MEANS OF ESCAPE FROM FIRE, FACILITIES FOR FIRE-FIGHTING AND MEANS OF WARNING OF FIRE
## INTRODUCTION

## REGULATION 13

Means of escape from fire, facilities for fire-fighting and means of warning of fire

### THE STANDARDS

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* As amended December 1999.
PROVISIONS DEEMED TO SATISFY THE STANDARDS

(E2.4)(E5.11) Revolving door, sliding door or automatic door
(E2.11)(E2.12) Automatic opening ventilators
(E2.14) Fire detection and alarm system
(E2.17)(E3.2) Emergency escape windows
(E5.11) Fixed ladders
(E5.19)(E5.20) Doors across escape routes
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(E8.6) Mattress evacuation stairs
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(E10.1) Access
(E10.4)(E10.9) Fire-fighting shafts
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(E11.3) Automatic fire detection in enclosed shopping centres with malls

ASTERISKS
Throughout the Technical Standards an asterisk against a standard denotes that a provision deemed to satisfy the standard or some aspect of the standard is specified at the end of the relevant Part.

ITALICS
Throughout the Technical Standards a term in italics is a defined term. The definition is listed in Part A, General.
1. The intention of this Part is to provide all users of a building with adequate means of escape from fire. It also requires the provision of certain fixed fire-fighting equipment, means of access for fire-fighting, and means of warning of fire in a dwelling, residential accommodation and enclosed shopping centres.

2. The intention of the requirements for means of escape is that everyone within a building may reach either a place of safety or, in certain circumstances, a protected zone within a reasonable travel distance. The requirements for the number and width of exits assume a unit width of 530 mm per person and a rate of discharge of 40 persons per minute. The number of escape routes is determined by:
   a. the purpose group of the building;
   b. the occupancy capacity served;
   c. the height of a storey above ground or its depth below ground; and
   d. the travel distance involved.

3. A building must be planned so that:
   a. every escape route leads to a place of safety;
   b. every escape stair which forms part of an escape route, except an escape stair from a gallery, is protected from fire, from smoke and hot gases which might obscure or obstruct the escape route and, in higher buildings, from the effects of weather;
   c. provision is made within a protected zone for a refuge for wheelchair users; and
   d. within those parts of a building where people are at greatest risk the layout of the building is such as to limit that risk to the utmost practical extent.

4. Suitable provision must be made for access to the outside of a building for fire-fighting and rescue vehicles from a public road. A water supply installation must be available and, in the case of high buildings, suitable provision must be made for fire-fighting within the building.

5. The requirements to provide early means of warning of fire in a dwelling, residential accommodation and enclosed shopping centres increase significantly the level of safety of the occupants.

6. Standards are included which make specific provision for the fire safety of hospitals. However within the Technical Standards it is not possible to cover all aspects of fire safety relevant to hospitals. Fire safety is also dependent upon the way a building is furnished, staffed and managed. Designers of hospitals and other healthcare buildings will need to make reference to the full suite of documents that comprise “NHS in Scotland Firecode”.

7. There are requirements to provide fire exit signs and directional signs in various other regulations, in particular the Fire Precautions (Workplace) Regulations 1997 (as amended) and the Health and Safety (Safety signs and signals) Regulations 1996. Advice on fire safety signs is given in an HSE publication: “Safety Signs and Signals: Guidance on Regulations.”
Regulation 13

Means of escape from fire, facilities for fire-fighting and means of warning of fire

13. (1) Every building shall be provided with -

   (a) adequate means of escape in the event of fire; and

   (b) adequate fire-fighting facilities.

(1A) Every dwelling, all residential accommodation, and all enclosed shopping centres shall be provided with means of warning the occupants of an outbreak of fire.

(2) This regulation shall not be subject to specification in a notice served under section 11 of the Act in respect of -

   (a) buildings of purpose sub-groups 1B and 1C; and

   (b) buildings to which the Fire Certificates (Special Premises) Regulations 1976(a) apply.

The Standards

E1 Application of Part E

E1.1 This Part sets out the required standards for Regulation 13.

E1.2 The standards apply to all buildings as follows -

*Purpose sub-group* 1A: E2, E9, E10 & E11

*Purpose sub-groups* 1B and 1C: E3, E10 and E11

*Purpose groups* 2 to 7: E4 to E11.

E1.3 For the purposes of this Part a *flat or maisonette* entered only from the open air at ground level and with no storey at a height of more than 4.5 m shall be regarded as a *building of purpose sub-group* 1C; where a *maisonette* entered only from the open air at ground level has a storey at a height of more than 4.5 m it shall be regarded as a *building of purpose sub-group* 1B.

E1.4 For the purposes of this Part a roof, an external balcony, or an enclosed courtyard open to the external air to which there is access for a purpose other than the maintenance of the *building*, shall be regarded as a *room*, except -

where the area of the roof, the external balcony or the enclosed courtyard is not more than 8m².

E2 Means of escape from fire in a *building of purpose sub-group* 1a (flats and maisonsettes)

**ESCAPE ROUTES**

E2.1 There must be at least one *escape route* from -

a. the main entrance door of every *flat or maisonette*; and

b. the door of every communal *room*; and

c. from every plant room.

E2.2 An *escape route* must lead to a *place of safety* or an *access deck* -

a. directly; or

b. by way of a *protected zone*; or

c. by way of an *access deck* or access balcony; or

d. by way of an *exit* to an external *escape stair* (see E2.8); or

e. by way of a *flat roof*, but only where -

i. there is more than 1 *escape route* from the *storey*, and

ii. there are no exhausts of any kind less than 2 m from the *escape route*, and
iii. there is a wall or protective barrier at least 1.1 m high on each side of the escape route.

**E2.3** An escape route must have a clear headroom of at least 2 m, except -

in a doorway it may be reduced to not less than 1.9 m.

**E2.4** An escape route must not be by way of -

a. a lift; or

b. a passenger conveyor; or

c. a turnstile; or

d. a shutter; or

e. a revolving door, an automatic sliding door or an automatic door, other than one of suitable design and construction; or

f. a sliding door, other than one to which the public does not have access; or

g. a fixed ladder, other than a suitable fixed ladder providing access to a plant room other than a place of special fire risk which is normally unoccupied except for maintenance purposes.

**E2.5** Where a door across an escape route has to be secured against entry when the building is occupied it must be fitted only with a lock or fastening which is readily operated, without a key, from the side approached by people making an escape, and have a notice, on the inside, explaining the operation of the opening device.

**E2.6** Solid waste storage accommodation must not communicate directly with any escape route.

**E2.7** A communal room with an occupancy capacity of more than 60 must have -

a. exits in accordance with E4.1 to E4.4; and

b. escape routes with a width in accordance with E5.13 to E5.18 and E6.1.

**ESCAPE STAIRS**

**E2.8** An escape stair must be within a protected zone (see D11.1) which encloses no other room, except -

an external escape stair which has a total rise of not more than 6 m and leads directly to a place of safety.

**E2.9** A protected zone enclosing an escape stair must be provided with an unobstructed clear wheelchair space measuring not less than 700 mm x 1200 mm on every escape stair landing to which there is access from a storey, except -

a. a storey which has level or ramped access to a place of safety; or

b. a storey which is inaccessible to wheelchair users.
E2.10 Where an escape stair also serves a basement storey the protected zone enclosing the escape stair in the basement storey must be separated from the protected zone containing the escape stair serving the rest of the building by a wall or screen, with or without a door, at ground storey floor level having at least the level of fire safety performance of the protected zone (see D11.1).

E2.11* There must be a protected lobby (see D11.2) with suitable automatic opening ventilators, at each storey within the protected zone between the escape stair and the accommodation, including a parking garage and any other accommodation ancillary to the dwellings (see Diagram 1 to E2.11), except:

a. in relation to flats and maisonettes entered from an open access balcony or access deck having an opening or openings to the external air extending over at least four-fifths of its length and at least one-third of its height; or

b. where no storey is at a height of more than 7.5 m and there are not more than 4 dwellings on each storey and not more than 8 dwellings in total served by the escape stair and each dwelling has within it a protected enclosure (see D11.3) (see Diagram 2 to E2.11); or

c. at the topmost storey; or

d. where there are more than one escape stairs serving each dwelling.

Diagram 1 to E2.11: Single stair access to flats and maisonettes (any height)
Diagram 2 to E2.11: Single stair access to flats and maisonettes not more than 7.5 m above ground

Storey at a height of not more than 7.5 m with not more than 4 dwellings per storey and not more than 8 dwellings in total: no protected lobby required.

E2.12* Where a building has more than one escape stair and where a corridor or part of a corridor provides escape in only one direction, suitable automatic opening ventilators must be provided in that part of the corridor which provides single direction escape.

E2.13 Where an open access balcony or access deck is more than 2 m wide, any soffit above it must have a downstand on the line of separation between each dwelling extending the full width of the access balcony or access deck at 90 degrees to the face of the building and extending at least 300 mm below any beam or downstand parallel to the face of the building.

Note:
For this purpose an access balcony is to be regarded as open where it has an opening or openings to the external air extending over at least four-fifths of its length and at least one-third of its height.

E2.14* An escape stair must not communicate with any accommodation which is of a different purpose group, except:

a. in a building with no storey at a height of more than 7.5 m and with not more than 1 escape stair, or in a building with more than 1 escape stair, 1 escape stair may serve both flats or maisonettes and other accommodation provided that the escape stair is separated from each occupancy in a different purpose group by a protected lobby (see D11.2); or

b. any escape stair which serves a flat or maisonette which is ancillary to the main use of the building may communicate with the other accommodation provided that:

i. the escape stair is separated from the other accommodation by a protected lobby (see D11.2), and

ii. an alternative exit is available from the flat or maisonette, and

iii. the building has a suitably installed automatic fire detection and alarm system protecting the flat or maisonette.

