How do I work out a basic maximum occupancy for an office?

The following information uses occupancy standards outlined in BS9999 on how to work out the maximum occupancy for an office with a size of 20m x 20m.

1. Measure all doors (on evacuation routes) from the room

If you have more than one door, you discount the largest door. If you only have one door from this office, the maximum occupants you can have within the room would generally be 60, as long as the floor space can accommodate this number.

Consider if additional protection is provided in the way of sprinkler systems or suppression. Where additional protection is installed, BS9999 utilises an alternative table with a greater “minimum door width per person”.

BS9999 divides an occupied space into risk profiles. A risk profile is determining occupant vulnerability over the fire growth rate. An office risk profile is usually A2 (for occupants awake and familiar with the building). This may alter depending on the information provided as part of the fire risk assessment.

The “minimum door width per person” for an A2 risk building with minimum fire protection according to BS9999 is 3.6mm. On the basis that minimum door widths according to the standard are maintained, you divide the width of the doors by the ‘minimum door width per person’.

Worked example:
Door A (1200mm) - Excluded
Door B (980mm - /3.6 = 272)
Door C (850mm - /3.6 = 236)

Maximum number of people able to evacuate the room would be 508 people.

2. Measure out the room in square meters

Consider the spacing factor of the room. An administration office is permitted 5 square meters per person (BS9999 - chapter 17, table 10 example of typical floor spacing factors). Measured out floor space in meters squared/ spacing factor:

400 (20m x 20m office in square metres) / 5 = 80 people

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The maximum number permitted in an office is the lowest number of the “measurement of the doors” and “measurement of the room”. In this worked example above, it would be 80 people.

This is a very basic calculation for a room, not taking into consideration maximum floor capacities, available escapes, or widths of final exits.

References

Ref BS9999:2008 “Code of practice for fire safety in the design, management and use of buildings”
Chapter 6, table 4 and 5
Chapter 17, table 10 and 13
Chapter 18 table 14
HM Government fire safety offices and shops