



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

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**Electromagnetic compatibility for lifts, escalators and moving
walks - Immunity**

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1.1 This document specifies the immunity performance criteria and test levels for

apparatus used in lifts, escalators and moving walks which are intended to be permanently installed in buildings including the basic safety requirements in regard to their electromagnetic environment. These levels represent essential EMC requirements.

This document refers to EM conditions as existing in residential, office and industrial buildings.

1.2 This document addresses commonly known EMC related hazards and hazardous

situations relevant to lifts, escalators and moving walks when they are used as intended and under the conditions foreseen by the manufacturers.

It is assumed that no ports connected to safety circuit only are rated at currents greater than 100 A.

It is assumed that mobile telephones and radio transmitters used at frequencies and power of that stated in Table 1 are not placed within 200 mm distance from safety circuit(s).

1.3 Performance criteria and test levels for apparatus/assembly of apparatus used in

general function circuits do not cover situations with an extremely low probability of occurrence.

This document does not apply to other apparatus already proven to be in conformity to the

relevant EMC national standard, and not related to the safety of the lift, escalator or moving walk, such as lighting apparatus, communication apparatus, etc.

This document does not apply to electromagnetic environments such as radio transmitter stations, railways and metros, heavy industrial plant, and electricity power stations which need additional investigations.

This document is not applicable to apparatus which were manufactured before the date of its implementation.

2 Normative references

The contents of the following documents, through normative references in this text, constitute indispensable provisions of this document. Among them, for dated references, only the edition corresponding to that date applies to this document. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 17626.2-2018 Electromagnetic compatibility - Testing and measurement techniques - Electrostatic discharge immunity test (IEC 61000-4-2:2008, IDT)

GB/T 17626.3-2016 Electromagnetic compatibility - Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test (IEC 61000-4-3:2010, IDT)

GB/T 17626.4-2018 Electromagnetic compatibility - Testing and measurement techniques - Electrical fast transient/burst immunity test (IEC 61000-4-4:2012, IDT)

GB/T 17626.5-2019 Electromagnetic compatibility - Testing and measurement techniques - Surge immunity test (IEC 61000-4-5:2014, IDT)

GB/T 17626.6-2017 Electromagnetic compatibility - Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields (IEC 61000-4-6:2013, IDT)

GB/T 17626.11-2008 Electromagnetic compatibility - Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests (IEC 61000-4-11:2004, IDT)

GB/T 17799.1-2017 Electromagnetic compatibility - Generic standards - Immunity for residential, commercial and light-industrial environments (IEC 61000-6-1:2005, MOD)

IEC 61000-6-2:2016 Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments CISPR 32:2015+A1:2019 Electromagnetic compatibility of multimedia equipment - Emission requirements CISPR 35:2016 Electromagnetic compatibility of multimedia equipment - Immunity requirements

3 Terms and definitions

For the purpose of this document, the terms and definitions given in GB/T 17799.1-2017, IEC 61000-6-2:2016 and the following apply.

3.1 Assembly of apparatus

4 Test procedure

4.1 The tests shall be carried out as stated in GB/T 17626.2-2018, GB/T 17626.3-2016, GB/T 17626.4-2018, GB/T 17626.5-2019, GB/T 17626.6-2017 and GB/T 17626.11-2008, as appropriate (see Table 1 to Table 7).

An attempt shall be made to maximize susceptibility by varying the position of the test sample in the test facility.

4.2 Travelling cables or any other cables likely to be more than 5 m long shall be represented by a sample of at least 5 m long connected to the relevant port for the purpose of testing for susceptibility.

4.3 It is not always possible to measure the immunity levels for every function of the apparatus/assembly of apparatus. In such cases, the most critical period of operation shall be selected.

4.4 The test shall be carried out under a single set of environmental conditions within

the specified operating range of temperature, humidity, air pressure and supply voltage, unless otherwise indicated in the standards referred to in 4.1.

4.5 All tests shall be carried out in well-defined and reproducible conditions.

4.6 To facilitate testing, assemblies of apparatus may be tested together. However, where apparatus contain safety circuits, the tests shall prove that the safety circuits comply with the immunity requirements for all circuits and specific requirements for safety circuits.

This does not imply that those parts of the whole assembly, which are general function circuits, need to comply with the safety circuit requirements.

4.7 Tests shall be carried out at the following ports of the apparatus or assembly of

apparatus where they exist:

- enclosure port (see Table 1);

- ports for signal and control lines not crossing system boundaries (see Table 2);
- ports for monitoring and remote alarm systems crossing the system boundaries (see Table 3);
- input and output D.C. power ports with current rating ≤ 100 A (see Table 4);
- input and output D.C. power ports with current rating > 100 A (see Table 5);
- input and output A.C. power ports with current rating at ≤ 100 A per phase (see Table 6);
- input and output A.C. power ports with current rating > 100 A per phase (see Table 7).

Note: Current rating is the current for which the apparatus/assembly of apparatus has been designed for final application.

4.9 Test values shall be applied as specified in Table 1 to Table 7, and the performance

criteria shall be met as appropriate. The tests shall be carried out individually as single tests and in sequence.

4.10 CISPR 35:2016 shall be applied to wired network ports as defined in CISPR 32:2015+A1:2019.

5.1 The application of tests for evaluation of immunity depends on the type of apparatus/assembly of apparatus, its configuration, ports, technology and operating conditions.

5.2 It can be determined from consideration of the electrical characteristics and usage

of a particular apparatus/assembly of apparatus that some of the tests are inappropriate or unnecessary. In such a case, the decision and justification not to test shall be recorded.

5.3 Where deviations from the test methods specified in 4.1 are applied, such deviations

shall be justified and recorded.

6.1 General

The special requirements of the product make it necessary to define precise criteria for the evaluation of the immunity test results.