



# JELD-WEN® STAIRS

Visit us at [www.jeld-wen.co.uk](http://www.jeld-wen.co.uk) your ultimate resource for learning about our reliable windows, doors and stairs. It has product information, sizes and specifications you need to make the best choice for a home

Available Through:



## Guide to Common Stairs



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RELIABILITY *for real life*®



# INTRODUCTION TO COMMON STAIRS

## For use in Multi-Occupancy dwellings

For use in Multi- occupancy dwellings:  
“Common Stairs” - the term used to describe any staircase used in, or for access to, a multi-occupancy building, i.e in flats for access to apartments, but also in some dwellings where entry access is shared.

These stairs are different from standard domestic flights; the load bearing characteristics of trunks and handrails are greater, and they may require fire protection.

JELD-WEN has the complete offer for your stair solution, from a proven tested range of common stairs to meet these requirements through to pre-assembly. From initial enquiry through to site delivery, JELD-WEN’s national sales and technical teams, offering site measuring, are supported by a dedicated sales office with bespoke design services

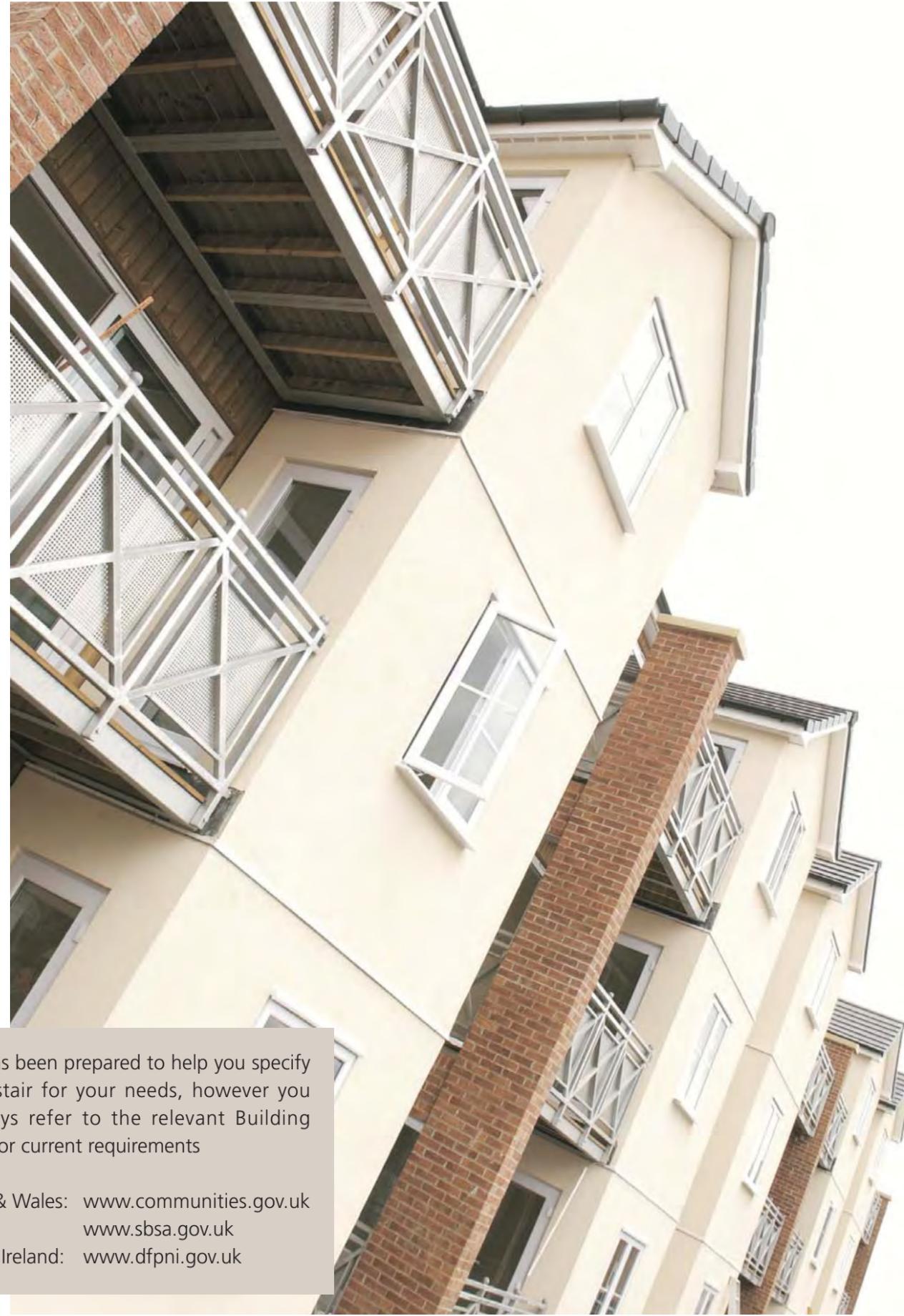
Where the build programme determines particular requirements, in areas such as handling or installation, for example for Off-Site Manufacturing or other Modern Methods of Construction (MMC), JELD-WEN can develop the standard stair designs by including features such as;