Note:
In this context ‘ancillary’ includes caretakers’, directors’, supervisors’ and similar flats or maisonettes.
TRAVEL DISTANCE

E2.15 Travel distance from a flat or maisonette, a communal room, or a plant room is the distance, measured along the shortest route of escape from the main entrance door to the nearest protected door or place of safety, and must comply with the table to this standard -

Table to E2.15: Maximum travel distance in a building of purpose sub-group 1A related to available directions of travel

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<th>Maximum travel distance (m)</th>
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<tr>
<td></td>
<td>One direction of travel</td>
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<tr>
<td>a storey at a height of not more than 7.5 m</td>
<td>7.5 [1]</td>
</tr>
<tr>
<td>a storey at a height of more than 7.5 m</td>
<td>7.5 [2]</td>
</tr>
<tr>
<td>a storey at any height with an access deck or open access balcony serving the dwellings</td>
<td>40 [1]</td>
</tr>
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Notes:
1. Unlimited where a dwelling on the storey has an alternative exit.
2. 32 m where a dwelling on the storey has an alternative exit.

INNER ROOMS

E2.16 An apartment in a storey at a height of more than 4.5 m, or in a basement storey, must not be an inner room, except -

an apartment in a basement storey with an emergency escape window (see E2.17) providing access to the external air, from which there is access to a place of safety at ground level.

ESCAPE WINDOWS

E2.17* A suitably designed and located emergency escape window must be provided in every apartment -

a. in an upper storey at a height of not more than 4.5 m; or
b. which is an inner room, except -

where there are alternative routes from the apartment to circulation areas or other rooms.

BASEMENTS

E2.18 A basement storey which contains an apartment must be provided with either –

a. an alternative exit from the basement storey, which may provide access to the external air (below the adjoining ground) from which there is access to a place of safety at ground level, or
b. a suitably designed and located escape window in every basement apartment.

E2.19 Where a private stair serves a basement storey, the private stair must be in a protected enclosure (see D11.3).

FLATS OR MAISONETTES AT A STOREY HEIGHT OF MORE THAN 4.5 m

E2.20 A flat at a storey height of more than 4.5 m which is entered at the same level as the accommodation must be planned so that -

a. an alternative exit is provided; or
E2.20 – E2.24

b. all apartments are entered directly from a protected enclosure (see D11.3) and the distance to be travelled from any door of an apartment to the exit is not more than 9 m; or

c. the distance to be travelled from any point within the flat to the exit is not more than 9 m and the direction of travel is away from cooking facilities; or

d. sleeping accommodation, and that part of the circulation area which serves the sleeping accommodation and the exit to the flat, is separated from any other apartment and kitchen by a construction with a level of fire safety performance equivalent to that of a protected enclosure (see D11.3); and where that flat has a storey at a height of more than 7.5 m and the distance to be travelled within the flat from any point to the exit is more than 15 m, there is an alternative exit from the living accommodation.

E2.21 A flat at a storey height of more than 4.5 m which is entered from a storey below the level of the accommodation must be planned so that -

a. an alternative exit is provided; or

b. all apartments are entered directly from a protected enclosure (see D11.3) and the distance to be travelled from any door of an apartment to the head of the private stair is not more than 9 m; or

c. the distance to be travelled from any point within the flat to the head of the private stair is not more than 9 m, and the direction of travel is away from cooking facilities.

E2.22 A flat at a storey height of more than 4.5 m which is entered from a storey above the level of the accommodation must be planned so that an alternative exit is provided from the lower storey.

E2.23 A maisonette with 1 or more storeys at a height of more than 4.5 m must be planned that -

a. all apartments are entered directly from a protected enclosure (see D11.3); and

b. where any storey is at a height of more than 7.5 m there is -

i. an alternative exit from each storey other than the entrance storey, or

ii. an alternative exit from each room intended for sleeping accommodation.

Note: For basement accommodation see E2.16 and E2.18.

E2.24 Where a flat or maisonette has a storey at a height of more than 4.5 m or has a basement storey and is provided with a system of ducted warm air heating -

a. transfer grilles must not be fitted between any room and the entrance hall or stair; and

b. supply and return grilles must be not more than 450 mm above floor level; and

c. where warm air is ducted to an entrance hall or stair, the return air must be ducted back to the heater; and

d. where a duct passes through any wall, floor, or ceiling of an entrance hall or stair, all joints between the duct and the surrounding construction must be sealed; and
e. there must be a room thermostat in the living room, at a height more than 1370 mm and not more than 1830 mm, with an automatic control which will turn off the heater, and any circulation fan should the ambient temperature rise to more than 35°C; and

f. where the system recirculates air, smoke detectors must be provided in every extract duct to cause the recirculation of air to stop and direct all extract air to the outside of the building in the event of fire.

E3 Means of escape in a building of purpose sub-group 1b and 1c (houses)

INNER ROOMS

E3.1 An apartment in a storey at a height of more than 4.5 m, or in a basement storey, must not be an inner room, except -

an apartment in a basement storey with an emergency escape window (see E3.2) providing access to the external air, from which there is access to a place of safety at ground level.

ESCAPE WINDOWS

E3.2+ A suitably designed and located emergency escape window must be provided in every apartment -

a. in an upper storey at a height of not more than 4.5 m; or

b. which is an inner room, except -

where there are alternative routes from the apartment to circulation areas or other rooms.

BASEMENTS

E3.3 A basement storey which contains an apartment must be provided with either -

a. an alternative exit from the basement storey, which may provide access to the external air (below the adjoining ground) from which there is access to a place of safety at ground level, or

b. a suitably designed and located escape window in every basement apartment.

HOUSES OF PURPOSE SUB-GROUP 1B

E3.4 In a house of purpose sub-group 1B, every stair must be in a protected enclosure (see D11.3), except -

a stair in a house with a storey at a height exceeding 4.5 m by 1 storey which does not contain an apartment or kitchen.

E3.5 In a house of purpose sub-group 1B, every storey at a height of more than 7.5 m must have an alternative exit.

E3.6 In a house of purpose sub-group 1B, where the private stair also serves a basement storey, the protected enclosure (see D11.3) serving the basement storey must be separated from the protected enclosure serving the remainder of the house.
E3.7 – E4.3

E3.7 Where the alternative exit provided in accordance with E3.5 is by way of a flat roof, there must be -

a. no exhausts of any kind less than 2 m from the route across the roof; and

b. a wall or protective barrier at least 1.1 m high on each side of the route across the roof.

E4 Means of escape from fire in a building of purpose groups 2-7 (exits and escape routes)

PRINCIPLES

E4.1 The minimum number of exits from a room, storey, gallery, catwalk or openwork floor in relation to occupancy capacity must be in accordance with the table to this standard; and

a. the minimum number of exits from a room not being a whole storey, shall be determined in relation to the occupancy capacity of the room; and

b. the minimum number of exits from a storey shall be determined in relation to the occupancy capacity of the storey.

Table to E4.1: Minimum number of exits in relation to occupancy capacity

<table>
<thead>
<tr>
<th>Occupancy capacity of room, storey, gallery, catwalk or openwork floor</th>
<th>Minimum number of exits from a room, gallery, catwalk or openwork floor</th>
<th>Minimum number of exits from a storey</th>
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</thead>
<tbody>
<tr>
<td>Not more than 60</td>
<td>1</td>
<td>2 [1,2]</td>
</tr>
<tr>
<td>61-600</td>
<td>2</td>
<td>2 [3]</td>
</tr>
<tr>
<td>More than 600</td>
<td>3</td>
<td>3 [4,5]</td>
</tr>
</tbody>
</table>

Notes:
1. Only one exit is required from the ground storey or an upper storey at a height of not more than 7.5 m, in a building of purpose sub-group 2B or purpose groups 3-7.
2. Only 1 exit is required from a basement storey at a depth of not more than 4.5 m which is not intended for use by members of the public other than for access to sanitary accommodation.
3. In a hospital any storey with more than 100 patient beds must have at least 3 exits.
4. In a hospital any storey with more than 200 patient beds must have at least of 4 exits.
5. In a hospital any storey with more than 300 patient beds must have at least of 5 exits.

INDEPENDENCE OF ESCAPE ROUTES

E4.2 Every escape route from a room or storey must be independent of any other escape route from that room or storey, and where more than 1 escape route is required they must provide alternative directions of escape in accordance with E5.7.

E4.3 Where more than 1 exit is required from a storey or room, access from any point within the storey or room must be provided to not less than 2 exits from the storey or room, except -

a. from a room on the ground storey of a building which room is required to have only 1 exit and from which room the travel distance to the nearest exit giving direct access to a place of safety complies with E5.1 as to the maximum travel distance related to 1 direction of travel from any point within the storey;

b. exits from a room with an occupancy capacity of not more than 100 may be to an unprotected zone which provides escape in 2 directions as required by E5.7;

c. from a room permitted inside the protected zone enclosing an escape stair (see E6.8).
**E4.4** Where 2 or more escape stairs in protected zones are required from a storey or room, it must be possible to reach at least 2 such protected zones without passing through either of them, or any such protected zone or any place of special fire risk.

