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

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**Technical guidelines for noise impact assessment
(English Translation)**

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1 Scope of application

This standard specifies the general principles, contents, procedures, methods and requirements for acoustic environmental impact assessment.

This standard applies to the acoustic environmental impact assessment of construction projects.

The planned acoustic environmental impact assessment can be used for reference.

2 Normative references

This standard refers to the following documents or clauses thereof. For dated references, only the dated version applies to this standard.

For undated references, the latest edition (including all amendments) applies to this standard.

GB 3096 Acoustic Environment Quality Standard GB 9660 Environmental Standard for Aircraft Noise Around Airports GB 9661 Measurement method of aircraft noise around airports GB 12348 Industrial Enterprise Boundary Environmental Noise Emission Standard GB 12523 Environmental Noise Emission Standard for Construction Sites GB 12525 Railway boundary noise limit and its measurement method GB 22337 Noise Emission Standard for Social Living Environment GB/T 17247.1 Acoustic Outdoor Sound Propagation Attenuation Part 1: Calculation of Atmospheric Sound Absorption GB/T 17247.2 Acoustic Outdoor Sound Propagation Attenuation Part 2: General Calculation Method HJ/T 90 Specification for Acoustic Design and Measurement of Sound Barriers HJ 884 Technical Guidelines for Pollution Source Intensity Accounting JTG B01 Highway Engineering Technical Standard

3 Terms and Definitions

The following terms and definitions apply to this standard.

noise

Sounds that interfere with the surrounding living environment generated in industrial production, building construction, transportation and social life (frequency between 20 Hz and 20 kHz audible range).

stationary sound source A sound source whose position does not move within the sounding time.

mobile sound source

A sound source whose position moves according to a certain trajectory during the sounding time.

point sound source

A sound source that radiates sound waves in the form of spherical waves, and the sound pressure amplitude of the radiated sound waves is inversely proportional to the sound wave propagation distance. sound sources of any shape, only If the wavelength of the sound wave is much larger than the geometric size of the sound source, the sound source can be regarded as a point sound source.

line sound source

For a sound source that radiates sound waves in the form of cylindrical waves, the sound pressure amplitude of the radiated sound waves is inversely proportional to the square root of the sound wave propagation distance.

area sound source

A sound source that radiates sound waves in the form of plane waves, and the sound pressure amplitude of the radiated sound waves does not change with the propagation distance.

noise protection target Buildings and building clusters that need to be kept quiet in accordance with laws, regulations, standard policies, etc.

equivalent continuous A-weighted sound pressure level the average energy value of the A sound level during the specified measurement time T, using $A_{eq,TL}$ means, the unit is dB.

By definition, the equivalent continuous A sound level is expressed as.

A_{eq}

$10\lg 10d$

$TL\ t$

In the formula. $A_{eq,TL}$ - equivalent continuous A sound level, dB;

A_L -- instantaneous A sound level at time t, dB;

T--specified measurement time period, s.

background noise value the sound level affected by the sound source of the construction project itself is not included in the evaluation scope.

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noise contribution value the sound level produced by the construction project's own sound source at the predicted point.

Noise contribution value (eqg_L) is calculated as.

eqg

$10\lg 10i$

In the formula. eqg_L -- noise contribution value, dB;

T -- time period for forecast calculation, s;

i -- the running time of the i sound source in the T period, s;

A_{iL} - The equivalent continuous A sound level produced by the i sound source at the predicted point, dB.

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noise prediction value the contribution value and background value of the predicted point are calculated by the energy superposition method.

Noise prediction (

eqL) is calculated as.

()eqg eqb0.1 0.1eq 10lg 10 10L LL = (3) in the formula. eqL - the noise prediction value of the prediction point, dB;

4.1 Basic tasks

Evaluate the changes in acoustic environment quality caused by the implementation of construction projects; propose reasonable and feasible prevention and control measures to reduce noise impact;

Evaluate the feasibility of construction project implementation from the perspective of acoustic environmental impact; optimize site selection, route selection, rational layout and land space for construction projects the plan provides a scientific basis.

4.2 Evaluation Category

4.2.1

According to the type of sound source, it can be divided into the environmental impact assessment of fixed sound source and mobile sound source.

4.2.2

If the construction project includes both fixed sound sources and mobile sound sources, the sound environmental impact assessment shall be carried out separately;

When affected by fixed sound sources and moving sound sources (excluding aircraft noise at airports), the evaluation shall be carried out after superimposing the environmental impact.

4.3.1 Sound source intensity

The evaluation quantity of sound source intensity is. A-weighted sound power level (L_{Aw}) or octave band sound power level (L_w), if necessary, the sound source direction should be included A-weighted sound pressure level [L_A(r)] or octave band sound pressure level [L_p(r)] at a distance r from the sound source, including a sound source directivity description if necessary;

Effective perceived noise level (LEPN).