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

GB/T 23717.2-2009

**Mechanical vibration and shock -- Vibration and shock in
buildings with sensitive equipment -- Part 2: Classification**

机械振动与冲击 装有敏感设备建筑物内的振动与冲击 第2部分：分级

(English Translation)

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Foreword

GB/T 23717 "Mechanical vibration and shock mounted vibration and shock sensitive equipment in buildings" by the following two parts.

--- Part 1. Measurement and Evaluation;

--- Part 2. Classification.

This section GB/T Part of 223,717.

This part identical with ISO/T S10811-2.2000 "Mechanical vibration and shock mounted vibration and shock sensitive equipment in buildings Part 2. Classification "(in English).

This section is equivalent translation ISO/T S10811-2.2000.

For ease of use, this section was modified following editorial.

--- With "this Part" instead of "ISO/T S10811-2";

--- Remove the ISO/T S10811-2.2000 foreword, preface rewritten this section;

--- With a decimal point as a decimal symbol instead of ", ". ";

--- Of ISO/T S10811-2.2000 references other international standards, have been adopted as the equivalent of a standard, instead of using our standard Corresponding to international standards, is not tantamount to the adoption of a standard for the direct reference to international standards.

Appendix A of this section is informative appendix.

This part of the National mechanical vibration, shock and condition monitoring Standardization Technical Committee (SAC/TC53) and focal points.

This section drafted by. Dalian University of Technology, Tongji University, Tsinghua University.

Introduction

This section provides a brief description of the three values of the spectral measurement data simplified method for classifying a measure used, the basic idea of its classification I want to make measurements and concise constant displacement/constant speed/constant acceleration spectral match. Concise description of the spectrum consists of three values. a speed average Two corner frequency and rms values.

GB/T 23717.2-2009/ISO/TS10811-2:2000 Mechanical vibration and shock Equipped with vibration and shock sensitive equipment in buildings Part 2. Classification

1 Scope

One way to define this part of GB/T 23717, this method GB/T 23717.1 measured data based on the effects on buildings.

Vibration and Shock classification. Hierarchy of environmental vibration conditions as designers, vibration and shock sensitive equipment manufacturers Building developers and users and usage guidelines.

Vibration and Shock type considered include transfer from the floor, table, wall, ceiling or isolated systems to the role of the device components, which are it may be produced by the following aspects.

- a) external vibration source, such as transport (road, rail or air) or the construction of buildings and construction activities (blasting, piling and vibration close Real), but also the weather causes vibration and sound of the roar and vibration response due to acoustic excitation;
- b) equipment for indoor use, such as presses, forging hammers, rotating equipment (air compressors, air conditioning systems, etc.) and transport within the building or Operating heavy equipment;
- c) Activities related to personnel and maintenance and operation of the device, such as people walking around, especially in the paving on the floor.

The frequency range of interest is typically 2Hz ~ 200Hz. General characteristic frequency less than 100Hz, because it is the performance of the building the response of various elements thereof.

This section only from the perspective to deal with the largest amplitude of vibration. Other quantitative concept does not involve vibrations (such as fatigue life estimation).

2 Normative references

The following documents contain provisions which, through reference GB/T 23717 in this section constitute provisions of this section. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

GB/T 23717.1 Mechanical vibration and shock mounted Part 1 Vibration and shock sensitive equipment within the building. Measurement and Evaluation (GB/T 23717.1-2009, ISO/T S10811-1.2000, IDT) IEC 61260 electrical acoustic octave band and fractional-octave bandwidth filter

3 Types of vibration waves

The shock wave can have an impact on the type of precision instruments within the building may be in any form. sine wave, random wave or transient waves. because Here, the vibration measurement and analysis should be effective against all of the above three types of motion. For a typical vibration source can be an example of a different type wave as follows.

Sinusoidal vibration a) of rotating machines;

A large number of vehicles on the random vibration b) road;

c) a single transport, piling, impact and explosion of transient vibration.

Frequency of vibration not only determined by the vibration source, but also by the dynamic characteristics of the building. Measurement and analysis methods described in this section it can be used with any type of vibration waveform.

GB/T 23717.2-2009/ISO/TS10811-2:2000