

Fire precautions in the design and construction of buildings —

Part 8: Code of practice for means of escape for disabled people

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Association of Metropolitan Authorities	Fire Brigades' Union
British Fire Services' Association	Fire Insurers' Research and Testing Organisation (FIRTO)
British Gas plc	Fire Offices Committee
British Retailers' Association	Fire Protection Association
Building Employers' Confederation	Health and Safety Executive
Chief and Assistant Chief Fire Officers' Association	Home Office
Consumer Policy Committee of BSI	Incorporated Association of Architects and Surveyors
Department of Education and Science	Institute of Building Control
Department of Health and Social Security	Institution of Fire Engineers
Department of the Environment (Building Research Establishment (Fire Research Station))	Institution of Gas Engineers
Department of the Environment (Housing and Construction Industries)	Institution of Structural Engineers
Department of the Environment (Property Services Agency)	National Council of Building Materials Producers
Department of the Environment for Northern Ireland	Royal Institute of British Architects
Electricity Supply Industry in England and Wales	Royal Institution of Chartered Surveyors
	Scottish Development Department
	Timber Research and Development Association

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

Access Committee for England	Joint Committee on Mobility for the Disabled
Association of British Theatre Technicians	National Federation of the Blind of the United Kingdom
Centre on Environment for the Handicapped	Royal National Institute for the Deaf
Cinematograph Exhibitors' Association of Great Britain and Ireland	Scottish Council on Disability
Flat Glass Manufacturers' Association	Sports Council
Hevac Association	Steel Window Association
Intumescent Fire Seals Association	Theatres Advisory Council

This British Standard, having been prepared under the direction of the Fire Standards Committee, was published under the authority of the Board of BSI and comes into effect on 29 February 1988

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Foreword

This new code of practice was prepared under the direction of the Fire Standards Committee. This code is published as a Part of BS 5588; other Parts already published are as follows:

- *Part 1: Residential buildings;*
Section 1.1: Code of practice for single-family dwelling houses;
- *Part 2: Code of practice for shops;*
- *Part 3: Code of practice for office buildings;*
- *Part 4: Code of practice for smoke control in protected escape routes using pressurization;*
- *Part 5: Code of practice for firefighting stairways and lifts.*

Other Parts will include the revision of CP 3: Chapter IV: Part 1, which will appear as BS 5588-1.2, and new codes for the precautions to be taken in places of assembly, for ventilation and air conditioning ductwork and for enclosed shopping complexes. Other Parts may also be added to BS 5588.

The axiom that buildings should be comprehensively accessible to disabled people is firmly established. In 1967, BSI published CP 96 "Access for the disabled to buildings". The Chronically Sick and Disabled Persons Act was enacted in 1970 (and amended in 1976) with the requirement in section 4 that buildings to which the public, or some sections of the public, have access should, wherever practicable and reasonable, be accessible. In 1979, CP 96 was revised as BS 5810. The Disabled Persons Act, 1981, included in Section 6 a requirement that provision in public buildings should comply with the recommendations of BS 5810 in order that access controls should be more effective. Following consultations on how Section 6 of the 1981 Act might be implemented, the Government decided that the intentions of the legislation would be better satisfied by using building regulations as a control instrument. Regulations came into force in Northern Ireland from December 1984, in Scotland from March 1985 and in England from August 1985. A basic tenet of building law is that access provision has to be linked to egress provision, and it is on this account that this code has been prepared.

It has been assumed in the drafting of this code that the execution of its provision will be entrusted to appropriately qualified and experienced people.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations. In particular, attention is drawn to 3.3.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 22, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Section 1. General

1 Scope

This code of practice provides guidance for designers and the building construction team in their task of incorporating into new buildings, or alterations to existing buildings, measures that should in the event of a fire, enable the safe evacuation of any disabled people. The code is applicable to all buildings except single-family dwelling houses, flats and maisonettes (i.e. buildings covered by BS 5588-1). It is not intended for application to a building used as a house in multiple occupation.

NOTE Buildings purpose-built for disabled people will usually be provided with means of escape that are more extensive than those recommended in this code.

Access for disabled people is covered by BS 5810, and means of escape in general is covered by the various Parts of BS 5588. This code considers only those features necessary for means of escape for disabled people.