- Lifting points
- Pre-assembly
- Factory finishing
- Fire Protection
- Packaging and protection
- Fixing to particular joist designs
- Shrinkage allowance for timber frame

**From initial enquiry through to delivery to site JELD-WEN has the complete offer for your stair solution.**

This guide has been prepared to help you specify the correct stair for your needs, however you should always refer to the relevant Building Regulations for current requirements

For England & Wales: [www.communities.gov.uk](http://www.communities.gov.uk)  
For Scotland: [www.sbsa.gov.uk](http://www.sbsa.gov.uk)  
For Northern Ireland: [www.dfpni.gov.uk](http://www.dfpni.gov.uk)



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More detailed information on the structural requirement for stair is available in the British Woodworking Federation’s Publication ‘The Next Step in Technical Guidance for Timber Stairs’

# TRADITIONAL

## JELD-WEN Common Stair Specification

Element	Traditional
Baluster	41 x 41 stopped chamfered - Hemlock
Newel	90 x 90 stopped chamfered - Hemlock
Intermediate Newel	90 x 90 stopped chamfered - Hemlock
String	32 x350 - Kerto-S
Tread	27mm MDF
Riser	15mm MDF
String Capping	Redwood
Handrail	Hemlock
Wall Handrail	Hemlock on brackets
Landing Nosing	MDF

### Material Specification

Other material specifications are available upon request, i.e fire protection, hardwood handrail etc.  
Please enquire by calling T: 01664 484 516

### Material Certification

We can fully ensure you meet with the requirements of FSC, Chain of Custody Certificatio, subject to material specification

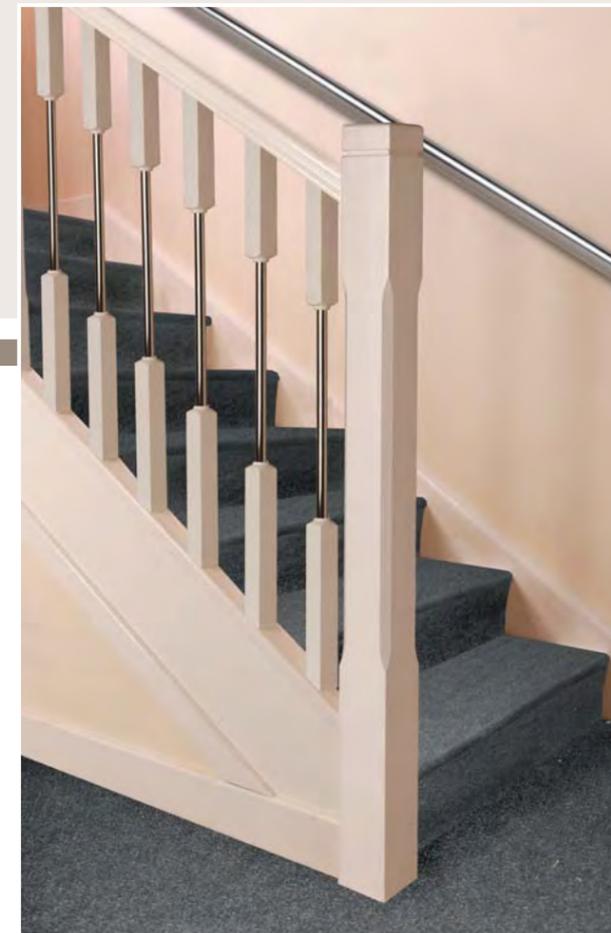
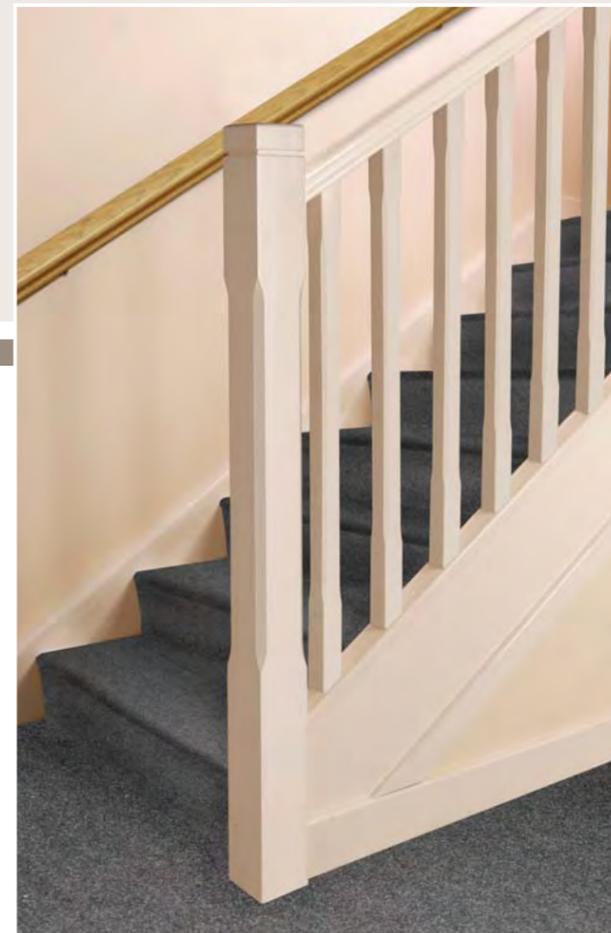


