



REF: Home Farm Catering

Home Farm
West Street
Walsham Le Willows
IP31 3AP

Date 14th April 2024

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1.0 INTRODUCTION:

The information contained within this document should be used as supporting information when applying for Change of Use Planning Approval and is based on the '*DEFRA Annex B – Guidance on the control of odour and noise from Commercial Kitchen Exhaust system – Jan 05*'. This follows feedback from various Local Authorities who use Annex B as a guide when referring to the extract system as part of the application process.

Annex B advises that the aim of any ventilation/extraction is to ensure that no nuisance, disturbance or loss of amenity is caused by odour, fumes, food droplets or noise, to nearby properties. Additionally, the visual appearance of the flue may be important and the flue itself may require a separate planning permission. Enquiries should be made to the Local Authority Planning Department regarding this matter.

A suitably qualified and experienced person with specialist knowledge of ventilation schemes should undertake the design and installation of a ventilation system.

Designing and installing appropriate ventilation systems may involve considerable expense.

In circumstances where the end user of the premises is unknown, or where the specific

type of food to be cooked is unknown, the installation should be designed to achieve the highest level of odour control in order to cater for a worst-case scenario.

There are many different types of odour abatement available (carbon filters, electrostatic precipitation, high dilution and high velocity extraction) however not all types are suitable for all cooking methods. In each case, grease filters must be installed.

2.0 PREAMBLE TO RESTAURANT SPECIFICATION

Please note that this home cooking unit will produce little grease and the extract system is predominately removing heat fumes and any grease that is created in the cooking process. All work is carried out in accordance with the latest relevant British (or Irish regulations where applicable) and European Standards, statutory Regulation and Byelaws together with the following publications:

CIBSE Codes and guides to current practice

Water Authority By Laws

HVCA – DW143 Practical Guide to Ductwork Leakage Testing

HVCA DW144 Specification for Sheet Metal Ductwork

HVCA DW172 Guide to Good Practice for Kitchen Ventilation Systems

HVCA – RUAG70 Guide to Good Practice Refrigeration

The Building Regulations

Gas Safety (Installation and Use) Regulations 1998

All plant, ducts, pipe cables etc. shall be adequately protected against accidental damage corrosion and external environment and shall be capable of safe decontamination and removal in the future without disturbing other services. Pipes and ducts shall be adequately sized, kept as short as practicable, leak-proof with a minimum number of joints and have provision for routine maintenance. All facilities shall be designed to prevent the ingress or egress of rodents, vermin, and insects.

The duct will be fixed to the shell of the unit using anti-vibration fixing mounts and under no circumstances will flexible ductwork be used other than the fan connections

The HVAC contractor shall supply the client with system design drawings, prior to manufacture and installation

For projects in England and Wales, the HVAC contractor shall also demonstrate compliance with Building Regulations Approved documents L2A & L2B. This will include:

- (a) Provision of details of the efficiency and controls of heating, cooling and ventilation systems in accordance with Non-Domestic & Heating, Cooling and Ventilation compliance Guide (2006)
- (b) Provision of commissioning certificates including air leakage tests on the ductwork

The HVAC contractor shall ensure that externally the ductwork conforms to the supplied drawings in terms of its route, height and termination. These drawings will have formed part of our Planning Approval and will be built as such.

Upon completion of the installation, all shall be fully tested and proved including airflows. The contractor shall produce an Operating and Maintenance Manual which shall contain details of all equipment supplied, a record drawing of the complete mechanical services installation and copies of all Test Certificates. It shall contain a Maintenance Schedule based on the manufacturer's recommendations.

3.0 DETAILED DESIGN OF VENTILATION SYSTEM

3.1 Canopy Hood.

Canopy dimensions

1200mm length, x 1200mm wide x 500mm back x 300 front, tapered wall canopy. The filter banks will run on back sides of the hood, all corners are fully welded, with drain taps fitted to the back-drain channel for cleaning purposes.

Finish Type

Fine grain stainless steel finish 430 x 1mm.

Filters

Stainless steel baffle filters for easy cleaning, filter size 395(W)mm x 495(H)mm x 50mm.

Canopy face velocity 127ft/min



The canopy system will look very similar to this one.



