

ISO 6460-1:2022-02 (E)

Motorcycles - Measurement method for gaseous exhaust emissions and fuel consumption - Part 1: General test requirements

Contents		Page
	Foreword.....	v
	Introduction.....	vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Symbols	2
5	Standard reference conditions	5
6	Tests	5
	6.1 Measurement of gaseous exhaust emissions.....	5
	6.1.1 Average gaseous exhaust emissions during conventional test cycles.....	5
	6.1.2 Measurement of gaseous exhaust emissions at an idling speed.....	5
	6.2 Measurement of fuel consumption.....	5
	6.2.1 Average fuel consumption during conventional test cycles.....	5
	6.2.2 Fuel consumption at a constant speed.....	5
7	Measurement equipment	5
	7.1 General.....	5
	7.2 Chassis dynamometer.....	5
	7.3 Gas-collection equipment.....	5
	7.4 Analytical equipment.....	7
	7.5 Cooling equipment.....	8
	7.6 Fuel consumption measurement.....	8
	7.7 Accuracy of instruments and measurements.....	9
8	Preparing the test	9
	8.1 Engine fuel and lubricants.....	9
	8.2 Description of the test motorcycle.....	9
	8.3 Conditioning/preparation of the test motorcycle.....	9
	8.4 Calibration and adjustment of analysers.....	10
	8.4.1 Calibration of the analysers.....	10
	8.4.2 Adjustment of the analysers.....	11
	8.4.3 Reference gases and accuracy of the mixing device.....	13
9	CVS system check procedure	13
10	Procedure for sampling, analysing and measuring the volume of gaseous exhaust emissions	14
	10.1 Operations to be carried out before the test motorcycle start up.....	14
	10.2 Beginning of sampling and volume measurement.....	17
	10.3 End of sampling and volume measurement.....	17
	10.4 Analysis.....	17
	10.5 Measuring the driving distance.....	18
	10.6 Open type CVS system.....	18
11	Determination of the quantity of gaseous exhaust emissions	18
	11.1 Total diluted exhaust mixture volume corrected to the standard reference conditions.....	18
	11.1.1 Total diluted exhaust mixture volume for the CVS system with CFV.....	18
	11.1.2 Total diluted exhaust mixture volume for the CVS system with PDP.....	19
	11.1.3 Total diluted exhaust mixture volume for the CVS system with SSV.....	19

11.2	Exhaust emissions sampling and the dilution factor	20
11.2.1	Exhaust emissions sampling.....	20
11.2.2	Dilution factor.....	20
11.3	Mass of the gaseous exhaust emissions	21
11.3.1	Mass of carbon monoxide.....	21
11.3.2	Mass of total hydrocarbons.....	22
11.3.3	Mass of non-methane hydrocarbons.....	22
11.3.4	Mass of nitrogen oxides.....	24
11.3.5	Mass of carbon dioxide.....	25
12	Determination of the fuel consumption.....	25
12.1	Carbon balance method.....	25
12.1.1	Fuel consumption for four-stroke engines.....	25
12.1.2	Calculation of results in litres per 100 km.....	26
12.2	Fuel flow measurement method.....	26
12.2.1	Fuel consumption for four-stroke engines.....	27
12.2.2	Calculation of results in litres per 100 km.....	27
Annex A	(normative) Method and equipment for measuring fuel consumption by the fuel flow measurement method.....	28
Annex B	(informative) Example for record form of test fuel specifications.....	39
Annex C	(informative) Exhaust emissions leakage check procedure for the open type CVS system.....	40
Annex D	(informative) Determination of the dilution factor	46
Annex E	(informative) Principle of the carbon balance method for four-stroke engines	55
Annex F	(informative) Simplified determination method of the atom number ratio of hydrogen and carbon, and that of oxygen and carbon in gasoline.....	56
Annex G	(informative) CVS system check procedure.....	57
Bibliography	58