Second edition
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Electromagnetic compatibility — Product family standard for lifts, escalators and moving walks — Immunity

Compatibilité électromagnétique — Norme pour la famille de produits: ascenseurs, escaliers mécaniques et trottoirs roulants — Immunité

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 22200 was prepared by Technical Committee ISO/TC 178, *Lifts, escalators and moving walks*.

This second edition cancels and replaces the first edition (ISO 22200:2006), which has been technically revised.

Introduction

ISO 22200 is a type-C standard as stated in ISO 12100-1. When provisions of a type-C standard are different from those which are stated in type-A or type-B standards, the provisions of the type-C standard take precedence over the provisions of the other standards for machines that have been designed and built according to the provisions of the type-C standard.

This International Standard is based upon the European Standard EN 12016:2004. This International Standard contains no technical deviations from EN 12016:2004, except that the most recent specified radio frequency limits have been taken into account.

The requirements of this International Standard have been specified so as to ensure a level of electromagnetic immunity which will allow minimal disturbance to the product family.

Two levels of immunity are given which have been selected such that the immunity levels for safety circuit apparatus are higher than the immunity levels for general function apparatus. The higher levels cover the possibility for example of disturbances emanating from hand-held transmitters in close proximity to safety circuit apparatus.

Neither level, however, covers cases where an extremely low probability of occurrence exists.

The immunity levels given are on the basis that equipment of the product family range is installed both indoor and outdoor in all types of building and, generally, is connected to a low voltage system.

It is known that in the field of electromagnetic compatibility (EMC) provision, technology changes often require amendments to standards. It can be expected that radio frequency (RF) field ranges above 500 MHz for communications technology will continue to be introduced into the market. This International Standard has been prepared with the assumption that equipment utilizing frequencies above 500 MHz is not used in close proximity (200 mm) to lift, escalator and moving walk controls.

New technology equipment operating in high radio frequency (RF) field ranges will steadily be introduced into the market.

a) Important changes

- As a result of harmonization with the latest EN standard, the following new requirements have been established with this International Standard.
- Change of the term “installation” to “system”. The scope of the standard is applicable to the apparatus and assembly of apparatus of lifts and escalators and assembly into systems.
- New requirements for radio frequency electromagnetic field above 500 MHz, which have been extended to cover digital mobile telephone services up to 2 170 MHz.
- New requirements for surge testing on safety circuits.
- New requirements for radio frequency electromagnetic fields regarding safety circuits.
- New requirement to address the possible effects of mobile telephones or radio transmitters.
- Advanced requirements for several environmental phenomena considering the progress in EMC technology and the results of the EN 12016:2004 risk assessment.
- New requirements for immunity to mains power supply voltage interruptions and voltage dips.

b) Environmental issues

1) Lifts, escalators and moving walks are systems whose component apparatus/assembly of apparatus are distributed (and some of which move) throughout the building. The definition, in terms of the EMC, of the use of the building (residential or industrial) cannot be predetermined or assumed to be fixed. Therefore, to cover requirements in all cases, no differentiation between environments was made and a single set of limits has been maintained.

2) Severe electromagnetic environments have not been considered. Examples of these are: radio transmitter stations, railways and metros, heavy industrial plants and electricity power stations. Additional tests and immunity measurements may need to be taken on apparatus to be used in these environments.

3) The levels of immunity and the resultant performance criteria, which are given in this International Standard, reflect the fact that lifts, escalators and moving walks are deemed to consist of self-contained subsystems and apparatus (e.g. machine room and lift car).

The related EMC product family standard for emission is ISO 22199.