Management systems are an essential part of means of escape for disabled people and appendix A provides guidance for management to aid it in making the best use of the facilities described in this code.

The code should not be used as a criterion against which to judge whether a person may use a particular existing building and it is hoped that management will apply the philosophy of the code to existing buildings wherever possible; further information on this is given in appendix B.

NOTE The titles of the publications referred to in this code are listed on the inside back cover.

2 Definitions

For the purposes of this code the definitions given in BS 5810 apply, together with the following.

2.1

accommodation stairway

a stairway, additional to that or those required for escape purposes, provided for the convenience of occupants

2.2

compartment

a part of a building (comprising one or more rooms, spaces or storeys) constructed to prevent the spread of fire to or from another part of the same building

NOTE This definition differs from that used in connection with building regulations.

2.3

evacuation lift

a lift that may be used for the evacuation of disabled people in a fire

2.4

final exit

the termination of an escape route from a building giving direct access to a street, passageway, walkway or open space, and sited to ensure the rapid dispersal of persons from the vicinity of a building so that they are no longer in danger from fire and/or smoke

2.5

fire door

a door or shutter provided for the passage of persons, air or things, which, together with its frame and furniture as installed in a building, is intended, when closed, to resist the passage of fire and/or gaseous products of combustion and is capable of meeting specified performance criteria to those ends

2.6

firefighting lift

a lift designated to have additional protection, with controls that enable it to be used under the direct control of the fire brigade in fighting a fire

2.7

fire resistance

the ability of a component or construction of a building to satisfy for a stated period of time the appropriate criteria specified in the relevant Part of BS 476

2.8

manual call point

a device intended for the manual initiation of an alarm of fire in an electrical fire alarm system, operated by the breaking by hitting or pressing of a frangible element forming part of the front face

2.9

means of escape

structural means whereby a safe route is provided for persons to travel from any point in a building to a place of safety

2.10

non-combustible

capable of satisfying the performance requirements specified in BS 476-4

2.11

protected stairway/lobby/corridor

a stairway, including any exit passageway leading therefrom to its final exit, or lobby or corridor, enclosed with (other than any part that is an external wall of a building) fire-resisting construction

2.12**refuge**

an area that is both separated from a fire by fire-resisting construction and provided with a safe route to a storey exit, thus constituting a temporarily safe space for disabled persons to await assistance for their evacuation

2.13**storey exit**

a final exit, or a doorway giving direct access to a protected stairway, firefighting lobby or external escape route

2.14**two-stage fire alarm**

an alarm of fire in which an evacuation signal is given in those areas the occupants of which are at the greatest risk, usually those closest to the fire, with an alert signal being given in all other areas

2.15**wheelchair stairlift**

an appliance for transporting a person or person with a wheelchair between two or more levels by means of a guided carriage moving substantially in the direction of a flight of stairs and travelling in the same path in both upward and downward directions

3 Use of this code**3.1 Provision and use of fire safety arrangements**

The basic principles and philosophy underlying the provision of means of escape from buildings, and the related precautions in the case of fire are:

- a) planning and protection of escape routes leading to safety both horizontally and downwards (and/or possibly upwards in a few special circumstances) from any area that may be threatened by fire, so enabling any person confronted by an outbreak of fire to turn away and make a safe escape;
- b) construction and finishing with suitable materials and embodying adequate fire resistance in the structure where these are not covered by building regulations;
- c) segregation of higher fire risk areas;
- d) the provision of means of giving warning of fire and, where appropriate, of detecting outbreaks of fire.

The provision of structural means of escape assumes that building users are able-bodied people, and the essential role of management in a fire is to ensure that the fire brigade is called and to carry out a roll call when the evacuation has been completed. The presumption of independent capability to use steps and stairs for egress is clearly inadequate for the consideration of the safety of some disabled people, and for them evacuation involving the use of refuges on escape routes, and either assistance down (or up) stairways or the use of suitable lifts will be necessary. Accordingly, this code covers the measures appropriate to ensure the safety of disabled people from the moment they become aware of potential danger until they reach a place of safety. This concept is illustrated in Figure 1.

