

# What is the fraction of floor area that is required for purge ventilation in a window?

**In the UK, Approved Document F of the Building Regulations stipulates that a window used for purge ventilation must have an openable area equivalent to at least 1/20th of the room's floor area. For instance, a room measuring 20m<sup>2</sup> requires a minimum openable area of 1m<sup>2</sup>. This rapid ventilation helps remove pollutants and moisture quickly.**

## **Understanding Purge Ventilation Requirements in the UK**

Navigating the Building Regulations can feel like deciphering an ancient code, but getting ventilation right is absolutely critical for the health of your home and everyone in it. The rule on purge ventilation is a cornerstone of Part F, and for good reason. It's not just a bureaucratic box-ticking exercise; it's a fundamental requirement designed to protect your property and your wellbeing.

### **The Golden Rule: 1/20th of the Floor Area**

Let's break down the core requirement. Approved Document F, which governs ventilation in England, states that for a window to be considered suitable for purge ventilation (sometimes called 'rapid ventilation'), its minimum openable area must be at least 5% of the floor area of the room it serves. Now, 5% might sound like a small, abstract number, but it's far more intuitive to think of it as a fraction: **1/20th**.

This means a simple calculation governs your window size:

- **Room Floor Area (m<sup>2</sup>) ÷ 20 = Minimum Openable Window Area (m<sup>2</sup>)**

For example:

- A 15m<sup>2</sup> bedroom needs an openable area of **0.75m<sup>2</sup>**.
- A 24m<sup>2</sup> living room needs an openable area of **1.2m<sup>2</sup>**.

It is crucial to understand that this refers to the *openable* area of the window, not the size of the entire glass pane. A large fixed pane with a tiny top-opening vent might not meet the requirement, even if the overall window is big. The mechanism must allow this specified area to be opened freely to the outside air.

### **Why This Specific Fraction Exists**

This isn't an arbitrary number plucked from thin air. This 1/20th fraction is the product of extensive research into air flow dynamics, moisture removal, and pollutant dilution. Purge ventilation is your home's emergency flush button. Its purpose is to rapidly expel large volumes of humid, stale, or polluted air in a short period.

Think about it. You've just had a shower, and the bathroom is full of steam. You boil a kettle, and the kitchen fills with moisture. You've had a gathering, and the living room feels stuffy. These are all scenarios where low-level, background ventilation (like trickle vents) simply isn't enough. You need a powerful, immediate exchange of air. The 1/20th ratio is calculated to be the minimum effective size to achieve this rapid air change without causing excessive draughts or heat loss. It's the

engineering sweet spot for practicality and performance.

## The Critical Difference: Purge vs. Background Ventilation

A common point of confusion is mixing up purge ventilation with other types. It's vital to distinguish between them:

- **Purge Ventilation (The 1/20th Rule):** This is for short-term, high-volume ventilation. You manually open a window for perhaps 10-20 minutes to quickly clear moisture, odours, or stuffiness. It is an *on-demand* solution.
- **Background Ventilation (Trickle Vents):** These are small, continuously open vents (often integrated into window frames) designed to provide a constant, low-level air exchange. They work silently in the background to dilute and remove pollutants that build up from everyday activities like breathing and cooking. They are not designed for rapid clearing.

A compliant ventilation strategy for a habitable room, as per Building Regulations, typically requires *both* adequate background ventilation *and* a means of purge ventilation (which is most commonly an openable window meeting the 1/20th rule).

## The Limitations of Relying Solely on Windows

While the 1/20th rule is effective in theory, in practice, relying solely on manual window opening has significant drawbacks that we at VENTI see every day.

1. **Human Nature:** People simply forget to open windows, especially in colder weather. The immediate discomfort of a cold draught often overrides the long-term benefit of ventilation, leading to windows staying shut.
2. **Security and Safety:** Leaving windows open, particularly on ground floors or when leaving the house, is a security risk. It's also impractical during heavy rain or high winds.
3. **Energy Inefficiency:** Opening a window, even for a short purge, wastes a tremendous amount of heat. In an era of high energy costs and a push for net-zero, intentionally letting heated air escape is a costly and environmentally poor solution.
4. **No Filtration:** An open window allows all external air in—including pollen, dust, pollution, and noise. For those with allergies or in urban areas, this can be a major problem.

This is where modern mechanical ventilation systems come into their own. They automate the process, providing continuous, controlled, and filtered fresh air without the downsides of manual window operation.

## How VENTI Provides a Superior, Modern Solution

The 1/20th rule is a vital baseline, but it represents a fundamentally passive approach to a problem that demands an active, intelligent solution. At VENTI, we believe in moving beyond the bare minimum to provide air quality that truly empowers you to breathe freely.

Our systems, such as the **ARIA (dMEV)** for continuous extract in wet rooms or the **RESPIRO (MVHR)** and **FLUXO (srMVHR)** for whole-house or single-room ventilation with heat recovery, are designed to work in harmony with, or indeed replace the need for, constant manual window opening.

## The key advantages are profound:

- **Continuous and Controlled:** They operate 24/7, automatically adjusting their speed based on humidity levels (in the case of humidity-sensitive models). This ensures moisture and

pollutants are removed at the source, constantly, before they ever become a problem requiring a 'purge'.

- **Uncompromising Energy Efficiency:** MVHR units like the RESPIRO and FLUXO recover up to 90% of the heat from the outgoing stale air and use it to warm the incoming fresh air. This means you get fantastic ventilation without the punishing energy bill or cold draughts. You can keep your windows shut on a freezing day and still have perfectly fresh, pre-warmed air.
- **Superior Air Filtration:** Incoming air passes through high-grade filters, removing pollen, dust, traffic pollution, and other allergens. This creates a healthier indoor environment, especially crucial for vulnerable groups like asthmatics or those with hay fever.
- **Compliance and Peace of Mind:** Our systems are designed to not only meet but far exceed the requirements of Building Regulations Part F. By choosing a VENTI solution, you are future-proofing your property against damp, mould, and poor air quality, ensuring compliance in the most efficient way possible.

The 1/20th fraction is the regulatory starting point, but your health and your home deserve the finish line that only modern, mechanical ventilation can provide.

**For truly healthy, efficient, and hassle-free air quality that surpasses basic regulations, explore our range of intelligent ventilation systems designed for UK homes.**