

# FIRE DEPARTMENT • CITY OF NEW YORK



## STUDY MATERIAL FOR THE EXAMINATION FOR CERTIFICATE OF FITNESS FOR

### **W-64 Commercial Cooking Exhaust System Cleaning Technician (Citywide)**

### **P-64 Commercial Cooking Exhaust Systems & Pollution Control Device Clean Technician (Citywide)**

**W-64** is for employment with a Commercial Cooking Exhaust System Cleaning and Servicing Company. This Certificate allows holders to work citywide under the supervision of the owner or principal of a recognized Cleaning Servicing Company.

**P-64** in addition allows the technician to clean specific type of pollution control devices. This Certificate has special requirements, it also allows the holders to work citywide and it supersedes W-64 Certificates.

**This book is provided to the public for free by the FDNY.**

ALSO INCLUDED IN THIS BOOKLET YOU WILL FIND THE FOLLOWING:  
NOTICE OF EXAMINATION (NOE)

**NEW!** THIS CERTIFICATE OF FITNESS STUDY MATERIAL HAS BEEN  
UPDATED TO REFLECT UPDATED NYC FIRE RULE REGULATIONS  
REGARDING COMMERCIAL COOKING EXHAUST CLEANING.

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## **EXAM SPECIFIC INFORMATION FOR W-64/P-64 CERTIFICATE OF FITNESS**

**Save time and submit application online!**

***Applicants who submitted and paid online for an exam before arriving at the FDNY will not need to wait in line to enter the FDNY.***

***It can take about 30 minutes to complete. Completing application and paying online will eliminate waiting outside in the long lines.***

Simplified instructions for online application and payment can be found here:  
<http://www1.nyc.gov/assets/fdny/downloads/pdf/business/fdny-business-cof-individuals-short.pdf>

Create an Account and Log in to:  
<https://fires.fdnyccloud.org/CitizenAccess/SAML/NYCIDLogin.aspx>

### **REQUIREMENTS FOR CERTIFICATE OF FITNESS APPLICATION**

#### **General requirements:**

Review the General Notice of Exam:  
<http://www1.nyc.gov/assets/fdny/downloads/pdf/business/general-notice-of-exam-cof.pdf>

### **About the Study Material**

The Study Material provided contains the information you will need to prepare for the written examination for the Certificate of Fitness for Inspection and Cleaning of Commercial Cooking Exhaust System (W-64). The study material includes information taken from NFPA 96, the NYC Mechanical Code sections 506 and 507, 2022 NYC Fire Code 609, NYC Fire Rules and NYC Building Code. Other information provided describes the recommended operation, installation, maintenance and cleaning of commercial cooking exhaust systems. Special thanks are given to IKECA for allowing the FDNY to abstract information from its publications.

The study material does NOT contain all the information you need to know in order to correctly and safely perform the work. It is your responsibility to become familiar with all the rules and regulations of the City of New York, as they apply to this certification, even if they are not covered in this manual.

This Study Material reflects many changes reflecting recent code and procedural revisions. It is important to read and understand the entire booklet as it will help applicants prepared for the test and enable all to perform their duties in a thorough and code compliant manner.

## TEST INFORMATION

The test will be of a multiple-choice type. You will take this test on a touch-screen computer. A passing score of at least 70% is required to receive a Certificate of Fitness.

You must pass a multiple-choice test to qualify for the Certificate of Fitness. All questions on the exam are multiple choice, with four alternative answers to each question. Each question has only one correct answer. If you do not answer a question, it will be scored as incorrect. Read each question carefully before marking your decision. There is no penalty for guessing.

The W64 exam consists of **40 questions**, and you will have **60 minutes**.  
The P64 exam consists of **50 questions**, and you will have **75 minutes**.

## **SAMPLE QUESTIONS**

*The following questions represent the “format” of the exam questions, not the content of the real exam.*

### **1. Which of the following are allowed to be used while taking a Certificate of Fitness examination at 9 Metro Tech Center?**

- I. cellular phone
- II. study material booklet
- III. reference material provided by the FDNY
- IV. mp3 player

- A. III only
- B. I, II, and III
- C. II and IV
- D. I only

Only reference material provided by the FDNY is allowed to be used during Certificate of Fitness examinations; therefore, the correct answer would be A. You would touch “A” on the computer terminal screen.

### **2. If the screen on your computer terminal freezes during your examination, who should you ask for help?**

- A. the person next to you
- B. the firefighters in the testing room
- C. the examiner in the testing room
- D. the computer help desk

If you have a computer related question, you must ask the examiner in the testing room. Therefore, the correct answer would be C. You would touch “C” on the computer terminal screen.

### **3. If you do not know the answer to a question while taking an examination, who should you ask for help?**

- A. the person next to you
- B. the firefighters in the testing room
- C. the examiner in the testing room
- D. it is forbidden to ask anyone regarding test questions

You should not ask about examination questions or answers since FDNY staff cannot assist applicants with test questions. Therefore, the correct answer would be D. You would touch "D" on the computer terminal screen.

## Contents

EXAM SPECIFIC INFORMATION FOR W-64/P-64 CERTIFICATE OF FITNESS .....	2
TEST INFORMATION .....	2
1. DEFINITIONS .....	6
2. INTRODUCTION .....	8
3. DESIGN AND INSTALLATION .....	11
3.1 EXHAUST HOODS .....	11
3.2 EXHAUST DUCTS .....	11
3.3 SOLID FUEL COOKING .....	11
3.4 EXHAUST SYSTEM COMPONENTS .....	11
A. <b>EXHAUST HOODS</b> .....	13
B. <b>GREASE FILTRATION SYSTEMS</b> .....	14
C. <b>EXHAUST DUCTS</b> .....	16
D. <b>EXHAUST FANS</b> .....	17
E. <b>FIRE EXTINGUISHING SYSTEM</b> .....	19
4. GREASE REMOVAL IN COMMERCIAL KITCHEN SYSTEMS .....	19
4.1 CLEANING METHODS .....	19
4.2 CLEANING FILTERS .....	20
4.3 CLEANING .....	21
4.4 GREASE REMOVAL .....	21
4.5 COMPANY CERTIFICATION .....	21
4.6 RANGEHOOD DECALS .....	22
4.7 IN CASE OF A FIRE WHILE YOU ARE PERFORMING A CLEANING: .....	23
5. POLLUTION CONTROL DEVICES .....	23
6. IMPORTANT INFORMATION TO BE PROVIDED TO KITCHEN OPERATORS .....	25
6.1 CHECKLIST .....	25
6.2 COF HOLDER CHECK LIST .....	26
7. FDNY Mobile Application Quick Guide .....	29
APPENDIX A .....	34
APPENDIX B .....	35
APPENDIX C .....	37
FREQUENTLY ASKED QUESTIONS AND RESPONSES .....	41

## 1. DEFINITIONS

**ACCESSIBLE.** Within comfortable reach, with limited dependence on mechanical devices, extension, or assistance.

**ACCESS PANEL.** A closure device used to cover an opening into a duct, an enclosure, equipment, or an appurtenance.

**APPROVED.** Acceptable to the authorities having jurisdiction.

**APPURTENANCE.** An accessory or a subordinate part that enables the primary device to perform or improves its intended function.

