
**Electrical requirements for lifts,
escalators and moving walks —**

**Part 1:
Electromagnetic compatibility with
regard to emission**

*Exigences électriques pour ascenseurs, escaliers mécaniques et
trottoirs roulants —*

*Partie 1: Compatibilité électromagnétique en ce qui concerne les
émissions*



This document is a preview generated by ERS



COPYRIGHT PROTECTED DOCUMENT

© ISO 2020

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Test set-up procedure	5
4.1 General	5
4.2 Radiated and conducted radio-frequency emissions	6
4.3 Voltage fluctuation and flicker	6
4.4 Mains supply harmonics	6
5 Applicability of tests	6
6 Emission limits	7
6.1 Enclosure ports (radiative)	7
6.2 A.C. mains ports (conductive)	7
6.3 Output power ports (conductive)	7
6.4 Impulse noise	7
6.5 Voltage fluctuations	7
6.6 Mains supply current harmonics	8
6.7 Measurement	9
6.7.1 Radiated and conducted radio-frequency emission	9
6.7.2 Mains supply harmonics	10
7 Documentation for the installer of the apparatus/assembly of apparatus	12
Bibliography	13

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

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

This first edition of ISO 8102-1 cancels and replaces ISO 22199:2009 which has been technically revised.

Introduction

This document is a type-C standard as stated in ISO 12100.

This document is of relevance, in particular, for the following stakeholder groups representing the market players with regard to machinery safety:

- machine manufacturers (small, medium and large enterprises);
- health and safety bodies (regulators, accident prevention organisations, market surveillance etc.)

Others can be affected by the level of machinery safety achieved with the means of the document by the above-mentioned stakeholder groups:

- machine users/employers (small, medium and large enterprises);
- machine users/employees (e.g. trade unions, organizations for people with special needs);
- service providers, e. g. for maintenance (small, medium and large enterprises);
- consumers (in case of machinery intended for use by consumers).

The above-mentioned stakeholder groups have been given the possibility to participate at the drafting process of this document.

The machinery concerned and the extent to which hazards, hazardous situations or hazardous events are covered are indicated in the Scope of this document.

When requirements of this type-C standard are different from those which are stated in type-A or type-B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type-C standard.

This document is based on EN 12015:2020.

The requirements of this document have been specified so as to ensure a level of electromagnetic emission that causes minimal disturbance to other equipment. The limits given in this document recognize that:

- the product family covers a total range of lifts, escalators and moving walks used in residential buildings, offices, hospitals, hotels, industrial plants, etc.; and
- 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 document is the product family standard for the electromagnetic compatibility of lifts, escalators and moving walks (emission). It takes precedence over all aspects of IEC 61000-6-x. The emission limits given are on the basis that equipment of the product family range is installed both indoors and outdoors in all types of building, involves the switching of heavy currents and high inductive loads and, generally, is connected to a low-voltage system.

The levels, however, do not cover the following cases where:

- a) the probability of an occurrence likely to produce emissions in excess of those which are normally experienced is extremely low, e.g. the emergency stopping of a lift, escalator or passenger conveyor under a fault condition;
- b) highly susceptible apparatus is used in the close proximity of the equipment covered by this document, in which case further measures can be necessary to:
 - 1) reduce the electromagnetic emission to below the levels specified in this document; or

- 2) increase the immunity of the affected apparatus.

The related EMC product family standard for immunity is ISO 8102-2:2017.

This document is a preview generated by EVS

Electrical requirements for lifts, escalators and moving walks —

Part 1: Electromagnetic compatibility with regard to emission

1 Scope

This document specifies the emission limits in relation to electromagnetic disturbances and test conditions for lifts, escalators and moving walks, which are intended to be permanently installed in buildings. It is possible, however, that these limits do not provide full protection against disturbances caused to radio and TV reception when such equipment is used within distances given in [Table 1](#).

This document is not applicable for apparatus which are manufactured before the date of its publication

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

CISPR 11, *Industrial, scientific and medical — Radio-frequency disturbance characteristic — Limits and methods of measurement*

CISPR 14-1:2016+COR1:2016, *Electromagnetic compatibility — Requirements for household appliances, electric tools and similar apparatus — Part 1: Emission*

IEC 61000-3-11, *Electromagnetic compatibility (EMC) — Part 3 11: Limits — Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated current up to 75 A and subject to conditional connection*

IEC 61000-3-12, *Electromagnetic compatibility (EMC) — Part 3-12: Limits — Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16 A and ≤ 75 A per phase*

IEC 61000-6-3, *Electromagnetic compatibility (EMC) — Part 6-3: Generic standards — Emission standard for residential, commercial and light-industrial environments*

IEC 61000-6-4, *Electromagnetic compatibility (EMC) — Part 6-4: Generic standards — Emission standard for industrial environments*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61000-6-3, IEC 61000-6-4 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <http://www.electropedia.org/>