

Calculating Occupancy for Licensed Premises and Other Places of Assembly

This leaflet has been produced to provide licensed premises and other places of assembly, with guidance and advice when calculating occupancy figures.

By following our guidance, you could improve the fire safety in your premises and protect your staff, customers and business.

Your Fire Safety responsibilities under the Licensing Act 2003

The information contained within this leaflet is for guidance only. It is not a full and authoritative statement of the law and does not constitute legal advice. The leaflet does not replace, extend, amend or alter in any way the statutory provisions of the Licensing Act 2003 or any subordinate legislation made under it or statutory guidance issued in relation to it.

Introduction

This leaflet is for the benefit of persons applying for Premises Licenses or Club Premises Certificates or variations thereto under the Licensing Act 2003 and existing licence holders, but will also assist with calculations for other places of assembly. It provides guidance on general fire safety advice on fire risk assessments and how to calculate safe occupancy figures.

As the responsible person of the premises, you will need to calculate the occupant capacity as part of your fire risk assessment and in order to assess the means of escape.

The occupant capacity is the number of people who can safely occupy a building or part thereof which is made available to relevant persons (e.g. member of the public).

To calculate the occupancy capacity with the following guide, the following needs to be understood:

- The calculations set out below are relevant to premises of a good general standard of construction, with sound foundations supporting walls of block, brick, stone, or modern insulated treated wood construction, supporting a substantial roof of traditional construction. The internal walls, floors and ceilings are to be sound, and covered by non-combustible surface coverings, doors should be substantial and well fitting. The services and equipment should be to the required certificated standards, being tested and maintained.
- Should the premises not be to these standards it may be necessary to assess that a fire could spread through the premises more quickly; therefore the time given for the evacuation of persons could be reduced. A reduction in the time to evacuate a premises or room will affect the overall occupancy limit provided.
- With this in mind a premises with a less than an adequate standard of construction, could have occupancies restricted by as much as 20% from the calculations provided below.

Your premises operating schedule should clearly state the **Occupancy Capacity** and how the figure had been reached. The Licensing Authority may attach conditions relating to the maximum occupancy level(s) after consultation with all statutory agencies, if the operating schedule does not include such details or there are objections to the proposed occupancy level.

The responsible person needs to also provide an acceptable method of:

- Controlling entry
- Identifying the numbers of persons present on the premises at any time
- Providing appropriate staffing levels (stewards) where the number of people on the premises exceed 60
- Producing on demand to any authorised officer of the authority, the Police or Fire and Rescue Service, evidence of the number of persons present on the premises

If your building has had its occupancy capacity determined under previous legislation, providing no material alterations have been made to the building, and/or the use of the building has not changed, the previously determined figure may be acceptable to Leicestershire Fire and Rescue Service (LFRS) and the Licencing Authority, if the previous approval covers all the requirements of the Regulatory Reform (Fire Safety) Order 2005

Plans

Information that should be shown on the plans of your premises include:

1. Location, door opening direction and size of exits
2. Fixed structures that are impediments to movement
3. Location and height of any stage or raised area
4. Location and type of any fire safety measure (emergency lights, fire alarm, fire doors, signs, firefighting equipment, etc)
5. Specific use of areas within the premises (as they relate to your occupancy figure, as detailed later)
6. Any additional items not detailed above, i.e. flammability of seasonal/party decorations etc.

An example of plans is located at the end of this leaflet

The Five Steps of a Fire Risk Assessment

This must be in writing

- 1) Identify the hazards.
- 2) Identify people at risk.
- 3) Evaluate, remove, reduce and protect from risk.
- 4) Record, plan, inform, instruct and train.
- 5) Review.

(A pro forma is available to download from our website)

Fire Safety Checks - This does not form part of the fire risk assessment

The adequacy of existing fire safety measures in a premise should be determined by carrying out a fire risk assessment. The following check list (although not exhaustive) has been compiled to enable you to address and manage fire safety measures in their building.

Has a fire risk assessment been carried out?

Has the maximum occupancy of the premises been determined?

Are all fire escape routes properly maintained and free from obstructions, goods or any material that constitutes a hazard to the route?

Are all stairways, corridors and lobbies kept free from combustible storage and furniture at all times?

Are all stairways, ramps and steps, comprising part of the means of escape, maintained in a safe condition with even and non-slippery surfaces, with all floor coverings secured in position?

