

Planning Consent Information

Mechanical Ventilation & Environmental Control Equipment

BREWZ BAR RUSTINGTON

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1.01 GENERAL

This specification covers standards for the selection, supply, delivery, installation, testing and commissioning of Kitchen ventilation in accordance with HVCA Specification DW/172 for Restaurant developments. The cooking of food involves appliances releasing heat, steam, fumes and airborne grease.

The cooking process requires extract ventilation for the removal of fumes, smoke and vapours generated by the cooking activity.

1.02 OBJECTIVES

To provide an acceptable working environment for all kitchen staff by the extraction / removal of heated air, fumes, steam and cooking smells, as well as preventing condensation. The extract canopies are designed to enable ease of access for cleaning throughout the system and distribution ductwork and primary fan equipment.

1.03 ODOURS

All fumes and odours from the food preparation areas of the kitchens shall be mechanically extracted utilizing an extract canopy specifically designed and installed by a nominated specialist to remove all cooking odours. This will take into account the dimensions of the kitchens in question, the type of grease filters used in the application and the cooking equipment within the grouped cooking range.

1.04 NOISE

All fan equipment, ductwork and filter housing shall be so mounted and installed so as not to give rise to a noise nuisance. Any noise generated by the extraction or supply systems as a whole shall not exceed the pre-existing hourly background noise level at nearby residential accommodation by more than 5dB(A). When measured and rated in accordance with BS 4142, entitled Method of Rating Industrial Noise Affecting Mixed Residential and Industrial Areas 1997

1.05 LOCATION

The canopies will be sited over the grouped cooking equipment, or any heat, steam or grease producing equipment.

1.06 SIZE

The canopies shall overhang the grouped cooking range by not less than 250mm and will be mounted at a height no lower than 2000mm from the finished floor level to the underside of the canopy.

1.07 CANOPY CONSTRUCTION

The extract canopies shall be constructed from 18 swg (1.22mm thick) stainless steel type 304. All visible surfaces shall be ultra fine grain satin polished to 280 grit, and Polythene protected during installation. All constituent parts must be suitable for use in a working kitchen environment.

The canopies shall be cut, punched and folded into sub sections of up to 2600mm in. All joints shall be formed to enable ease of cleaning with no cut edges or corners, which shall become an encumbrance to cleaning requirements. All metal edges shall be rolled smooth and shall be free from any sharp edges or projections.

The canopy lower edge at each end and the front and rear shall be formed into a condensation channel with inclined internal elevation to simplify cleaning requirements, the inner edges having crush folded safety finish.

When constructed, the canopies should be flush with sealing surface as should any ducting within the kitchen itself. This is to prevent the creation of a shelf which would permit the collection of dust etc. where this is not possible infill panels are to be fitted so there are no dust traps. All infill panel requirements shall be constructed from the same material as the canopy.

1.08 SPLASHBACKS

Stainless steel sheets of the same grade and polish finish should be fitted to the rear and side walls below the canopy. This should be, as a minimum, the width of the canopy and should be flush with the base of the canopy, the wall and down to the floor. All joints between the splashback, cooking equipment and the canopy should be sealed with a silicone sealant. Silicone sealant should be applied only when absolutely necessary to joints in a neat finish not protruding the metal surface. Silicone joints will not be accepted as an alternative for a welded or poor constructed joint.

1.9 LIGHTING

The canopies shall be fitted with vapour proof lamps suitable for use in damp atmospheres. The lamps should have a diffuser, which can also withstand high temperature. Recess lighting is preferred to bulkhead fittings. Lighting within the canopies shall provide a minimum of 500 lux at the working surface.

1.10 FAN EQUIPMENT

All fans are to adequately sized to overcome the system resistance and to provide the required extraction/supply rate specified. Multiple fans rather than single units should be used to reduce noise in instances when the system resistance is inherently high.

All fan motors are to be totally enclosed, air cooled, class F rated, with motor protection IP55. All single phased motors are to have "sealed for life" bearings. The fan motor should have an operating temperature of -40 deg. Cent. to +50 deg. Cent.

