



Commercial Kitchen Hood Worksheet / Checklist

Date: _____

Occupancy Name: _____

Contact Name: _____

Address: _____

Email: _____

Phone: _____

Contractor Name: _____

Email: _____

Address: _____

Phone: _____

Occupancy Classification

- | | | | | | | | |
|----------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|-------------------------|---|
| Assembly | A-1 <input type="checkbox"/> | A-2 <input type="checkbox"/> | A-3 <input type="checkbox"/> | A-4 <input type="checkbox"/> | A-5 <input type="checkbox"/> | Business | <input type="checkbox"/> |
| High Hazard | H-1 <input type="checkbox"/> | H-2 <input type="checkbox"/> | H-3 <input type="checkbox"/> | H-4 <input type="checkbox"/> | H-5 <input type="checkbox"/> | Educational | <input type="checkbox"/> |
| Residential | R-1 <input type="checkbox"/> | R-2 <input type="checkbox"/> | R-3 <input type="checkbox"/> | R-4 <input type="checkbox"/> | | Mercantile | <input type="checkbox"/> |
| Institutional | I-1 <input type="checkbox"/> | I-2 <input type="checkbox"/> | I-3 <input type="checkbox"/> | I-4 <input type="checkbox"/> | | Utility / Miscellaneous | <input type="checkbox"/> |
| Factory / Industrial | F-1 <input type="checkbox"/> | F-2 <input type="checkbox"/> | | | | Storage | S-1 <input type="checkbox"/> S-2 <input type="checkbox"/> |

A. Building history:

Is it an existing restaurant, food processing area or food service area Yes No

If no, provide building permit number: _____ Yes No

Have plans / shop drawings been submitted? Yes No

B. Location of exterior ductwork and mechanical equipment

- Is ductwork or Mechanical equipment located outside of building other than roof top? Yes No
- Plan and elevation views showing ductwork, duct enclosure, hood, cooking surface air supply, exhaust system, and equipment support including structural detail shall be submitted prior to permit approval.

C. Type of Hood

- For Grease and smoke removal: Type I _____ Quantity
(Example: Deep fryer, char broilers, grill, ovens including conveyor style pizza ovens and all solid-fuel appliances)
- For steam, vapor, heat or odor removal Type II _____ Quantity
(Example: Steamer, soup kettle, and commercial dishwashers)
Hood shall have a permanent, visible label identifying it as a Type II hood.
- Domestic cooking appliances used for commercial purposes Yes No
- Is hood for solid-fuel cooking equipment? Yes No

D. Type of material and gauge

	Type I Hood			Type II Hood		
	Type of Material	Min. req.	Proposed	Minimum Req.	Proposed	
Duct and Plenum	Stainless Steel	18 Ga.	Ga.	26 Ga. Up to 12" Diameter	Ga.	Dia.
	Galvanized steel	16. Ga	Ga.	22 Ga. Up to 30" Diameter	Ga.	Dia.
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.			

E. Hood Type – Size – Location

1. Canopy hoods shall extend a minimum of 6" beyond cooking surface.

Type of Hood proposed:

Vertical distance between lip of hood and cooking surface.

Canopy _____ Ft.

Canopy

Non-Canopy

Canopy _____ Ft.

2. Complete part "i" for listed hood or part "ii" for unlisted hood.

i. Listed hood. Make and model No: _____

Listed CFM _____

Provide manufacturer's installation instructions and listing documents for listed hoods and grease ducts.

ii. Unlisted hood: Quantity of air = Linear ft. of hood front x CFM from Table below

Quantity of air = _____ Ft. X _____ $\frac{\text{CFM}}{\text{Ft.}}$ = _____ CFM

Minimum net airflow for different types of unlisted hood.

