

What is a Ventilation Duct?

A ventilation duct is a tube or conduit designed to transport air from one area to another within a ventilation system. It is a critical component in maintaining indoor air quality, thermal comfort, and energy efficiency in buildings. Ventilation ducts can be solid/rigid, semi-rigid, or flexible, with each type offering distinct advantages depending on the application.

- **Solid/Rigid Ducts:** These are typically made from materials such as galvanised steel, aluminium, or PVC. They are highly effective for maximising airflow and minimising noise, making them ideal for large-scale residential and commercial applications. Solid ducts are available in round or flat profiles, with round ducts offering better airflow efficiency due to reduced friction.
- **Flexible Ducts:** Constructed from materials like plastic or metalised polyester, flexible ducts are easier to install in complex or constrained spaces. However, they are less efficient than rigid ducts due to increased air resistance and are more prone to damage over time.

Practical Examples:

- In a UK residential retrofit project, rigid galvanised steel ducts might be used to connect a mechanical ventilation with heat recovery (MVHR) system to various rooms, ensuring efficient airflow and compliance with Part F of the Building Regulations.
- Flexible ducts could be employed in a loft conversion where space is limited, allowing for easier routing around structural obstacles.

Synonyms:

Air duct, HVAC duct, air conduit.

Related Terms:

1. **Mechanical Ventilation with Heat Recovery (MVHR):** A system that extracts stale air from a building while recovering heat and supplying fresh, filtered air.
2. **Building Regulations Part F:** UK regulations that set standards for ventilation in buildings to ensure adequate indoor air quality.
3. **Airflow Rate:** The volume of air moved through a ventilation system, measured in cubic metres per hour (m³/h).
4. **Duct Insulation:** Material applied to ducts to prevent heat loss or gain, improving energy efficiency.
5. **Approved Document F:** Guidance document accompanying Part F of the Building Regulations, providing detailed instructions on compliance.