

City of Bozeman



BUILDING INSPECTION DIVISION

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Commercial Kitchen Hood Systems Checklist

Facility _____ Address _____

Contractor _____ Phone Number _____

Project Plans Checklist

Plan View Elevation Section Electrical Plan Gas Plan

Commercial Hood Type: Type I _____ Type II _____

- | | | |
|--|--|--|
| <input type="checkbox"/> Compensating Hood | <input type="checkbox"/> Back-shelf Hood | <input type="checkbox"/> Double Island Canopy Hood |
| <input type="checkbox"/> Eyebrow Hood | <input type="checkbox"/> Pass-over Hood | <input type="checkbox"/> Single Island Canopy Hood |
| <input type="checkbox"/> Wall Canopy Hood | <input type="checkbox"/> Stainless Steel | <input type="checkbox"/> Galvanized Steel |
| <input type="checkbox"/> Sheet Copper | <input type="checkbox"/> Ansul System | |

Calculated CFM _____ Makeup Air CFM _____

I. IMC 506 – Hood Ventilation System Ducts and Exhaust Equipment

Ducts Serving Type I Hoods- IMC 506.3

- IMC 506.2 - Ducts shall be protected against corrosion.
- IMC 506.3.1 - Grease duct materials: galvanized 16 gage, stainless 18 gage.
- IMC 506.3.2 - Grease Duct Joints, seams or penetrations continuously welded or brazed.
- IMC 506.3.2.3 - Duct-to-exhaust fan connection: flanged, gasketed and bolted.
- IMC 506.3.2.4 - Vibration isolation: Listed non-combustible packing in metal sleeve joint or listed coated-fabric flexible duct connector, connected only at the duct to fan inlet or outlet connection.

- IMC 506.3.3 - Grease duct bracing and support: non-combustible material securely attached to the structure, bolts, screws, rivets and other mechanical fasteners shall not penetrate the duct walls.
- IMC 505.3.4 - Velocity: not less than 500 feet per minute.
- IMC 506.36 - Grease duct clearances: not less than 18" from combustibles or 3" from gypsum wallboard attached to non-combustible structures.
- IMC 506.3.7; 506.3.8; 506.3.9 - Grease accumulation and cleanout requirements.
- IMC 506.3.12.1 - Termination above roof: not less than 40" above the roof.
- IMC 506.3.12.2 - Termination through exterior wall: does not create a public nuisance, not where protected openings are required and not within 3' of other exterior openings.
- IMC 506.12.3 - Termination location: 10' horizontally from buildings, property lines, air intake openings and 10' above grade. Exception: Five feet if air discharges away from such locations.

Ducts Serving type II Hoods - IMC 506.4

- IMC 506.2 - Ducts shall be protected against corrosion.
- IMC 401.4 - Opening location: 10' horizontally from buildings and property lines.
- IMC 401.4.1 - Termination location: 10' horizontally away from and 2' above outdoor mechanical and gravity air intake openings.
- IMC 401.4.2 - Exhaust openings; shall be located so as not to create a nuisance, nor be directed onto walkways.
- IMC 506.4.1 - Exterior exhaust outlets: Shall meet IBC requirements for exterior wall opening protectives.
- IMC 506.4.2 - Ducts: constructed of rigid metallic materials, construction per IMC chapter 6, positive pressure systems connected and joined in an approved manner.

Exhaust Equipment – IMC 506.5

- IMC 506.5.1 - Exhaust fans serving Type I hoods: Constructed as required for a grease duct or per UL 762, fan located outside the air stream.
- IMC 506.5.2 - Exhaust fan discharge: Will not impinge on roof, other equipment, appliances or parts of structure. Vertical discharge fans to have an approved drain outlet at lowest point of housing and grease reservoir.
- IMC 506.5.3 - Exhaust fan mounting: Up-blast fans shall be hinged and supplied with a flexible, weatherproof electrical cable to permit inspection and cleaning. Ductwork shall extend 18" above the roof surface.
- IMC 506.5.4 - Clearances: exhaust equipment to maintain 18" clearance from combustibles.
- IMC 506.5.5 - Termination: per IMC 506.3.12 and 2' between the vertical discharge fan and parapets if fan housing is no taller than the parapet.

II. IMC 507 - Commercial Kitchen Hoods

General – IMC 507.1

- IMC 507.1 - Hoods shall be designed to capture and confine cooking vapors and residues and shall operate during cooking operations.

