

 <b>Building Division</b>	<h1>KITCHEN HOODS GUIDELINES</h1> <p>City of Palo Alto Building Inspection Division 285 Hamilton Ave. Inspection Request: 650 329-2496</p>	Revision Date:6/27/12
		General Requirements/Checklist for: <b>Commercial</b>
		Codes Enforced: 2010 CBC,CMC,CPC,CEC/NEC Palo Alto Municipal Code (PAMC)
The information provided in this document is general and intended as a guide only. Each project is unique and additional requirements may be enforced as deemed appropriate.		

### **WARNING**

- Failure to complete items below prior to inspection may result in a re-inspection fee.

### **FREQUENTLY MISSED /INSPECTION FAILURES**

- Provide a disconnect for all electrical under hood including lights.
- Equipment must be properly secured per approved plans.
- Fire barrier duct wrap shall be maintained when duct passes through wall and installed by a certified installer.
- Change of duct direction requires accessible cleanout.
- Connections and welds shall be substantially connected and smooth.
- Grease collection kit required for Roof mounted grease producing equipment. (closed and rainproof) *CMC 510.8.2 (C)*
- A curb inspection is required. See HVAC checklist same requirements
- Exhaust shall terminate no less than 10' from property line, adjacent buildings, and air intakes. *CMC 510.8 (A)*
- Food or drink shall not be stored, prepared, or displayed beneath soil or drain pipe, unless those areas are protected against leakage or condensation from such pipes reaching the food or drink. *CPC 318* When necessary provide protection using the following methods:
  - Provide proper seepage pan.
  - Seal watertight all openings.
  - Thermally insulate condensation pipes.

### **REQUIRED SIGN-OFFS AND REPORTS PRIOR TO BUILDING DEPARTMENT FINAL**

- County Health final. (408) 918-3400 [www.ehinfo.org](http://www.ehinfo.org)
- Fire department signoff prior to building department final. (650) 329-2184  
[www.cityofpaloalto.org](http://www.cityofpaloalto.org)
- Air Balance Report by certified third party. **Provide ( min. makeup air)**
- Provide inspector with a copy of the "Cooking Equipment Maintenance Agreement" contract for all cooking equipment that collects grease. *CMC 515.3.2*

### **REQUIRED INSPECTION**

- Curb construction and attachment
- Shaft
- Grease Duct w/ high intensity light inspection
- Duct wrap 3-M or equivalent
- Final

## **CURBS**

- See "Rooftop Equipment" checklist for general requirements.

### ☒ **CPA INSPECTION**    General requirements

- ☐ Provide CPA Inspector with manufacturer's installation instructions, approved plans, and permit.
- ☐ All hoods shall be secured in place by approved methods and supports.
- ☐ Cooking equipment used in processes of producing smoke or grease laden vapors shall be equipped with an exhaust system to comply with *CMC 507*
- ☐ All equipment shall be kept in good working condition including cooking equipment/hoods/ducts/fans/fire suppression. *CMC T-4, 514.3, 515*
- ☐ All air flows shall be maintained, maintenance and repairs shall be performed on all components at intervals necessary to maintain proper working conditions of equipment.
- ☐ All interior surfaces of the exhaust system shall be reasonably accessible for cleaning and inspection.
- ☐ Grease gutters shall drain to an approved receptacle fabricated, designed and installed to allow for access & cleaning.

### ☒ **TYPE I HOODS**    *CMC 508*

- Type I hood is a kitchen hood for collecting and removing grease and smoke.
- Type I hoods are required to be installed at or above all commercial type deep fat fryers, broilers, fry grills, steam jacketed kettles, hot top ranges, ovens, BBQ, rotisseries, or other grease or smoke producing equipment.

### ☒ **TYPE II HOODS**    *CMC 508*

- Type II hood is a general kitchen hood for collecting and removing steam, vapor, heat, or odors. Approved for coffee and non-conveying pizza ovens.
- Type II Hoods are required to be installed at all steam vapor, heat, or odors.
- Under counter high heat **commercial dishwashers** require a Type II hood (low heat under counter dishwashers do not require a hood)

### ☒ **CONSTRUCTION**    *CMC 508.1.1*

- ☐ Type I hoods shall be constructed and supported by a steel not less than (.043 inch) (#18 MSG) in thickness, stainless steel not less than (.037 inch) (# 20 MSG) **OR** shall be a **listed** exhaust hood.
- ☐ Type II hoods shall be constructed of at least (.024 inch) (#24 gauge) steel.
- ☐ All joints and seams of hoods shall be substantially tight, and smooth.