3.2 Extraction

Extraction fan

The fan specified in the extraction system is a Soler and Palau HCFB/4-400/H, rpm 1200, sound pressure level 60 outlet dBA, pressure level air volume 5070(m³/h), This fan will be fitted with an REB 5 speed control. Fan duty 1.0 3/sec @ 200pa static pressure. The will be fitted within one of our fan boxes, the box will be powder coated black to match the building.



3.3 Speed Controls

Speed Control Inverter Extraction

Air-in control REB 5

REB 5



PLATE MOUNTED AXIAL FLOW FANS
COMPACT Series type HCFFB / HCFT
 (Plastic impellers)



IP65⁽¹⁾

Range of low profile plate mounted axial fans fitted with **plastic impellers** (250 to 630) or aluminium hub and plastic blades (710 to 1000). Available, depending upon the model, with single or three phase motors in 2, 4, 6 or 8 poles.

Motors

All the motors are **IP65⁽¹⁾ Class F insulation⁽²⁾** equipped with **thermal protection**.

All motors are speed controllable by autotransformer except 2 pole and /4-630, /4-710, 800, 900, 1000 models.

Models 800 to 1000 are speed controllable by inverter.

Electrical supplies:

Single phase 230V-50Hz. (Capacitor located inside the wiring terminal box).

Three phase 230/400V-50Hz or 400V-50Hz. (See characteristic chart).

(1) 2 pole motor and 800, 900 & 1000 models are IP55.

(2) Working temperatures from -40°C up to 70°C. Except models 800 to 1000 suitable for usage in environments from -20 °C to 40°C.

Additional Information

Standard air direction: form (A) configuration (Motor over Impeller).

On request

Air direction: form (B) configuration (Impeller over Motor).

Inlet finger proof guard for models 800 to 1000.

Compact design



Compact design created by the combination of the motor with the factory matched direct drive wrap around impeller hub

Corrosion resistance



Mounting plate, motor support and finger proof guard protected by catalaorosis primer and black polyester paint finish. Stainless steel screws

Terminal box



Wiring terminal box with cable gland PG-11

Impeller dynamically balanced



Impellers are dynamically balanced, according to ISO 1040 standard, giving vibration free operation

Configuration for models Ø 800 to 1000



A P P L I C A T I O N S





■ Technical characteristics with PLASTIC impellers (HCFB, HCFB, HCGT & HCFT)

Before making any electrical connection ensure that the voltage and frequency of the mains electrical supply matches that of the fan data plate label.

