SLOVENSKI STANDARD
oSIST prEN ISO 25745-1:2022

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Energetska učinkovitost dvigal (liftov), tekočih stopnic in tekočih stez - 1. del: Merjenje energije in preverjanje (ISO/DIS 25745-1.2:2022)

Energy performance of lifts, escalators and moving walks - Part 1: Energy measurement and verification (ISO/DIS 25745-1.2:2022)

Performance énergétique des ascenseurs, escaliers mécaniques et trottoirs roulants - Partie 1: Mesurage de l'énergie et vérification (ISO/DIS 25745-1.2:2022)

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91.140.90 Dvigala. Tekoče stopnice Lifts. Escalators

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Energy performance of lifts, escalators and moving walks —

Part 1:
Energy measurement and verification

Performance énergétique des ascenseurs, escaliers mécaniques et trottoirs roulants —

Partie 1: Mesurage de l'énergie et vérification

ICS: 91.140.90

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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).

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 of 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 www.iso.org/iso/foreword.html.

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

This second edition cancels and replaces the first edition (ISO 25745-1:2012), which has been technically revised.

The main changes are as follows:

— Updated normative References

— Updated scope for lifts regarding Energy storage systems and fan

A list of all parts in the ISO 25745 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This standard was first published in 2012, a review was undertaken in 2019 and this revision updates by taking into account the comments received.

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 consistent method of measuring actual energy usage of an installed lift, escalator and moving walk;

b) a simple method to periodically verify that energy usage of an installed unit has not changed — this is in support of regulatory periodic energy verification requirements.

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

— building developers or owners determining and confirming the energy consumption of a building;

— building owners and service companies for performing regulatory periodic energy verification;

— the manufacturers, installers and maintenance providers of lifts, escalators and moving walks;

— consultants and architects involved in specification of lifts, escalators and moving walks.

The total energy consumption over the entire life cycle of lifts, escalators and moving walks consists of the energy to manufacture, install, operate, and the disposal of lifts, escalators and moving walks. However, for the purpose of this International Standard, only the power consumption of the lift, escalator or moving walk required for its operation is considered in the assessment of energy consumption and its verification.

This International Standard is suitable for national or regional jurisdictional energy performance purposes.

Energy performance of lifts, escalators and moving walks —

Part 1: Energy measurement and verification

1 Scope

1.1 General

This part of ISO 25745 specifies:

a) methods of measuring actual energy consumption of lifts, escalators and moving walks on a single unit basis;

b) methods of carrying out periodic energy verification checks on lifts, escalators and moving walks in operation.

This part of ISO 25745 only considers the energy performance during the operational portion of the life cycle of the lifts, escalators or moving walks.

1.2 Lifts

For lifts, this part of ISO 25745 does not cover energy aspects, such as:

a) hoistway lighting;

d) heating and cooling equipment, including fans in the lift car;

e) machine room lighting;

f) machine room heating, ventilation and air conditioning;

g) non-lift, display systems, closed circuit television security cameras, etc.;

h) non-lift, monitoring systems (building management systems, etc.);

i) the effect of lift group dispatching on energy consumption;

j) non-lift equipment **[3.13]** consumption through the power sockets.

k) energy storage systems if used as an alternative energy source for operation.

1.3 Escalators and moving walks

For escalators and moving walks, this part of ISO 25745 does not cover energy aspects of the ancillary equipment, such as:

a) lighting with the exception of comb plate lighting and step gap lighting and traffic light;

b) cooling and heating;

c) alarm devices and emergency battery supplies equipment, etc.

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.

IEC 61000-4-30, *Electromagnetic compatibility (EMC) — Part 4-30: Testing and measurement techniques — Power quality measurement methods*

IEC 62053 (all parts), *Electricity metering equipment (a.c.) — Particular requirements*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

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

— IEC Electropedia: available at https://www.electropedia.org/

3.1
ancillary current
current drawn by the ancillary circuit(s) through the ancillary switch(es)

3.2
ancillary energy
energy used by the ancillary equipment

3.3
ancillary equipment
equipment such as lighting, fans, heating, alarm devices and emergency battery supplies

3.4
ancillary power coupling point
point where ancillary power measurements are taken, and which is located at the output side of the lift, escalator or moving walk ancillary power breaker

Note 1 to entry: See Annex A.

3.5
autostart condition
condition when an escalator or moving walk is stationary, powered up and ready to start when initiated by passenger detection

3.6
energy
power consumed over time

3.7
energy meter
instrument capable of measuring energy

3.8
idle condition
condition when a lift is stationary at a floor following a run before the standby mode is entered

3.9
load condition
condition in which an escalator or moving walk is running with one or more passengers

3.10
main power coupling point
point where the main power measurements are taken, and which is located at the output side of the main switch/disconnect for the lift, escalator or moving walk

Note 1 to entry: See Annex A.

3.11
no load condition
condition when an escalator or moving walk is running at nominal speed without passengers

3.12
Nominal speed

3.12.1
nominal speed
<escalator> speed in the direction of the moving steps or pallets when operating the equipment in the no load condition (i.e. without persons), stated by the manufacturer as that for which the escalator has been designed

3.12.2
nominal speed
<moving walk> speed in the direction of the belt when operating the equipment in the no load condition (i.e. without persons), stated by the manufacturer as that for which the moving walk has been designed

3.13
non-lift equipment
equipment not required by the lift to perform all the necessary operations to ensure the safe and intended functioning of the installation

3.14
reference cycle
<lift> cycle during which the empty car is run from the bottom terminal landing, to the top terminal landing, and then back to the bottom terminal landing including two complete door cycles

3.15
running current
current drawn by the lift, when it has achieved rated speed in either the up or down direction

3.16
slow speed condition
condition when an escalator or moving walk is running at slow speed without passengers

3.17
Standby condition
Note 1 to entry: For units with power back-up systems, the lift, escalator or moving walk should be connected and operating on main power with back up power outputs disabled while the measurements are taken.

Note 2 to entry: Care should be taken to ensure that the application of the standby condition does not compromise the safety of the installation.

3.17.1
standby condition
<lift> condition when a lift is stationary at a floor and may have reduced the power consumption to a lower level set for that particular lift