All fans will be provided with suitably rated on/off variable speed controllers, and all fan equipment having local isolators and emergency stops fitted adjacent to the applicable equipment. Fans should be fitted with necessary resilient mounting to prevent noise and vibration transfer to the kitchen, other unit rooms and the external environment.

The Contractor will ensure that the fans are capable of producing the required air volumes as specified. All fans and motors arrangements shall be capable of running at 10% over the maximum specified duty.

The Contractor shall ensure that fan motors are suitable for the electrical supply available to the building.

Casing mounted fans shall have internal vibration isolation. Duct mounted fans shall have flexible duct connections consisting of or be externally protected by material having a fire penetration time of at least 15 minutes when tested in accordance with BS 476 Part 8 and shall comply with BS 476 Part 7, Section 2, Clause 2.8 (Class 1 : surface of a very low flame spread properties).

Fans shall be selected to meet the specified noise criteria.

The construction of the fan shall be such that is capable of withstanding the pressures and stresses experienced under continuous operation.

Fan casings shall be constructed such that access can easily be gained to motors and impellers, and that these can be removed if required for maintenance or replacement.

1.11 GREASE FILTERS

The canopies should be fitted with internal extract plenum(s) with grease filters cells across its length. The filters should be of a sufficient size and number to ensure that the velocity through them does not lead to grease "carry over" into the ductwork and onto the extract fan.

The grease filters should have rigid frames in stainless steel baffle filters of sufficient density to capture and hold airborne grease. Filters shall fit correctly into holding frames to eliminate any extracted air passing around the filter.

The extracted fumes shall first be passed through these filters designed to remove the grease entrained in the fumes; the filters shall be removed and cleaned of their deposits at the end of each working day.

The grease filters should be easily removed and should be adequately sized to fit easily within dishwashers to facilitate easy cleaning.

The location of the filters should be such that it is not affected by the heat of wall mounted equipment, such as grills. This is particularly important with replaceable filter fittings, which carbonize at high temperature.

1.12 DISTRIBUTION DUCTWORK

Kitchen canopy exhaust ductwork shall be constructed and installed in accordance with HVCA Specification DW/172 and HVCA Specification DW/144. Ductwork shall be routed to external source in the shortest possible route, without excessive use of bends and horizontal ductwork installation.

Ductwork shall be suitable for kitchen extract systems, with smooth internal surfaces that facilitate easy removal of grease deposits.

1.13 PARTICULAR MAIN CANOPY ARRANGEMENT

The kitchen area shall have a mechanical forced air system, with a wall mounted canopy arrangement over the main grouped cooking equipment, and supply air system with ceiling mounted diffusers. The extract system shall have a speed controller sited away from the kitchen area to suit site and operatives requirements.

The canopy arrangement shall be as follows:

- a) (Dimensions to be checked prior to site start) 2600mm long x 1650mm wide x 600mm high
- b) Four sided outer valance casing.
- c) The canopy lower edge at each end shall be formed into a condensation channel with inclined internal elevation to simplify cleaning requirements.
- d) Full area horizontal ceiling plate, manufactured in tray form, fixed and sealed into the outer valance casing.
- e) Full length single sided extract plenum, fixed and sealed to the canopy outer structure and complete with: -
 - 5 No. 500 x 400 x 45mm stainless steel baffle filters
 - 1 No. 450mm diameter extract factory fitted duct connection spigot.
- g) 4 No. LED recessed downlight manufactured to IP65, fire-rated, to give an average illumination of 500 Lux upon the working surfaces.
- h) Grease collection drawers
- i) Full Length stainless steel splashback, 3000mm x 2000mm and side splashbacks of 1200mm x 2000mm (tbc)

DUTIES: Canopy Extract volume 1.27m³/sec. at a constant pressure drop of approximately 160 pascals

All duties to be checked against the manufacturers filter performance data.

SECTION 2 : ODOUR ABATEMENT SYSTEM

2.01 GENERAL

As part of the Brewz Bar commitment to the brand, an odour control system will be installed to serve the kitchen extract system on the project.

2.02 ODOUR EQUIPMENT PARTICULARS

1 no Nationwide Ventilation 'Introzone' ozone odour control unit.

2.03 SYSTEM DESCRIPTION

The first stage of the odour control system would be the grease baffle filters actually located within the extraction hood, which remove the large particles of grease and water vapour.

