Portland Fire Depar

*Fire Prevention ◆ 380 Congress Street ◆ Portland,*

*(t) 207.874.8400 (f) 207.874-8410 ◆ www.portlandfire.com*

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 03/07/17

**Kitchen Exhaust System Guideline and Code Provisions**

Dear Applicant,

The following are guidelines to assist you in filing for a permit to install a kitchen exhaust system. This checklist should be provided to the licensed engineer responsible for the design of the system. This checklist must be complete and submitted with all required supporting documentation and the permit application for permit approval. The applicable code for this installation is NFPA 96, *Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*, 2008 edition.

**Designer Information**

Name: LeBel's sheet metal

Phone Number: 207 576 5613

E-mail address: sachi@exploremaine.com

**Required Plans**

Key Plan (illustrating location of work within the building)

Plot plan showing duct systems and terminations, adjacent buildings, property lines, combustible construction, electrical equipment or lines, and closest point of any air intakes, doors, or windows within the distances specified in Section 7.8 of NFPA 96.

Interior and exterior elevations showing duct systems and terminations, clearances to adjacent buildings, property lines, combustible construction, electrical equipment , and closest point of all air intakes, doors, or windows within the distances specified in Section 7.8 of NFPA 96; and equipment, clearance reduction methods, rated enclosures, and cleanouts.

Type of cooking device to be used (i.e: open grill, solid fuel fried, or fryer)

**Required Documents**

Equipment operation and installation manuals

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**Type of System:**

Type 1: x  Type 2: ____

Type 1 systems are used for cooking equipment used in processes producing smoke or grease-laden vapors.
Type 2 systems are used to vent steam.

**Hood specs**

What type of material is the hood constructed of? 430 Stainless

Thickness of hood material: 16 gauge

Style of hood: concession style low proximity backshelf

Type of filter: ss baffled grease

Height of filter above nearest cooking surface: 26"

Capacity of hood (CFM): 800 cfm

Makeup air system description and capacity: screened window in airstream trailer

**Exhaust Duct Specs**

What type of material is the duct constructed of? 16 gauge steel

Thickness of duct material: 16

Air velocity within the duct system: _____

**Plan Details Required**

- Hood and duct supports
- Seams and joints
- Grease gutters
- Clearance reduction methods: hood and duct
- Vibration isolation system
- Grease accumulation prevention system
- Cleanouts
- Grease duct enclosure
- Exhaust termination

**A separate fire suppression system permit is required for Type 1 hoods**

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## HOOD INFORMATION – Job#2907054

| HOOD NO. | TAG | MODEL | LENGTH | MAX. COOKING TEMP. | EXHAUST PLENUM | | | | | | | HOOD CONSTRUCTION | HOOD CONFIG. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | TOTAL EXH. CFM | RISER(S) | | | | | | | END TO END | ROW |
| | | | | | | WIDTH | LENG. | HEIGHT | DIA. | CFM | S.P. | | | |
| 1 | | 3012 BLL | 4' 0.00" | 400 Deg. | 800 | 7" | 10" | 4" | | 800 | -0.359" | 430 SS Where Exposed | ALONE | ALONE |

## HOOD INFORMATION

| HOOD NO. | TAG | FILTER(S) | | | | | LIGHT(S) | | | UTILITY CABINET(S) | | | | | | FIRE SYSTEM PIPING | HANGING WGHT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | FIRE SYSTEM | | ELECTRICAL | SWITCHES | | |
| | | TYPE | QTY. | HEIGHT | LENGTH | EFFICIENCY @ 9 MICRONS | QTY. | TYPE | WIRE GUARD | LOCATION | SIZE | TYPE | SIZE | MODEL # | QUANTITY | | |
| 1 | | SS Baffle with Handles | 2 | 10" | 16" | 30% | 0 | | | | | | | | | NO | 86 LBS |

PLAN VIEW – Hood #1
4' 0.00" LONG 3012BLL

SECTION VIEW – MODEL 3012BLL
HOOD – #1

| | | |
|---|---|---|
| JOB Bayside Bowl - BLL | | |
| LOCATION Lewiston, ME, | | |
| DATE 1/31/2017 | JOB # 2907054 | |
| DWG # 1 | DRAWN BY BFC-21 | |
| REV. | SCALE 3/8" = 1'-0" | |

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## EXHAUST FAN INFORMATION – Job#2907054

| FAN UNIT NO. | TAG | FAN UNIT MODEL # | CFM | ESP. | RPM | H.P. | B.H.P. | ø | VOLT | FLA | WEIGHT (LBS.) | SONES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | DU30HFA | 800 | 0.670 | 1460 | 0.250 | 0.1610 | 1 | 115 | 3.8 | 109 | 11 |

## FAN OPTIONS

| FAN UNIT NO. | TAG | OPTION (Qty. – Descr.) |
|---|---|---|
| 1 | | 1 – Grease Box |
| | | 1 – Full Crating For Exhaust Fans |
| | | 1 – Wallmount 20.5" sq. x 2" |
| | | 1 – Wall Mount Construction for Fan |
| | | 1 – 3 Year Extended Motor Warranty |
| | | 1 – Fan Base Ceramic Seal – For Grease Ducts |

## FAN ACCESSORIES

| FAN UNIT NO. | TAG | EXHAUST | | | SUPPLY | | | |
|---|---|---|---|---|---|---|---|---|
| | | GREASE CUP | GRAVITY DAMPER | WALL MOUNT | SIDE DISCHARGE | GRAVITY DAMPER | MOTORIZED DAMPER | WALL MOUNT |
| 1 | | YES | | YES | | | | |

