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 Building Department to efficiently review plans and issue permits. 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

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 views 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: (507.2)
   1. For grease and smoke removal: Type I _____Quantity
      (Example: Deep fryer, char-broilers, grill, pizza ovens and all solid-fuel appliances)

   2. For steam, vapor, heat or odor removal: Type II _____Quantity
      (Example: steamer, pastry dishwashers)
      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></td>
<td>Gage</td>
</tr>
<tr>
<td><strong>Type of Material</strong></td>
<td><strong>Min. Req.</strong></td>
</tr>
<tr>
<td>Flashing</td>
<td>Stainless Steel</td>
</tr>
</tbody>
</table>

F. Quantity of air exhausted through the hood (507.12, 507.14)

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.
   - 4 ft. maximum allowed
   - 3 ft. maximum allowed

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 airflow 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.

Hood Exhaust CFM Table

<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, electric 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, re-therm, 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) Welding Certifications must be on site. Light test required**
1. Applicant shall provide the specified air velocity in exhaust duct.

2. \( \text{Duct size } \frac{24 \text{ in} \times 36 \text{in.}}{144} = \text{(dcfm) } \frac{6}{6} \text{ ft}^2 \)

3. **Type of Hood**

<table>
<thead>
<tr>
<th>Air Velocity (FPM)/CFM / Duct Area (ft²)</th>
<th>Proposed Air Velocity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type I hood = (1500 req. to 2500 recommended)</td>
<td>1500 / 6 (dcfm)ft² = 250 FPM</td>
</tr>
<tr>
<td>Type II hood = (500 to 2500 recommended)</td>
<td>500 / 6 (dcfm)ft² = 83.3 FPM</td>
</tr>
</tbody>
</table>

4. **Static pressure loss:**
   \( \text{Duct } + \text{ grease filters / extractor } + \text{ other } = \text{ Total } \text{ in of H2O} \)

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.

6. **Fan make and model**

   **HP**

7. Static pressure

   **in. at**

   **CFM.**

**H. Exhaust outlet location (506.3.12)**

1. **Exhaust outlet shall terminate above roof**

<table>
<thead>
<tr>
<th>Min. required</th>
<th>Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type I 40 in.</td>
<td>_____ in.</td>
</tr>
<tr>
<td>Type II 24 in.</td>
<td>_____ in.</td>
</tr>
</tbody>
</table>

2. **Distance from same or adjacent building**

   | 10 ft. | _____ ft. |

3. **Distance above adjoining grade**

   | 10 ft. | _____ ft. |

4. **Distance from property line**

   | 10 ft. | _____ ft. |

5. **Distance from windows and doors**

   | 10 ft. | _____ ft. |

6. **Distance from mechanical air intake**

   | 10 ft. | _____ ft. |

7. **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.**

   \( \text{(dcfm) } \frac{6}{6} \text{ ft}^2 \times 0.9 = \text{8.1 CFM.} \)

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

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.**

   **Heater model #**

   **Input BTU**

   **Output BTU**

   **Heater CFM**

   **AFUE**
Make and Model ____________ HP ___________ Recommended air velocity, 500 FPM

Static pressure__________________ in. at CFM

Duct area req. = CFM / 500 FPM:

\[
\text{Duct area} = \frac{\text{CFM}}{500 \text{ FPM}} = \text{__________ ft}^2
\]

Duct dimension required = __________

Eff. Damper opening_____ X_____ = ______ ft²

J. Slope of duct and cleanout access (506.3.7, 506.3.8)

1. Horizontal duct up to 75’ long  Min. Slope 1/4” in/ft  Proposed ___________ in/ft

   More that 75’ long   Min. Slope 1” in/ft  Proposed ___________ in/ft

2. Tight-fitting cleanout doors shall be provided at every change in ductwork direction.
   Total number proposed_________________

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:

<table>
<thead>
<tr>
<th>Type of construction</th>
<th>Distance from duct to shaft</th>
</tr>
</thead>
<tbody>
<tr>
<td>GWB w/ wood stud wall</td>
<td>18 in.</td>
</tr>
<tr>
<td>GWB w/ steel stud wall</td>
<td>6 in.</td>
</tr>
<tr>
<td>506.3.10 Exc. #1- ASTM E 814 and ASTM E 2336</td>
<td>Per mfg.______</td>
</tr>
<tr>
<td>506.3.10 Exc. #2- ASTM E 814 and UL 2221</td>
<td>Per mfg.______</td>
</tr>
<tr>
<td>506.3.10 Exc. #3- see 506.3.6 for distance to combustible</td>
<td>18 in.</td>
</tr>
</tbody>
</table>

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, 507.15)

1. Hoods vented by a single duct system (must meet all 4 conditions)

   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-fired appliances.

2. A hood outlet shall serve not more than a 12 foot section of hood
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)

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

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

N. References:
1. International Mechanical Code 2006