Identify the cooking appliances and check 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	*CFM / Lineal Ft. of hood front
1. Extra heavy-duty cooking appliances (non-canopy hood not allowed) Type I hood e.g. All solid-fuel including solid-fuel pizza oven.	<input type="checkbox"/> Backshelf/passover	Not allowed
	<input type="checkbox"/> Double island canopy (per side)	550
	<input type="checkbox"/> Eyebrow	Not allowed
	<input type="checkbox"/> Single Island	700
	<input type="checkbox"/> Wall-mounted canopy	550
2. Heavy duty cooking appliances Type I hood e.g. wok, broiler (gas or electric), GAS burner range.	<input type="checkbox"/> Backshelf/passover	400
	<input type="checkbox"/> Double island canopy (per side)	400
	<input type="checkbox"/> Eyebrow	Not allowed
	<input type="checkbox"/> Single Island	600
	<input type="checkbox"/> Wall-mounted canopy	400
3. Medium-duty cooking appliances Type I hood e.g. All solid-fuel including solid-fuel pizza oven, electric Or gas conveyer pizza ovens, Electric ranges, griddles, rotisseries, and fryers	<input type="checkbox"/> Backshelf/passover	300
	<input type="checkbox"/> Double island canopy (per side)	300
	<input type="checkbox"/> Eyebrow	250
	<input type="checkbox"/> Single Island	500
	<input type="checkbox"/> Wall-mounted canopy	300
4. Light-duty cooking appliances (e.g. pizza oven, pastry oven, gas and Electric ovens, pasta cookers, steamers, and Type II hoods)	<input type="checkbox"/> Backshelf/passover	250
	<input type="checkbox"/> Double island canopy (per side)	250
	<input type="checkbox"/> Eyebrow	250
	<input type="checkbox"/> Single Island	400
	<input type="checkbox"/> Wall-mounted canopy	200
5. Exhaust flow rate label. Type I hoods shall bear a label indicating the minimum exhaust flow rate in CFM per linear foot of hood that provides for capture and containment of the exhaust effluent for the cooking appliance duty classification defined in IMC 2006		
6. Air velocity. Type I hood shall be designed and installed to provide an air velocity of not less than 500 feet per minute. (see exception 506.3.4)		

F. Exhaust duct system (IMC 506.3.4)

1. Applicant shall provide the specified air velocity in exhaust duct.

2. Duct Size _____ in. X _____ In., duct area = _____ in. X _____ in. = _____ Ft²

144

Type of Hood	Air Velocity (FPM)	CFM/Duct Area (ft ²)	Proposed Air Velocity
1. I Req. minimum 500 fpm	_____ / _____	= _____	FPM
II Req. minimum 500 fpm	_____ / _____	= _____	FPM

2. Static pressure loss duct _____ in. + grease filters/extractor _____ in. + other _____ in. = Total _____ in. of H₂O

3. 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.

Fan make and Model: _____ HP _____
 Static pressure: _____ in. at _____ CFM.

IF USING A LISTED DUCT WRAP, THE SURFACE OF THE DUCT SHALL BE CONTINUOUSLY COVERED ON ALL SIDES FROM THE POINT THE DUCT ORIGINATES TO THE OUTLET TERMINAL (IMC 506.3.11)

G Exhaust Outlet Location (IMC 506.3.13)

	Type I	Min. Required	Proposed
1. Exhaust discharge outlet shall terminate Above the roof.	Type I Type II	40 in 30 in	_____ in.

Distance from walls in the same or adjacent building	_____ ft	10 ft	_____ ft
Distance above adjoining grade	_____ ft	Property line	_____ ft
Distance from windows and doors	_____ ft	Mech Air intake	_____ ft
Distance of duct above adjoining grade at alley	_____ ft	16 ft	_____ ft

- Exhaust terminations through non-fire rated exterior walls other exterior openings shall not be located within 3 feet of other exterior openings (IMC 506.3.13.2)

H. Makeup air (IMC 508)

- The amount of makeup air supplied to the building from all sources shall be approximately equal to the amount of exhaust air for all exhaust systems for the building.

CFM / Type I hood /space	CFM / Building / Space
--------------------------	------------------------
- 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 the plan sheet number _____
- 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.
- Makeup air locations shall be (IMC 401.4) intake opening location.

FAN	MOTORIZED DAMPER
Make and Model: _____ H.P. _____	Recommended air velocity, 500 FPM
Static Pressure: _____ in. at CFM	Duct area req. = cfm/500 fpm _____ / 500 = _____ ft ²
Duct Dimension _____, area _____ ft ²	Duct Dimension req. = _____
Air velocity = cfm/area = _____ / _____ = _____ FPM	Eff. Damper opening _____ X _____ = _____ ft ²

I. Slope of duct and cleanout access (506.3.7, 506.3.9)

- Horizontal duct up to 75' long Minimum slope ¼ in/ft Proposed in/ft
More than 75' long Minimum slope 1 in/ft Proposed In/ft
- Liquid/tight fitting cleanouts shall be constructed of steel of a not less gauge than that required of the duct. Gasket or sealing shall be rated for not less than 1500 degrees. Horizontal cleanouts shall be located within 10 ft. from changes of direction which are greater than 45 degrees and not more than 20 ft. apart. Cleanouts shall be not less than 1 inch from edge of duct shall be provided with internal damming to provide grease flow without pooling be 12 in. x 12 in., unless duct size precludes this size and be located on the bottom ONLY where other locations are not available.
- Vertical grease duct cleanouts (IMC 506.3.9) if the grease duct passes through a floor assembly there shall be a minimum of one (1) cleanout on each floor level.

