

BS 7801:2011



BSI Standards Publication

Escalators and moving walks – Code of practice for safe working on escalators and moving walks

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Summary of pages

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Foreword

Publishing information

This British Standard is published by BSI and came into effect on 31 May 2011. It was prepared by Subcommittee MHE/4/3/3, under the authority of Technical Committee MHE/4, *Lifts, hoists and escalators*. A list of organizations represented on this committee can be obtained on request to its secretary.

Supersession

This British Standard supersedes BS 7801:2004, which is withdrawn.

Relationship with other publications

Attention is drawn to BS EN 115-2:2010, *Rules for the improvement of safety of existing escalators and moving walks*, which provides guidance on the upgrading of escalators and moving walks, not installed to BS EN 115-1:2008+A1:2010 and BS 5656-2:2004, which provides guidance for the selection installation and location of escalators and moving walks.

Information about this document

This is a full revision of the BS 7801:2004, published to accommodate:

- the regulatory changes that have occurred since 2004;
- the publication of BS EN 115-1:2008+A1:2010;
- the publication of BS EN 115-2:2010;
- changes in training requirements.

It is intended to:

- a) assist employers and owners to provide ever-safer workplaces;
- b) support a risk assessment methodology as the basis for determining safe systems of work;
- c) emphasize the need to demonstrate competence;
- d) meet the need to have a code of practice that covers escalators and moving walks of any age, whether or not they conform to current British or European standards.

The safety of persons working on escalators and moving walks is the responsibility of all persons associated with such work, in particular:

- owners and/or persons having effective control of the premises containing the escalators and moving walks;
- employers and supervisors of persons working on escalators and moving walks;
- persons working on escalators and moving walks;
- other persons working within the premises.

All such persons have a responsibility to ensure the safety of persons who might be affected by their activities, including members of the public. Where such persons are responsible for their own safety there needs to be a formal, common, safe system of work, in terms of method statements and safety practices.

This British Standard sets out the rudiments for the assessment and planning of safe working, so that practical safe systems of work can be established to enable personnel to access their places of work safely, and be adequately protected during their work.

This British Standard gives recommendations on the best practices to be employed in order to provide the safest practicable working environment. It brings together all the known procedures for safe working into one place. It also introduces the following principal changes:

- Clause 4 gives recommendations for owners of escalators and moving walks;
- Clause 5 gives recommendations for manufacturers and installers and persons working on escalators and moving walks.

There are a number of similarities between the two clauses; this is because some recommendations were felt to be equally applicable to owners, manufacturers and installers and persons working on escalators and moving walks. However, there are also some distinct differences between the two clauses. Users of this British Standard should ensure that they are reading the appropriate clause for their responsibilities.

Use of this document

As a code of practice, this British Standard takes the form of guidance and recommendations. It should not be quoted as if it were a specification and particular care should be taken to ensure that claims of compliance are not misleading.

Users of this British Standard are reminded that as a code of practice it recommends actions to be taken by all persons involved with escalators and moving walks; it does not specify requirements for the escalators and moving walks themselves. A safe system of work normally involves definitive working practices for people and a certain level of product safety. Both of these aspects have been addressed; in the case of product safety, the emphasis has been put onto persons to provide it.

The harmonized European standards are commended to those responsible for the safety management of older escalators and moving walks, so that those escalators and moving walks can be upgraded, as far as practicable, to an equivalent level of safety to those that conform to the harmonized European standards.

It has been assumed in the preparation of this British Standard that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

WARNING This British Standard calls for the use of substances and/or procedures that can be injurious to health if adequate precautions are not taken. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage.

Presentational conventions

The provisions in this standard are presented in roman (i.e. upright) type. Its recommendations are expressed in sentences in which the principal auxiliary verb is "should".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Contractual and legal considerations

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

Compliance with a British Standard cannot confer immunity from legal obligations.

1 Scope

This British Standard gives recommendations for safe working practices (supported by training) for:

- owners of permanently installed and commissioned escalators and moving walks;
- persons having effective control of the premises (duty holder) on which such escalators and moving walks are installed;
- persons responsible for, and involved in, the examination, inspection, testing, service, maintenance, repair and dismantling of such escalators and moving walks.

This British Standard is applicable to persons working on all types of escalators and moving walks. However, not every recommendation is applicable for all types of escalator and moving walk that are covered by British Standards either published or in preparation.

The recommendations in this British Standard relate to the safety of persons when gaining access to and from the work areas of escalator and moving walks, and while working there. They also relate to the safety of others present in the vicinity, whether they are working or not, who could be endangered by the actions of those working on escalators and moving walks.

This British Standard does not cover the design, manufacture, construction or installation of escalators and moving walks.

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.

