

Stairs, ladders and walkways —

Part 1: Code of practice for the design, construction and maintenance of straight stairs and winders

ICS 91.060.30

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- British Precast Concrete Federation Ltd
- British Woodworking Federation
- Consumer Policy Committee of BSI
- Department of the Environment, Transport and the Regions
- Department of the Environment for Northern Ireland
- District Surveyors Association
- Engineering Equipment and Materials Users Association
- Galvanizers Association
- Health and Safety Executive
- Institution of Structural Engineers
- London Fire and Civil Defence Authority
- Royal Institute of British Architects
- Scottish Executive (Building Control Division)
- Spiral Stair Manufacturers Association
- Storage Equipment Manufacturers Association

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Foreword

This part of BS 5395 has been prepared by Technical Committee B/208, Stairs and Walkways. It supersedes BS 5395-1:1977 and its amendments, which are withdrawn.

The revision reflects best architectural design practice. It addresses handrails, slip resistance and acoustics in more detail.

The text has been reordered in part to provide easier access to information on specific aspects of design.

BS 5395, *Stairs, ladders and walkways*, is published in three parts, as follows:

- *Part 1: Code of practice for the design, construction and maintenance of straight stairs and winders;*
- *Part 2: Code of practice for the design of helical and spiral stairs;*
- *Part 3: Code of practice for the design of industrial-type stairs, permanent ladders and walkways.*

As a code of practice, this part of BS 5395 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.

Attention is drawn to the requirements of the Building Regulations for England and Wales, The Building Regulations (Northern Ireland) and The Building Standards (Scotland) Regulations.

In this standard, the verbal form “should” indicates recommended best practice, and the verbal form “may” indicates a practice which is permissible, but which is not necessarily best practice. The verbal form “can” indicates an action or event which has a probability or capability of happening.

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.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 39 and a back cover.

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1 Scope

This part of BS 5395 gives recommendations for the design, construction and maintenance of straight stairs, including landings and winders, in various materials for all types of building. It does not apply to steps or stairs which are not connected to a building, for example, those which are part of the surrounding landscape or which provide entry to a property. The standard does not apply to ramps, whether stepped or not, nor to ladders (see 3.2.2), nor to steps within swimming pools.

2 Normative references

This part of BS 5395 incorporates, by dated or undated reference, provisions from 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, any subsequent amendments to, or revisions of, the cited publications apply to this part of BS 5395 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.

BS 449-2, *Specification for the use of structural steel in building — Part 2: Metric units.*

BS 585-1, *Wood stairs — Part 1: Specification for stairs with closed risers for domestic use, including straight and winder flights and quarter or half-landings.*

BS 585-2, *Wood stairs — Part 2: Specification for performance requirements for domestic stairs constructed of wood-based materials.*

BS 648, *Schedule of weights of building materials.*

BS 1186-2, *Timber for and workmanship in joinery — Part 2: Specification for workmanship.*

BS 1217, *Specification for cast stone.*

BS 4592-1, *Industrial type flooring, walkways and stair treads — Part 1: Specification for open bar gratings.*

BS 4592-2, *Industrial type flooring, walkways and stair treads — Part 2: Specification for expanded metal grating panels.*

BS 4592-3, *Industrial type flooring, walkways and stair treads — Part 3: Specification for cold formed planks.*

BS 4592-5, *Industrial type flooring, walkways and stair treads — Part 5: Specification for solid plates in steel, aluminium and glass reinforced plastics.*

BS 5266-1, *Emergency lighting — Part 1: Code of practice for the emergency lighting of premises other than cinemas and certain other specified premises used for entertainment.*

BS 5268-2, *Structural use of timber — Part 2: Code of practice for permissible stress design, materials and workmanship.*

BS 5268-5, *Structural use of timber — Part 5: Code of practice for the preservative treatment of structural timber.*

BS 5578-2, *Building construction — Stairs — Part 2: Modular co-ordination: specification for co-ordinating dimensions for stairs and stair openings.*

BS 5588-1, *Fire precautions in the design, construction and use of buildings — Part 1: Code of practice for residential buildings.*

BS 5588-2, *Fire precautions in the design, construction and use of buildings — Part 2: Code of practice for shops.*

BS 5588-3, *Fire precautions in the design, construction and use of buildings — Part 3: Code of practice for office buildings.*

BS 5588-4, *Fire precautions in the design, construction and use of buildings — Part 4: Code of practice for smoke control in protected escape routes using pressurization.*

BS 5588-6, *Fire precautions in the design, construction and use of buildings — Part 6: Code of practice for places of assembly.*

BS 5588-8, *Fire precautions in the design, construction and use of buildings — Part 8: Code of practice for means of escape for disabled people.*

BS 5588-10, *Fire precautions in the design, construction and use of buildings — Part 10: Code of practice for shopping complexes.*

