

CALIFORNIA CONFERENCE OF DIRECTORS OF ENVIRONMENTAL HEALTH

COOKING EQUIPMENT EXHAUST VENTILATION EXEMPTION GUIDE FOR THE LOCAL ENFORCEMENT AGENCY

September 2009

PURPOSE

To provide uniform standards for exemption of cooking equipment used in commercial kitchens that due to particular specifications may not require a complete hood exhaust ventilation system. It is anticipated that this document provide guidance to the EHS in evaluating the cooking appliance and such evaluation is standardized so that one jurisdictional or regional body making an assessment is considered reasonable assurance for applicability to any jurisdiction.

BACKGROUND

The California Mechanical Code and the California Health and Safety Code (HSC) require that all cooking equipment in food facilities be vented for the removal of toxic gases, heat, odors, steam, and grease laden vapors. Prior to the implementation of the California Retail Food Code, letters for equipment ventilation exemptions were a function of the Food and Drug Branch of the California Department of Public Health (formerly CDHS) under section 114140 of the former CURFFL. DHS/FDB has not issued these types of letters for some time now and the evaluation of equipment for a ventilation exemption has defaulted to the local level.

The Plan Check sections of the Local Enforcement Agencies (LEA) have had no clear direction or method of evaluating cooking equipment exemption as requested by industry. This resulted in the Southern California Food Technical Advisory Sub-Committee charge to establish an across the board guideline on issuing a commercial cooking equipment ventilation exemption at the local or regional level.

AUTHORITY

CALIFORNIA HEALTH AND SAFETY CODE
PART 7. CALIFORNIA RETAIL FOOD CODE
CHAPTER 6. Equipment, Utensils, and Linens
Article 2. Ventilation
Sections 114149, 114149.1, 114149.2, and 114149.3
114149.1.

(c) This section shall not apply to cooking equipment when the equipment has been submitted to the local enforcement agency for evaluation, and the local enforcement agency has found that the equipment does not produce toxic gases, smoke, grease, vapors, or heat when operated under conditions recommended by the manufacturer. The local enforcement agency may recognize a testing organization to perform any necessary evaluations.

RESOURCES

The proposed cooking equipment considered for exemption must be tested and certified by an ANSI-accredited testing organization as complying with the requirements of the National Sanitation Foundation (NSF) and Underwriters Laboratory (UL) standards.

These following resources may be applicable in evaluation of the cooking equipment:

- **ANSI/UL 197:** These requirements cover commercial electric cooking appliances rated 600 volts or less. Cooking equipment to meet this standard for exemption.
- **ANSI/UL 710:** These requirements cover exhaust hoods intended for placement over commercial cooking equipment. Non-exempt cooking equipment must have an exhaust hood.
- **ANSI/UL 710B:** These requirements cover commercial electric cooking appliances provided with integral recirculating hood ventilation systems (previously referred to as ductless hoods) and non-integral recirculating hood ventilation systems, both of which are intended for installation in commercial establishments for the preparation of food. These devices incorporate an air filtering system enclosed in a hooded or otherwise contained area intended to capture air from the cooking process area. The hood assembly generally includes a fan, collection hood, or equivalent design feature, air filtering system (consisting of a grease filter with other filters), a fire actuated damper, and a fire extinguishing system unit.
- **U.S. Environmental Protection Agency (EPA) Test Method 202:** The test method for condensable particulate used to exempt cooking equipment from having an exhaust system.
 - Identifies a TLV concentration of 5mg/m³ at 500 CFM rate of exhaust for commercial cooking equipment exemption.
 - Equates to total condensable particulate (grease)/hour of .01mg.
- **NFPA 96:** This standard provides the minimum fire safety requirements related to the design, installation, operation, inspection, and maintenance of all cooking operations.
- **UL KNLZ:** Commercial cooking equipment with integral systems for limiting the amount of grease laden air including the use of catalytic combustion technology integral with the cooking equipment. EPA 202 Standards are used.
- **UL KNKG:** Cooking equipment such as deep fat fryers, griddles and other appliances covered in this category is manufactured with an integral recirculating ventilation system intended for use in commercial kitchens, restaurants, or other business establishments where food is prepared. Additional to UL 710B.
- **ASHRAE** (American Society for Heating, Refrigeration and Air-conditioning Engineers) Standard 154-Ventilation of Commercial Cooking Processes: Takes into account the effect of the cooking appliance on the ventilation system of the building and classifies according to a “duty” rating of light duty, medium duty, heavy duty and extra heavy duty.

