Bulletin: Commercial Kitchen Exhaust Requirements

Kitchen Exhaust for Food Service Operations

Purpose

The purpose of this information bulletin is to provide an overview of the requirements that pertain primarily to ventilation control and fire protection of food service operations. The following includes information on when permits are required and emphasizes owner/user responsibilities for the design, installation, and maintenance of kitchen ventilation systems in the District of Peachland.

Although some smaller operations may not require full commercial ventilation & fire suppression systems, consideration for the health and safety of workers and patrons must be followed under Part 6 of the BC Building Code.

Work involving gas and electrical installations, or alterations shall contact the **BC Safety Authority** for the necessary permits.

Interior Health must also be contacted as soon as possible for new installations or alterations to existing food service operations. Please refer to Food Approval Checklist – **Requirements for Food Premises Approval**. An approved plan stamped by Interior Health will be required as part of the permit application.

References and Definitions

References

- BC Building Code – Part 6.2.2.7 & 9.32
- BC Fire Code
- NFPA 96

Definitions

"Domestic Hood" means a metal hood designed for use over domestic cooking equipment. Typically, a domestic hood is installed per 9.32.3.7 and 9.32.3.9 and has filters for grease removal as per 9.32.2.9.(6)

"NFPA 96" is the "Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations". Kitchen systems complying with this standard typically have welded steel ductwork, a heavy-duty exhaust hood (Type I Hood), fire suppression underneath the hood and a make-up air system.

"Type I Hood" means a hood designed in conformance with NFPA 96 [NFPA 96, A.3.3.31] and constructed per NFPA 96, Chapter 5. Typically, the hood is externally welded so that it is liquid-tight and is of 18 gauge steel or 20 gauge stainless steel [NFPA 96, 5.1.1 and 5.1.2].

"Type II Hood" means a hood designed for heat and steam removal and other non-grease applications. It is generally seamed. A condensate hood with an exhaust is a Type II Hood.

Implementation

Ventilation System & Permit Requirements

Class 1 Cooking Operations (grease-laden vapours)

A **Class 1 Cooking Operation** is defined as any cooking process which produces significant smoke or grease laden vapours and includes any equipment which has been designed by the manufacturer to be able to produce significant smoke or grease-laden vapours, except where specifically approved under another class.

Examples of Class 1 Cooking Operations include:
• Cooking operations outside the scope of Classes 2 through 5*
• The following commercial-type equipment or, domestic-type equipment used in a commercial-like food-processing establishment:
- Range (burners or hot top), stove, hot plate (gas burner, electric coil or flat top), induction cooker, electric frying pan, conveyor convection oven if used for cooking chicken wings or other bulk meat, oven used for cooking meat, char broiler, wok, fry grille, griddle, salamander, deep fat fryer, pan frying, barbeque, rotisserie, donair vertical broiler, tilting skillet, braising pan, any equipment recommended to have fire suppression by the manufacturer, any equipment which produces or has been designed by the manufacturer to have the potential to produce comparable amounts of smoke or grease. [NFPA 96, A.10.1.2]

• Cooking operations which receive complaints of producing objectionable odours or are found to cause interior build-up of grease of smoke residue [Provincial Health Act].

*Please note that churches and catering businesses could qualify under this type of classification. (See also Class 3 Operations).

Permit Application Requirements
Creation of a new or significant alteration to an existing Food Service Operation will require a building permit which would include:

• Completed application form with kitchen layout approved by interior health. The layout should indicate all appliances and ducting* including make-up air as well as plumbing fixtures.
• Two (2) copies of the mechanical system drawings must be presented showing compliance with the BC Building Code and NFPA 96. All drawings* shall be prepared, signed and sealed by a professional engineer entitled to practice in the Province of British Columbia and skilled in the appropriate section of the work concerned.
• Schedule B “letters of assurance”

Note that all work is to be completed by a certified trades person

Class 2 Cooking Operations (Steam and heat removal)

A **Class 2 Cooking Operation** is defined as any cooking equipment or process which produces significant steam or heat but does not product grease-laden vapours.

