Rochdale Building Control Guide

Approved Document J

Combustion appliances and fuel storage systems

Coming into effect 1st October 2010

The provisions which apply to combustion appliances are changing to reflect the increased levels of air tightness in buildings, this guide seeks to offer a brief overview of the guidance in approved document J.

For further detailed guidance please refer to the approved document.

ROCHDALE METROPOLITAN BOROUGH COUNCIL

greater manchester LABC

Mechanical ventilation and open flued appliances

Extract fans lower the pressure in a building and can cause combustion products to spill into the building rather than be extracted via flues/chimneys.

For appliances with open flues the mechanical ventilation should be as follows:

Combustion appliance	Mechanical extract rate
Gas fired appliance	Limited to 20 litres/second (72m^3/hour)
Oil fired appliance	Limited to 40 litres/second for pressure jet burner or 20 litres/second for vaporising burner
Solid fuel appliance	Avoid installing mechanical ventilation, the flue may act as passive stack ventilation.

Testing

A test is required to check for spillage into buildings this is to be undertaken when all external doors, windows and adjustable ventilators are closed. Fans should be on their maximum setting during the test. Several tests may be required to ensure safe operation of the appliance (one must be with doors into the room closed and fans in that room switched on).

Fans installed in tumble dryers and other open flue appliances can also contribute to depressurisation and must be taken into account during testing.

Suitable spillage tests are described in manufacturer's installation instructions or BS 5440-1:2008 can be used for gas appliances. Oil fired appliance testing should be in accordance with OFTEC Technical Books 2, 4 and 5.

Flues & Chimneys

Flues

Flues serving more than one oil fired appliance should conform to BS 5410-1:1997 and for more than one gas appliance should conform to BS 5440-1:2008. Each solid fuel appliance should have its own flue.

Chimneys and flues

New chimneys should be constructed with flue liners and suitable masonry. Bends in flues should not exceed 45 degrees.

Liners suitable for fuel appliances:

Flue type	Requirements
Clay flue liners (rebated/socketed joints)	Class A1 N2 or Class A1 N1 as described in BS EN 1457:2009
Concrete flue liners	Type A1, A2, B1 or B2 as described in BS EN 1857: 2003
Flue block chimneys	T400 N2 D 3 G as described in BS EN 1443: 2003
Clay flue blocks	Class FB1 N2 as described in BS EN 1806: 2006
Cast Iron fluepipes	BS 41:1973 (1988)
Metal flue pipes	BS EN 1856-2:2004
Vitreous enamelled steel pipes	BS 6999: 1989 (1996)
Flexible metal flue liners (not to be used for new chimneys).	BS EN 1856-2:2004
Factory made metal chimneys	BS EN 1856-1:2003, BS EN 15287-1:2007, BS 5440-1:2008,

All liners should be installed to manufacturers instructions, joints should be sealed with fire cement, refractory mortar or to manufacturer's instructions.

Spaces between the lining and masonry should be filled with weak insulating concrete such as:
1 part ordinary Portland Cement to 20 parts suitably lightweight expanded clay aggregate, minimally wetted.
1 part ordinary Portland cement to 6 parts Vermiculite
1 part ordinary Portland cement to 10 parts Perlite.

Notice plates for hearths and flues

When a heart, fireplace, flue or chimney is provided or extended a notice place should be provided either

- next to electricity consumer unit or
- next to chimney or hearth or
- next to the water supply stop cock.

An example of notice is below:

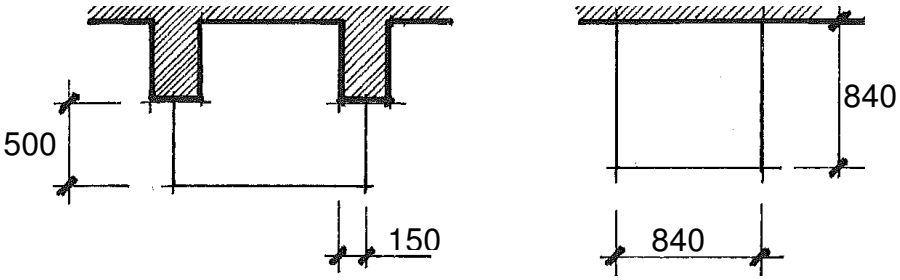
IMPORTANT SAFETY INFORMATION This label must not be removed or covered.	
Property address	20 Any Street Anytown
The hearth and chimney installed in	lounge
Are suitable for	decorative fuel gas fire
Chimney liner	double skin stainless steel flexible, 200mm diameter
Suitable for condensing appliance	No
Installed on	5th any date
Other information	Liner in accordance with T450 N2 S D 3

Material change of use

Where a buildings use is altered the fire resistance of masonry chimneys may need to be improved to meet the requirements of part B.