**CLEANING.** For cooking exhaust systems and cooking equipment, the act of removing grease, oil deposits, and other residues.

**COMMERCIAL COOKING APPLIANCES.** Appliances used in a commercial food service establishment for heating or cooking food, and which produce grease vapors, steam, fumes, smoke, or odors that are required to be removed through a local exhaust ventilation system. Such appliances include deep fat fryers; upright broilers; griddles; broilers; steam-jacketed kettles; hot-top ranges; under-fired broilers (charbroilers); ovens; barbeques; rotisseries; and similar appliances. For the purpose of this definition, a food service establishment shall include any building, or a portion thereof used for the preparation and serving of food.

**EXHAUST SYSTEM.** A continuous passageway for the transmission of air that, in addition to ducts, includes duct fittings, dampers, plenums, fans and accessory air-handling equipment and appliances.

**DUCT TERMINATION.** The final or intended end-portion of a duct system that is designed and functions to fulfill the obligations of the system in a satisfactory manner.

**EMISSION CONTROL DEVICE.** An emission control device (also known as pollution control device) such as a precipitator, air purification unit (APU), pollution control unit (PCU) are used to help kitchens and restaurants adhere to stricter air requirements by removing grease particles from the exhaust stream and radically improving the air quality that is being exhausted outdoors. Helps with odor control.

### **FILTERS:**

**GREASE FILTER.** A removable component of the grease removal system designed to capture grease and direct it to a safe collection point.

**MESH FILTER.** A filter construction consisting of a net made from intersecting strands with a space between each strand.

**GREASE.** Rendered animal fat, vegetable shortening, and other such oily matter used for the purposes of and resulting from cooking and/or preparing foods.

**GENERAL SUPERVISION.** Supervision by the holder of any FDNY Certificate of Fitness who is responsible for performing the duties of the certificate holder but need not be personally present on the premises at all times.

**HOOD.** An air-intake device used to capture by entrapment, impingement, adhesion or similar means, grease and similar contaminants before they enter a duct system.

**Type I.** A kitchen hood for collecting and removing grease vapors and smoke.

**Type II.** Kitchen hoods that are designed to exhaust equipment not generating grease-laden vapors, fumes and smoke such as from dishwashers, steamers and general kitchen space and may not require fire protection.

**INSPECTION.** The focus of an inspection is to establish whether the volume of grease buildup within the exhaust system warrants cleaning and to determine whether adequate access is available throughout the exhaust system to inspect and remove the grease buildup.

**LIQUIDTIGHT/GREASETIGHT.** Constructed and performing in such a manner as not to permit the passage of any liquid at any temperature.

**PERSONAL PROTECTIVE EQUIPMENT.** In accordance with OSHA, the PPE (personal protective equipment) that is required for the cooking exhaust cleaning and inspection includes, but not limited to the following: eye protection, respiratory protection, hand protection, foot protection, energy protection, fall protection, head protection.

**PERSONAL SUPERVISION.** Supervision by the holder of any FDNY Certificate of Fitness who is required to be personally present on the premises, or other proximate location acceptable to the FDNY, while performing the duties for which the certificate is required.

**PROOF OF COMPLIANCE.** FDNY-issued decals, tags or other forms of documentation that is individually marked and/or numbered to identify the company and person who performed certain fire safety inspections, testing, cleaning servicing and/or other required or regulated activities.

**SOLID FUEL COOKING.** Any solid, organic, consumable fuel such as briquettes, mesquite, hardwood, or charcoal.

**SPARK ARRESTOR.** Device or method that minimizes the passage of airborne sparks and embers into a plenum, duct and flue.

## 2. INTRODUCTION

This edition includes in depth knowledge of the required reporting by Certificate of Fitness holders at cleaning sites. It includes the newly revised procedures for **INCOMPLETE** jobs. It is **ESSENTIAL** that you and your company understand and follow them. Failing to can result in penalties including revocation or suspension.

According to the National Fire Protection Association, U.S. Fire Departments responded to an estimated 1,500,000 fires. These fires resulted in 3,790 civilian fire fatalities, 13,250 civilian fire injuries and an estimated \$18,000,000,000 in direct property loss. There was a civilian fire death every 3 hours and 14 minutes and a civilian fire injury every 53 minutes in 2023.

When considering all the possible causes of fire in eating and drinking establishments, the leading cause of restaurant fires occurred by cooking. Grease accumulations were found to be a contributing factor to the expansion of smaller fires into larger fires. When an exhaust system is cleaned regularly the chances of a duct fire become extremely low.

According to statistics, the peak time for fires is between 9:00 am and noon. These are the times when food is either prepared or served. Kitchen fires are less common between 9 p.m. and 8:59 a.m., when most establishments are closed. Cooking equipment was responsible in approximately half of the structural fires in eating and drinking establishments.

FOR NEWS STORIES OF ACTUAL FIRES THAT STARTED IN KITCHENS AND SPREAD TO DUCTS SEE APPENDIX B.

Grease removal in cooking exhaust system is a continually evolving subject. The key to the prevention of fires is a combination of properly designed, installed and maintained exhaust systems coupled with scheduled inspections and preventive maintenance.

Cooking exhaust systems cleaning is required by law for all premises with commercial cooking systems; such as restaurants, hospitals, hotels, employee cafeterias and other food-service locations that utilize hoods and ductwork over cooking equipment to release smoke, grease-laden vapors and fumes out of the building. These exhaust gases leave a grease residue on the inside of the ductwork.

A variety of cooking equipment plus different menu selections create differing amounts and types of residue. Where steam type cooking equipment leaves little to no grease residue, cooking equipment such as char broilers, woks, grills, fryers, ranges and upright broilers and other grease producing appliances can leave black, hard or rubbery deposits on the hood, in the duct and on the exhaust fan.



Solid fuel cooking using briquettes, mesquite, hardwood and charcoal produces large grease laden particles that quickly clog grease filters and leave the dirtiest type of cooking emissions.

Solid fuel cooking appliances must be serviced by their own independent cooking exhaust system and not connected with any other exhaust system. Systems of this type produce high levels of heat, grease, ash, creosote, and smoke.

The buildup of grease, ash and creosote on the filters, hoods, ducts, and fan is highly volatile. Once ignited this combination of fuel burns at a high temperature.

**WARNING:** Cleaning could be hazardous because of the presence of electrical components in these systems. Before commencement of cleaning prep work, all electrical connections associated with commercial cooking exhaust systems must be disconnected or turned off at the main power source.

