

Chimney design/specification for Thornhill Range Cookers wood and pellet fired cookers.

The chimney is an integral part of a wood burning appliance and as such the design and function of the chimney greatly affects the working of the appliance.

The job of the chimney is to cause a partial vacuum and draw air/oxygen through the combustion chamber to allow combustion.

To strong a draw and the appliance becomes inefficient as heat is draw up the chimney and thrown away.

A weak draw, no draw or a back draft will stop the fire burning properly, go out or push smoke back into the room.

Equally well if the room is gas tight, air cannot enter to pass through the appliance and up the chimney, so a very sealed room need an air supply for the appliance, and if an extraction fan is fitted a larger vent is required or it can draw the smoke back down the chimney and out the appliance into the room. (a problem in Restaurants/professional kitchens which have massive extraction fan)

If the house is a newly built and relatively gas tight, an air vent of at least 60mm diameter must be fitted at least 100mm if an extractor fan is fitted.

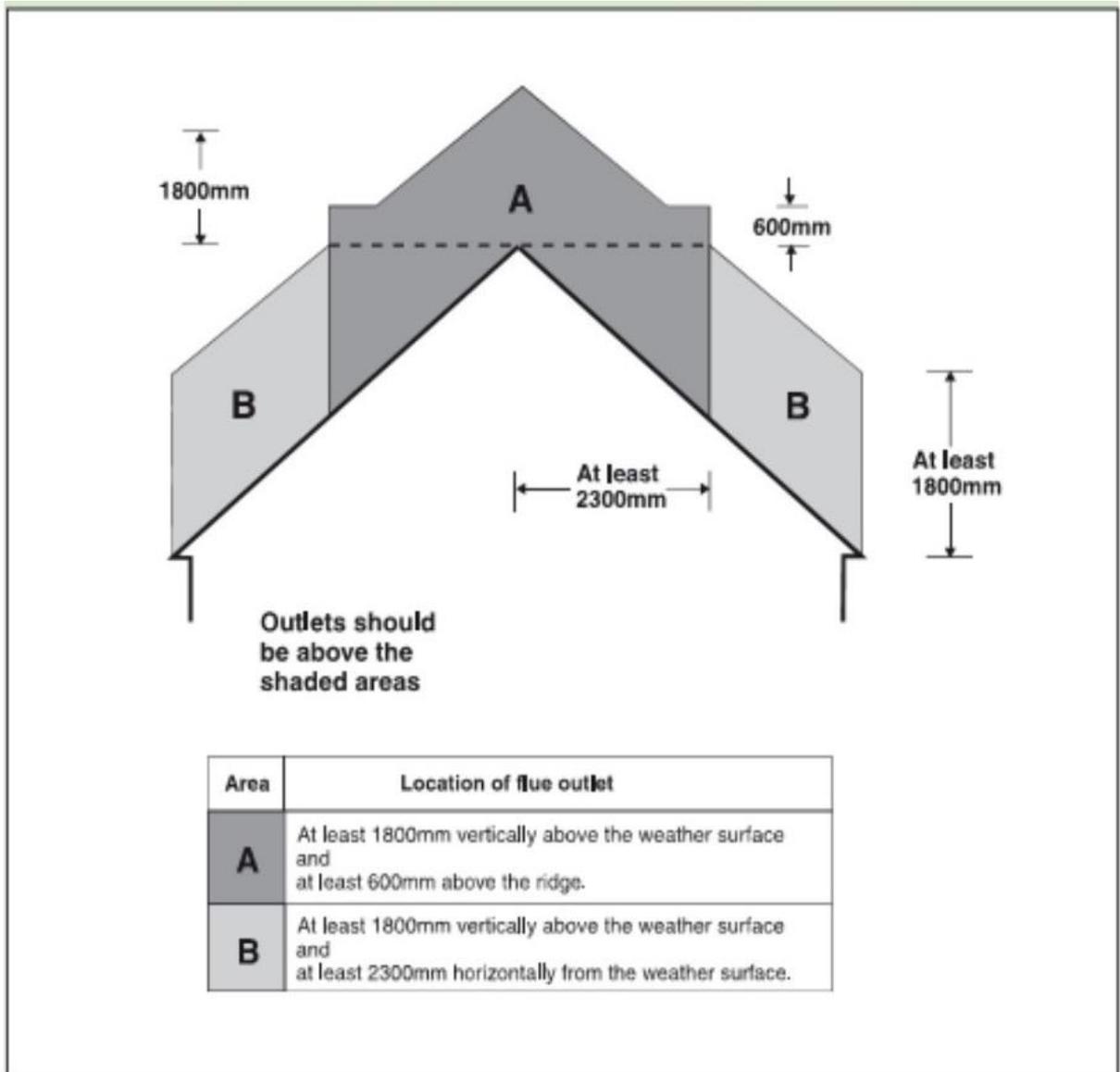
Flue pipe, single skin pipe of stainless steel or Vitreous enamelled steel is used to connect the appliance to the chimney.