**E4.5** Where a separated stage and stage area in a building containing an auditorium is equipped with a safety curtain any escape route from that part of the stage behind the curtain must be independent of that from the auditorium (see D11.13, D11.14, D11.15).

**E5** Means of escape from fire in a building of purpose groups 2-7 (design for horizontal escape)

### TRAVEL DISTANCE

**E5.1** The maximum travel distances for a building or part of a building related to available directions of travel, measured in accordance with E5.2, are given in the table to this standard.

<table>
<thead>
<tr>
<th>Purpose group or purpose sub-group</th>
<th>Situation</th>
<th>Maximum travel distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>One direction of travel</td>
</tr>
<tr>
<td>2A (institutional)</td>
<td>a. generally (including hospitals)</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>b. residential care buildings (e.g. nursing homes, and residential schools for disabled children)</td>
<td>9</td>
</tr>
<tr>
<td>2B (other residential, including shared residential accommodation)</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>3 (offices)</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>4 (shops and commercial)</td>
<td>a. generally</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>b. from any part of the mall of an enclosed shopping centre (except those with a mall on three or more storeys)</td>
<td>9</td>
</tr>
<tr>
<td>5 (assembly)</td>
<td>a. generally</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>b. buildings primarily for disabled people or people with learning difficulties, and swimming pools in air supported structures</td>
<td>9</td>
</tr>
<tr>
<td>6 (industrial)</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>7A (high hazard storage)</td>
<td>a. generally</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>b. bonded warehouses containing spirituous liquor</td>
<td>18</td>
</tr>
<tr>
<td>7B (low hazard storage)</td>
<td>a. generally</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>b. silage and grain stores on farms where the material is handled primarily by mechanical plant.</td>
<td>30</td>
</tr>
<tr>
<td>7C (open sided car parks)</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>Any</td>
<td>a. from a room or auditorium with provision for fixed seating</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>b. from a rooftop plant room</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>c. within a roof top plant room</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>d. within a place of special fire risk</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>e. within a protected zone to a place of safety</td>
<td>100</td>
</tr>
</tbody>
</table>

(Amd: September 2001)
E5.2  Travel distance is the distance measured along the actual route of escape from any point within a storey -

a.  to the nearest protected door giving direct access to an escape stair or a place of safety, except -

   in the case of building or part of a building where there are at least 2 available directions of travel, when the travel distance may be measured to any protected door; or

b.  to a door in a compartment wall, as described in E5.3; or

c.  to a door in a sub-compartment wall, as described in E5.4, except –

   in the case of an enclosed shopping centre provided with appropriate smoke and heat exhaust ventilation system (see D3.7) the travel distance from a mall level storey of a shop may be measured to the mall.

E5.3  Where the travel distance is measured to a protected door in a compartment wall -

a.  there must be no fire shutter in the compartment wall; and

b.  the compartment must also have at least 1 other escape route which is not through another compartment, except -

   a compartment in a hospital; and

c.  in a building of purpose sub-group 2A used for bed-patient care, the escape route must not pass through any of the rooms listed in D4.2 as requiring to be enclosed with the same level of fire safety performance as a sub-compartment; and

d.  in a part of a building of purpose sub-group 2A used for bed-patient care each compartment must be capable of holding the occupancy capacity of that compartment and the occupancy capacity of the largest adjoining compartment; and

e.  in a building, or part of a building, other than one specified in E5.3d, either -

   i.  the area of the adjoining compartment is at least the sum, in m², of the occupancy capacities of both compartments multiplied by 0.3, or

   ii. the escape route width available from the adjoining compartment is adequate for the sum of the occupancy capacities of both compartments.

E5.4  Where the travel distance is measured to a protected door in a sub-compartment wall -

a.  there must be no fire shutter in the sub-compartment wall; and

b.  the escape route must not be through any of the rooms listed in D4.2 as requiring to be enclosed with the same level of fire safety performance as a sub-compartment.

E5.5  Where a floor is divided by fixed seating or other fixed obstructions the travel distance must be measured by way of the shortest route along open seatways, gangways or circulation areas.

E5.6  Where a measurement of travel distance includes an escape stair not in a protected zone within the building, as permitted by E6.6a. and b., the travel distance must be measured along the pitch line from the centre of the nosing of the topmost tread to the lower landing, including the length of any intermediate landings, measured throughout along the centre line of travel.
E5.7 Where more than 1 exit is required, the directions of travel from any point within the storey or a room must -

a. diverge at an angle of at least 45°; or

b. be combined for a distance not exceeding that allowed for single direction of travel (see Table to E5.1) and then diverge to 2 exits at an angle of at least 45° plus 2½° for every metre in the combined distance, provided the distance between the exits is also more than twice the combined distance.

E5.8 In a building in purpose sub-group 2A, the maximum travel distance from any point within a compartment must be not more than 64 m to -

a. each of 2 adjoining compartments; or

b. an adjoining compartment and an escape stair or a final exit; or

c. an adjoining compartment and a final exit; or

d. an escape stair and a final exit.

ESCAPE ROUTES

E5.9 An escape route must give access to a place of safety or to another compartment (see E5.3) -

a. directly; or

b. by way of a protected zone or unprotected zone; or

c. by way of an unprotected zone to a protected zone; or

d. by way of an access deck, or

e. by way of an exit to an external escape stair (see E6.6); or

f. in the case of escape from an inner room not intended to be used as sleeping accommodation, by way of one other room, other than a place of special fire risk; the escape route from that other room must comply with a, b, c, d or e above; or

g. by way of a flat roof, but only where -

i. there is more than 1 escape route from the storey; unless the storey consists of a roof top plant room which is not a place of special fire risk, and

ii. it serves a building of purpose group 3, 6 or 7 or part of a building of purpose group 2, 4 or 5 to which the public has no access, and

iii. there are no exhausts of any kind less than 2 m from the escape route, and

iv. there is a wall or protective barrier at least 1.1 m high on each side of the escape route,

except -

an escape route from a hospital department to which patients have access, complying with E8.4.
E5.10 In a building of purpose sub-group 2A, where a compartment is divided into sub-compartments, each sub-compartment must be provided with at least 2 exits by way of protected zones and unprotected zones to adjoining but separate compartments or sub-compartments, except -

in the case of an escape route from a ward bedroom it may be to another ward bedroom in a different compartment or sub-compartment.

E5.11* An escape route must not be by way of -

a. a lift; or

b. a passenger conveyor; or

c. a turnstile, other than a suitably designed and installed turnstile unit with an emergency pressure operated facility enabling the entire unit to open in the direction of escape; or

d. a shutter, other than a shutter which is installed for security purposes across a shop front and which does not close automatically in the event of fire, but not a shutter across an opening between a protected zone and a place of safety; or

e. a revolving door, an automatic sliding door or an automatic door, other than one of suitable design and construction; or

f. a sliding door, other than one to which the public does not have access; or

g. a fixed ladder, other than a suitable fixed ladder providing access to a plant room other than a place of special fire risk which is normally unoccupied except for maintenance purposes.

HEIGHT OF ESCAPE ROUTES

E5.12 An escape route or circulation area must have a clear headroom of at least 2 m, except -

in a doorway it may be reduced to not less than 1.9 m.

WIDTH OF ESCAPE ROUTES

E5.13 The aggregate unobstructed width in mm of all escape routes from a room, or storey must be at least 5.3 x the occupancy capacity of the room or storey, except-

in an enclosed shopping centre with a mall on not more than 2 storeys complying with E7.2, E7.3 and E7.4.

E5.14 The unobstructed width of each individual escape route from a room or storey must be at least 1200 mm, except -

a. where the room or storey is inaccessible to wheelchair users the width may be reduced to not less than 1100 mm; and

b. where the occupancy capacity of the room or storey is not more than 100 and it is inaccessible to wheelchair users the width may be reduced to not less than 1000 mm.
**E5.15** An *escape route* must be free of any obstruction or barrier, other than a doorway which has a clear opening width in accordance with the diagram to this standard, not more than 150 mm less than the minimum width of the *escape route*,

except-

a. where the number of people using the *escape route* is not more than 225, the clear opening width of the doorway may be reduced to 850 mm; and

b. where the number of people using the *escape route* is not more than 100, the clear opening width of the doorway may be reduced to 750 mm.

**Diagram to E5.15: Measurement of clear opening width**

**E5.16** An *escape route* must not narrow in the direction of escape, except-

a. an *escape route* may pass through a wider *circulation area* leading to a narrower *circulation area* provided the latter is of a width at least that required for the *escape route*; and

b. where permitted by E6.1a.

**E5.17** A door opening into an *escape route* must not when being opened and when fully open, reduce the width of the *escape route* to less than that required by E5.14.

**E5.18** An *emergency door*, and a door across an *escape route*, must open in the direction of escape, except -

a. a door other than an *emergency door* which is a revolving door, an automatic sliding door or an automatic door, as permitted by E5.11e, and a sliding door across an *escape route* to which the public does not have access; and

b. a door other than an *emergency door* across an *escape route* where the *escape route* is from a room or storey, other than a place of special fire risk, having an *occupancy capacity* not more than -

i. in a *building* of *purpose groups* 2 to 5 or *purpose sub-group* 7C, 60, or

ii. in a *building* of *purpose group* 6 or *purpose sub-group* 7A or 7B, 10.