Electrical shock can cause personal injury or death. Only certified Certificate of Fitness holders should conduct or supervise the cleaning of commercial cooking exhaust systems. All safety codes must be followed. Only P-64 COF holders are allowed to service electrostatic precipitator units.

Additionally, all personnel must wear safety glasses, work gloves and other appropriate personnel protective equipment (PPE) during cleaning.

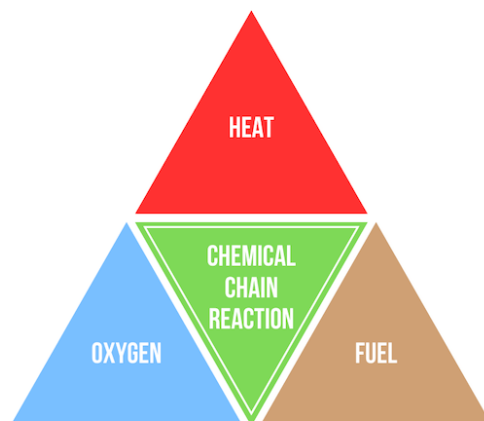
Prior to an inspection the exhaust fan needs to be locked out and tagged out. An inspection cannot occur until all fan motion has stopped. (The motor compartment of the exhaust fan must be opened, and a visual inspection must be performed on the belts and drives).

Deficiencies such as cracked or loose belts must be noted where required in the technician's service report. Notification of such deficiencies must be provided as soon as practical to the owner/operator of the system and to the person's supervisor.

An ABC portable fire extinguisher should be made available for a non-grease fire. During a grease fire, the fire extinguishing system needs to be activated. The use of flame-retardant powder to coat interior surfaces of cooking exhaust systems is prohibited at all times.

When performing duct cleaning, special care must be taken with regard to personnel entering any duct. All OSHA rules and other applicable regulations must be followed to ensure safety.

**Fire Tetrahedron** (If you remove **any** side of the tetrahedron, a fire cannot occur). To have a fire, you need all three components to be present: heat, oxygen, and a fuel source which then causes a chemical chain reaction (combustion). If you remove any component such as heat, oxygen or fuel, a fire will not occur.



It is **UNLAWFUL** to operate commercial cooking equipment that generates smoke, grease-laden vapors or fumes:

- without a permit for the operation of the commercial kitchen cooking system
- without a lawful fire extinguishing system
- without a lawful exhaust system
- without the required grease filters
- while its fire extinguishing system or exhaust system is **out of service**

The New York City Fire Code prohibits the operation of any exhaust system without approved filters.

### **3. DESIGN AND INSTALLATION**

Commercial cooking systems must be designed and constructed in accordance with the construction codes, including the NYC Building Code and the NYC Mechanical Code and Underwriters Laboratory.

#### **3.1 EXHAUST HOODS**

Commercial cooking exhaust hoods must be designed, installed, operated and maintained in accordance with the construction codes, including the NYC Building Code and the Mechanical Code.

#### **3.2 EXHAUST DUCTS**

Commercial cooking exhaust ducts must be provided with cleanout openings in accordance with Chapter 5 of the NYC Mechanical Code, to allow for cleaning and other maintenance that must be Liquid Tight Welded Construction.

#### **3.3 SOLID FUEL COOKING**

All solid fuel cooking equipment serviced by hood and duct system must be separate from all other exhaust systems. Exhaust systems used in solid fuel cooking must be cleaned prior to them becoming heavily contaminated.

**NOTE:** Solid-fuel appliances are extra-heavy duty, producing heavy grease and/or creosote and requires monthly inspections. COF holders may recommend cleanings when grease exceeds 1/8<sup>th</sup> of an inch and/or 50 microns. If a pollution control device is provided, only a Certificate of Fitness holder trained by a manufacturer of the specific device installed at the site can perform the monthly inspections and cleanings.

#### **3.4 EXHAUST SYSTEM COMPONENTS**

A typical cooking ventilation system (Type I Hood) includes an exhaust hood, ductwork, exhaust fan, a fire system, and the means of providing adequate make-up air.

*The entire system must constitute a fire-safe assembly within the building.*

The basic commercial cooking exhaust system is composed of the following components:

- A. Exhaust Hoods
  - Type I
  - Type II
- B. Grease Filtration Systems
- C. Exhaust Duct
- D. Exhaust fan
- E. Make up Air

Auxiliary components as follows:

1. Fire Extinguishing Systems



TYPE I HOOD USING BAFFLE FILTERS  
CONVENTIONAL KITCHEN



TYPE I HOOD WASH HAS PLENUM  
DOORS

## A. EXHAUST HOODS

Exhaust hoods capture heat, smoke, grease laden vapors and fumes. Filters remove contaminants in the exhaust air. The two types of hoods that can be found in commercial kitchens are:

- 1) Type I hood
- 2) Type II hood

- **Type I hoods**

At the heart of the cooking exhaust system, a Type I hood is equipped with grease filtration and extraction devices that include: listed grease filters, and/or extractors for removing the grease. Type I hoods are designed for cooking equipment generating grease-laden vapors, fumes and smoke for which fire protection is required. Type I hoods require an externally welded liquid tight shell.

**Solid fuel cooking appliances must be serviced by their own independent cooking exhaust system and not connected with any other exhaust system serving nonsolid fuel appliances.**

Type I Water Wash Hood has plenum doors and a self-cleaning feature. **Note that self-cleaning does NOT replace the mandatory quarterly cleaning.**

- **Type II hoods**

Type II hoods are designed to exhaust equipment that does not generate grease-laden vapors, fumes and smoke such as dishwashers, steamers and general kitchen space and may not require fire protection. Type II hoods may or may not have grease filters.

Branch ducts from other equipment in the same kitchen area or ducts servicing Type II hoods may be interconnected with Type I systems but must be separated at the point of connection with a grease duct by a fire damper. The branch ducts after the fire damper do not require a cleaning because they are not serving appliances producing grease, but cleaning may be beneficial.

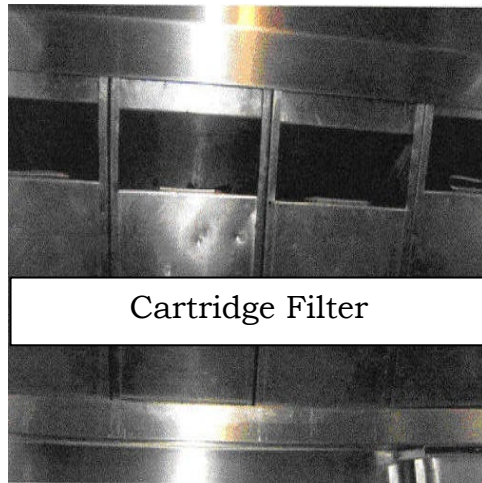
Any grease accumulation in a Type Hood II should be documented. A notification to the FDNY should **immediately** be made.