Hearth construction

Hearths must be constructed with minimum dimensions as below.



Appliances fitted on the hearth must be 225mm from the front of hearth for a closed appliance and 300mm for an open appliance.

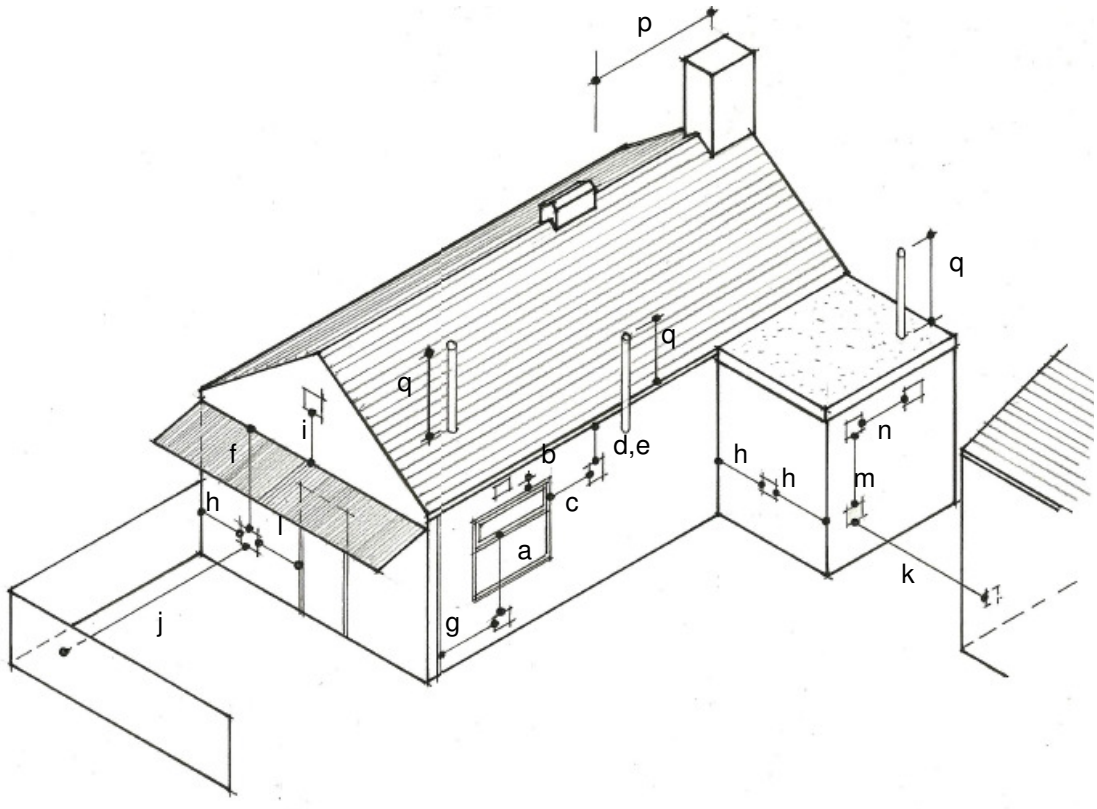
Carbon monoxide alarms

When new or replacement solid fuel appliances are installed a carbon monoxide alarm must be provided in the same room as the appliance conforming to BS EN 50291. The alarm can be battery or mains operated with alarms to indicate battery life failure or sensor failure. Alarms should be located 1m to 3m from the appliance and 300mm from any wall on the ceiling, or on a wall 150mm below the ceiling.