**DOORS ACROSS ESCAPE ROUTES**

**E5.19** Where a door across an *escape route* has to be secured against entry when the *building* is occupied it must be fitted only with a suitable lock or fastening which is readily operated, without a key, from the side approached by people making an escape, except -

in the case of a place of lawful detention.
In a building of purpose group 2 to 5 with an occupancy capacity more than 60, where a door across an escape route has to be secured against entry when the building is occupied, every lock or fastening must be suitable, and be capable of being over-ridden when depressed by hand or body pressure, except:

in the case of a place of lawful detention.

CIRCULATION IN CONFINED SPACES

In any building the width of any gangways and stairways within a storage area containing fixed obstructions (including fixed racking or shelving and high-bay storage) must be not less than 530 mm, except:

in a store for the bulk storage of spirituous liquor, gangways may be reduced to not less than 400 mm.

In a building, or part of a building with fixed seating or fixed seating and fixed tables or other floor fixtures, there must be access to an exit by way of a gangway or a seatway, or a circulation area in accordance with the table and diagram to this standard, and:

a. escape from any point shall be by way of a gangway or from a seatway by way of a gangway to an exit or from a seatway directly to an exit; and

b. in the case of a room in an auditorium that requires more than 1 exit -

   i. at least 1 exit must be provided not less than two-thirds of the distance from any stage, screen or performing area to the back of the room, and

   ii. a gangway must be provided at each end of a row of more than 12 fixed seats; and

c. in the case of a building of purpose group 4 where the room or part of the room has an occupancy capacity of more than 100, the minimum width of a circulation area must comply with E5.13 as if the circulation area were an escape route.

### Table to E5.22: Minimum width of gangways and seatways in a room with fixed seating

<table>
<thead>
<tr>
<th>Situation</th>
<th>Number of seats in row</th>
<th>Minimum width or effective width (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gangway</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Gangway and seatway combined</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Seatway</td>
<td>2</td>
<td>2-4</td>
</tr>
<tr>
<td></td>
<td>3-7</td>
<td>5-14</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>15, 16</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>17, 18</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>19, 20</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>21, 22</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>23, 24</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>25, 26</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>27, 28</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>More than 28 (limited by travel distance)</td>
</tr>
</tbody>
</table>

### Note:
1. May be reduced to 900 mm where the occupancy capacity of the room is not more than 60.
Diagram to E5.22: Minimum width of gangways and seatways in a *room* or space with fixed seating

**Note:**
1. 900 mm where the *room* or the space has an *occupancy capacity* of not more than 60 persons.

**SMOKE CONTROL IN CORRIDORS**

**E5.23** For purposes of smoke control a corridor must be subdivided with a wall or screen with *fire doors* (see D11.4) as follows -

- **a.** where the corridor provides at least 2 directions of escape and is more than 12 m in length between the *exits* it serves, it must be divided in the middle third of the corridor; and

- **b.** where the corridor is a dead end more than 4.5 m long and provides access to a point from which more than 1 direction of escape is possible, it must be divided at that point or points, as shown in the diagram to this standard,

*except* -

in a *building of purpose sub-group 2B* or *purpose groups 3 to 7* where the corridor has a suitable system of pressurisation.
**E5.23 – 5.25**

*Diagram to E5.23b: Doors across escape routes*

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**GALLERIES**

**E5.24** A *gallery* must be open above and below to the *room* into which it projects and must not give access to any other *room* other than a *room* with a means of escape independent of the *gallery*, except -

- it may be wholly or partly enclosed below where -
  
  a. the floor of the *gallery* has the level of fire safety performance as set out in D11.6; and
  
  b. at least 1 *escape route* is by way of a *protected zone*.

**ESCAPE PAST OPENINGS IN THE FLOOR**

**E5.25** In a *building* where there is an opening in any floor, not being a *separating floor* or *compartment floor* (for these see D3 and D5) -

- escape from any point on the floor not more than 4.5 m from the opening must be directly away from the opening; and
b. the escape route from any point on the storey more than 4.5 m from the opening must pass no closer to the opening than 4.5 m (see Diagram to this standard),

except -

where more than one escape route is provided and at least 1 escape route is at least 4.5 m from the opening.

Diagram to E5.25: Openings between floors

PLACES OF SPECIAL FIRE RISK

E5.26 A place of special fire risk must be separated from an escape route by a protected lobby (see D11.2) where the escape route is in a protected zone serving another part of the building.

AIR SUPPORTED STRUCTURES

E5.27 An air supported structure must be designed and constructed so that -

a. travel distance in one direction is not more than 9 m; and

b. every exit is at least 3 m, or one quarter of the smallest plan dimension, whichever is less, from any corner of the structure; and

c. every exit has a rigid supporting framework and be clearly marked ‘EXIT’ by means of an illuminated sign; and

d. inflation equipment includes a standby power system which -

i. will start up automatically on any failure of the main power supply, and

ii. is independent of the main power supply, and

iii. includes weather protected, non-return dampers in the ducts, outside the structure; and

e. where the occupancy capacity exceeds 100, or in the case of a swimming pool 50, an emergency support system is provided which will -

i. support the membrane in a deflated state under short term loading conditions, and

ii. give escape routes a headroom of at least 2.5 m for at least 10 m adjacent to every exit; and

f. where it covers a swimming pool, egress steps from the water are adjacent to an exit from the building.
E6.1, E6.2

E6  Means of escape from fire in a building of purpose groups 2-7
(design for vertical escape)

WIDTH OF ESCAPE STAIRS

E6.1  The width of an escape stair must be at least the width required for any escape route giving access to it, except -

a.  where the number of people using the escape route is not more than 225, it may be reduced to not less than 1100 mm; and

b.  where the number of people using the escape route is not more than 100, it may be reduced to not less than 1000 mm.

Note:
See S3.4 for method of measurement.

E6.2  Where the escape routes from a storey consist solely of escape stairs, and the storey requires 2 or more escape stairs, the width of every escape stair in mm from that storey must be at least 5.3 x the appropriate capacity (see E6.4) divided by the number of such stairs, less one, except -

a.  where there is a protected lobby (see D11.2) between each escape stair in a protected zone and any part of the building at any storey from which there is access to the escape stair, other than the topmost storey, the provision as to less one escape stair does not apply;

b.  where the topmost storey contains plant and it is not accessible for a purpose other than the maintenance of the plant the width of any escape stair from this storey to the storey immediately below needs to comply only with the requirements of Part S for industrial stairs and fixed ladders;

c.  where escape routes from a storey consist of a combination of escape stairs and other escape routes (see Diagram to this standard) the width of any escape stair from that storey may be designed to take into account that proportion of the number of occupants on that storey who may escape by way of the other escape routes.
E6.3 Where the escape route from an escape stair is also the escape route from the ground and/or basement storey its width shall be increased to take account of that proportion of the occupancy capacity of the ground and/or basement storey served by the escape route, and unless access to the escape route on the ground storey is by way of a protected lobby (see D11.2) 1 escape route from the ground storey into a protected zone containing an escape stair must be discounted.

E6.4 The appropriate capacity in relation to a suitable escape stair at any storey above or below the place of safety is -

a. the occupancy capacity of the part of the storey or room served by the escape stair, provided the escape stair does not also serve the next storey or room above or in the case of a basement storey, the next storey below; or

b. where the escape stair serves 2 or more storeys including any rooms, or part of a building, which is not divided by compartment floors, the occupancy capacity of the part of each storey, including any room, served at and above or below as the case may be, by the escape stair less 20% (20% represents standing capacity within the protected zone containing the escape stair). At each storey level the appropriate capacities must be accumulated in respect of those storeys which at that level have been served by the escape stair. The total appropriate capacity for all the storeys served by the escape stair must be taken into account at the storey level where the escape route leads to a place of safety; or

c. in a building, or part of a building, which is divided by 1 or more compartment floors, the total occupancy capacity, less 20%, of -

i. each of the 2 adjacent upper storeys, 1 or both of which may be a room, served by the escape stair, or in the case of an escape stair serving a basement storey the 2 adjacent basement storeys served by that escape stair, having in either case the greatest combined occupancy capacity, or
ii. the compartment either above or below ground level served by the escape stair having the greatest occupancy capacity, discounting the occupancy capacity of any storey within the compartment which is not served by the escape stair, whichever is the greater of either sub-clause c.i. or c.ii.

Diagram to E6.4: Calculation of appropriate capacity

Notes:
1. L = Appropriate capacity.
2. OC = Occupancy capacity of storey.
3. G = Ground storey.
5. Numbers 100, 150 etc. relate to occupancy capacity of each storey.
6. Figure numbers refer to paragraph numbers in E6.4.
7. For simplicity, the 20% reduction factor has not been applied to above examples.