Twin wall insulated flue is a chimney and is equal to a brick built/lined chimney.

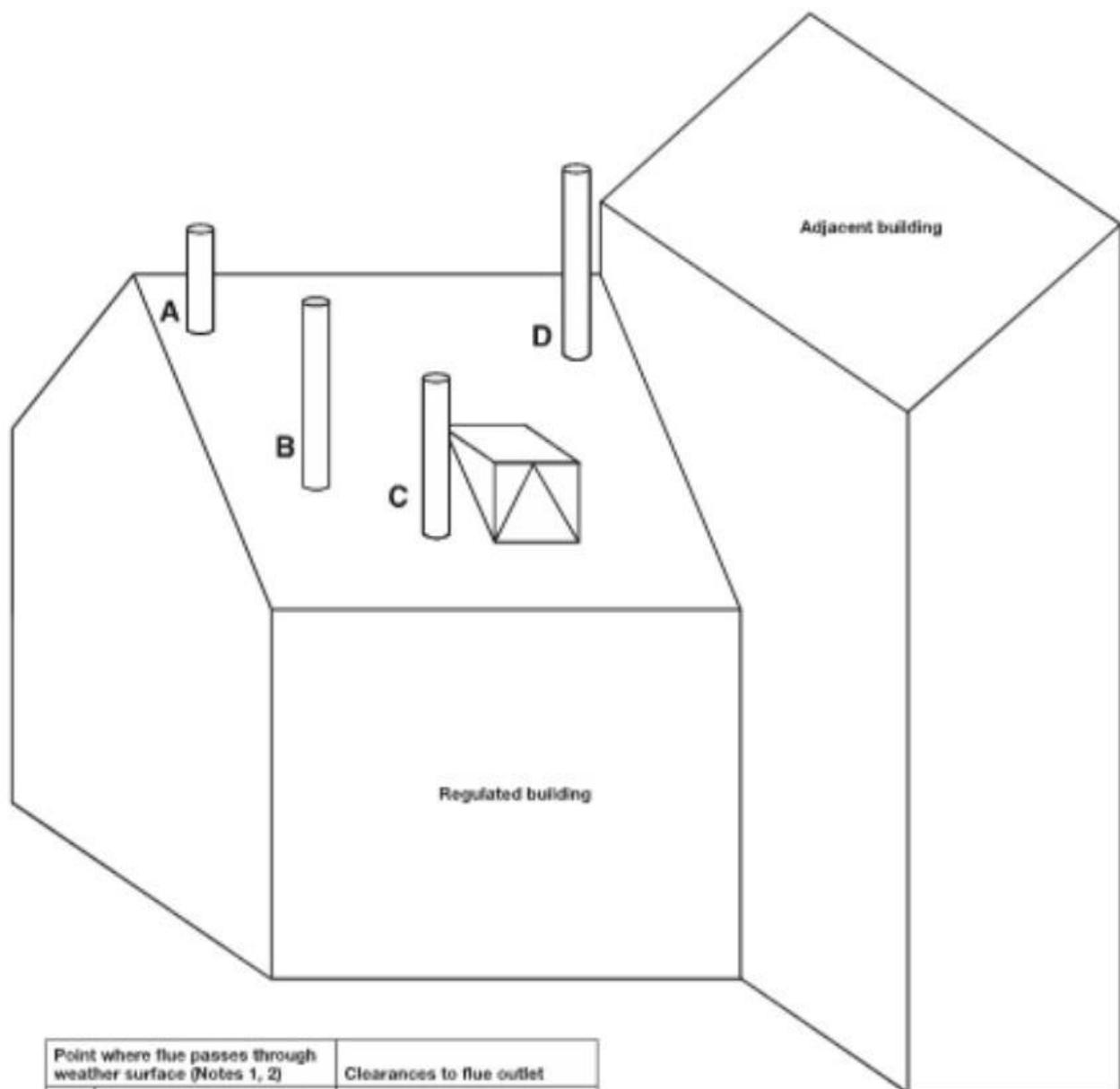
Golden Design Rules:

- a) No more than 2 meters of flue pipe should be used. (it causes the flue gases to over cool and lose their lift)
- b) No more the 4 off 45-degree elbows should be used, in the flue and the chimney.
- c) Distance to flammable materials (plaster board is cardboard backed and flammable), Chimney 60mm, flue pipe 3 X diameter so 450mm on the wood cooker, 375mm on the pellet.
- d) The chimney should terminate 2.4meters horizontally from a tiled surface all as per the diagrams below.

- e) A terminal must be used with a bird mesh between 12mm and 25mm. A storm type is preferable wood, essential on the pellet cooker. See diagram.
- f) Brick build chimney must be lined down to the correct diameter for the appliance.
- g) The diameter of the lining must not be smaller and not be excessively larger than the flue diameter of the appliance. i.e. an appliance with a 150mm flue can be used on a 150 to 170mm diameter chimney, but not on a 125mm or 200mm chimney.
- h) A soot door/sweeping door must be provided, usually in the **first** section of flue pipe or at the first bend.
- i) If it is a very tall chimney or larger than standard, the draw should be measured with a manometer. The draw should be between 10-15PA. Above that and the efficiency will start to drop. Over 20PA and you can start to affect the appliance and a flue or barometric stabilizer will have to be fitted and set to 12-15 PA We can supply these.



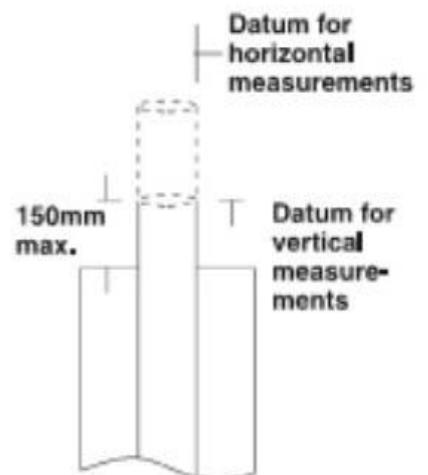
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Point where flue passes through weather surface (Notes 1, 2)		Clearances to flue outlet
A	At or within 600mm of the ridge	At least 600mm above the ridge
B	Elsewhere on a roof (whether pitched or flat)	At least 2300mm horizontally from the nearest point on the weather surface and: a) at least 1000mm above the highest point of intersection of the chimney and the weather surface; or b) at least as high as the ridge.
C	Below (on a pitched roof) or within 2300mm horizontally to an openable rooflight, dormer window or other opening (Note 3)	At least 1000mm above the top of the opening.
D	Within 2300mm of an adjoining or adjacent building, whether or not beyond the boundary (Note 3)	At least 600mm above any part of the adjacent building within 2300mm.

Notes

- 1) The weather surface is the building external surface, such as its roof, tiles or external walls.
- 2) A flat roof has a pitch less than 10°.
- 3) The clearances given for A or B, as appropriate, will also apply.
- 4) A vertical flue fixed to an outside wall should be treated as equivalent to an inside flue emerging at the nearest edge of the roof.



The datum for vertical measurements is the point of discharge of the flue, or 150mm above the insulation, whichever is the lower



Barometric draft stabilizer.



Storm Cowl.



Register plate adaptor, for sealing a flexible liner to the closure or register plate across the base of the fireplace.