Model	Speed (r.p.m.)	Maximum absorbed power (W)	Maximum current (A)		Sound pressure level (dB(A))	Maximum air volume (m ³ /h)	Weight (kg)	Speed* controller
			at 230 V	at 400 V				
SINGLE PHASE 2 POLE								
HCFB/2-250/H	2500	250	1,2		65	2160	5	-
HCFB/2-315/L	2500	380	1,7		70	3260	7	-
HCFB/2-355/J	2000	460	2,2		71	4000	8	-
SINGLE PHASE 4 POLE								
HCFB/4-250/H	1330	60	0,3		52	1215	5	REB-1
HCFB/4-315/H	1300	100	0,6		54	2350	7	REB-1
HCFB/4-355/H	1225	200	1,0		58	3490	8	REB-2,5
HCFB/4-400/H	1200	340	1,6		60	5070	9	REB-2,5
HCFB/4-450/H	1290	480	2,3		65	6760	13	REB-2,5
HCFB/4-500/H	1290	650	3,0		68	9200	16	REB-5
HCFB/4-560/H	1250	980	4,9		71	12480	22	REB-5
HCFB/4-630/H	1200	1700	7,6		72	17060	25	-
SINGLE PHASE 6 POLE								
HCFB/6-315/H	825	80	0,4		45	1560	7	REB-1
HCFB/6-355/H	800	90	0,5		50	2210	8	REB-1
HCFB/6-400/H	750	110	0,6		52	3400	9	REB-1
HCFB/6-450/H	835	220	1,2		53	4550	13	REB-2,5
HCFB/6-500/H	840	290	1,6		56	5820	16	REB-2,5
HCFB/6-560/H	900	420	2,4		59	7870	22	REB-2,5
HCFB/6-630/H	800	510	2,6		60	10750	25	REB-5
HCFB/6-710/H	900	1300	5,7		66	17570	27	-
SINGLE PHASE 8 POLE								
HCFB/8-450/H	625	130	0,7		46	3500	13	REB-1
HCFB/8-500/H	605	160	0,9		49	4660	16	REB-1
HCFB/8-560/H	610	240	1,3		52	5990	22	REB-2,5
HCFB/8-630/H	585	320	1,7		53	8340	25	REB-2,5
HCFB/8-710/H	625	480	2,4		59	11960	27	-
THREE PHASE 2 POLE								
HCFT/2-250/H	2500	250	0,9	0,5	65	2160	5	-
HCGT/2-315/G	2650	410	1,4	0,8	70	3400	7	-
HCGT/2-355/I	2380	520	1,6	0,9	71	4400	8	-
THREE PHASE 4 POLE								
HCFT/4-250/H	1330	60	0,3	0,2	52	1220	5	RMT-1,5
HCFT/4-315/H	1300	150	0,6	0,3	54	2350	7	RMT-1,5
HCFT/4-355/H	1260	200	0,8	0,5	58	3490	8	RMT-1,5
HCFT/4-400/H	1350	300	1,4	0,8	60	5070	9	RMT-1,5
HCFT/4-450/H	1230	500	1,7	1,0	65	6760	13	RMT-1,5
HCFT/4-500/H	1350	660	2,7	1,6	68	9200	16	RMT-2,5
HCFT/4-560/H	1320	1210	3,9	2,3	71	12480	22	RMT-2,5
HCFT/4-630/H	1420	1550	5,2	3,0	72	17060	25	RMT-5
HCFT/4-710/H	1350	2200	7,0	4,0	75	22150	27	VFKB-45
HCFT/4-800/L-X (1,5 kW)	1420	2300	6,6	3,8	79	24960	37	VFKB-45
HCFT/4-800/H-X (3 kW)	1430	4200	12,6	7,3	82	32600	52	VFKB-48
HCFT/4-900/L-X (3 kW)	1400	4400	11,3	6,5	83	35000	94	VFKB-48
HCFT/4-900/H-X (5,5 kW)	1400	7200		12,0	87	45000	110	VFTM-TRI 5,5
HCFT/4-1000/L-X (4 kW)	1400	4400	12,3	7,1	84	42000	67	VFKB-48
HCFT/4-1000/H-X (5,5 kW)	1460	7200		12,0	87	54000	95	VFTM-TRI 5,5

* Three phase speed controllers (RMT) or inverter control (VFKB/VFTM) are suitable for 400V.

COMPACT

Plate mounted axial flow fans

3.7 Odour Control

Unit size 600mm D x 600mm H x 600mm W

Constructed from galvanised steel with access doors to remove and replace the filters

Pre-filter 1 x 595 x 595 Mesh filter Cleaning period once a month

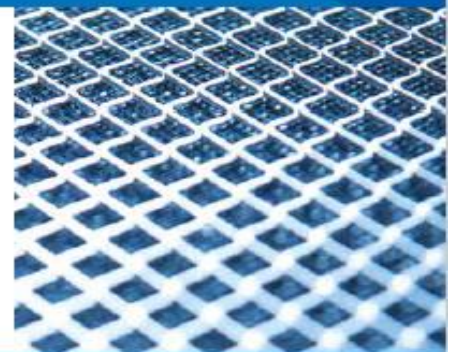
Pre- filter 1 x 595 x 595 G4 filter Change once a month

Carbon bag filters 2 x 595 x 595 Change every six months

3.8 Filter Specification

Filters used within the Odour control unit.

LONGAR® Type 4 Mesh Filter



LONGAR® TYPE 4 FEATURES:

- The LONGAR® Type 4 Mesh filter is manufactured using a patented expanded mesh, this offers a unique design based on many years of R&D. This results in a mesh that delivers greater air or grease arrestance, integral strength and low pressure loss.
- Comes with a safety edge channel to offer greater strength and safety over conventional products available on the market place.
- Using an Expanded metal multi-layer pad we are able to offer a panel with greater rigidity and importantly the pad cannot migrate particles, which can be found in 'knit mesh' filters, these types of panels can be hazardous where strands can break away from the filter.
- Due to the nature of the material that we use, its integral strength means when it comes to cleaning it will stand up well, and outlast panels of lesser constructions.
- Tested to Eurovent 4/5.
- Handles and drain holes are available.
- Available in Galvanised Steel, Stainless Steel and Aluminium.

