

What is the CIBSE Guide B2: Ventilation and Air Conditioning?

Synonym(s): CIBSE Guide B: Heating, Ventilation, Air Conditioning and Refrigeration (HVACR), Part 2: Ventilation and Air Conditioning; The Engineer's Benchmark for Ventilation.

CIBSE Guide B2 is an authoritative, non-statutory publication produced by the **Chartered Institution of Building Services Engineers (CIBSE)**. It provides comprehensive, detailed guidance on the design, installation, commissioning, operation, and maintenance of ventilation and air conditioning systems in buildings across the UK.

While **Approved Document F (AD F)** of the Building Regulations sets the *minimum acceptable standards* for ventilation in new and existing dwellings in England and Wales, CIBSE Guide B2 represents the recognised **standard of best practice** within the engineering profession.

For Architects and Specifiers, B2 acts as the critical bridge between basic legal compliance (AD F) and delivering truly high-performing, healthy, and resilient indoor environments. It moves beyond flow rates to cover system selection, noise control, energy efficiency, and post-installation verification, all of which are vital for avoiding costly failures and client complaints.

Relevance to UK Residential and Retrofit Sectors

In the UK house building, residential retrofit, home renovation, and extension sectors, specifying designs that reference CIBSE Guide B2 is increasingly seen as a necessity for quality assurance.

1. **Exceeding Minimums:** AD F (Volume 1 for Dwellings) focuses heavily on ensuring sufficient air changes for health and safety. B2 guides the specifier on *how* to achieve those changes optimally—addressing factors like thermal comfort, noise transmission (which is crucial for client satisfaction and avoiding complaints), and energy consumption.
2. **The Golden Thread and Compliance:** For specifiers dedicated to excellence, CIBSE B2 provides the robust, verifiable methodology required to demonstrate that the installation meets the necessary performance standards. This aligns directly with the 'Golden Thread' principle of comprehensive, traceable building information. When challenging a non-compliant installation, referencing B2 provides an irrefutable, industry-agreed benchmark that stands above the basic legal minimum.
3. **Real-World Application:** For a new-build residential block, a design meeting AD F might specify a certain Mechanical Ventilation with Heat Recovery (MVHR) flow rate. A design referencing CIBSE B2 would additionally specify:
 - The maximum acceptable noise rating (often lower than AD F's recommendations) to prevent resident dissatisfaction.
 - Detailed commissioning protocols and in-use testing to verify the installed performance

matches the design specification.

The VENTI Air Passport Connection

The **VENTI Air Passport** is a streamlined system designed to capture, verify, and present the necessary commissioning data and performance outcomes. By using a system like the Air Passport, specifiers can effortlessly **demonstrate** that their ventilation design not only satisfies the legal requirements of **AD F** but also adheres to the superior, detailed performance criteria outlined in **CIBSE Guide B2**. This provides immediate, traceable proof for the Golden Thread and protects the specifier's reputation for delivering excellence.

5 Essential Related Terms for Ventilation Excellence

These terms are crucial for specifiers focused on best practice and robust compliance:

1. **Approved Document F (AD F):** The statutory minimum requirement for ventilation in buildings in England (Vol 1: Dwellings, Vol 2: Buildings Other Than Dwellings). While CIBSE B2 provides the *how-to* for excellence, AD F provides the *must-do* for legality.
2. **The Golden Thread of Information:** A key principle derived from the Building Safety Act, demanding that accurate and up-to-date building information is maintained and traceable throughout the building's lifecycle. Ventilation performance data, guided by CIBSE B2 standards, is a critical component of this thread.
3. **System Specific Fan Power (SFP):** An efficiency metric (W/L/s or Watts per litre per second) used to assess the energy consumption of the installed ventilation system. B2 provides guidance on achieving optimal SFP values, balancing performance with energy efficiency.
4. **In-Situ Air Permeability Testing (Air Tightness):** While covered by Approved Document L (Conservation of Fuel and Power), this is intrinsically linked to ventilation. As UK homes become more air-tight, the need for robust, managed ventilation systems designed to B2 standards becomes paramount.
5. **Part B (Fire Safety):** In multi-occupancy residential buildings, the ventilation system design (e.g., ducts, risers, fan enclosures) must not compromise the fire safety provisions required by Approved Document B. CIBSE B2 often references these essential cross-compliance requirements.