

Safety rules for the construction and installation of escalators and passenger conveyors

Part 1. Specification and proformas for test and examination of new installations

ICS 91.140.90

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee MHE/4, Lifts, hoists and escalators, upon which the following bodies were represented:

Federation of the Electronics Industry

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

- Association of District Councils
- British Broadcasting Corporation
- British Retail Consortium
- Chartered Institution of Building Services Engineers
- Chartered Institute of Environmental Health
- Department of Trade and Industry (Standards Policy Unit)
- Department of the Environment, Transport and the Regions (Construction Sponsorship Directorate)
- Health and Safety Executive
- Electrical, Electronic, Telecommunications and Plumbing Union
- Engineer Surveyors Section of the MSF
- Institution of Electrical Engineers
- Institution of Incorporated Executive Engineers
- Institution of Mechanical Engineers
- Institution of Plant Engineers
- Lift and Escalator Industries Association
- Lloyds Register of Shipping
- London Underground Ltd.
- Post Office
- Royal Association for Disability and Rehabilitation
- Safety Assessment Federation Ltd.

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Amendments issued since publication

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The following BSI references relate to the work on this standard:
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Foreword

This Part of BS 5656 has been prepared by Technical Committee MHE/4, Lifts, hoists and escalators, and is applicable to the testing and examination of new escalators and passenger conveyors installed in accordance with BS EN 115.

BS 5656 consists of the following Parts:

Part 1: *Specification and proformas for test and examination of new installations*

Part 2: *Specification and proformas for test and examination after modernization (in preparation)*

It was originally intended that BS 5656 (EN 115) would be renumbered as BS 5656 : Part 1 to produce a logical pair of stand-alone standards for escalators and passenger conveyors. However, as the practice of dual numbering an EN as a BS was replaced by implementation as a BS EN, the 1995 revision of EN 115 was published in the UK as BS EN 115 and the identifier BS 5656 was no longer used for current standards. Nevertheless, as this BS identifier was well known within the industry, it was decided to retain it for the testing and examination standard.

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CAUTION. During any inspection and test, maintenance or repair it is suggested that precautions should be taken so that escalators and passenger conveyors cannot be set into motion without the knowledge and consent of the person performing such work. (See **16.1** of BS EN 115 : 1995 and BS 7801). In addition, safety barricades should be erected at the ends of each escalator or passenger conveyor before any floor coverings or steps etc. are removed and should remain in position until the escalator or passenger conveyor is safe and suitable for public use. (See **15.1.2.3** of BS EN 115 : 1995).

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 26, an inside back cover and a back cover.

1 Scope

This Part of BS 5656 specifies requirements for the testing and examination of new escalators and passenger conveyors covered by BS EN 115, before the equipment is put into service. This Part does not specify such requirements for the testing and examination of equipment after modernization (this is dealt with in Part 2) or for periodic examination. This Part includes proformas for certificates of test and examination (tables 1 and 2), which cover construction, certain aspects of performance, and contract data. A requirement to provide test certificates relating to certain components of the equipment is also specified in this Part.

2 References

2.1 Normative references

This Part of BS 5656 incorporates, by dated or undated reference, provisions from specific editions of other publications. These normative references are made at the appropriate places in the text and the cited publications are listed on the inside back cover. For dated references, only the edition cited applies; any subsequent amendments to or revisions of the cited publication apply to this Part of BS 5656 only when incorporated in the reference by amendment or revision. For undated references, the latest edition of the cited publication applies, together with any amendments.

2.2 Informative references

This Part of BS 5656 refers to other publications that provide information or guidance. Editions of these publications current at the time of issue of this standard are listed on the inside back cover, but reference should be made to the latest editions.

3 Definitions

For the purposes of this Part of BS 5656 the definitions given in clause 3 of BS EN 115 : 1995 apply.

