COMMERCIAL KITCHEN HOOD WORKSHEET / CHECKLIST

Two copies of this worksheet/checklist must accompany plan sets submitted with commercial kitchen range hood permit applications. It explains and organizes information needed by the Community Development Building Division (CDBD) to efficiently review plans and issue permits. CDBD will keep this document as part of the permanent project file and will use it to verify code compliance. The applicant is responsible for assuring the accuracy and consistency of the information.

A. Project Address: _____________________________________________________________

B. Established use and history of building:
   Is it an existing restaurant, food processing area or food service area:  
   ☐ Yes  ☐ No
   If no, provide construction or change of use permit number: __________________________

C. Location of exterior ductwork and mechanical equipment:
   1. Is ductwork or mechanical equipment located outside of building other than roof top?  
      ☐ Yes  ☐ No
   2. Applicant shall provide plan and elevation view showing ductwork, duct enclosure, hood, cooking surface air supply, exhaust system, and equipment support including structural detail (See attached examples 1,2 and 3).

D. Type of Hood:
   1. For grease and smoke removal:  
      Type 1  _______ Quantity
      (Example: Deep fryer, charbroilers, grill, roasting ovens larger then 6 KW and all solid-fuel appliances)
   2. For steam, vapor, heat or odor removal:  
      Type II  _______ Quantity
      Hood shall have a permanent, visible label identifying it as a Type II hood.
   3. Is hood for solid-fuel cooking equipment?  
      ☐ Yes  ☐ No
      If yes, a separate exhaust system is required.

E. Type of material and gage (506.3.1.1, 507.4, 507.5)

<table>
<thead>
<tr>
<th>TYPE I HOOD</th>
<th>TYPE II HOOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Material</td>
<td>Min. Reg.</td>
</tr>
<tr>
<td>Flashing</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td></td>
<td>Galvanized Steel</td>
</tr>
</tbody>
</table>
F. **Quantity of air exhausted through the hood (507.12, 506.14)**

1. Canopy hoods are hoods that extend a minimum 6” beyond cooking surface.

   - **Type of hood proposed**
     - Canopy
     - Non-canopy

   - **Distance between lip of hood and cooking surface:**
     - Canopy _____ ft.
     - Non-canopy _____ ft.

2. Complete part ‘i’ for listed hood or part ‘ii’ for unlisted hood:
   
   - **i)** Listed hood. Make and model No. _________________________________ Listed CFM _________
   
   - **ii)** Unlisted hood: Quantity of air = Lineal ft. of hood front x CFM from table below:
     
     = _____ 10 ft x _______ 550 CFM/ft. = _______ 5500 CFM

   **Minimum net air flow for different types of unlisted hoods. (507.13)**

   Identify the cooking appliance and circle the CFM applied. Where any combination of cooking appliances are utilized under a single hood, the highest exhaust rate required by this table shall be used for the entire hood.

<table>
<thead>
<tr>
<th>Type of Hood</th>
<th>Extra Heavy Duty</th>
<th>Heavy Duty</th>
<th>Medium Duty</th>
<th>Light Duty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wall – mounted canopy</td>
<td>550</td>
<td>400</td>
<td>300</td>
<td>200</td>
</tr>
<tr>
<td>Single island canopy</td>
<td>700</td>
<td>600</td>
<td>500</td>
<td>400</td>
</tr>
<tr>
<td>Double island canopy</td>
<td>550</td>
<td>400</td>
<td>300</td>
<td>250</td>
</tr>
<tr>
<td>Back-shelf/pass-over</td>
<td>Not allowed</td>
<td>400</td>
<td>300</td>
<td>250</td>
</tr>
<tr>
<td>Eyebrow</td>
<td>Not allowed</td>
<td>Not allowed</td>
<td>250</td>
<td>250</td>
</tr>
</tbody>
</table>

**Definitions:**

- **Extra Heavy Duty Cooking appliance.** Include appliances utilizing solid fuel such as wood, charcoal, briquettes, and mesquite to provide all or part of the heat source for cooking.

- **Heavy Duty Cooking appliance.** Include electric under-fired broilers, electric chain (conveyor) broilers, gas under-fired broilers, gas chain (conveyor) broilers, gas open-burner ranges (with or without oven), Electric and gas wok ranges, and electric and gas over-fired (upright) broilers and salamanders.

- **Medium Duty Cooking appliance.** Include electric discrete element ranges (with or without oven), electric and gas hot-top ranges, electric and gas griddles, electric and gas double-sided griddles, electric and gas fryers, (including open deep fat fryers, donut fryers, kettle fryers, and pressure fryers), electric and gas pasta cookers, electric and gas conveyor pizza ovens, oven and gas tilting skillets (braising pans) and electric and gas rotisseries.

