

INTERNATIONAL STANDARD

ISO
7188

Second edition
1994-12-01

Acoustics — Measurement of noise emitted by passenger cars under conditions representative of urban driving

*Acoustique — Mesurage du bruit émis par les voitures particulières dans des
conditions représentatives de la conduite en ville*



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 voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 7188 was prepared by Technical Committee ISO/TC 43, *Acoustics*, Subcommittee SC 1, *Noise*.

This second edition cancels and replaces the first edition (ISO 7188:1985), which has been technically revised.

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Case postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Acoustics — Measurement of noise emitted by passenger cars under conditions representative of urban driving

1 Scope

This International Standard specifies a method for measuring the noise emitted by passenger cars (as defined in ISO 3833) in motion.

The method is based on statistical studies of the use of cars in urban driving. It is designed to meet the requirement of simplicity as far as that is consistent with reproducibility of results and realism in representing the operating conditions of the vehicle.

The specifications are intended to reproduce the noise level which is exceeded during only 5 % of the total driving time in urban traffic flow of irregular character which requires the use of intermediate gears. The noise level obtained is in good correlation with the equivalent continuous A-weighted sound pressure level (see ISO 1996-1), $L_{Aeq,T}$, emitted by the vehicle during urban driving.

Information is also given, in notes, for the assessment of the noise level which is exceeded during only 1 % of the total driving time.

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 vehicles,
- measurements at the manufacturing stage, and
- measurements at official testing stations.

It should be noted that spot checking of vehicles chosen at random 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 those obtained under the specified conditions.

2 Normative references

The following International 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 1176:1990, *Road vehicles — Masses — Vocabulary and codes*.

ISO 1585:1992, *Road vehicles — Engine test code — Net power*.

ISO 1996-1:1982, *Acoustics — Description and measurement of environmental noise — Part 1: Basic quantities and procedures*.

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

ISO 10844:1994, *Acoustics — Specification of test tracks for the purpose of measuring noise emitted by road vehicles*.

IEC 651:1979, *Sound level meters*.

3 Definitions

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

3.1 automatic downshift: A gear change to a lower gear (higher numerical ratio) which occurs outside the control of the driver.

3.2 external downshift: A gear change to a lower gear (higher numerical ratio) which can be initiated at