4 Test and examination

4.1 Test and examination after manufacture, installation and commissioning

NOTE. All test equipment, instruments and personnel needed to complete the testing and inspection after installation should be provided by the escalator manufacturer. A power supply at the declared voltage and frequency, for test and adjustment purposes, should also be provided by the purchaser.

4.1.1 The performance of certain tests, as required to complete the appropriate test and examination certification (see **4.1.2**) shall be undertaken for every installation before it is put into normal service, i.e. at the time of manufacture and commissioning.

4.1.2 The form of the appropriate certificate for test and examination conforming to the requirements of **16.2** of BS EN 115 : 1995 and referred to in **4.1.1** shall be as follows:

a) escalators	Table 1
b) passenger conveyors	Table 2

4.2 Component testing

Copies of test certificates relating to particular components shall be available prior to, or during, commissioning tests. These test certificates shall relate to individual or type tests carried out by the component manufacturer, escalator/passenger conveyor manufacturer, or an independent body.

4.3 Availability of certificates

Copies of completed certificates appropriate to the type of equipment, as referred to in **4.1.1** and **4.1.2** shall be available for inspection in accordance with **16.2.1** and **16.2.2** of BS EN 115 : 1995.

5 High voltage test (at manufacturer's works)

The dielectric or electrical apparatus (excluding motors, generators, transformers, electronic apparatus and instruments, shall withstand a test voltage of 10 times the working voltage, with a maximum of 2000 V when applied as follows:

- between the live parts and the case or the frame with all circuits completed;
- between main terminals or equivalent parts with all circuits open;
- between any live parts of independent circuits.

NOTE. The dielectric or electrical apparatus should be tested in accordance with the appropriate British Standard.

The test voltage shall be alternating of approximately sine wave form with a frequency of approximately 50 Hz and shall be applied for 1 min.

NOTE. Owing to the impracticability of applying the foregoing tests b) and c) on controllers and similar apparatus after controller wiring has been completed, these tests should be made at convenient stages of manufacture. A test certificate to this effect issued by the manufacturer is acceptable.

6 Electrical tests (after installation)

Electrical installations, excluding electronic equipment, shall be subjected to test, by instruments as follows.

- a) Apply d.c. test voltage which is not less than twice the r.m.s value of the a.c. supply voltage or not greater than 500 V d.c. for low voltage circuits, to prove that the insulation resistance to earth is not less than 0.5 MW.

NOTE. If dampness in a new building prevents a reading of 0.5 MW from being obtained, an insulation resistance of 0.25 MW is provisionally acceptable provided a retest figure of 0.5 MW is obtained when conditions in the building improve.

- b) Determine that the earthing of all conduit, trunking, switch cases and similar metal work is continuous and does not exceed 0.5 W impedance.

NOTE. An escalator or passenger conveyor installation is considered to be a self-contained piece of equipment and as such is not required to conform in all respects to BS 7671 : 1992 (formerly the IEE Regulations) in particular with regard to the earthing of all apparatus.

Table 1. Certificate of test and examination for escalators**Notes for completion of this certificate:**

1. Statements and replies to all relevant questions should be annotated in the appropriate boxes. Where multiple questions are posed only one of the boxes should be ticked.
2. Boxes marked with an asterisk (*) should be completed by the vendor's design office.

1 Description of installation

Do the additional requirements of BS EN 115 : 1995 apply to this installation?¹⁾

Yes

☐

No

☐

Location: *

Vendor: *

Vendor's identification no:

Purchaser's identification no: *

Vertical rise m *

Angle of inclination ° *

Nominal step width m *

Ratio speed m/s *

Power supply (at time of test)

	Specified	Actual
Voltage	*	

Is supply²⁾

Permanent

Phase	*	
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Temporary

Hz (Cycle)	*	
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Is the above acceptable?

Wire ²⁾	*	
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Yes ☐ No ☐

Fuse rating	*	
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Fuse type	*	
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Location of control panel

Within escalator truss *

With separate machine room *

Other
Description:

Machine room location

Inside truss *

Outside truss *

¹⁾ Note the contents of 0.4 of BS EN 115 : 1995.