E6.5 Where the escape routes from a storey consist of a combination of escape stairs and other escape routes, the appropriate capacity of the storey is that proportion of the occupancy capacity of the storey which the aggregate width of escape routes discharging to the stairs bears to the aggregate width of all escape routes from the storey.
E6.6 An escape stair must be within a protected zone (see D11.1), except -

a. an escape stair which connects 2 or more levels within a single storey where the difference in height between the highest and lowest level is not more than 1.8 m; or

b. an escape stair which leads from a gallery, catwalk or openwork floor to a room in which the gallery, catwalk or openwork floor is situated and the gallery, catwalk or openwork floor -
   i. has an occupancy capacity of not more than 60, or
   ii. has an occupancy capacity of 61 to 100, and at least 1 escape stair from the gallery, catwalk or openwork floor is within a protected zone, or
   iii. has an occupancy capacity of 61 to 100, and at least 1 external escape stair which complies with sub-clauses d. or e. below, and
   iv. where there is a gallery, catwalk or openwork floor complying with sub-clauses b.ii. or iii. above at more than 1 level within the room an unenclosed escape stair may be provided only between the floor of the room and the lowest gallery, catwalk or openwork floor; or

c. a fixed ladder as permitted by E5.11g; or

d. an external escape stair which has a total rise of not more than 1.6 m and leads directly to a place of safety; or

e. an external escape stair which has a total rise more than 1.6 m but not more than 6 m and -
   i. the escape stair leads directly to a place of safety, and
   ii. in the case of a building of purpose sub-group 2A the escape stair is intended to serve accommodation occupied only by staff, and
   iii. in the case of a building of purpose group 4 and 5 the escape stair is not intended for use by members of the public.
**E6.6 – E6.9**

Diagram to E6.6: *Escape stair enclosure and external escape stairs*

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**E6.7** A protected zone enclosing an escape stair must be provided with an unobstructed clear wheelchair space measuring not less than 700 mm x 1200 mm on every escape stair landing to which there is access from a storey, except:

- a storey which has level or ramped access to a place of safety; or
- a storey in a hospital; or
- a storey which is inaccessible to wheelchair users.

**E6.8** A protected zone enclosing an escape stair must enclose no other rooms, except:

- a toilet or toilets;
- a washroom or washrooms;
- where the escape stair serves part of a building which has at least one other escape route,
  - a reception room, but not a waiting area,
  - an office,
  - a cleaner’s room of not more than 3 m²,
  - a store which has a floor area of not more than 10 m².

**E6.9** Every escape stair must give access directly to:

- a place of safety; or
- an escape route across a flat roof (see E5.9g); or
- an access deck; or
d. a hospital street; or

e. in the case of an enclosed shopping centre provided with appropriate smoke and heat exhaust ventilation system (see D3.7), the mall, provided alternative escape not via the mall is also provided from each shop or other unit having a frontage to the mall.

**E6.10** Where 2 protected zones enclosing escape stairs share a common wall, any access between them must be by way of a protected lobby (see D11.2).

**E6.11** A building with more than 1 escape route contained in a central core must be planned so that the exits from the storey are remote from one another, and so that no 2 exits are approached from the same lift hall, common lobby or undivided corridor or linked by any of these except through fire doors as shown in the diagram to this standard -

**Diagram to E6.11: Protected zone: escape stairs in a central core**

**Notes:**
1. Possible alternative position of fire doors shown dotted.
2. If escape stair serves a storey at a height of more than 18 m, a lobby is required (see E6.14).

**E6.12** Where an escape stair also serves a basement storey the protected zone enclosing the escape stair in the basement storey must be separated from the protected zone containing the escape stair serving the rest of the building by a wall or screen, with or without a door, at ground storey floor level having at least the level of fire safety performance of the protected zone (see D11.1).

**E6.13** Where a building has not more than 1 escape stair, access to it must be by way of a protected lobby (see D11.2), except -

a. in shared residential accommodation; or
b. at the topmost storey not being the escape stair exit storey; or

c. where the escape stair serves not more than 1 basement storey.

**E6.14** Where an escape stair serves a storey at a height of more than 18 m access to the protected zone containing the escape stair must be by way of a protected lobby (see D11.2).

### E7 Special requirements for means of escape for enclosed shopping centres with malls

#### DIRECTION OF TRAVEL

**E7.1** An enclosed shopping centre with a mall must be designed so that from every part of the mall and from every mall-level shop there must be at least 2 directions of travel leading to a place of safety without passing through any space in single occupation,

except -

a kiosk not more than 25 m² and in which either the public are not admitted, or the depth from the mall is not greater than 5 m.

#### ESCAPE ROUTE WIDTH

**E7.2** The aggregate unobstructed width in mm of all escape routes from the mall in an enclosed shopping centre with a mall, must be at least 2.65 x the occupancy capacity of the entire shopping centre, (i.e. the mall and all shops),

except -

a shop, or shops, with a floor area more than 1300 m² and where the means of escape has been designed independently of the mall need not be included in the calculation.

**E7.3** The aggregate unobstructed exit width in mm from each shop in an enclosed shopping centre with a mall, to the mall must be at least 5.3 x the occupancy capacity of the shop.

except -

a shop, or shops, with a floor area more than 1300 m² and where the means of escape has been designed independently of the mall.

**E7.4** The aggregate unobstructed exit width in mm from each shop in an enclosed shopping centre with a mall, to a route which does not enter the mall must be at least 5.3 x the occupancy capacity of the shop.

except -

a. a shop, or shops, with a floor area more than 1300 m² and where the means of escape has been designed independently of the mall, and

b. a kiosk not exceeding 25 m² and in which either the public are not admitted, or the depth from the mall is not more than 5 m.

**E7.5** The unobstructed width of each individual exit from the mall in an enclosed shopping centre with a mall must be at least 1.8 m wide.
E7.6 In an enclosed shopping centre with a mall, where a service corridor is used for means of escape directly from a shop or shops, the unobstructed width must be based on the total number of occupants of the largest shop that evacuates into the corridor, plus, other than at column positions, an additional width of 1 m.

E7.7 In an enclosed shopping centre with a mall, where a service corridor is used for means of escape directly from a shop or shops, such service corridor must not be used for any form of storage.

CRÈCHES

E7.8 Every crèche provided within an enclosed shopping centre with a mall must be designed so that it is -

a. at ground level or exit level; and
b. not sited on a storey higher than those where parents or guardians may be located, unless escape is via the upper storey itself; and
c. located adjacent to an external wall and has at least 2 exits, one of which must be directly to a place of safety.

E8 Special requirements for means of escape for hospitals

STOREYS AT A HEIGHT OF MORE THAN 7.5 m

E8.1 In a hospital every storey at a height of more than 7.5 m containing departments to which patients have access, must either:

a. comprise at least 4 compartments, each of which must have an area of at least 500 m²; or
b. have a hospital street (see E8.9) and at least 3 other compartments.

STOREYS AT A HEIGHT OF MORE THAN 18 m

E8.2 In a hospital every storey at a height of more than 18 m containing departments to which patients have access, must either -

a. comprise at least 4 compartments, each of which must have an area of at least 500 m²; or
b. have a hospital street (see E8.9) and at least 3 other compartments each of which must have an area of at least 500 m².

COMPARTMENT EXITS

E8.3 In a hospital where a storey is divided into three or more compartments, each compartment must have exits to -

a. a compartment and a hospital street; or
b. a compartment and an escape stair; or
c. a compartment and a final exit.
E8.4 – E8.9

**ESCAPE ROUTES**

E8.4 An escape route from a hospital department to which patients have access, must be (see E5.3 and E5.4) to -

- a. a place of safety; or

- b. a protected zone; or

- c. an unprotected zone in another compartment or sub-compartment,

except -

in the case of an escape route from a ward bedroom it may be to another ward bedroom in a different compartment or sub-compartment.

E8.5 In a hospital the unobstructed width of every escape route intended to be used by patients who require bed evacuation must be at least 1500 mm.

**ESCAPE STAIRS**

E8.6* In areas of hospitals providing patient sleeping accommodation, an escape stair must be not less than 1300 mm and designed to facilitate mattress evacuation.

E8.7 In a hospital where an escape stair in a protected zone serves an upper storey containing a department to which patients have access, access to the protected zone must be by way of a protected lobby (see D11.2),

except -

in the case of a storey at a height of not more than 18m, where access can be from the hospital street (see E8.9).

E8.8 Every escape stair opening into the hospital street must be located so that the travel distance from an escape stair exit to a door leading directly to a place of safety is not more than 64 m.

**HOSPITAL STREET**

E8.9 A hospital street must -

- a. be a protected zone; and

- b. have an unobstructed width of at least 3 m; and

- c. be divided into at least 3 sub-compartments; and

- d. at ground storey have at least 2 final exits; and

- e. at upper storeys, have access to at least 2 escape stairs accessed from separate sub-compartments, which are located so that -

  - i. the distance between escape stairs is not more than 64 m, and

  - ii. the distance of single direction of travel within the hospital street is not more than 15 m, and

  - iii. the distance from a compartment exit to an escape stair is not more than 32 m; and

- f. not contain a shop or other commercial enterprise.
E8.10 A door from a hospital street to an adjoining compartment must -

a. be located so that an alternative independent means of escape from each compartment is always available; and

b. not be located in the same sub-compartment as a door to a protected zone containing a stairway or lift.