Are all self-closing doors (other than those held open automatically) maintained self-closing at all times and not provided with any means of keeping them in the open position?

Are there any fire doors held open with automatic devices?

Do they close automatically on operation of the fire alarm?

Are all exit doors, through which people may have to pass, unlocked and free to open for persons leaving the premises?

Are arrangements in place so that persons with mobility difficulties are able to leave the premises safely in the event of fire? (Remember wheelchair users require a 900mm wide exit to safely evacuate your premises).

Are all floors, walls and ceilings kept in a satisfactory state of repair?

Are all surface finishes on walls, partitions and ceilings of such a standard to minimise fire spread?

Is all firefighting equipment (fire extinguishers) readily available for use?

Is all firefighting equipment tested and maintained in efficient working order according to the appropriate standard?

Are all fire alarm tests, emergency lighting tests, electrical tests and fire training recorded?

Are all notices, signs and fire exit signs legible and unobstructed?

Has the electrical installation (fixed wiring) been checked within the last 5 years?

If special effects such as lasers, pyrotechnics, smoke machines, foam machines, etc. are to be used, what additional fire safety measures have been provided?

For premises with moveable seating, (village halls, etc.) are adequate gangway widths (1.05m) and seat way widths (305mm) provided?

Are the fire exits outward or inward opening? If the occupancy figure is for more than 60 people then the doors should be outward opening.

Is there a procedure in place controlling the movement of persons through each floor level?

This is not a full and extensive risk assessment this is a basic fire safety check, there may be other Issues that need to be taken into consideration, and therefore it is not a full and conclusive statement of fire safety requirements.

OCCUPANCY CALCULATIONS

The following information has been extracted from the CLG guide for Fire Safety Risk Assessment in Small and Medium Places of Assembly under the Regulatory Reform (Fire Safety) Order 2005 (this guide is available to download free from www.communities.gov.uk/firesafety) and Build Regulations approved Document B (ADB).

The occupancy figure for any building is based on the **lesser** of the two following calculations; the number of persons who can safely reside in the premises (*using the floor space factor may assist in working this out*) and the width and capacity of the exit routes to allow them to escape safely.

Floor Space Factors

Floor space factors may assist you in working out the maximum number of persons who may safely reside in the premises and are based on the following table is taken from Building Regulations ADB Note this should exclude toilets, stairway enclosures, bar serving areas, DJ Booths, stores, fixed furniture and other similar areas.

Table 1 - Floor Space Factors

Type of accommodation	M2 per person
Standing areas, Bars without seating	0.3
Assembly Halls, Dance floors, Concert events	0.5
Dining rooms, Seated Lounge/Bar, Restaurants	1.0

Examples of Individual Areas

- **Dance floor area** measuring $10\text{m} \times 20\text{m} = 200\text{m}^2$ of floor space, then divide the area by the floor space factor e.g. $200 \div 0.5 = 400$ people
- **Individual seated areas** the major part of the occupancy capacity will be determined by the number of seats available
- **Bench seats** or similar continuous seating, dividing the total width of such seating by 450mm to calculate the occupant limit

Where you have fixed seating then the maximum numbers of people in the Hall, Bar or Restaurant will be known from the number of seats provided. If you are providing temporary seating then this may be limited by the maximum numbers your escape routes can accommodate.

E.g. Bar area of $100\text{m}^2 \div 0.3 = 300$ persons and 50 seats around the side of the room total occupancy = 350

Widths of Escape Routes and Exits

The minimum width for an escape route should ideally be 1050mm but in any case not less than 750mm and where wheelchair users are likely to use it not less than 900mm. The premises fire risk level will be obtained from your fire risk assessment (use medium risk if you are not sure of your premises risk level).

To measure the usable width of an opening, when the door is fully open, the measurement must take into consideration any projections into the doorway or elsewhere around the exit route from the opening in the room.

The number of people who could be expected to exit through a specific size opening within a specified time would be:

Table 2 - Exit Widths

(Source CLG guide Fire Safety Risk Assessment Small and Medium Places of Assembly)

Minimum width on escape route or exit	Premises Fire Risk Level and Persons
750mm – 1050mm	Low Risk = 120 Medium Risk = 100 High Risk = 80
1050mm	Low Risk = 120 Medium Risk = 100 High Risk = 80
Over 1050mm - every 75mm	+15 persons regardless of risk level

Note: No individual exit door should be greater than 2m in width.