BS 5606, *Guide to accuracy in buildings.*

BS 5950, *Structural use of steelwork in buildings.*

BS 6093, *Code of practice for design of joints and jointing in building construction.*

BS 6150, *Code of practice for painting of buildings.*

BS 6180, *Code of practice for barriers in and about buildings.*

BS 6262-4, *Glazing for buildings — Part 4: Code of practice for safety — Human impact.*

BS 6399-1, *Loading for buildings — Part 1: Code of practice for dead and imposed loads.*

BS 6399-2, *Loading for buildings — Part 2: Code of practice for wind loads.*

BS 6399-3, *Loading for buildings — Part 3: Code of practice for imposed roof loads.*

BS 6954-3, *Tolerances for building — Part 3: Recommendations for selecting target size and predicting fit.*

BS 7371-6, *Coatings on metal fasteners — Part 6: Specification for hot dipped galvanized coatings.*

BS 8000-12, *Workmanship on building sites — Part 12: Code of practice for decorative wallcoverings and painting.*

BS 8110-1, *Structural use of concrete — Part 1: Code of practice for design and construction.*

BS 8118-1, *Structural use of aluminium — Part 1: Code of practice for design.*

BS 8118-2, *Structural use of aluminium — Part 2: Specification for materials, workmanship and protection.*



BS 8201, *Code of practice for flooring of timber, timber products and wood based panel products.*

BS EN 942, *Timber in joinery — General classification of timber quality.*

BS EN ISO 1461, *Hot dip galvanized coatings on fabricated iron and steel articles — Specifications and test methods.*

BS EN ISO 12944-4, *Paints and varnishes — Corrosion protection of steel structures by protective paint systems — Part 4: Types of surface and surface preparation.*

BS EN ISO 12944-5, *Paints and varnishes — Corrosion protection of steel structures by protective paint systems — Part 5: Protective paint systems.*

BS EN ISO 12944-7, *Paints and varnishes — Corrosion protection of steel structures by protective paint systems — Part 7: Execution and supervision of paintwork.*

BS EN ISO 14713, *Protection against corrosion of iron and steel in structures — Zinc and aluminium coatings — Guidelines.*

3 Terms and definitions

For the purposes of this part of BS 5395, the terms and definitions given in annex A and in the BS 476 series apply, together with the following.

NOTE Some of the terms are illustrated in Figure 1, which is solely for that purpose and has no other significance.

3.1 Categories of stair

3.1.1

private stair

main access stair located in a private dwelling or similar situation, and which is used by a small number of people who are generally familiar with it

3.1.2

public stair

stair used intermittently by a large number of people, some of whom are not familiar with it, and which is located in a commercial building, office or public building such as a library

3.1.3

assembly stair

stair used simultaneously by a large number of people, many of whom are not familiar with the stair, and which is located in an assembly building such as a theatre, concert hall, educational establishment or stadium

3.2 Other terms

3.2.1

bulkhead

soffit of a ceiling above a stair and usually constructed parallel to its pitch line

3.2.2

ladder

fixed means of sloping or vertical access, using horizontal rungs, which has an angle of pitch from more than 75° to 90° degrees

3.2.3

overlap

amount by which the nosing of a tread (including a landing) oversails the next lower tread (or landing)

3.2.4

patent nosing

material added to the leading edge of a tread, usually to increase its slip-resistant properties

3.2.5

raked riser

riser which slopes from the rear of a tread towards the nosing of the next tread (or landing) above it

4 Regulations and standards

4.1 Stair design

Stair design is covered by building regulations and attention is drawn to the following documents:

- England and Wales: Building Regulations for England and Wales. Approved Document K [1];
- Scotland: Technical Standards. Part S [2];
- Northern Ireland: Building Regulations (Northern Ireland). Technical Booklet H [3].

4.2 Means of escape

Where stairs are designed to provide a means of escape in the event of fire, building regulations apply, and attention is drawn to the following documents, in addition to those listed in 4.1:

- England and Wales: Building Regulations for England and Wales. Approved Document B [4];
- Scotland: Technical Standards. Part E [5];
- Northern Ireland: Building Regulations (Northern Ireland). Technical Booklet E [6].