APPLICATIONS

- Primary air filtration G2/G3
- Kitchens
- Cooker hoods
- All types of grease extraction
- General heating and ventilation pre-filtration

LONGAR® TYPE 4 MESH FILTER

The LONGAR® Type 4 Mesh filter is the result of years of experience in the manufacture and development of filters for the HEVAC world. With over 40 years of manufacturing experience the products brought to the market place today are clearly world class in price and product.

The LONGAR® Type 4 is a superior grease filter, available in a large selection of sizes and materials options.

Our Mesh filters are of robust construction and are used for a variety of applications, grease and air or dust collection applications, coalescer and spark arrestance, ideal as a prefilter for large particle contaminants and widely used in high air volume applications.

CONSTRUCTION DETAILS / MATERIAL SPECIFICATION

Media: Expanded metal patented design to aid filtration, available in stainless steel, galvanised steel, and aluminium.

Frame: U shaped section supplied with safety edge, available in stainless steel, galvanised steel and aluminium.

Filter thickness: Filter panels are available in actual thicknesses of: 8,10,12,20,25,40,45,50 and 95mm. Other sizes available on request.

Support mesh: Our own Q14 mesh is used in the grease filter as the support mesh.

Handles and drain holes: Folding handles and drain holes can be supplied as an option when required. They are fitted by default to the short dimension, unless otherwise stated by the customer at the time of ordering.

Housings: We can supply front withdrawal housings where required, see separate data sheet.

For technical specifications, part numbers and ordering information, please see overleaf.

FITTING INSTRUCTIONS

- Fit products, handles in direction of air in.
- Product vertical in air stream.
- Drain holes lower edge to exit into drip tray if installed.

HANDLING

- Handle with care when unpacking.
- Store in dry and frost protected place.

MAINTENANCE

- All maintenance should be carried out in accordance with the planned maintenance set by installation contractor.
- When handling any components suitable PPE should be used - gloves, eye protection and access equipment.
- Filters should be cleaned by a trained operative either daily for heavy use or weekly for light use.
- For more exact guide to cleaning you should contact a cleaning specialist.

PACKAGING

All units are packaged in double wall boxes with separators for standard sizes, glued closed for protection whilst in transit against contamination.

TECHNICAL SPECIFICATIONS

Tested to Eurovent 4/5

Fire rating = UL Class 2

100% relative humidity

Longar specifies the Grease Filter as height x width x thickness. The handles are fixed to the height and drain holes punched on the width.

Please ensure correct orientation is given when ordering.



Carbon Impregnated Bag Filters

Applications

The Activated Carbon impregnated bag filter, can be utilised to remove the slight general odours associated with towns and cities.

When a Carbon Bag Filter is used in the extract systems of light duty catering establishments, such as coffee shops, the life of it will be very short, as the odour retention is directly proportional to the weight of activated carbon on the product.

Airclean will not recommend this product for new installations for odour removal.



Description

The fully cured coating of the activated carbon powder on the polyester non-woven bag filter material is formed into pockets which are stitched and tagged to minimise blinding from each other.

The formed pockets are supported by a copper coated rod assembly which, with the media, is sealed into the corrosion resistant galvanised steel header frame.

Technical

Filter Classification:
 Maximum Operating Temperature : 40 Degrees Centigrade
 Maximum Operating Humidity: 80% RH

STANDARD CARBON IMPREGNATED BAG FILTERS

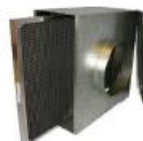
Dimensions					Flow Rate		Part Numbers
OT Inches		Actual mm			Flow	Pressure Drop	
H x W	D	H	W	D	m ³ /s	Pa	
24 x 12	12	594	289	289	0.38	70	1410801
	20	594	289	492	0.47	70	1410804
24 x 20	12	594	492	289	0.50	70	1410802
	20	594	492	492	0.64	70	1410805
24 x 24	12	594	594	289	0.75	70	1410803
	20	594	594	492	0.94	70	1410806
NON STANDARD							1410899



Front Withdrawal Frame



MEZ Flanged Side



Duct Mounted Filter



Fully Welded Side



3.8 Dwell time 0.2 sec

3.10 Extraction Duct Work Brief

Extraction duct work

The ducting systems will start from the canopy run to the right into the carbon filter system, once the air has passed through the filter system the ducting will go through the wall to the fan unit. Duct layout as shown on the plans.