FSC CHAIN OF CUSTODY

# CONTEMPORARY

## JELD-WEN Common Stair Specification

Element	Contemporary Stopped Chamfered - Hemlock
Baluster	41 x 41 redwood bases and caps with chrome plated steel tubes
Newel	90 x 90
Intermediate Newel	90 x 90 redwood bases and caps with chrome plated steel tubes
String	32 x350 - Kerto-S
Tread	27mm MDF
Riser	15mm MDF
String Capping	Redwood
Handrail	Hemlock
Wall Handrail	50mm Chrome tubular handrail & brackets
Landing Nosing	MDF



### Intermediate Newels



images depicted show both chrome and timber handrails



# COMMON STAIRS AS MEANS OF ESCAPE IN THE EVENT OF FIRE

**JELD-WEN Common Stairs;**  
 In an emergency (for example during a fire evacuation of a building) the staircase accessing several flats or apartments may have to withstand substantially greater loads than in normal single occupancy domestic dwelling. The safety of the occupants may depend on the performance of the staircase.

Building Regulations and standards require a common stair to be structurally stronger and more robust than a domestic flight. JELD-WEN common stairs are tested to these higher loading requirements and meet both the loading and 'factor of safety' levels specified. The British Woodworking Federation's publication 'The Next Step in Technical Guidance for Timber Stars' contains more details of these requirements.

Over the following pages JELD-WEN have summarised many of the key factors that need to be considered when specifying and designing common flights

It is recommended that the fire precautions incorporated into any proposed building works meet the requirements of all the authorities that may be involved in the enforcement of fire safety legislation, and that consultation with those authorities takes place in conjunction with the Building Regulation approval.

It is often appropriate to take into account a range of fire safety features and to set these against an assessment of the hazard and risk peculiar to a particular building:

- The anticipated probability of a fire occurring.
- The anticipated fire severity
- The ability of the structure to resist the spread of fire smoke.
- The consequential danger to people in (and around) the building

A wide variety of measures could be considered and incorporated as appropriate:

- The adequacy of means to prevent fire.
- Early warning by fire detection systems
- The standard of means of escape
- Provision of smoke control
- Control of the rate of growth of the fire
- The adequacy of the structure to resist the effects of a fire
- The degree of fire containment

In the design of a building reliance should not be placed on external rescue by the fire services. In an emergency occupants of any part of the building should be able to escape without external assistance.

Fires do not normally start in two different places in a building at the same time. Initially a fire will create a hazard only in the part in which it starts and it is unlikely, at this stage, to involve a large area. The risk of a fire originating accidentally in circulation areas, such as corridors, lobbies or stairways, is limited, provided that the combustible content of such areas is restricted.

There is always the possibility of the path of a single escape route being rendered impassable by fire, smoke or fumes and ideally, people should be able to turn their backs on a fire wherever it occurs and travel away from it to a final exit or protected escape route leading to a place of safety.

Protected Stairways are designed to provide virtually "fire sterile" areas that lead to places of safety outside the building. Once inside a protected stairway, a person can be considered to be safe from immediate danger from flame and smoke. It is assumed that the building will be appropriately managed but the stairways need to be designed to discourage the accumulation of unmanaged storage or rubbish. Rubbish is likely to accumulate at ground floor and so the layout of the stairway at this level should be such as to reduce the extent of "common" area. Unused areas should be removed for example open access under a flight.