²⁾ Delete as applicable.

Table 1. Certificate of test and examination for escalators <i>(continued)</i>				
2 Static examination, mechanical				
2.1 General examination				
Has overall visual inspection been carried out in accordance with 16.2.1.2 of BS EN 115 : 1995?	Yes	☐	No	☐
2.2 Test certificates				
a) Are the factory test and examination records available and in order?	Yes	☐	No	☐
b) Is the step type test certificate available and in accordance with 8.2.2.1/8.2.2.2 of BS EN 115 : 1995?	Yes	☐	No	☐
c) Is the handrail type test certificate available and in accordance with 16.2.1.1.1(f) of BS EN 115 : 1995?	N/A	☐	Yes	☐
			No	☐
d) Is a speed sensing device fitted?	N/A	☐	Yes	☐
			No	☐
e) If fitted, is a test certificate available and in order?	Yes	☐	No	☐
2.3 Supporting structure				
a) Are intermediate supports provided?	N/A	☐	Yes	☐
			No	☐
b) State the no. of supports fitted:	Specified		*	Actual
c) Is supporting structure side cladding fitted in accordance with 5.1.1.1 of BS EN 115 : 1995?	Yes	☐	No	☐
d) Is the cladding permanent? ³⁾	Yes	☐	No	☐
e) Are the balustrades fitted correctly and in accordance with 5.1.5.4 of BS EN 115 : 1995?	Yes	☐	No	☐
f) Are deflector devices fitted?	Yes	☐	No	☐
g) If deflector devices are fitted, are they set in accordance with 5.1.5.4 of BS EN 115 : 1995?	N/A	☐	Yes	☐
			No	☐
³⁾ Escalators should not be put into service with temporary cladding.				

Table 1. Certificate of test and examination for escalators (<i>continued</i>)			
2.4 Machine drive			
a) Type of drive:	Chain *	Gear *	Other *
b) If other, specify:	*		
c) If chain driven, details of drive chains:	Pitch		* mm
	No. of links per chain		*
2.5 Operational brake(s) (see 12.4.1 of BS EN 115 : 1995)			
a) Number of brakes fitted:	Specified *	Actual	
b) Location:	*		
2.6 Auxiliary brake(s) (see 12.6 of BS EN 115 : 1995)			
		N/A	
a) Number of brakes fitted:	Specified *	Actual	
b) Location:	*		
2.7 Step chain lubrication			
a) Is a lubrication system fitted?	Yes *	No *	N/A *
b) If yes, is it working satisfactorily?	Yes	No	
2.8 Return station			
a) Tensioning method:	Spring *	Hydraulic *	
	Counterweight *	Other *	
b) If other, specify:	*		
c) Does it function?	Yes	No	

Table 1. Certificate of test and examination for escalators (<i>continued</i>)			
2.9 Steps and step band			
a) Length of horizontal travel (see 10.1.3 of BS EN 115 : 1995)	Top		m *
	Bottom		m *
2.10 Clearances and alignments			
Are the following clearances in accordance with clause 11 of BS EN 115 : 1995?	Yes		No
a) Step to step clearance 6 mm or less in accordance with 11.1 of BS EN 115 : 1995	Yes		No
b) Step to skirting clearance 4 mm or less at either side and 7 mm or less for the sum of both directly opposite sides in accordance with 11.2 of BS EN 115 : 1995	Yes		No
c) Mesh depth h_8 at least 6 mm (see figure 1 of BS EN 115 : 1995)	Yes		No
d) Clearance h_6 not greater than 4 mm (See figure 1 of BS EN 115 : 1995)	Yes		No
2.11 Handrail			
a) Does the handrail profile and position conform to 7.3.1 of BS EN 115 : 1995?	Yes		No
b) Is the dimension between the outer edge of the handrail and any other obstacle at least 80 mm?	Yes		No
c) Is the dimension in b) above maintained to a height of 2.10 m above the steps?	Yes		No