Ducting Colourgalvanised

Cowlweather Louver Grille

Discharge velocity on the cowl 10-12m³/s

All our systems comply with DW175 regulations and specifications with regards to ducting sizes, heights and fan duties etc.

The Commissioning sheet will be issued after the work has been completed showing air flow rate and inventory of the system fitted.



Extraction Grille



Spiral Tube
 315mm will be used for the Extraction system.



SPIRAL TUBE | HOTCHKISS



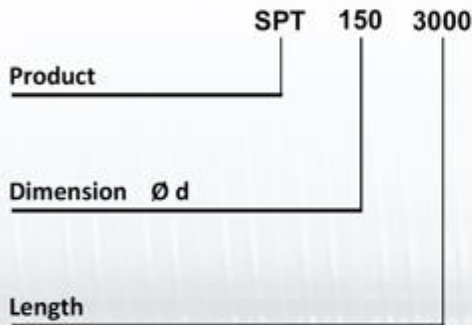
Description

Spiral Tube | Hotchkiss

Spirally Wound Tubing.

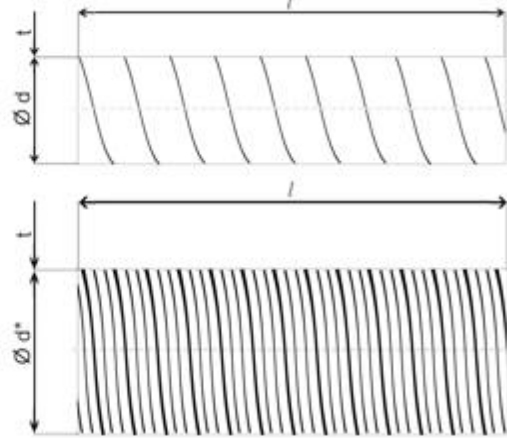
- Comes in a wide variety of diameters.
- Manufactured in standard 3.0m lengths.
- Custom lengths can be made upon request.
- Galvanised material - manufactured in accordance with DW144 specification.

Order Example:



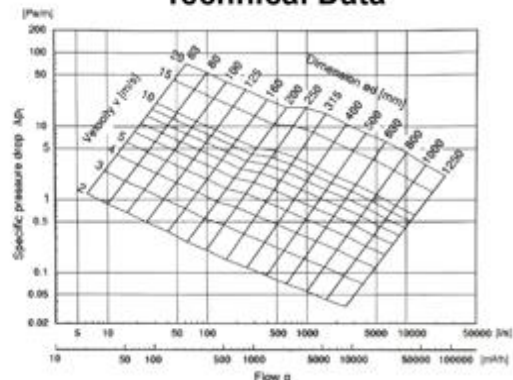
Also available in custom lengths.
 Manufactured to order.