The documentation should be sent to the following email address:

**[FDNY.BusinessSupport@fdny.nyc.gov](mailto:FDNY.BusinessSupport@fdny.nyc.gov)**

Nozzle installed in a water wash system hood





## B. GREASE FILTRATION SYSTEMS

Grease particles are measured in terms of microns. Grease generated by commercial cooking equipment has a size of 10 microns or more. The grease extraction efficiency of the exhaust hood and filters plays a key role in the removal of grease particles before they reach smoke and odor control equipment.

Filters, grease extractors and other filtration devices located in the hood area are the first line of defense since they capture grease particulates being exhausted in the very beginning.

All baffle grease filters should be approved type and labeled either with an MEA (Mechanical Equipment Acceptance) stamp, NYC BSA (Board of Standards and Approvals) stamp or a COA stamp.

Types of grease filters and extractors that fit into the hood and are in use today include: the **baffle filter**, **cartridge filters**, **drawer filters** and **Spark Arrestors**.

Baffle filters have a series of vertical baffles designed to capture grease that would be drained into a container. Each hood usually has one or more baffle filter(s) which are typically constructed of galvanized or stainless steel and come in various sizes.

All baffle filters must be installed with the baffles running vertically so the grease can drain downward and out of the weep holes at the bottom of the filter. Grease can drain into a drip tray or cup. Filter drip trays and cups should be monitored by the commercial cooking operator and emptied daily.

Some filters are part of a listed and approved hood assembly such as in water wash hoods and other prefabricated hoods. These filters, though different in appearance, provide the same level of grease removal as found in baffle type grease filters. Extra care should be taken when handling these filters for cleaning as they must be returned to their original positions.



Filters are required to be installed in a Type 1 Hood. Filters must be installed at an angle not less than 45 degrees, with the exception of those filters associated with listed grease extractor hood assemblies.

Spark Arrestor Filters by code shall be installed on all Solid Fuel Exhaust System Hoods.

Filters should not be secured to anything and must be easily attached so they can be easily removed for cleaning.

Supplemental multi-stage filtration units such as emission control units employ a combination of filters which are part of a listed component.

**Note: Mesh or mesh type grease filters are ONLY permitted for use as part of a listed device. Mesh filters in Type I hood without solid fuel must be removed from service and replaced with baffle filters.**

#### 1. ULTRA-VIOLET (UV) LIGHTS

Ultra-violet (UV) lights are also being incorporated into new hood designs. UV lighting breaks down grease molecules into smaller harmless compounds of carbon dioxide and water vapor, which are then carried out with the exhaust airflow.

This new added filtration device (UV lighting) is electrically charged and must be handled with caution before cleaning can occur. It may be necessary to consult with an authorized representative of the UV lighting system since special tools are required for the removal of the lights.

Any broken UV bulbs should be reported to a crew supervisor and the owner of the system.

#### 2. WATER WASH EXHAUST SYSTEM

A water wash exhaust system has fixed baffles that are non-removable and are washed in place with a fixed hot water and detergent spray. Full length inspection panels provide access to the grease extraction chambers.

They may have fire dampers at the exhaust duct collar or at the inlet to the extraction chamber. Dampers in cooking exhaust systems may only be acceptable when they are part of a listed grease extractor.

If a technician find the water to the system shut off or disconnected the condition should be reported to their crew supervisor and the owner of the system.

### 3. EMISSION CONTROL DEVICES

**Air quality** is a major concern in New York City. As a result, many commercial kitchens require pollution control equipment to be installed in their exhaust systems. Pollution control equipment is not limited to removing smoke particles, but also removes a majority of the grease particles from the exhaust stream.

The Emission Control devices are designed to reduce grease and/or odors. Removing grease/smoke from the exhaust stream allows the odor control component of the system to work more efficiently. Once the exhaust has been processed by the emission control unit/ it is exhausted to the outdoor environment. Their operating status may not be fully indicated by lights, gauges, and other devices.

#### C. **EXHAUST DUCTS**

An exhaust duct system removes cooking vapors, grease, fumes and smoke to the outside of the building and usually found on the roof.

#### **Properly designed and installed ducts consist of the following:**

- The entire duct system must be made liquid tight by means of a continuous external weld to prevent leakage.  
**Exception:** UL listed prefabricated duct systems approved by NYC Department of Buildings.

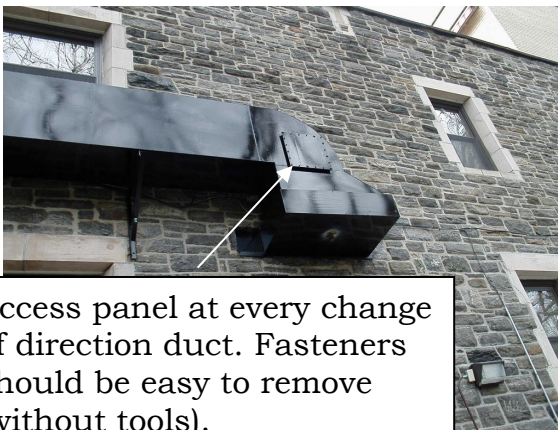
The use of a high-heat-silicone sealant on the grease ducts is **PROHIBITED**.

- All interior ductwork must be properly insulated with approved and listed materials approved by the NYC Department of Buildings.  
**Exception:** Listed prefabricated duct systems approved by NYC Department of Buildings.
- Duct systems serving type I hoods must be constructed and installed so that the grease cannot collect in any portion of the system.  
**THERE IS ONE EXCEPTION:** Exhaust ducts used in down draft appliance ventilation systems must be allowed to include an upturn in the duct provided the trapped area contains a low point drain to an approved grease reservoir not exceeding 3.8 L in capacity. The entire length of duct must be easily accessible for cleaning. The exhaust duct must be pitched towards its origin.
- Ducts must be provided with access panels at every change of direction. Horizontal ducts must be provided with access panels installed at 12-foot intervals. Where horizontal ducts are large enough for personnel entry access panels can be installed at 20-foot intervals. Access panels should

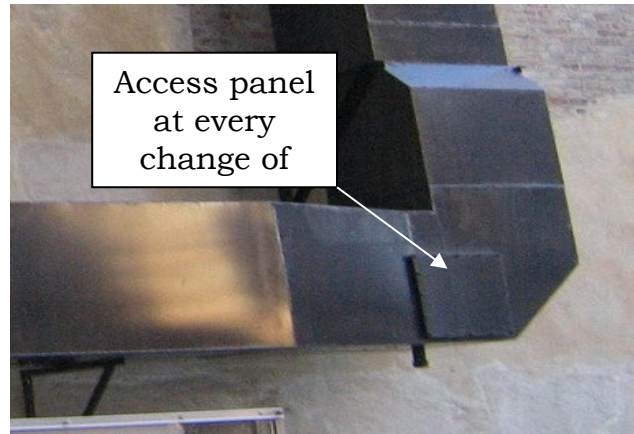


only be found on the sides or on top of the ductwork. If found on the bottom of the duct it should have a dam, so it drains down and does not leak through the door. Access panels should have a gasket that is rated for a minimum of 1500 degrees Fahrenheit. Access panels should be removable without the use/or need of tools.