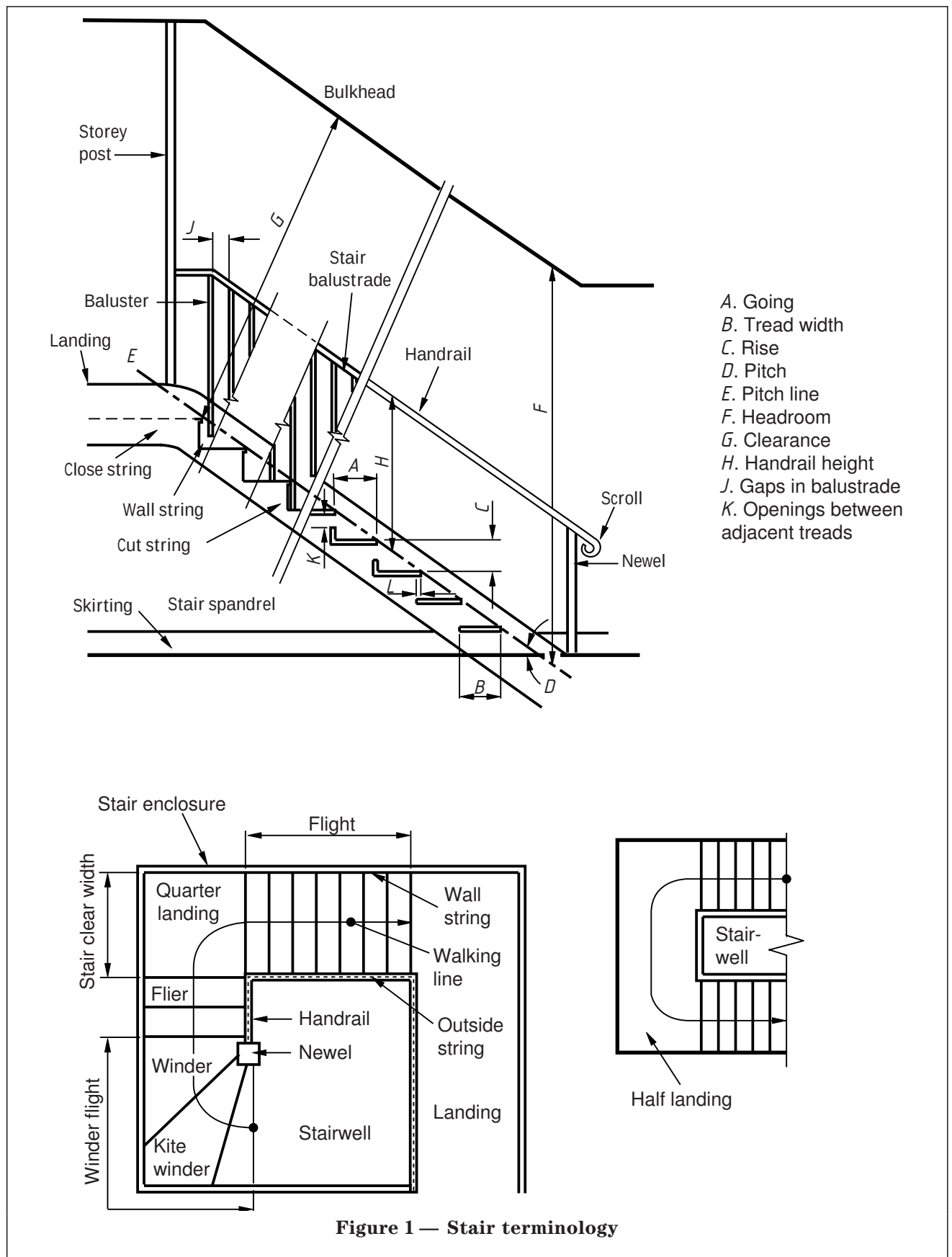
Recommendations relating to fire precautions in the design and construction of buildings are given in the BS 5588 series of standards.

4.3 Disabled people

Building regulations require that reasonable provision be made for disabled people to gain access to, and use, many types of building. For the design of stairs and other features suitable for use by disabled people, attention is drawn to the following documents:

- England and Wales: Building Regulations for England and Wales. Approved Document M [7];
- Scotland: Technical Standards. Part T [8];
- Northern Ireland: Building Regulations (Northern Ireland). Technical Booklet R [9].

Recommendations relating to provision for disabled people are given in BS 5619 and BS 5810.



4.4 Glass in and around stairs

Where glass is used in and around stairs, building regulations apply, and attention is drawn to the following documents:

- England and Wales: Building Regulations for England and Wales. Approved Document N [10];
- Scotland: Technical Standards. Part P [11];
- Northern Ireland: Building Regulations (Northern Ireland). Technical Booklet V [12].

Guidance relevant to the use of glass is given in BS 6180 and BS 6262-4.

See also 6.5.

4.5 Workplaces

Attention is drawn to The Workplace (Health, Safety and Welfare) Regulations [13], which contain provisions relevant to the design of stairs for the workplace.

4.6 Sports grounds

Useful information can be found in prEN 13200-1 and in the *Guide to Safety at Sports Grounds* [14].

5 Arrows on drawings

On plan drawings, arrows placed on the walking line should only be used to indicate upward movement.