When calculating the exit capacity you must remember to discount the largest exit or exits if they are close together (see example below), as they may be unavailable due to the fire. Then add together the number of persons who can safely use the remaining available exits.

Note: An occupancy limit of 60 persons will apply where only one exit exists and 60 persons is the limit for an exit where an exit door opens inwards (unless that door is fastened open).

Other guides are available which may also assist in calculating a safe and accurate occupancy figure for fire safety in buildings e.g. Building Regulations Approved Document B 2013, BS 9999 2008.

Example Calculation for Occupancy Figure

Worked Example 1

Our assembly building consists of 3 areas, i.e.

- 20m^2 bar area near serving point = $20/0.3 = 66.6$ persons
- 100m^2 bar area away from serving point = $100/0.5 = 200$
- Restaurant area with 60 seats = 60 persons
- 100m^2 Lounge area = $100/ 1.0 = 100$

This gives a maximum floor occupancy figure of 426 people permitted in the premises at any one time; however there must be sufficient exits for all these people to escape in the event of an emergency

In order to make sure we have enough exit capacity we need to examine the doors available from these areas.

The following doors are available:

- Exit 1 - 750mm - Capacity 100 persons
- Exit 2 - 1050mm - Capacity 200 persons
- Exit 3 – 750mm – Capacity 100 persons
- Exit 3 – 850 mm – Capacity 100 persons

This gives an exit capacity for 500 people, i.e. $100+200+100+100 = 500$ people, however, in the event of a fire then it is always assumed that one exit is unavailable and this is always the largest exit.

This gives a reduced capacity of $100+100+100 = 300$ people.

If it is impracticable to provide additional exit widths, then the occupancy figure should be restricted to 300 people

Worked Example 2

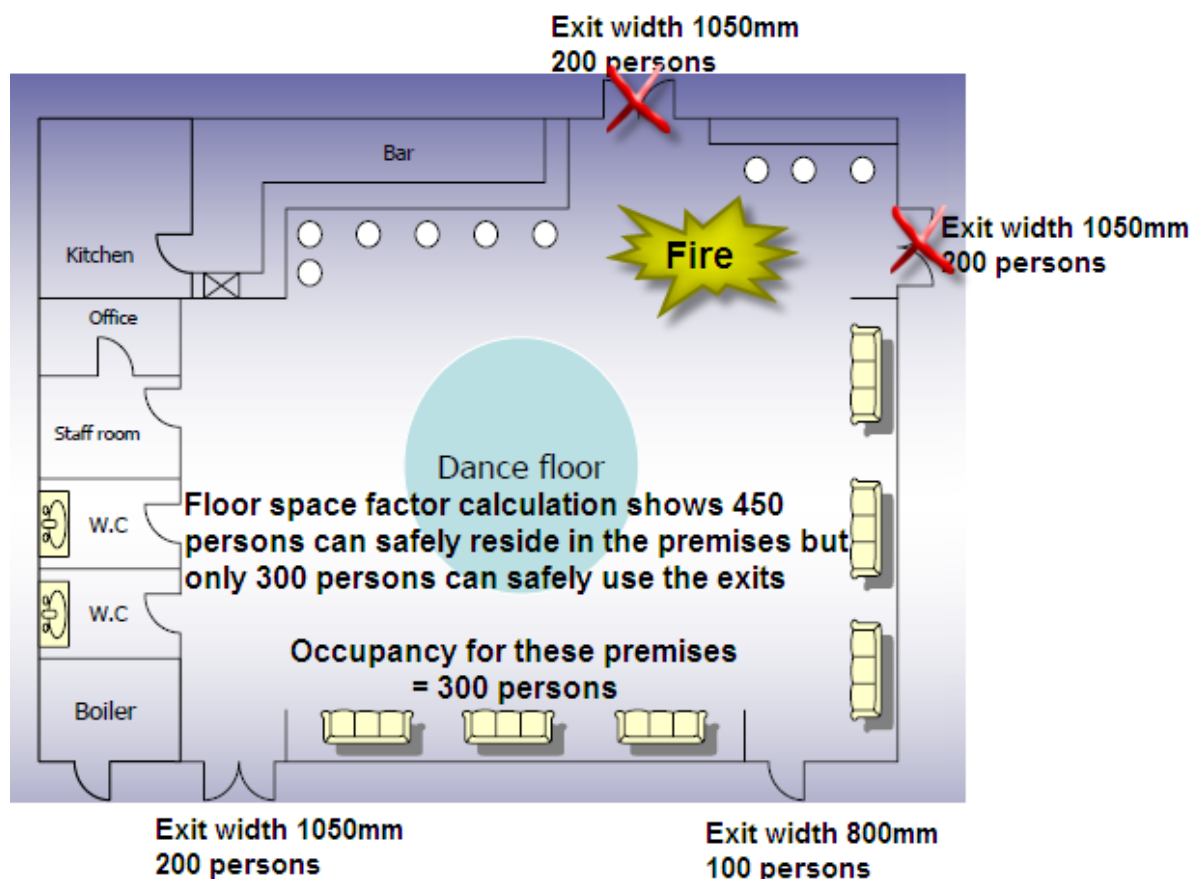
Exit A (1200mm wide) = 200 + 30 (150mm over 1050mm; therefore 2 X 75mm = an additional 30 persons). Total capacity of exit A = 230 persons,

