Recirculating Hood Systems

Recirculating hood systems, also referred to as “ductless hoods,” are being used in an ever-increasing number of specialty commercial cooking applications, such as deep-fat fryers and griddles.

These systems capture the cooking effluent from a cooking appliance, process the captured air through various filters and vent the filtered air back into the room where the appliance is located. These systems can be either portable or permanently installed, and include an integral fire extinguishing system to protect the hood system and appliance area.

Recirculating hood system requirements were originally introduced in the 1994 edition of National Fire Protection Association (NFPA) 96, Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations, and have subsequently been introduced in the International Fire Code (IFC), the International Mechanical Code (IMC) and the Uniform Mechanical Code (UMC). They were previously investigated in accordance with requirements in UL 197, Standard for Safety for Commercial Electric Cooking Appliances. Requirements covering these appliances were later updated and moved to UL 710B, Standard for Safety for Recirculating Systems.

Recirculating hood systems are Listed by Underwriters laboratories Inc. under two product categories. Complete, selfcontained systems are Listed under “Commercial Cooking Appliances with Integral Recirculating Ventilation Systems (KNKG).” These units include the cooking appliance, hood and fire extinguishing system. Systems Listed under “Hoods/Recirculating Systems for Use with Specified Commercial Cooking Appliances (YZCT)” cover only the hood, recirculating and extinguishing systems, which have been investigated for use with a specific cooking appliance that is provided separately. These products are intended for installation in accordance with Section 904.11 of the IFC, Sections 501.2 and 507.1 of the IMC, and Section 516.0 of the UMC. They are also intended for installation in accordance with NFPA 96.

Both systems comply with the same construction and performance requirements. If the cooking appliance is provided separately, however, information on the recirculating hood label and in the instruction manual specifies the particular cooking appliances that have been investigated and found suitable for use with the recirculating hood system.

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Recirculating Hood Systems (continued)

In general, many construction and electrical performance requirements for ductless and ducted hoods are similar. However, for ductless hoods, there are additional requirements for the recirculating hood system and the fire extinguishing system.

A recirculating hood system includes a fan, a collection hood and an air filtering system consisting of a grease filter, and may incorporate other air filtering devices. An additional capture and emissions test, based on U.S. Environmental Protection Agency (EPA) Test Method 202, is conducted to ensure the emission of grease-laden effluent does not exceed an average of 5 mg/m3 during an eight-hour test cooking period.

These systems incorporate an automatic fire extinguishing system that has been evaluated for the specific combination of the hood and the cooking appliances. The fire extinguishment test criteria is similar to UL 300, Standard for Safety Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment, but is customized to recognize the limitations of the heat production and retention limitations of the specific cooking appliance that is provided as part of the system.

Recirculating hood systems may also be UL Classified for sanitation to NSF/ANSI 2, Food Equipment, under the product category "Fabricated Food Service Equipment (TSQU)." Guide Information for this product category can be found in UL's Online Certifications Directory at www.ul.com/database. Products Classified under this standard are evaluated with respect to materials used in construction, and design and construction of food, non-food, and splash zones. They must also comply with the performance requirements specified in this standard.

Hoods that have been Classified by UL to ANSI/NSF 2 will bear UL's EPH Mark in addition to any other UL Listing Mark.

As with all types of exhaust hoods, the operating instructions must be carefully reviewed for information regarding proper maintenance of the fire extinguishing system. The building design must also provide sufficient ventilation, heating and cooling capacity for the intended installation.

Additional information on commercial cooking equipment can be found in UL's Commercial Cooking Equipment Marking Guide and Application at **www.ul.com/regulators/CommercialCooking.pdf**