

INTERNATIONAL STANDARD

**ISO
362**

Third edition
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Acoustics — Measurement of noise emitted by accelerating road vehicles — Engineering method

*Acoustique — Mesurage du bruit émis par les véhicules routiers en
accélération — Méthode d'expertise*



Contents

Page

1	Scope.....	1
2	Normative references	1
3	Definitions.....	2
4	Vehicle categories.....	2
5	General considerations	3
5.1	Driving conditions	3
5.2	Interpretation of results.....	3
6	Instrumentation	3
6.1	Instruments for acoustical measurement	3
6.2	Instrumentation for speed measurements	4
6.3	Meteorological instrumentation	4
7	Acoustical environment, meteorological conditions and background noise	4
7.1	Test site	4
7.2	Meteorological conditions	4
7.3	Background noise.....	5
8	Procedure.....	5
8.1	Microphone positions.....	5
8.2	Number of measurements.....	5
8.3	Conditions of the vehicle	5
8.4	Operating conditions.....	6
8.5	Readings to be taken and reported values	9
8.6	Measurement uncertainty	9
9	Test report	10
	Annex A: Measurement uncertainty.....	11
	Annex B: Bibliography.....	12

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

International Standard ISO 362 was prepared by Technical Committee ISO/TC 43, *Acoustics*, Subcommittee SC 1, *Noise*.

This third edition cancels and replaces the second edition (ISO 362:1994), which has been technically revised. The method has been modified in relation to earlier editions in order to improve the reproducibility.

Annexes A and B of this International Standard are for information only.

Acoustics — Measurement of noise emitted by accelerating road vehicles — Engineering method

1 Scope

This International Standard specifies an engineering method for measuring the noise emitted by accelerating road vehicles.

The method is designed to meet the requirements of simplicity as far as they are consistent with reproducibility of results under the operating conditions of the vehicle.

The specifications are intended to reproduce the noise levels which are produced during the use of intermediate gears with full utilization of the engine power available as may occur in urban traffic.

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

- type approval measurements of vehicle;
- measurements at the manufacturing stage; and
- measurements at official testing stations.

NOTE 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 the results obtained using the specified conditions.

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 edition indicated was 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 edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 10844:1994, *Acoustics — Test surface for road vehicle noise measurements*

IEC 60651:1979, *Sound level meters*

IEC 60942:1988, *Sound calibrators*

3 Definitions

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

3.1

automatic downshift

gear change to a lower gear (higher transmission ratio) which can be initiated at the will of the driver

NOTE An automatic downshift may be initiated, for example, by a change of pressure on or position of the accelerator control, thereby activating a special programme which effects downshifts to gears which are lower than those normally used in urban driving.

3.2

intermediate result

value calculated from the test series measurements and used to determine the reported value

3.3

kerb mass

complete shipping mass of a vehicle fitted with all equipment necessary for normal operation plus the mass of the following elements:

- lubricants, coolant (if needed), washer fluid,
- fuel (tank filled to at least 90 % of the capacity specified by the manufacturer),
- other equipment if included as basic parts for the vehicle, such as spare wheel(s), wheel chocks, fire extinguisher(s), spare parts, and tool-kit

NOTE The definition of kerb mass may vary from country to country, but in this International Standard it refers to the definition contained in ISO 1176.

3.4

rated engine speed, S

engine speed at which the engine develops its rated maximum net power as stated by the manufacturer

4 Vehicle categories

4.1 Category L: motor vehicles with less than four wheels:

- L1 and L2: mopeds (see ISO 9645 for further details),
- L3: two-wheeled motor vehicles with an engine cylinder capacity $> 50 \text{ cm}^3$ or maximum speed $> 50 \text{ km/h}$,
- L4: three-wheeled motor vehicles with an engine cylinder capacity $> 50 \text{ cm}^3$ or maximum speed $> 50 \text{ km/h}$, the wheels being attached asymmetrically along the longitudinal vehicle axis,
- L5: three-wheeled motor vehicles with an engine cylinder capacity $> 50 \text{ cm}^3$ or maximum speed $> 50 \text{ km/h}$, having a gross vehicle mass rating $< 1000 \text{ kg}$ and wheels attached asymmetrically along the longitudinal vehicle axis.

4.2 Category M: motor vehicles with at least four wheels, used for the carriage of passengers:

- M1: vehicles used for the carriage of passengers and comprising no more than eight seats in addition to the driver's seat,
- M2: vehicles used for the carriage of passengers and comprising more than eight seats in addition to the driver's seat, and having a maximum mass not exceeding 5 t,
- M3: vehicles used for the carriage of passengers and comprising more than eight seats in addition to the driver's seat, and having a maximum mass exceeding 5 t.