6 Safety

6.1 Accidents on stairs

In the United Kingdom there are nearly as many deaths each year from accidents in the home as from traffic accidents. Falls account for over half of these accidental deaths in the home, and half of the deaths from falls relate to stairs. There is an estimated further one quarter of a million non-fatal accidents on stairs in the home each year, which are serious enough to cause the victim to visit their GP or Hospital Accident and Emergency department. This is equivalent to a domestic accident on stairs occurring every 2.5 min.

Young children and the elderly are particularly at risk from falls on stairs. Nearly 20 % of the non-fatal domestic accidents on stairs happen to children under 4 years of age, and 70 % of the fatal accidents occur to adults over 65 years of age.

NOTE These data are based on DTI home accident surveillance from 1992 to 1996.

6.2 Guarding

6.2.1 General

Stairs and landings should be provided with protection against falling over the edge of the treads.

The height of the guarding should be not less than 900 mm above the pitch line of stairs, and not less than 1 100 mm above landings. The height of the guarding above landings may be reduced to 900 mm in dwellings, although this can increase the risk of falls. (Further information is given in BS 6180.)

6.2.2 Safety considerations for children

In buildings where likely users include children under 5 years of age, the guarding should be designed to prevent children from falling through it, and to avoid entrapment of a child's head. Gaps in the guarding should therefore be small enough to prevent a sphere with a 100 mm diameter from passing through them. Other than within a dwelling, triangular openings may be left between the treads, the risers and the guarding, provided that the bottom of the guarding is not more than 50 mm above the pitch line.

Guarding should be designed in such a way as to discourage young children from climbing it. Features in the guarding that might provide a foothold should be avoided. It may also be advantageous to allow small children to see what is on the other side of the guarding, either through small gaps, or by the use of strong, transparent materials.

Stairwells should be avoided in multi-storey buildings where children are likely to play on stairs. If a stairwell cannot be avoided, then guarding of full storey height should be considered to prevent children from climbing into the stairwell.

6.3 Handrails

In addition to guarding, every stair with two or more rises should have a continuous handrail to provide guidance and support to those using the stair. A suitably designed handrail should prevent users from losing their balance when on the stair, and can also help some users to pull themselves up the stairs. A handrail can also help users to regain their balance in the event of a fall and can reduce the severity of the injuries that might result.

Handrails should be:

- a) fixed securely at a vertical height above the pitch line of not less than 900 mm or more than 1 000 mm;
- b) rigid and strong enough to provide adequate support for users;
- c) comfortable to grip and without sharp arrises, yet able to provide adequate resistance to hand slippage;
- d) a poor conductor of heat, if exposure to heat is likely.

Consideration should be given to providing visual contrast between the handrail and its surroundings.

Handrails may form the top part of the guarding, as in a stair balustrade, if the heights of the guarding and the handrail can be matched. In no case should the inside edge of the handrail (the edge nearest the walking line) be more than 50 mm outside the edge of the stair clear width.

The handrails should be free from any obstruction throughout a flight and preferably continuous throughout the stair. Handrail supports should not prevent the passage of the hand throughout the length of the handrail. The handrail should not form the top of the guarding if this guarding finishes under the string of an upper flight or landing, as this will cause some steps to be walked without the support of a handrail.

Circular handrails are usually the most comfortable to grasp. A handrail diameter of between 32 mm and 50 mm is recommended, or of between 40 mm and 50 mm for the elderly and for people with disabilities. Oval handrails should have a thickness of between 18 mm and 37 mm horizontally, and of between 32 mm and 50 mm vertically. In all cases, the handrail should be supported at a distance of between 50 mm and 100 mm from any guarding which extends above the bottom edge of the handrail, or from any wall, in order to avoid entrapment of the fingers or hand.

To allow users a choice when ascending and descending stairs, it is preferable to have a handrail on both sides. Where it is likely that people will be ascending and descending the stair at the same time, such as on stairs with a stair clear width of 1 000 mm or more, it is essential to have a handrail on both sides. In some cases it is advantageous for the stair user, particularly if they are elderly or disabled, to be able to reach both handrails at the same time. If so, the distance between the handrails should be 800 mm to 1 000 mm.

Where public or assembly stairs have a stair clear width greater than 1 800 mm, the overall width of the stair should be divided by handrails into two or more channels, so that all persons using the stair at the same time are within reach of a handrail. Each channel should have a stair clear width of not less than 1 000 mm and not more than 1 800 mm. This precludes the use of stairs between 1 800 mm and 2 000 mm wide.

In order to reduce the risk of clothing, for example, being caught on handrails, the ends of handrails should be:

- a) supported by a newel; or
- b) returned to the wall or the floor; or
- c) scrolled or wreathed.

The suitable termination of handrails is of particular importance where handrails are used to divide wide stairs into channels.

