



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

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**Technical code for anti-micro-vibration engineering of
electronics industry**

电子工业防微振工程技术规范

(English Translation)

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1 General

1.0.1

In order to standardize the survey, design and construction quality acceptance of anti-microvibration projects in the electronics industry, to ensure that the microvibration environment requirements allowed by precision equipment and instruments are met, and to achieve advanced technology, economical applicability, reliable operation, and energy saving, the this specification.

1.0.2

This specification is applicable to the anti-microvibration design, construction and quality acceptance of newly-built or reconstructed electronic industrial plants, test stations (tables) and other projects.

1.0.3

The design, construction and quality inspection of the anti-microvibration project shall not only comply with this code, but also comply with the current relevant national standards.

2.0.1 Micro-vibration

Environmental vibration with low vibration amplitude that affects the normal operation of precision equipment and instruments.

2.0.2 Allowable value of vibration

The maximum vibration value at the support structure to ensure the normal operation of precision equipment and instruments.

2.0.3 Structural microvibration control system

In order to ensure the normal operation of precision equipment and instruments, comprehensive measures are taken to reduce the impact of environmental vibration on the building structure.

2.0.4 Active vibration isolation active vibration isolation

Vibration isolation measures taken to reduce the impact of vibration generated by power equipment on the external environment.

2.0.5 Passive vibration isolation passive vibration isolation

Vibration isolation measures taken to reduce the impact of environmental vibration on precision equipment and instruments.

2.0.6 Active vibration isolation device active vibration isolation device

It has a device that is pre-set and obtains signals through its own feedback system, so that the vibration isolation device can exert a reverse action in real time to reduce the impact of environmental vibration and ensure the normal operation of the equipment.

2.0.7 Vibration isolator vibration isolator

Support element with damping function.

2.0.8 Vibration isolation mounting

A vibration isolation assembly composed of vibration isolators, dampers, regulating valves, controllers and signal processors.

2.0.9 Vibration isolation system vibration isolation system

A system consisting of an object to be isolated, a deck, a vibration isolator, or a vibration isolation device.

2.0.10 Vibration response vibration response

When the building structure or vibration isolation system is subjected to vibration, its output vibration displacement, vibration velocity, vibration acceleration, etc.

2.0.11 Environmental vibration environment vibration

The vibration of a construction site or building under the influence of various vibration sources inside and outside.

2.0.12 Usual environmental micro-vibration

Weak vibration of a site or building without a clear source of vibration.

2.0.13 Microvibration isolation wall

A wall installed in a building structure to dampen the effects of vibrations.

2.0.14 Waffle slab

Vertical unidirectional flow clean room production floor cast-in-place reinforced concrete perforated floor slab.

2.0.15 Anti-microvibration design anti-microvibration design

In order to control the impact of environmental vibration within the allowable vibration value range of precision equipment and instruments, comprehensive measures are taken in engineering design planning, building structure design and vibration isolation design.

2.0.16 Anti-microvibration table

A structural system with vibration isolation composed of a platform and a supporting structure. The supporting structure can be a building structure or an independently set beam, plate, column and foundation. A vibration isolator or vibration isolation can be installed between the platform and the supporting structure. device.

3 Basic Regulations

3.0.1

The micro-vibration defined in this code shall be the vibration whose amplitude is not greater than the limit value specified in Table 3.0.1.

Table 3.0.1 Micro-vibration limits

3.0.2

The survey, design, construction and installation of anti-microvibration works should follow the following procedures.

- 1 Determine the permissible vibration standards of precision equipment and instruments;
- 2 Site engineering geology, hydrogeological survey and foundation dynamic characteristic test;
- 3 Site environment vibration test and analysis;
- 4 Site comprehensive assessment and site selection;
- 5 Demonstration of anti-microvibration engineering design scheme;
- 6 Anti-micro-vibration engineering design;
- 7 Anti-micro-vibration engineering construction and installation;
8. The dynamic test and analysis of the building structure when the main building of the project is completed and all kinds of equipment have not been installed;
- 9 Environmental vibration test and analysis during trial operation of power equipment;
- 10 Environmental vibration test and analysis during trial production;
- 11 Anti-micro-vibration project acceptance;
- 12 The micro-vibration test and analysis shall comply with the provisions of Appendix A of this code.

3.0.3

The location of the vibration source should be reasonably arranged in the planning and design of the area and plant area, and the vibration source with large vibration should be arranged at the edge of the area or away from buildings that require anti-micro-vibration.

3.0.4

The vibration sources, precision equipment and instruments in the building should be classified and concentrated, arranged in different areas, and should be kept away from each other.

3.0.5

Anti-microvibration engineering design should include the following contents.

- 1 Anti-microvibration design of building structures;
- 2 Vibration isolation design of power equipment and piping;
- 3 Vibration isolation design of precision equipment and instruments.