## FAN SOUND INFORMATION

| FAN UNIT NO. | MOTOR | RPM | LWA | SONES | DBA | DISTANCE FT | OCTAVE 1 | OCTAVE 2 | OCTAVE 3 | OCTAVE 4 | OCTAVE 5 | OCTAVE 6 | OCTAVE 7 | OCTAVE 8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Exhaust | 1460 | 73.3 | 11 | 61.8 | 5 | 72.9 | 75.8 | 76.8 | 69.6 | 65.7 | 63.8 | 58.9 | 48.9 |

## FAN #1 DU30HFA – EXHAUST FAN

## FEATURES:

- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS)
- ROOF MOUNTED FANS
- RESTAURANT MODEL
- UL705 AND UL762
- VARIABLE SPEED CONTROL
- INTERNAL WIRING
- WEATHERPROOF DISCONNECT
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE)
- HIGH HEAT OPERATION 300°F (149°C)
- GREASE CLASSIFICATION TESTING

NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

ABNORMAL FLARE-UP TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

## OPTIONS

GREASE BOX
FULL CRATING FOR EXHAUST FANS
WALLMOUNT 20.5" SQ. X 2"
WALL MOUNT CONSTRUCTION FOR FAN
3 YEAR EXTENDED MOTOR WARRANTY
FAN BASE CERAMIC SEAL – FOR GREASE DUCTS

## WALL MOUNT BRACKET

- WALL BRACKET FITS INTO BASE OF FAN
- SELF DRILLING SCREWS SHOULD BE USED FOR UNIT ATTACHMENT TO WALL MOUNT BRACKET

* DIMENSION = 5" WHEN USED WITH DAMPER
** CENTERED IN WALL MOUNT

| | |
|---|---|
| JOB Bayside Bowl – BLL | |
| LOCATION Lewiston, ME, | |
| DATE 1/31/2017 | JOB # 2907054 |
| DWG # 2 | DRAWN BY BFC-21 |
| REV. | SCALE 3/8" = 1'-0" |

FAN#1 - EXHAUST PERFORMANCE CURVES.

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800 CFM, 0.67 SP @ 1460 RPM and 0.161 BHP at 243 feet and 70 deg F

* Please note that these curves were adjusted for job specific temperature and altitude.

| | | |
|---|---|---|
| JOB Bayside Bowl - BLL | | |
| LOCATION Lewiston, ME, | | |
| DATE 1/31/2017 | JOB # 2907054 | |
| DWG # 3 | DRAWN BY BFC-21 | |
| REV. | SCALE 3/8" = 1'-0" | |

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GREASE DUCT SPECIFICATIONS:
PROVIDE GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW" ROUND 20 GAUGE 430 STAINLESS STEEL DUCTWORK. MODEL "DW" IS LISTED TO UL-1978 AND IS INSTALLED USING "V" CLAMP LOCKING CONNECTIONS SEALED WITH 3M FIRE BARRIER 2000 PLUS. MODEL "DW" DOES NOT REQUIRE WELDING PROVIDING IT HAS BEEN INSTALLED PER THE MANUFACTURES INSTALLATION GUIDE.
PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER. PER MANUFACTURES LISTING MODEL "DW" HORIZONTAL RUNS LESS THAN 75 FT. CAN BE SLOPED 1/16" PER 12", HORIZONTAL RUNS MORE THAN 75 FT. CAN BE SLOPED 3/16" PER 12". DUCT SHOULD BE SLOPED AS MUCH AS POSSIBLE TO REDUCE THE CHANCE OF GREASE ACCUMULATION IN HORIZONTAL RUNS.

IF THE DUCT IS WITHIN 18 INCHES OF COMBUSTIBLE MATERIAL, PROVIDE UL-2221 LISTED DOUBLE WALL GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW- 2R, 3R, OR 3Z" ROUND 20 GAUGE 430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.

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## CUSTOMER APPROVAL TO MANUFACTURE:

Approved as Noted ☐
Approved with NO Exception Taken ☐
Revise and Resubmit ☐
SIGNATURE _____
Your Title _____ Date _____ _____

| | | |
|---|---|---|
| JOB Bayside Bowl - BLL | | |
| LOCATION Lewiston, ME, | | |
| DATE 1/31/2017 | JOB # 2907054 | |
| DWG # 4 | DRAWN BY BFC-21 | |
| REV. | SCALE 3/8" = 1'-0" | |

CAPTIVEAIRE

| Exhaust Fan Wiring | JOB 2907054 - Bayside Bowl - BLL | |
|---|---|---|
| DRAWING NUMBER EXH2907054-1 | SHIP DATE 1/31/2017 | MODEL DU30HFA |

## Installed Options

Speed Control

## Component Identification

| Label | Description | Location |
|---|---|---|
| MT-01 | Fan Motor | [2] |
| QD-01 | Quick Disconnect | [2] |
| SC-01 | Speed Control | [1] |
| SW-01 | Main disconnect switch | [2] |

## MOTOR INFO

EXHAUST 0.25HP-115V-1P-3.8FLA

## ELECTRICAL INFORMATION

MOTOR/CTRL MCA: 4.8A
MOTOR/CTRL MOP: 15A

## NOTES

- - - - DENOTES FI
——— DENOTES IN

## WIRE CO

BK - BLACK
BL - BLUE
BR - BROWN
OR - ORANGE
RD - RED
WH - WHITE

Date:

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