6.4 Steps

A single step is likely to cause a trip and should not be provided across a circulation route. A single step may be provided between the external door of a building and either the ground or an access balcony, and between a landing and the floor at the foot of a stair in a dwelling. If a single step is used, it should be prominently marked by a change of colour and should be well lit (see clause 12).

A step at the bottom or top of a flight should not encroach into a circulation route. Figures 2 and 3 show examples of hazardous encroachments. The example shown in Figure 3 is particularly hazardous, as the step is obscured from one direction by the stair itself.

Wherever possible, the use of surface materials or stair coverings that are made up of highly contrasting colours used in irregular, busy or regular geometric or striped patterns should be avoided.

6.5 Glazed areas and windows

Glazing which provides a guarding function should provide containment in accordance with BS 6180. Other low-level glazing should either be protected by a permanent screen or be made from safety glazing material in accordance with BS 6262-4. (See also 4.4).

Windows located on stairs should be situated and designed so that operations such as opening, closing, cleaning or curtaining them can be performed safely. (See also clause 12).

The Workplace (Health, Safety and Welfare) Regulations 1992 [13] include requirements for safety glazing, outlined in Regulation 14. Guidance on these is given in the documents listed in 4.4.

6.6 Doors

Where it is necessary for a door to open on to a stair, the door should not impinge upon the stair clear width and so obstruct free passage across a landing.

Glazed panels in areas of low-level glazing, within 1 500 mm of the floor surface in doors, or within 300 mm of the floor surface in door side panels, should follow the recommendations of BS 6262-4.

6.7 Fire protection and means of escape

In most buildings, stairs provide the main vertical escape routes and are often in the first protected area reached by people escaping from a fire. The recommendations given in the relevant part of BS 5588, for the planning, construction and protection of escape routes to prevent rapid spread of fire, should be followed. Attention is drawn to building regulations (see 4.2).

The minimum stair clear widths given in Table 1 could be insufficient for escape stairs, depending upon the building use and number of occupants.

The following materials should never be used in the construction of the only escape stair in a building, nor of a stair for firefighting:

- a) materials having a low melting point, such as aluminium, as these are likely to result in early collapse when exposed to heat; or
- b) stone, which when subjected to heat or to cold water during firefighting operations can collapse without warning; or
- c) plastics, not covered by a), that give off toxic fumes when subjected to heat.

