What is Carbon Monoxide (CO)?

Carbon Monoxide (CO) is a colourless, odourless, and tasteless toxic gas produced by the incomplete combustion of carbon-based fuels such as gas, oil, wood, and coal. It binds to haemoglobin in the blood, reducing oxygen delivery to vital organs, which can lead to severe health effects or death.

In UK residential construction, ventilation systems must mitigate CO risks, particularly in homes with fuel-burning appliances (e.g., boilers, fires, stoves). **Approved Document J (Combustion Appliances and Fuel Storage Systems)** of the Building Regulations 2010 (as amended) mandates safe installation, ventilation, and maintenance to prevent CO accumulation.

Practical Examples

1. **Faulty Boiler Installation** – Poorly maintained gas boilers can leak CO, necessitating annual Gas Safe-registered servicing.
2. **Blocked Flues** – A blocked chimney in a retrofitted home can cause CO backdraft, highlighting the need for compliant ventilation.
3. **Open Flue Appliances in Airtight Homes** – Post-retrofit air sealing without adequate ventilation increases CO risk, requiring mechanical extract or passive stack ventilation.

Related Terms

1. **Approved Document F (Ventilation)** – Covers whole-house ventilation strategies to maintain indoor air quality.
2. **Gas Safe Register** – The official UK body for gas engineers; legally required for gas appliance work.
3. **CO Alarm Regulations (Building Regulations Part J)** – Requires alarms in rooms with solid fuel burners (since 2010) and recommends them near gas/oil appliances.
4. **Air Permeability** – Measures a building’s airtightness; excessive sealing without ventilation increases CO risk.
5. **Flue Gas Analysis** – A diagnostic test ensuring combustion appliances emit safe CO levels.