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

GB/T 21230-2014

Replacing GB/T 21230-2007

**Acoustics -- Determination of occupational noise exposure --
Engineering method**

声学 职业噪声暴露的测定 工程法

(English Translation)

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Table of Contents

Preface
Introduction
1 Scope
2 Normative references
3 Terms and definitions
4 Symbol
5 Instruments
Step 6 general method --- chronological
6 7 Job Analysis

Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules.

This standard replaces GB/T 21230-2007 "Acoustics workplace noise exposure measurement and evaluation guidelines." versus GB/T 21230-2007 compared to the main changes are as follows.

--- The guide is specific, rose to occupational noise exposure - Engineering method of determination;

--- Engineering method only effect of noise on hearing loss for other than on hearing shall not be taken into account;

--- Use only A-weighted equivalent continuous sound level and sound exposure level evaluation of the amount, the amount does not involve other evaluation guidelines mentioned.

This standard uses the translation method identical with the international standard ISO 9612:2009 "Acoustics - Determination of occupational noise exposure - Engineering method." Correspondence between the consistency of the standards of international documents and normative references of the following documents.

--- Hearing impairment evaluation GB/T 14366-1993 Acoustics occupational noise-induced noise (ISO 1999:1990, IDT) this standard was proposed by the Chinese Academy of Sciences.

This standard by the National Standardization Technical Committee of Acoustics (SAC/TC17) centralized.

This standard was drafted. Institute of Acoustics, Anhui Vocational and Technical College, Tongji University, Beijing Labor Protection Science Research the long Shao Bang Industrial Co., Ltd. of environmental protection.

Introduction

This standard provides a method for determining occupational noise exposure according to noise level measurements step by step method. Including the steps of. job analysis, Measurement program selection, measurement, error handling and uncertainty assessment, calculation and presentation of results. This standard specifies three different measurements Programme. measurement operation based on measurements and measurement-day trades. This standard provides for specific work and how research projects to select the appropriate measurement programs guide. Meanwhile, the standard also can be calculated given the uncertainty of the measurement results and the data of the data table.

The standard approved handheld sound level meter and use personal sound exposure meter. Optimization method prescribed steps to achieve a given accuracy.

Engineering method acoustic occupational noise exposure

1 Scope

This standard specifies the noise measurement staff in the work environment exposure and exposure to sound level computing project-level approach. This standard uses A-weighted sound level, but may also be C-weighted sound level. Standard specifies three different methods of measurement. The method is suitable for noise-level requirements engineering Exposure measurement occasions, such as epidemiological studies detailed study of noise exposure, hearing damage and other harmful effects.

Measuring process requires observation and analysis of noise exposure conditions to be able to control the quality of measurements. This standard also provides estimates Uncertainty count method.

This standard does not verbal communication to assess the effect of masking, nor the non-auditory impact infrasound, ultrasound and noise to be evaluated. The standard Registration does not apply to wearing hearing protectors when noise exposure measurement of the human ear.

According to the measurement results obtained in this standard can provide useful information to optimize noise control measures.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 3785.1-2010 Electric Acoustic Sound Level Meters Part 1. Specification (IEC 61672-1:2002, IDT) GB/T 15173-2010 electric acoustic sound calibrator (IEC 60942:2003, IDT) GB/T 15952-2010 electro-acoustics specifications for personal sound exposure meters (IEC 61252:2002, IDT) ISO/IEC Guide98-3 Measurement Uncertainty - Part 3. Guide to the Expression of Uncertainty in Measurement [Uncertaintyofmeas-urement-Part 3. Guidetotheexpressionofuncertaintyinmeasurement] ISO 1999 assessment of acoustic noise-induced hearing loss (Acoustics-Estimationofnoise-inducedhearingloss)

3 Terms and Definitions

The following terms and definitions apply to this document.

A time-weighted average sound pressure level

A-weightedtime-averagedsoundpressurelevel $L_{p,A,T}$ A weighted equivalent continuous sound pressure level A-weightedequivalentcontinuousoundpressurelevel $L_{p,A,eqT}$

A-weighted sound pressure p_A in the square of a sustained period of time T (from time t_1 to time t_2 termination) time average of the reference sound Base 10 of 10 times the logarithm of the square of the ratio of the pressure value p_0 is expressed in dB, namely.

$L_{p,A,T} = L_{p,A,eqT} = 10 \lg \frac{1}{T} \int_{t_1}^{t_2} p_A^2(t) dt$ (1) where.

Reference sound pressure $p_0 = 20 \mu Pa$.