- Access panels must be provided with proper signage at each opening reading; “**ACCESS PANELS – DO NOT OBSTRUCT**”, this also includes corresponding ceiling access points. After service they must be closed by the Certificate of Fitness holder.



Access panel at every change of direction duct. Fasteners should be easy to remove (without tools).



Access panel at every change of

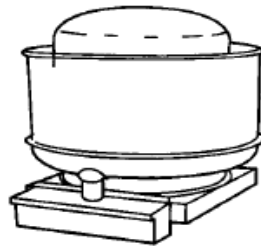
#### D. **EXHAUST FANS**

Exhaust fans must be UL listed (UL Standard 762) for the removal of grease-laden vapors from commercial cooking equipment. In-line exhaust fans are permitted providing they are UL listed for such use and that the motor or any electrical components of the fan are not located inside the air stream.

When cleaning a commercial cooking exhaust fan, the power must be shut-off and the switch should be locked out and tagged. To prevent roof damage, roof mounted fans should be provided with a collection pan to properly drain grease collected at the roof level.

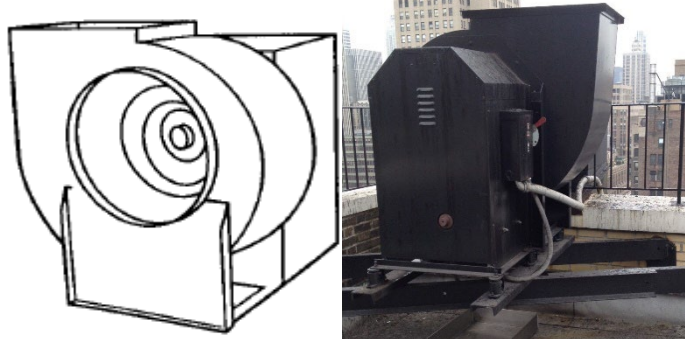
Exhaust fans with ductwork connected to both sides must have access for cleaning and inspection within 3 feet of each side of the fan. Common types of exhaust fans found in-use (all use centrifugal wheels with backward inclined blades):

#### **UP BLAST/MUSHROOM FANS** (power roof ventilator)



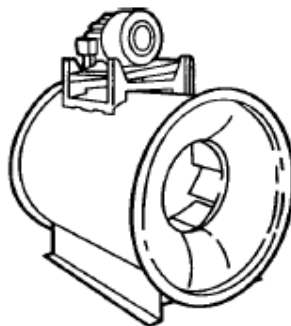
A mushroom fan must be hinged and supplied with a flexible weatherproof electrical cable to permit inspection and cleaning. They must also be supplied with a service hold open retainer.

**UTILITY SET** (Centrifugal Fan)



Listed for grease exhaust application with an access door and drain coupler.

**INLINE FANS** (tubular centrifugal)



An exhaust fan unit must be installed in accordance with the manufacturer's terms and listing. Access doors must be installed within 3 feet of the intake and the exhaust side of the fan.

## E. **FIRE EXTINGUISHING SYSTEM**

The cleaning technician is NOT AUTHORIZED to touch, work with or clean any of the components of the fire extinguishing system. If electrical switches, detection devices, or other components of the fire extinguishing system must be deactivated during the cleaning process, such deactivation must be performed by a licensed Master Fire Suppression Piping Contractor and holding a Certificate of Fitness S-71 or an individual working under the direct supervision of a MFSPC holding a Certificate of Fitness. Immediately upon completion of the cleaning process the Certificate of Fitness holder must restore the system to proper working operation.

Cleaning fluids must not be applied on fusible links or other detection devices of the fire extinguishing system.

## **4. GREASE REMOVAL IN COMMERCIAL KITCHEN SYSTEMS**

### **4.1 CLEANING METHODS**

When an exhaust system is properly cleaned, the chances of a fire are reduced. All components of the exhaust system must be cleaned to bare metal and no powder or other foreign substance must remain in the exhaust system after cleaning.

The entire exhaust system, including but not limited to hoods, filters, grease removal devices, ducts, fans, pollution control devices and other accessories, must be inspected and cleaned at least once every three months by a person(s) holding a W-64/P-64 Certificate of Fitness. **VERTICAL EXHAUST DUCTS MORE THAN 3 STORIES HIGH MUST BE CLEANED AT A MINIMUM OF SIX MONTHS.**

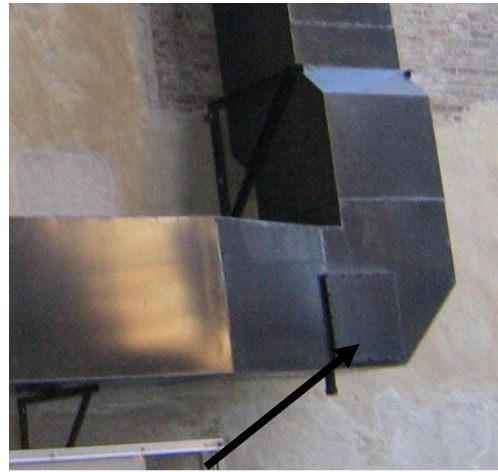
Common methods of cleaning commercial cooking exhaust systems are:

- **Scraping**
- **Pressure Washing**
- **Steam Cleaning**

**1. SCRAPING** is a manual method requiring the use of hand tools such as wire brushes, chisels, hand scrapers as well as steel wool. When properly done, this method is extremely effective.

**2. PRESSURE WASHING or STEAM CLEANING** are cleaning methods requiring various nozzles, plastic sheeting, high pressure warm/hot water, and the means to control wash/wastewater.

Generally, pressure washing and scraping are the most widely used methods.



Shop fabricated cleanout door

A drain coupler is used to remove water and grease while pressure washing the exhaust ducts.

#### A COMBINATION OF METHODS CAN BE USED FOR THOROUGH CLEANING.

When performing cleaning by means of a pressure washer and cleaning chemical, a Certificate of Fitness holder should collect all the wastewater. It must be properly disposed of before it enters a sanitary line or a storm drain. Wastewater should be discarded into a sink connected to a grease trap. Grease trap waste is then collected and is disposed of by a NYC permitted company.



A service report following a cleaning job should be completed after each cooking exhaust system service. If a problem is noticed while performing the work at a site, the Certificate Of Fitness holder should indicate it on the service report. The Certificate Of Fitness holder should notify the supervisor or the owner of the company. The holder should **NOT** attempt to make repairs out of their scope of duties.

When you are finished cleaning, Certificate of Fitness holders must remove all grease rags and debris before leaving the work site. Since they pose fire risks, leave the location as clean to avoid unnecessary hazards.

