

Commercial Cooking Fire Safety



Why do I need a UL 300 fire-extinguishing system for my commercial kitchen?

NFPA 96, Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations, specifies that automatic fire-extinguishing systems shall be used for the primary protection of grease removal devices, hood exhaust plenums and exhaust duct systems, and shall comply with UL 300, the Standard for Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment, or another equivalent standard. NFPA 96 also specifies that the primary protection of cooking equipment that produces grease-laden vapors, which might be a source of ignition of grease in the hood, grease removal device or duct must comply with UL 300, or another equivalent standard. Automatic fire-extinguishing systems need to be installed per the requirements of the listing, i.e., as published by an organization such as UL Solutions, which is concerned with evaluating the products and maintaining periodic inspections of production.

Why and when does it need to be inspected, maintained and recharged?

To maintain automatic fire-extinguishing systems in proper working order, NFPA 17A, Standard for Wet Chemical Extinguishing Systems, specifies a range of inspection, maintenance and recharging requirements including a monthly physical inspection.

Frequency	Action	References ^[1]
Monthly	Physical inspection	Owner’s manual and NFPA 17A
Semi-annual	Maintenance	Design, installation and maintenance (DIM) manual and NFPA 17A
After system leakage or discharge	Recharging	DIM manual and NFPA 17A
Every 12 years	Hydrostatic pressure test ^[2]	DIM manual and NFPA 17A

[1] – Manuals referenced are for the automatic fire-extinguishing system.

[2] – This test will be conducted on agent storage containers, auxiliary pressure containers and hose assemblies.

Please note that per NFPA 17A, wet chemical fire-extinguishing systems for the protection of cooking operations need to be listed and meet or exceed the requirements of UL 1254, the Standard for Pre-Engineered and Engineered Dry and Pre-Engineered Wet Chemical Extinguishing System Units, and UL 300. For additional details regarding these types of products certified by UL Solutions, search UL Product iQ® database - <https://productiq.ulprospector.com/en> - under GOAS or GMXH.

Why do we need a hood and duct exhaust system?

Hood and duct exhaust systems are designed and installed to reduce the likelihood of combustible condensation accumulation and the occurrence of damage if a fire occurs within the system. As described in NFPA 96, hoods are devices for a cooking appliance to direct and capture grease-laden vapors and exhaust gases. Filters are removable components of the grease removal system designed to capture grease and direct it to a safe collection point. Grease ducts are containment systems for the transportation of air and vapors.

Why does it need to be serviced quarterly/semi-annually?

NFPA 96 specifies that the entire exhaust system needs to be inspected for grease buildup at intervals defined by the type of cooking operation and production volume, ranging from monthly to annually. The primary focus of an inspection for cleanliness is to establish whether the volume of grease buildup within the exhaust system warrants cleaning. When cleaning is needed, confirm adequate exhaust system access is available to remove the grease buildup. Hoods, grease removal devices, fans, ducts and other appurtenances must be cleaned to remove combustible contaminants before surfaces become heavily contaminated with grease or oily sludge.

How can a clean kitchen that is free of grease on the cooking equipment and filters help reduce fires?

Simply put, grease-laden cooking vapors, exhaust gases and residues are primary combustible hazards in a commercial cooking environment. It is the tendency for these combustible elements to build up on each other and further limit the ability of the cleaning and exhaust systems to function at total capacity.

Why do I need a Class K-rated fire extinguisher specific for the commercial kitchen area?

NFPA 96 states that a Class K-rated fire extinguisher must be available as a backup device for cooking appliance hazards involving combustible cooking materials, specifically vegetable oils and animal fats. In addition, a placard must be conspicuously placed near each Class K extinguisher that states that the fire protection system shall be activated before using the fire extinguisher.

References:

- NFPA 96:2024, Ventilation Control and Fire Protection of Commercial Cooking Operations
- NFPA 17A:2024, Wet Chemical Extinguishing Systems
- UL 300:2022, the Standard for Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment
- UL 1254:2022, the Standard for Pre-Engineered and Engineered Dry and Pre-Engineered Wet Chemical Extinguishing System Units

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