Type I & Type II Hood Requirements – IMC 507.2

- IMC 507.2.1 - Type I hoods shall be installed where cooking appliances produce grease or smoke, such as occurs with griddles, fryers, broilers, ovens, ranges and wok ranges.
- IMC 507.2.1.1 - Operation: Type I hood systems shall be designed and installed to automatically activate the exhaust fan whenever cooking operations occur. The activation of the exhaust fan shall occur through an interlock with the cooking appliances, by means of heat sensors or other approved methods.
- IMC 507.2.2 - Type II hoods shall be installed where cooking or dishwashing appliances produce heat, steam or products of combustion and do not produce grease or smoke, such as steamers, kettles, pasta cookers and dishwashing machines (some exceptions apply).
- IMC 507.2.3 - Domestic cooking appliances used for commercial purposes shall be provided with Type I or Type II hoods as required for the type of appliances and processes proposed.
- IMC 507.2.4 - Type I hoods over extra-heavy duty cooking appliances used for commercial shall discharge to an exhaust system that is independent of other exhaust systems.
- IMC 507.3 - Where vented fuel burning appliances are located in the same room or space as the hood, provisions shall be made to prevent the hood system from interfering with the appliance's operation.
- IMC 507.4 - Type I hood materials: steel 18 gage, stainless 20 gage in thickness.
- IMC 507.5 - Type II hood materials: steel 22 gage, stainless 24 gage, copper 24 oz/sq. ft.
- IMC 507.6 - Supports: Type I hoods shall be secured by non-combustible supports.
- IMC 507.7.1 - Type I hoods: external hood joints, seams, and penetrations shall be made with a continuous external liquid, tight weld or braze.
- IMC 507.7.2 - Type II hoods: Joints, seams and penetrations shall be as set forth in IMC Chapter 6, shall be sealed on the interior of the hood and shall provide a smooth surface that is readily cleanable and watertight.
- IMC 507.8 - A hood shall be designed to provide for thorough cleaning of the entire hood. Grease gutters shall drain to an approved collection receptacle that allows access for cleaning.
- IMC 507.9 - Type I hood clearances: not less than 18" from combustibles. Clearance from gypsum wallboard attached to non-combustible structures is not required if a smooth, cleanable, non-absorbent, and non-combustible material extends 18" beyond the hood.

- IMC 507.12 - The hood shall extend a minimum of 6 inches past the edge of the appliances and shall be no more than four feet above the surface of the appliances. The front edge of the hood may be flush with the appliances when the rear wall of the appliance space is constructed of noncombustible materials.
- IMC 507.13 - Capacity of Hoods: Commercial food service hoods shall exhaust a minimum net quantity of air as determined by the multipliers below based on the length of the hood. The heaviest duty appliance type covered by the hood shall be used for the entire hood.
- IMC 507.13.5 - Dishwashing appliances: Minimum net airflow for a Type II hood shall be 100 CFM per linear foot.
- IMC 507.15 - Exhaust outlets shall not serve more than a 12 foot hood.

Extra-Heavy-Duty Cooking Appliance – Type I Hood

Hood Type	CFM/linear Foot of Hood
<i>Double Island Canopy (per side)</i>	550
<i>Single Island Canopy</i>	700
<i>Wall-mounted Canopy</i>	550

Heavy-Duty Cooking Appliance – Type I Hood

Hood Type	CFM/linear Foot of Hood
<i>Backshelf/Pass-over</i>	400
<i>Double Island Canopy (per side)</i>	400
<i>Single Island Canopy</i>	600
<i>Wall Mounted Canopy</i>	400

Medium-Duty Cooking Appliance – Type I Hood

Hood Type	CFM/linear Foot of Hood
<i>Backshelf/Pass-over</i>	300
<i>Double Island Canopy (per side)</i>	300
<i>Eyebrow</i>	250
<i>Single Island Canopy</i>	500
<i>Wall-mounted Canopy</i>	300

Light-Duty Cooking Appliance – Type I & Type II Hood

Hood Type	CFM/linear Foot of Hood
<i>Backshelf/Pass-over</i>	250
<i>Double Island Canopy (per side)</i>	250
<i>Eyebrow</i>	250
<i>Single Island Canopy</i>	400
<i>Wall-mounted Canopy</i>	200

III. Commercial Kitchen Makeup Air – IMC 508

- IMC 508.1- Makeup air shall be supplied during the operation of commercial kitchen exhaust systems that are provided for commercial cooking appliances. The amount of makeup air supplied shall be approximately equal to the amount of exhaust air. For mechanical makeup air systems, the exhaust and makeup air systems shall be electrically interlocked.
- IMC 508.1.1 - Makeup air temperature differential between makeup air and air in the conditioned

space shall not exceed 10° F.

- IMC 508.2 - Manufacturer's of compensating hoods shall provide a label indicating minimum exhaust flow and/or maximum makeup airflow that provides capture and containment of the exhaust effluent.

IV. System Testing – IMC 506.3.3.1; 507.16; 507.16.1

- IMC 506.3.3.1 - Grease duct test: Prior to the use or concealment of any portion of a grease duct system, a leakage test shall be performed in the presence of the code official. The permit holder will be responsible to provide the necessary equipment and perform the test (bare bulb light test).
- IMC 507.16 - A performance test shall be conducted upon completion and before final approval of the installation of the commercial kitchen hood ventilation and exhaust system. The test shall verify the rate of exhaust and makeup airflow. The permit holder will be responsible to provide the necessary equipment and perform the test. Test shall be performed in the presence of the code official.
- IMC 507.16.1 - Capture and containment test: The permit holder shall verify capture and containment performance of the exhaust system. This field test shall be conducted with all the appliances under the hood at operating temperatures, with all sources of ventilation and exhaust air functioning and containment visually observed with smoke or steam produced by actual or simulated cooking. Test shall be performed in the presence of the code official.