The successful emergency evacuation of a building using the structural means of escape provided requires comprehensive management procedures, and this applies whether the occupants of a building are disabled or not. The management procedures for disabled persons will, of necessity, include special arrangements for assisting wheelchairbound persons or others with walking difficulties along corridors or stairways, and for supervising the use of an evacuation lift if provided. Although this code includes a description of an evacuation lift, the installation of such a lift is recommended purely as an aid to evacuation procedures, particularly where they are needed to supplement the normal structural means of escape, such as in taller buildings. The installation of such a lift may also be in the interest of the general convenience of the building's occupants. More detailed information on fire plan strategies is given in appendix A. Application of the recommendations will also result in buildings which offer enhanced means of escape in fire for able-bodied persons.

3.2 Entertainment and cultural use buildings

Access to entertainment and cultural use buildings such as theatres, cinemas, concert halls, exhibition halls and stadia is important to enhance the lives of everybody, not least disabled people. The design of escape routes and the organization of management procedures are particularly critical in these classes of buildings because the users are likely to be unfamiliar with their surroundings and population densities in terms of the number of persons per unit area are very high. These considerations have often led to unreasonable restrictions on the access of disabled persons to these buildings and one of the purposes of this code is to show that such restrictions are unnecessary. There are clearly problems in stepped auditoria, grandstands and similar buildings, but an aim of the designer should be to provide some, or indeed many, locations for disabled persons to be integrated with the assembly as a whole from whence they may be evacuated without disrupting the general exodus.

Normally the number of severely disabled persons in an assembly building is likely to be small, but in the event of a large group attending an event, it is sensible that the organizers of the group should discuss the arrangements with the management of the building.

3.3 Relationship with statutory provisions

3.3.1 General. It is important to appreciate the relationships between this code and the various statutory provisions relevant to the design and construction of new buildings and to the fire precautions to be provided in existing buildings. The relevant legislation indicated in general terms in **3.3.2** has to be complied with in the event of a conflict with this code.

3.3.2 Building regulations. The design and construction of new buildings, and of alterations of existing buildings, are controlled by the following statutory provisions which are collectively referred to as building regulations in this code.

England and Wales: The Building Regulations;
Scotland: The Building Standards (Scotland) Regulations;

Northern Ireland: Building Regulations (Northern Ireland).

3.3.3 Legislation and other regulations for fire safety in buildings. In addition to the controls mentioned in **3.3.2**, fire safety and means of escape for a wide variety of buildings is dealt with under the following legislation.

England and Wales:

The Fire Precautions Act, 1971, as amended by the Health and Safety at Work etc., Act, 1974

The Building Act, 1984 (except in Inner London where the fire provisions of the London Building Acts, 1939-1982, as amended by the Local Government Act, 1985, apply)

The Safety of Sports Grounds Act, 1975

The Fire Safety and Safety of Places of Sports Act, 1987¹⁾

Scotland:

The Fire Precautions Act, 1971 as amended by the Health and Safety at Work etc., Act, 1974

The Building (Scotland) Act, 1959 (as amended)

The Safety of Sports Grounds Act, 1975

The Fire Safety and Safety of Places of Sports Act, 1987¹⁾

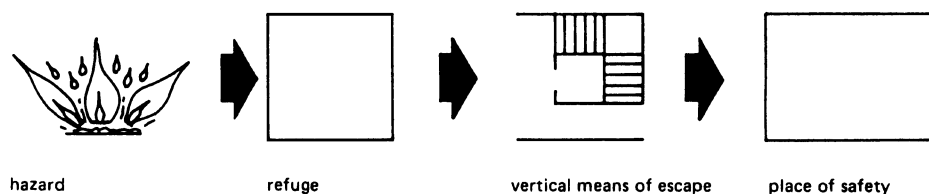


Figure 1 — Principles of evacuation

¹⁾ This Act amended the Fire Precautions Act and the Safety of Sports Grounds Act.

Northern Ireland:

The Fire Services (Northern Ireland) Order, 1984 and the Health and Safety at Work (Northern Ireland) Order, 1978

The Building Regulations (Northern Ireland) Order, 1979

It should be noted that for premises subject to the Fire Certificates (Special Premises) Regulations, 1976, the regulations apply to all buildings within the premises.