BS 5499-5, *Graphical symbols and signs – Safety signs, including fire safety signs – Part 5: Signs with specific safety meanings*

BS 7375, *Distribution of electricity on construction and demolition sites – Code of practice*

BS 7671, *Requirements for electrical installations – IEE Wiring Regulations*

3 Terms and definitions

For the purposes of this British Standard the following terms and definitions apply.

3.1 authorized person

person responsible for ensuring that specific plant and equipment are safe for the intended work to be undertaken

NOTE An authorized person might have prior knowledge and experience of the plant and equipment to be assessed, or might have been given instructions and training for a specific task, enabling them to recognize potential hazards, identify ways of avoidance of hazards and ensure that risks are reduced to a minimum.

3.2 belt

power-driven and tensioned continuous surface that forms the treadway of a moving walk, which is supported along its length by various means

3.3 CDM coordinator

person (duty holder under CDM Regulations 2010 [1]) who advises and assists the client to coordinate health and safety aspects of a notifiable project

3.4 comb

part of an escalator or moving walk that meshes with the steps, pallets or belt at each landing, in order to facilitate the transition of passengers

3.5 competent person

person suitably trained and qualified by knowledge and practical experience, and provided with the necessary instructions to enable the required work to be carried out safely

3.6 construction phase

period of time starting when construction work in any project starts and ending when construction work in that project is completed

3.7 contractor

person (duty holder under CDM Regulations 2010 [1], including a client, principal contractor, escalator/moving walk contractor), who carries out or manages construction work, including the supply, installation, modernization, repair, inspection, service, or dismantling an escalator or moving walk

NOTE For the purposes of this British Standard, the contractor is the escalator/moving walk contractor.

3.8 drive station

area within the truss of an escalator or moving walk, where the drive machinery is located

3.9 escalators**3.9.1 compact escalator**

escalator where the drive machinery is located within the truss and access to the machinery is gained from the passenger side

3.9.2 escalator

power-driven installation with endless moving stairway for the conveyance of passengers in an upward or downward direction

3.9.3 remote drive escalator

escalator where the drive machinery is located external to the truss and within a separate machine room

3.10 floor plate

removable plate at the ends of an escalator or moving walk to provide access to the drive and return stations

3.11 inspection control

means of controlling an escalator or moving walk during maintenance and other operations

NOTE This is usually a portable and manually operated device.

3.12 landing

unrestricted space at the top or bottom of an escalator or moving walk to permit the manoeuvring, boarding and alighting of persons

3.13 lock-off device

device to prevent unauthorized reconnection of electrical energy

NOTE This is often a padlock that prevents movement of the operating handle of the isolator.

3.14 machine room

machinery space outside of the truss in which one or more driving machine(s) and/or associated equipment are located

3.15 machinery space

space(s) inside or outside of the truss where the machinery as a whole or in parts is placed

3.16 main isolating switch

switch in the vicinity of the machinery, the return stations or the control devices, capable of breaking the supply to the motor, to the brake releasing device and to the control circuit in the live conductors

NOTE 1 This switch is not expected to isolate the supply to the socket outlets or to the lighting circuits necessary for inspection and maintenance.

NOTE 2 This switch can also control auxiliary equipment such as heating, balustrade lighting, comb lighting, under-step lighting, etc.

3.17 moving walk

power-driven installation with endless moving walkway (e.g. pallets, belt), for the conveyance of passengers either on the same level or between different levels

NOTE A moving walk was formerly known as a "passenger conveyor".

3.18 owner

legal entity having right of possession of an escalator or moving walk and responsibility for its safe working

NOTE The owner is usually the landlord or proprietor of the building in which an escalator or moving walk is situated.

3.19 pallet band

continuous loop of chain and pallets guided along the full length of a moving walk

3.20 passenger

person transported by an escalator or moving walk

3.21 permit to work

authority in writing which includes details of:

- a) work to be undertaken;
- b) procedures involved;
- c) precautions needed;
- d) emergency procedures to be in place;
- e) persons to undertake the work;
- f) timescale of the work to be undertaken;
- g) restrictions on the workplace or equipment.

3.22 premises

place and its immediate vicinity, where an escalator or moving walk is situated

3.23 return station

area within the truss of an escalator or moving walk where the moving steps, pallets or belts commence their return to the drive station

3.24 risk assessment

comprehensive estimation of the probability and the degree of possible injury or damage to health in a hazardous situation, in order to select appropriate safety measures

3.25 safe system of work

formal procedure, resulting from a risk assessment, which specifies safe methods of work to ensure that risks to health and safety are minimized and the remaining risks are mitigated

3.26 step band

continuous loop of chain and steps guided along the full length of an escalator

3.27 truss

structural framework of an escalator or moving walk

3.28 workplace

premises or part of premises where work is carried out

NOTE This can include:

- any place which is accessible to those at the workplace;
- any means of access to/from the workplace, e.g. staircase, corridor, road.

