

What is Demand-controlled Mechanical Extract Ventilation (dMEV)?

Demand-controlled Mechanical Extract Ventilation (dMEV) refers to a single-room mechanical ventilation system designed to continuously extract air at a low “trickle rate” to maintain indoor air quality. It differs from traditional extractor fans by its continuous operation and ability to adjust airflow based on demand, such as during high-humidity activities like showering.

dMEV systems are commonly used in UK residential buildings, particularly in bathrooms, kitchens, and utility rooms, to ensure consistent ventilation and prevent issues like condensation, mould, and poor air quality. These systems operate at a low extraction rate (trickle rate) under normal conditions but can switch to a higher “boost” rate when sensors detect increased humidity or pollutants. This dual-mode operation makes dMEV systems energy-efficient and effective in maintaining healthy indoor environments.

Practical Example:

In a UK home renovation project, a dMEV unit might be installed in a bathroom to replace a standard extractor fan. During normal use, the dMEV operates at a trickle rate of 5-10 litres per second (l/s), ensuring continuous air exchange. When the shower is in use, humidity sensors trigger the boost mode, increasing the extraction rate to 15-30 l/s to quickly remove steam and prevent condensation on walls and mirrors.

Synonyms:

- Demand-controlled Ventilation

Related Terms:

1. **Mechanical Extract Ventilation (MEV):** A centralised system that extracts air from multiple rooms via ducting, often used in larger residential properties.
2. **Positive Input Ventilation (PIV):** A system that introduces fresh air into a building to improve air quality and reduce condensation.
3. **Heat Recovery Ventilation (HRV):** A system that extracts stale air while recovering heat to warm incoming fresh air, improving energy efficiency.
4. **Building Regulations Part F (Ventilation):** UK regulations that set standards for ventilation systems in new and existing buildings to ensure adequate air quality.
5. **Approved Document F:** Provides guidance on meeting the requirements of Building Regulations Part F, including the use of dMEV systems.
6. **Trickle Rate:** The low, continuous airflow rate maintained by dMEV systems under normal conditions.
7. **Boost Rate:** The higher airflow rate activated during periods of increased demand, such as high humidity or pollutant levels.