BS ISO 18738-2:2012

BSI Standards Publication

# Measurement of ride quality

## Part 2: Escalators and moving walks

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## National foreword

This British Standard is the UK implementation of ISO 18738-2:2012.

The UK participation in its preparation was entrusted to Technical Committee MHE/4, Lifts, hoists and escalators.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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# INTERNATIONAL STANDARD

# ISO 18738-2

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## Measurement of ride quality —

## Part 2:
## Escalators and moving walks

*Mesure de la qualité de déplacement —*

*Partie 2: Escaliers mécaniques et trottoirs roulants*

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Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
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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 18738-2 was prepared by Technical Committee ISO/TC 178, *Lifts, escalators and moving walks*.

ISO 18738 consists of the following parts, under the general title *Measurement of ride quality*:

— *Part 1: Lifts (elevators)*

— *Part 2: Escalators and moving walks*


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# Introduction

The objective of this part of ISO 18738 is to encourage industry-wide uniformity in the definition, measurement, processing and expression of vibration and noise signals that comprise ride quality of escalators and moving walks.

The aim of such uniformity is to benefit industry clients by reducing variability in the results of ride quality measurements caused by differences in the methods of acquiring and quantifying the signals.

This part of ISO 18738 is intended to be referred to by those parties interested in:

a) developing manufacturing specifications and calibration methods for instrumentation;

b) defining the scope of the specifications for ride quality in contracts; and

c) measuring ride quality of escalators and moving walks in accordance with an international standard.

This part of ISO 18738 is intended to produce ride quality measurement methods and results which:

a) are simple to understand without specialized knowledge of noise and vibration analysis;

b) correlate well with human response to ensure plausibility; and

c) are accountable via calibration procedures, which are traceable to national standards.

Experience in the escalator and moving walk industry has shown that passenger perception and sound pressure levels measured while travelling on an escalator or moving walk can be influenced by the presence of extraneous noise sources and by the acoustic characteristics of the environment in which the unit is installed. Additionally, the proximity of the escalator or moving walk to strong reflecting surfaces such as walls, ceilings or diagonally opposite units can also influence the sound pressure level measured. These influences can cause a sound pressure level measurement to significantly overestimate the sound level emitted exclusively by the unit.

In order to address this issue, this part of ISO 18738 defines the methodology for measuring sound pressure level that corresponds to passenger perception and additionally defines the methods that should be used if further understanding of the result is required in order to quantify the noise emitted by the unit as compared to the background or environmental contributions.

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INTERNATIONAL STANDARD ISO 18738-2:2012(E)

# Measurement of ride quality —

# Part 2: Escalators and moving walks

## 1 Scope

This part of ISO 18738 specifies requirements and methodology for the measurement and reporting of escalator and moving walk ride quality. This part of ISO 18738 does not specify acceptable or unacceptable ride quality values.

## 2 Normative references

The following referenced documents are indispensable for the application 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.

ISO 2041, *Vibration and shock — Vocabulary*

ISO 8041, *Human response to vibration — Measuring instrumentation*

ISO 11201, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions in an essentially free field over a reflecting plane with negligible environmental*

ISO 11205, *Acoustics — Noise emitted by machinery and equipment — Engineering method for the determination of emission sound pressure levels in situ at the work station and at other specified positions using sound intensity*

IEC 61043, *Electroacoustics — Instruments for the measurement of sound intensity — Measurements with pairs of pressure sensing microphones*

IEC 61672-1, *Sound level meters*

IEC 61672-2, *Calibration sound level meters*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 2041, ISO 11201, ISO 11205 and the following apply.

**3.1**
**load carrying unit**
part of an escalator or moving walk designed to carry persons for the purpose of transportation

EXAMPLE Step, pallet or belt.

**3.2**
**ride quality**
sound pressure levels at defined locations, and vibration of load carrying unit and handrail relevant to passenger perception, associated with escalator or moving walk operation

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