3.29 work platform

designated area, moving or fixed, for carrying out work tasks

4 Safety management – Responsibilities of owners

COMMENTARY ON CLAUSE 4

There are certain hazards relating to moving and rotating machinery and electrical equipment, etc., that are similar to those experienced in other industrial workplaces. These are expected to have been identified in the risk assessment.

Not every escalator or moving walk is identical, modern, or similarly positioned; nor are all machinery spaces of identical size or shape, nor segregated, illuminated or located within similar environments.

The recommendations given in this Clause are applicable to owners (duty holders) of escalators and moving walks and to persons having effective control of the premises in which escalators and moving walks are installed. Persons responsible for, and involved in, the design, thorough examination, inspection, testing, service, maintenance, repair or dismantling of escalators and moving walks, ought to read Clause 5.

4.1 Training

4.1.1 All of the following persons should possess demonstrable competence in basic escalator or moving walk safety and procedures, or be under relevant supervision.

- a) Those who might at any time be working on an escalator or moving walk or related equipment.
- b) Those who are working within the escalator or moving walk machine room or machinery space.

c) Those who are carrying out risk assessments.

NOTE Relevant supervision could be provided by any person who possesses demonstrable competence in basic escalator or moving walk safety procedures.

4.1.2 Clear instructions relating to site emergency and first aid procedures should be issued to employees, visitors, contractors and other authorized persons, where risk assessment identifies a need. Any specific regulations that apply to the premises should also be included in these instructions. Where such instructions are complex and/or specific risks exist, these instructions should be in written form and, if necessary, should be supplemented by a specific "site safety awareness" training regime and safe system(s) of work.

4.1.3 Training should be provided to authorized persons on all procedures to be carried out for normal operations and in the event of an emergency situation.

4.1.4 The competency of all trained persons should be assessed and documented annually. Documentation should list the competencies achieved relating to the type of equipment upon which the training was carried out.

4.1.5 Information and instructions should be given to persons who could be affected whenever any works are carried out on escalators or moving walks, indicating any relevant effects on their environment or their health and safety.

NOTE 1 Examples of signs that can be encountered by persons at the premises are given in Annex A and include signs placed on safety barriers and for use on the access to a machinery space. Examples of other signs that carry instructions to passengers are given in BS EN 115-1:2008+A1:2010, 7.2.1.2.

NOTE 2 Where an escalator or moving walk is removed from service, it is generally advisable to provide alternative means of access/egress in all situations.

NOTE 3 Information and instructions can be provided by means of appropriate signage.

4.1.6 Information and safe working instructions should be given to persons not in the owner's employ, e.g. painting contractors, whenever they are working on or near to an escalator or moving walk. These persons should be competent in their practising professions.

NOTE 5.1 gives recommendations for the minimum training necessary to demonstrate competence.

4.2 General

4.2.1 Responsibility for work on site

COMMENTARY ON 4.2.1

The contractor or other person(s) authorized to carry out work on the escalator or moving walk is expected to advise the owner of risks that could arise as a result of the work.

The owner should ensure that any work carried out on escalators or moving walks is performed only by authorized persons.

NOTE Attention is drawn to the Workplace (Health, Safety and Welfare Regulations) 1992 [2].

A person should be appointed by the owner or the contractor's site person in charge, to be responsible for at least the following:

- a) familiarization with the relevant parts of any site safety assessment undertaken by the contractor;
- b) familiarization with the work site from commencement of the work, including the effect the work is likely to have on other persons in the area;
- c) directing and managing the work safely;
- d) ensuring that the work site is handed back to the owner in a safe condition on completion of the work.

A person should also be appointed by the owner with responsibility for the management of the escalator or moving walk and ensuring that the immediate environment is safe. These responsibilities include:

- starting and stopping the equipment;
- ensuring that maintenance is being carried out;
- ensuring that emergency procedures are in place;
- inspection.

4.2.2 Liaison

COMMENTARY ON 4.2.2

The contractor's site person in charge of the works on escalator(s) or moving walk(s) is expected to establish contact with the owner's site representative. It is expected that the owner's site representative will be advised before work is started or any escalator or moving walk is removed from service.

The owner should nominate a representative to summon emergency assistance if required, and to advise on special precautions or procedures required for works being undertaken within the premises.

The owner, together with the contractor's site person in charge of the works, should determine whether any special precautions or procedures need to be taken.

NOTE Such precautions can become necessary due to environmental factors, e.g. particularly where children are present in the vicinity.

4.2.3 Personal protective equipment

A risk assessment (see 4.3) should be carried out to identify the need for any appropriate type(s) of personal protective equipment and/or clothing, for example high-visibility vests.

The owner should ensure that appropriate personal protective equipment and/or clothing is provided to ensure the health and safety of persons working on escalators and moving walks.