#### 4.2 CLEANING FILTERS

Filters should be inspected **daily** by a trained and knowledgeable employee of the restaurant owner and must be cleaned as needed but at least once a month.

### 4.3 CLEANING

The cooking exhaust system must be cleaned at least once every three months, or as frequently as necessary to maintain system free of grease accumulations. High volume cooking equipment such as solid fuel burning appliances, char broilers, woks, fryers, upright broilers and some 24-hour restaurants may require more frequent cleaning and inspection.

Systems must be cleaned by a person holding a W-64/P-64 Certificate of Fitness issued by the Fire Department. A record of inspection and cleaning of an exhaust system must be maintained on the premises and upon request made available for inspection to any representative of the FDNY.

- It is **unlawful** for anyone to inspect or clean any commercial cooking exhaust system without a valid Certificate of Fitness.
- The Certificate of Fitness holder and/or the principal of the citywide cleaning company are required to notify the FDNY - Rangehood Unit of any hazardous conditions found at the premises.
- A Certificate of Compliance decal (**as approved by the FDNY**) must bear the Commercial Cooking Exhaust Cleaning Company name, ID number, company address, and phone number and must be placed on the hood with the date of cleaning. Certificate of Fitness holder must be responsible for alerting FDNY and restaurant owner/operators of the status of their systems unless a return visit is necessary.
- Certificate of Fitness Stamp should be with the person performing the cleaning and must be used on the decal after successful service completion. The stamp is personalized to each Certificate Of Fitness holder with their full name and Certificate Of Fitness number.
- Where possible, full cleanings should be completed before leaving the premises. In certain circumstances, particularly large locations i.e. hospitals, etc.), it may not be possible to do it all in one day. Returning the next day to complete the cleanings may be necessary. It is **NOT** acceptable to do a fast incomplete or partial cleaning where large accumulations still remain and place a Compliance decal.

### 4.4 GREASE REMOVAL

Grease collected from the exhaust system should be disposed of properly. **It is the responsibility of the restaurant owner.** Stored grease is a fire hazard and may produce harmful odors. Disposal of grease directly into a NYC sewer system is strictly prohibited.

### 4.5 COMPANY CERTIFICATION

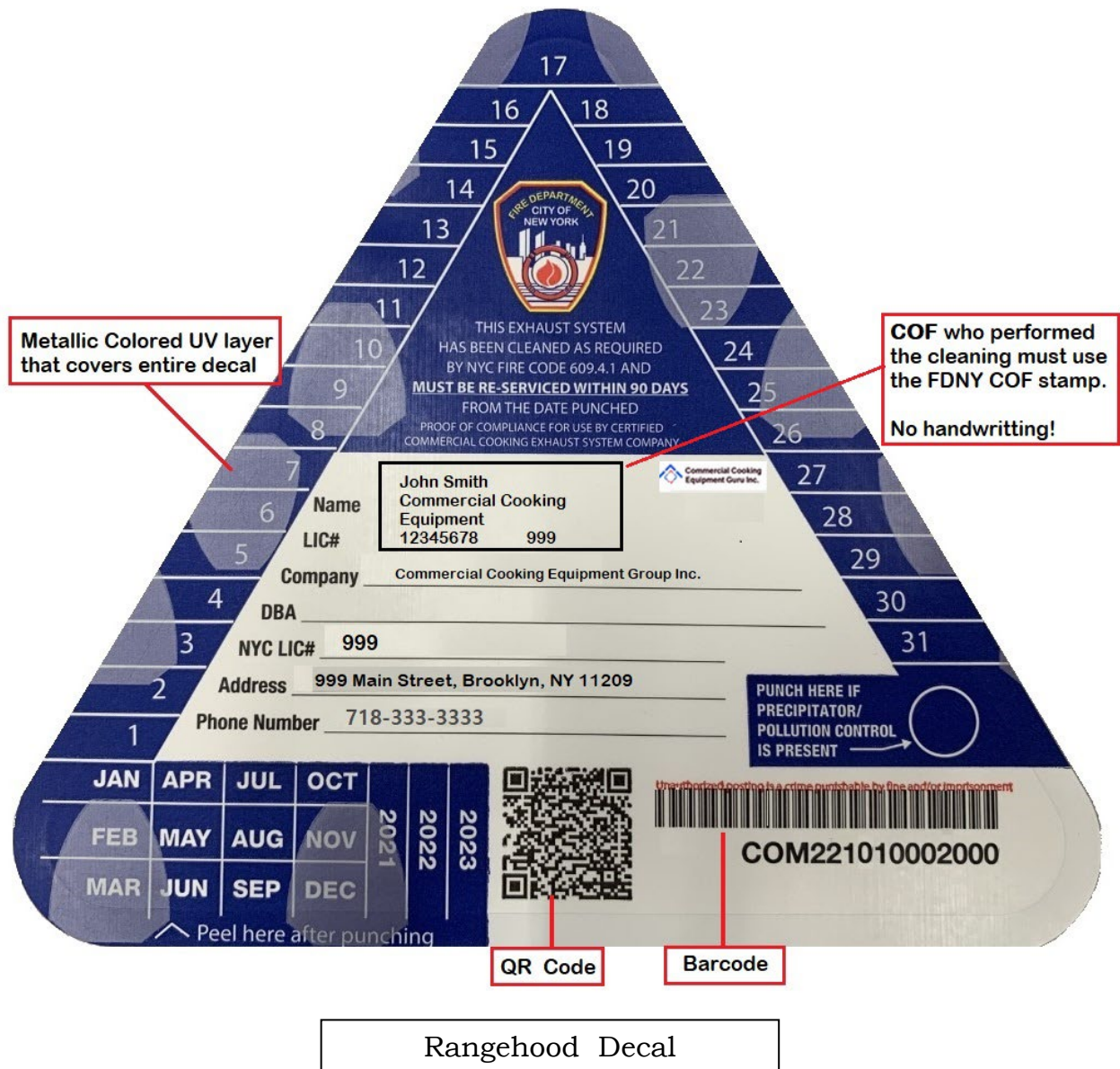
All companies in the business of inspecting and cleaning commercial cooking exhaust systems need FDNY approval.

Companies performing commercial cooking exhaust cleaning must be certified by the FDNY. There are numerous qualifying requirements which appear on the

application form. The form will be available on the FDNY website [WWW.NYC.GOV/FDNY](http://WWW.NYC.GOV/FDNY) or person at 9 Metro Tech Center, Brooklyn, NY 11201.

#### 4.6 RANGEHOOD DECALS

Decals must be attached to each hood after service. The decals are provided by the FDNY approved Commercial Cooking Exhaust Cleaning Companies to show proof of work completed. Periodically the decals will change colors and shape and your certified company will provide the most up to date version of the decal. Any unused decals should be safeguarded.