Permit Application Requirements
Creation of a new or significant alteration to an existing Food Service Operation will require a building permit which would include:

- Completed application form with kitchen layout approved by Interior Health. The layout should indicate all appliance and ducting* including make-up air as well as plumbing fixtures.
- Ventilation Checklist
- Copy of the Menu

Note that all work is to be completed by a certified trades person

The following requirements apply to Class 2 Cooking Operations:

- Type II hood and exhaust with general HVAC ducting
- If the ductwork is combined with ductwork serving a Class 1 cooking operation, then the ventilation for the Class 2 cooking operation is required to comply with NFPA 96 except that the air flow volume may be designed for heat and steam removal only. [NFPA 96, 7.1.3]
- If an appliance is designed with the potential for Class 1 cooking and will only be used for Class 2 cooking, then the following are additional requirements:
  - A metal sign securely mounted to the front of the hood embossed with the following words, sized and coloured so they can be easily read and understood:

"COOKING CAUSING GREASE-LADEN VAPOURS IS NOT ALLOWED.
EXHAUST SYSTEM IS DESIGNED FOR STEAM AND HEAT REMOVAL ONLY"

Examples of <u>Class 2</u> Cooking Operations include:

- Any of the following if they are >6 KW (20,478 BTU/h)7: closed pizza oven, conveyor pizza oven if used only for pizza or bread, baking oven, coffee maker, coffee roaster, hot dog display heater, pastry oven, popcorn maker, roll warmer, steam reconstitution device, steamer, toaster, warming oven.
- The following would be considered appliances designed with the potential of Class 1 but used only for Class 2 cooking: an electric domestic range, hot plate or induction cooker in a commercial cooking establishment used only for non-grease applications such as boiler water (eg: Potatoes, pasta, rice), reheating premade soups, heating beverages (eg: Hot chocolate or melting chocolate. (See additional requirements above).

Class 3 Cooking Operations (Dwelling Units and limited use)

A **Class 3 Cooking Operation** is defined as any cooking equipment or process where limited smoke and limited grease-laden vapours are produced such as normal usage in a single-family dwelling. This class of cooking operation typically utilizes a domestic range.

Permit Application Requirements
Creation of a new or significant alteration to an existing Food Service Operation will require a building permit which would include:

- Completed application form with kitchen layout approved by Interior Health. The layout should indicate all appliance and ducting* including make-up air as well as plumbing fixtures.
- Ventilation Checklist
- Copy of the Menu

Note that all work is to be completed by a certified trades person

If a sign is required as per the general requirements at the beginning of this section, it should read:

> **"This is a Class 3 cooking operation, with a grease capacity alike to a single-family dwelling. No commercial cooking is permitted, including preparation of meals for more than a normal household on a regularly repeated basis"**

The following requirements apply to Class 3 Cooking Operations:

- A domestic hood with a grease filter is the required minimum
- The exhaust and make-up air systems must comply with the requirements for a typical self-contained mechanical ventilation system serving only one dwelling unit [BC Building Code Part 6 and Part 9].
- Fire rated around that portion of the exhaust duct which is located within another fire compartment.
- Except within dwelling units, fire extinguisher(s) located in the kitchen area [NFPA 96, 1.1.4.(2)].

Examples of <u>Class 3</u> Cooking Operations include:

- Single family usage
- A single, four burner domestic range in a Fire Hall
- A single, four burner domestic range in an amenity room in a residential building, care home, congregate housing, employee break room or church where there is no cooking that produces grease-laden vapours, eg: Used for food warming or baking cakes (a microwave is recommended rather than a range where possible) [NFPA 96, A1.1.4]
- A home-economics classroom in a high school where only domestic cooking is taught
- Domestic range in a licensed childcare facility. The menu is regulated by the Interior Health Authority
- A single domestic range used in a showroom that sells non-food products, such as a showroom for selling domestic ranges, where the range is used once on the occasional day for a small number of people
- Class 3 does not include commercial food operations

Class 4 Cooking Operations (Self-contained)

A **Class 4 Cooking Operation** is defined as cooking equipment listed by an accredited certification organization such as ULC, cUL or ETL to ventilate into the room. These devices typically have their own fire suppression and grease filtering systems.

Permit Application Requirements
Creation of a new or significant alteration to an existing Food Service Operation will require a building permit which would include:

- Completed application form with kitchen layout approved by Interior Health as well as the manufacturers installation and maintenance manuals. New or relocated plumbing fixtures should also be indicated on the layout.

Note that all work is to be completed by a certified trades person

The following requirements apply to Class 4 Cooking Operations:

- Comply with the manufacturer's installation, operation and listing requirements.

