Dimethyl Ether in accordance with ISO 16861 and ASTM D7901. 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.

NOTE 1 It is recognized that miscellaneous components not specifically covered herein can be examined to meet the criteria of this document and tested according to the appropriate functional tests.

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

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 22760 (all parts), *Road vehicles — Dimethyl Ether (DME) fuel system components*

ISO 6722-1, *Road vehicles — 60 V and 600 V single-core cables — Part 1: Dimensions, test methods and requirements for copper conductor cables*

ISO 6722-2, *Road vehicles — 60 V and 600 V single-core cables — Part 2: Dimensions, test methods and requirements for aluminium conductor cables*

3 Terms and definitions

For the purposes of this document, the following terms and definitions 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/

3.1
valve
device by which the flow of a fluid may be controlled

3.1.1
manual valve
valve (3.1) which is operated manually

3.1.2
automatic valve
valve (3.1) which is not operated manually

3.1.3
automatic tank valve
automatic valve (3.1.2) rigidly fixed to the tank which controls the flow of *Dimethyl Ether* (3.10) out of the tank to the fuel system

3.1.4
check valve
automatic valve (3.1.2) which allows *Dimethyl Ether* (3.10) to flow in only one direction

3.1.5
excess flow valve
automatic valve (3.1.2) which automatically shuts off, or limits, the *Dimethyl Ether* (3.10) flow when the flow exceeds a set design value

3.1.6
manual tank valve
manual valve (3.1.1) rigidly fixed to the tank

3.1.7
pressure relief valve
PRV
self-closing device which opens to prevent a pre-determined pressure being exceeded

3.1.8
service valve
manual valve (3.1.1) which is closed only during vehicle maintenance

3.2
filter
protective device which removes foreign debris or substances from the gas stream

3.3
fitting
connector used in joining a piping, tubing, or hose system

3.4
flexible fuel line
flexible tubing or hose through which *Dimethyl Ether* (3.10) flows

3.5
rail pressure sensor
device which gives rail pressure feedback to electronic control unit (ECU)

3.6
rail pressure control valve
RPCV
inlet metering valve
IMV
device which performs feedback-based control of common rail pressure by variation of high pressure (above tank pressure) pump's volumetric efficiency in real time

3.7
gas tight housing
device which vents gas leakage to outside the vehicle including the gas ventilation hose, the clear opening of which is at least 450 mm^2

3.8
Dimethyl Ether vehicle
road vehicle powered by *DME* (3.10)

3.8.1
mono-fuel
road vehicle which operates on *Dimethyl Ether* (3.10) only

Note 1 to entry: Also known as "dedicated *Dimethyl Ether vehicle* (3.8)".

Note 2 to entry: In Europe and in India the term mono-fuel also applies to a light duty vehicle with a maximum 15 litre gasoline tank.

3.8.2
bi-fuel
road vehicle that has two independent fuel systems (one of them for DME) and can run alternatively on either fuel, but only on one at a time

3.8.3
dual-fuel
vehicle that has two independent fuel systems (one of them for DME) and can run on both fuels simultaneously

Note 1 to entry: It also may run on one fuel alone.

3.9
fuel pump
device to establish the supply of liquid *DME* (3.10) from the tank to the engine, fuel pump may be located inside or outside tank

3.10
Dimethyl Ether
DME
organic compound with the formula CH_3OCH_3, simplified to C_2H_6O

Note 1 to entry: DME is also known as methoxymethane.

3.11
pressure relief device
PRD
one time use device triggered by excessive temperature or temperature and pressure which vents gas to protect the tank from rupture

3.12
rigid fuel line
metallic tubing which has been designed not to flex in normal operation and through which *Dimethyl Ether* (3.10) flows

3.13
test pressure
pressure to which a component is taken during acceptance testing

3.14
working pressure
maximum pressure to which a component is designed to be subjected to and which is the basis for determining the strength of the component under consideration