Dimensions

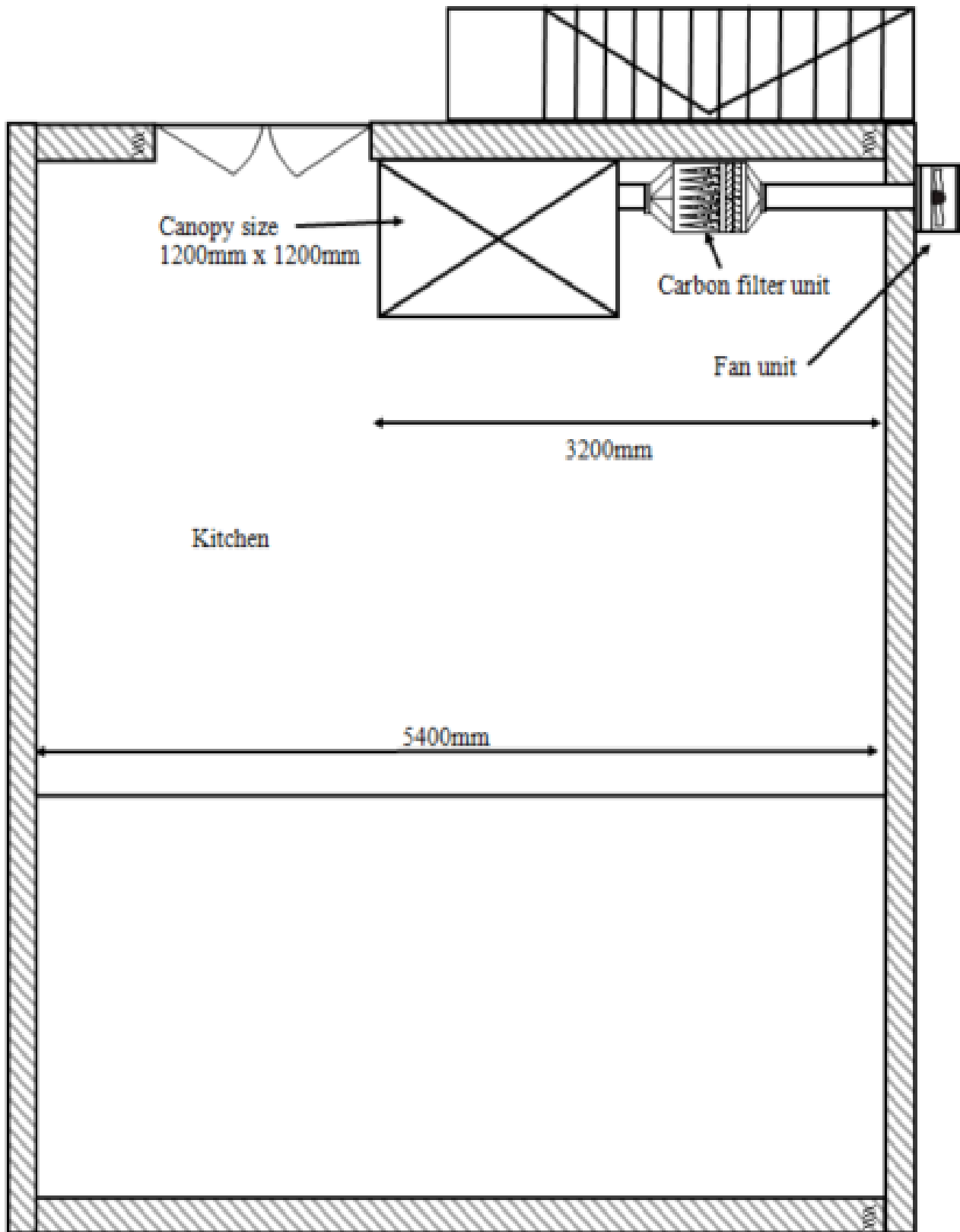


Nominal Diameter mm	Surface Area m ²	Cross Sectional Area m ²	Standard Gauge mm	Standard Length mm	Weight Kg/m
63	0.198	0.003	0.5	3000	1.01
80	0.251	0.005	0.5	3000	1.14
100	0.314	0.008	0.5	3000	1.42
112	0.352	0.010	0.5	3000	1.59
125	0.393	0.012	0.5	3000	1.78
140	0.440	0.015	0.5	3000	1.99
150	0.471	0.018	0.5	3000	2.13
160	0.503	0.02	0.5	3000	2.28
180	0.565	0.025	0.6	3000	3.07
200	0.628	0.031	0.6	3000	3.41
224	0.704	0.039	0.6	3000	3.82
250	0.785	0.049	0.6	3000	4.26
280	0.880	0.062	0.6	3000	4.78
300	0.942	0.071	0.6	3000	5.12
315	0.990	0.078	0.6	3000	5.38
355	1.115	0.099	0.8	3000	8.08
400	1.257	0.126	0.8	3000	9.10
450	1.414	0.159	0.8	3000	10.23
500	1.571	0.196	0.8	3000	11.37
560	1.759	0.246	0.8	3000	12.73
600	1.885	0.283	0.8	3000	13.65
630	1.979	0.312	0.8	3000	14.33
710	2.231	0.396	0.8	3000	16.15
800	2.513	0.503	0.8	3000	18.20
900	2.827	0.636	1.0	3000	25.58
1000	3.142	0.785	1.0	3000	28.43
1120	3.519	0.985	1.2	3000	38.21
1250	3.927	1.227	1.2	3000	42.64
1400	4.398	1.539	1.2	3000	47.76
1500	4.712	1.767	1.2	3000	51.17
1600	5.027	2.011	1.2	3000	54.58

Technical Data



3.13 Proposed Elevations





For any more advice or support before placing the order please feel free to contact me
07876 500 438 / 01733 7004

