

Section 5. Flue Systems

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Oil Fired Appliances

5.1 Flue Systems

Conventional Flue

Where the Grandee boiler is installed employing a conventional flue or chimney then this should comply with BS5410: Part 1 and satisfy Building Regulations.

There are a number of additional points which the installer should consider carefully.

1. The flue should allow free passage of flue gases and, therefore, the flue should rise as vertically as possible. Any bends, should they be necessary should be gently sweeping 135 degrees to encourage the free flow of flue gases. Sharp right angular bends, and any deviations which are likely to retard flue products must be avoided.
2. The termination of the flue should attempt to avoid areas of potential down draught or turbulent winds. In the event of downdraught a suitable anti downdraught cowl or device should be fitted.
3. Grandee oil boilers are thermally very efficient, often in excess of 90% and flue gas temperatures are relatively low. The flue must be lined with a suitable liner to avoid condensation.
4. Brick chimneys should be lined with a stainless liner, insulated if condensation is a possibility. The flue should be the same diameter as the boiler flue socket.

Balanced Flue

Grandee boilers are available with a variety of balanced flue systems which are often simpler to install than conventional flue models provided that a suitable outside wall is available. These models may be the only ones suitable if no chimney exists.

Balanced flue boilers can be judged to be more stable in burning conditions as they are less affected by flue draught and wind conditions. Air intake and flue discharge are more or less balanced. Also, balanced flue boilers take air for combustion from outdoors and, therefore, air change within the dwelling (itself a significant cause of heat loss) is reduced.

Low level balanced flue boilers may only be used with Kerosene. Gas Oil is not permitted. Flue terminals must be protected by a terminal guard which is supplied with the boiler.

Balanced flue terminals must be 600mm from any opening door to window. Avoid positioning where flue discharge or noise could cause inconvenience or objection. Avoid narrow alleyways or confined spaces which could cause ingress of flue products, pollution, which could cause malfunction of the boiler. Also take care not to allow contact between the flue and combustible material.

Contact manufacturer for full details as site conditions vary considerably with Grandee boilers and balanced flue systems can be supplied to specific requirements.

5.2 Balanced Flue Terminals - Recommendations

These recommendations relate to basic safety requirements and should assist the installer in the siting of the boiler.

The principles are to :-

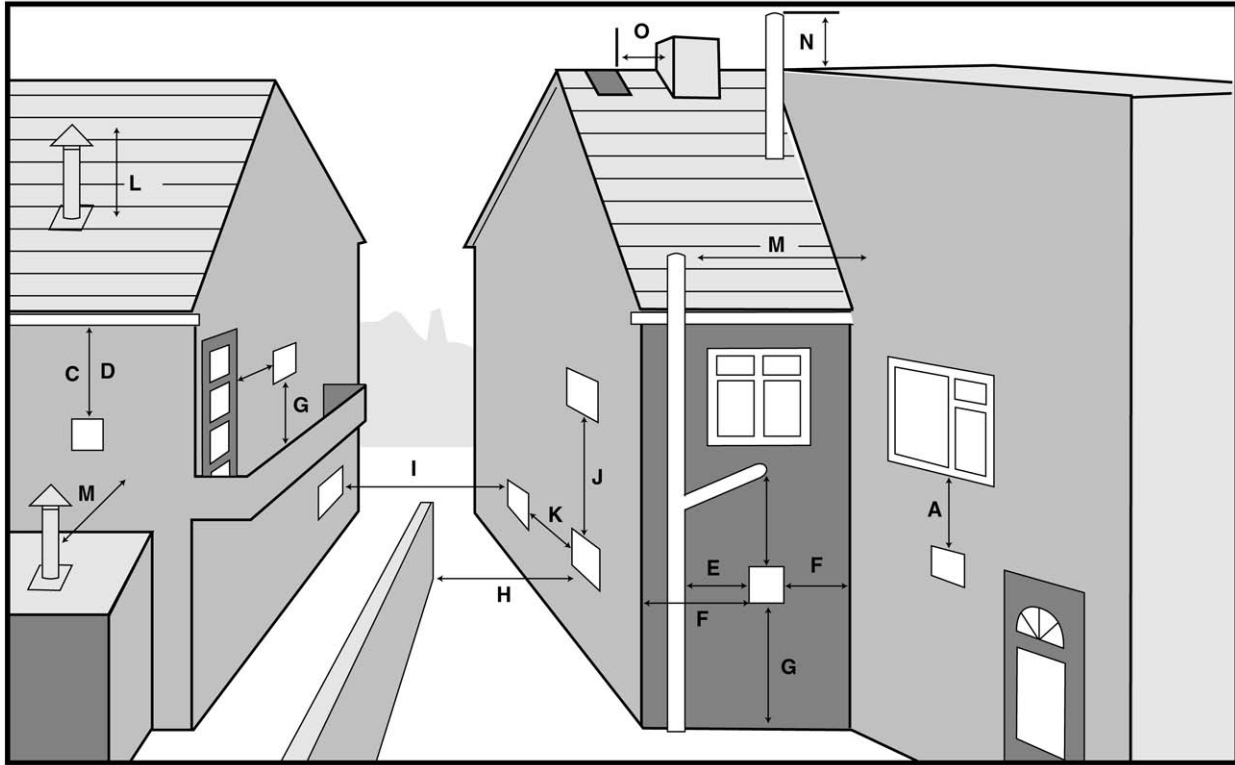
- a). Avoid combustion products from drifting into the dwelling.
- b). To avoid possible combustion with materials such as plastic drain pipes, wooden eaves or other combustible material.
- c). To prevent any person, particularly children from accidental burning from the flue terminals. If a flue terminal is less than 2 metres from ground level a flue guard must be fitted.

