



CITY OF PRESCOTT
 COMMUNITY DEVELOPMENT DEPARTMENT
 COMMERCIAL BUILDING PERMIT REVIEW
 201 S. CORTEZ STREET
 PRESCOTT, AZ 86302
 (928)777-1207

Licensed Contractor Required
 License L16 or K16

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 and3).

D. Type of Hood:

1. For grease and smoke removal: Type I _____ Quantity
 (Example: Deep fryer, charbroilers, grill, roasting ovens larger than 6 KW and all solid-fuel appliances)

2. For steam, vapor, heat or odor removal: Type II _____ Quantity
 (Example: steamer, pastry and pizza oven)
 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)

TYPE I HOOD				TYPE II HOOD		
	<u>Type of Material</u>	<u>Min. Req.</u>	<u>Gage Proposed</u>	<u>Min. Req.</u>	<u>Gage</u>	<u>Proposed</u>
Duct and Plenum	Stainless Steel	18 Ga.	_____ Ga.	26 Ga. Up to 12" Diameter		_____ Ga.
	Galvanized Steel	16 Ga.	_____ Ga.	22 Ga. Up to 30" Diameter		_____ Ga.
Hood	Stainless Steel	20 Ga.	_____ Ga.	Stainless Steel 24 Ga.		_____ Ga.
	Galvanized Steel	18 Ga.	_____ Ga.	Galvanized Steel 22 Ga.		_____ Ga.
Flashing	Stainless Steel	22 Ga.	_____ Ga.	Not Required		
	Galvanized Steel	22 Ga.	_____ Ga.			

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.
 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 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.

Hood Exhaust CFM Table

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

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 (conveyer) 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, 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)

- Applicant shall provide the specified air velocity in exhaust duct.
- (Duct size _____ 24 in x _____ 36 in.) / 144 = (dcfm) _____ 6 ft²

3. Type of Hood Air Velocity (FPM)/CFM / Duct Area (ft²)= Proposed Air Velocity

Type I 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

Min. required

Proposed

Distance from same or adjacent building

Type I 40 in.

_____ in.

Type II 24 in.

_____ in.

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= _____ 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 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.

Heater model # _____ Input BTU _____ Output BTU _____

Heater CFM _____ AFUE _____

FAN

MOTORIZED DAMPER

Make and Model _____ HP _____

Static pressure _____ in. at CFM

Duct Dimension _____ in x _____ in = _____ ft²

Air velocity = CFM / Area:

_____ CFM / _____ ft² = _____ FPM

Recommended air velocity, 500 FPM

Duct area req. = CFM / 500 FPM:

_____ CFM / 500 FPM = _____ ft²

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 ¼" in/ft
More than 75' long Min. Slope 1" in/ft

Proposed _____ 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:

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: Proposed _____ In.
GWB on Metal stud (minimum 3" clearance required) (506.3.6,507.9)
GWB on wood stud (minimum 18" clearance required)

	UNPROTECTED (Combustible Construction)	PROTECTED (1-hour fire-rated material and metal stud construction)
Hood	min. req. 18 in Proposed _____ in.	min. req. 3 in. Proposed _____ in.
Duct	min. req. 18 in Proposed _____ in.	min. req. 3 in. Proposed _____ in.

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)

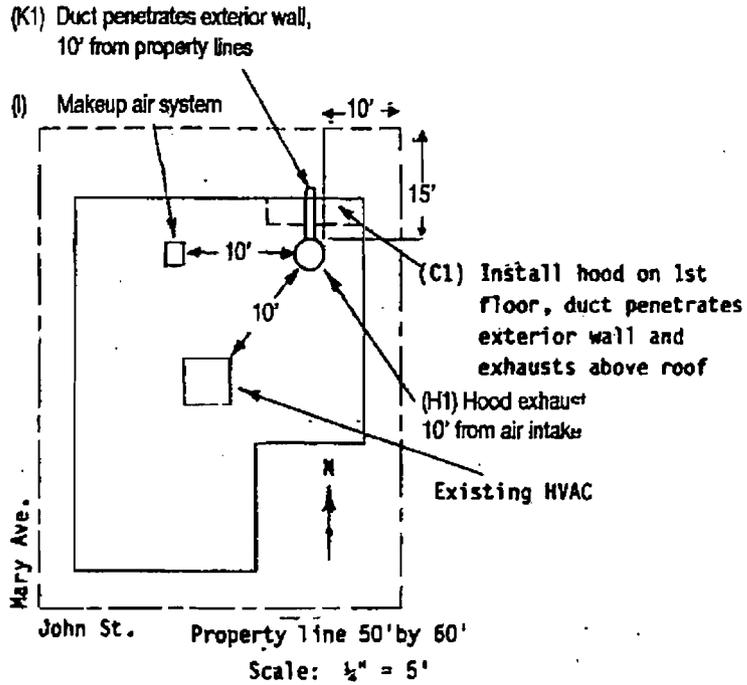
References:

International Mechanical Code 2006
 International Building Code 2006
 International Fire Code 2006
 International Fuel Gas Code 2006

Example 1

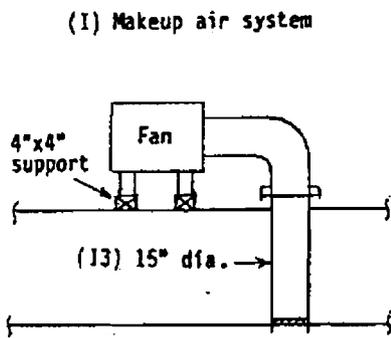
Mechanical Plot Plan

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.

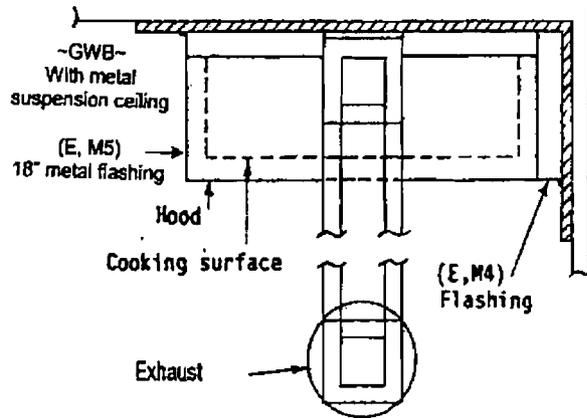


Example 2

Elevation View of Makeup Air System



Plan View of Hood System



Example 3

Elevation Views of Hood System