Landings should be kept clear. This will also reduce the possibility that escape routes become impassable due to storage of items such as bicycles. Access into the common areas should be restricted. This can be achieved by having suitable security or the common entrance doors. (But consideration should be given to egress in the event of a fire)

FIG 1. ESCAPE IN ONE DIRECTION ONLY

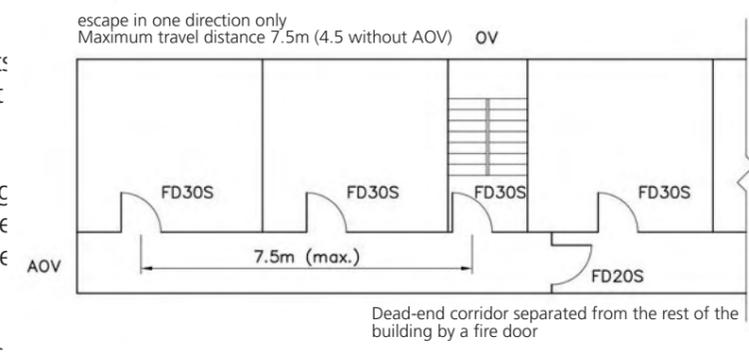


FIG 2. EXTERNAL PROTECTION TO PROTECTED STAIRWAYS

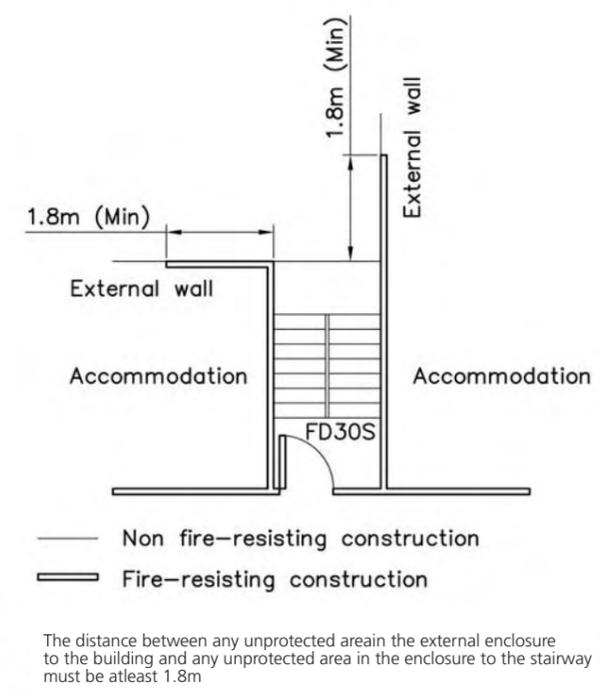
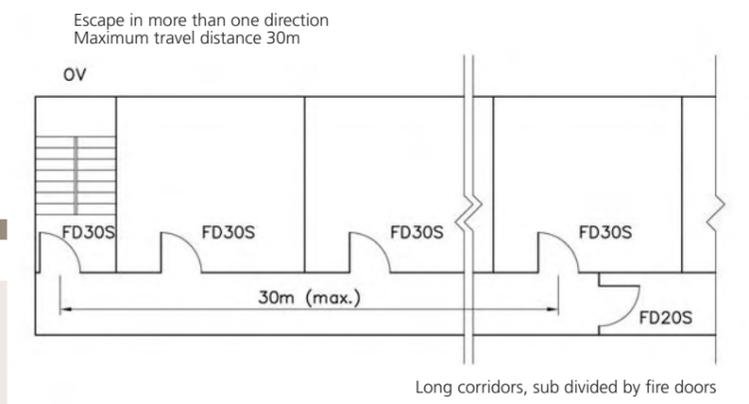


FIG 3. ESCAPE IN MORE THAN ONE DIRECTION



## Single escape route

A single escape route from the dwelling entrance door is acceptable if:

- the dwelling is situated in a storey served by a single common stair and every dwelling is separated from the common stair by a protected lobby or common corridor ventilated by an AOV and the travel distance from the dwelling entrance door to the common stair is not more than 7.5m.
- the dwelling is situated in a dead end part of a common corridor, ventilated by an AOV and served by two (or more) stairs, and the travel distance from the dwelling entrance door to the common stair is not more than 7.5m.
- the dwelling is within a small single stair building then the AOV to the common lobby or corridor can be omitted but the travel distance from the dwelling entrance door to the common stair must not be more than 4.5m.

A small single stair building is one where

- the top floor of the building is not more than 11m above ground level; and
  - there are no more than three storeys above ground level storey;
  - the stair does not connect to a covered car park, except if the car park is open sided and
  - the stair does not serve ancillary accommodation unless
- the storey containing the ancillary accommodation does not contain any dwellings, and
  - the ancillary accommodation is separated from the stair by a protected lobby, or protected corridor, which has not less than 0.4m<sup>2</sup> permanent ventilation or is protected from the ingress of smoke by a mechanical smoke control system.