Flue guards are supplied as standard equipment with all Grandee boilers.

Recommended clearances for Balanced flue terminals are listed on the following page, figure 9.

5.3 Flue Terminating Positions for Oil Fired Appliances

Fig 9.



Appliance Burner Type:
Pressure Jet

Minimum distances to terminals in millimetres as measured from top of the chimney or the rim of a low level discharge opening.

| Location | mm. |
|--|------|
| A.....Directly below an opening, air brick, window etc | 600 |
| B.....Horizontally to an opening, air brick, window etc | 600 |
| C.....Below a gutter, eaves or balcony with protection | 75 |
| D.....Below a gutter or a balcony without protection | 600 |
| E.....From vertical sanitary pipework | 300 |
| F.....From an internal or external corner | 300 |
| G.....Above ground or balcony level..... | 300 |
| H.....From a surface or boundary facing the terminal | 600 |
| I.....From a terminal facing the terminal..... | 1200 |
| J.....Vertically from a terminal on the same wall | 1500 |
| K.....Horizontally from a terminal on the same wall..... | 750 |
| L.....Above the highest point of an intersection with the roof | 600 |
| M.....From a vertical structure on the side of the terminal | 750 |
| N.....Above a vertical structure less than 750mm from the side of the terminal | 600 |
| O.....From a ridge terminal to a vertical structure on the roof | 1500 |

Notes: These notes form an integral part of the information shown above.

- Terminals should be positioned so as to avoid products of combustion accumulating in stagnant pockets around the building or entering into buildings.
- Appliances burning Class D oil have additional restrictions, see clauses 9.6.2 and 11.1.
- Vertical structure in N, O and P include tank or lift rooms, parapets, dormers etc.
- Terminating positions A to L are only permitted for appliances that have been approved for low level flue discharge when tested to a standard listed in Annex A.1.2 or A.2.
- Terminating positions must be at least 1.8 metres distant from an oil storage tank unless a wall with at least 30 mins fire resistance and extending 300mm higher and wider than the tank is provided between the tank and the terminating position.
- Where a flue is terminated less than 600mm away from a projection above it and the projection consists of plastic or has a combustible or painted surface, then a heat shield of at least 750mm wide should be fitted to protect these surfaces.
- For terminals used with vapourising burners, a horizontal distance of at least 2300mm is required between the terminal and the roof line.
- If the lowest part of the terminal is less than 2 metres above the ground, balcony, flat roof or other place to which any person has access, the terminal must be protected by a guard.