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

GB/T 14125-2008

Replacing GB/T 14125-1993

**Mechanical vibration and shock -- Measurement and evaluation
of shock and vibration effects on sensitive equipment in
buildings**

机械振动与冲击 振动与冲击对建筑物内敏感设备影响的测量和评价

(English Translation)

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Foreword

This standard is identical with ISO 8569:1996 "Mechanical vibration and shock and vibration measurements on sensitive equipment in buildings of and evaluation "(in English).

This standard is equivalent translation ISO 8569:1996.

This standard and ISO 8569:1996 as compared to, editorial changes as follows.

--- The "this International Standard" by "this standard";

--- Use the decimal symbol instead of as a decimal comma " , " . " , " ;

--- To ISO 8569:1996 and other international standards cited, as have been tantamount to the adoption of a standard with our standard instead of the corresponding International standards.

This standard is GB/T 14125-1993 "interior vibration and shock vibration-sensitive equipment on the measurement and data reporting approach" Amendments.

Compared with GB/T 14125-1993, modifications are as follows.

--- 1993 edition is equivalent to using ISO 8569. 1989; Excerpts Department identical with ISO 8569:1996 (in English), and technical content Write format equivalent to international standards.

From the date of implementation of this standard instead of GB/T 14125-1993.

This standard Annex A, Annex B is informative appendix.

This standard by the national mechanical vibration, shock and condition monitoring Standardization Technical Committee (SAC/TC53) and focal points.

This standard was drafted. Tongji University, Dalian University of Technology, Beijing Electric Power Construction Research Institute, Tsinghua University.

1 Scope

This standard specifies the data to measure and report on sensitive equipment within the building (in operating or non-operating state) of vibration and shock Method, the measured vibration and shock data used to create the database.

In order to facilitate comparison of vibration data (for example, in different countries compare different manufacturers to produce equipment measured with the amount of impact Level), to discuss the database reporting system. The proposed reporting system is conducive to the establishment of a specific device threshold, while facilitating divided into different circles Limit environmental conditions.

Vibration and Shock type considered include this standard from the ground, table, wall, roof or isolation system and vibration transmitted to the whole equipment Shock. Mechanical vibration or shock individual electronic components inside the device's response will not be considered.

According to the database of environmental conditions established classification system should be used as the design, manufacture, use of vibration and shock sensitive equipment and people Guide to construction contractors. For sensitive equipment, including.

- a) fixed the computer system (including peripherals);
- b) fixed telecommunication equipment;
- c) fixed laboratory equipment, such as electron microscopes, mass spectrometers, gas chromatographs and X-ray and laser equipment in general;
- d) mechanical precision instruments (tools), such as electronics manufacturing equipment;
- e) high-precision optical equipment, photocopying equipment, and electron beam;
- Electromechanical systems f) train traffic control center;
- g) safety device (fire alarm equipment) and access control equipment.

Vibration and shock in this standard under consideration may be caused by the local oscillator.

- a) external vibration source (such as traffic, the construction process of blasting, piling and vibration compaction, etc.), but also includes a sonic boom and sound incentives Vibration response;

- b) equipment for indoor use, such as presses, forging hammers, rotating equipment (for example, an air compressor, air-conditioning pumps) and transport and in buildings
Operating heavy equipment;
- c) the maintenance and operation of the officer class activities;
- d) natural vibration source, such as earthquakes, water and wind;
- e) internal vibration source, such as the vibration caused by the device itself.

Reflects the dominant frequency response characteristics of building components, in general, the advantages of frequency is less than 100Hz, so the frequency range of interest for the 0.5Hz ~ 250Hz (for vibrations caused by earthquakes, the frequency range of interest is 0.5Hz ~ 35Hz).

Vibration amplitude and duration depends on the distance from the vibration source, vibration source and the sensitive equipment and building components of support sensitive equipment response. Buildings currently used to evaluate the vibration parameters to represent the particle velocity, and the value in $10^{-4}\text{m/s} \sim 2 \times 10^{-2}\text{m/s}$ within range.

For transient and continuous vibrations caused by the different vibration sources, Appendix B gives the vibration concern.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

Vibration measurement GB/T 14124 Mechanical vibration and shock of the building and its effects on buildings evaluation guidelines GB/T 14125-2008/ISO 8569:1996