



The EPH Regulator

News and technical information for the Environmental and Public Health regulatory community.



Fire Protection Systems for Commercial Cooking Operations

While health officials are not regularly involved in the design, installation, and inspection of fire protection systems for commercial cooking equipment, it is appropriate that they have a basic understanding of the types of systems that are applicable for this type of use.

Understanding the types of systems Listed for use in these applications as well as the philosophy behind their intended usage can help. This article focuses on two particular types of systems that can be used to provide protection of commercial cooking equipment: (1) pre-engineered extinguishing systems, and (2) fire sprinkler-based extinguishing systems.

Pre-engineered extinguishing systems

The UL 300 Standard (*Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment*) is a fire test method that applies to pre-engineered extinguishing system units intended for the protection of commercial cooking areas.

The scope of UL 300 clearly indicates this intended application. In addition to fire test methods and requirements to protect the various types of cooking appliances, this Standard includes tests and criteria for evaluating the ability of the pre-engineered equipment to protect plenums and ducts. The requirements in UL 300 take into consideration the characteristics of pre-engineered systems, including its self-contained supply of extinguishing agent. Since the quantity of extinguishing agent is generally limited, and the effective discharge of the agent is over a short period of time, these systems are required to quickly extinguish test fires, as part of the UL 300 evaluation.

Sprinkler-based extinguishing systems

Automatic sprinkler systems installed to protect commercial cooking appliances are designed to discharge water over long periods of time as required in NFPA 13, Standard for the Installation of Sprinkler Systems. These systems are intended to achieve the desired level of safety and fire control by cooling the fire source and wetting the surrounding combustibles with relatively large quantities of water. NFPA 13 requires that sprinklers or automatic spray nozzles be specifically Listed for protecting deep fat fryers. In 2004, UL published Subject 199E, *Outline of Investigation for Fire Testing of Sprinklers and Water Spray Nozzles for Protection of Deep Fat Fryers*. Subject 199E includes fire test methods and requirements

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for automatic sprinklers and water spray nozzles intended to provide fire protection for deep fat fryers and similar appliances.

Since the severity and type of deep fat fryer fires that are expected to challenge pre-engineered and sprinkler systems are similar, the specifications for the fryer and two-minute pre-burn period described in both UL 300 and Subject 199E are the same. UL 300 requires a deep fat fryer test fire to be fully extinguished upon complete discharge of the extinguishing agent, as well as not permitting re-ignition of the grease.

In comparison, Subject 199E deep fat fryer test fires are required to be fully extinguished

within 15 minutes, and be effectively controlled prior to achieving full extinguishment.

UL Listings for these automatic sprinklers or spray nozzles are included in the product category VNSY. "Attachments to Sprinkler Systems Protecting Commercial Cooking Equipment."

Application considerations

UL standards and test requirements are developed taking into consideration the attributes of the end-use products as well as the requirements described in the nationally recognized installation codes and standards. In addition to the previously mentioned requirements in NFPA 13, both NFPA 96 (*Standard for Ventilation Control and Fire Protection of*

Commercial Cooking Operations) and the International Fire Code (IFC), include specific installation requirements for protecting commercial cooking equipment with a variety of fire protection systems, including both pre-engineered and sprinkler-based systems.

To determine the applications for which the systems are Listed, including details on equipment to be protected, minimum system requirements and proper nozzle placement, you should refer to the manufacturers' installation manual as identified in their Listing information in UL's Online Certifications Directory at www.ul.com/database.

(Portions of this article are adapted from an article in *The Code Authority* Fall 2004, by Kerry Bell).

Questions & Answers

I tried to locate a listing on your website (www.ul.com) using the "Search UL" function on your home page. I could not locate the listing even after trying to search using the manufacturer's name, model number and UL file number. This was confusing because a distributor provided a document on UL letterhead showing that the product was UL Listed. What gives?

The confusion relates to the fact that there are two separate search functions on the UL website. The "Search UL" function only searches for keyword information, such as manufacturer's name, in the ul.com web pages, not UL's Certification Directory.

The www.ul.com website includes information for clients, regulators, consumers, and industry

contacts; in short, the information is specific to UL as an organization, rather than to manufacturers' certified products.

The information you were trying to verify is found in the Certifications Directory database. To access the Certifications Directory, click on the word "Certifications" link located in the middle of UL's home page. This directory allows you to search by company name, file number, and keyword, as well as other search parameters. If you have difficulty finding what you need, check out the "Quick Guide" link, located on the main "Online Certification Directory" page, for tips on searching.

We want our website to be user friendly and we welcome your comments and feedback.

Environmental and Public Health Code Authorities Web Page

For many years, UL has provided a web page with information relevant to Environmental and Public Health regulatory officials. We are pleased to announce that this page has been updated as of February 1, 2010. You will find it much easier to access information on certified products, as well as additional technical information on food, water, and swimming pool topics.

Give it a try **here** ... and let us know what you think!

