Australian Standard™

# Lifts, escalators and moving walks

## Part 5: Escalators and moving walks (BS EN 115:1995, MOD)



Standards Australia

This Australian Standard was prepared by Committee ME-004, Lift Installations. It was approved on behalf of the Council of Standards Australia on 31 January 2003 and published on 4 March 2003.

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# Lifts, escalators and moving walks

# Part 5: Escalators and moving walks (BS EN 115:1995, MOD)

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# PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee ME-004, Lift Installations, to supersede AS 1735.5—2001, *Lifts, escalators and moving walks*, Part 5: *Escalators and moving walks.*

After consultation with stakeholders in both countries, Standards Australia/Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this Standard is to provide requirements for electric escalators and moving walks that carry passengers.

The objective of this edition is to accommodate additional safety requirements in relation to step demarcation adjacent to balustrades and to revise the requirements for combplate switch. This edition also incorporates Amendment No.1 (October 2002).

This Standard is a modification of and is reproduced from BS EN 115:1995, *Safety rules for the construction and installation of escalators and passenger conveyors*.

Variations have been made in this Standard to the requirements of BS EN 115:1995. These variations, which are necessary for Australian application, are listed in Annex ZZ and are indicated by single bar lines set adjacent to the affected text. Where an additional clause has been added, it is indicated by a double bar line in the margin.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the annex to which they apply. A 'normative' annex is an integral part of a Standard, whereas an 'informative' annex is only for information and guidance.

As this Standard is reproduced from a BS EN Standard, the following applies:

(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(b) References to EN and CENELEC Standards should be replaced, where appropriate, by reference to equivalent Australian or Australian/New Zealand Standards as follows:

| *Reference to EN or CENELEC Standard* | | *Australian or Australian/New Zealand Standard* | |
|---|---|---|---|
| EN | | AS | |
| 60439-1 | Low-voltage switchgear and controlgear assemblies<br>Part 1: Type-tested and partially type-tested assemblies | 3439.1 | Low-voltage switchgear and controlgear assemblies<br>Part 1: Type-tested and partially type-tested assemblies |
| 60529 | Degrees of protection provided by enclosures (IP code) | 1939 | Degrees of protection provided by enclosures for electrical equipment (IP Code) |
| | | AS/NZS | |
| 60742 | Specifications for safety isolating transformers | 3108 | Approval and test specification—Particular requirements for isolating transformers and safety isolating transformers |
| 60947-4-1 | Low-voltage switchgear and controlgear<br>Part 4: Contactors and motor starters<br>Section One—Electromechanical | 3947<br>3947.4.1 | Low-voltage switchgear and controller<br>Part 4.1: Contractors and motor starters—Electro-mechanical contactors and motor-starters |

| EN | | AS/NZS | |
|---|---|---|---|
| 60947-5-1 | Part 5: Control circuit devices and switching elements<br>Section One—<br>Electromechanical control circuit devices | 3947.5.1 | Part 5.1: Control circuit devices and switching elements—Electro-mechanical control circuit devices |
| | | AS | |
| CENELEC<br>HD 21 | Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V—<br>Part 1: General requirements<br>Part 3: Single-core non-sheathed cables for fixed wiring<br>Part 4: Sheathed cables for fixed wiring | 3147 | Approval and test specification—Electric cables—Thermoplastic insulated—For working voltages up to and including 0.6/1 kVs |
| | | AS/NZS | |
| HD 21 | Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V—<br>Part 5: Flexible cables (cords) | 3141 | Approval and test specification—Electric flexible cords |
| HD 384 | Electrical installations of buildings—<br>Part 4: Protection for safety—<br>Chapter 41: Protection against electric shock<br>Part 5: Selection and erection of electrical equipment—<br>Chapter 54: Earthing arrangements and protective conductors | 3000 | Electrical Installations (known as the Australian/New Zealand Wiring Rules) |

CONTENTS

# INTRODUCTION

## 0 Introduction

The purpose of this standard is to define safety rules for escalators and passenger conveyors in order to safeguard people and objects against risks of accidents during maintenance and inspection work.

**0.1** It is necessary that all components:

**0.1.1** are properly dimensioned, of sound mechanical and electrical construction and made of material with adequate strength and of suitable quality and free from defects; the use of materials with asbestos is not permitted;

**0.1.2** are kept in good repair and working order. In particular, care shall be taken that the dimensions indicated are maintained despite wear; if necessary, the worn parts shall be replaced.

**0.2** Where, for elucidation of the text, an example is given, this shall not be considered as the only possible design. Any other solution leading to the same result is permissible if it is guaranteed that with an equivalent function the same safety level exists.