CERTIFICATE OF FITNESS STAMP

If you encounter a Fake Decal you need to alert your supervisor as soon as possible.

EXAMPLES OF FAKE DECALS:

- The security features are missing.
- The metallic colored UV layer is too dark.



**4.7 IN CASE OF A FIRE WHILE YOU ARE PERFORMING A CLEANING:**

- Activate the fire suppression system by pulling the fire alarm.

Call 911

- Evacuate the entire commercial cooking establishment.
- If possible be prepared to provide information to the arriving FDNY units.

**5. POLLUTION CONTROL DEVICES**

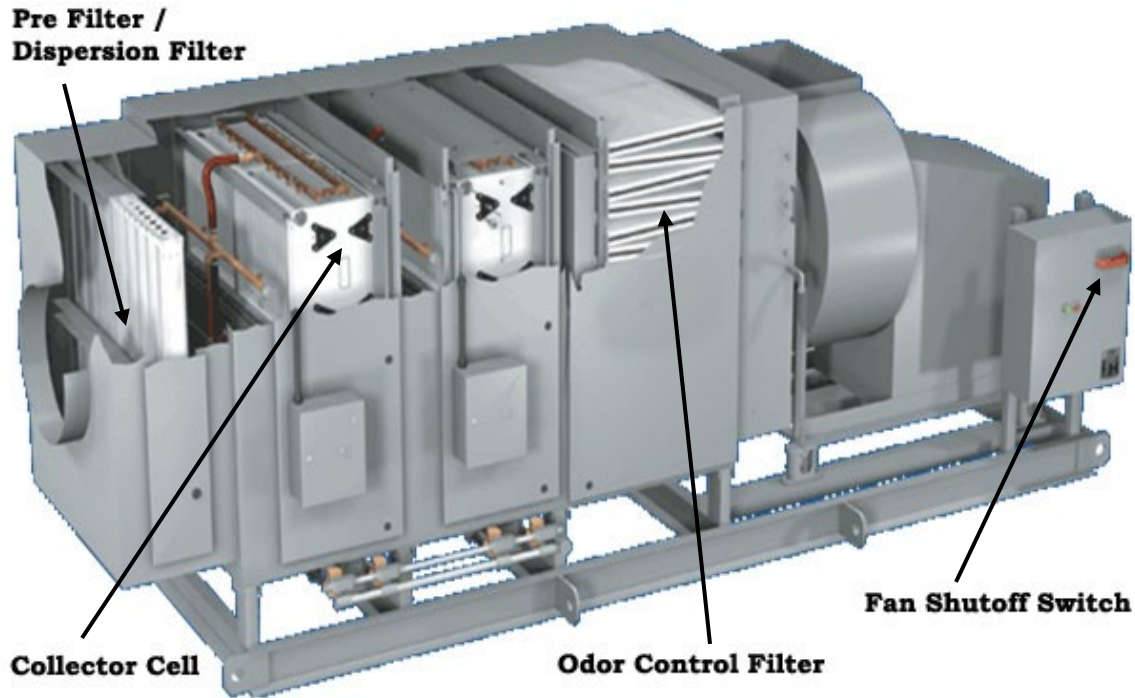
This section sets forth standards, requirements and procedures for issuance of P-64 Certificates of Fitness to inspect and clean commercial cooking exhaust systems with pollution control devices.

Applicants who intend to inspect and clean the pollution control device component of commercial cooking exhaust systems must obtain an endorsement on his/her *Certificate of Fitness* for **each type** of pollution control device to be serviced.

In addition to the qualifications set forth in this study material applicants must possess and demonstrate to the satisfaction of the Fire Department that they possess the training and knowledge necessary to properly inspect and clean the

particular pollution control devices that they intend to service; and possess the manufacturer's specifications and servicing manuals for such pollution control devices. Pollution control devices must be cleaned or inspected at a minimum of every 90 days. Odor control filters are an added option; therefore, not all pollution control devices come with them. Electrostatic pollution control device cells are reusable.

**Typical Electrostatic Precipitator**



**NO PERSON SHOULD SERVICE OR MAINTAIN THESE UNITS WITHOUT PROPER TRAINING FROM THE MANUFACTURER OF THAT PARTICULAR UNIT.** It should be the responsibility of employers to ensure that their staff is properly trained and knowledgeable and have a valid Certificate of Fitness.



## 6. IMPORTANT INFORMATION TO BE PROVIDED TO KITCHEN OPERATORS

### 6.1 CHECKLIST

The FDNY approved electronic reporting system is MANDATORY and lists several important items regarding the exhaust system cleaning. The app must be used to record compliant and non-compliant exhaust systems.

In addition to the app, the FDNY has prepared a sample checklist. Your company may have its own. The purpose of the **FDNY CHECKLIST** is to ensure that standardized processes are followed at all times by Certificate of Fitness holders. The checklist also allows the Certificate of Fitness holders to document their actions at the work site.

It may be useful to safeguard a copy of the checklist in the event of any follow-up questions arise. Each individual company may have their own procedures.

If any items have a **(C-Critical)**, they have high safety importance. The FDNY should be notified at the completion of the job if any of these items are checked by the Certificate of Fitness holder. This is an important responsibility since public safety may be jeopardized by unreported serious hazards since fires can easily occur and then spread.

The Citywide companies, and all Certificate of Fitness holders are responsible to send an original report **within 24 hours to the restaurant owner or his designated authorized person**. Any problems must be documented and be made available for inspection by the premises owner and any Fire Department representative.

Many cleanings are done in the early morning or late at night so it might be difficult to find the appropriate person. In those cases, a copy of the report should be sent on its own or with the invoice to the appropriate party. The actual checklist is in this study material.

**Applicants should know the checklist contents since it must be performed while performing their duties.**

\*Business name, address and phone number are essential elements that should be included in the checklist.

## 6.2 COF HOLDER CHECK LIST

Premises: Business name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City & State: \_\_\_\_\_  
 Phone: \_\_\_\_\_

**Company Name** \_\_\_\_\_  
**Address** \_\_\_\_\_  
**City, ST, Zip Code** \_\_\_\_\_  
**COF Certification #** \_\_\_\_\_

Date: \_\_\_\_\_  
 Technician Name: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 C of F #: \_\_\_\_\_ Exp. \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Time in: \_\_\_\_\_  
 Time out: \_\_\_\_\_

<b>A. Pre-Cleaning Check</b>	<b>Responses</b>	<b>Comments</b>
1. Have you checked in via the app?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2. Is there a pollution control device related to this exhaust system, and are you qualified to clean/service it? (manufacturer)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
3. Is the fire extinguishing system properly deactivated by a qualified person if required? (name and company/COF)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
4. Have cooking appliances been disconnected?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Have all power sources for cooking exhaust fans and pollution control devices been locked out and tagged out?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6. Are the exhaust ducts on floors more than three (3) floors above the kitchen subject to cleaning?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	If <b>NO</b> , the date _____ of last cleaning by COF# _____ If cannot be identified, the entire system is subject to cleaning
<b>B. Post Cleaning Check</b>		
7. Have all parts of the exhaust system that require cleaning, including the fan(s), pollution control device(s), and other associated equipment, been accessible and properly cleaned? (Critical) (C)	<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>If not, Non-compliance decal is required. Cleaning in progress.</b>  <b>Have notification procedures been followed? (See below in section named Major Changes)</b>
8. Have all access panels been placed back and properly secured?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
9. Have all grease filters been placed back and fitted adequately within the hoods?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
10. Has the fire extinguishing system been restored by a qualified person if required? (name and company/COF)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
11. Have appliances been restored back to proper working order?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
12. Have all power sources for cooking exhaust fans, pollution control devices, and other associated equipment been restored to proper order, and does the system function as intended?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If no, explain reasons on back of page in comments section.