# FIRE PROTECTION

## Basement Stairs

If an escape stair forms part of the only escape route from an upper storey of a building (or part of a building), which is not a small building (see above) it should not be continued down to serve any basement storey. A separate stair should serve the basement.

If there is more than one escape stair from an upper storey of a building (or part of a building) only one of the stairs serving the upper storeys of the building (or part) need be terminated at ground level. Other stairs may connect with the basement storey(s) if there is a protected lobby, or a protected corridor between the stair(s) and accommodation at each basement level.

## Number of Common Stairs

A single common stair can be acceptable in some cases (see above), but otherwise there should be access to more than one common stair for escape purposes.

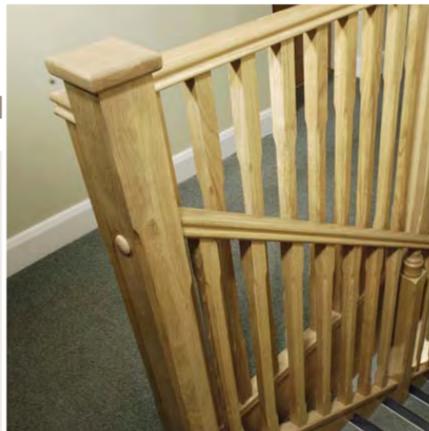
## Width of Common Stairs

A stair of acceptable width for everyday use will be sufficient for escape purposes, but if it is also a fire-fighting stair, it should be at least 1100mm wide.

## Protection of Common Stairs, General

Common stairs need to have a satisfactory standard of fire protection if they are to fulfil their role as areas of relative safety during a fire evacuation.

Stairs provide a potential route for fire spread from floor to floor. To inhibit internal fire spread common stairs should be contained in an enclosure.



## Enclosure of Common Stairs

Every common stair should be situated within a fire-resisting enclosure (i.e. it should be a protected stairway), to reduce the risk of smoke and heat making use of the stair hazardous.

## Exits from protected stairways

Every protected stairway should discharge:

- a, directly to a final exit; or
- b, by way of a protected exit passageway to a final exit.

## Separation of adjoining protected stairways

Where two protected stairways (or exit passageways leading to different final exits) are adjacent, they should be separated by an imperforate enclosure.

## Use of space within protected stairways

A protected stairway needs to be relatively free from potential sources of fire. Consequently, it should not be used for anything else, except a lift well or electricity metre(s).

## External walls of protected stairways

With some configurations of external wall, a fire in one part of a building could subject the external wall of a protected stairway to heat (Fig 2). If the external wall of the protected stairway has little fire resistance, there is a risk that this could prevent the safe use of the stair. Therefore, if;

- a, a protected stairway projects beyond, or is recessed from, or is in an internal angle of, the adjoining external wall of the building; then
- b, the distance between any unprotected area in the external enclosures to the building and any unprotected area in the enclosure to the stairway should be at least 1800mm

## Stairs serving accommodation ancillary to flats and maisonettes

Except in small single stair buildings where a common stair forms part of the only escape route from a dwelling it should not also serve any covered car park, boiler room, fuel storage space or other ancillary accommodation of similar fire risk on the same storey as that dwelling.

Any common stair that does not form part of the only escape route from a dwelling may also serve ancillary accommodation if it is separated from the ancillary accommodation by a protected lobby or a protected corridor.

If the stair serves an enclosed car park or place of special fire hazard, the lobby or corridor should have not less than 0.4m<sup>2</sup> permanent ventilation or be protected from the ingress of smoke by a mechanical control system.

## Dwellings in mixed use buildings

In buildings with not more than 3 storeys above the ground storey, stairs may serve both dwellings and other occupancies, provided that the stairs are separated from each occupancy by protected lobbies at all levels.

In buildings with more than 3 storeys above the ground storey, stairs may serve both dwellings and other occupancies provided that;

- a, the dwelling is ancillary to the main use of the building and is provided with an independent alternative escape route;
- b, the stair is separated from any other occupancies on the lower storeys by protected lobbies (at those storey levels).

Note: The stair enclosure should have at least the same standard of fire resistance as stipulated in Building Regulations for the elements of the structure of the building.

- c, any automatic fire detection and alarm system with which the main part of the building is fitted also covers the dwelling;
- d, any security measures should not prevent escape at all material times.

## Construction of escape stairs

The flights and landings of every escape stair should be constructed of materials of limited combustibility:

- a, If it is the only stair serving the building, or part of the building, unless the building is of two or three storeys and contains flats or maisonettes (purpose group 1a) or administrative offices (purpose group 3);

- b, If it is within a basement storey (this does not apply to a private stair in a maisonette);
- c, if it serves any storey having a floor level more than 18m above ground or access level.