PROCEDURES

1. Dependent on the type of equipment used, cooking is limited to food products that produce little or no grease laden vapors during the cooking process. Typically, these products are packaged, pre-cooked foods and certain unpackaged, uncooked foods such as rolls, bread, muffins, baked potatoes etc. Uses that will require that mechanical ventilation be installed over the unit include cooking meats, poultry, fish, or other foods that may produce grease laden vapors.
2. Cooking equipment operating temperatures are low enough that the existing room ventilation can compensate for the heat generated by the equipment without creating unsafe or hazardous conditions in the kitchen.
3. Cooking apparatus is equipped with an air purifying system of baffles, filters, etc. (with or without fire suppression), that effectively removes all toxic gases, smoke, grease, vapors, and heat from the air released by the equipment.
4. Equipment may, due to design or size, cook certain food without producing significant amounts of toxic gases, smoke, grease, vapors, or heat.
5. An equipment specification sheet and any available emissions test data (usually supplied by the equipment manufacturer or distributor) must accompany the application for exemption.
6. In some cases, a site specific determination by a licensed Mechanical Engineer that the equipment does not produce toxic gases, smoke, grease, vapors, or heat when operated under maximum use conditions using the specific menu items of the proposed facility may be needed.
7. In all cases, cooking equipment must be installed and maintained in accordance with manufacturer's recommendations, must be installed in well ventilated areas approved for food preparation, and must comply with all local building and fire codes.

STANDARDS FOR WHICH AN EXEMPTION CAN BE CONSIDERED

1. Factors for consideration for the cooking equipment:
 - a. Has the appliance been tested by a certified ANSI laboratory for grease and heat emissions?
 - b. Does it qualify as a low grease emission appliance (no more than 5 milligrams per cubic meter during an 8 hour test)?

- c. Documentation of the condensable particulate emissions from a stationary source.
 - d. How much heat or steam does the cooking equipment produce during a normal cooking cycle? Does it affect the HVAC system?
 - e. Does the electrical appliance (e.g., hot plate) exceed the 1.5 KW rating?
 - f. Does the electrical appliance (e.g., convection oven) exceed the 12 KW rating?
2. Contents of Exemption Letter:
 - a. What type of cooking equipment is being exempted including make and model number?
 - b. Statement of types of foods to be cooked & handled regularly by the equipment.
 - c. Number of units covered by each letter.
 - d. Statement that ownership changes with menu change voids variance.
 - e. Location of the equipment-address general ventilation issues of smaller rooms, lower ceilings, or presence of other mechanical ventilation systems in the room.
3. Proposed deletions from existing ventilation guidelines
 - a. The "Portability" (80 lbs or less) exemption
 - b. Gas appliances are not allowed in this exemption.
4. Keeping track of exempted letters
 - a. It is recommended that the regional FTAC evaluate the exemption of the LEA for concurrence and applicability to other jurisdictions.
 - b. Letters to the manufacturer or operator shall be maintained electronically and updated as needed.

The exemption shall not be deemed to supersede any local building and fire code requirements pertaining to electrical or fire safety. Further, the exemption does not preclude any local enforcement agency from requiring the installation of mechanical exhaust ventilation when the operation of the cooking equipment in a specific location results in a sanitation or safety violation.

Specific Equipment Recommended for Exemption

EQUIPMENT

Coffee Equipment

- Urn or brewer *
- Roaster (electric) *

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 grills is counted as two equipments. *#

Crepe Maker (no meats)/ Waffle Cone Maker / Waffle Iron

- Limit to 3 units *

Hot Dog Warmer *

Hot Plate

- Electric (one burner only) *#
- Induction cooker *#

Ovens

- Electric convection oven, 12 KW or less * #
- Portable ovens (microwave, cook and hold, ovens utilizing Visible and Infrared light technology) *

Popcorn Popper

- Without external grease vapor release *

Rethermalizers (max temperature of 250°F) *

Rice Cookers

- Electric *

Rotisserie

- Electric and enclosed with max. ambient cavity temperature of 250°F *#

Toaster –countertop (bread only) *

* Equipment marked with an asterisk 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, e.g., refrigeration condensers, steam tables, or counter-top 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, e.g., the types of food prepared, how often, etc.;
 - Nature of the emissions, e.g., grease, heat, steam, etc.;
 - Method of producing heat, e.g., 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 grill**, 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 grills 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.

Special Consideration for Recirculating Ventilation Systems

The primary benefit of recirculating systems is that they do not require grease ducts with discharge to the outdoors. They are ideal for installations in building designs where it is impractical or too expensive to exhaust to the outdoors. Examples include some indoor food carts, stadiums, arenas, and operations where there is limited food preparation or where there are physical limitations with access to the outdoors. Appliances have been exempted when they include an integral ductless powered ventilation system shown to remove grease, smoke, fumes, and vapors that are emitted during the cooking process. To be exempted these systems must meet applicable performance and construction standards and include built-in fire suppression systems. Nevertheless, heating and cooking appliances produce heat during operation that may result in uncomfortable working conditions for food employees and increased potential for contamination of food by perspiration. Many times this can be resolved with an adequate ceiling fan.