Solid fuel flues

Flue outlets for solid fuel appliances		
Point where flue passes through roof (weather surface)		Clearance to flue outlet
A	Within 600mm of the ridge.	600mm above the ridge.
B	Elsewhere on the roof	2300mm horizontally from nearest point of roof and 1000mm minimum above intersection with roof.
C	Within 2300mm of an openable roof light, dormer window or other opening	1000mm minimum above top of the opening plus A & B above.
D	Within 2300mm of adjoining or adjacent building.	600mm minimum above any part of adjacent building within 2300mm.

Flue outlets for Gas & Oil appliances



Flues for appliances should be positioned as below:

Location of flue outlets for gas & oil appliances							
Location (Shown on diagram above)	**Gas fired**					**Oil fired**	
	balanced			**Open flue**		**Jet burner**	**vaporising burner**
	Natural draught		**Fanned draught**	**Natural draught**	**Fanned draught**		
Below an opening (a)	0-7kW 7-14kW 14-32kW >32kW	300 600 1500 2000	300	(3)	300	600	Should not be used
Above an opening (b)	0-32kW >32kW	300 600	300	(3)	300		
Horizontally to an opening (c)	0-7kW 7-14kW >14kW	300 400 600	300	(3)	300	600	Should not be used
Below gutters, drain pipes (d)	300		75	(3)	75	75	Should not be used
Below eaves (e)	300		200	(3)	200	75	Should not be used
Below balcony or car port roof(f)	600		200	(3)	200		
From a vertical drain or soil pipe(g)	300		150 (4)	(3)	150	300	Should not be used
From an internal or external corner or to a boundary alongside the terminal (h)	600		300	(3)	200	300	Should not be used
Above ground, roof or balcony level. (i)	300		300	(3)	300	300	Should not be used
From a surface or boundary facing the terminal (j)	600		600	(3)	600	600	Should not be used
From a terminal facing the terminal (k)	600		1200	(3)	1200	1200	Should not be used
From an opening in the car port to the building (l)	1200		1200	(3)	1200		
Vertically from a terminal in the same wall (m)	1200		1500	(3)	1500	1500	Should not be used
Horizontally from a terminal on the same wall. (n)	300		300	(3)	300	750	Should not be used
From a structure on the roof (p)	N/A		N/A	1500 from ridge terminal or BS 5440-1:2008 to any other terminal	N/A	1500	Should not be used
Above the highest point of intersection with the roof. (q)	N/A		Manufacturers instructions	To BS 5440-1:2008	150	600(6)	1000(5)
From a vertical structure to the side of terminal						750 (6)	2300
Above a vertical structure less than 750mm (jb) or 2300mm (vb) horizontally from side of terminal.						600 (6)	1000 (5)

Flue testing

Flue testing should be performed as below:

Flue/Chimney type	Tests and checks to be performed
Existing flues	• Sweep the flue to verify that it is free from obstruction. (Tar debris caused by burning wood can be hard to remove but must be dislodged.) Debris coming down the chimney should be examined for excessive quantities of brick or lining which are signs that further repair is necessary. • Visual inspection of the accessible parts to identify deterioration in structure, lining and connections. Visual check for smoke or tar stains on the exterior of chimney breast as this may indicate leaks and damage. Modifications and lining should be checked to ensure suitability for new application. • Ensuring the flue is free from restriction can be done visually or in case of doubt via coring ball test. • A smoke test to verify gas-tightness.
New masonry and flue block chimneys.	• Visual inspection of accessible parts. • Visual checks to ensure flue free from restriction, if in doubt the flue should be swept or coring ball test performed. • Performing a smoke test to verify gas tightness.
factory made metal chimneys	• Following checklist for visual inspection in BS EN 15287-1:2007, including manufacturer's installation instructions. • Performing a smoke test to verify gas tightness.
Relined flues	• Visual checked to ensure free from restrictions. • Performing a smoke test to verify gas tightness. • Flexible metal flue liners should not be coring ball tested or swept as this can cause damage to liner.
Combustion appliance connected to flue	• Visual checked to ensure free from restrictions. • Performing a smoke test to verify gas tightness. • Spillage test in BS 5440-1:2008 for gas appliances • Spillage test in BS 5410-1:1997 for Oil and solid fuel appliances.

Bibliography/Further Guidance

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