**Note:** In satisfying the above conditions combustible materials may be added to the upper surface of these stairs (except in the case of fire fighting stairs).

## Fire protection

Where required, common stairs are treated with Envirograph ES/UFR Fire Retardant Coating System

## Testing

Timber substrates coated with ES/UFR basecoat have been tested by Wiratec, WIRA Testing Centre and achieved the following:

BS 476: Part 6: 1989, Class O for Fire propagation

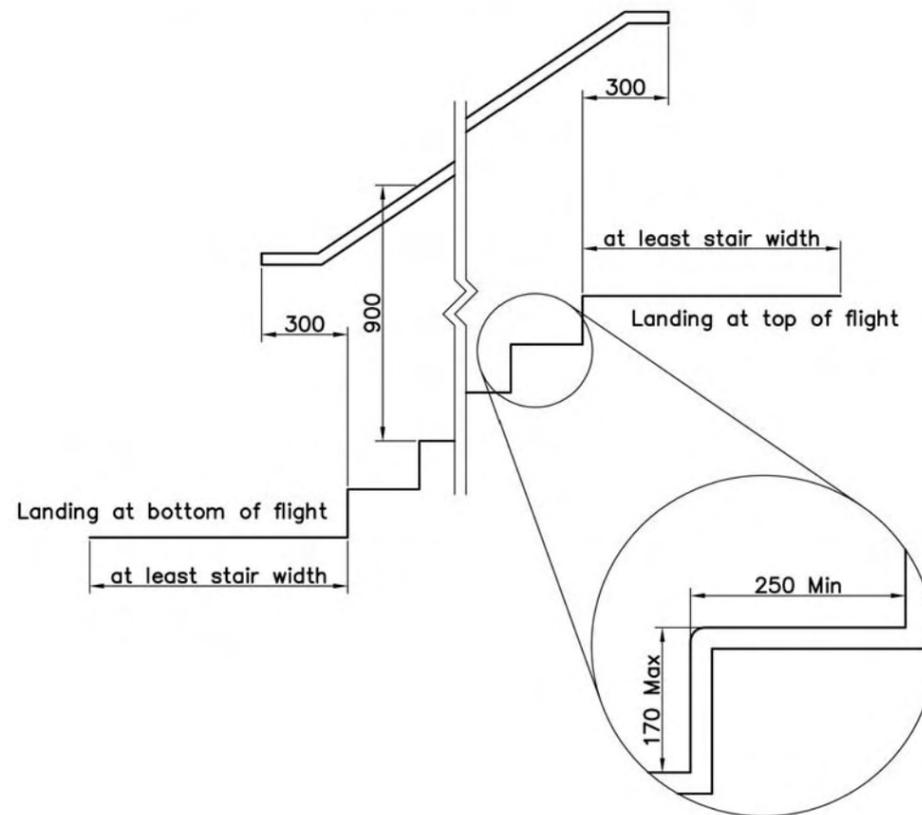
BS 476: Part 7: 1987, Class I for surface spread of flame

Test No,s 27165/03/01 and 27723/07/01 apply.



- A building containing flats in which a passenger lift is not installed should be provided with a stair that has;
- A. all nosings distinguishable through contrasting brightness
  - B. steps with "anti-trip" nosing
  - C. Uniform going of each step not less than 250mm
  - D. Uniform rise of each step not more than 170mm
  - E. a continuous handrail on each side of flights and landings extending 300 mm beyond the upper and lower steps.

FIG 4. COMMON STAIRS SUITABLE FOR AMBULANT DISABLED PEOPLE



**Landings**

Landings should be provided at the top and bottom of every flight. The width and length of every landing should at least be as great as smallest width of the flight. The landing may include part of the floor of the building.

To afford safe passage landings should be clear of permanent obstruction. A door may swing across a landing at the bottom of a flight but only if it will leave a clear space of at least 400mm across the full width of the flight.



**Handrails for stairs**

Stairs should have a handrail on one side if they are less than 1m wide. They should have a handrail on both sides if they are wider. Handrails should be provided beside the two bottom steps where stairs are intended to be used by people with disabilities (AD M)

In all buildings handrail heights should be between 900mm and 1000mm measured to the top of the handrail from the pitch line or floor.

**Guarding for stairs**

Flights and landings should be guarded at the sides.

- A in buildings other than dwellings where there are two or more risers.

Except on stairs in a building which is not likely to be used by children under 5 years the guarding to a flight should prevent children being held fast by the guarding. The construction should be such that;

- A. a 100mm sphere cannot pass through any openings in the guarding and
- B children will not readily be able to climb the guarding.

