

# BUILDING REGULATIONS

## GREENWOOD COMMERCIAL RANGE

### Building Regulations

The Building Regulations require ventilation in all new-build or refurbishment commercial premises, where planning permission is required.

They work by identifying the technical requirements for:

- 1 **Rapid ventilation**, such as opening windows.
- 2 **Background ventilation** using window ventilators, airbricks etc.
- 3 **Mechanical Extract Ventilation** by extractors operated mechanically and automatically.

### Complying with Building Regulations

For maximum efficiency, careful planning for the installation, size and number of fans is required. This can be calculated by following the advice below:

#### Performance Requirements

- 1 Calculate the volume of room (length x width x height) in cubic metres.
- 2 Identify the room usage in the list opposite for the recommended number of air changes per hour.
- 3 Multiple the room volume by the number of air changes to

obtain the required air extract rate ( $m^3 \cdot h^{-1}$ ).

- 4 Select the fan model that has a performance at least equal to this extract rate from Eco range.
- 5 If no single fan meets the required extract rate, divide the rate by the performance of selected fans to establish the quantity of fans required.

## Offices

**Table 2.1a Extract Ventilation Rates**

Room	Extract rate
Rooms containing printers and photocopiers in substantial use (greater than 30 minutes per hour).	Air extract rate of 20l/s per machine during use. Note that if the operators are continuously in the room, use greater of extract and whole building ventilation rates.
Office sanitary accommodation and washrooms.	Intermittent air extract rate of: 15l/s per shower/bath 6l/s per WC/urinal
Food and beverage preparation areas (not commercial kitchens)	Intermittent air extract rate of: 15l/s with microwave and beverages only 30 l/s adjacent to the hob with cooker(s) 60l/s elsewhere with cooker(s) All to operate while food and beverages preparation is in progress
Specialist buildings and spaces (eg. commercial kitchens, fitness rooms)	See Table 2.3

**Table 2.1b Whole Building Ventilation Rate for air supply to offices**

	Air Supply rate
Total outdoor air supply rate for offices (no-smoking and no significant pollutant sources)	10l//s per person

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## Ventilation of Other Types of Buildings

Ventilation of other buildings and spaces is detailed in **Table 2.3** of ADF 2006, where reference is made to additional regulations and guidance notes e.g **CIBSE Guide B2: 2001**

The following performance information is a guide to the airflow requirements for varying buildings types. Please refer to ADF and respective guidance notes to ensure compliance.

Building/Space/Activity	Air changes per hour
Assembly Rooms	6 – 8
Bakeries	20 – 30
Banks/Building Societies	4 – 6
Cafes/Coffee Bars	10 – 12
Car Park	3
Car Park – Basement	6
Car Park – Access Ramps	10
Cellars	3 – 10
Changing Rooms	6 – 10
Churches/Church Halls	1 – 2
Cinemas/Theatres	6 – 10
Conferences Rooms	8 – 10
Dance Halls	10 – 12
Dental Surgeries/Waiting Rooms	12 – 15
Gymnasiums	6 – 8
Hairdressing Salons	10 – 15
Laboratories	4 – 6
Laundries	10 – 15
Lecture Theatres	6 – 10
Libraries	3 – 4
Offices	4 – 6
Recording Control Rooms	15 – 25
Recording Studios	10 – 12
Sanitary Accommodation in Schools	6
Schoolrooms	4 – 6
Shops and Supermarkets	8 – 10
Stores/warehouses	3 – 6
Squash Courts	4 – 6
Swimming Baths	15 – 20

### Examples

#### Health Club Gymnasium

16m x 10m x 2.5m.

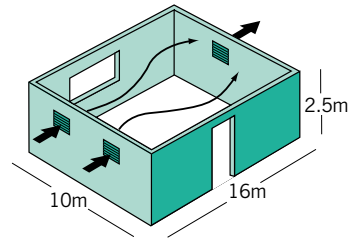
Air Volume: 400m<sup>3</sup>

Air Changes/hour required: 7  
= 2800m<sup>3</sup>.h<sup>-1</sup>.

Eco Fans Required:

2 x CD12 or

3 x CD.



#### Recording Studio

10m x 10m x 2.7m.

Air Volume: 270m<sup>3</sup>

Air Changes/hour required: 10–12  
= 3200m<sup>3</sup>.h<sup>-1</sup> (maximum).

Eco Fans Required:

3 x CD12.

