



BRAINERD FIRE DEPARTMENT
Fire Inspections
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COMMERCIAL KITCHEN HOODS AND DUCTS

All commercial kitchen hoods and ducts must meet the following minimum requirements.

General Requirements

Submittals must include a fire permit application and a scaled floor plan showing the type and location of cooking equipment, the type and location of sprinkler heads or nozzles, and the distance between heads or nozzles and the cooking surfaces.

System must comply with the Minnesota State Fire Code Sections 609 and 904, Minnesota Mechanical Code 904, and applicable NFPA Standards.

A system operation test is required to verify proper operation of all components. Fire Inspector must witness tests.

All deep fat fryers must be installed with at least a 16-inch space between the fryer and surface flames from adjacent equipment, unless an 8-inch steel or tempered glass baffle is installed between the appliances.

All protected appliances must be located a minimum of 4 inches from the inside vertical edge of the hood.

All appliances on wheels must have cable restraints.

In buildings required to be protected throughout by automatic sprinklers, class I and II hoods greater than four feet in depth and not protected by a hood and duct automatic fire extinguishing system must have sprinklers installed in the hood to provide adequate floor coverage.

Automatic Fire Extinguishing Systems

A sprinkler system, wet chemical suppression system or combination water/chemical suppression system is required in all hood and ducts where cooking produces grease laden vapors. Coverage must include cooking surfaces, deep fat fryers, griddles, upright broilers, charbroilers, range tops, ovens and conveyor ovens with grease laden vapors, the enclosed plenum space within the hood above filters and exhaust ducts serving the hood. Coverage is not required for food warming appliances, steamers, and completely enclosed convection ovens.

Activation of the automatic fire extinguishing system must immediately shut off gas and electric supply to all appliances under the protected hood. Manual gas and electric resets are required.

Sprinkler Systems

The Gem model EA-1 Protectospray head may be installed in accordance with its' previous listing to protect deep fat fryers.

Dry heads must be used in ducts where there is potential for freezing.

Automatic sprinkler systems used to protect cooking equipment shall be supplied from a separate, readily accessible indicating-type control valve that is identified and monitored as a supervisory alarm.

Wet Chemical or Combination Water/Chemical Suppression Systems

Pre-engineered wet chemical systems must be installed and tested in accordance with UL 300. Other types of suppression systems shall be listed and labeled for specific use as protection for commercial cooking operations. All chemical systems must be designed and installed in accordance with the Fire Code and the manufacturer's requirements.

Exhaust ventilation must remain on and the make up air must shut down upon activation of the system unless otherwise specified by the manufacturer.

A manual actuation device (pull station) must be located in the path of egress and be a minimum of 10 feet and maximum of 20 feet from the protected hood. The device must be located a minimum of 4-1/2 and a maximum of 5 feet above the floor.

Suppression systems must be centrally monitored.

Fire-resistive Hoods and Shaft Enclosures

A one-hour fire-resistive wallboard shaft or a UL listed insulated wrap is required around the duct and top of hood if the hood is located above the ceiling. The wrap must be installed in strict adherence with the manufacturer's requirements. A copy of the manufacturer's installation requirements must be provided.

Access panels must be provided at each direction change of ducts and in additional locations as required by the code.

A detailed plan must be provided showing the hood and duct enclosure, and all access panels.

Portable Fire Extinguisher

A K - class wet chemical fire extinguisher must be installed in a clearly visible and accessible location within 30 feet of cooking equipment involving vegetable and animal oils and fats.

Inspection Checklist

- ✓ Rough in sprinkler heads or nozzles, fusible links and manual pull station locations.
- ✓ For chemical suppression systems, system activation by release of a fusible link and by manual pull station.
- ✓ Gas and electric shut down with manual reset.
- ✓ Exhaust air continues running and makeup air shuts down.
- ✓ Fire-rated shaft enclosure inspection.
- ✓ Central monitoring.
- ✓ Portable fire extinguishers.

Note: Extinguishing systems must be 100% tested prior to calling for an inspection. If a system fails an inspection, a re-inspection must be scheduled.

Required Maintenance

Hoods, grease-removal devices, fans, ducts and other appurtenances shall be cleaned in intervals necessary to prevent the accumulation of grease. Documentation of cleaning shall be maintained on the premises.

Cleanings must be recorded and records shall state the extent, time and date of cleaning. Such records shall be maintained on the premises.

Extinguishing systems must be serviced at least every six months or after activation of the system. Inspections shall be by qualified individuals, and a Certificate of Inspection shall be forwarded to the Brainerd Fire Department - Fire Inspections upon completion.

Fusible links and automatic sprinklers heads must be replaced at least annually (except frangible bulbs), and other protection devices shall be serviced or replaced in accordance with the manufacturer's instructions.

Notification Requirements

The Brainerd Fire Department-Fire Inspections and the Minnesota Department of Health must be immediately notified in the event the fire extinguishing system activates or a portable fire extinguisher is discharged in a kitchen.