E9 Lighting

E9.1 Every part of an escape route must have artificial lighting providing a level of illumination not less than that provided by suitable emergency lighting supplied with electric current -

a. by a protected circuit; and

b. where it serves a protected zone, by a separate circuit from that supplying any other part of the escape route,
   except -
   a protected circuit is not required where emergency lighting is installed in accordance with E9.2,
   except -
   in a building to which Part 1 of the Cinematographic (Safety) (Scotland) Regulations 1955 apply.
E9.2* Suitable emergency lighting must be provided in accordance with the table to this standard -

**Table to E9.2: Emergency Lighting**

<table>
<thead>
<tr>
<th>Purpose group or sub-group</th>
<th>Part of building requiring emergency lighting</th>
</tr>
</thead>
</table>
| 1A (other than a dwelling), 2-7 | 1. A protected zone or unprotected zone in a building with a storey at a height of more than 18 m.  
2. A room with an occupancy capacity of more than 60 or any room containing an inner room with an occupancy capacity of more than 60, and any protected zone or unprotected zone serving such a room.  
3. An underground car park including any protected zone or unprotected zone serving it where less than 30% of the perimeter of the car park is open to the external air.  
4. A protected zone or unprotected zone serving a basement storey.  
5. A place of special fire risk (other than one requiring access only for the purposes of maintenance) and any protected zone or unprotected zone serving it.  
6. Any part of an air supported structure, other than one ancillary to a dwelling. |
| 2 (other than a hospital) | 7. A room with an occupancy capacity of more than 10 and any protected zone or unprotected zone serving such a room.  
8. A protected zone or unprotected zone serving a storey required to have 2 or more escape routes other than, subject to 1. above, a storey in a building not more than 2 storeys high with a floor area of not more than 300 m².  
9. A protected zone or unprotected zone in a single stair building of 2 storeys or more with an occupancy capacity of 10 or more. |
| 2A hospital | 10. Essential lighting circuits must be provided throughout and designed to provide not less than 30 percent of the normal lighting level. [1, 2] |
| 4 | 11. In shop premises, a protected zone or unprotected zone serving a storey required to have 2 or more escape routes.  
12. In an enclosed shopping centre with a mall on 2 or more storeys or having a total floor area more than 5,600 m², the mall and any protected zones or unprotected zones required to have at least 2 escape routes. |
| 5 | 13. A protected zone or unprotected zone serving -  
a. a storey required to have at least 2 escape routes; or  
b. any storey in a non-residential school of more than one storey. |
| 6 | 14. A protected zone or unprotected zone serving a storey required to have at least 2 escape routes. |
| 7A | 15. A protected zone or unprotected zone serving a storey required to have at least 2 escape routes, other than in a single-storey building with a floor area of not more than 500 m². |
| 7C | 16. A protected zone or unprotected zone serving any storey. |

**Notes:**

1. In an area where a 15 second response time would be considered hazardous, (e.g. a stairway), emergency lighting must be provided by battery back-up giving a response time of not more than 0.5 seconds.
2. The distribution boards for essential and non-essential circuits may be in the same location but must be in separate cabinets.
E10 Facilities for fire-fighting

ACCESS

E10.1* Every building must be provided with suitable access for fire-fighting purposes.

GROUND HYDRANTS

E10.2* A building having a floor area more than 280 m\(^2\) must be provided with suitably positioned and constructed ground hydrants, except -

where no piped water supply is available and a suitable and adequate alternative source of supply is provided.

E10.3 A ground hydrant must be connected to a water service pipe capable of delivering water at a flow rate of at least 1500 litres per minute, provided by -

a. a water main vested in a public water authority; or

b. a supply provided under the Fire Services Act 1947.

PROVISION OF FIRE-FIGHTING FACILITIES

E10.4* In a building of purpose sub-group 1A and purpose groups 2–7, at least 2 escape stairs must be provided with fire fighting facilities in accordance with the table to this standard and located so that they are,

a. at least 20 m apart; and

b. so that no point on any storey is further from a fire-fighting outlet than -

i. 1 storey height, and

ii. 60 m measured along an unobstructed route for fire hose.
### Table to E10.4: Provision of fire-fighting facilities

<table>
<thead>
<tr>
<th>Storey height</th>
<th>Purpose groups and purpose sub-groups</th>
<th>Purpose groups and purpose sub-groups</th>
<th>Purpose sub-group 2A with a hospital street</th>
<th>Purpose sub-group 7C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Basements at a depth more than 10 m</strong></td>
<td>Fire-fighting shaft; Fire-fighting lift; Suitable pressure differential control; Dry fire main (outlet located in fire-fighting lobby).</td>
<td>Fire-fighting shaft; Fire-fighting lift; Suitable pressure differential control; Dry fire main (outlet located in fire-fighting lobby).</td>
<td>Fire-fighting lift; Suitable pressure differential control; Dry fire main (outlet located at every departmental entrance).</td>
<td>Dry fire main (outlet located in protected zone enclosing escape stair).</td>
</tr>
<tr>
<td><strong>Basements at a depth not more than 10 m</strong></td>
<td>No provision</td>
<td>Fire-fighting shaft; Dry fire main (outlet located in fire-fighting lobby).</td>
<td>Dry fire main (outlet located at every departmental entrance).</td>
<td>Dry fire main (outlet located in protected zone enclosing escape stair).</td>
</tr>
<tr>
<td><strong>Upper storey not more than 7.5 m</strong></td>
<td>No provision</td>
<td>Protected lobby; Dry fire main (outlet located in protected lobby) [1].</td>
<td>Dry fire main (outlet located at every departmental entrance).</td>
<td>No provision</td>
</tr>
<tr>
<td><strong>Storey more than 7.5 m and not more than 18 m</strong></td>
<td>Protected lobby; Dry fire main (outlet located in protected lobby) [1].</td>
<td>Protected lobby; Dry fire main (outlet located in protected lobby) [1].</td>
<td>Dry fire main (outlet located at every departmental entrance).</td>
<td>Dry fire main (outlet located in protected zone enclosing escape stair).</td>
</tr>
<tr>
<td><strong>Storey more than 18 m and not more than 60 m</strong></td>
<td>Fire-fighting shaft; Fire-fighting lift [2]; Dry fire main (outlet located in fire-fighting lobby).</td>
<td>Fire-fighting shaft; Fire-fighting lift [2]; Dry fire main (outlet located in fire-fighting lobby).</td>
<td>Fire-fighting lift [2]; Dry fire main (outlet located at every departmental entrance).</td>
<td>Fire-fighting lift [2]; Dry fire main (outlet located in protected zone enclosing escape stair).</td>
</tr>
<tr>
<td><strong>Storey more than 60 m</strong></td>
<td>Fire-fighting shaft; Fire-fighting lift [2]; Wet fire main (outlet located in fire-fighting lobby).</td>
<td>Fire-fighting shaft; Fire-fighting lift [2]; Wet fire main (outlet located in fire-fighting lobby).</td>
<td>Fire-fighting lift [2]; Wet fire main (outlet located at every departmental entrance).</td>
<td>Fire-fighting lift [2]; Wet fire main (outlet located in protected zone enclosing escape stair).</td>
</tr>
</tbody>
</table>

**Notes:**

1. The **protected lobby** provided must have an area of at least 5 m².
2. **A fire-fighting lift** need not serve the top **storey** of a **building** where the top **storey** is for service plant use only and is equipped with a **wet or dry fire main** and a **fire-fighting outlet** where:
   a. there is access to an **escape stair** from the **storey** below, and
   b. the foot of the **escape stair** is not more than 4.5 m from a **fire-fighting lift**.
E10.5 Every single storey hospital with a hospital street must be provided with a dry fire main with an outlet located in the hospital street at every hospital departmental entrance, except -

da dry fire main need not be provided where no part of the storey is more than 60 m measured along an unobstructed route, not being a protected zone, for the fire hose from the access point or points.

E10.6 Every single storey shopping mall must be provided with a dry fire main with an outlet located not more than 5 m from a Fire Brigade access point, except -

nda dry fire main need not be provided where no part of the storey is more than 60 m measured along an unobstructed route, not being a protected zone, for the fire hose from the access point or points.

E10.7* A wet fire main must be of suitable construction and, where an inlet is provided for the emergency replenishment of the suction tank, provided with a parking space for a pumping appliance located -

a. i. when one such inlet is provided, not more than 18 m from the inlet, or

ii. when more than 1 such inlet is provided, not more than 18 m from the inlet nearest an appropriately located entrance, and sited not more than 60 m from all other inlets; and

b. sited so that there is a clear route for the hose between the pumping appliance access and the wet riser inlet.

E10.8* A dry fire main must be of suitable construction, and where there is -

a. i. 1 such fire main, the inlet must be located not more than 18 m from a parking space for a pumping appliance, or

ii. more than 1 such fire main, the inlet must be located not more than 18 m from a parking space for a pumping appliance to the inlet at an appropriately located entrance, and sited not more than 60 m from all other inlets; and

b. sited so that there is a clear route for the hose between the pumping appliance access and the dry riser inlet.

E10.9* A fire-fighting shaft must be provided with -

a. a suitably constructed and ventilated fire-fighting lobby, having not more than 1 door to the room or storey it serves; and

b. suitable provision for the control of smoke.

E10.10 A fire-fighting shaft must serve all storeys in a building, except -

a. a fire-fighting shaft serving an upper storey need not serve a basement storey unless it is required by the Table to E10.4; and

b. a fire-fighting shaft serving a basement storey need not serve an upper story unless it is required by the Table to E10.4.

E10.11* A fire-fighting lift must be of a suitable construction and entered only from -

a. a fire-fighting lobby having not more than 1 door to the room or storey it serves; or

b. an open access balcony or an access deck.
**E10.12 – E10.16**

**E10.12** An enclosed shopping centre with a mall on 2 or more storeys or having a total floor area more than 5600 m² must have a fire control room -

a. *constructed* as a separate compartment (see D3); and

b. with access points away from the discharge points for the public and with an alternative means of escape; and

c. located adjacent to a fire service access point and accessible from open air.

**SMOKE VENTILATION OF ESCAPE ROUTES**

**E10.13** An escape stair within a protected zone must have -

a. a ventilator of not less than 1 m² at the top of the stair; or

b. an opening window at each storey.

**E10.14** Every access corridor or part of an access corridor, in a building of purpose sub-group 1A, must be provided with openable ventilators, with an aggregate opening area to the external air of at least 1.5 m² and providing for exhaust at or near ceiling level and for supply at or near floor level, except -

an open access balcony or an access deck having an opening or openings to the external air extending over at least four-fifths of its length and at least one third of its height.