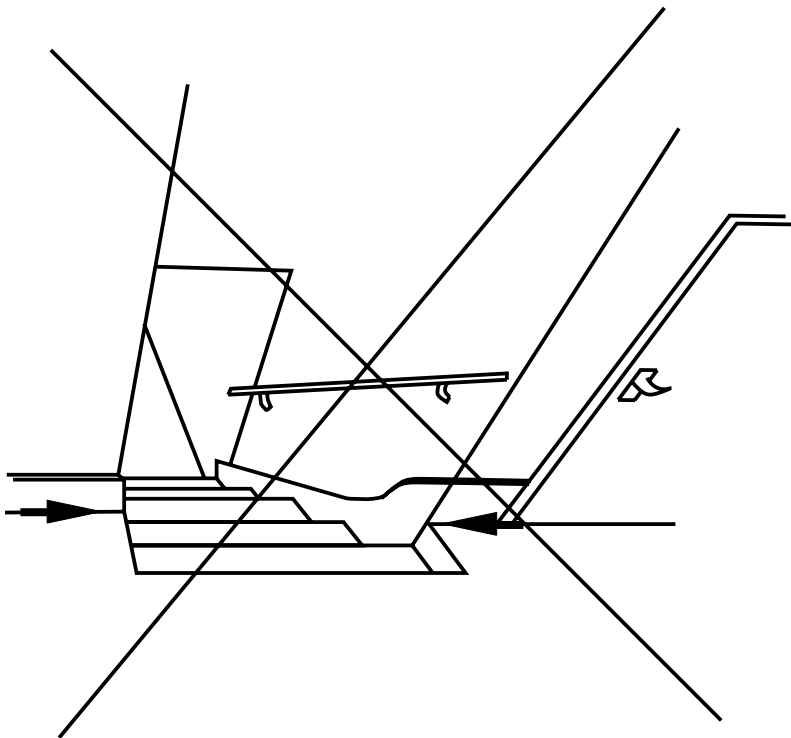


Figure 2 — Hazard at top of flight

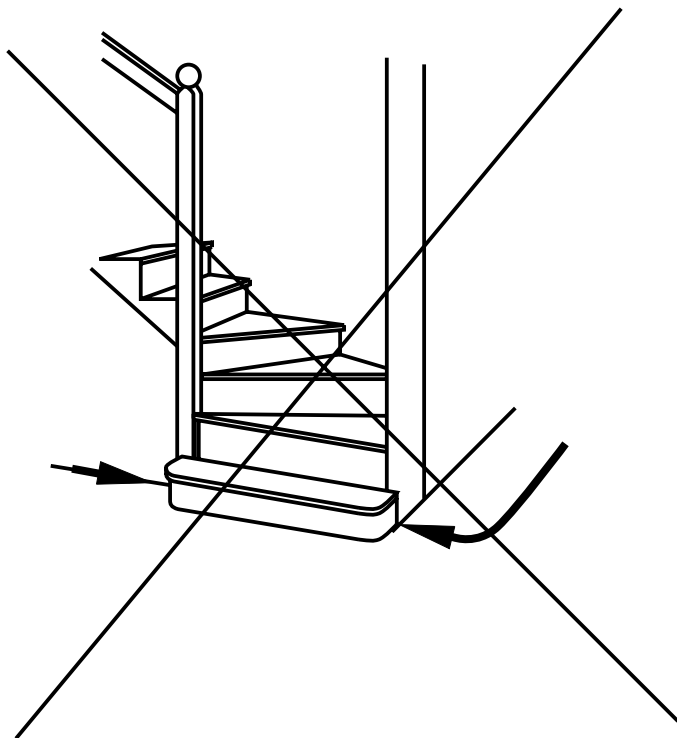


Figure 3 — Hazard at bottom of flight

7 Dimensions

7.1 Anthropometric and ergonomic factors

Recommended ranges of dimensions are given in Table 1 and Figure 4 for the three categories of stair. These dimensions reflect the way in which the stairs are used. Assembly stairs are often used by large numbers of people at the same time, moving slowly, and so they should be designed with a large going and a small rise. Public stairs are used by people moving faster, unconstrained by other users, and so the rise may be greater. The rise for private stairs may exceed the maximum given in Table 1, since the occupants will be familiar with the stair, and space is usually at a premium, although greater rises should be avoided where possible.

Stairs should be designed so that everybody who is likely to use that stair can do so comfortably and safely, whilst exerting the least amount of energy. Table 1 takes into account anthropometric and ergonomic factors which affect safety. Further limits on a number of these dimensions are shown in Figure 4, which plots rise against going.

7.2 Rise

A step with a shallow rise tends to cause people to trip, especially where the rise is less than 100 mm. The maximum rise that people can be expected to negotiate safely is 220 mm. A rise of less than 100 mm or more than 220 mm is therefore not recommended for any category of stair. For public stairs and assembly stairs, the rise should be much smaller than 220 mm (see Table 1).

The rise for every step should be equal throughout the stair. There should be no fewer than three, and no more than 16, rises in any one flight, except that, between the external door of a building and the ground or an access balcony, and at the foot of a private stair, there may be a flight of fewer than three rises. Assembly stairs having more than 36 rises in consecutive flights should make at least one change of direction of at least 30° between flights.

Special consideration should be given to the design of open-rise stairs. Small children can climb or fall through them. In stairs likely to be used regularly by children under 5 years old, no opening between adjacent treads should be large enough to permit a sphere of 100 mm diameter to pass through it. Some people, especially the elderly, may feel a sense of insecurity when looking through the spaces between treads.

If a stair has open rises or raked risers, the nosing of the tread of any step or landing should oversail, on plan, the back edge of the tread, or landing, below, by not less than 16 mm. The overlap should be uniform on all steps between consecutive floors.

7.3 Going and treads

The tread width should be sufficient to provide adequate support to the shod foot. It should allow at least part of the heel, when ascending the stair, to rest firmly on each step, and should permit descent without the need to place the foot at an awkward angle.

The tread width should not be less than the going (see 13.2.5).

Sizes for the going are given in Table 1. The going for every parallel tread should remain constant in consecutive steps and in consecutive flights.

Elderly or disabled people, and those guiding small children or carrying loads, often wish to pause on the stairs, particularly during ascent. Wide treads can provide a suitable platform for this purpose.

Treads and landings should be horizontal and firmly fixed.

7.4 Going of winders

In a stair with a stair clear width of up to 1 000 mm, the goings of the winders should be measured in accordance with BS 585-1. For a stair clear width greater than 1 000 mm, the going of each winder should be measured at a distance of 270 mm from both its inner and outer extremities. Additionally, the effective width of the tread at its narrow end (minimum going) should not be less than 50 mm, and preferably not less than 75 mm.

The varying tread widths of a winder can cause people to misjudge distances and can lead to falls. For this reason, the use of winders should be avoided. If it is necessary to use them, they should preferably be situated at the bottom of the flight. Assembly stairs should not contain winders.

Consecutive winders should be similar to each other. For detailed information on winders, see BS 585-1.

