International Standard 7636

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Bells for bicycles and mopeds — Technical specifications

Sonnettes pour cycles et cyclomoteurs — Spécifications techniques

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Foreword

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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.

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Bells for bicycles and mopeds — Technical specifications

1 Scope

This International Standard lays down the technical specifications, such as the sound pressure level and the durability, and specifies the corresponding test methods for bells which may be fitted to bicycles and certain categories of mopeds.

2 Field of application

This International Standard applies to the following two categories of bells :

Category I : Bells for use on bicycles

Category II : Bells for use on certain categories of mopeds

3 References

ISO 3768, *Metallic coatings — Neutral salt spray test (NSS test).*

IEC Publication 651, *Sound level meters.*

4 Measuring apparatus

Measurements of the sound pressure levels shall be made using a sound level meter conforming at least to the requirements of a type 1 instrument according to IEC Publication 651. When a device for protection against wind is used, its effect on the measuring precision is to be taken into account according to the indications of the manufacturer.

The fast time constant and the weighting curve A shall be used.

5 Test conditions

5.1 Test site

5.1.1 The measurements of the sound pressure levels shall be carried out preferably in an anechoic room of which the cut-off frequency shall be lower than the frequency of the lowest component of the sound emitted by the bell under test.

5.1.2 Alternatively, the measurements of the sound pressure levels may be carried out either in a semi-anechoic room or in an open space[1)]. No person other than the observer taking the readings on the meter shall remain in the vicinity of the bell or microphone, since the presence of bystanders may have an appreciable influence on the meter readings. Care shall be taken to avoid reflections from the ground in the area of measurement (for example, by using a series of absorbing screens).

It shall be ensured that the hemispherical divergence is complied with to a limit of 1 dB, within a hemisphere of at least 5 m radius up to the maximum frequency to be measured, particularly in the measuring direction and at the height of the bell and microphone.

5.1.3 In case of disagreement, only measurements carried out in an anechoic room can be considered valid.

5.2 Ambient conditions

5.2.1 The ambient noise level shall be at least 10 dB lower than the sound level of the bell to be tested.

5.2.2 No measurements shall be carried out when the wind speed is greater than 5 m/s.

5.2.3 The ambient temperature during the measurements shall be between 10 and 30 °C.

5.3 Mounting of the bell

The bell to be tested shall be fitted as specified by the manufacturer, on a tube rigidly fixed to a solid metallic base, the mass of which is at least 15 kg.

Unless otherwise specified by the manufacturer, the bell shall be mounted horizontally. Any tilt shall be stated in the test report.

The base shall be so designed that reflections from its faces, or vibrations do not noticeably affect the measurement results.

1) This open space may, for instance, be an area of 50 m radius, the central part of which is intended for the execution of the measurements. This central part shall be practically horizontal over at least 20 m radius, covered with concrete, asphalt or similar material, and free from long grass, loose soil or ashes.

5.4 Positioning of the microphone and bell

5.4.1 The bell to be tested and the microphone shall be placed at the same height. This height shall be between 1,15 and 1,25 m.

5.4.2 The axis of maximum sensitivity of the microphone shall run through the centre of the bell.

5.4.3 The microphone shall be placed so that its diaphragm is at a distance of 2 ± 0,01 m from the centre of the bell.

6 Measurement of sound pressure level

6.1 Actuation of the bell

The bell to be tested shall be rung by an operator who pushes the lever 10 times consecutively over its full travel in 4 ± 0,5 s. This operation shall be carried out five times, each sequence being interrupted by a pause.

The operator shall sit such that his presence has no noticeable influence on the test results.

6.2 Expression of results

The results of measurements of the sound pressure levels shall be expressed in decibels in relation to 2×10^{-5} Pa (N/m^2), weighted in accordance with curve A [dB(A)].

The value expressing the result of the measurements shall be the average of the maximum values obtained during each of the 5 sequences of 10 actuations, as specified in 6.1.

6.3 Required sound pressure level

Measured under the conditions specified in clause 5, the average of the measured sound pressure level of three out of four bells shall be at least :

75 dB(A) for bells of category I;

85 dB(A) for bells of category II.

7 Test of durability

7.1 Test procedure

Four examples of each model of bell shall be subjected to the durability test as specified in 7.1.1 and 7.1.2. The apparatus shall be in new condition and shall not be lubricated during the test.

7.1.1 Stability test

Four bells shall be rung 30 000 times over the full travel of the lever at a rate of 100 ± 5 operations per minute.

7.1.2 Corrosion test

Four bells shall be subjected to a salt test of 50 g/l concentration for 96 h, according to ISO 3768.

7.2 Test results

After undergoing the tests specified in 7.1.1 and 7.1.2, at least three out of four bells shall still meet the requirements of 6.2.