

**HOOD AND DUCT SHOP DRAWINGS
VENTILATION CONTROL AND FIRE PROTECTION OF
COMMERCIAL COOKING OPERATIONS
2001 NFPA 96 and 1997 SMC Chapter 5**

Listed items require commercial kitchen hood and duct system shop drawing revisions and manufacturer product cut sheets verifying listing by a nationally recognized testing laboratory. Answers in letter form are not acceptable. **Starting construction before plans approval may be considered as just cause, by the State, to issue a stop work order. [Rule 0780-2-3-.03 (3)]**

I. Submittal Requirements

1. Commercial kitchen hood and duct system shop drawings (2-copies) must be submitted by the system installer for review and approval prior to installation. Essential features of the system must be submitted and include (1) third party listed exhaust hood(s), (2) listed cooking equipment, (3) listed exhaust and supply fans, (4) fixed fire extinguisher system details furnished and installed by a Tennessee licensed firm, and (5) supply and exhaust duct system. [NFPA 96 3.2.1 and 3.2.2]
2. The commercial kitchen hood and duct system shop drawings must be reviewed and approved by the mechanical engineer of record (processed with the engineer's shop drawing review stamp) prior to the submittal to the State Fire Marshal's Office.
3. These standards shall apply to residential cooking equipment used for commercial cooking unless the requirements of NFPA 96 1.1.4 are met. [NFPA 96 1.1.2]

II. Exhaust Hood

1. Provide shop drawings for the commercial cooking exhaust hood identifying the manufacturer and model number, exhaust and supply CFM, and static pressure for the hood collars. Identify whether the hood is UL listed with or without exhaust dampers. [NFPA 96 5.1.7]
2. A fire damper actuated at a maximum of 286°F must be installed in the supply plenum. [NFPA 96 5.3.4]
3. A fire damper must not be installed in the exhaust system. [NFPA 96 9.1.1 and SMC 505.11]
4. Provide exhaust and supply fan shop drawings and performance data.
 - A. Exhaust motors must be listed for use in greasy atmospheres. [NFPA 96 8.1, SMC 505.1.3, and 506]
 - B. Provide the exhaust fan's manufacturer, model, horsepower, RPMs, static pressure rating, and performance chart.
 - C. Approved up-blast fans must be hinged and supplied with a flexible weatherproof electrical cable and service hold-open retainers. [NFPA 96 8.1.1.1]
5. Provide a wiring and control diagram showing:
 - A. The fixed fire extinguisher system must activate general and supervisory alarms. [NFPA 96 10.6 and 10.7]
 - B. Provide interlock of the fixed fire extinguisher system pull station with electrical panel shunt trips, gas shut-off valves, and the supply fan. [NFPA 96 10.3 and 10.4]

- C. Supply and exhaust fan interlock - the exhaust fan must continue to operate after the fixed fire extinguisher system has been activated. [NFPA 96 8.2.3.1]
- D. Provide supply fan shut off. [NFPA 96 8.3.2]
- E. Simultaneous operation of the fixed fire extinguisher system. [NFPA 96 10.3]

III. Cooking Equipment

- 1. Provide manufacturer cut sheets for all cooking equipment under the exhaust hood including the listing information or test data. [NFPA 96 4.1 Chapter 12]
- 2. All listed cooking appliances must be installed in accordance with terms of their listing and the manufacturer's instruction. [NFPA 96 12.1.2.1]
- 3. All deep fat fryers must be installed with a 16" space between the fryer and surface flames from adjacent cooking equipment. [NFPA 12.1.2.4]
- 4. All deep fat fryers must be equipped with a separate high-limit control (thermostat) to shut off fuel or energy when the fat temperature reaches 475°F. [NFPA 96 12.2]

IV. Ductwork

- 1. Provide exhaust and supply duct system shop drawings showing the duct size, duct gauge, length, slope, cleanouts, and connection with the hood and exhaust fan. [NFPA 96 Chapter 7]
- 2. The exhaust duct must lead as directly as practical to the building's exterior to decrease the fire hazard and must comply with the following. [NFPA 96 7.1.2]
 - A. Exhaust ducts must be constructed of and supported by 16-gauge carbon steel or 18-gauge stainless steel. [NFPA 96 7.5 and SMC 505.1]
 - B. An opening for cleaning must be provided at each change of direction. [NFPA 96 7.3.1 and SMC 505.5.10]
 - C. All exhaust duct seams, joints, and penetrations must have liquid tight external welds. [NFPA 96 7.5.2.1 and SMC 505.2]
- 3. An access panel must be provided for hoods with dampers on exhaust or supply collars and for all openings required for accessibility. [NFPA 96 7.1.5 and SMC 505.4]

V. Fixed Fire Extinguisher System

- 1. Provide a shop drawing for the fixed fire extinguisher system. It must comply with UL 300 and must protect the cooking equipment, duct system, grease removal devices, and the exhaust hood. [NFPA 96 10.1 and SMC 507.3] Shop drawings must be provided by a licensed Tennessee firm.
- 2. A fixed fire extinguisher system that is installed at the manufacturing facility during construction of the commercial cooking exhaust hood must be installed by a Tennessee licensed firm. [TCA 62-32-204]