J. Duct enclosure (IMC 506.3.11, 506.3.11.3, 506.3.12)

- Ducts penetrating a ceiling, wall or floor shall be enclosed in a duct enclosure having a fire rating of a minimum of 1 hour or if required by type of construction, 2 hour from the point of penetration to the outside air.
- A duct may only penetrate exterior walls where unprotected openings are permitted by table 705.8 IBC

Type of Construction	Min. Fire-Resistive Const. of enclosure	Proposed	Proposed Material and Construction
I F.R. & II F.R.	2 Hour	_____ hr.	_____
II, III, IV, V	1 Hour	_____ hr.	_____

- Shaft enclosures: such grease duct systems and exhaust equipment shall have a clearance to combustible construction of not less than 18 inches and shall have a clearance to noncombustible construction of not less than 6 in. (IMC 506.3.11) See exceptions for factory-built exhaust equipment installed in accordance with IMC 304.1 Proposed _____ inches
- Duct enclosures shall be sealed around the duct at the point of penetration and vented to the exterior through a weather-protected opening.
- Where cleanout openings are located in ducts within a fire-rated enclosure, access openings shall be provided in the enclosure at each cleanout point. These openings shall have 1 or 2 hour fire rating, tight-fitting sliding or hinged doors with an approved sign as follows: **ACCESS PANEL. DO NOT OBSTRUCT** (IMC 506.3.12)

K. Separation of grease duct system (IMC 506.3.5)

A separate grease duct system shall be provided for each type I hood. A separate grease duct system is not required where all of the following conditions are met.

- All interconnected hoods are located within the same story
 - All interconnected hoods are located within the same room or in adjoining rooms.
 - Interconnecting ducts do not penetrate assemblies required to be fire-resistance rated.
 - The grease duct system does not serve solid-fuel fired appliances.
- Number of hoods vented by a single duct system: Proposed _____
A single duct system may serve more than one hood located in the same story of the building, provided that the interconnecting ducts do not penetrate any fire resistance rated construction and the grease duct system does not serve a solid fuel fired appliance.
 - A hood outlet shall serve not more than a 12 ft section of hood.

- Provide seismic restraint vertical support and attachment details. Shall be prepared by a structural engineer. (IMC 301.18; IBC 1604 & 1613; ASCE 7-10)

M Additional information for Type I hood only (IMC 507)

Grease filters shall be installed at minimum 45 degree angle and

1. Grease filters shall be installed at minimum 45 degree angle and Equipped with drip tray and gutter beneath lower edge of filters (IMC 507.11.2) Proposed _____ Degrees
2. Distance between lowest edge of grease filters and cooking surface of:
 - a) Exposed flames shall not be less than 2 ft., Without exposed flame shall not be less than .5 ft. (IMC 507.11) Proposed _____ ft.
 - b) Exposed charcoal; charbroil shall be not less than 3.5 ft. (IMC 507.11) Proposed _____ ft.
3. Type I hood and duct shall have clearances from construction of
 - a) GWB on Metal stud (minimum 3" Clearance required) Proposed _____ in.
 - b) GWB on Wood Stud (minimum 18" Clearance required) Proposed _____ in.

Unprotected (Combustible Construction)		Protected (With 1-hour fire-rated Material & Metal Stud Construction)	
Hood Min. Req. 18 in.	Proposed _____ in.	Min. Req. 3 in.	Proposed _____ in.
Duct Min. Req. 18in.	Proposed _____ in.	Min. Req. 3 in.	Proposed _____ in.

4. 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 maybe used provided it consists of noncombustible packing in a metal sleeve joint. (IMC 506.3.2, 506.3.2.4) Joints shall be smooth & accessible for inspection. (IMC 506.3.2)
5. 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)
6. 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. Dependent on suppression agent & manufacturer's requirements. (Sec 5.10.7)
7. 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. (IMC 507.16)

References:

- International Mechanical Code 2006
- International Building Code 2006
- International fuel gas Code 2006
- International Fire Code 2015