7.5 Comfortable gait

The most comfortable combination of rise and going depends on the individual and on the circumstances in which the stair is used. For general use, the going should be at the upper end of the appropriate range given in Table 1.

It is generally accepted that the stride length for most persons, at speeds normally experienced when moving on stairs, is between 550 mm and 700 mm. However, when mounting stairs, extra effort is required in moving both forward and upward and this reduces the horizontal distance which a person can travel in comfort. To ensure that the steps are suitably proportioned and comfortable to use, the rise and the going should be considered together. For example, if the rise is small, the going should be proportionately greater to ensure that the stair is comfortable to use.

A comfortable gait on stairs is expected for most people if the value of $(g + 2r)$ is within the range given in Table 1, where g is the going in millimetres and r is the rise in millimetres.

Table 1 — Recommended sizes for straight stairs and winders

1 Stair category	2 Rise, <i>r</i>		3 Going, <i>g</i>		4 Sum of <i>g</i> + 2 <i>r</i> ^a		5 Pitch	6 Stair clear width (see note 2)		7 Handrail height	
	Min. mm	Max. mm	Min. mm	Max. mm	Min. mm	Max. mm	Max. degrees	Min. mm	Reduced min. where limited use ^c mm	Min. mm	Max. mm
A Private stair	100	220	225	350	550	700	41.5	800	600	900	900
B Public stair	100	190	250	350	550	700	38	1 000	800	900	1 000
C Assembly stair	100	180	280	350	550	700	33	1 000 ^b	—	900	1 000

NOTE 1 Special circumstances may demand easier limiting sizes than some of those given in this table.

NOTE 2 Requirements for means of escape in case of fire can necessitate an increase on the minimum values given here for stair clear width. Where means of escape is a factor, the relevant mandatory regulations apply. See 4.2.

NOTE 3 The limiting sizes in each column apply to the stair as a whole. The most onerous requirement should be met in each case.

^a See 7.5

^b For hospitals, the minimum stair clear width is 1 200 mm.

^c For example, access to a loft space.