Criteria for approval of Recirculating Systems that may be used by Plan Check include:

1. The facility will be limited to one integral recirculating system unit with an electric appliance or non-integral recirculating system with electrical appliance(s).
2. The standard components of a recirculating system could include: 1) a UL listed grease filter, 2) a high efficiency particulate arresting (HEPA) filter and/or an electrostatic precipitator (ESP) or water system, 3) an activated charcoal or other odor control device, 4) a recirculating fan, and 5) a

safety interlock system that disables the system if any of the components are missing or loaded with grease.

3. The cooking equipment and recirculating system shall be interlocked such that when the recirculation system is not functional or is operating at less than 85% efficiency, the cooking equipment will not operate.
4. Specifications documenting grease discharge at the exhaust outlet of the system not to exceed an average of 5 mg/m³ of exhausted air sampled from that equipment at maximum amount of product that is capable of being processed over a continuous 8-hour test per EPA Test Method 202, "Determination of Condensable Particulate Emissions for Stationary Sources", with the system operating at its minimum listed airflow.
5. A minimum of 450 cubic feet per minute (CFM) of air must be provided through the facility's heating, ventilation, and cooling system for each heating and cooking appliance equipped with an integral or under a non-integral recirculating system in order to maintain acceptable working conditions.
6. The listed equipment while exempt from Type I hood exhaust system requirements may need a Type II hood if conditions warrant. If the space is small, or lacking mechanical ventilation, and or has low ceilings, then a Type II hood may be needed to assure that the heat from the process does not cause the space to become uncomfortable or humidity levels to rise to such as point as to encourage mold growth or ceiling panels to discolor or sag.
7. The recirculating system must be installed, serviced, and maintained according to the manufacturer's specifications. The exemption shall not be deemed to supersede any local building and fire code requirements.
8. Exemption letter to indicate that if the type of operation changes or the recirculating system or cooking system use causes sanitation, ventilation or safety problem, this exemption may be revoked and an approved Type I mechanical exhaust system will be installed, or the units will be removed. Also, if ownership is changed, the new owner/operator will be informed of these operating conditions.

APPLICATION FOR EXEMPTION FROM MECHANICAL VENTILATION

1. Applicant Name(s): _____ Telephone: _____
Applicant Name(s): _____ Telephone: _____
2. Facility Name: _____
Facility Address: _____
3. Facility Type: Restaurant ____ Market ____ Bakery ____ Other _____
4. Appliance Type (rotisserie, oven, etc.): _____ Weight: _____
5. Equipment Manufacturer: _____
Address: _____
Model: _____ Specifications Included? Yes ____ No ____
6. Heat Source: Electric ____ Gas ____ Solid (wood, charcoal, etc.) ____ Microwave ____
Other (specify): _____
7. Certified to meet NSF/ANSI Standard 4? Yes ____ No ____ Don't Know ____
If "yes", certifying organization: NSF Int'l ____ ETL/I ____ UL Sanitation (EPH) ____
Other certifying organization (specify): _____
8. Hours per day of operation of appliance: _____ Number of days/week: _____
9. Approximate size of facility (square feet): _____ Of area/room with cooking equipment _____
10. Area/Room ceiling height _____ Ventilation (CFM) in room/area _____
11. # of appliances currently in use that have been previously approved for use without mechanical ventilation: _____
12. How many appliances are you requesting to install without mechanical exhaust ventilation? _____
13. Types of foods to be cooked in the appliance (*check all that apply*):
 - a. Pre-cooked wrapped/packaged foods-reheat only: _____
 - b. Baked goods: (including bread, rolls, pastries, pies, cookies, cakes, etc.): _____
 - c. Vegetables: (including baked potatoes, steamed vegetables, beans, etc.): _____
 - d. Pizza: _____ frozen par baked: _____ made fresh: _____
 - e. Sandwiches: (containing only ready to eat fillings): _____
 - f. Raw meats and/or raw eggs: (meat, fish, poultry): _____
 - g. Open cooking: (sauté, grill, etc.): _____
 - h. Deep fat fried foods: _____
 - i. Other (specify): _____
14. "Ductless" ventilation provided: Yes ____ No ____
If yes, is it included with appliance? ____ or installed separately? ____
 - ▶ Ductless Hood Manufacturer: _____ Model: _____
 - ▶ Complies with UL Standard 197? Yes ____ No ____ Don't know ____

APPLICANT SIGNATURE

DATE

FOR OFFICE USE ONLY

Recd by _____ Date _____ Amt. Recd _____ Check # _____