**SMOKE VENTILATION OF BASEMENT STOREYS**

**E10.15** Suitable smoke outlets, communicating directly with the external air, must be provided from every basement storey, and where the basement storey is divided into compartments from every compartment of the basement storey, except -

a. in a building of purpose sub-groups 1B, 1C or 7C; or

b. where the floor area of the basement storey is not more than 200 m²; or

c. where the basement storey is at a depth of not more than 4.5 m; or

d. where a window or windows opening direct to the external air have a total area not less than 1% of the floor area; or

e. where the basement storey or part of the basement storey is used as a strong room; or

f. where the basement storey has an appropriate fire control system and is ventilated by a suitable mechanical smoke and heat extraction system.

**ROLLING SHUTTERS**

**E10.16** All rolling shutters in compartment walls (see D3.14) must be capable of being opened and closed manually by the Fire Brigade.
E11 Means of warning of fire

E11.1* A dwelling must be provided with -

a. where any storey is not more than 200 m², at least 1 smoke alarm suitably located on each storey; or

b. where any storey is more than 200 m², a suitable fire detection and alarm system.

E11.2* A building in purpose group 2 must be provided with a suitable fire detection and alarm system.

E11.3* An enclosed shopping centre with a mall on 2 or more storeys or having a total floor area more than 5600 m², must be provided with a suitable fire detection and alarm system.
Provisions deemed to satisfy the standards

REVOLVING DOOR, SLIDING DOOR OR AUTOMATIC DOOR

(E2.4)(E5.11)

The requirements of E2.4e and E5.11e for a revolving door, sliding door or automatic door will be met by a door which complies with BS 7036: 1996; and

a. is arranged to fail safely to outward opening from any position of opening; or

b. i. is provided with a monitored fail-safe system for opening the door from any position in the event of mains supply failure and also in the event of a failure of the opening sensing device, and

ii. opens automatically from any position in the event of the actuation of any fire alarm in the fire alarm zone within which the door is situated, and

iii. permits easy manual opening from any position.

AUTOMATIC OPENING VENTILATORS

(E2.11)(E2.12)

Where suitable automatic opening ventilators are required under E2.11 and E2.12, they should -

a. have an aggregate opening area of at least 1.5 m²; and

b. provide for exhaust at or near ceiling level and for supply at or near floor level; and

c. be activated by automatic smoke detection fixed to the ceiling of -

i. the protected lobby in the case of E2.11, or

ii. located in the corridor in the case of E2.12 and fitted with a manual override for fire service use.

Note:
Detectors should be evenly spaced and -

A. with the distance between the detectors not more than 20 m; and

B. at least 500 mm from any side of the lobby or corridor; and

C. with the detector-sensing element more than 35 mm and not more than 300 mm from the soffit of the ceiling; and

D. with a detector situated not more than 5 m from any change of direction in the lobby or corridor exceeding 45°; and

E. with any part of a lobby or corridor divided from any other part by a beam or other obstruction projecting more than 600 mm below the soffit of the ceiling shall be deemed to be a separate lobby or corridor.
The requirements of E2.14b.iii will be met when *smoke alarms* are provided in each *dwelling* as specified in E11.1, and an alarm and detection system complying with BS 5839: Part 1: 1988 Type L2 is installed in the common areas.

**EMERGENCY ESCAPE WINDOWS**

The requirements of E2.17 and E3.2 will be met by a window, or a door (french window) -

- a. situated in an *external wall or roof*; and

- b. having an unobstructed openable area that is at least 0.33 m² and at least 450 mm high and 450 mm wide (the route through the window maybe at an angle rather than straight through); and

- c. where the bottom of the openable area is not more than 1100 mm above the floor.

**FIXED LADDERS**

The requirements of E5.11g will be met by a fixed ladder which complies with the recommendations of BS 5395: Part 3: 1985.

**DOORS ACROSS ESCAPE ROUTES**

The requirements of E5.19 and E5.20 for a suitable lock or fastening will be met when it is in accord with the guidance in the Builders Hardware Industry Federation, Code of Practice, “Hardware for Timber Fire and Escape Doors”.

**PRESSURISATION**

The requirements of E5.23 for pressurisation will be met by a smoke control system employing pressure differentials in accordance with BS 5588: Part 4: 1998, but assuming a minimum pressure of 25 Pa based on a wind speed of 22 m/sec.

**MATTRESS EVACUATION STAIRS**

The requirement of E8.6 will be met by a stair having the landing configuration appropriate to its width as specified in the table to this specification -

<table>
<thead>
<tr>
<th>Stair width (mm)</th>
<th>Minimum landing width (mm)</th>
<th>Minimum landing depth (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1300</td>
<td>2800</td>
<td>1850</td>
</tr>
<tr>
<td>1400</td>
<td>3000</td>
<td>1750</td>
</tr>
<tr>
<td>1500</td>
<td>3200</td>
<td>1550</td>
</tr>
<tr>
<td>1600</td>
<td>3400</td>
<td>1600</td>
</tr>
<tr>
<td>1700</td>
<td>3600</td>
<td>1700</td>
</tr>
<tr>
<td>1800</td>
<td>3800</td>
<td>1800</td>
</tr>
</tbody>
</table>
EMERGENCY LIGHTING

(E9.2) The requirements of E9.2 will be met where emergency lighting is installed in -

- a. cinemas, bingo halls, ballrooms, dance halls and bowling alleys, in accordance with CP1007: 1955; and


In the case of a building with a smoke and heat exhaust ventilation system the emergency lighting should be installed so that it is not rendered ineffective by smoke filled reservoirs.

ACCESS

(E10.1) The requirements of E10.1 will be met in the case of a house where an access route is provided from a public road, in accordance with the table to this specification, to not more than 45 m from a door giving direct access to the interior of the house.

The requirements of E10.1 will be met in the case of a building, other than a house, where -

- a. an access route is provided, or in the case of a hospital more than 1 access route, from a public road, in accordance with the table to this specification, as prescribed in E10.2, E10.7 and E10.8 and to the rear of the building when -
  
  i. the building has any storey more than 900 m², or

  ii. the building has a perimeter more than 150 m, or

  iii. pedestrian access is not possible around the building; and

- b. in consultation with the Fire Authority, it is determined that an operating space or spaces for a high reach appliance is required, the operating space(s) -

  i. is at least 6 m wide and 20 m long, with the nearer edge at least 2.2 m from the face of the building, and

  ii. has an unobstructed air space of at least 2.2 m beyond the further edge of the operating space (see diagram below), and

  iii. has a ground loading capacity of the operating space not less than 8.3 kg/cm², and

  iv. is level or does not have a gradient more than 1 in 12; and

- c. every perimeter wall (elevation) to which vehicle access is required has a door giving access to the interior of the building.

The requirements of E10.1 will be met, in the case of every building where a turning facility is provided in any dead-end route that is more than 20 m long. This may be a hammerhead or turning circle, designed on the basis of the table to this standard as appropriate.
Table to (E10.1): Access route requirements for fire-fighting vehicles

<table>
<thead>
<tr>
<th></th>
<th>Minimum width of road between kerbs (m)</th>
<th>Minimum width of gateways etc (m)</th>
<th>Minimum clearance height (m)</th>
<th>Minimum turning circle between kerbs (m)</th>
<th>Minimum turning circle between walls (m)</th>
<th>Surface capable of supporting a minimum axle loading (tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>House</td>
<td>3.7</td>
<td>3.5</td>
<td>3.7</td>
<td>16.8</td>
<td>19.2</td>
<td>14</td>
</tr>
<tr>
<td>Building other than a house [1]</td>
<td>3.7</td>
<td>3.5</td>
<td>4.0</td>
<td>26.0</td>
<td>29.0</td>
<td>14</td>
</tr>
</tbody>
</table>

**Note:**
1. Where, in consultation with the Fire Authority, access is provided for pumping appliances only, the dimensions for a *house* may be used.

Diagram to (E10.1): Dimensions of operating space for high reach fire appliances

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**GROUND HYDRANTS**

(E10.2) The requirement of E10.2 for suitably positioned and *constructed* ground hydrants will be met where the hydrants are -

**a.** positioned externally, for each *building* or common to more than 1 *building* -
   
i. not more than 60 m from an entrance to the *building*, and
   
ii. distributed around the *building* so that no external elevation of the *building* is more than 60 m from a hydrant, and

iii. so that hydrants are at least 6 m from the *building*, and

iv. located adjacent to a parking space for a pumping appliance, and

v. where a parking space is required in E10.7 or E10.8 for a fire appliance, adjacent to the parking space, and

vi. so as to be accessible for use at all times, and

vii. so that there is a clear route for the fire hose between the hydrant and the *building*; and

**b.** constructed in accordance with BS 750: 1984.
(E10.2 – E10.11)

The requirements of E10.2 for an alternative source of water will be met by -

a. a charged static water tank of at least 45,000 litre capacity; or

b. a spring, river, canal, loch or pond, to which access and space are available for a pumping appliance, capable of providing or storing at least 45,000 litres of water for fire-fighting purposes.

Note:
Consultation with the Fire Authority is advised on all matters concerning ground hydrants and water supplies.

FIRE-FIGHTING SHAFTS

(E10.4)(E10.9)

The requirement of E10.4 for suitable stair pressure differential control, of E10.9 for ventilation and of E10.9 for smoke control will be met where pressurisation and ventilation is provided in accordance with Clause 8 of BS 5588: Part 5: 1991.