Exit B (900mm wide) = 100 persons,

Exit C (850mm wide) = 100 persons.

Discount the largest Exit (A) then total exit capacity is Exit B + Exit C = 200 persons

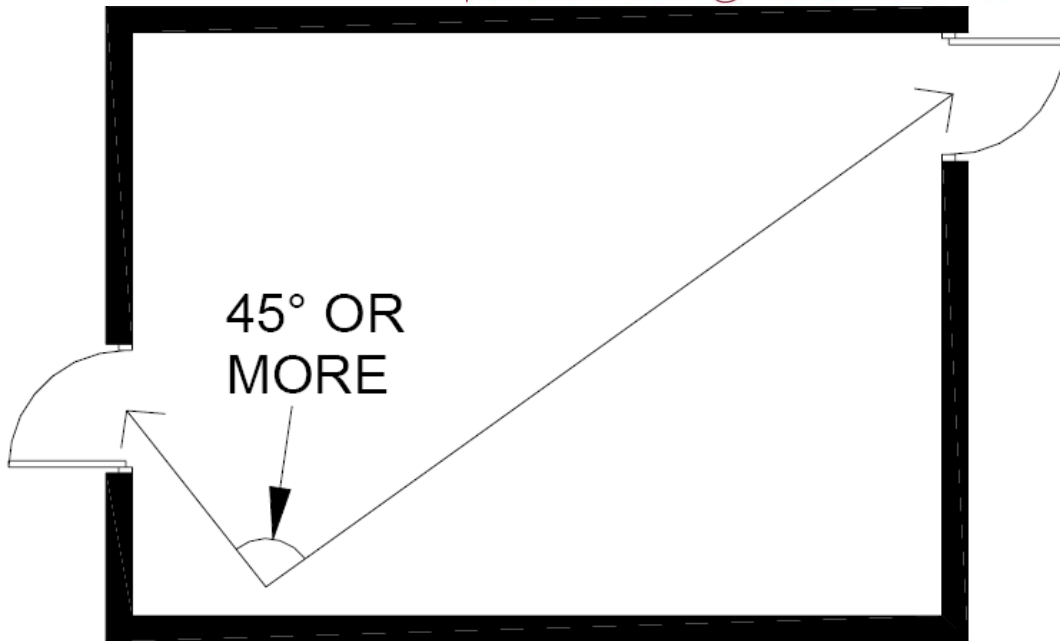
Worked Example (3) of discounting the largest exits and 45 degree rule



