



Naperville

CITY OF NAPERVILLE

Transportation, Engineering, & Development (T.E.D.) Business Group

Commercial Kitchen Hood Questionnaire Per 2018 IMC

Project Information:

Name of Business: _____

Project Address: _____

1. Established use and history of building:

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

2. Location of exterior ductwork and mechanical equipment:

1. Is ductwork or mechanical equipment located outside of the building other than the roof top? Yes No

3. Type of hood:

Type I (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. Is hood for solid-fuel cooking equipment? Yes No
If yes, a separate exhaust system is required.

4. Type of material and gage (506.3.1.1, 507.2.3)

TYPE I HOOD

Duct and Plenum	Type of Material	Min. Req. Gage	Proposed
	Stainless Steel	18 Ga.	_____ Ga.
	Galvanized Steel	16 Ga.	_____ Ga.
Hood	Stainless Steel	20 Ga.	_____ Ga.
	Galvanized Steel	18 Ga.	_____ Ga.

5. Quantity of air exhausted through the hood (507.4.1, 507.4.2)

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. 4 ft. maximum allowed	Non-canopy _____ ft. 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

6. Quantity of air exhausted through the hood (507.5)

Minimum net airflow for different types of unlisted hoods. (507.5.1, 507.5.2, 507.3, 507.4)

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	Dishwasher
Wall – mounted canopy	550	400	300	200	100
Single island canopy	700	600	500	400	100
Double island canopy	550	400	300	250	100
Back-shelf / pass-over	Not allowed	400	300	250	100
Eyebrow	Not allowed	Not allowed	250	250	100

Definitions:

Extra Heavy Duty cooking appliances: 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 appliances: 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 appliances: 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 appliances: include gas and electric ovens (including standard, bake, roasting, revolving, retherm, convection, combination convection/steamer, countertop conveyORIZED baking/finishing, deck and pastry), electric and gas steam jacketed kettles, electric and gas pasta cookers, electric and gas compartment steamers (both pressure and atmospheric) and electric and gas cheesemelters.

Dishwashing appliances: include any dishwashing appliance in a commercial kitchen.

Type I Hood

Type II Hood

7. 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. (Duct size _____ 24 in X _____ 36in.) / 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)ft²= _____ 250 FPM

Type II hood = (500 to 2500 recommended) _____ 500 / _____ 6 (dcfm)ft²= _____ 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.

8. Exhaust outlet location Type I Hoods (506.3.13)

Min. Required

Proposed

Exhaust outlet shall terminate above roof	40 in.	_____ in.
Termination through an exterior wall	3 ft.	_____ ft.
Distance from same or adjacent building	10 ft.	_____ ft.
Distance from property line	10 ft.	_____ ft.
Distance from adjoining grade level	10 ft.	_____ ft.
Exhaust outlets located horizontally to air intake openings	10 ft.	_____ ft.
Exhaust outlets located above air intake openings*	3 ft.	_____ ft.

*See Exception for 5 ft.

9. Makeup air (508.1)

1. Applicant shall provide makeup air not less than 90% of the exhaust.
(dcfm)_____6 ft²X.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

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
Make and Model_____HP_____

MOTORIZED DAMPER
Recommended air velocity, 500 FPM

Static pressure_____in. at CFM

Duct area req. = CFM / 500 FPM:
_____CFM / 500 FPM = _____ ft²

Duct Dimension_____in X _____ in = _____ft²

Duct dimension required = _____

Eff. Damper opening_____X_____ = _____ft²

10. 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_____

11. 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 2018 IBC 705.8 from point of penetration to the outside air. A duct may only penetrate exterior walls at locations where unprotected openings are permitted by Table 705.8 International Building Code.

2. 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"**

12. Multiple hood venting (506.3.5, 507.1.5)

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

- i) Located in the same story of the building
- ii) Located 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

13. Additional information for Type I hood only (507.2):

1. Grease filters shall be installed at min 45 degree angle and Equipped with a drip tray and gutter beneath lower edge of filters. (507.2.8.2)
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. (507.2.8).

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.

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

4. 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)

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. (506.5.3)

6. **Fire Suppression System.** Fire suppression system is a separate fire related permit. Must submit separately.

14. Type of hood:

Type II (507.3)

1. 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.

15. Type of material and gage (506.4.1, 507.3.1)

TYPE II HOOD

Duct and Plenum	Type of Material	Min. Req. Gage	Proposed
	In accordance with 506.4.1		_____ Ga. _____ Ga.
Hood	Stainless Steel	24 Ga.	_____ Ga.
	Galvanized Steel	22 Ga.	_____ Ga.

16. Exhaust outlet location Type II Hoods (506.4.2)

	Min. Required	Proposed
Exhaust outlet shall terminate above roof	30 in.	_____ in.
Terminate through an exterior vertical wall	30 in.	_____ in.
Distance from any openings into the building	3 ft.	_____ ft.
Distance from same or adjacent building	10 ft.	_____ ft.
Distance from property lines	10 ft.	_____ ft.
Distance from adjoining grade level	10 ft.	_____ ft.

*Outlets shall be protected from local weather conditions
**Outlets shall not be directed onto walkways

17. Additional information for Type II hood only (507.3):

1. Type II hoods shall be installed above dishwashers and appliances that produce heat or moisture and do not produce grease or smoke as a result of the cooking process, except where the heat and moisture loads from such appliances are incorporated into the HVAC system design or into the design of a separate removal system. Type II hoods shall be installed above all appliances that produce products of combustion and do not produce grease or smoke as a result of the cooking process. Spaces containing cooking appliances that do not require Type II hoods shall be provided with exhaust at a rate of 0.70 cfm per square foot. For the purpose of determining the floor area required to be exhausted, each individual appliance that is not required to be installed under a Type II hood shall be considered as occupying not less than 100 square feet. Such additional square footage shall be provided with exhaust at a rate of 0.70 cfm per square foot.
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Applicant Name: _____

Date: _____

Applicant Email: _____

Applicant Phone: _____