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Fire risk assessment - assessing the means of escape

The range of workplaces covered by these regulations is huge and so the following information is intended as a guide to get you started on an assessment. Our advice is to get expert help from one of our experienced safety consultants conducting a fire risk assessment at your premises, please call us on [01458 253682](tel:01458253682) or info@wilkinssafety.co.uk for more information on our safety consultancy and fire risk assessment / fire risk audit services.

Please note that in some cases, it may be necessary to provide additional means of escape or to improve the fire protection of existing escape routes. At this point you should consult the fire authority and, where necessary, your local building control officer before carrying out any alterations. The distances given below should ensure that people are able to escape within the appropriate period of time. You can of course use actual calculated escape times but should do so only after consulting a fire safety consultant with appropriate training and expertise in this field.

Fire risk categories for assessing the means of escape

In general, most workplaces can be categorised as high, normal or low risk. Examples of the type of workplace or areas within workplaces likely to fall within these categories are:

High

- Where highly flammable or explosive materials are stored or used (other than in small quantities).
- Where unsatisfactory structural features are present such as:
 - lack of fire-resisting separation;
 - vertical or horizontal openings through which fire, heat and smoke can spread;
 - long and complex escape routes created by extensive subdivision of large floor areas by partitions, or the distribution of display units in shops or machinery in factories; and
- large areas of flammable or smoke-producing surfaces on either walls or ceilings.
- Where permanent or temporary work activities are carried out which have the potential for fires to start and spread such as:
 - workshops in which highly flammable materials are used, e.g. paint spraying;
 - areas where the processes involve the use of naked flame, or produce excessive heat;
- large kitchens in works canteens and restaurants;
- refuse and waste disposal areas; and
- areas where foamed plastics or upholstered furniture are stored.



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or, where there is a significant risk to life in case of fire, such as where:

- sleeping accommodation is provided for staff, the public or other visitors in significant numbers;
- treatment or care is provided where the occupants have to rely upon the actions of limited numbers of staff for their safe evacuation;
- there is a high proportion of elderly or infirm people, or people with temporary or permanent physical or mental disabilities, who need assistance to escape;
- groups of people are working in isolated parts of the premises such as basements, roof spaces, cable ducts and service tunnels etc; and
- large numbers of people are present relative to the size of the premises (e.g. sales at department stores) or in other circumstances where only a low level of assistance may be available in an emergency (e.g. places of entertainment and sports events).

Normal

- Where any outbreak of fire is likely to remain confined or only spread slowly, allowing people to escape to a place of safety.
- Where the number of people present is small and the layout of the workplace means they are likely to be able to escape to a place of safety without assistance.
- Where the workplace has an effective automatic warning system, or an effective automatic fire-extinguishing, -suppression or -containment system, which may reduce the risk classification from high risk.

Low

- Where there is minimal risk to people's lives and where the risk of fire occurring is low, or the potential for fire, heat and smoke spreading is negligible.
- The work you have done on assessing the risks and reducing the risk of fire occurring, together with the knowledge you have gained about the location of people at risk, should generally provide you with the information you need to establish the risk category or categories of your workplace.

General principles for escape routes

Other than in small workplaces, or from some rooms of low or normal fire risk, there should normally be alternative means of escape from all parts of the workplace. Routes which provide means of escape in one direction only (dead-end) should be avoided wherever possible as this could mean that people have to move towards a fire in order to make their escape. Escape routes should be independent of one another and arranged so that people can move away from a fire in order to make their escape and should always lead to a place of safety. Remember that they should also be wide enough for the number of occupants and should not normally reduce in width and be kept clear of obstruction at all times.

Evacuation times and length of escape routes



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The aim is, from the time the fire alarm is raised, for everyone to be able to reach a place of relative safety, i.e. a storey exit (see 'Technical terms relating to means of escape'), within the time available for escape. The time for people to reach a place of relative safety should include the time it takes them to react to a fire warning.

This will depend on a number of factors including:

- what they are likely to be doing when the alarm is raised, e.g. sleeping, having a meal etc;
- what they may have had to do before starting to escape, e.g. turn off machinery, help other people etc; and
- their knowledge of the building and the training they have received about the routine to be followed in the event of fire.
- Where necessary, you can check these by carrying out a practice drill.

To ensure that the time available for escape is reasonable, the length of the escape route from any occupied part of the workplace to the storey exit should not exceed:

Where more than one route is provided

- 25 metres - high-fire-risk area;
- 45 metres - normal-fire-risk area;
- 60 metres - low-fire-risk area.

Where only a single escape route is provided

- 12 metres - high-fire-risk area;
- 18 metres - normal-fire-risk area (except production areas in factories);
- 25 metres - low-fire-risk area.

Where the route leading to a storey exit starts in a corridor with a dead-end, then continues via a route which has an alternative, the total distance should not exceed that given above for 'Where more than one route is provided'. However, the distances within the 'dead-end portion' should not exceed those given for 'Where only a single escape route is provided'.

People with disabilities

You may need to make special arrangements for staff with disabilities, which should be developed in consultation with the staff themselves. British Standard 5588: Part 8 gives guidance and provides full information.

Premises providing residential care and/or treatment

The distances shown in the paragraphs above may not be suitable for workplaces providing residential care - you should seek specialist advice from your fire safety consultant in this situation.



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Number and width of exits

There should be enough available exits, of adequate width, from every room, storey or building. The adequacy of the escape routes and doors can be assessed on the basis that:

- a doorway of no less than 750 millimetres in width is suitable for up to 40 people per minute (where doors are likely to be used by wheelchair users the doorway should be at least 800 millimetres wide); and
- a doorway of no less than 1 metre in width is suitable for up to 80 people per minute.
- Where more than 80 people per minute are expected to use a door, the minimum doorway width should be increased by 75 millimetres for each additional group of 15 people.

For the purposes of calculating whether the existing exit doorways are suitable for the numbers using them, you should assume that the largest exit door from any part of the workplace may be unavailable for use. This means that the remaining doorways should be capable of providing a satisfactory means of escape for everyone present.

Inner rooms

You should avoid situations where the only escape route for people in an inner room is through one other room (the access room). The exception to this is where the people in the inner room can be quickly made aware of a fire in the outer one and this is not an area of high fire risk. Where there is no automatic fire detection system, it may be reasonable to provide a self-contained smoke alarm which is solely within the access room, as long as it is clearly audible within the inner room.

Corridors

Corridors should generally be a minimum of 1 metre wide (although wheelchair users will need a width of 1.2 metres and a width of 1.5 metres is preferable). The doors should be aligned with the walls of the rooms so that the floor area is effectively divided into two or more parts. To avoid having to travel long distances in corridors affected by smoke, those corridors which are more than 30 metres long (45 metres in offices and factories) should be subdivided into approximately equal parts by providing, close-fitting, self-closing fire doors.

Where a corridor only leads in one direction, or serves sleeping accommodation, it should be constructed of fire-resisting partitions and self-closing fire doors (this does not apply to toilets).

If you would like assistance with any aspect of fire risk assessment please call one of our expert fire safety consultants on [01458 253682](tel:01458253682). We can complete a comprehensive fire risk assessment / fire risk audit for your workplace, email info@wilkinssafety.co.uk to find out more.