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HJ

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

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**Technical specifications for automatic monitoring of acoustic
environment quality in function area**

功能区声环境质量自动监测技术规范

(English Translation)

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Foreword

In order to carry out "Law of the People's Republic of China on Environmental Protection" and "Law of the People's Republic of China on Prevention and Control of Environmental Noise Pollution", norms Functional area acoustic environment quality automatic monitoring and evaluation, the development of this standard.

This standard specifies the functional area acoustic environment quality monitoring methods of automatic monitoring, the main monitoring project, data validation, monitoring Test data statistics, quality assurance and quality control and other technical requirements.

This standard is released for the first time.

This standard by the Environmental Protection Department of Environmental Monitoring Division and Science and Technology Standards Division to develop.

This standard was drafted. China Environmental Monitoring Station, Tianjin Environmental Monitoring Center, Chongqing Environmental Monitoring Center, Wu Han City Environmental Monitoring Center and Suzhou City Environmental Monitoring Center Station.

This standard MEP approved on December 14, 2017.

This standard since March 1, 2018 into effect.

This standard is interpreted by the MEP.

1 Functional area acoustic environment quality automatic monitoring technical specifications

1 scope of application this standard specifies the functional area acoustic environment quality monitoring methods of automatic monitoring, the main monitoring project, data validation, monitoring data Statistics, quality assurance and quality control and other technical requirements.

This standard applies to functional area acoustic environment quality automatic monitoring.

2 Normative references

This standard references the following documents or the terms of them. For undated references, the latest edition is applicable to this standard quasi.

GB 3096 acoustic environment quality standards HJ 640 Environmental Noise Monitoring Technical Specification Urban Acoustic Environment General Monitoring HJ 907 automatic environmental noise monitoring system technical requirements

3 Terms and definitions

The following terms and definitions apply to this standard.

Valid data rate

In the measurement period, due to equipment, power, communications failures and other reasons, the actual number of valid data collected and the number of theoretical collection According to the percentage of the number. The effective acquisition rate of the measurement period is calculated by equation (1) $100\% \text{ VDR} = \frac{n}{N} \times 100\%$ where. VDR - effective collection of measurement time period;

n - the actual number of valid data collected during the measurement period;

N - the number of data that should be collected theoretically during the measurement period.

Equivalent sound level A continuous sound pressure level Equivalent continuous A sound level referred to, in the provisions of the measurement time T A sound level average energy, with $L_{Aeq, T}$ (abbreviated L_{eq}) in dB (A).

Considering the effective acquisition rate, the equivalent sound level is calculated according to formula (2).

, $0.1 (10)$

$10 \lg$

eq iL

VDR

VDR

2 Where. Leq, i - the equivalent sound level of the i period;

VDRi - the effective acquisition rate for period i.

Weather monitoring unit weather monitoring unit Meteorological monitoring unit is an optional part of various noise monitoring terminals for real-time measurement of wind speed, wind direction, precipitation, temperature, humidity Degree, pressure and other weather parameters.

4 Monitoring methods

4.1

Automatic noise monitoring equipment used shall comply with the relevant requirements of HJ 907.

4.2

automatic monitoring of functional areas using GB 3096 Appendix B of the fixed-point monitoring method, the point settings should be consistent with HJ 640 in the relevant technology Claim.

4.3

Point Selection First in accordance with the GB 3096 Appendix B census monitoring method, all kinds of functionally rough out the equivalent sound level and the average function area There is no significant difference between the effective sound level, which can reflect the number of measuring points of the acoustic environmental quality characteristics of such functional areas, and then determine the function according to the following principles District acoustic environment quality automatic monitoring point.

- a) To meet the automatic monitoring equipment installation, normal operation, routine management and quality control requirements.
- b) The monitoring points are easy to maintain and can guarantee safe, reliable and long-term stable operation.
- c) Avoid any fixed sources of noise near the reflecting surface and nearby sources and avoid the effects of trees (windy leaves).
- d) Monitoring points should be divided into administrative divisions.
- e) Zone 4 Acoustic Environment Select the area for noise-sensitive buildings.
- f) Automatic monitoring system noise on the microphone should be less than 10 dB (A)

above the environmental noise, noise reduction measures should be taken Reduce the impact of the work of automatic monitoring system noise.

g) Monitoring points should be free from strong electromagnetic interference, should be avoided by tall buildings, noise barriers and other obstacles to the spread of noise should be avoided installation in the tuyere.

4.4

Monitoring point above ground level 1.2m above.

4.5

If the original functional area monitoring point meets the above requirements, install the automatic noise monitoring instrument directly at that point.

4.6

Functional area Acoustic environment quality automatic monitoring points to determine the program see Appendix A.

5 Main monitoring project

5.1

Equivalent sound level for each hour $L_{eq, h}$, cumulative percentile levels L_{10} , L_{50} , L_{90} , maximum L_{max} , minimum L_{min} and standard deviation SD .

35.2 Daytime equivalent sound level L_d , nighttime equivalent sound level L_n and nighttime maximum sound level L_{max} .

5.3

hours effective collection rate and day, night effective collection rate.

5.4

Optional meteorological monitoring unit records the monitoring time period of meteorological parameters (such as. wind speed, wind direction, temperature, humidity, pressure, etc.) and the weather conditions (such as. rain and snow, lightning, etc.). And the average wind speed and minute precipitation statistics, the average hourly wind speed and hourly precipitation the amount.

6 Data validity

6.1

In all nature, all kinds of voices that may appear in human activities should not be treated as outliers.