# GUARDING FOR STAIRS

Guarding should be at least 900mm high for flights and otherwise at least 1100mm high. Guarding should be capable of resisting at least the horizontal force given in BS 6399: Part 1: 1996.

For further guidance on design of barriers and infill panels reference should be made to BS 6180: 1995 Code of practice for protective barriers in and about buildings.

Minimum horizontal imposed loads for parapets, barriers and balustrades etc

EXAMPLE OF SPECIFIC USE	Horizontal uniform distributed line load (kN/m)	Horizontal uniform distributed line load (kN/m)	Horizontal uniform distributed line load (kN/m)
Communal areas in blocks of flats covered by "Limited use" and flats not covered by "Limited use"	0.74	1.00	0.50

## Loading of balustrades

Minimum horizontal imposed loads appropriate to the design of balustrades should be determined in accordance with BS 6399-1:1996, clause 10, which specifies a uniformly distributed line load for the barrier and a uniformly distributed and point load applied to the infill. These are not additive and should be considered as separate load cases.

Loads for Flights & Landings

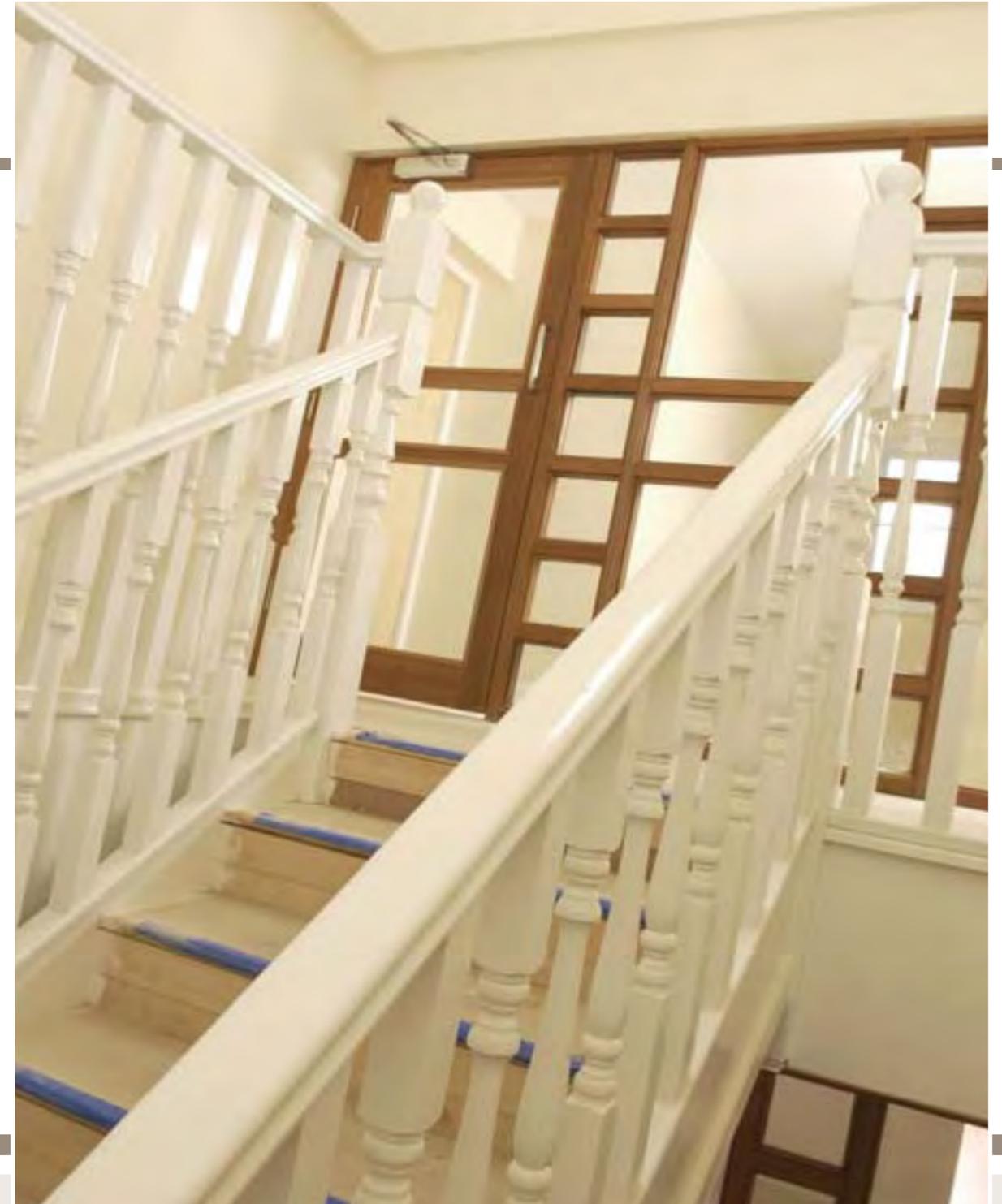
Example of specific	Uniformly distributed use (kN/m)	Concentrated load (kN/m)
Communal areas in blocks of flats covered by "Limited use"	1.5	1.40
Communal areas in blocks of flats not covered by "Limited use"	3	4.00

