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STANDARD

9645

First edition
1990-04-15

**Acoustics — Measurement of noise emitted by
two-wheeled mopeds in motion — Engineering
method**

*Acoustique — Mesurage du bruit émis par les cyclomoteurs à deux roues en
mouvement — Méthode d'expertise*



Reference number
ISO 9645 : 1990 (E)

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Case postale 56 • CH-1211 Genève 20 • Switzerland

Printed 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.

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. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 9645 was prepared by Technical Committee ISO/TC 43, *Acoustics*.

Acoustics — Measurement of noise emitted by two-wheeled mopeds in motion — Engineering method

1 Scope

This International Standard specifies an engineering method for measuring the noise emitted by two-wheeled mopeds in motion [as defined in ISO 3833¹⁾].

The method is designed to meet the requirement of simplicity as far as it is consistent with reproducibility of results and realism in the operating conditions of the moped.

The specifications are intended to reproduce the noise level in urban traffic flow of irregular character, with full use of the engine power available.

NOTE — The test method calls for an acoustical environment which can only be obtained in an extensive open space. Such conditions can usually be provided for

- type approval measurements of mopeds,
- measurements at the manufacturing stage, and
- measurements at official testing stations.

It should be noted that spot checking on the road of mopeds in use can rarely be made in an ideal acoustical environment. If measurements have to be carried out on the road in an acoustical environment which does not fulfil the requirements stated in this International Standard, it should be recognized that the results obtained may deviate appreciably from the results obtained using the specified conditions. A method better fitted to the spot checking on road of mopeds in use will be specified in a future International Standard.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 4164 : 1978, *Road vehicles — Mopeds — Engine test code — Net power.*

ISO 6726 : 1988, *Mopeds and motorcycles with two wheels — Masses — Vocabulary.*

ISO 7116 : 1981, *Road vehicles — Measurement method for the maximum speed of mopeds.*

IEC 651 : 1979, *Sound level meters.*

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 moped in kerb weight condition : Moped in the condition defined as vehicle kerb mass in ISO 6726.

3.2 maximum design speed : The speed which the moped cannot exceed, measured in accordance with ISO 7116, and stated by the manufacturer.

4 Interpretation of results

The results obtained by this method give an objective measure of the noise emitted under the conditions of test. However, it is necessary to consider the fact that the subjective appraisal of the annoyance of different classes of motor vehicles is not simply related to the indications of a sound level meter.

The uncertainty of determination of noise emitted by mopeds measured in accordance with this International Standard is within ± 1 dB.

5 Instrumentation

5.1 Instrumentation for acoustical measurements

The sound level meter (or the equivalent measuring system) shall at least meet the requirements of a type 1 instrument in accordance with IEC 651.

The measurements shall be made using the frequency-weighting characteristic A and the time-weighting characteristic F.

The calibration of the sound level meter shall be checked and adjusted in accordance with the manufacturer's instructions or with a standard sound source (for example a pistonphone) at

1) ISO 3833 : 1977, *Road vehicles — Types — Terms and definitions.*