Energy performance of lifts, escalators and moving walks - Part 2: Energy calculation and classification for lifts (elevators). (ISO 25745-2:2015, Corrected version 2015-12-15)

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NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 25745-2:2015 sisaldab Euroopa standardi EN ISO 25745-2:2015 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 25745-2:2015 consists of the English text of the European standard EN ISO 25745-2:2015.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 08.04.2015.	Date of Availability of the European standard is 08.04.2015.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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Performance énergétique des ascenseurs, escaliers mécaniques et trottoirs roulants - Partie 2: Calcul énergétique et classification des ascenseurs (ISO 25745-2:2015)

Energieeffizienz von Aufzügen, Fahrtreppen und Fahrsteigen - Teil 2: Energieberechnung und Klassifizierung von Aufzügen (ISO 25745-2:2015)

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN ISO 25745-2:2015) has been prepared by Technical Committee ISO/TC 178 “Lifts, escalators and moving walks” in collaboration with Technical Committee CEN/TC 10 “Lifts, escalators and moving walks” 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of an identical text or by endorsement, at the latest by October 2015, and conflicting national standards shall be withdrawn at the latest by October 2015.

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

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Endorsement notice

The text of ISO 25745-2:2015 has been approved by CEN as EN ISO 25745-2:2015 without any modification.

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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.

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).

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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 meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 178, *Lifts, escalators and moving walks*.

This corrected version of ISO 25745-2:2015 incorporates the following corrections: minus signs have been replaced by plus signs in Formulae (9), (10) and (11); references in the Bibliography have been updated and corrected.

ISO 25745 consists of the following parts, under the general title *Energy performance of lifts, escalators and moving walks*:

— *Part 1: Energy measurement and verification*

— *Part 2: Energy calculation and classification for lifts (elevators)*

— *Part 3: Energy calculation and classification for escalators and moving walks*

Introduction

This International Standard has been prepared in response to the rapidly increasing need to ensure and to support the efficient and effective use of energy. This International Standard provides

a) a method to estimate energy consumption on a daily and an annual basis for lifts, and

b) a method for energy classification of new, existing, or modernised lifts.

This International Standard is intended to be a reference for the following parties:

— building developers/owners to evaluate the energy consumption of various lifts;

— building owners and service companies when modernising installations including reduction of energy consumption

— the installers and maintenance providers of lifts;

— consultants and architects involved in specification of lifts.

— inspectors and other third parties providing energy classification services.

The total energy consumption over the entire life cycle of lifts consists of the energy to manufacture, install, operate, and the disposal of lifts. However, for the purpose of this International Standard, only operating energy (running, idle, and standby) performance is considered.

In the preparation of this International Standard, Technical Committee ISO/TC 178, Subcommittee WG10 has initiated extensive research, which included over 4 500 simulations of typical lift installations. The results of this research have been used to provide the numerical values shown in Tables 2 to 4.

This International Standard only considers traction, hydraulic and positive drive lifts, but can be used as a reference for alternative technologies.

This International Standard can be used in relationship with national/regional jurisdictional energy performance purposes.

It is assumed that whenever the energy performance of a lift is assessed to this International Standard, all components of the lift have been designed in accordance with usual engineering practice and calculation codes, are of sound mechanical and electrical construction, are made of materials with adequate strength and of suitable quality, are free of defects, are kept in good repair and working order, and have been selected and installed so that foreseeable environmental influences and special working conditions have been considered.

Energy performance of lifts, escalators and moving walks —

Part 2:
Energy calculation and classification for lifts (elevators)

1 Scope

This part of ISO 25745 specifies the following:

a) a method to estimate energy consumption based on measured values, calculation, or simulation, on an annual basis for traction, hydraulic, and positive drive lifts on a single unit basis;

b) energy classification system for new, existing, and modernized traction, hydraulic, and positive drive lifts on a single unit basis;

This part of ISO 25745 applies to passenger and goods passenger lifts with rated speeds greater than 0,15 m/s and only considers the energy performance during the operational portion of the life cycle of the lifts.

NOTE 1 For other types of lifts (e.g. service lifts, lifting platforms, etc.), this part of ISO 25745 can be taken as a reference.

This part of ISO 25745 does not cover energy aspects, which affect the measurements, calculations, and simulations, such as the following:

a) hoistway lighting;

b) heating and cooling equipment in the lift car;

c) machine room lighting;

d) machine room heating, ventilation, and air conditioning;

e) non-lift display systems, CCTV security cameras, etc.;

f) non-lift monitoring systems (e.g. building management systems, etc.);

g) effect of lift group dispatching on energy consumption;

h) environmental conditions;

i) consumption through the power sockets;

j) lifts whose travel includes an express zone.

NOTE 2 An express zone is unlikely to affect the average car load but can significantly affect the average travel distance.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 25745-1, *Energy performance of lifts, escalators and moving walks — Part 1: Energy measurement and verification*