The final stage of the odour control system would be the Introzone ozone injection system which is mounted on the extract ductwork located internally above the extract canopy. The system is interlocked with the extract fan via an airflow pressure switch so that it can only operate whilst the extract fan is running.

Under its own control, the Introzone system draws in fresh air from the immediate area, this passes through the unit and across the ozone generator plates, and injects ozone directly into the negative side of the extract fan ductwork. The ozone then breaks down any odour particles prior to discharge through the final duct outlet.

2.04 PREVENTATIVE MAINTENANCE

A maintenance contract will be taken out directly between the Occupier and the Odour Control equipment manufacturer, namely, Nationwide Ventilation.

Work to be carried out is :-

Introzone System

1. Check operation and change plates/transformer as required
2. Replace inlet filter

Frequency

1. Service Introzone unit bi-annually

2.05 SUPPORTING DOCUMENTATION

Oxidation using ozone and activated oxygen ions is used to treat odour emissions from commercial and industrial kitchen processes, and is fully compliant with DEFRA. The units are specifically designed to fit into our canopy range or ductwork, but are also suitable to retrofit 100% of existing systems on site. The system injects ozone directly into the canopy or ductwork which then reacts with the odours. These are oxidized by a chemical reaction, and converted to carbon dioxide and water vapour. The ozone itself is then converted back into oxygen.

Benefits of the system are as follows:

- *Removal of kitchen odours produced by cooking processes.*
- *Can help to reduce grease build up within the canopy and ductwork.*
- *Available to retro fit in 100% of installations, can be fitted to either canopy or ductwork.*
- *Compact, lightweight and quiet operation.*
- *Quick and easy installation.*
- *Available for a range of airflow requirements.*
- *Low capital running cost, on average up to 50% less than standard UV-c systems*
- *Direct injection into canopy or ductwork means no fan upgrade are required.*
- *Reduced yearly maintenance cost over traditional UV-c systems*
- *100% compliant with fire suppression systems.*
- *No harmful UV-c light and less complicated interlock systems.*
- *All that is require for the installation on site is a 240v single phase fused spur supply.*



OPERATIONS AND MAINTENANCE

The Introzone unit is a self contained system so requires no direct action by the operator to activate. It has an integral airflow pressure switch which, when detecting the airflow of the extract system being on, will switch on the unit. When the extract is turned off, the unit will also shut off.

The ozone generating plates within the unit will last approximately 6 months in normal daily use after which time they will need to be replaced. This should only be carried out by Nationwide Ventilation recognised/authorised engineers to ensure the unit is safely and correctly maintained.

There should be no need for the client to access the unit, but should it be necessary for the unit to be deactivated it can simply be switched off via the socket and unplugged.

In the very unlikely event that ozone is smelt in the area where the unit is located for a prolonged time, this is not an indication of any hazard to health. As the ozone is supposed to go directly into the canopy or duct, it would indicate a leak. If the smell is particularly strong, please switch off the unit and report to our office for investigation.

SECTION 3 : EXTRACT PLANT NOISE CRITERIA

SECTION 3 : EXTRACT PLANT NOISE CRITERIA

3.01 KITCHEN EXTRACT FAN EQUIPMENT PARTICULARS

NOTE: Items detailed within this section are kitchen ventilation plant items only.

3.01 KITCHEN EXTRACT FAN EQUIPMENT PARTICULARS

The main extract system within the kitchen shall serve the single wall mounted canopy arrangements as described in earlier sections of this document. The fan is mounted internally as shown on the accompanying drawing..

The extract fan equipment shall be as follows: -

Elta Fans
Model : SEL355/2-1AC
Motor : 960W 2776rpm
Duty : 1.0m³/s @ 160Pa
Sound Level : 63dBA@3 metres (OUTLET)
Controller : TRANSFORMER
Electrical : 230 volt / 1 phase / 50 Hz
Weight : 17kg

Atmosphere attenuator supplied (eg Elta 068-0355-JF3 – 900mm) to achieve the following insertion losses :

Frq Hz	63	125	250	500	1k	2k	4k	8k
Loss dB	4	7	9	19	28	25	16	13

END OF DOCUMENT

