

TB

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

TB 10054-2010

**Satellites Positioning System Survey Specifications for Railway
Engineering**

铁路工程卫星定位测量规范

(English Translation)

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sound barriers J 2743-2019**

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1 General

1.0.1

In order to unify the design standards of railway sound barrier engineering, make the railway sound barrier engineering design meet the requirements of safety, reliability, green, environmental protection, advanced maturity, economical application, etc., this

Code is formulated.

1.0.2

This Code is applicable to the engineering design of new and reconstructed railway sound barriers.

1.0.3

The acoustic design of the sound barrier should be determined, according to the recent traffic volume of the railway project, the type of train, the number of marshalling, the number of pairs, the design speed and other factors.

1.0.4

The sound barrier is strictly prohibited from intruding into the boundary of the railway building. It shall not affect the safety of other transportation equipment. It shall meet the inspection and maintenance requirements of itself and other railway facilities.

1.0.5

The design service life of acoustic elements of sound barrier shall not be less than 25 years. The design service life of structural components shall not be less than 50 years. The structural safety level shall not be lower than level 2.

1.0.6

The new technology, new process, new material, new equipment, which is adopted in the sound barrier project, shall comply with the relevant provisions of the current national standards.

1.0.7

In addition to this Code, the engineering design of railway sound barrier shall also comply with the relevant current national standards.

2.0.1 Railway sound barrier

Structures, which are used to reduce the impact of train running noise, on the acoustic environment. According to its location, it is divided into subgrade sound barrier and bridge sound barrier.

2.0.2 Post and panel sound barrier

A sound barrier, which is formed by inserting sound-absorbing or sound-insulating sheet, between the uprights.

2.0.6 Sound-sensitive point

Noise-sensitive buildings or areas, such as hospitals, schools, institutions, scientific research organizations, residences, nature reserves, etc.

2.0.7 Background noise

The noise, which is measured at the reference point or the sound receiving point, when there is no railway noise source, within the control range of the sound barrier.

2.0.8 Insertion loss of sound barrier

Under the condition that the noise source, topography, landform, ground features, meteorological conditions remain unchanged, The difference between the sound pressure

level of a specific location of a sound-sensitive target of the acoustic environment, before and after the installation of the sound barrier.

3 Basic provisions

3.0.1

The sound barrier facilities shall be safe and reliable, easy to construct, conducive to repair and maintenance.

3.0.2

The setting of sound barriers is strictly prohibited to interfere with railway visual signals.

3.0.3

The location of the sound barrier shall meet the following requirements.

3.0.4

The sound barriers, which are installed in towns, scenic spots, tourist resorts, shall not only coordinate with the main project, but also coordinate with the local natural environment, architectural style, humanistic environment.

3.0.5

The sound barrier shall be naturally connected and smoothly transitioned, at the cross-section change of the road and bridge connections, the station's access section, the cable well. It shall take measures to prevent sound leakage.

4.1 General provisions

4.1.1

The sound barrier shall be acoustically designed, according to the characteristics of railway noise source intensity and the noise control requirements of sensitive targets, in the acoustic environment.

4.1.3

The sound source equivalent height, which is used for the calculation of sound barrier insertion loss, can be determined by the following methods.

4.1.4

The length and height of the sound barrier shall be calculated and determined, according to the design target value of the insertion loss.

4.1.5

The length of the sound barrier shall include the distribution length of the acoustic environment sensitive targets, along the line, AND the additional length at both ends.

The additional length can be calculated and determined according to the following formula, which should not be less than 50 m.

4.1.6

When the design target value of the insertion loss of the sound barrier is greater than 10 dB (A), the structural form of the sound barrier shall be compared, selected, demonstrated; it shall take appropriate noise control measures.

4.2 Design target value

4.2.1

It shall adopt the A sound level, for the design target value of the sound barrier.

4.2.2

The design target value of the sound barrier shall be calculated and determined, according to the following formula.

4.2.4

The relationship, between the design target value of the sound barrier and the insertion loss value of the sound barrier, shall meet the requirements of the following formula.

4.3 Insertion loss of sound barrier

4.3.1

The insertion loss of the sound barrier shall be calculated and determined, according to the following formula.

4.3.6

Where there are other barriers or obstacles, other than the proposed sound barrier, between the sound source and the sound receiving point, the sound attenuation can be determined, according to Articles 4.3.2 ~ 4.3.4 of this Code.

5.1.1 In addition to the requirements of "Acoustic elements of railway sound barrier"

TB/T 3122, the metallic acoustic elements of sound barriers shall also meet the following requirements.

5.1.3 In addition to complying with the requirements of "Acoustic elements of railway

sound barrier" TB/T 3122, the transmission sound insulation panel of the sound barrier shall also meet the following requirements.