

International Standard



6855

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Road vehicles — Measurement method for gaseous pollutants emitted by mopeds equipped with a controlled ignition engine

Véhicules routiers — Méthode de mesurage des émissions de gaz polluants par les cyclomoteurs équipés de moteurs à allumage commandé

First edition — 1981-04-15

UDC 629.113.35 : 614.72 : 543.27

Ref. No. ISO 6855-1981 (E)

Descriptors : road vehicles, motor vehicles, mopeds, spark ignition engines, pollutant gases, measurement, tests, chemical tests, performance cycle, analyzing, test equipment.



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 6855 was developed by Technical Committee ISO/TC 22, *Road vehicles*, and was circulated to the member bodies in July 1979.

It has been approved by the member bodies of the following countries :

Austria	Italy	Romania
Belgium	Japan	South Africa, Rep. of
Brazil	Korea, Dem. P. Rep. of	Spain
Chile	Korea, Rep. of	Sweden
China	Libyan Arab Jamahiriya	Switzerland
Czechoslovakia	Mexico	United Kingdom
France	Netherlands	USA
Germany, F. R.	Poland	

No member body expressed disapproval of the document.

This International Standard incorporates draft Addendum 1 to draft International Standard ISO/DIS 6855, which was circulated to the member bodies in February 1980 and which has been approved by the member bodies of the following countries :

Austria	Italy	Spain
Belgium	Japan	Sweden
Brazil	Korea, Dem. P. Rep. of	Switzerland
China	Korea, Rep. of	United Kingdom
Egypt, Arab Rep. of	Mexico	USA
France	Netherlands	USSR
Germany, F. R.	Poland	
Ireland	Romania	

No member body expressed disapproval of the document.

Road vehicles — Measurement method for gaseous pollutants emitted by mopeds equipped with a controlled ignition engine

1 Scope and field of application

This International Standard specifies the measurement methods for gaseous pollutants emitted by mopeds as defined in ISO 3833, equipped with a four stroke, a two stroke or a rotary controlled ignition engine.

It defines a driving cycle in accordance with the requirements of different types of mopeds and provides specifications of the methods for collecting gaseous pollutants, a measuring system, and a test bench.

2 References

ISO 3833, *Road vehicles — Types — Terms and definitions*.

ISO 6726, *Road vehicles — Mopeds — Weights — Vocabulary*.

ISO/TR 6970, *Road vehicles — Pollution tests for mopeds and motorcycles — Chassis dynamometer (bench)*.¹⁾

ISO 7116, *Road vehicles — Method of measurement of maximum speed for mopeds*.

CEC specification RF-05-T-76.

CEC specification RF-05-T-77.

3 Definitions

3.1 moped kerb weight : Moped total unladen weight, the moped being filled with fuel in such a way that the normal container for fuel is filled to at least 90 % of the capacity specified by the manufacturer, and being fitted with tool kit and spare wheel (if it is obligatory).

3.2 reference weight of the moped : The weight corresponding to the moped kerb weight (see 3.1) increased by a uniform figure corresponding to a mass of 75 kg.

NOTE — The terms "weight" and "load" have been retained in this International Standard in place of the correct term "mass" as a concession to the continued current use of these terms by certain legislative bodies.

3.3 equivalent inertia : The total inertia of the rotating masses of the test bench determined in relation to the reference weight of the moped (see 3.2).

3.4 gaseous pollutants : Carbon monoxide, hydrocarbons, and nitrogen oxides.

4 Tests

The moped shall be subjected to tests of two types :

4.1 Type 1 test

Measurement of the average exhaust gas pollutants emitted by a moped equipped with a controlled ignition engine during a conventional driving cycle.

4.1.1 The moped shall be placed on a roller bench equipped with a brake and an inertia simulation system. A test shall include four cycles as described in 5.1 carried out without a break.

During the test, the exhaust emissions shall be diluted with air to a constant volumetric flow rate of the mixture. Part of the mixture shall be collected continuously and stored in a bag and then analyzed for the determination of the average concentration of carbon monoxide, hydrocarbons and nitrogen oxides.

4.1.2 The test shall be carried out in accordance with the method described in clause 5 of this International Standard.

4.2 Type 2 test

Measurement of the emissions of the exhaust gases at idling speed.

The test shall be carried out in accordance with the method described in clause 6.

¹⁾ At present at the stage of draft.

5 Measurement of the average exhaust gas pollutants emitted by a moped equipped with a controlled ignition engine during a conventional driving cycle (type 1 test)

5.1 Operating cycle on the roller bench

5.1.1 Description of the cycle

The operating cycle on the roller bench shall be that specified in table 1 and depicted in figure 1. The cycle shall be adapted for each moped according to its performance (acceleration capacity, maximum design speed) as specified in 5.5.3 to 5.5.5.

Table 1 — Operating cycle on the roller bench

Nº of operation	Operation	Acceleration m/s ²	Speed km/h	Duration of phase s	Total time s
1	Idling	—	—	8	8
2	Acceleration	Full throttle	0 to max.	57	—
3	Constant speed	Full throttle	max.		—
4	Deceleration	— 0,56	max. to 20		65
5	Constant speed	—	20	36	101
6	Deceleration	— 0,93	20 to 0	6	107
7	Idling	—	—	5	112

5.1.2 General conditions under which the cycle is carried out

Preliminary testing cycles should be carried out, if necessary, to determine how best to actuate the accelerator, brake controls, the gear box and clutch, where necessary.

5.1.3 Use of the gear box

The use of the gear box shall be as specified by the manufacturer; however, in the absence of such instructions, the following points shall be taken into account :

5.1.3.1 Manual change gear box

At the constant speed of 20 km/h, the speed of rotation of the engine shall be, if possible, within 50 to 90 % of the speed corresponding to the maximum power of the engine. When this speed can be reached in two or more gears, the moped shall be tested with the highest such gear engaged.

During acceleration, the moped shall be tested with the gear which gives maximum acceleration. A higher gear shall be engaged at the latest when the rotating speed is equal to 110 % of the speed corresponding to the maximum power of the engine.

During deceleration, a lower gear shall be engaged before the engine starts to idle roughly, at the latest when the engine revolutions are equal to 30 % of the speed corresponding to the maximum power of the engine. No change down to first gear shall be effected during deceleration.

5.1.3.2 Automatic gear box and torque converter

The position “road” shall be used.

5.1.4 Tolerances

5.1.4.1 A tolerance of ± 1 km/h on the theoretical speed shall be allowed during constant speed and deceleration. If the moped decelerates more rapidly without the use of the brakes the specifications of 5.5.6.3 shall apply.

Speed tolerances greater than those prescribed shall be accepted during phase changes provided that the tolerances are never exceeded for more than 0,5 s on any one occasion.

5.1.4.2 The time tolerance shall be $\pm 0,5$ s.

5.1.4.3 The speed and time tolerances shall be combined as indicated in figure 1.

5.2 Fuel and lubricant

For the test, the reference fuel CEC RF-05-T-77 or CEC RF-05-T-76 shall be used. The lubrication of the engine, including engines lubricated by a fuel mixture, shall comply, as to grade and quantity of oil, with the manufacturer’s recommendation.