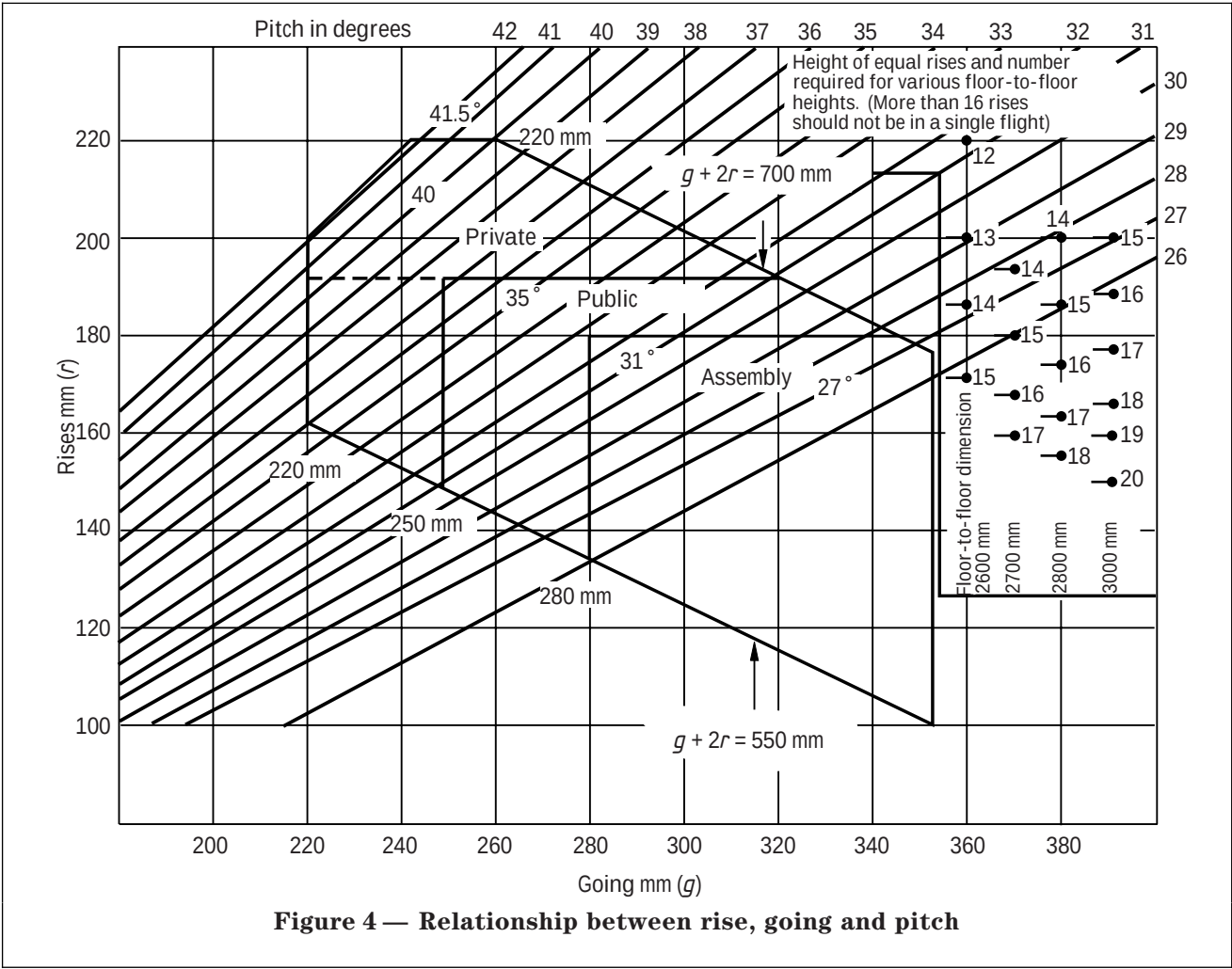


Figure 4 — Relationship between rise, going and pitch

7.6 Pitch

Within limits, the flatter the pitch, the safer is the stair to use. It is especially important to take this into account when designing stairs that are likely to be used frequently by people who are unfamiliar with them. The recommended pitch for assembly stairs is therefore less than that for private stairs: see Table 1.

7.7 Headroom and clearance

Except for short flights (see 7.8), headroom over stairs and landings should not be less than 2 000 mm, and there should be a clearance of at least 1 500 mm. A headroom of 2 000 mm and a pitch of 41.5° or less will always provide a clearance of at least 1 500 mm. Sufficient extra headroom and clearance should be provided for all the purposes for which the stair is designed, such as moving furniture or goods.

7.8 Headroom and clearance on short flights

Additional headroom should be provided where short flights of three or four steps occur across a corridor. There is a tendency for young persons using such a flight to jump down all the steps at once. In these circumstances, the clearance should be at least 1 800 mm (see Figure 5). A bulkhead should be incorporated in preference to a down-stand beam whenever a short flight occurs across a corridor.

7.9 Stair clear width

The stair clear width should be sufficient to enable occupants to move readily up and down, and should also allow for the movement of furniture and goods between floors. This is particularly relevant to private stairs.

Attention is drawn to requirements for the stair clear width of escape stairs specified in building regulations (see 4.2). (See also 6.7.)

7.10 Width of landing

The clear width of landings should never be less than the stair clear width, and should be sufficient to allow for the movement of furniture and equipment.

7.11 Dimensional co-ordination

7.11.1 Horizontal co-ordinating dimensions

Co-ordinating dimensions normally apply to the length, width and height of a component.

Co-ordinating dimensions should conform to BS 5578-2.

Dimensions should be determined by the functional requirements. Standard co-ordinating dimensions can then be selected as appropriate multiples of 100 mm, which is the international unit of size (module) for building construction.

All co-ordinating dimensions of a component should include the thickness of the necessary joint with other adjacent components when positioned in the building.

7.11.2 Work sizes

Figure 6 indicates the critical details that control location, within a basic space, of a timber stair serving a private dwelling. Any combination of suggested sizes for nosing, top riser and foot of flight will range between 10 mm and 70 mm. A 13-riser flight within a basic space of 2 700 mm $\times$ 900 mm allows a maximum of 34 mm for these details when the pitch is 41.5° .

Figure 7 shows a typical configuration for storey-height components with separate landings, half landings and flights.

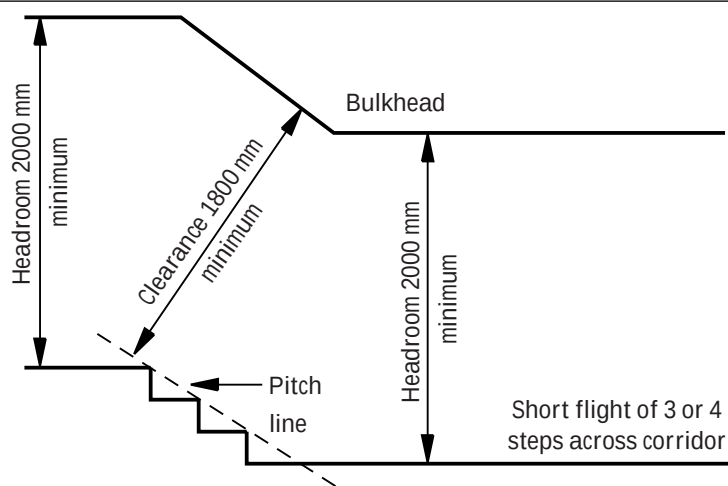


Figure 5 — Headroom and clearance on short flights

