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Ventilation System Flow Rate Checklist



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Ventilation System Flow Rate Checklist

This checklist is split into two sections.

Section 1 Site preparation.

Section 2 Additional notes & key terms.

Site preparation prior to our arrival

- 1 Ventilation extracts which are subject to be tested to all be fitted and in working order.
These include:
 1. Kitchen extract.
 2. All bathrooms.
 3. Sanitary accommodation (sink and toilet).
 4. Utility room.
 5. Any other areas where extracts are present.
- 2 All internal and external doors to be fitted. Doors will need to be closed during the air flow measurements testing.
- 3 Tall ceilings may require a step up to be provided in order to get to the extractor. Above 2.4m we will require a platform or a ladder which is Class 1 or 2.
- 4 Site operative to be present on the testing day. Assistance may be required due to operating the fans under boost settings, or if any simple problems which can be resolved on the day. Failures will incur a re-test fee.

No commissioning to take place on test day.
- 5 We require a parking space for a van (transit size) within 25 metres of the test location on site.
- 6 If you are unable to provide parking, additional charges will be applied to final invoice for the parking privileges.

What do my fans have to achieve?

Please note, a lot of fan manufactures state the amount of litres per second (l/s) they carry this normally calculated at a distance of 300mm (typical wall section). Be aware of the utility room needs a powerful fan of at least 30 l/s the most common failure.

Fan reference	System 1: Intermittent Extract minimum Rate	System 3: Continuous Extract Minimum Rate
Kitchen	30 l/s adjacent to hob 60 l/s elsewhere Min value	13 l/s
Utility Room	30 l/s minimum value	8 l/s
Bathroom	15 l/s minimum value	8 l/s
Sanitary Accommodation	6 l/s minimum value	6 l/s

Additional notes

Axial fans are designed for simple installations and are generally suitable for wall or window mounting or with short (up to 1.5metre) duct runs and no more than two bends for flows of up to 30l/s and one bend for over 30l/s.

Centrifugal fans are designed to generate the pressure required to perform in longer and more complex duct installations. However their use is limited to duct runs of 6 metres for airflows between 0-30l/s and 3 metres for airflows between 31-60l/s.

To reduce risk of restricted airflow when installing fans with flexible duct, please note the following:

The inner radius of any bend should be greater or equal to the diameter of the ducting being used.

If the radius is reduced, the resistance of the bend will increase and the volume of air being extracted will decrease.

Ensure flexible ducting is installed without peaks or troughs.

External terminations must have at least 90% equivalent free area of the ductwork being used.

Key terms

The following key terms where used in this guide are shown in **bold**. For other terms, reference should be made to Approved Document F.

Background ventilator is a small ventilation opening designed to provide controllable whole building ventilation.

BCB or building control body is a local authority or an approved inspector.

Continuous mechanical extract ventilation (MEV) is a ventilation system comprising a central ducted continuously running extract fan (or a set of local continuously running extract fans in the wet rooms for de-centralised systems), air being supplied via background ventilators into the habitable rooms.

Continuous mechanical balanced ventilation with heat recovery (MVHR) is a ventilation system that comprises central ducted supply and extract fans, air being supplied into the habitable rooms via a heat recovery unit.

Equivalent area is a measure of the aerodynamic performance of a ventilator. It is the area of a sharp-edged circular orifice which air would pass through at the same volume flow rate, under an identical applied pressure difference, as the opening under consideration.

Free area is the geometric open area of a ventilator or terminal.

Intermittent extract fan is a mechanical ventilator that does not run all the time, usually only running when there is a particular need to remove pollutants or water vapour (e.g.during cooking or bathing). Intermittent operation may be under either manual control or automatic control.

Passive stack ventilation (PSV) is a ventilation system using ducts from terminals in the ceilings of rooms to terminals on the roof that extract air to outside by a combination of the natural stack effect and the pressure effects of wind passing over the roof of the building.

Single room heat recovery ventilator (SRHRV) is a ventilation system comprising local continuously running balanced supply and extract fans in a single room.