- **Light Duty Cooking appliance.** Include gas and electric ovens (including standard, bake, roasting, revolving, retherm, convection, combination convection / steamer, conveyor, deck or deck style pizza, and pastry), electric and gas steam-jacketed kettles, electric and gas compartment steamers (both pressure and atmospheric) and electric and gas cheese-melters.

G. **Exhaust duct system (506.3.4)**

1. Applicant shall provide the specified air velocity in exhaust duct.
2. (Duct size ____ in x _____ in.) / 144 = (dcfm) _______ ft²

3. **Type of Hood**

   - **Air Velocity (FPM)/CFM / Duct Area (ft²)=** Proposed Air Velocity

   - **Type 1 Hood** = (1500 req to 2500 recommended) _______ 1500 / _______ 6 (dcfm)ft = _______ 250 FPM

   - **Type II Hood** = (500 to 2500 recommended) _______ 500 / _______ 6 (dcfm)ft = _______ 83.3 FPM

4. Static pressure loss:
   
   Duct _____ in. + grease filters / extractor _____ in + other _____ in. = Total _____ in. of H₂O.

5. Fan and Motor shall be of sufficient capacity to provide the required air movement. Fan motor shall not be installed within ducts or under hood. The activation of the exhaust fan shall occur through an interlock with the cooking appliances.

   - **Fan make and model** _________________________________ HP _________

   - **Static pressure** _________________________________ in. at _______________CFM
H. Exhaust outlet location (506.3.12)
   1. Exhaust outlet shell terminated above roof
      Type I 40 in. _______ in.
      Type II 24 in. _______ in.
      Distance from same or adjacent building 10 ft. _______ ft.
      Distance above adjoining grade 10 ft. _______ ft.
      Distance from property line 10 ft. _______ ft.
      Distance from windows and doors 10 ft. _______ ft.
      Distance from mechanical air intake 10 ft. _______ ft.
      Distance of duct above adjoining grade at alley 16 ft. _______ ft.

I. Makeup air (508.1)
   1. Applicant shall provide makeup air not less than 90% of the exhaust. (dcfm) _______ _______ 6 ft² x .9 = _______ CFM.
   2. Makeup air system shall be electrically interlocked with the exhaust system, such that the makeup air system will operate when the exhaust system is in operation. Provide note on plan sheet No. ________.
   3. Makeup air shall be provided by a mechanical or gravity means of sufficient capacity. Windows and door openings shall not be used for the purpose of providing makeup air.
   4. If more than 2500 CFM supplied to the space other than the hood, provide heater capable of heating makeup air supplied to the space to 65 degrees F.

FAN

<table>
<thead>
<tr>
<th>Make and Model</th>
<th>HP</th>
<th>Recommended air velocity, 500 FPM</th>
</tr>
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<tbody>
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</table>

MOTORIZED DAMPER

<table>
<thead>
<tr>
<th>Duct area req. = CFM / 500 FPM:</th>
<th>Duct dimension required =</th>
<th>Eff. Damper opening x =</th>
</tr>
</thead>
<tbody>
<tr>
<td>_______CFM / 500 FPM = _______ft²</td>
<td>_________________</td>
<td>_______ ft²</td>
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<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

J. Slope of duct and cleanout access (506.3.7, 506.3.8)
   1. Horizontal duct up to 75’ long Min. Slope ¼” in/ft Proposed _______ in/ft.
      More than 75’ long Min. Slope 1” in/ft Proposed _______ in/ft
   2. Tight-fitting cleanout doors shall be provided at every change in ductwork direction.

K. Duct enclosure (506.3.10, 506.3.11)
   1. Ducts penetrating a ceiling, wall or floor shall be enclosed in a duct enclosure having a fire rating per IBC 707.4 from point of penetration to the outside air. A duct may only penetrate exterior walls at locations where unprotected openings are permitted by Table 704.8 of 2006 International Building Code.
   2. Duct Enclosure clearances from duct to shaft:
      Type of construction Distance from duct to shaft Proposed fire rating Proposed material and construction, ICBO#
      GWB w/wood stud wall 18 in. _______ _______ |
      GWB w/steel stud wall 6 in. _______ _______ |
      506.3.10 Exc. #1-ASTM E 814 and ASTM E 2336 Per mfg. _______ _______ |
      506.3.10 Exc. #2-ASTM E 814 and UL 2221. Per mfg. _______ _______ |
      506.3.10 Exc #3 see 506.3.6 for distance to combustible 18 in _______ _______ |
3. Duct enclosures shall be sealed around the duct at the point of penetration and vented to the exterior through a weather protected opening.
4. Duct enclosures shall serve only one kitchen exhaust duct. (See multiple hood venting for exception)
5. Tight-fitting hinged access door shall be provided at each clean-out. Access enclosure doors shall have a fire-resistance rating equal to the enclosure. An approved sign shall be placed on access door. “ACCESS PANEL DO NOT OBSTRUCT”.