## Deflection of balustrades

Barriers for the protection of people should be of adequate strength and stiffness to sustain the applied loads given in BS 6399-1: 1996 (see above), without permanent deflection or distortion. In addition a barrier that is structurally safe

should not possess sufficient flexibility to alarm building users when subject to normal service conditions. Therefore, for serviceability considerations, the limiting condition for deflection appropriate for a barrier for the protection of people is that the

total horizontal displacement of the barrier at any point from its original unloaded position should not exceed the deflection limits determined from the relevant structural design code for the material used or 25mm, whichever is the smaller.



# RESISTANCE TO THE PASSAGE OF SOUND

# GLOSSARY

## Protection against sound from other parts of the building and adjoining buildings.

Where a common stair performs a separating function between a common area and a dwelling the stair, and flanking construction, need to be constructed in such a way that it provides the minimum levels of resistance to the passage of sound given below. A higher level of sound insulation may be required depending on the noise generated in the common areas. Specialist advice may be needed to determine the appropriate level.

	PURPOSE BUILT FLATS	FLATS FORMED BY MATERIAL CHANGE OF USE
Airbourne sound insulation DnTw + Ctr dB (minimum value)	45	43
Impact sound insulation L'nTw dB (maximum value)	62	64

A typical installation is shown right. The resistance to airbourne sound depends mainly on the mass of the stair, the mass and isolation of any independent ceiling and the airtightness of any cupboard or enclosure under the stairs. The stair covering reduces impact sound.

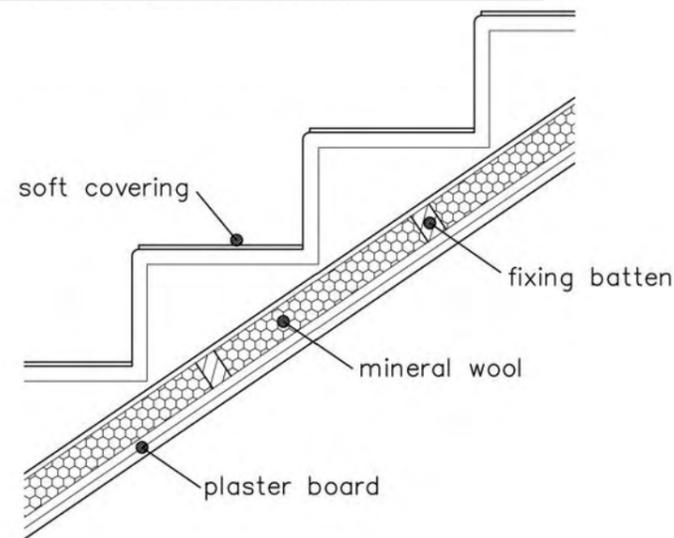
Any construction will need to be subject to pre-completion testing to determine the level of performance and to show compliance with Requirement E1.

## Reverberation in the common internal parts of buildings containing flats or rooms for residential purposes.

Common internal parts of buildings that contain flats need to be constructed in such a way as to prevent unreasonable levels of reverberation. A method of achieving this is to apply appropriate amounts of sound absorbing material, rated in accordance with BS EN ISO 11654:1997, in areas such as the underside of intermediate landings, the underside of other landings and the ceiling area of the top floor. This may be done by the use of proprietary acoustic ceilings. However, the absorptive material can be applied to any surface that faces into the space.



FIG 5. STAIR COVERING AND INDEPENDENT CEILING WITH SOUND ABSORBING MATERIAL



### Common Stair

An escape stair serving more than one flat or maisonette.

### Dwelling

A unit of residential accommodation occupied (whether or not as a sole or main residence):

- A, by a single person or by people living together as a family; or
- B. by not more than 6 residents living together as a single household, including a household where care is provided by residents.

### Protected Stairway

A stair discharging through a final exit to a place of safety (including any exit passageway between the foot of the stair and the final exit) and is adequately enclosed with fire resisting construction.

### Limited Use

Communal areas in blocks of flats with limited use refers to blocks of flats not more than three storeys in height and with not more than four self-contained single family dwelling units per floor accessible from one staircase.