**0.3** It is not the purpose of this standard to preclude new developments of escalators and passenger conveyors. A new design shall meet at least the safety requirements of this standard.

**0.4** Certain escalators and passenger conveyors are subject to special operational conditions. For these cases some additional requirements are defined, marked in this standard with the note 'for Public Service Escalators and Public Service Passenger Conveyors'. Additional recommendations for that kind of escalator and passenger conveyor are given in annex D (informative).

During the planning stage it should be specified if it will be a public service escalator or public service passenger conveyor (for criteria and definition see **3.9**).

**0.5 Special installations**

**0.5.1** Fire protection and building requirements differ from country to country and so far neither have been harmonized, either on the international level or in Europe.

Therefore, this standard cannot include specific requirements for fire protection and building requirements. However, it is recommended that as far as possible, escalators and passenger conveyors are made of materials that are not easy to ignite[1].

**0.5.2** If escalators or passenger conveyors have to be operated under special conditions, such as directly exposed to the weather or explosive atmosphere, or in exceptional cases serve as emergency exits, appropriate design criteria, components, materials and instructions for use shall be used that satisfy the particular conditions.

In addition, it is recommended that for escalators and passenger conveyors which otherwise would be exposed to weather conditions, the customer provides a roof and enclosure.

**0.5.3** If, exceptionally, means of transportation, e.g. push chairs, luggage trolleys or baggage carts, shall be carried on escalators or passenger conveyors, special measures shall be agreed between the manufacturer of the escalator/passenger conveyor, the manufacturer of the means of transportation and the customer. Within those measures, care has to be taken that the conditions defined in **8.2.1** for the steps, pallets and the belt are observed when selecting the means of transportation. The measures to be taken are governed by very different conditions, which make a standardization within the scope of EN 115 impossible.

**0.6** Requirements related to the life of the escalators and passenger conveyors are not included in this standard as they depend on the place of installation and customers' special specifications.

**0.7** This standard has been drawn up taking into account in certain cases the imprudent act of the user. However, this standard takes into consideration proper use and not abuse.

**0.8** An Interpretation Committee has been established to clarify, if necessary, the spirit in which the clauses of the standard have been drafted and to specify the requirements appropriate to particular cases.

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[1] 'not easy to ignite' equals 'schwer entflammbar' in German and 'difficilement inflammable' in French.

NOTES

AUSTRALIAN STANDARD

# Lifts, escalators and moving walks

## Part 5:
## Escalators and moving walks (BS EN 115: 1995, MOD)

### 1 Scope

**1.1** This standard is applicable for all new escalators and passenger conveyors (pallet or belt type).

**1.2** Existing escalators and passenger conveyors are not subject to this standard. It is, however, recommended that they be adapted to this standard.

**1.3** If some dimensions of this standard cannot be kept due to structural conditions in existing buildings, it has to be defined in the individual case which alternative requirements are necessary.

NOTE. In addition, see **0.5** and **0.6**.

### 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 292-1 | *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology* |
| EN 292-2 | *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles and specifications* |
| EN 294 | *Safety of machinery — Safety distances to prevent danger zones being reached by the upper limbs* |
| prEN 1037 | *Safety of machinery — Prevention of unexpected start-up* |
| prEN 60068-2-6 | *Basic environmental testing procedures — Part 2: Tests; Test Fc and guidance: Vibration (sinusoidal)* |
| EN 60068-2-27 | *Basic environmental testing procedures — Part 2: Tests; Test Ea and guidance: Shock* |
| EN 60269-1 | *Low-voltage fuses — Part 1: General requirements* |
| EN 60439-1 | *Low-voltage switchgear and controlgear assemblies — Part 1: Type-tested and partially type-tested assemblies* |
| EN 60529 | *Degrees of protection provided by enclosures (IP Code)* |
| EN 60742 | *Specifications for safety isolating transformers* |
| EN 60947-4-1 | *Low-voltage switchgear and controlgear — Part 4: Contactors and motor starters Section One — Electromechanical contactors and motor starters* |
| EN 60947-5-1 | *Low-voltage switchgear and controlgear — Part 5: Control circuit devices and switching elements Section One — Electromechanical control circuit devices* |
| IEC 249-2 | *Metal-clad base materials for printed circuits — Part 2: Specifications* |
| IEC 249-3 | *Metal-clad base materials for printed circuits — Part 3: Special materials* |
| IEC 326-1 | *Printed boards — Part 1: General information for the specification writer* |
| IEC 664-1 | *Insulation co-ordination for equipment within low-voltage systems — Part 1: Principles, requirements and tests* |