

What is an Axial Fan?

Axial fans are the most common style of bathroom wall-mounted fan in the UK, and are a specific design of fan impeller or blades used to move air where the air flows parallel to the axis of rotation. They are widely used in domestic settings, particularly in bathrooms, for ventilation purposes.

Axial fans are characterised by their ability to move air efficiently over short distances, typically less than 5 metres. They are commonly wall-mounted and operate using various mechanisms such as timers, humidistats, pull cords, or PIR (Passive Infrared) sensors. Some models are designed to be activated by light switches, ensuring ventilation is used when the bathroom is occupied. Axial fans are available in both 240V and SELV (Safety Extra-Low Voltage) 12V versions, with the latter being suitable for installation in Zones 1 and 2 of bathrooms, as defined in the UK Building Regulations (Approved Document P).

However, axial fans are not suitable for long duct runs exceeding 5 metres, as the increased air pressure within the duct significantly impairs their ability to extract air effectively.

Practical Example:

In a typical UK residential bathroom retrofit, an axial fan might be installed to comply with Part F of the Building Regulations, which mandates adequate ventilation to prevent condensation and mould growth. For instance, a 240V axial fan with a humidistat could be installed to automatically activate when humidity levels exceed a set threshold, ensuring consistent air quality.

Related Terms:

1. **Centrifugal Fans:** Fans where air flows perpendicular to the axis of rotation, suitable for longer duct runs.
2. **Humidistat:** A device that measures humidity and activates ventilation systems when levels are too high.
3. **SELV (Safety Extra-Low Voltage):** A low-voltage electrical system designed to reduce the risk of electric shock, often used in wet areas like bathrooms.
4. **Building Regulations Part F:** UK regulations specifying ventilation requirements for buildings.
5. **Approved Document P:** UK guidelines for electrical safety in dwellings, relevant for fan installation in bathrooms.
6. **PIR Sensor:** A motion sensor used to activate fans when movement is detected.
7. **Duct Run:** The length of ducting used to transport air from the fan to the outside.