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T E C H N I C A L B U L L E T I N

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Source Document: 19 NYCRR 1225 - *Fire Code of New York State (FCNYS)*
19 NYCRR 1223 - *Mechanical Code of New York State (MCNYS)*

Topic: Kitchen Fire Suppression Systems

This document provides Code Enforcement Officials, installers, and end users clarification on proper installation, inspection, testing, and maintenance regulations regarding fire suppression systems protecting cooking equipment as found in the FCNYS and the MCNYS.

Further definition of terms used in the FCNYS:

Commercial food heat-producing appliances— In addition to the definition found in FCNYS Section 602.1, the term “commercial” refers to appliances that have been listed and/or labeled for commercial use. This classification can be used in helping determine the applicability of a Type I hood. The following are some of the standards relating to various types of food heat-producing appliances published by the American National Standards Institute (ANSI) and Underwriter’s Laboratories (UL):

Residential (a/k/a household, domestic) cooking gas appliances	ANSI Z21.1a
Standard for electric household cooking and food appliances	UL 1026
Standard for commercial electric cooking appliances	UL 197
Standard for gas food service equipment	ANSI Z83.11
Standard for household electric ranges	UL 858

Grease-laden vapors or smoke— Whereas these conditions are not defined, production of grease-laden vapors or smoke means that there is sufficient release of these products such that they cannot be handled by a Type II hood. Variables that can lead to defining whether or not an appliance produces sufficient grease-laden vapors or smoke can be based on the duration and frequency of use as well as the overall production rate and temperature of the products. The production of any or minimal grease-laden vapors or smoke does not necessarily trigger the requirements for a Type I hood.

What are the requirements for new fire suppression systems in commercial hood systems?

Fire suppression systems (System) shall be installed in accordance with FCNYS Section 904.11. An engineered-type System is an option; which shall be designed to any of the options given in the section. These Systems are required to be designed under the supervision of, and stamped by a registered design professional to the appropriate reference standard and applicable code requirements, similar to a design of an automatic fire sprinkler system.

The most common type of System is a pre-engineered System. These Systems shall have an Underwriter’s Laboratories UL-300 listing at the time of installation. The installation shall meet the parameters of the listing,

usually referencing the manufacturer's instructions and or labels on the equipment itself. The System shall, at no time, be extended, configured, or otherwise modified outside the specific limitation published for the System. A System that previously held a UL-300 listing but was de-listed prior to the date of installation is not acceptable.

When installing a new System, does the System interconnection need to shutdown the power or fuel source to all appliances under the hood or just the appliances that are required to be protected by the System?

FCNYS Section 904.11.2 requires the shutdown of all appliances under the hood that have a fuel or power source. Since most Systems activate for a set amount of time and terminate after expulsion of all of the suppression agent, minimization of all fuel and power sources is paramount in preventing other appliances from contributing to the duration and/or intensity of any fire that occurs under the hood.

What additional modifications need to be added, or provided in addition to the System regarding the NYS modification in FCNYS Section 904.11 pertaining to exhaust ducts?

The NYS modification is to ensure that the exhaust ducts connected to a Type I hood are also protected. A pre-engineered System is listed to protect up to a certain length of duct, due to the limitations of the test. The NYS modification serves as a reminder to protect the duct, whether it be pre-engineered or engineered, for the whole length of the duct.

Are there any state-wide licensing requirements or other certification required for fire suppression equipment installers or inspectors?

No, there is no state-wide licensing of fire suppression equipment installers or inspectors. However, some municipalities in the State have local requirements for installers and inspectors to operate within said jurisdictions.

How does the FCNYS handle dry-chemical Systems?

Dry-chemical Systems that were listed under the UL-300 test standard prior to 1996 and still remain can continue to be inspected and maintained in certain situations. Two situations that would require the installation of a new System would be:

1. The use of a dry-chemical System to protect a deep fryer that uses a cooking media other than animal fat, including partial blends or changes.
2. The use of a dry-chemical System to protect appliances that have been added or replaced since the adoption of the FCNYS (January 1, 2003).

The requirement for replacement is found in a combination of the FCNYS and NFPA 17:

1. FCNYS Section 901.6.1– Inspection, testing, and maintenance of dry-chemical extinguishing Systems shall be in accordance with NFPA 17.
2. NFPA 17 Chapter 9-3– Inspection, performed at least semiannually, shall include verifying that the hazard has not changed. [A change from animal fat to vegetable oil or other cooking media is a change of hazard.] This would render the System non-compliant by the System inspector.
3. FCNYS Section 901.6– Fire extinguishing Systems shall be maintained in an operative condition at all times, and shall be replaced or repaired where defective. Since the System cannot be repaired to provide protection, it shall be replaced.

How does the FCNYS handle wet-chemical Systems tested to the previous UL-300 listing criteria?

Since these Systems were tested to the same standard as the dry-chemical Systems, they shall be treated the same. The performance of these Systems to have the same effectiveness as a wet-chemical System tested to the current UL-300 criteria cannot be obtained.

Can parts or suppression agents that are not listed or not permitted by the manufacturer's instructions be used in existing suppression Systems?

No. Only parts and suppression agents that are listed and permitted by the manufacturer's instructions are permitted to be used in any System.

As a regulator, can I require the installation of a Class K portable fire extinguisher in a kitchen?

Yes. FCNYS Section 906.1 requires an extinguisher within 30 feet of commercial cooking equipment as well as an extinguisher installed in accordance with FCNYS Section 904.11.5. A location used for using fats or oils for cooking purposes shall be protected by a Class K rated portable fire extinguisher. This applies to existing kitchens, independent of the type hood or fire suppression equipment installed. A kitchen that does not have cooking equipment utilizing fats and oils shall also be protected but may utilize a BC combination class portable fire extinguisher. Since FCNYS Section 904.11.5 is more specific than FCNYS 906.4 regarding the types of extinguishing agent, a Class K portable fire extinguisher is appropriate for appliances protected by a dry-chemical System.

Is there any exemption for day-care centers utilizing residential-type food heat-processing appliances?

No. This was a specific exemption in the Title 9(B) version of the Uniform Code and a commensurate section does not exist in the FCNYS. The only exemption from type I hood, regardless of the equipment served, is when the appliance is located within a dwelling unit.

However, the need for a Type II hood rather than a Type I hood (which requires the System) should be evaluated for this condition as well as other uses that may not produce sufficient grease-laden vapors or smoke. In the case of a day-care center, the warming of bottles and/or lunches could, in most cases, be sufficiently ventilated by a Type II hood.

As a regulator, can I require the installation of a System in an existing hood that was installed, along with the appliances below, before the adoption of any code provisions requiring it?

No. The operation of a hood and appliances that were installed prior to the adoption of the kitchen fire suppression system requirements of the Uniform Code is a pre-existing, non-conforming condition. Since the installation of a System is considered construction, the FCNYS does not require retroactive System installations. However, a change to the hood and/or appliances below it would trigger new installation requirements per the FCNYS.

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