

Means of ventilation

Where combustion and/or ventilation air supplies are to be provided for appliances in properties built or refurbished to Technical Booklet F1 (November) 2006 air leakage rates, it is strongly recommended that the first 5kW of appliance rated output is no longer omitted (for adventitious air) in the calculation process.

Example 1

Property built pre TBF1 (November) 2006

Appliance rated output = 17kW

Less 5kW allowance = 12kW

Combustion air supply = 12kW x 550mm²

Example 2

Property built post TBF1 (November) 2006

Appliance rated output = 17kW

Combustion air supply = 17kW x 550mm²

Conventionally open flued appliances with a rated output of below 5kW should have a minimum combustion air supply of at least

100cm² 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 at commissioning. 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.

Work notification

Changes to the Building Regulations mean that from 30th November 2006, Local Authority Building Control must be notified of any oil firing, storage, installation and commissioning works (including replacement works) undertaken. Local Authority Building Control should be contacted before commencement of works for either a Building Notice or full Building Regulations approval.

Changes to Technical Booklet F1 of the Building Regulations Northern Ireland

Important changes have been made to Technical Booklet F1 of the Building Regulations Northern Ireland, which take effect from 30th November 2006. Technical Booklet F1 details guidance on conservation of fuel and power in domestic dwellings.

New systems in new and existing dwellings

The proposed building should be designed following the guidance contained within this and other advisory documents which contain design limitations, including maximum U values, limitations on air leakage and infiltration, appliances efficiency, etc.

Using SAP 2005 reference values, a notional rate of CO₂ emissions is calculated (utilising a notional dwelling of the same shape and size as the proposed dwelling) from which is then calculated a Target CO₂ Emission Rate (TAR) (units = kg/m² floor area) which includes a given fuel factors (oil = 1.17 Table 2.1 Technical Booklet F1) for the proposed notional property design.

This TER is the target of CO₂ (units = kg/m² floor area) emissions which should not be exceeded (by the completed building) to achieve compliance.

The building services are then designed with this in mind. Once the design process is complete the proposed design specification is submitted for SAP 2005 calculations to ascertain the Dwelling CO₂ Emission Rate (DER) units = (kg/m² floor area). For Building Regulations approval it will be necessary for the designer to show evidence that the calculated DER does not exceed the notional TER.

As a result of this, those installing domestic



heating systems will need to be advised by the property designer of any design limitation such as appliance type and minimum (SEDBUK or alternative) efficiency required (where this is more onerous than the 2nd tier guidance documentation (Domestic Heating Compliance Guide available from the Communities and Local Government website (www.communities.gov.uk) and industry and appliance manufacturers recommendations) to achieve compliance for this particular property/design.

Minimum provision for new systems in new and existing dwellings

For oil fired boilers installed before April 2007:

- Minimum SEDBUK efficiency 86%

OR

- Minimum SEDBUK efficiency of 82% may be installed provided that compensating provisions are included in the SAP/design and installation.

For oil fired boilers installed on or after April 2007:

- The boiler shall have a SEDBUK efficiency of not less than 86%.

For combination boilers and range cooker boilers (as per the Domestic Heating Compliance Guide):

- Combination boilers
Minimum SEDBUK efficiency 82%
- Range Cooker boilers
Minimum efficiency * >75%
* As declared on www.rangeefficiency.org.uk

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 manufacturer's instructions.

Any variation from the given technical specification by the heating technician will require approval from the designer as the DER would have to be recalculated to check that it (the new DER from the amended specification) still does not exceed the TER. However, if it is found that the DER exceeds the TER then the design specification of the



property will need revision to reduce the DER to below that of the TER.

It is therefore vitally important that there is good two-way communication between the building designer and the heating/hot water designer/specifier/installer.

If any changes to the specification have been necessary and applied during construction, upon completion of build the DER will have to be recalculated to satisfy Building Control that even though changes in design have taken place the TER has still not been exceeded.

Replacement systems in existing dwellings

The proposed service or fitting to be replaced or installed in an existing dwelling (such as a central heating boiler) is required to meet minimum SEDBUK (or equivalent) efficiency levels as stated in the Domestic Heating Compliance Guide. The minimum system (e.g fully pumped) and controls (e.g full boiler interlock with separate time/temperature control for each zone) requirements are specified for appliances such as central heating boilers, cooker boilers and stove (room-heaters) installations which have to be met in order to achieve a compliant installation.

Minimum provision for replacement systems in existing dwellings

For oil fired boiler replacements not involving a fuel or energy switch:

For oil fired boilers installed before April 2007:

- Minimum SEDBUK efficiency 85%

For oil fired boilers installed on or after April 2007:

- The boiler should be of the condensing type and have a SEDBUK efficiency of not less than 86%.

For combination boilers and range cooker boilers:

Follow the guidance for new systems in new

and existing dwellings, but the SEDBUK efficiency should not be worse than 2 percentage points lower than the SEDBUK efficiency of the appliance being replaced.

Please note if the efficiency of the system or appliance is not known, efficiency values can be taken from table 4a or 4b of SAP 2005.

For appliance replacements involving a fuel or energy switch (e.g the replacement of an LPG boiler with an oil boiler):

- The seasonal efficiency (SEDBUK) of the proposed appliance should not be less than that as defined above.
- The proposed appliance's equivalent seasonal efficiency must be greater than the existing appliance's seasonal efficiency (SEDBUK) minus maximum 2 percentage points maximum allowance*.
*For further information and guidance when replacing other fuelled appliances with oil fired appliances see OFTEC publication "A Guide to Replacement Appliance Efficiencies (England and Wales)"

When replacing appliances and hot water storage systems the existing system should be (where not already) upgraded to follow the guidance for new systems in new and existing dwellings.

