

ICS 43.150
CCS Y14



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 42703-2023

**Cycles - Audible warning devices - Technical specification and
test methods**

自行车 鸣号装置 技术规范和试验方法

Issued on: May 23, 2023

Implemented on: December 1, 2023

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

Foreword	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	5
4 Symbols and abbreviations	5
5 Measuring instruments	5
5.1 Acoustic measuring instrument	5
6 Acoustic environment, meteorological conditions and background noise	7
6.1 Test site	7
6.2 Meteorological conditions	8
6.3 Background noise	8
6.4 AWD installation	8
6.5 Microphone and AWD location	8
7 Measurement of sound pressure level	9
7.1 AWD operation	9
7.2 Measurement readings and reported values	9
7.3 Sound pressure requirements	9
7.4 Low battery indication	10
8 Durability test	10
8.1 Test steps	10
8.2 Test results	11
9 Test report	11
10 Marks	12

Foreword

This document was issued on 23 May 2023 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 1 December 2023.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

1 Scope

GB/T 42703-2023 covers audible warning devices fitted to cycles - the bell or the electric horn a rider uses to be heard - setting both what one has to sound like and how that is measured. The acoustic instruments come first, then the test site, which is anechoic or semi-anechoic, the meteorological conditions, the background noise ceiling, and the positions of the device and of the microphone, because a bell measured half a metre closer or in a reverberant room will pass a limit it should fail. Clause 7 governs how the device is operated during the test, how readings are reduced to a reported value, the sound pressure requirements themselves, and the low battery indication an electric device must give before it grows too quiet to be heard while the rider still believes it works. Clause 8 is durability: mechanical stability, and cycling of the control - 30 000 operations at (100+/-5) times per minute for a lever type - so that a device loud when new is still loud after a season of use. The test report and the marking clause close the document. Aimed at cycle and electric bicycle manufacturers, makers of bells and horns, and the laboratories that certify them.

This document specifies the technical specifications for audible warning devices installed on cycles, such as sound pressure levels and durability performance. It also describes the corresponding test methods.

This document applies to various types of audible warning devices for cycles.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 9227, Corrosion test in artificial atmosphere - Salt spray tests

NOTE: GB/T 10125-2021, Corrosion tests in artificial atmospheres -- Salt spray tests (ISO 9227:2017, MOD)

ISO 26101, Acoustics - Test methods for qualification of free field environments

NOTE: GB/T 34828-2017, Acoustics -- Test methods for the qualification of free-field environments (ISO 26101:2012, IDT)

IEC 60942, Electroacoustics - Sound calibrators

NOTE: GB/T 15173-2010, Electroacoustics -- Sound calibrators (IEC 60942:2003, IDT)

IEC 61672-1, Electroacoustics - Sound level meters - Part 1: Specifications

NOTE: GB/T 3785.1-2010, Electroacoustics -- Sound level meters -- Part 1: Specifications (IEC

61672-1:2002, IDT)

IEC 61672-3, Electroacoustics - Sound level meters - Part 3: Periodic tests

NOTE: GB/T 3785.3-2018, Electroacoustics -- Sound level meters -- Part 3: Periodic tests (IEC

61672-3:2013, IDT)

The entire measurement system shall be checked using a Class 1 acoustic calibrator complying with the requirements of IEC 60942.

When measuring, acoustic measuring instruments with "F" time weighting and "A" frequency weighting described in IEC 61672-1 shall be used. When using a system that monitors A-weighted sound pressure levels at periodic intervals, the interval between readings shall not be greater than 30 ms.

Instruments shall be maintained and calibrated in accordance with the instrument manufacturer's instructions.

When it is impossible to make an overall judgment or conclusion on whether the sound level meter complies with all the specifications of IEC 61672-1, the sound level meter or equivalent measurement system shall at least meet the requirements of Class 1 sound level meter in IEC 61672-3.

NOTE: The tests in IEC 61672-3 only cover part of the provisions of IEC 61672-1. IEC 61672-1

covers a large range (temperature range, frequency requirements up to 20 kHz, electromagnetic

compatibility test), so from an economic perspective, it is impossible to verify each parameter of

the computer data acquisition system one by one according to the requirements of IEC 61672-1.

5.1.2 Calibration

At the beginning and end of each measurement, the entire acoustic measurement system shall be checked with the acoustic calibrator described in 5.1.1. Without additional

adjustments, the difference between readings shall not be greater than 0.5 dB. If this value is exceeded, measurements taken after the last satisfactory inspection shall be discarded.

5.1.3 Compliance requirements

The acoustic calibrator shall be calibrated once a year in accordance with the requirements of IEC 60942.

The instrument system shall be calibrated at least once every 2 years in accordance with the requirements of IEC 61672-3.

All compliance testing shall be performed by an authorized laboratory traceable to an appropriate reference.

5.1.4 Meteorological instrument

Meteorological instruments used to monitor environmental conditions during the test shall meet the following technical specifications:

- a) Temperature measuring device $\pm 1^{\circ}\text{C}$ or less;
- b) Wind speed measuring device ± 1.0 m/s;
- c) Air pressure measuring device ± 5 hPa;
- d) Relative humidity measuring device $\pm 5\%$.

4 AWDs shall be operated 30,000 times at a speed of (100 $\pm$ 5) times/min during the

operating stroke of the joystick.

- b) Electric or electronic AWD

The product is securely installed. Apply a cyclic force of $0 \sim (13 \pm 1)$ N (or larger, enough to trigger sound). Last 30,000 times.

The contact time from 0~13 and 13~0 shall be 1 s. The pause time shall be 1 s. Force shall be applied gradually to avoid any shock. The force shall be applied at the center

.....

6 Acoustic environment, meteorological conditions and

background noise