There are also a number of local Acts as well as entertainment and other licensing legislation which deal with fire safety and means of escape. The designer should consult the fire authority and building authority at an early stage to make certain the building as planned will meet the requirements those authorities may make, particularly if a fire certificate or licence may be necessary.

NOTE Under the Fire Precautions Act, 1971, Fire Authorities in England and Wales cannot, as a condition of the issue of a fire certificate, require structural or other alterations relating to escape from the premises if the plans of the building comply with building regulations, unless the fire authority is satisfied that the means of escape in case of fire are inadequate by reason of matters or circumstances of which particulars were not required to be supplied to the local authority in connection with the deposit of plans for building regulation purposes.

3.4 Information to be given to clients

Designers are advised to inform their clients of the nature, design and (if necessary) limitations of the fire precautions that have been designed into the building, and especially those whose nature may be less evident. This will enable a better understanding of the responsibility for ensuring that a high standard of safety is maintained. The advice given in appendix A is intended not only as a guide to the management of fire precautions in a building, but also as a guide to the information concerning the fire precautions that have been designed into the building which designers are advised to pass to their clients.

3.5 Diagrams

The figures are intended to clarify concepts, and should not be taken as indicating the only acceptable forms of planning.

Section 2. Horizontal escape

4 General

It is essential that all occupants are able to leave quickly any area in which they may be in danger from fire. Escape routes ought to be free from any feature which might impede movement, such as unsuitable door ironmongery or raised thresholds or steps between changes of level within a storey. A route leading to a final exit at substantially the same level should not pose a serious problem for those persons who cannot use stairs, but on floors other than final exit level there will inevitably be some delay whilst waiting either for assistance to travel down (or possibly up) the stairway, or for an evacuation lift. For this reason it may be necessary to provide refuges where disabled people can wait in relative safety before continuing to a final exit.

In many buildings suitable refuges will be provided as a result of meeting the general requirements for means of escape. Where this is not the case, the provision of refuges ought normally to be possible both without affecting the internal design of the building to any material extent and without incurring substantial additional costs.

5 Horizontal escape routes

5.1 Commentary

Whilst the planning of storeys (including the subdivision into separate rooms or areas, the distance of travel from any point within the storey to a storey exit, the number of escape routes and siting of exit doors) should be in accordance with the standards for the type of occupancy in any relevant codes and regulations, the routes of travel should also be free from any serious obstacle that may cause undue delay to disabled persons, e.g. raised thresholds or steps.

5.2 Recommendation for horizontal escape routes

Where minor changes of level within any storey cannot be avoided, a ramp complying with BS 5810 and signs warning of the change of level should be provided.

6 Refuges

6.1 Commentary

The limitation of distances of horizontal travel for means of escape purposes means that most disabled persons should be able to independently reach the safety of a protected escape route or final exit. However, some disabled persons, for example those who are wheelchairbound, will not then be able to use stairways without assistance, and for this reason it is necessary to provide refuges on all storeys other than those in small buildings of limited height (where the distance of travel to a final exit will be so limited that the provision of refuges is unnecessary), those providing level access directly to a final exit, and those consisting exclusively of plant rooms.

A refuge is an area that is both separated from the fire by fire-resisting construction and provided with a safe route to a storey exit, thus constituting a temporarily safe space for disabled persons to await assistance for their evacuation.

A refuge needs to be of sufficient size both to accommodate a wheelchair user and to allow the wheelchair user to manoeuvre into the wheelchair space without undue difficulty. A BS 5568 type A folding wheelchair occupies a space of 660 mm × 1065 mm, but there are a wide variety of wheelchairs in use and powered wheelchairs are increasingly being used. It should also be noted that the disabilities of wheelchair users vary both in type and degree. Given these factors the minimum space provided for a wheelchair in a refuge, excluding manoeuvring space, needs to be at least 700 mm × 1200 mm, and ideally ought to be 900 mm × 1400 mm after including an allowance for manoeuvring. As an indication of the manoeuvrability of wheelchairs, a BS 5568 type A folding wheelchair (when propelled in a forward direction by means of the handrims) is capable of negotiating a turn through a door opening of 775 mm clear width into a 900 mm wide corridor (and vice versa), and is capable of being turned through 180° in a 1400 mm wide corridor. In many buildings such spaces will be formed as part of the design and construction process.