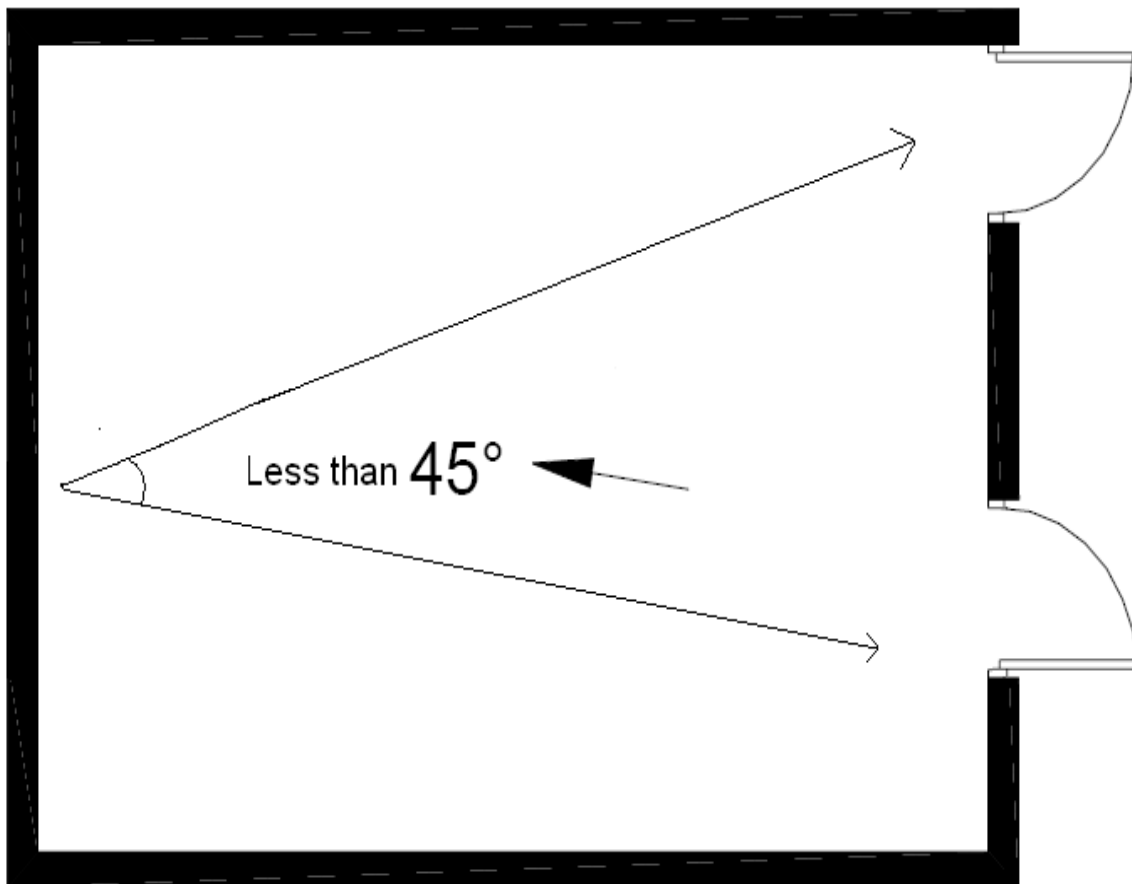
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Doors may be counted as 2 separate exits



Doors must be counted as one exit

Exit Routes and Considerations

- Are they Suitable?
- Easily, safely and immediately usable at all times?
- Adequate for the number of people likely to use them?
- Free from any obstructions, slip or trip hazards?
- Well lit by normal and emergency escape lighting?
- Available for access by the emergency services?

Having established the number and location of people and the exit capacity required to evacuate them safely, you now need to confirm that the number and location of existing exits is adequate. This is normally determined by the distance people have to travel to reach them.

Table 3 gives guidance on travel distances and it should be understood, that these distances are flexible and may be increased or decreased depending upon the level of risk after you have put in place your fire-prevention measures.

Travel Distance: Is the distance a person has to travel to a place of reasonable safety i.e

- A protected stairway enclosure.
- A separate fire compartment, from which there is a final exit to a place of total safety
- The nearest available final exit.

Table 3 – Travel Distances

(Source CLG guide Fire Safety Risk Assessment Small and Medium Places of Assembly)

Escape routes	Travel distance with seating in rows	Travel distance other areas
Where more than one route is provided	20m High risk 32m Normal 45 Lower	25m High risk 45m Normal 60m Lower
Where only a single escape route is provided	10m High risk 15m Normal 18m Lower	12m High risk 18m Normal 25m Lower

Please note: This leaflet is not a full and extensive method of calculating the maximum occupancy capacity of a premises, and is only a basic guide. Any figure you may arrive at may be reduced by Leicestershire Fire and Rescue Service due to the unique circumstances of your premises.

The use of this guide will not prejudice any enforcement action that may be taken by Leicestershire Fire and Rescue Service as a result of any fire safety deficiencies found during an audit, and does not automatically demonstrate compliance with the law.



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Contact us

If after reading this guide you still feel you need more information, you can go to our website or contact a fire safety officer on:

Phone: 0116 2872241

Email: firesafetyadvisors@lfrs.org