☒ **GREASE DUCTS**

- Listed grease ducts shall be installed per the manufacturer's instructions. *CMC 510.5*

**Materials**

- ☐ Required to be constructed of and supported by steel not less than (#18 MSG) (.043") thickness or stainless steel not less than (324 gauge .024" steel).
- ☐ All seams, joint, and penetrations of the hood enclosure shall have liquid tight continuous external welds to the hoods lower outermost perimeter. Internal joints are required to be made grease tight.

**Clearances**

- ☐ Listed grease ducts shall be installed per their listings and manufacturers instructions. *CMC 510.2.2*
- ☐ Hoods require 18" clearances to combustibles materials, 3" to limited-combustible materials, and 0 inches to noncombustible materials.

**Exception:** When device is listed for lesser clearances OR Reduced clearances may be achieved by using methods noted in *CMC 507.2.1* when first approved by the administrative authority.

**Field applied and factory built grease duct enclosures** *CMC 507.2.3*

- ☐ Shall be a UL 2221 Listed assembly and installed per the manufacturers installation.
- ☐ Ensure no physical damage may occur to any material or product.
- ☐ Verify # of wraps and attachment methods.
- ☐ Ducts shall not come in contact with combustible surfaces.

**Openings** *CMC 510.3*

- ☐ Openings shall be provided at the sides or at the top of the duct, whichever is more accessible, and at change of direction. Not required at accessible front entry or discharge.
- ☐ **Hoods with dampers** in exhaust or supply collar shall have an access panel for cleaning and inspection. The access panel shall be as close to the hood as possible not exceeding 18" inches. Access is not required if damper is accessible from under hood.
- ☐ **Exhaust fans** with ductwork connected to both sides shall have access for cleaning and inspection within 3' feet of each side of fan.
- ☐ **Horizontal** ducts shall have at least one 20" x20" opening for personnel entry and shall be secured sufficiently to allow for the weight of personnel entry to duct. When openings of this size are not possible, openings large enough to permit cleaning shall be provided at 12' foot intervals. Supports 24" and larger shall be designed for the weight of the ductwork plus 800 lbs at any point of the duct system.
- ☐ **Vertical** ductwork where personnel entry is possible, access shall be provided at the top of the vertical riser to accommodate descent. Where personnel entry is not possible, adequate access for cleaning shall be provided on each floor.

### **Access panels**

- ☐ Openings for installation, servicing, and inspection of listed fire protection system devices and for duct cleaning shall be provided in ducts and enclosures  
And comply with section 510.3. Openings required to reach access panels in the ductwork shall be large enough for the removal of the access panel. *CMC 510.3.4.5*
- ☐ Access panels shall be listed grease duct access door assemblies, or shall be constructed of materials described in *CMC 510.3.4.4*
- ☐ Signage shall be placed on all access panels stating the following:  
**ACCESS PANEL-DO NOT OBSTRUCT.** *CMC 510.1.6*

### **Grease removal devices in hoods**

- ☐ Listed grease filters, baffles, or other approved Grease Removal Devices (GRD) in commercial looking equipment shall be tested in accordance with *UL 1046*.
- ☐ The distance between the GRD and cooking surface shall be as great as possible but not less than 18" inches.
- ☐ Where a GRD is used in conjunction with charcoal/charcoal type broilers the minimum vertical distance of 4' feet shall be maintained between the lower edge of the GRD and the cooking surface. *CMC 509*

### **Grease filters**

- ☐ Grease filters shall be easily accessible and comply with *CMC 509.2.4* and shall be equipped with a drip tray beneath their lower edge.

