

Approved Document F (England and Wales) April 2006

Approved Documents L1a and L1b (England and Wales) April 2007

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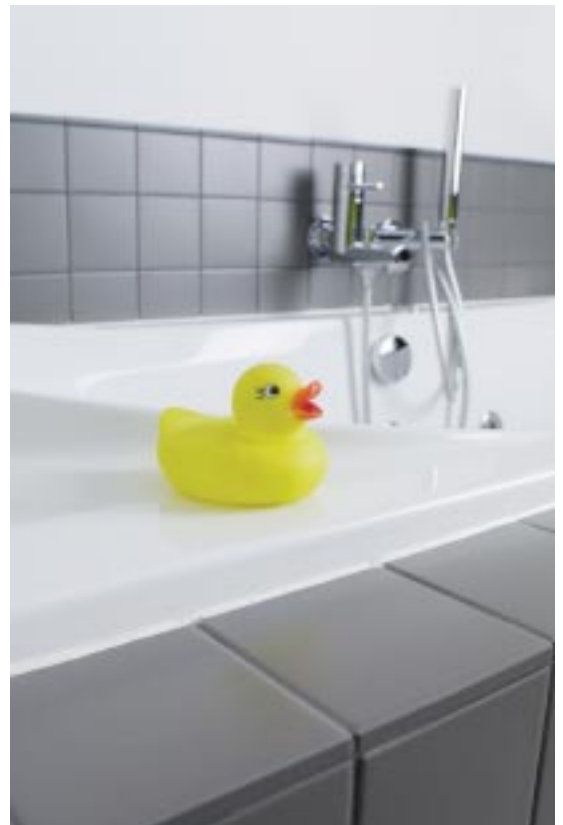
The Building Regulations England and Wales Approved Document F covers domestic and non-domestic ventilation requirements for work in new dwellings and other buildings. This section offers guidance and information on the minimum specifications and requirements needed to comply with Approved Document F.

With the increased air tightness requirements for new dwelling houses, dwelling spaces and other buildings as required in Approved Document L1a and L2a it has been necessary to review the ventilation requirements of dwellings and buildings. This is to enable and maintain good health to those occupying and utilising these spaces by designing out uncontrollable air leakage, infiltration and usually encountered adventitious air. The controlled ventilation specifications are designed to take account of property air tightness and/or leakage where it is restricted to as low as $3\text{m}^3/\text{h}/\text{m}^2$ (cubic meters of air (leakage) per hour, per square meter of floor area) at 50Pa (pascals).

Designers of dwellings and buildings are given options on how to achieve compliance with ventilation requirements for the design of dwellings and buildings via the use of passive (for example by natural means) and mechanical means.

Wet areas (kitchens, utility rooms, bathrooms and WCs) are required to have extract ventilation of:

- 60 l/s in kitchens (restricted to 30 l/s adjacent to hobs)
- 30 l/s in utility rooms
- 15 l/s in bathrooms
- 6 l/s in WCs



The whole building will require ventilation to habitable rooms of the following:

- 13 l/s for dwellings with one bedroom
- 17 l/s for dwellings with two bedrooms
- 21 l/s for dwellings with three bedrooms
- 25 l/s for dwellings with four bedrooms
- 29 l/s for dwellings with five bedrooms

The whole building will also require an overall minimum ventilation rate of not less than 0.3 l/s/m² of total internal floor area. This can be achieved by the use of background ventilators and intermittent extract fans, passive stack ventilation, continuous mechanical extract and continuous mechanical supply and extract with heat recovery.

Additional requirements are as follows:

- Having at least a 10mm gap under interconnecting doors to allow for adequate ventilation air movement from room to room.
- The reclassification of ventilators to be quoted as “equivalent area” as opposed to “free area”.
- Purge ventilation as a means of achieving an increased rate of air change for a short period of time (for example to disperse paint fumes when decorating).

Great care will have to be taken when designing, installing, commissioning and maintaining conventionally open flued appliances because of the potential increased risk of flue interference from these requirements.

It is recommended that:

- No allowance should be made for adventitious air for combustion or appliance ventilation purposes. Therefore, the first 5kW (or any other allowance) under these conditions should no longer be deducted from the appliance rated output for calculation purposes.

