COUNTY OF SANTA CLARA
DEPARTMENT OF ENVIRONMENTAL HEALTH
CONSUMER PROTECTION DIVISION
1555 Berger Dr Bldg. 2 3rd Floor ● San Jose, CA 95112 ● 408 918-3400

TO: FOOD OPERATORS, CONTRACTORS, and DESIGNERS

FROM: PLAN REVIEW AND CONSTRUCTION UNIT
CONSUMER PROTECTION DIVISION
DEPARTMENT OF ENVIRONMENTAL HEALTH

DATE: DECEMBER 1997

SUBJECT: RECOMMENDATIONS FOR MECHANICAL EXHAUST VENTILATION AND HOOD SYSTEMS FOR COMMERCIAL FOOD AND UTENSIL HEAT PROCESSING EQUIPMENT

Reference - (Health and Safety Code, Section 114140 and Uniform Mechanical Code, Chapter 5, 1994 ed.)

These recommendations/guidelines are provided to assist enforcement agencies in determining mechanical exhaust ventilation requirements for heat processing equipment in retail food facilities. They have been promulgated by the Food Committee of the California Conference of Directors of Environment Health (CCDEH) with the assistance of:

1. Food Sanitation Advisory Committee - Los Angles
2. Food Sanitation Advisory Committee - Northern California
3. Southern California Plan Check Committee (SCPCC)
4. State Department of Health Services (SDOHS)

The enforcement agency will make mechanical exhaust ventilation determinations based on all available data. These are minimum standards; stricter requirements may be applied. Particular attention should be given to the notes at the close of this guideline.

An enforcement agency may request the assistance of the SDOHS and CCDEH Food Committee when faced with atypical or unique equipment. Decisions involving atypical or unique equipment should be based on extensive field tests if the equipment is determined to be sufficiently different for the usual.

Canopy hoods are of two types:

Type I Hood - kitchen hood for collecting and removing grease vapors and smoke

Type II Hood - general purpose kitchen hood for collecting and removing steam vapors, heat, and odors.

Non-canopy Hoods - are as described in the Uniform Mechanical Code, Section 2003(h).

Listed Exhaust Hood - are as specified in the Uniform Mechanical Code and UL listings.

EQUIPMENT	**CANOPY HOODS**	
	Type	**Formula UMC 509.7**
Bain Marie/Steam Table[i]	None	-
Broiler (side, over-fired, or Salamander) (Gyros)	I	3
Charbroiler - under-fired (charcoal solid fired burning and other than solid fuel burning)	I	1
Cheese Melter	II	4
Chinese Range (wok)	I	2
Coffee Urn	None	-
Corn Warmer	None	-

EQUIPMENT		CANOPY HOODS	
		Type	**Formula UMC 509.7**
Crepe Maker -	a. Portable	None	-
	b. Non-portable	II	4
Deep Fat Fryer		I	2
Dishwashing Machine -	a. High Temperature	II	4
	b. Chemical Sanitizing or Undercounter	None	-
Hot Dog Warmer		None	-
Hot Plate -	a. Small 1.5 kW or 5,000 BTU or less	None	-
	b. Large (larger than above)	I	3
Griddle/Grill (medium temperature)		I	3
Kettle, Steam/Coffee		II	4
Kettle, Candy		II	4
Oven[ii] -	a. Max. Temperature 250°F -thermostatically controlled	None	-
	b. Greater than 250°F - without grease vapor generation	II	4
	c. Greater than 250^{0}F - with grease vapor generation	I	3
	d. Microwave	None	-
Popcorn Popper -	a. 2 gallons or less hopper capacity, no grease vapor generation	None	-
	b. Greater than 2 gallon hopper capacity without grease vapor generation	II	4
	c. Greater than 2 gallon hopper capacity with grease vapor generation	I	3
Pressure Fryer		I	2
Range -	a. High temperature “hot tops”	I	2
	b. All others	I	3
Roll Warmer		None	-
Rotisserie (open) -	a. High temperature	I	3
	b. Low temperature	None	-
Skillet (tilting or braising)		I	3
Steam Cooker		II	4
Steam Table -	a. Gas-fired	II	3
	b. Electric	None	-
Toasters -	a. Large Production	II	4
	b. Small	None	-
Waffle Cone Maker/Waffle Iron -	a. Portable	None	-
	b. Non-portable	II	4

Notes:

1. Type I hoods for use over charcoal and other solid-fuel burning charbroilers shall be provided with separate exhaust systems. Formula I is required for all types of charbroilers even if they are under a common hood.

2. This guideline does not preclude the use of non-canopy hood. (See applicable sections of the Uniform Mechanical Code.)

3. Pant-leg or slot hoods for dishmachines may be approved for conveyor-type dishmachines (i.e., where emissions are localized and can reasonably be captured by such a configuration). Use Q=200 cfm per lineal foot of hood. Similar configurations for non-dishmachine application may be approved using Q=300 cfm.

4. In general, cooking equipment which exceed 250°F temperature shall be equipped with at least a Type II exhaust ventilation system. Adherence to this standard may be adjusted (more or less restrictive) in consideration of the following factors:

a) Existence of other unventilated heat processing units.
b) Presence of heating/ventilating (HVAC) system.
c) Size of room or space wherein the equipment is installed.
d) Nature of emissions, usage of equipment and impact on the facility environment.
e) Relative size of the cooking unit.

1. Portable - the recognized standard of portability is the NSF standard equaling 88 lb. or less.

2. Filters in Type I hoods should be properly mounted to minimize the possibility of being lifted off the upper mounting flange during hood operation. A channel or full-length bracket along the inside edge of the upper mounting flange will generally be adequate.

3. Make-up Air (reference - UMC, Section 2003(I)) - The introduction of make-up air as required by the above referenced code should be undertaken in a manner which will minimize short-circuiting, excessive air velocities and air turbulence conditions. The introduction of large volumes of air at high velocities tends to create conditions which compromise exhaust system efficiency and results in drafting, which may be unsuitable for employee comfort and/or maintenance of food holding temperatures. The following factors should be considered as part of the review of make-up air systems:

   a) Increasing the size and/or number of make-up air registers and locating them appropriately;
   b) Utilizing diffusers which slow and evenly distribute the air stream;
   c) Using properly designed registers, such as multi-directional louvered units.

   In extremely small kitchens, the use of compensating hoods may be helpful in reducing air turbulence conditions since a portion of the air volume is introduced within the hood canopy. Similarly, the introduction of make-up air at the front face of the hood may be helpful.

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[i] Gas-fired steam tables require at least a Type II hood

[ii] Exhaust ventilation determinations over ovens should be based on the primary factors of heat (above or below 250°F) and whether or not more than minimal amounts of grease vapors will be produced.