### **Exhaust duct systems**

- ☐ Grease collection kit is required for Roof mounted equipment. (must be closed and rainproof) *CMC 510.8.2 (C)*
- ☐ Exhaust flow shall be directed up, away, and min. 40" from roof surface. *CMC 510.8.2 (B)*
- ☐ Exhaust shall terminate no less than 3' above or 10' from property line, adjacent buildings, and air intakes. *CMC 510.8 (A)*

### **Canopy**

- ☐ Hoods for **canopy type commercial** cooking shall overhang or extend 6" inch horizontally beyond the edge of the cooking surface on all open sides and shall not exceed 4' feet vertically from the cooking surface to the lip of the hood except listed exhaust hoods are to be installed with the terms of their listings and installation instructions. *CMC 508.4.1.1*

### **Interlocks**

- ☐ Recirculation systems shall be provided with interlocks of all critical components and operations such that if any interlock components are interrupted the cooking appliance shall not be able to operate. *CMC 516.3*

### **Deep-Fat Fryers**

- ☐ **All deep-fat fryers** shall installed with a minimum clearance of 16" inches between the fryer and surface flames from adjacent cooking equipment except when a steel or tempered glass baffleplate is installed at a min. 8" inches in height between the fryer and surface flames of the adjacent appliances.

- ☐ **Deep-fat fryers** shall be equipped with a separate high-limit control in addition to the adjacent operating control (thermostat) to shut off fuel or energy when the fat temperature reaches 475 degrees F at one (1) inch below the surface.

#### **Air test**

- Air balance test by third party tester report required at Final.
- ☐ **Replacement air** quantity shall be adequate to prevent negative pressure in the commercial cooking area(s) from exceeding 0.02" inch water column. *CMC 511.3*
- ☐ **Make up air** is required when installing commercial hoods and shall be provided to replenish air exhausted by the ventilation system and shall be located so as to avoid recirculation of contaminated air within enclosures. *CMC 505.3*

#### **ELECTRICAL**

- ☐ Wiring systems of any type shall not be installed in ducts. *CMC 512.2*
- ☐ Motors, lights, and other electrical devices shall not be installed in ducts or hoods or located in the path of travel of exhaust products. Except where specifically approved for such use. *CMC 512.2*
- ☐ Lighting units in hoods shall be listed for use over commercial cooking appliances and installed per the terms of their listing. *CMC 512.2.3*

#### **Exhaust Damper wiring**

- ☐ May contain a H2O Wash system
- ☐ May have sprinklers or automatic spray nozzle
- ☐ May have grease filter or extractors
- ☐ 375 degree exhaust duct trap
- ☐ Installation instructions for required:
  - Mountings
  - Wiring
  - Exhaust flow rates

#### **FIRE PROTECTION**

- See CPA Fire Department "Inspectors Hood and Duct Inspection Checklist"  
Fire Department checklist are posted on-line at: [www.cityofpaloalto.org](http://www.cityofpaloalto.org)

## TYPE OF HOOD REQUIREMENTS

There have been a number of new cooking appliances introduced to the food service industry over the past several years, which has raised questions to the type of hood required for a specific cooking appliance. This chart will provide direction for our commercial food service customers in determining the type of hood that is appropriate for a particular appliance.

<b>Light-duty</b>	Type I	Type II	No hood
Cheesemelters	x		
Coffee makers			x
Convection/steamer ovens	x		
Deck-style pizza ovens	x		
Egg cookers			x
Electric Convection ovens (single)			x
Electric Convection ovens (multiple)		x	
Gas Convection ovens	x		
Holding/warming ovens			x
Hot dog cookers			x
Popcorn poppers			x
Retherm ovens (single)			x
Retherm ovens (multiple)		x	
Revolving ovens	x		
Rice cookers			x
Roasting ovens	x		
Standard ovens	x		
Steam tables, electric			x
Steam tables, gas fired		x	
Steamers		x	
Steam-jacketed kettles		x	
Toasters (counter-top)			x
Toasters (conveyor style)		x	

<b>Medium-duty</b>	Type I	Type II	No hood
Conveyor pizza ovens	x		
Donut fryers	x		
Double-sided griddles	x		
Electric discrete-element range	x		
Griddles	x		
Hot-top ranges	x		
Kettle fryers	x		
Open deep-fat fryers	x		
Pasta cookers			
Pressure fryers	x		
Tilting skillets	x		

<b>Heavy-duty</b>	Type I	Type II	No hood
Gas conveyor broilers	x		
Gas open burner ranges	x		
Salamanders	x		
Under-fired broilers	x		
Upright broilers	x		
Wok ranges	x		

<b>Extra Heavy-duty</b>	Type I	Type II	No hood
Solid-fueled appliances	x		