FIRE MAINS

(E10.7)
The requirements of E10.7 will be met where -

a. the wet fire main is in accordance with BS 5306: Part1: 1976 (1988); and


(E10.8) The requirements of E10.8 will be met where the main is in accordance with BS 5306: Part 1: 1976 (1988); and where there are -

a. landing valves for dry fire mains, they conform to BS 5041: Part 2: 1987; and

b. inlet breechings for dry fire mains, they conform to BS 5041: Part 3: 1975 (1987); and

c. boxes for landing valves for dry fire mains, they conform to BS 5041: Part 4: 1975 (1987); and


The requirements of E10.7 and E10.8 for an appropriately located entrance will be met where it is established in consultation with the Fire Authority.

FIRE-FIGHTING LOBBIES

(E10.9)(E10.11)

The requirements of E10.9 and E10.11 for a suitably constructed fire-fighting lobby will be met by a lobby constructed in accordance with Clause 6 of BS 5588: Part 5: 1991.

FIRE-FIGHTING LIFTS

(E10.11) The requirements of E10.11 for a lift of a suitable construction will be met where the fire-fighting lift complies with Section 3 and 4 of BS 5588: Part 5: 1991.
VENTING OF HEAT AND SMOKE FROM BASEMENT STOREYS

The requirements of E10.15 will be met by smoke outlets that -

a. are sited at ceiling level within the room they serve; and

b. have an aggregate cross-sectional area of at least 2.5% of the floor area of the room they serve; and

c. are evenly distributed around the perimeter of the building; and

d. discharge directly to the open air at a point at least 2 m, measured horizontally, from any part of an escape route or exit, and have a sign stating SMOKE OUTLET FROM BASEMENT, DO NOT OBSTRUCT fixed adjacent to each external outlet point; and

e. where they serve a place of special fire risk are separate from the smoke outlets from other areas; and

f. discharge by means of windows, panels or pavement lights which are readily accessible to the Fire Brigade and which can be opened or knocked out by the Fire Brigade; and

g. where required are enclosed by a smoke venting shaft as specified in Part D3.11; and

h. where there are smoke venting shafts from different parts of the same basement storey, or from different basement storeys, they are separated; and

i. are covered with a metal grille or louvre.

The requirements of E10.15f. for a suitable mechanical smoke and heat extraction system will be met by incorporating a powered smoke and heat exhaust ventilator which has a capacity of at least 10 air changes per hour and conforms to BS 7346: Part 2: 1990 with a class D level of performance.

The requirements of E10.15f. for an appropriate fire control system will be met by a sprinkler system which conforms to BS 5306: Part 2: 1990.

AUTOMATIC FIRE DETECTION IN DWELLINGS

The requirements of E11.1a will be met by a smoke alarm with a standby supply, complying with BS 5446: Part 1: 1990 and installed in accordance with the provisions of a. to e. below -

a. The standby power supply for the smoke alarm should take the form of a primary battery, a secondary battery or a capacitor. The capacity of the standby supply should be sufficient to power the smoke alarm when the mains power supply is off for at least 72 hours while giving an audible warning of mains power supply being off. There should remain sufficient capacity to provide a warning of smoke for a further 4 minutes. An audible warning should be given at least once every minute where the capacity of the standby power supply falls below that required to satisfy the recommended standby duration when the mains power supply is on; or persist for at least 15 days when the mains power supply is off.

b. A smoke alarm should be located -

i. in a circulation area which will be used as a route along which to escape, not more than 7 m from the door to a living room or kitchen and not more than 3 m from the door to a room intended to be used as sleeping accommodation, the dimensions to be measured horizontally,

ii. where the circulation area is more than 15 m long, not more than 15 m from another smoke alarm on the same storey,
iii. where designed for ceiling mounting, at least 300 mm away from any wall or light fitting, or if designed for wall mounting, more than 150 mm and not more than 300 mm below the ceiling,

iv. at least 300 mm away from, and not directly above, a heater or air conditioning outlet, and

v. on a surface which is normally at the ambient temperature of the rest of the room or circulation area in which the smoke alarm is situated.

Note:
The above provisions are broadly in line with the recommendations of BS 5839: Part 6: 1995 for a Grade D Type LD3 system.

c. Where more than 1 smoke alarm is installed in a dwelling they should be interconnected so that detection of a fire by any one of them operates the alarm signal in all of them.

d. A smoke alarm should be permanently wired to a circuit. The mains supply to the smoke alarm should take the form of either -

i. an independent circuit at the dwelling’s main distribution board, in which case no other electrical equipment should be connected to this circuit (other than a dedicated monitoring device installed to indicate failure of the mains supply to the smoke alarms), or

ii. a separately electrically protected, regularly used local lighting circuit.

Note:
Where smoke alarms are of a type that may be interconnected, all smoke alarms should be connected on a single final circuit.

e. Any smoke alarm in a dwelling which forms part of residential accommodation with a warden or supervisor, should have a connection to a central monitoring unit so that in the event of fire the warden or supervisor can identify the dwelling concerned, and the system should comply with the recommendations in BS 5839: Part 6: 1995 for a Grade C Type LD3 installation.

The requirements of E11.1b will be met by an automatic fire detection and alarm system complying with BS 5839: Part 1: 1988: Type L3.

AUTOMATIC FIRE DETECTION IN BUILDINGS OF PURPOSE GROUP 2

(E11.2) The requirements of E11.2 for a suitable fire detection and alarm system in the case of a building of purpose sub-group 2A, will be met by an automatic detection and alarm system where -

a. manual fire alarm call points are provided and sited as specified in BS 5839: Part 1: 1988; and

b. automatic detection is provided to the L1 standard, complying with BS 5839: Part 1: 1988, except -

detection need not be provided in -

i. sanitary accommodation, and

ii. a lockable cupboard with a plan area not more than 1 m², and

iii. a void and roof space which contain only mineral insulated wiring or wiring laid on metal trays or in metal conduits, metal pipes or plastic pipes used for water supply or drainage, and ventilating ducts; and
c. the fire alarm is activated upon the operation of manual call points, automatic detection or the operation of any sprinkler system installed; and

d. the building should be divided into detection zones not extending beyond a single compartment, except -

   in a hospital the detection zone should not extend beyond a single sub-compartment; and

e. the audibility level of the fire alarm sounders complies with BS 5839: Part 1: 1988, except -

   i. in a hospital department to which patients have access, when the audibility need only be 55dB(A) or 5 dB(A) above the level of background noise, whichever is greater, or

   ii. in a place of lawful detention, the alarm need not be sounded; and

f. a main fire alarm control panel is provided at -

   i. the main entrance, or a suitably located entrance, to the building, and;

   ii. in hospitals, repeater panels should be provided at all other Fire Brigade access points; and

g. on the actuation of the fire alarm a signal is transmitted automatically to the Fire Brigade, either directly or by way of a remote centre, designed and operated in accordance with BS 5979: 1993, except -

   in the case of a building in purpose sub-group 2A designed to accommodate not more than 10 residents, where the fire detection and alarm system complies with that for a building of purpose sub-group 2B.

The requirements of E11.2 for a suitable fire detection and alarm system in the case of a building of purpose sub-group 2B, will be met by an automatic detection and alarm system where -

a. manual fire alarm call points are provided and sited as specified in BS 5839 Part 1 1988; and

b. automatic detection is provided to the L2 standard, complying with BS5839: Part 1: 1988; and

c. the fire alarm is activated upon the operation of manual call points, automatic detection or the operation of any sprinkler system installed; and

d. the audibility level of the fire alarm sounders complies with BS 5839: Part 1: 1988, except -

   in the case of shared residential accommodation designed to provide sleeping accommodation for not more than 6 persons, and having no sleeping accommodation below ground level or above first floor level, a smoke alarm system as specified in E11.1a. may be provided.

AUTOMATIC FIRE DETECTION IN ENCLOSED SHOPPING CENTRES WITH MALLS

(E11.3) The requirements of E11.3 for a suitable fire detection and alarm system will be met by an automatic detection and alarm system where -

a. automatic detection is provided to the L2 standard, complying with BS 5839: Part 1:1988; and

b. the fire alarm is also activated upon the operation of the sprinklers, or manual call points (complying with BS 5839 Part 1: 1988); and
(E6.1)

c. on the activation of the alarm in a shop, evacuation may be restricted to the shop concerned for a grace period not more than 4 minutes, unless during that time there is further detection in the mall, in which case the evacuation of the shopping centre should be commenced; and

d. notwithstanding this grace period, immediately upon activation of the alarm a message should be sent to an appropriate fire station or manned agency; and

e. in the case of the activation of the alarm anywhere other than in an individual shop, or on activation of sprinklers anywhere within the shopping centre, evacuation should be commenced immediately and there is no grace period; and

f. all areas of the shopping centre, including shops, are alerted using a voice alarm system complying with BS 5839: Part 8: 1998, however individual shops may use conventional sounders for the internal fire alarm; and

g. the fire alarm system is interfaced with other fire safety systems, to operate in the correct zones; and

h. on the operation of the fire alarm -

i. all escalators come to a controlled halt and lifts should return to the ground storey (or exit level),

ii. all systems within the mall or shops which play amplified music are silenced,

iii. any smoke dampers required to prevent the siphoning of smoke are activated, and

iv. (subject to the grace period where appropriate) all air-moving systems, mains and pilot gas outlets, combustion air blowers and gas, electrical and other heating appliances in the reservoir are shutdown; and

i. the main fire alarm system control panel is within the control room; and

j. indicator panels are provided at each of the fire-fighting accesses.