- Conventionally open flued appliances with a rated output of below 5kW should have a minimum combustion air supply of at least 100cm² (10000mm²) free area (or equal “equivalent area”)
- Conventionally open flued appliances which have either an integral stabiliser (or draught break) or where the primary flue has an integral stabiliser (or draught break) should have an additional 550mm² free area (or equal “equivalent area”) per kW of appliance maximum output rating added to the combustion air allowance. N.B. This additional allowance would not be required when an appliance is installed in a compartment with compliant compartment ventilation.
- A full flue interference test must be carried out during the commissioning procedure. If flue interference is identified the appliance must not be used, a warning sticker affixed until such times as permanent remedial works have been carried out and have been proven to prevent flue interference so that the appliance can be left operating in a safe manner.

Approved Documents L1a and L1b (England and Wales) April 2006

The Building Regulations England and Wales Approved Document L1a and L1b (as amended with effect from 1st April 2005) requires that high efficiency oil fired condensing boilers should be installed from 1st April 2007. This section offers guidance on the requirements needed to comply with Approved Documents L1a and L1b



Minimum provisions for new systems in new and existing dwellings

All oil boilers should be of the condensing type and have a SEDBUK efficiency of not less than 86%.

Oil fired range cooker boilers should have a minimum efficiency greater than 75% (as declared on www.rangeefficiency.org.uk).

Exemptions

OFTEC Oil Condensing Boiler Installation Assessment Form (CD/30)

An OFTEC CD/30 is a form required to be completed to ascertain if it is permissible to install a non condensing boiler in existing buildings. This is achieved by comparing the total assessment score with 1000. If the total assessment figure exceeds 1000 then it is permissible to install a non-condensing boiler.

OFTEC CD/30 forms can be purchased

by OFTEC Registered Technicians from OFTEC Direct (www.oftecdirect.com or 0845 65 85 080).

Appliance minimum SEDBUK efficiencies on new build properties form part of the SAP calculation process, it is therefore important that the appliance efficiency utilised (as specified by the builder, developer, architect or consultant) is matched to this requirement. No variation to this should take place without prior consultation and agreement of the specifier.

Systems for space and domestic hot water are required to have:

- Primary circuits of the fully pumped type with full boiler controls, interlock and zones.
- An automatic bypass valve as required by the appliance manufacturer's installation instructions.

- Vented hot water cylinders complying with the heat loss and heat exchanger requirements of BS 1566.
- Un-vented hot water storage systems complying with BS 7206 or be certified by the British Board of Agrément or equivalent approval.
- Been thoroughly cleaned and flushed using an appropriate inhibitor.
- Water treatment provided in hard water areas.
- All appliances, systems and associated equipment fully commissioned in accordance with the manufacturer's instructions.

Minimum provision for replacement systems in existing dwellings

Oil fired boiler replacements that do not involve a fuel or energy switch should be as defined under the minimum provisions for new systems in new and existing dwellings and the replacement boiler's SEDBUK efficiency should not be more than 2% lower than the SEDBUK efficiency of the appliance being replaced (if the efficiency of the system or appliance is not known, efficiency values can be taken from tables 4a or 4b of SAP 2005).

Oil fired boiler replacements involving a fuel or energy switch (e.g the replacement of an LPG boiler with an oil boiler) should be as defined under minimum provision for new systems in new and existing dwellings and the proposed appliance must have a calculated equivalent SEDBUK efficiency of not less than 2% lower than the existing appliance. Further guidance on replacing other fuelled appliances with oil fired appliances see OFTEC publication "A Guide to Replacement Appliance Efficiencies" (publication date to be advised).

When replacing appliances the existing system should be (where not already) upgraded to:

- Primary circuits of the fully pumped type with full boiler controls, interlock and zones.
- An automatic bypass valve as required by the appliance manufacturer's installation instructions.
- Been thoroughly cleaned and flushed using an appropriate inhibitor.
- Water treatment provided in hard water areas.
- All appliances, systems and associated equipment fully commissioned in accordance with the manufacturer's instructions.

When replacing hot water storage systems they should (where not already) upgraded to:

- Vented hot water cylinders complying with the heat loss and heat exchanger requirements of BS 1566.
- Un-vented hot water storage systems complying with BS 7206 or be certified by the British Board of Agrément or equivalent approval.