

Kent and Co

From: [REDACTED]
To: [REDACTED]
Sent: 07 September 2023 09:42
Attach: PART J FUEL ADJ_LOCKED.pdf
Subject: FW: Re Kent & Co biomas

Good morning
Apologies for the delay.

Kind Regards

Paul Warnes
Contracts Manager (Plumbing and Heating)

Panks Engineers Ltd.

[REDACTED]

Head office: 8 Heigham St, Norwich, Norfolk, NR2 4TE.
Ipswich: Unit C Olympus Cl, White House Ind. Est, Ipswich, IP1 5LJ



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EXCEEDING EXPECTATIONS

Email : PWarnes@panks.co.uk

From: [REDACTED]
Sent: [REDACTED]
To: [REDACTED]
Subject: Re Kent & Co biomas

Paul,

Re Kent & Co biomas

Please find attached a copy of Building Regulations Part J detailing the requirements of flues for solid fuel appliances (biomass)

The details are located on Page 30 in part J2

The kW rating of an appliance or the boiler room will determine the regulations that apply to the installation. A biomass application:

Rated up to 50kW installed in a domestic dwelling, an appliance should be installed in accordance

07/09/2023

with Part J of the Building Regulations (Approved Document J) and with the Town & Country Permitted Developments Act, Order G.

An appliance with a burn rate that is less than 45.4 kg/hr. should be installed in accordance with BSEN 15287 part 1 Annex M.

With a burn rate above 45.4 kg/hr. the requirements of the Clean Air Act should be followed. A screening assessment, produced in accordance with Local Air Quality Technical Guidance should also be carried out.

Note. A fuel burn rate of 45.4 kg/hr. is used instead of kW input, because the equivalent kW input for solid fuel can vary significantly depending on the exact type of solid fuel and its moisture content, i.e. for Biomass a 45.4 kg/hr. is equivalent to an input heat range between 100 - 220 kW heat input depending on the type of wood and its moisture content.

The initial factor to determine the height of the flue is its ability to create the draught to remove products of combustion. This is the minimum height & will be set by the manufacturer.

The clean air act 1996, sections 14 & 15 drive the requirements for flue heights based upon the criteria of (a) the purpose of the chimney; (b) the position and descriptions of buildings near it; (c) the levels of the neighbouring ground; and (d) any other matters requiring consideration in the circumstances.

The short story is that the locality of neighbouring buildings / trees / ground levels will determine if a flue is required to exceed the manufactures height requirements for function. Rising higher to 'prevent, so far as practicable, the smoke, grit, dust, gases or fumes emitted from the chimney from becoming prejudicial to health or a nuisance'

So the height of a biomass flue is going to be determined by size of the equipment and the adjacent surroundings. A survey would have to be undertaken and then a calculation performed to determine a compliant height, however the absolute minimum would be 600mm above the roof line to meet building regulations, but likely to be much higher to meet the clean air act.

Kind regards.

Sim Tilcock

Plumbing ,Heating & Mechanical
Mechanical design.

Head office: 8 Heigham St, Norwich, Norfolk, NR2 4TE.
Ipswich: Unit C Olympus CI, White House Ind. Est, Ipswich, IP1 5LJ

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EXCEEDING EXPECTATIONS

The Building Regulations 2010

Combustion appliances and fuel storage systems

J

APPROVED DOCUMENT

- J1** Air supply
- J2** Discharge of products of combustion
- J3** Warning of release of carbon monoxide
- J4** Protection of building
- J5** Provision of information
- J6** Protection of liquid fuel storage systems
- J7** Protection against pollution

2010 edition
incorporating 2010 and
2013 amendments

ADDITIONAL PROVISIONS FOR APPLIANCES BURNING SOLID FUEL WITH A RATED OUTPUT UP TO 50kW

2.6 For multi-fuel appliances, the *flue* should be sized to accommodate burning the fuel that requires the largest *flue*.

Table 2 Size of flues in chimneys

Installation (1)	Minimum flue size
Fireplace with an opening of up to 500mm x 550mm	200mm diameter or rectangular/square flues having the same cross-sectional area and a minimum dimension not less than 175mm
Fireplace with an opening in excess of 500mm x 550mm or a fireplace exposed on two or more sides	See paragraph 2.7. If rectangular/square flues are used the minimum dimension should be not less than 200mm
Closed appliance of up to 20kW rated output which: a) burns smokeless or low-volatiles fuel (2) or b) is an appliance which meets the requirements of the Clean Air Act when burning an appropriate bituminous coal (3) or c) is an appliance which meets the requirements of the Clean Air Act when burning wood (3)	125mm diameter or rectangular/square flues having the same cross-sectional area and a minimum dimension not less than 100mm for straight flues or 125mm for flues with bends or offsets
Pellet burner or pellet boiler which meets the requirements of the Clean Air Act (3)	125mm diameter This may be reduced to no less than 100mm when permitted by the appliance manufacturer and supported by calculation according to BS EN 13384-1:2002. This calculation can be applied to an individual installation or manufacturers can provide precalculated designs.
Other closed appliance of up to 30kW rated output burning any fuel	150mm diameter or rectangular/square flues having the same cross-sectional area and a minimum dimension not less than 125mm
Closed appliance of above 30kW and up to 50kW rated output burning any fuel	175mm diameter or rectangular/square flues having the same cross-sectional area and a minimum dimension not less than 150mm
Notes:	
1. Closed appliances include cookers, stoves, room heaters and boilers.	
2. Fuels such as bituminous coal, untreated wood or compressed paper are not smokeless or low-volatiles fuels.	
3. These appliances are known as 'exempted fireplaces'.	

2.7 For fireplaces with openings larger than 500mm x 550mm or fireplaces exposed on two or more sides (such as a fireplace under a canopy or open on both sides of a central *chimney* breast) a way of showing compliance would be to provide a *flue* with a cross-sectional area equal to 15 per cent of the total face area of the fireplace opening(s) (see Appendix B). However, specialist advice should be sought when proposing to construct *flues* having an area of:

- a. more than 15 per cent of the total face area of the fireplace openings; or
- b. more than 120,000mm² (0.12m²).

Height of flues

2.8 *Flues* should be high enough to ensure sufficient draught to clear the products of combustion. The height necessary for this will depend upon the type of the appliance, the height of the building, the type of *flue* and the number of bends in it, and an assessment of local wind patterns. However, a minimum flue height of 4.5m could be satisfactory if the guidance in Paragraphs 2.10 to 2.12 is adopted. As an alternative approach, the calculation procedure within BS EN 13384-1:2005 can be

used as the basis for deciding whether a *chimney* design will provide sufficient draught.

2.9 The height of a *flue* serving an open fire is measured vertically from the highest point at which air can enter the fireplace to the level at which the *flue* discharges into the outside air. The highest point of air entry into the fireplace could be the top of the fireplace opening or, for a fire under a canopy, the bottom of the canopy. The height of a *flue* serving a closed appliance is measured vertically from the appliance outlet.

Outlets from flues

2.10 The outlet from a *flue* should be above the roof of the building in a position where the products of combustion can discharge freely and will not present a fire hazard, whatever the wind conditions.

2.11 *Flue outlet* positions which can meet the requirements in common circumstances are shown in Diagram 17. The *chimney* heights and/or separations shown may need to be increased in particular cases where wind exposure, surrounding tall buildings, high trees or high ground could have adverse effects on flue draught.

Diagram 17 Flue outlet positions for solid fuel appliances

