ISO 8178-2:2008-04 (E)

Reciprocating internal combustion engines - Exhaust emission measurement - Part 2: Measurement of gaseous and particulate exhaust emissions unde r field conditions

Contents

Page

Foreword iv

1 Scope 1

2 Normative references 1

3 Terms and definitions 2

4 Symbols and abbreviations 4
4.1 Symbols 4
4.2 Measured chemical components 5
4.3 Abbreviations 5

5 Test conditions 6
5.1 General requirements 6
5.2 Engine test conditions 7
5.3 Power 8
5.4 Engine air intake system 8
5.5 Engine exhaust system 8
5.6 Cooling system 8
5.7 Lubricating oil 8
5.8 Installation of sampling probes and equipment 8

6 Test fuels 9

7 Measurement equipment and data to be measured 9
7.1 General 9
7.2 Torque and speed 10
7.3 Exhaust gas flow 11
7.4 Accuracy of the data to be measured 11
7.5 Determination of the gaseous components 12
7.6 Determination of the particulates 13

8 Calibration of the analytical instruments 13

9 Calibration of the particulate sampling system 13

10 Running conditions 13
10.1 Test cycles 13
10.2 Preparation of the engine 14
11 Test run 14
11.1 Preparation of the sampling filters (if needed) 14
11.2 Installation of the measuring equipment 14
11.3 Starting the dilution system and engine 14
11.4 Adjustment of the dilution ratio 14
11.5 Determination of test points (steady-state testing only) 14
11.6 Checking the analysers 15
11.7 Test sequence 15
11.8 Re-checking the analysers 16

11.9 Test report 16
12 Emissions evaluation and calculation 17
12.1 General guidelines 17
12.2 Specific requirements for in-use compliance testing of off-road vehicles 17

Bibliography 18