Where work is carried out in a hostile environment, specialized protective clothing/equipment should be provided by the owner.

4.2.4 Electrical equipment

The owner should enable the contractor to have access to the electrical supplies.

The owner should ensure that existing electrical conductors and their terminations that could give rise to danger are:

- a) of the appropriate rating;
- b) insulated;
- c) marked with appropriate signs.

NOTE The integrity of the electrical supply is solely the responsibility of the owner.

4.2.5 Removal of escalator or moving walk from service

The owner should establish procedures that a safety sign(s) is displayed where an escalator or moving walk is removed from service (see Annex A, Figure A.1) and that an effective safety barrier is erected whenever necessary (see 4.5.2).

4.2.6 Housekeeping

COMMENTARY ON 4.2.6

A high standard of cleanliness and general housekeeping is necessary as a precaution against the risk of fire, especially when flame cutting, welding or grinding work is being carried out. In particular, attention is drawn, where applicable, to the following:

- *regular, frequent cleaning of dust trays or other devices for collecting debris that passes through the comb;*
- *prevention of the build-up of excessive grease, oil, dust and fluff;*
- *regular cleaning of machinery, machine rooms and machinery spaces;*
- *removal of all surplus materials and debris from the site at the conclusion of each working shift;*
- *appropriate control measures on the storage of materials on site;*
- *the need for fire extinguishers to be located in the vicinity appropriate to the work to be carried out, and for personnel to be trained in their correct use;*
- *regular maintenance, testing and certification of fire protection and detection equipment.*

The owner, in conjunction with the contractor, should establish procedures to deal with potential hazards arising from:

- a) the build-up of waste materials in the workplace;
- b) the disposal of waste and other items and substances that are potentially injurious to health and safety and the environment;
- c) the cleaning of the exterior (particularly for continuous banks of escalators);
- d) the build-up of water from weather conditions entering the tread plates.

NOTE 1 Attention is drawn to The Control of Substances Hazardous to Health Regulations 2004 [3].

NOTE 2 Weil's Disease is an example of a potential hazard.

Steps, skirts, pallets, truss, etc. should be regularly cleaned to reduce any build-up of dirt harmful to the operation of the equipment, and all debris or other foreign materials collecting on the escalator or moving walk, particularly at the comb plates, should be removed.

Steps, skirts, pallets, truss, etc. should be protected from the likelihood of ingress of water in order to prevent slipping hazards and electrical malfunction.

WARNING Attention is drawn to the potential hazard of using strong and corrosive cleaning agents and the effect these can have if they come into contact with persons or parts of the equipment.

4.2.7 Health and safety file

Persons working on an escalator or moving walk should be aware that information specific to the work is held within the health and safety file, including the following information.

- Record, or “as built” drawings and plans used and produced throughout the construction.
- General details of the construction process and materials used.
- Details of the equipment and maintenance facilities.
- Servicing and maintenance requirements, including cleaning.
- Manuals produced by specialist contractors.
- Any special operations where a particular method needs to be adopted.
- Details of the location and nature of services, including emergency and fire-fighting systems.
- Instructions for the dismantling and disposal of the equipment at the end of its working life.

During the construction phase the principal contractor and other contractors should have provided all relevant information to the CDM coordinator to enable the file to be reviewed, amended or additions made.

NOTE 1 Attention is drawn to the CDM Regulations 2010 [1], Regulation 14, which requires the client to appoint a CDM coordinator to produce a health and safety file and to Regulation 17(1) which requires the client to provide the CDM coordinator with all health and safety information relating to the project.

NOTE 2 The health and safety file alerts persons to the risks to be managed during the repair, service, renovation or demolition of the structure and plant, after the escalator or moving walk has been put into service.

NOTE 3 Attention is drawn to the ACOP to the CDM Regulations 2010 [1], which details what needs to be included and what does not need to be included in the health and safety file.

Following the installation or major modernization of an escalator or moving walk, the health and safety file should be given to the owner and be made available to persons who subsequently work on the escalator or moving walk.

NOTE 4 Where the owner does not hold copy of the health and safety file, they ought to endeavour to obtain a copy from the original installer.

NOTE 5 Products installed prior to the existence of the CDM Regulations are not likely to have a health and safety file.

4.2.8 Effects on persons at the premises

Potential disruption, arising from any work, to persons at the premises should be assessed jointly by the owner and the contractor, and minimized.

4.2.9 Access for tools, equipment and materials

Arrangements should be made between the owner and the contractor for:

- a) the safe access to all tools, equipment and materials at workplaces;
- b) the provision of suitable and clearly identified storage space for tools, equipment, materials and any portable access equipment;
- c) the provision of alternative access routes as might become necessary during the works being undertaken.

NOTE These are some elements of the provision of safe systems of work.

4.2.10 Permit to work

There should be a safe system of work for all those undertaking tasks within designated workplaces.