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International Standard



5128

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

Acoustics — Measurement of noise inside motor vehicles

Acoustique — Mesurage du bruit à l'intérieur des véhicules à moteur

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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 5128 was developed by Technical Committee ISO/TC 43, *Acoustics*, and was circulated to the member bodies in July 1976.

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

Austria	Ireland	Poland
Belgium	Italy	Romania
Brazil	Japan	South Africa, Rep. of
Canada	Korea, Rep. of	Spain
Denmark	Mexico	Sweden
Finland	Netherlands	Switzerland
France	New Zealand	Turkey
Germany, F.R.	Norway	United Kingdom
Hungary	Philippines	USA

The member bodies of the following countries expressed disapproval of the document on technical grounds :

Czechoslovakia
USSR

Acoustics — Measurement of noise inside motor vehicles

1 Scope and field of application

This International Standard is the first stage in the development of a test intended to provide a useful definition of interior noise for engineering and contractual purposes. It specifies the conditions for obtaining reproducible and comparable measurements of the levels of the noise and the noise spectra inside all kinds of motor vehicles intended for road use, including those where the driver and/or passengers occupy an open cabin or even only a well-defined area, but excluding agricultural tractors and field machinery covered by ISO 5131.

The results may be used, for example :

- to decide whether or not the noise inside the vehicle is in accordance with noise specifications;
- to estimate hearing damage risk in conjunction with noise exposure data (see ISO 1999);
- to rate the degree of speech interference;
- to orient a programme of more elaborate measurements for the purposes of studying noise reduction procedures.

The specified procedure is intended neither for the measurement of pressure oscillations at very low frequencies, nor for the assessment of the noise exposure for comfort and security such as fatigue and vigilance. The present state of the art does not yet allow a good correlation between measured data and comfort and security.

NOTES

- 1 The test procedures described in this International Standard are engineering methods as defined in ISO 2204.
- 2 Measurements may be made on sources emitting noise of an impulsive character with an impulse sound level meter.
- 3 When repeating a measurement following this International Standard with other vehicles of the same type or on other measuring sites or with other measuring instruments which comply with instruments of type 1 of IEC Publication 651, differences of the order ± 3 dB may be observed in the test results of the A-weighted sound pressure level measurements.

2 References

ISO 1176, *Road vehicles — Weights — Vocabulary.*

ISO 1999, *Acoustics — Assessment of occupational noise exposure for hearing conservation purposes.*

ISO 2204, *Acoustics — Guide to International Standards on the measurement of airborne acoustical noise and evaluation of its effects on human beings.*

ISO 5131, *Acoustics — Measurement of noise at the operator's workplace on agricultural tractors and field machinery — Survey method.*

IEC Publication 225, *Octave, half-octave and third-octave band filters intended for the analysis of sounds and vibrations.*

IEC Publication 651, *Sound level meters.*

3 Nature of tests

3.1 Verification tests : Measurements performed to prove that the vehicle delivered by the manufacturer is in accordance with noise specifications.

The conditions prescribed for each test shall be complied with as closely as possible, but if unavoidable variations have to be made, these shall be stated in the test report.

3.2 Monitoring tests : Measurements performed in order to check that the noise of the vehicles is still within prescribed limits, and that noticeable changes have not occurred since delivery, or between individual units of a consignment of vehicles.

For monitoring tests, slight deviations from the type test conditions may be tolerated; for example, the number of microphone positions and driving conditions may be reduced. Any variations shall be described in the test report.