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NFPA No.
96

VENTILATION OF COOKING EQUIPMENT 1964



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NATIONAL FIRE PROTECTION ASSOCIATION
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Standard for
Ventilation of Restaurant Cooking Equipment

NFPA No. 96 — 1964

1. Where Required.

→ 11. Restaurant cooking appliances such as ranges, deep fat fryers, grills and broilers shall be provided with exhaust ventilating equipment to carry away the grease laden vapor effectively in a safe manner.

2. System Design.

21. The system shall be so designed as to confine cooking vapors and residues within the hood or other primary collection means installed at the cooking appliance.

22. The hood or other portion of the system designed for primary collection of cooking vapors and residues shall be constructed of steel, stainless steel or copper with tight joints and shall have a clearance of at least 18 inches to unprotected combustible material unless protection is provided in accordance with Appendix B.

23. Duct systems should be designed to create a conveying air velocity in the exhaust ducts of not less than that specified in Appendix A.

24. In duct systems grease filters or other means of grease extraction shall be provided in addition to approved fire extinguishing equipment conforming to paragraphs 61 and 62. Exhaust systems without duct work shall be provided with approved fire extinguishing equipment conforming to paragraphs 61 and 62.

NOTE: In duct systems it will generally be necessary to provide an approved fixed pipe extinguishing system. One example of an installation which would not require a fixed pipe extinguishing system is a duct system equipped with a listed grease extractor. Exhaust systems without duct work in many instances may be adequately protected by approved portable fire extinguishing equipment. Care should be taken to assure that the exhaust will not create an exposure hazard.

25. Grease filters or other means of grease extraction, if used, shall be of noncombustible construction designed for the specific

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purpose. The distance between the lower edge of the grease filters and the cooking surface should be as great as possible and, where practicable, the filters should be shielded from flames resulting from localized grease fires during cooking operations. In the case of horizontal charcoal or charcoal type broilers this distance shall be at least 4 feet.

3. Ducts.

31. Ducts from hoods or other primary collection devices shall be constructed of No. 18 U. S. gage or heavier steel, or No. 20 U. S. gage stainless steel, with tight joints, and separated at least 18 inches from all unprotected combustible material unless protection is provided in accordance with Appendix B. Inside laps in duct joints shall project in a direction against the air flow.

32. Ducts shall lead as directly as possible to outside.

33. Exhaust ducts shall constitute an independent exhaust system leading to the outside and shall not be connected with any other ventilating system.

34. Hand-holes, for inspection and cleaning purposes, equipped with tight-fitting sliding or swinging doors and latches, shall be provided in horizontal sections of exhaust ducts. Such openings should be at the sides of the horizontal run in order to prevent dripping of residue. Spacing of such openings shall not exceed 20 feet. Opening shall have a minimum dimension of 6 inches.

35. Vertical risers should be located outside of the building and adequately supported. If absolutely necessary to locate the riser inside the building, it shall be enclosed in a shaft preferably constructed of masonry at least the equivalent of 4-inch hollow tile, extending continuously from the first floor pierced and through the roof. Access openings shall be provided in the enclosure at each clean-out point. (See Fig. 1.)

36. At the base of each vertical riser a residue trap shall be provided, with provisions for cleanout.

37. Exhaust ducts shall not pass through fire walls. Where ducts pass through partitions or walls of combustible construction the clearance shall be 18 inches unless protection is provided in accordance with Appendix B.

