

ICS 13.140
CCS Q 84



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

GB 14227-2006

Replacing GB/T 14227-2006

**Acoustical requirement and measurement on station platform
of urban rail transit**

城市轨道交通车站站台声学要求和测量方法
(English Translation)

Issued on: September 29, 2024

Implemented on: April 1, 2025

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting is required.

This document replaces GB/T 14227-2006 "Acoustic requirements and measurement methods for urban rail transit station platforms" and is consistent with GB/T 14227-2006 in comparison, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

The scope of application adds requirements for the design speed range and wheel-rail conditions (see Chapter 1); a) Deleted subway and light rail (see Chapter 1 of the 2006 edition); b) the term "train group" has been deleted (see 3.4 of the 2006 edition); c) Added the term "platform screen door" (see 3.5); d) the equivalent continuous A-weighted sound pressure level requirements for noise measurement quantities have been changed (see 5.1, 5.1 of the 2006 edition); e) the requirements for measuring equipment have been changed (see 5.2.1, 5.2.1 of the 2006 edition); f) Changed "Environmental Conditions" to "Measurement Conditions", deleted the wind speed requirement, changed the requirements for sound reflectors around the measuring point, and added the speed requirements for trains entering and leaving the station, platform screen door requirements, and background noise measurement requirements are specified (see 5.3, 5.3 of the 2006 edition);

The background noise correction value has been deleted (see Table 2 of the 2006 edition); h) Added background noise correction formula (see 5.3.7); i) Changed the requirements for

microphone position (see 5.4, 5.4 of the 2006 edition); j) Added the measurement point requirements used in data processing (see 5.7); k) the reverberation time measurement method has been changed (see Chapter 6, Chapter 6 of the 2006 edition); l) Added the requirements for meteorological conditions in the test report (see Chapter 7); m) Added the layout of platform noise measurement points (see Appendix A); n) Added the reverberation time measurement point arrangement (see Appendix B). o)

1 Scope

This document specifies the acoustic requirements and measurement report contents for trains entering and leaving urban rail transit station platforms.

Measurement methods and reverberation time measurement methods.

This document is applicable to new and renovated buildings with a maximum design speed of no more than 160 km/h, supported by steel wheels and rails, and powered by electricity.

Design, measurement and evaluation of the acoustic environment of stations and platforms in urban rail transit systems and expansion projects;

The measurement of the learning environment shall be carried out in accordance with this reference.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies.

in this document.

GB/T 3785.1 Electroacoustic sound level meter Part 1: Specification GB/T 8170 Rules for rounding off values and expression and determination of limit values GB/T 15173 Electroacoustic sound calibrator GB/T 36075.2 Acoustics Measurement of indoor acoustic parameters Part 2: Reverberation time of ordinary rooms

3 Terms and definitions

The following terms and definitions apply to this document.

Equivalent continuous A-weighted sound pressure level $L_{Aeq,T}$ the A-weighted sound pressure level of a steady-state sound that has the same mean square A-weighted sound pressure level as the time-varying noise within a specified time.

Note 1: The equivalent continuous A-weighted sound pressure level is referred to as "equivalent sound level".

Note 2: The expression of equivalent continuous A-weighted sound pressure level is shown in formula (1).

$$L_{Aeq,T} = 10 \lg$$

$$\frac{1}{T} \int_{t_1}^{t_2} p_A^2(t) dt$$

$$p_0^2$$

$$p_A(t)$$

$$p_0$$

$$(1)$$

Where.

$L_{Aeq,T}$ - equivalent continuous A-weighted sound pressure level, in decibels [dB(A)];

T - specified time period, in seconds (s);

$p_A(t)$ - A-weighted sound pressure, unit is Pascal (Pa);

p_0 - reference sound pressure, taken as 20 μ Pa.

Note 3. When A-weighted sound pressure is expressed as A-sound level, the expression for the equivalent continuous A-weighted sound pressure level is given by formula (2).

$$L_{Aeq,T} = 10 \lg$$

$$\frac{1}{T} \int_{t_1}^{t_2} 10^{L_{pA}/10} dt$$

$$10^{L_{pA}/10}$$

$$10^{L_{pA}/10}$$

[Source. GB/T 3947-1996, 13.7, modified]