

What is an Energy Recovery Ventilator (ERV)?

An Energy Recovery Ventilator (ERV) is a mechanical ventilation system that exchanges stale indoor air with fresh outdoor air while simultaneously transferring heat and moisture between the two air streams. This process improves indoor air quality (IAQ) and reduces energy consumption by pre-conditioning incoming air, making it more efficient than traditional ventilation systems.

ERVs are widely used in UK residential buildings, particularly in homes with high levels of insulation and airtightness, as mandated by Part L (Conservation of Fuel and Power) and Part F (Ventilation) of the Building Regulations. They are especially beneficial in retrofit projects and new builds aiming to meet or exceed energy efficiency standards, such as those outlined in the Approved Documents.

Synonyms:

- Heat Recovery Ventilator (HRV)
- Mechanical Ventilation with Heat Recovery (MVHR) [Note: MVHR is a broader term that includes ERVs]

Related Terms:

1. **Airtightness:** The measure of how well a building prevents uncontrolled air leakage. ERVs are essential in airtight homes to ensure adequate ventilation without energy loss.
2. **Indoor Air Quality (IAQ):** The quality of air within a building, which ERVs improve by removing pollutants and introducing fresh air.
3. **Part L of Building Regulations:** Focuses on energy efficiency and requires effective ventilation systems like ERVs in new builds and retrofits.
4. **Part F of Building Regulations:** Governs ventilation requirements to ensure healthy indoor air quality, often achieved using ERVs.
5. **Passivhaus Standard:** A rigorous energy efficiency standard that often incorporates ERVs to maintain indoor comfort with minimal energy use.
6. **Condensation Control:** ERVs help manage moisture levels, reducing the risk of condensation and mould growth in homes.
7. **Thermal Efficiency:** The effectiveness of a system in retaining heat, which ERVs enhance by recovering heat from exhaust air.