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

GBZ/T 189.8-2007

**Measurement of physical agents in workplace - Part 8: Noise
(English Translation)**

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Foreword

GBZ/T 189 "Measurement of physical agents in workplace" is divided into the following parts:

- Part 1: Ultra high frequency radiation;
- Part 2: High frequency electromagnetic field;
- Part 3: Power frequency electric field;
- Part 4: Laser radiation;
- Part 5: Microwave radiation;
- Part 6: Ultraviolet radiation;
- Part 7: High stress;
- Part 8: Noise;
- Part 9: Hand-transmitted vibration;
- Part 10: Classification of physical workload;
- Part 11: Heart rate on physical work.

This Part is Part 8 of GBZ/T 189.

This Part of GBZ/T 189 was revised in accordance with WS/T 69-1996 "Directive rules for noise measurement in the work environment".

Compared with WS/T 69-1996 on measurement methods, the main revisions of this Part are as follows:

- INCORPORATE the measurement series of physical factors in the workplace;
- STANDARDIZE the scope of use, requirements for measuring instruments, measurement methods;
- ADD the calculation methods for steady-state and unsteady-state noise, 8h equivalent sound level, 40h equivalent sound level;
- ADOPT the personal noise dosimeters; PROVIDE the sampling methods using personal noise dosimeters.

Appendix A and Appendix B of this Part are informative appendixes.

Measurement of physical agents in workplace - Part 8: Noise

1 Scope

This Part of GBZ/T 189 specifies the measurement methods for productive noise in workplaces.

This Part applies to the measurement of productive noise in the workplace.

2.2 Integrating sound level meter or personal noise dosimeter: Type 2 or above, with A-

weighting, C-weighting, "S (slow)" gear and "Peak (peak)" gear.

3.1 On-site investigation

In order to correctly select the measurement point, measurement method, measurement time, etc., it is necessary to conduct an on-site investigation of the workplace, before the measurement. The investigation contents mainly include:

3.1.1 Draw a sketch for the area, space, process division, noise equipment layout, etc.

of the workplace.

3.1.2 Division of work flow, noise characteristics of each production procedure, noise

change law, etc.

3.1.3 Pre-measurement, to determine whether the noise is stable and whether the distribution is uniform.

3.2.1 Selection of measuring instruments: Sound level meters are used for fixed job

positions; individual noise dosimeters are preferred for mobile jobs, OR sound level meters are used for different workplaces, to measure separately and calculate the equivalent sound level.

3.2.2 The measuring instrument shall be calibrated, according to the instrument calibration requirements, before measurement.

3.2.3 Integral sound level meter or personal noise dosimeter is set to A-weighting, "S

(slow)" gear; the value is sound level L_{pA} or equivalent sound level L_{Aeq} . When measuring impulse noise, use "Peak (peak value)" gear.

3.3.1 When the sound field in the workplace is evenly distributed [A sound level difference within the measurement range is less than 3 dB(A)], select 3 measuring points; take the average value.

3.3.2 When the sound field distribution in the workplace is uneven, it shall be divided

into several sound level areas; the sound level difference within the same sound level area is < 3 dB(A). In each area, select 2 measuring points; take the average value.

3.3.3 Workers are mobile. Within the mobile range, make measurements at the workplaces respectively; calculate the equivalent sound level.

3.4.1 The microphone shall be placed at the height of the ears of the workers, when they

are working, 1.50 m for standing gesture and 1.10 m for sitting gesture.

3.4.3 The measuring instrument is fixed on a tripod and placed at the measuring point;

if the tripod is not suitable for placement on site, the sound level meter can be held by hand; however, the distance between the tester and the microphone shall be kept > 0.5 m.

3.4.4 For workplaces with steady-state noise, make 3 measurements at each measuring

point; take the average value.

3.4.5 For workplaces with unsteady noise, determine the time period, according to the

sound level change (sound level fluctuation ≥ 3 dB); measure the equivalent sound level of each time period; record the duration of each time period.

3.4.6 When measuring impulse noise, it shall measure the peak value of impulse noise

and the number of impulses in a working day.

3.4.7 Measurements shall be carried out under normal production conditions. When the

wind speed in the workplace exceeds 3 m/s, the microphone shall wear a windshield.

Electromagnetic field interference shall be avoided, as much as possible.

Where:

LEX,W - Refers to the average weekly exposure value (A-weighted), in decibels (dB);

LEX,8h - The equivalent sound level (A-weighted) of exposure noise intensity, which is normalized to 8 hours of work during the actual working time of a day, in decibels (dB);

n - Refers to the actual number of working days per week, in days (d).

3.5.4 Impulse noise: Using the integral sound level meter, "Peak (peak value)" gear, it

can directly read the peak value of the sound level L_{peak} .