



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

**GB 50343-2012**

---

**Technical code for protection of building electronic information  
system against lightning  
(English Translation)**

**Issued on: June 11, 2012**

**Implemented on: December 1, 2012**

---

**Issued by: Ministry of Housing and Urban-Rural Development**

## Table of Contents

|                                                                                              |  |
|----------------------------------------------------------------------------------------------|--|
| 1 General Provisions                                                                         |  |
| 2 Terms                                                                                      |  |
| 3 Division of Lightning Protection Zone                                                      |  |
| 4 Classification of Lightning Protection Level and Risk Assessment                           |  |
| 5 Lightning Protection Design                                                                |  |
| 6 Lightning Protection Construction                                                          |  |
| 7 Inspection and Acceptance                                                                  |  |
| 8 Maintenance and Management                                                                 |  |
| Appendix B Risk Assessment Based on Risk Management                                          |  |
| Appendix C Lightning Current Parameters                                                      |  |
| Appendix D Calculation of Lightning Magnetic Strength                                        |  |
| Appendix E Test Waveforms and Parameters of Signal SPD                                       |  |
| Appendix F The Statistics Table of Average Annual Thunderstorm Days for Main Cities in China |  |
| Explanation of Wording in This Standard                                                      |  |
| List of Quoted Standards                                                                     |  |
| 1 General Provisions                                                                         |  |
| 1.0.1 This code is formulated with a view to preventing and reducing the damage caused by    |  |

## 1 General Provisions

### 1.0.1

This code is formulated with a view to preventing and reducing the damage caused by lightning on building electronic information system and protecting the safety of life and property.

### 1.0.2

This code is applicable to the design, construction, acceptance, maintenance and management of constructed, renovated and extended protection of building electronic information system against lightning. This code is not applicable to the protection of building electronic information system against lightning in explosive and fire hazard environments.

### **1.0.3**

Protection of building electronic information system against lightning shall adhere to the principle of prevention and safety first.

### **1.0.4**

In the design for protection of building electronic information system against lightning, external and internal lightning protection measures shall be coordinated according to the characteristics of building electronic information system; an overall planning shall be made according to the whole engineering requirements to achieve safety and reliability, advanced technology as well as economy and rationality.

### **1.0.5 Comprehensive protection combining external and internal lightning protection**

measures shall be adopted in the building electronic information system.

### **1.0.6 Corresponding protective measures shall be taken for the building electronic**

information system according to environmental factors, lightning activity routines, the immunity of lightning protection zone (LPZ) and system (where equipment is located) against lightning electromagnetic impulse (LEMP), extent of damage in lightning stroke accidents as well as significance of system equipment.

### **1.0.7 Protection of building electronic information system against lightning shall not only**

comply with those specified in this code but also meet the requirements of the current relevant standards of the nation.

## **2.0.1 Electronic information system**

A man-machine system for the collection, processing, storage, transmission and search of information according to certain application purpose and rule, consisting of computer, communication equipment, process equipment, control equipment, electric/electronic device and its associated support equipment and facility (including network), as well as other electronic equipment.

## **2.0.2 Lightning protection zone (LPZ)**

Specified lightning electromagnetic environment zone

### **2.0.6 Common earthing system**

It refers to an earthing system which is made by connecting the lightning protection system earthing device, building hardware, low-voltage distribution protection wire, equipotential bonding terminal board or bonding bar, equipment protective earthing, shield earthing, electrostatic earthing, and functional earthing, etc.

### **2.0.7 Natural earthing electrode**

A general term for hardware, metal well casing and steel bar in concrete which also have earthing function, but are not arranged specially for this purpose.

### **2.0.9 Main equipotential earthing terminal board**

Metal board connecting multiple earthing terminals that is directly connected with the earthing device

### **2.0.10 Floor equipotential earthing terminal board**

Earthing terminal board which is arranged on the floor of building for the equipotential bonding of local equipotential earthing terminal board

### **2.0.24 Measured limiting voltage**

The maximum peak value of voltage that is measured across the wiring terminals of the SPD during the application of impulses of specified waveform and amplitude

### **3.1.1 Regional thunderstorm days shall be classified according to the average annual**

thunderstorm days.

### **3.1.2 Regional thunderstorm days shall be subject to the local average annual thunderstorm**

days published by the nation.

### **3.2.1 Different lightning protection zones shall be divided for the buildings requiring**

protection and control of the LEMP environment according to the requirements of 3.2.2 of this code.

3.2.3 The protected objects shall be placed in the lightning protection zones that the electromagnetic properties are compatible with the tolerance capacities of such objects.

#### **4.1.1 Risk assessment may be carried out for the building electronic information system**

according to the methods specified in 4.2, 4.3 or 4.4 of this code.

#### **4.2 Determine Lightning Protection Level by Efficiency of LPS**

4.3 Determine Lightning Protection Level by the Importance, the Application and the Value of building Electronic Information System

#### **4.3.1 Lightning protection level may be determined for the building electronic information**

system by the importance, the application and the value of the system according to Table 4.3.1.

4.4.3 Risk of lightning damage to the building,  $R$ , shall be calculated according to the requirements of risk management, which shall be compared to the allowable value of risk.

### **5.1 General Requirements**

#### **5.1.1**

Building electronic information system should be subjected to risk assessment and taken with appropriate protection measures.

#### **5.1.2**

The electronic information system, if necessary, must be taken with equipotential bonding and earthing protection measures.

#### **5.1.5**

For expanded and renovated engineering, both the above-mentioned data and the following related data shall be collected.

### **5.2 The Equipotential Bonding and the Common Earthing System**

5.2.1 The electronic information equipment in machine room shall be subjected to equipotential bonding whose structure type shall adopt S-type, M-type or their combination (Figure 5.2.1).

5.2.2 At the junctions between LPZ0A or LPZ0B and LPZ1, main equipotential earthing terminal board shall be provided and be connected with earthing device for at least two points;

a floor equipotential earthing terminal board should be provided in each floor; the electronic information system equipment room shall be provided with local equipotential earthing terminal board (LEB).