

A number of members have asked if there are any specific regulations or guidance relating to the ventilation of solid fuel appliances in Commercial Kitchens, however, at present the answer is that there is not.

CEDA TSG Representatives have been working with HSE who intend to issue a Catering Information Sheet covering these, however, this will take some time to get published and it will be aimed at operators and will not contain much technical information.

Some solid fuel burning equipment is designed to be connected by a flue direct to atmosphere and if possible this option should be used providing that the discharge point of the flue is positioned so as to ensure that fumes do not pose a risk to employees or occupants of adjacent properties. It is essential that if an appliance is flued in this way and there is other equipment in the same area but under a mechanical extraction hood system that there is also a mechanical air make up system operating to ensure that flue gases from the solid fuel appliance do not get drawn back into the kitchen due to negative pressure.

The current version of DW172 refers to charcoal grills as Mesquite grills and gives some figures for them.

B&ES intend to update DW172 to cover more of these products and to provide information about the required air volumes for extraction. Many items of solid fuel fired equipment are designed to be connected directly to an independent flue and it is important to seek advice from the suppliers regarding extract rates, flue sizes etc. The attached appendix 1 provides recommended extraction rates for equipment that may be positioned under a canopy. The list is not exhaustive but is based on equipment known to be specified by CEDA members.

The main concern with these products is that they give off Carbon Monoxide particularly when cooling down so there needs to be a system to leave the extraction running until the fuel has completely burnt away. As the length of time that this takes varies according to the product and the amount of fuel left at the end of a service period the only safe way is to leave extraction on overnight.

It is also recommended by HSE that a carbon monoxide alarm is fitted adjacent to the appliance. If possible the alarm should be linked to the ventilation system to ensure that in the event of the alarm detecting CO the extraction is turned on to maximum until such time as no CO is detected.

The fumes from solid fuel appliances are much hotter and more corrosive than gas fumes and therefore it is recommended to use stainless steel ducting if possible. It is acknowledged that this may not be financially possible so if galvanised ductwork is used there needs to be a regime of regular checking for corrosion which could lead to leaks of fumes.

The routing of ductwork should avoid close proximity to combustible material and the exhaust to atmosphere should be carefully positioned so as to ensure that fumes do not pose a risk to employees or occupants of adjacent properties.

Fans and other components should be designed to withstand higher temperatures than are found in gas installations.

The HSE document will also recommend that operators of solid fuel equipment only use the fuel that is recommended by the equipment supplier. This is normally of a controlled quality and moisture content. It is also important to store the fuel in a dry, well-ventilated area to maintain the moisture content of the fuel. Fuel with too high a moisture content, results in the creation of resins in the fumes given off during burning which can leave a highly flammable and corrosive lining on ductwork which is also difficult to remove.

This document also has advice for service engineers when working in kitchens with solid fuel equipment. see Appendix 2

## Appendix 1

### Technical Guidance Document number 6 – Ventilation of Solid Fuel Appliances in Commercial Kitchens

The following chart relates to equipment that uses solid fuel either as its sole heat source or as a flavour enhancer and secondary source of heat. The chart shows recommended extraction rates. These have either been provided by the supplier or have been calculated using the Thermal Convection Method\* as stated in DW172 section 5 5.3.

Supplier	Model	Extract rate (m3/hour)	Comments
<b>Beech</b>	<b>GRILLS</b>		
	CGC0600	1700	Based on DW172*
	CGC0900	2500	Based on DW172*
	CGC1200	3350	Based on DW172*
	CGC1500	4200	Based on DW172*
	CGC1800	5000	Based on DW172*
	<b>OVENS</b>		
	REC0700	1800	Information provided by supplier
	REC0850	2500	Information provided by supplier
	REC1250 1D	2500	Information provided by supplier
	RGO1250 2D	2500	Information provided by supplier
	RND0900	1800	Information provided by supplier
	RND1100	2000	Information provided by supplier
	RND1300	2200	Information provided by supplier
	RND1500	2500	Information provided by supplier
RND1800	2500	Information provided by supplier	
<b>Bertha</b>		1850	Based on DW172*
<b>Inka</b>	P300	2500	Information provided by supplier
	P600	3000	Information provided by supplier
	P900	3500	Information provided by supplier
<b>Jestic Josper</b>	HJX25L	1850	Based on DW172*
	HJX25L*ACXP	2000	Based on DW172*
	HJX25L*BC	1850	Based on DW172*
	HJX25M*BC	1850	Based on DW172*
	HJX25M*BC	1850	Based on DW172*
	HJX38PM	1500	Based on DW172*
	HJX45L*ACXP	2600	Based on DW172*
	HJX45L*ACXP	2500	Based on DW172*
	HJX45L*BC	2500	Based on DW172*
	HJX45M	2500	Based on DW172*
	HJX45M*BC	2500	Based on DW172*
	HJX50L	2900	Based on DW172*
	HJX50L*ACXP	4000	Based on DW172*
	HJX50L*BC	2900	Based on DW172*
	HJX50M*BC	2900	Based on DW172*
	HJX50M*BC	2900	Based on DW172*
	BC1-EM	3000	Based on DW172*

Solid fuel burning appliances from the following are designed to have their own independent extraction flue and therefore information on extraction rates, flue sizes etc. should be obtained from the suppliers.

Woodstone ovens – Jestic

Charcoa Grills – White's Foodservice Equipment Ltd

Valoriani Ovens – Jamie Oliver Ovens

Clayburn Ovens – The Clay Oven Company

StoneBake Ovens – The Stone Bake Oven Company

## **Appendix 2**

### **Guidance for service engineers relating to solid fuel burning equipment**

Other than general regulations (Health and Safety at Work, COSHH) and general guidance in IGEN standard UP/19 (A6.2), there are no specific standards that dictate what an engineer should do when working in a kitchen with solid fuel fired equipment; however, he has a responsibility to ensure that he checks that a workplace is safe so therefore the following are CEDA's suggestions for engineers.

Carbon Dioxide is easily measurable at safe levels and therefore an engineer should take air quality readings exactly as he would for gas equipment installations (As recommended in UP/19), however, solid fuel equipment produces far more Carbon Monoxide than gas equipment, particularly whilst the fuel is dying and therefore the engineer should be equipped with a meter that can read CO levels.

If he finds a CO<sub>2</sub> reading in excess of 2800 ppm he should look to find ways of improving ventilation such as opening windows and doors as a short term measure until such time the ventilation can be increased so as to bring CO<sub>2</sub> levels down consistently below 2800 ppm. He should also make a written report to the responsible person at site. (Not the kitchen porter etc.)

The engineer should also take readings for CO which should not exceed 30 ppm (based on Workplace Exposure Limit 8 hour average).

As CO is a more dense gas than CO<sub>2</sub>, it is recommended that the readings are taken at a height of 1.5 metres. If a reading is in excess of 30 ppm, he should alert the responsible person and recommend that the area be evacuated until such time as the ventilation is increased and the CO reading is reduced below 30 ppm.

All readings should be recorded and reported.