L. Multiple hood venting (506.3.5)

1. Number of hoods vented by a single duct system (must meet all 4 conditions) Proposed: __________
   i. Located in the same story of the building
   ii. Within the same or adjoining room of the building
   iii. Ducts do not penetrate assemblies required to be fire-resistance rated
   iv. The ducts do not serve solid fuel-fire appliances.

M. Additional information for Type 1 hood only (507):

1. Grease filters shall be installed at min 45 degree angle and
   Equipped with a drip tray and gutter beneath lower edge of filters. (507.11.2) Proposed_______Degrees

2. Distance between lowest edge of grease filters and cooking surface of:
   Grill, fryer, exposed flame shall be not less then 2 ft. Proposed _____ ft.
   Exposed charcoal, charbroil shall be not less than 3-1/2 ft. (507.11) Proposed ______ ft.

3. Type 1 hood and duct shall have clearances from construction of:
   GWB on Metal stud (minimum 3” clearance required) (506.3.6,507.9)
   GWB on wood stud (minimum 18” clearance required)

<table>
<thead>
<tr>
<th>UNPROTECTED (Combustible Construction)</th>
<th>PROTECTED (1-hour fire-rated material and metal stud construction)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hood min. req. 18 in Proposed _______ in.</td>
<td>min. req. 3 in. Proposed _______ in.</td>
</tr>
<tr>
<td>Duct min. req. 18 in Proposed _______ in.</td>
<td>min. req. 3 in. Proposed _______ in.</td>
</tr>
</tbody>
</table>

4. Hoods less than 12 inches from ceilings or walls shall be flashed solidly.
   Flashing provided: ☐ Yes ☐ No Distance from ceiling _______ in., Wall _______ in.

5. All joints and seams shall be made with continuous liquid-tight weld or braze made on the external surface of the duct system. Vibration insulation connector may be used provided it consists of non-combustible packing in a metal sleeve joint. (506.3.2, 506.3.2.4) Joints shall be smooth and accessible for inspection. (506.3.2)

6. Exhaust fans used for discharging grease exhaust shall be positioned so that the discharge will not impinge on the roof. The fan shall be provided with an adequate drain opening at the lowest point to permit drainage of grease to a suitable collection device. (506.5.2)

7. Fire Suppression System. Fire Suppression System shall be per fire code. Portable fire extinguisher shall also be provided per Fire Code. Provide automatic shutoff for make-up air, exhaust system and appliances when suppression system is activated. Dependant on suppression agent and manufacturer's requirements.

8. Performance test certificate of the hood system shall be provided to owner before final approval. Test shall verify proper operation, the rate of exhaust, make-up air, capture and containment performance of the exhaust at normal operating conditions. (507.16)

References:
International Mechanical Code 2006
International Building Code 2006
International Fire Code 2006
International Fuel Gas Code 2006
Example 1
Mechanical Plot Plan

1. Identification of adjacent streets, property and alleys.
2. Any easements that cross the property or other pertinent legal features.
3. Property line and property dimension.
4. Location, size and shape of any structure present on site and proposed for construction.
5. A North arrow and scale.
6. Locate and describe the job. Show location of hood, hood exhaust and supply, existing HVAC, and HVAC exhaust and supply.

Example 2
Elevation View of Makeup Air System

Plan View of Hood System

Revised: 05/02/09
Example 3
Elevation Views of Hood System

(K2) Duct enclosure, 1-hr. fire-resistive

(K3) Min. 3", max. 12" from duct

(K4) Vent to outside

(M3) Hood, 3" from 1-hour fire-resistive shield (metal stud construction)

(M3) Hood, 3" from 1-hour fire-resistive shield (metal stud construction)

(M3) Hood, 18" from combustible wall

(E,M4) Flashing

Penetration on structural framing required DPD approval

(M1) Grease gutter

(F) 6"

(F) 4" max.

(M2) 2"

MIN 45°

(F) 4" max.

15" dia. galv. 22 ga.

Mnt. 700 lb.

18°

40°

Fan

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