

# What is Airflow?

**Airflow refers to the movement of air in a specific direction, driven by pressure differences, temperature gradients, or mechanical systems. In UK house building, residential retrofits, and home renovations, airflow is crucial for effective ventilation, maintaining indoor air quality, and optimising energy efficiency.**

Airflow ensures the removal of stale air, control of humidity, and prevention of pollutant buildup, such as carbon dioxide, volatile organic compounds (VOCs), and mould spores. In residential settings, airflow is managed through:

- **Natural Ventilation:** Windows, trickle vents, and passive stack systems.
- **Mechanical Ventilation:** Extractor fans, Mechanical Ventilation with Heat Recovery (MVHR) systems, or positive input ventilation (PIV) units.

The **Building Regulations Approved Document F (Ventilation)** (2021 edition) sets minimum airflow rates for habitable rooms, kitchens, and bathrooms to ensure healthy indoor environments. Poor airflow can lead to condensation, dampness, and health issues, while excessive airflow can cause heat loss and higher energy bills.

## **Practical Examples**

1. **Natural Ventilation:** A newly built home with trickle vents in window frames allows continuous airflow, reducing reliance on mechanical systems.
2. **Mechanical Ventilation:** A retrofitted property with an MVHR system ensures controlled airflow while recovering heat from outgoing air, improving energy efficiency.
3. **Kitchen Extraction:** An extractor fan removes cooking fumes and moisture, maintaining airflow and preventing condensation.

## **Related Terms**

1. **Ventilation:** The process of supplying fresh air and removing stale air from a space.
2. **MVHR (Mechanical Ventilation with Heat Recovery):** A system that provides controlled airflow while recovering heat from exhaust air.
3. **Air Tightness:** The measure of how well a building prevents uncontrolled airflow through gaps and cracks.
4. **Condensation:** The process where water vapour in the air turns into liquid, often due to poor airflow.
5. **Building Regulations Approved Document F:** The UK government document outlining ventilation requirements for dwellings.
6. **Extractor Fan:** A mechanical device used to remove air from a specific area, such as a kitchen or bathroom.
7. **Trickle Vent:** A small vent in a window or wall that allows for continuous background ventilation.