



SLOVENSKI STANDARD SIST EN 12015:1999

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9`Y_fca U[bYfbUnXfi y`^j cgh!`GhUbXUfX`g_i d]bY]nXY_cj `nUXj][UÜZY_c Y
glc db]WY]b`fU_cj Y!`CXXUUb^Y`a chYb^

Electromagnetic compatibility - Product family standard for lifts, escalators and passenger conveyors - Emission

Elektromagnetische Verträglichkeit - Produktfamilien-Norm für Aufzüge, Fahrtreppen und Fahrsteige - Störaussendung

Compatibilité électromagnétique - Norme famille de produits pour ascenseurs, escaliers mécaniques et trottoirs roulants - Emission

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Ta slovenski standard je istoveten z: EN 12015:1998

ICS:

33.100.10	Emisija	Emission
91.140.90	Öçã aapãV^[^Áq] } ã^	Lifts. Escalators

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12015

May 1998

ICS 33.100; 91.140.90

Descriptors: electromagnetic compatibility, lifts, escalators, passenger conveyors, testing conditions, electromagnetic interference, tests, emission, limits

English version

**Electromagnetic compatibility - Product family standard for lifts,
escalators and passenger conveyors - Emission**

Compatibilité électromagnétique - Norme famille de
produits pour ascenseurs, escaliers mécaniques et trottoirs
roulants - Emission

Elektromagnetische Verträglichkeit - Produktfamilien-Norm
für Aufzüge, Fahrtreppen und Fahrsteige - Störaussendung

This European Standard was approved by CEN on 2 May 1998.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 10 " Passenger, goods and service lifts", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 1998, and conflicting national standards shall be withdrawn at the latest by November 1998.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this standard.

The initial draft for the standard was prepared by the Fédération Européenne de la Manutention (FEM) and consideration was given to EN 50081 - Electromagnetic compatibility - Generic emission standard - Part 1 : Residential, commercial and light industry, and - Part 2 : Industrial environment, together with a number of CISPR¹⁾ publications. The limits given in this standard recognize the fact that the product family covers a total range of lifts, escalators and passenger conveyors used in residential buildings, offices, hospitals, hotels, industrial plants etc. and that lifts, escalators and passenger conveyors are deemed to have their own dedicated power supply and be connected with the consent of the supply authority to a low impedance source. This standard is the product family standard for the electromagnetic compatibility of lifts, escalators and passenger conveyors (emission) and takes precedence over all aspects of the generic standard.

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The related EMC product family standard for immunity is:

[c5fe3fefcd2c/sist-en-12015-1999](#)

EN 12016

Electromagnetic compatibility - Product family standard for lifts, escalators and passenger conveyors - Immunity

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

¹⁾ CISPR : International Special Committee on radio interference

0 Introduction

This European Standard has been prepared to provide one means of complying with the requirements of the Electromagnetic Compatibility (EMC) Directive. The requirements of this European Standard have been specified so as to ensure a level of electromagnetic emission which will cause minimal disturbance to other equipment. The levels, however, do not cover the following cases :

a) where the probability of an occurrence likely to produce emissions in excess of those which would normally be experienced is extremely low, e.g. the emergency stopping of a lift, escalator or passenger conveyer under a fault condition ;

b) where highly susceptible apparatus will be used in the close proximity of the equipment covered by this standard, in which case further measures may have to be taken to :

- reduce the electromagnetic emission to below the levels specified in this standard ;

or

- increase the immunity of the affected apparatus.

The emission limits given, are on the basis that equipment of the product family range is installed both indoor and outdoor in all types of building, involves the switching of heavy currents and high inductive loads and, generally, is connected to a low voltage system.

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1 Scope

This European Standard specifies the emission limits and test conditions for lifts, escalators and passenger conveyors, which are permanently installed in buildings and for which CEN/TC 10 has direct responsibility for the production of European Standards, in relation to electromagnetic interference. These limits however, may not provide full protection against disturbances caused to radio and TV reception when such equipment is used within distances given in table 1.

Since lifts travel large vertical distances in buildings, it becomes impracticable to test the installation either in a test laboratory or in situ (where the uncontrolled environment can also influence the test procedures and results). Likewise, due to practical restrictions imposed by the lift car internal dimensions, it is impracticable to test the lift car from within. Similar considerations regarding dimensions apply equally to the testing of escalators and passenger conveyors. Therefore this standard applies to the sub-systems and/or apparatus of lifts, escalators and passenger conveyors, an assembly of which will comprise an installation, the boundaries of which are indicated by example in figures 2 and 3. However, this standard does not apply to lighting apparatus and other services already proven to be in conformity to the EMC Directive.

Equipment covered by this standard can also fall into the scope of EN 61000-3-2, EN 61000-3-3, IEC 1000-3-4 and IEC 1000-3-5 as appropriate.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 55011	: 1991	Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment
EN 55014	: 1993	Limits and methods of measurement of radio interference characteristics of household electrical appliances, portable tools and similar electrical apparatus

3 Definitions

For the purposes of this standard the following definitions apply :

3.1 installation

Lift, escalator or passenger conveyor installation comprising sub-systems with electrical and electronic equipment and interconnections.

3.2 sub-system

An assembly of apparatus which is appropriate for assessment for conformity to this standard and, by means of interconnection with other sub-systems, forms an installation (see clause 4).

3.3 apparatus

An assembly of components with an intrinsic function intended for use in a sub-system or installation.

3.4 port

Particular interface of the specified sub-system or apparatus with the external electromagnetic environment (see figure 1).

3.5 enclosure port

The boundary of the sub-system or apparatus through which electromagnetic fields can radiate or impinge.



Figure 1 : Examples of ports

4 Composition of sub-systems

The following assemblies of apparatus shall be considered as sub-systems and are exemplified in figures 2 and 3 :

a) for lifts :

- 1) all machine room apparatus connected to the lift main switch ;
- 2) apparatus associated with the lift car e.g. door gear, control panel, door protection devices etc. ;
- 3) apparatus associated with each lift floor excluding the lift car ;

b) for escalators and passenger conveyors :

- 1) all machine room apparatus connected to the escalator or passenger conveyor main switch ;
- 2) apparatus associated with escalator or passenger conveyor landings.

Other assemblies of apparatus can also be considered as sub-systems.

5 Test set-up

5.1 The tests, test methods, characteristics of the tests and test set-ups shall be as stated in EN 55011.

NOTE : An example of a test method for motor drives is given in annex A.

5.2 The measurements shall be made in the operation mode producing the largest emission in the frequency band being investigated (see tables 1 and 2) consistent with normal applications. An attempt shall be made to maximize the emission by varying the configuration of the test sample.

5.3 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 radiative emission.

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5.4 If the apparatus has a large number of similar ports or ports with many similar connections, then a sufficient number shall be selected to simulate actual operating conditions and to ensure that all the different types of termination are covered.

5.5 It is not always possible to measure emission for every function of the apparatus or sub-system. In such cases the most critical period of operation shall be selected under normal operating modes.

5.6 The tests shall be carried out at a single set of environmental conditions within the manufacturers specified operating range of temperature, humidity, pressure and supply voltage, unless otherwise indicated in EN 55011.

5.7 Measurements shall be taken in well-defined and reproducible conditions for each test.

5.8 Measurement shall be taken at the enclosure (radiative) ports and a.c. mains (conductive) ports of the apparatus or sub-system.

5.9 The configuration and mode of operation during measurement shall be precisely noted in the test report if one is produced.²⁾