Kitchen Exhaust System Cleaning Best Practices

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Company Description

Life Safety is a leader in fire protection and security solutions in the restaurant industry. Our team of experts can assist with inspections, maintenance and design of all fire protection and security systems, including kitchen hood systems, fire alarms, fire sprinklers, extinguishers, CCTV and security systems.

Project Description

According to the National Fire Protection Association (NFPA), the majority of restaurant fires originate on kitchen cooking appliances. If there is grease build-up present, these fires can quickly spread into poorly maintained exhaust system ductwork and rapidly travel onto the roof.

Although restaurant fire-suppression systems protect commercial cooking stations, most exhaust ventilation ducting leading up to the fan on the roof is not protected. Even if the fire is put out by the suppression system, improperly cleaned exhaust systems are at an elevated risk. In fact, failure to properly clean exhaust systems led to 22 percent of all restaurant fires between 2010 and 2014, according to research conducted by the NFPA. In the United States, an estimated 7,410 structure fires in eating and drinking establishments are reported every year to fire departments. Annual losses include three civilian deaths, 110 civilian injuries and $165 million in property damage.

NFPA 96 Section 4.1.5 states the responsibility for inspection, testing, maintenance and cleanliness of the ventilation control falls on the owner of the system, provided that this responsibility has not been transferred in written form to a management company, tenant or other party. That means it's the owner's responsibility to keep the system clear of grease and particulate buildup to reduce the risk of a fire. An incomplete cleaning performed by a contractor will not protect the owner from the cost and litigation of a fire. In fact, many insurance providers include provisions that exclude claims if there is negligence involved in the cause or spread of a fire.

Best Practices Summary

The first and most important step in any facilities maintenance program to is fully understand and articulate the code requirements and scope of work internally and to prospective providers. According to NFPA 96 Section 11.6, hoods, grease removal devices, fans, ducts and other appurtenances shall be cleaned to remove combustible contaminants to a minimum of 50 µm (0.002 inches) and at frequent intervals prior to surfaces becoming heavily contaminated with grease or oily sludge. Exhaust hood cleaning requirements should be determined based on periodic inspections of the exhaust system.

Table 11.4: Schedule of Inspection for Grease Buildup in NFPA 96 provides guidelines for inspection frequency

Monthly	Systems serving solid-fuel cooking operations
Quarterly	Systems serving high-volume operations, including 24-hour cooking, charbroiling and wok cooking
Semi-Annually	Systems serving moderate-volume cooking operations
Annually	Systems serving low-volume cooking operations, including churches, day camps, seasonal businesses and senior centers

The systems should be inspected per the frequencies listed in Table 11.4 using a grease depth gauge comb to measure grease depth. When cleaning is required based on the measured grease depth as outlined in Section 11.6, the contaminated portions of the exhaust system shall be cleaned by a properly trained, qualified and certified professional acceptable to the authority having jurisdiction in accordance.

It's reasonable to establish a cleaning program based on the guidelines established for the inspections and use the findings to increase or decrease the cleaning frequency accordingly. Depending on the installation, additional access panels may be required. Building codes state that the interior of the system shall be reasonably accessible for inspection and cleaning. As a rule, if the ductwork interior cannot be inspected, it cannot be cleaned.

NFPA guidelines state that access panels are required at minimum every 12 feet of horizontal ductwork, on every floor of vertical ductwork and at every change of direction. They also need to be adequately sized to allow for access for thorough cleaning. It's critical to develop a standard scope of work that all prospective service providers can bid on to ensure equivalent comparison.

The scope of work should include:

- Cleaning personnel should have personal protective equipment, including eye, head, hand and foot protection, respiratory protection, ladders, fall protection and lock-out/tag-out kits. Prepare site for safety, which includes locking/ tagging out fans, turning off cooking appliances, locking out breakers, extinguishing fires and removing all fuel.
- Remove or cover food products, cookware and cooking support equipment.
- Disassemble, clean and degrease hoods, including hood filter tracts, grease troughs and removable grease cups.
- Remove roof and/or wall-mounted fans from ductwork to degrease the base, shroud and blades.
- Inspect exhaust fans for loose or worn-out fan belts.
- Clean and degrease all hood filters, hood parts and accessories, and replace if necessary.
- Clean all accessible parts of ductwork from exhaust fans to each individual hood.
- Apply food-safe polish to stainless-steel ductwork.
- When cleaning procedures are completed, all electrical switches and system components shall be returned to an operable state and all access panels and cover plates shall be restored to their normal operational condition.
- Dampers and diffusers shall be positioned for proper airflow.
- Thoroughly clean all affected areas (remove plastic, mop, debris, etc.).
- Provide a complete, detailed written report of all work performed, as well as deficiencies in the exhaust system and recommendations for addressing any problems.
- Provide photo verification of work completion, including before/after photos for hood, filters, fan and inside ductwork at all access panels and entry points.
- Attach a completion certificate (hood sticker) to each hood cleaned. Additionally, to protect your business from liability, service providers should provide you with the following:
  - Company qualifications, including certifications

- Certificate of insurance and applicable licenses
- References

At the conclusion of the service, NFPA 96 Section 11.6.13 requires that a certificate showing the name of the servicing company, the name of the person performing the work, and the date of inspection or cleaning shall be maintained on the premises. Professional cleaning contractors post a certificate of performance (hood sticker) at or near the hood as proof of service. This hood sticker indicates the date of cleaning, company name, name of service technician, date of inspection, areas not cleaned and next service due date.

NFPA Section 11.6.14 also requires the exhaust cleaning company to provide the owner of the system with a written report that specifies areas that were inaccessible or not cleaned. Your cleaning contractor should submit a complete system service report after their service, documenting any mechanical issues, areas not cleaned (and why), issues of accessibility and other safety concerns. Ultimately, it is up to the restaurant owner to be compliant.

Best Practices Results

Effective cleaning of kitchen exhaust systems is an essential component to a facility maintenance program. Selecting a qualified and reliable service provider to perform the professional hood cleaning helps avoid future disasters that could lead to injury, death or property loss; mitigates liability; reduces maintenance and repair costs of hood exhaust systems; improves its efficiency and increases its useful life. Additionally, the cleanliness of the kitchen represents the professionalism of the business and impacts employees' attitude and performance.

Result Verification

Restaurateurs who follow these basic principles experience fewer maintenance issues and have lower rates of fire-related damage across their portfolio.

Lessons Learned

One of the most important elements of the program is the photo-verification piece. Facility maintenance professionals typically manage multiple locations, sometimes across a wide geographic region, so on-site visual verification is not only impractical but also time consuming. Acquiring photos of the hood exhaust system before and after cleaning ensures the service has been completed properly, protecting the service provider and the restaurant.