INTERNATIONAL STANDARD

ISO 8178-8

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Reciprocating internal combustion engines — Exhaust emission measurement —

Part 8: Engine group determination

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

Partie 8: Détermination des groupes de moteurs

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Contents

Page

Foreword

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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).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary Information

The committee responsible for this document is ISO/TC 70, *Reciprocating internal combustion engines*, Subcommittee SC 8, *Exhaust emission measurement*.

This second edition cancels and replaces the first edition (ISO 8178-8:1996), which has been technically revised.

ISO 8178 consists of the following parts, under the general title *Reciprocating internal combustion engines — Exhaust emission measurement*:

— *Part 1: Test-bed measurement of gaseous and particulate exhaust emissions*

— *Part 2: Measurement of gaseous and particulate exhaust emissions under field conditions*

— *Part 3: Definitions and methods of measurement of exhaust gas smoke under steady-state conditions*

— *Part 4: Steady-state test cycles for different engine applications*

— *Part 5: Test fuels*

— *Part 6: Report of measuring results and test*

— *Part 7: Engine family determination*

— *Part 8: Engine group determination*

— *Part 9: Test cycles and test procedures for test bed measurement of exhaust gas smoke emissions from compression ignition engines operating under transient conditions*

— *Part 10: Test cycles and test procedures for field measurement of exhaust gas smoke emissions from compression ignition engines operating under transient conditions*

Introduction

Unlike engines for on-road applications, engines for non-road use are made in a much wider range of power output and configuration and are used in a great number of different applications.

The objective of this International Standard is to rationalize the test methods for non-road engines in order to simplify and make more cost effective the drafting of legislation, the development of engine specifications, and the certification of engines to control gaseous and particulate emissions.

In order to achieve its objectives, this International Standard embraces four concepts that are the following:

a) grouping of engine applications in order to reduce the number of test cycles as defined in ISO 8178-4;

b) use of observed brake power as defined in ISO 8178-4 as the basis for the expression of specific emission levels;

c) incorporation of an “engine family” concept in which engines with similar emission characteristics and design can be represented by an engine within the family;

d) incorporation of an “engine group” concept which assumes that

   1) engines can be adjusted or modified after measurement on the test bed,

   2) engines of basically the same type or model can be classified within a group even if the engine is adjusted or modified after measurement on the test bed, and

   3) adjusted or modified engines must comply with the applicable emission limits.

The parameters that define the engine group are more restrictive than those for an engine family.

The group concept is typically applied to large sizes and engines produced in small number. This concept also provides the possibility for a reduction in approval testing for modifications to engines, either in production or in service.