INTERNATIONAL STANDARD

ISO 8178-6

Second edition
2018-04

Reciprocating internal combustion engines — Exhaust emission measurement —

Part 6: Report of measuring results and test

Moteurs alternatifs à combustion interne — Mesurage des émissions de gaz d'échappement —

Partie 6: Rapport de mesure et d'essai

Reference number
ISO 8178-6:2018(E)

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

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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).

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

For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 70, *Internal combustion engines*, Subcommittee SC 8, *Exhaust gas emission measurement.*

This second edition cancels and replaces the first edition (ISO 8178-6:2000), which has been technically revised. The main changes compared to the previous edition are as follows:

— alignment with the latest editions of ISO 8178-1, ISO 8178-4, ISO 8178-5, ISO 8178-7 and ISO 8178-8;

— application to steady state RMC test cycle, transient test cycle and control area;

— update of test engine information;

— revision of exhaust components to be measured;

— consideration of Infrequent Regeneration Adjustment Factors (IRAF);

— comprehension of validation criteria for particulate sampling;

— provision of the background correction for particulate mass emission;

— simplification of the fuel characteristics table;

— update of the smoke test data.

A list of all parts in the ISO 8178 series can be found on the ISO website.

Introduction

Results of an emissions test are presented clearly and include all information pertinent to the derivation of the emission test results. An accuracy or uncertainty analysis relevant to the test system used and engine being evaluated is made by the laboratory. A record is made of the measurement equipment being used, the ambient conditions, the engine performance and the fuel used. Recommendations for the data to be recorded are given regardless of the type of fuel being used.

The data format described in this document is intended to be used by individuals measuring emissions using the ISO 8178 series.

As expressed in ISO 8178-1 and ISO 8178-2, the emission results are stated in either "g/kWh" (preferred) or in "g/m^3".

Reciprocating internal combustion engines — Exhaust emission measurement —

Part 6: Report of measuring results and test

1 Scope

This document specifies a data format for reporting the measurement results of exhaust emissions from RIC engines for mobile, transportable and stationary use, excluding engines for motor vehicles primarily designed for road use. It includes basic information of the engine being tested. Equivalent data formats including those that are electronically generated can be used as long as the required engine, test cell and test data information is made available.

This document applies to measurement in the laboratory and, where applicable, at site.

For engines used in machinery covered by additional requirements (e.g. occupational health and safety regulations, dust regulations for powerplants), additional test conditions and special evaluation methods can apply.

NOTE Since the report format defined in this document is intended to be applicable to all types of internal combustion engines, some items are, in certain cases, not necessary for specific engines and/or tests, especially when measuring on site. On the other hand, some additional items can be necessary according to test purposes. Deletion and addition of items to be reported are based on agreement between the parties involved.

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 8178 (all parts), *Reciprocating internal combustion engines — Exhaust emission measurement*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 8178 (all parts) 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 Symbols and abbreviated terms

4.1 General symbols

For the EEC-UNO regulation equivalents of the symbols listed in Table 1, see ISO 8178-1.