

COMMERCIAL KITCHEN HOOD GUIDELINES

NOTE: *This handout is intended as a general guideline to assist the architect, engineer, designer, and / or contractor in the design, construction and installation of Commercial Kitchen Hood systems. Additional, and more specific, requirements are found in their entirety in the above listed codes and standards.*

WARNING: Failure to complete items below prior to inspection may result in a re-inspection fee.

NOTE: The first step in the process is to contact the City Health Department at (320) 255-7214 or visit their website at: <http://mn-stcloud.civicplus.com/DocumentCenter/Home/View/1556>

Frequent issues requiring a re-inspection:

- Permit card and red-line plan not on site for inspection
- Installation Instructions not on site or available for inspector.
- Installation Instructions not followed
- Use of non-listed equipment
- Hood does not overhang cooking equipment by minimum 6" on all sides
- Change of duct direction without cleanout.
- Clean-out panel not accessible
- Exhaust terminating less than 10' from property line, adjacent buildings, or air intakes.
- Roof top exhaust termination closer than 10' to a roof edge with no guard.

Sign-offs and reports required before or concurrent with final building safety approval:

- City Health final. (320) 255-7214
- Electrical final (320) 255-7239
- Air Balance Report
- Heating test record for make-up air and / or other equipment if applicable
- Fire suppression system for Type I hoods (320) 255-7284

Applicable Codes and Standards:

- 2006 IMC with MN Amendments
- 2007 Minnesota State Fire Code
- 2007 Minnesota State Building Code
- 2011 NEC
- 2008 NFPA 96

Required inspections:

- Curb construction and attachment
- Shaft
- Grease Duct (possible pressure test)
- Duct wrap (each layer)
- Electrical
- Gas line
- Fire suppression on Type I hoods
- Final

Definitions:

Type I hood: a kitchen hood for collecting and removing grease, smoke, heat, and vapors associated with the preparation of foods producing grease laden vapors or smoke.

Where required:

“... where cooking appliances produce grease or smoke, such as occurs with griddles, fryers, broilers, ovens, ranges, and wok ranges” (MSMC section 507.2.1)

“... at or above all commercial cooking appliances used for commercial purposes that produce grease vapors.” (MSFC section 609.2)

Type II hood: a general kitchen hood for collecting and removing steam, vapor, heat, or odors associated with the preparation of foods not producing grease laden vapor or smoke.

Hood Construction:

Type I

- Shall be constructed and supported by not less than 18 gauge carbon steel or 20 gauge stainless steel. (MSMC section 507.4 and NFPA 96 section 7.5.1.1)
- Shall be listed and labeled.
- External hood joints, seams and penetrations shall be made with a continuous external liquid tight weld to the lowest outermost perimeter of the hood. (MSMC section 507.7.1)
- Shall be equipped with listed grease filters which shall be accessible for cleaning. (MSMC section 507.11)

Type II

- Shall be constructed of minimum 22 gauge carbon steel, 24 gauge stainless steel, copper sheets weighing not less than 24 ounces per sq. ft., or of other approved material. (MSMC section 507.5)
- All joints and seams of hoods shall be sealed on the interior of the hood, substantially tight and smooth, and readily cleanable and water tight. (MSMC section 507.7.2)

Hood Installation:

Support

- Type I hoods shall be secured in place by noncombustible supports.
- The supports cannot be less than 18 gauge carbon steel or 20 gauge stainless steel. (MSMC section 507.4 and NFPA 96 section 7.5.1.1)
- Type I and II hoods must be held in place by supports capable of the imposed weight of the hood, unsupported ductwork, the effluent loading, and the possible weight of personnel working in or on the hood.
- Hoods for commercial cooking shall overhang or extend 6" horizontally beyond the edge of the cooking surface on all open sides and shall not exceed 4' feet vertically from the cooking surface to the lip of the hood except listed exhaust hoods are to be installed with the terms of their listings and installation instructions.

Clearances

- Hoods require 18" clearances to combustibles materials, 3" to limited-combustible materials, and 0 inches to noncombustible materials. (For limited exceptions see NFPA 96)
- Lesser clearances will be considered if the hood is listed for a lesser clearance

Grease Ducts:

- Unlisted and site-fabricated grease ducts shall be constructed and installed in accordance with NFPA 96.
- Listed grease ducts shall be installed per the listing and manufacturer's instructions.
- A copy of the listing and / or manufacturer's instructions shall be available on site for the inspector.

Materials

- Required to be constructed of and supported by not less than 18 gauge steel or 24 gauge stainless steel.
- All seams, joint, and penetrations of the hood enclosure shall have liquid tight continuous external welds to the hoods lower outermost perimeter. Internal joints are required to be made grease tight.
- All exposed surfaces must be accessible and cleanable.

Clearances

- Ducts require 18" clearances to combustibles materials, 3" to limited-combustible materials, and 0 inches to noncombustible materials. (For limited exceptions see NFPA 96)
- Clearances may be reduced by using a system that is listed for less clearance however; listing information must be presented for review prior to installation and must be on site for inspector.

Duct wrap

- Duct wrap SHALL BE installed in accordance with manufacturer's instructions.
- When using duct wrap, access panels SHALL BE protected in accordance with the duct wrap or access panel manufacturer's instructions and / or listing.

Access panels

- Openings for installation, servicing, and inspection of listed fire protection system devices and for duct cleaning shall be provided at the sides or at the top of the duct, whichever is more accessible, and at change of direction in ducts and enclosures.
- Openings required to reach access panels in the ductwork shall be large enough for the removal of the access panel.
- Access panels shall be listed grease duct access door assemblies, or shall be constructed of materials described in NFPA 96.
- Signage shall be visible and placed on all access panels stating the following:
ACCESS PANEL- DO NOT OBSTRUCT.
Signage for applications using duct wrap SHALL BE placed on the outside of the duct wrap.

Grease removal devices in hoods

- Listed grease filters, baffles, or other approved Grease Removal Devices (GRD) in commercial looking equipment shall be tested in accordance with UL1046.
- Grease filters shall be easily accessible and shall be equipped with a drip tray beneath their lower edge.

Air test

- Air balance test by third party tester report required at final.
- Make up air is required when installing commercial hoods and shall be provided to replenish air exhausted by the ventilation system and shall be located so as to avoid recirculation of contaminated air within enclosures.

ELECTRICAL

- All electrical components shall be listed and labeled for use in commercial cooking applications.
- No wiring of any type shall be installed in ducts.
- Motors, lights, and other electrical devices shall not be installed in ducts or hoods or located in the path of travel of exhaust products. Except where specifically approved for such use.
- Lighting units in hoods shall be listed for use over commercial cooking appliances and installed per the terms of their listing.

FIRE PROTECTION

- A separate permit must be obtained from the Fire Department (320-255-7213) for the installation of the suppression system.
- Must interlock with electrical (including under hood lighting), gas, mechanical, and alarm systems

SURROUNDING CONSTRUCTION

- Type I Hoods and ducts shall have 18" minimum clearances to combustibles materials, 3" to limited-combustible materials, and 0 inches to noncombustible materials. (For limited exceptions see NFPA 96)
- Incidental trim within the horizontal parameters of the above clearances shall meet the same specifications as surrounding construction.