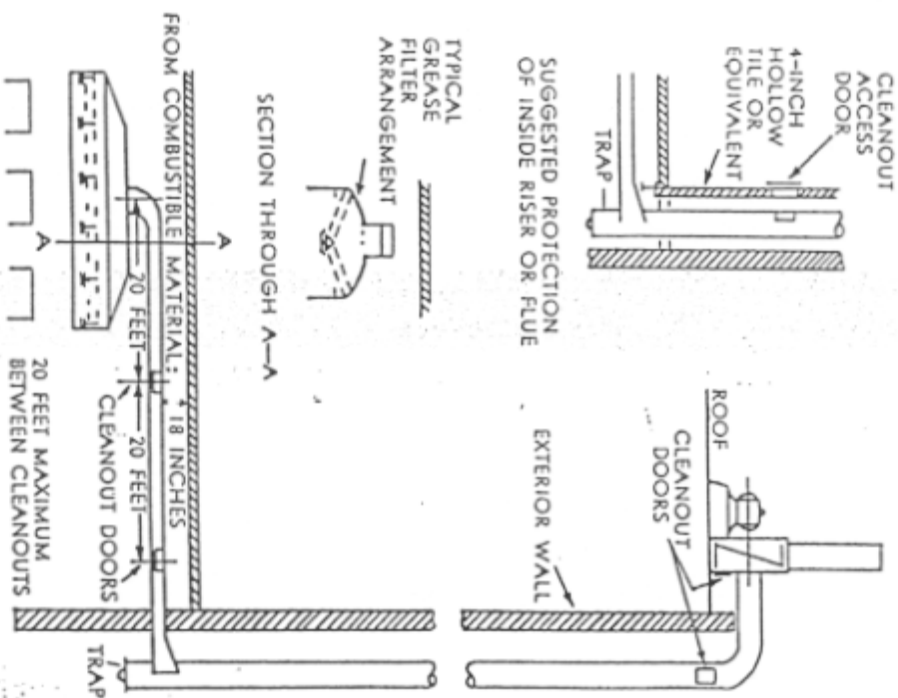


Fig. 1. Typical kitchen range exhaust system arrangement.

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4. Dampers.

41. Except as provided in paragraph 43 an automatic fire damper designed to close tightly at an exhaust air temperature not exceeding 375°F shall be installed at the inlet or inlets of the exhaust duct and constructed as follows:

Steel of No. 16 Manufacturer's Standard Gauge in ducts up to 18 inches in diameter or greatest width, No. 12 Manufacturer's Standard Gauge in ducts up to 36 inches in diameter or greatest width, and No. 7 Manufacturer's Standard Gauge in ducts above 36 inches in diameter or greatest width.

42. Provision should be made to shut down the exhaust fan motor upon the automatic or manual closing of the automatic fire damper.

43. The damper required in paragraph 41 may be omitted or replaced by a damper at the outlet of the exhaust duct if essential to the proper operation of a fixed pipe inert gas or dry chemical extinguishing system.

44. Dampers shall not be adjustable to any position except fully opened or fully closed and shall be readily accessible for inspection and cleaning.

45. Provision shall be made to permit periodic cleaning of all dampers and inspection and test of operating parts.

46. Other than the dampers described in paragraphs 41 and 43 no dampers shall be installed in the exhaust duct.

5. Electrical Equipment and Control.

51. In addition to the fan motor control located near the fan, a remote control shall be installed near the cooking appliance. Automatic shutdown of the motor by means of one or more thermal operated units, located over the cooking appliance, is recommended.

52. All electrical equipment including lighting fixtures shall be installed in accordance with the National Electrical Code (NEPA No. 70), with due regard to the effects of fumes and grease on equipment located in the hood or otherwise in the path of fume travel.

NOTE: Grease, vapor and heat may have a deteriorating effect upon ordinary electrical insulation; excessive deposits on electrical fixtures and

devices tend to increase operating temperatures above normal. "Vapor-tight" fixtures reduce the accumulation of grease deposits on internal electrical parts and insulation. Electrical equipment may be placed outside the path of fume travel by locating it on the outside of the hood with illumination through suitable glass panels in the hood.

6. Fire Extinguishing Equipment.

61. Approved fire extinguishing equipment of the following types should be provided:

a. Fixed pipe inert gas, dry chemical, or fine water spray systems, either manually controlled or provided with combined manual and automatic control; or

b. Portable inert gas or dry chemical extinguishers or portable water spray equipment.

62. The equipment shall be of such type and extent as to be acceptable to the authority having jurisdiction.

NOTE: See Standard for Carbon Dioxide Extinguishing Systems; Standard for Water Spray Systems for Fire Protection; and Standard for Dry Chemical Extinguishing Systems appearing in National Fire Codes, Volume 7, Alarms & Special Extinguishing Systems, and as separately published NFPA Standards, Nos. 12, 15 and 17 respectively. See also Standard for Portable Fire Extinguishers in National Fire Codes, Volume 8 and published separately as NFPA No. 10.

7. Inspection and Cleaning.

71. The entire exhaust system shall be inspected periodically and cleaned as needed to remove deposits of residue and grease in the system. Thorough cleaning of ducts, hoods, and fans usually requires scraping, brushing, or other positive means.

72. Grease filters or other grease extraction means shall be cleaned whenever inspection indicates the need.

73. The automatic fire damper located at the hood outlet shall be tested at least twice a year to insure freedom of movement and proper functioning of all parts.

74. Release devices shall be checked at least twice a year for proper operation. Fusible links, if employed, shall be replaced or properly cleaned.