Technical Guidance Document
VENTILATION 2002

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Introduction

- The purpose of the discussion will give an outline of the requirements within the Guidance Document and its application to the built environment.

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Topics of Discussion

- The Requirement ‘F1 & F2’
- Dwellings
- Non Domestic Dwellings
- Condensation in roofs
- Defects
Topic One

- The requirement F1 & F2.
  (F1)
  “Adequate means of ventilation shall be provided for people in buildings, including adequate provision for the removal of water vapour from kitchens, bathrooms, and other area’s where water vapour is generated.”

- (F2) “Adequate provision shall be made to prevent excessive condensation in a roof or in a roof void above an insulated ceiling.”
Dwellings

**Habitable rooms** other than a utility, kitchen, or a room containing a kitchen the following provisions for ventilation should be adequate:

- Back ground ventilation having an area not less than $6500\text{mm}^2$ and

- A ventilation opening suitable for rapid ventilation having a total area of at least $\frac{1}{20}$th of the floor area of the room.
Dwellings continued 1

**Kitchen & Utility rooms** or a room containing a kitchen the following provision should be adequate:

Background 6500mm² and

Rapid ventilation 1/20\(^{th}\) floor area and

Mechanical extract ventilation extracting at a rate of 60lit / sec or at a rate of 30lit / sec were a cooker hood is in place. Or

Passive stack ventilation in accordance with BRE 13/94 incorporating an auto humidity sensitive vent inlet control grille.
## Dwellings continued 2

<table>
<thead>
<tr>
<th>ROOM</th>
<th>RAPID VENTILATION</th>
<th>BACK GROUND</th>
<th>EXTRACT VENT RATE</th>
</tr>
</thead>
</table>
| Habitable| 1/20<sup>th</sup> floor area | 6500mm<sup>2</sup> | ---------
| Kitchen  | 1/20<sup>th</sup> floor area | 6500mm<sup>2</sup> | 60lit / sec 30 lit / sec or PSV |
| Utility  | 1/20<sup>th</sup> floor area | 6500mm<sup>2</sup> | 30 lit / sec or PSV |
| Bathroom | 1/20<sup>th</sup> floor area | ---------
| Sanitary | 1/20<sup>th</sup> floor area | --------- | 15 lit / sec or PSV |

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Dwellings continued 3

Ventilation of Habitable rooms through other rooms and spaces. E.g. conservatory which may be closable, rapid ventilation must not be less that 1/20th the combined floor area.

Ventilation of non-occupiable internal rooms:

Height of Habitable rooms
- 2.4m to ceiling
- 2.1m to underside of lowest beam
- 2.1m to underside of bay window
- Area B not less than Area A / 2
Non Domestic Dwellings

<table>
<thead>
<tr>
<th>Area</th>
<th>Ventilation Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kitchen</td>
<td>60 lit/sec – 30 lit/sec</td>
</tr>
<tr>
<td>Bathroom / shower</td>
<td>15 lit/sec bath / shower</td>
</tr>
<tr>
<td>Sanitary / washing</td>
<td>6 lit/sec / Wc or 3 air changes per hour</td>
</tr>
<tr>
<td>Rest room / smoking</td>
<td>16 lit/sec + 6500mm²</td>
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</tbody>
</table>
Condensation in Roofs

- Condensation in a roof and in the spaces above insulated ceilings should be limited so that, under normal conditions:
  - (a) The thermal performance of the insulating materials, and
  - (b) The structural performance of the roof construction:
- Will not be substantially and permanently reduced.
VENTILATING ROOF Voids

A. PITCHED ROOF
At least equal to continuous strip 10mm wide
At least 50mm

B. LEAN-TO ROOF
At least equal to continuous strip 10mm wide
At least 50mm

C. FLAT ROOF
At least equal to continuous strip 25mm wide
At least 50mm

D. CEILING FOLLOWING PITCH OF ROOF
At least equal to continuous strip 25mm wide
At least 50mm
Defects

- Dry rot
- Mould / algae
- Building unsuitable for occupation
- Building element failure
- Expensive to repair
SUMMARY

- Remember there are buildings with special requirements, these include schools, workplaces, hospitals, commercial kitchens, plant rooms and car parks.

- Consult appropriate design guides and BRE / EU / BS standards