Examples of Class 4 Cooking Equipment include:

- Giles Ventless Hood Fryer (previously called Chester Fried Ventless Hood Fryer)
- Perfect Fryer PFC model series, ventless commercial deep fat fryers
- Belshaw Donut Robot Fryer with insider ventless cabinet

Class 5 Cooking Operations (no Hood)

A **Class 5 Cooking Operation** is defined as cooking equipment where a hood is not provided. Products from the cooking operation may be removed by the room ventilation. Class 5 does not include cooking procedures which product significant grease-laden vapours, significant steam or significant heat.

Permit Application Requirements
Creation of a new or significant alteration to an existing Food Service Operation will require a building permit which would include:

- Completed application form with kitchen layout approved by Interior Health. The layout should indicate all appliance locations as well as plumbing fixtures.

Note that all work is to be completed by a certified trades person

Where complaints are received by Interior Health such as mould from too much moisture, over-heating in the work environment, objectionable odours, or build-up of grease or smoke residue, the owner or manager is responsible to make the required corrections, such as a menu change or applying for a building permit to comply with the appropriate class of cooking operation.

Business operating food services which use equipment listed in **Attachment A** need not supply dedicated exhaust and make-up air systems. Please note the specific considerations based the buildings size and existing mechanical systems may trigger additional reviews for exhaust requirements.

ALTERATIONS TO EXISTING SYSTEMS

(This means the repair/renewal/alteration or extension of the cooking equipment exhaust system). The information required is the same as for new installations.

- The use of existing or used equipment is subject to the BC Building Code "Used Materials, Appliances and Equipment." Used equipment shall be certified by a professional engineer.
- Relocating existing appliances within existing exhaust and fire suppression system may compromise the functionality of the fire suppression system. Consultation with a certified contractor and or mechanical engineer should be completed prior to any alterations. Permits may be required.
- Replacement of similar appliances, components do not require a permit.

MAKE-UP AIR The BC Building Code and NFPA 96 require that make-up air be provided for all exhaust systems.

The BC Building Code requires that when make-up air is introduced from outdoors to occupied parts of the building in the winter, a means of tempering the air to maintain the indoor design temperature shall be provided.

UP-GRADE REQUIREMENTS FOR EXISTING SYSTEMS

Regulations to mandatory upgrading of existing systems is regulated by the District of Peachland Fire Department. Please contact the Fire Department at 250-767-2841 for further information.

Attachment A – Specific Equipment Recommended for Exemption

The following equipment typically does not need mechanical exhaust ventilation. However, the following criteria should be taken into consideration when determining the need for mechanical exhaust ventilation:

- Installation of other unventilated heat generating equipment in the same area, eg: Refrigeration condensers, steam tables or countertop equipment;
- Presence of heating/cooling (HVAC) system;
- Size of the room or area where the proposed equipment will be installed, including ceiling height;
- How the proposed equipment will be operated, eg: The types of food prepared, how often, etc.;
- Nature of the emissions, eg: Grease, heat, steam, etc;
- Method of producing heat, eg: Gas, electricity, solid fuel, etc;
- Adequate amount of general ventilation: In poorly ventilated confined areas where the proposed equipment (like an electric convection oven, clamshell grille or low-temp dishwasher) is located, adequate general ventilation could be provided by a ceiling or wall exhaust fan that provides an air change rate of 3-5 minutes per change;
- All equipment shall be operated and maintained in accordance with manufacturer's recommendations

Equipment such as electric ovens, rotisseries and clamshell grilles shall be limited to 2 units without a hood. In most cases only 2 units of any hood exempted equipment should be placed; this may vary based on the field evaluation.

Please note that all appliances shall be certified for use within Canada and be rated for commercial use.

- **Equipment Coffee Equipment**
  - Urn or brewer
  - Electric roaster
- **Corn on the cob warmer**
- **Clam Shell Grill/Panini** – for heating non-grease producing foods (Tortillas, pastries, rolls, sandwiches from precooked meats and cheeses)
  - A unit with dual grilles is counted as two pieces of equipment.
- **Crepe Maker (no meats)/Waffle cone maker/Waffle iron**
  - Limit to 3 units
- **Hot Dog warmers**
- **Hot Plate** Electric (one burner only), including induction cooker
- **Ovens** Electric convention oven, 12kW or less Portable ovens (microwave, cook and hold, ovens utilizing visible and infrared light technology)
- **Popcorn popper** without external grease vapour release
- **Rethermalizers** (max. temperature of 250ºF)
- **Rice cookers** Electric
- **Rotisserie** Electric and enclosed with max. ambient cavity temperature of 250ºF
- **Toaster** Countertop (bread only)

Contact Information

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