<b>13.</b> Has the owner's representative been notified of any lack of access and/or out-of-order exhaust system	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	If no, explain reasons on back of page in comments section.
<b>14.</b> Have decal(s) been stamped and placed on each exhaust hood by a COF holder.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>15.</b> Is a return visit necessary?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>16.</b> Have you closed out in the app?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>Owner representative name:</b> _____ <b>Signature</b> _____ <b>Date:</b> _____ (For the follow up letter)		

**C** – Critical, Any *NO* answer on C items requires immediate notification to the FDNY, Rangehood Unit.

**N/A** – Not applicable

*Note: A record of this service must be maintained on premise and be made available for inspection by any member of the New York City Fire Department.*

*For any deficiencies described above, a follow-up letter will be sent to you listing any corrective action necessary. It is your responsibility to maintain your equipment in good working order.*

**Additional Comments:**

Section / Item #	Description of Deficiencies

**Major Notification Change: (See Item 7 on checklist)**

FDNY must be notified by the principal if the below-referenced conditions cannot be corrected within **24 hours** of cleaning, attempting to clean, or assessment of the system:


- Insufficient access to any portion of the exhaust duct, fan(s), pollution control device(s), and other associated equipment restricting proper cleaning of the entire exhaust system.
- Encrusted grease accumulation, which cannot be cleaned and/or requires the replacement of the exhaust duct or part thereof.
- Physical damage to the exhaust system (missing portion of the exhaust system, broken or not properly fitted filters, excessive leaks, ...), affecting the operation of the system.
- Major deficiencies affecting the operations of the exhaust system.

If the COF holder notices that the exhaust system is non-operational, the COF holder must notify the principal who then advises the restaurant owner to discontinue all cooking operations.


The FDNY needs to be notified by the principal or authorized representative by emailing [FDNY.BusinessSupport@fdny.nyc.gov](mailto:FDNY.BusinessSupport@fdny.nyc.gov) and [rangehood\\_unit@fdny.nyc.gov](mailto:rangehood_unit@fdny.nyc.gov), including address, name of the business, description of the non-compliance deficiencies, decals, and supporting pictures/documents if the inspector may be limited to verify the deficiencies during a regular inspection.


## 7. FDNY Mobile Application Quick Guide

This the official FDNY reporting mobile application. Your company may have a modified version of this reporting system.



### 1. Log in

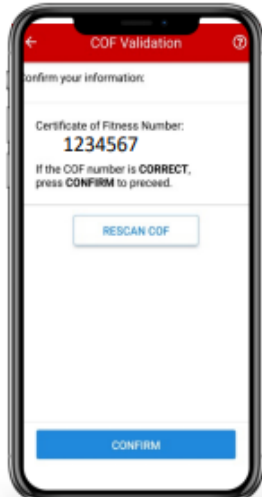
1. Tap on the FDNY app icon  from your home screen.
2. Tap **Scan COF**. Your camera will turn on.
3. Hover your phone's camera over your FDNY COF card's barcode.

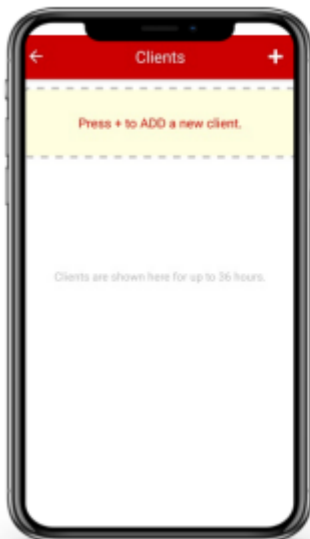


### 2. Validate your COF information

1. Make sure your information listed is correct.
2. Tap the **Confirm** button.

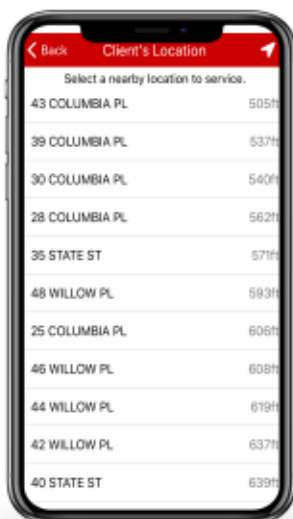
Note: A message will appear on this screen if your COF card is invalid, has already expired, or will be expiring.





### 3. Add a client

1. Tap on the **+** on the upper right corner of the screen to add a client.



### 4. Select (tap) your client's location

1. Tap on the client's address.
2. Is the address missing? Tap on the **Not listed? Add it manually!** link.

Note: if you receive an error when attempting to add a location, tap OK and use the manual add option.

## 5. Enter your client's info. while you are at the work location.

1. Enter your **Client's Name**.
2. Enter your client's address into **Address Line 1**, if not already entered.
3. Enter your client's **Borough**, if not already entered.
4. Tap the **Continue** button.

All other fields are optional.

**Note:** You must be at the location within NYC to use this feature. Please enter all information in English to the best of your ability.

Client's Info

Enter the client's service information.

**Client Name (Required)**  
Client Name (Required)

**Address Line 1**  
39 COLUMBIA PL

**Address Line 2**  
Floor, suite, apt (Optional)

**Borough**                      **ZipCode**  
Brooklyn                      11201

Continue

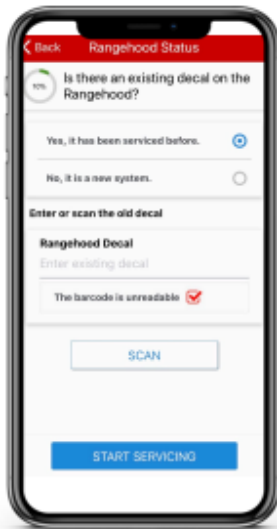
**\*\*It is advisable to enter this information while having internet access.**



## 6. Select type of cleaning

1. Tap the large yellow dotted button or tap the + sign at the top of the screen.
2. Select **Add a RH** for a Rangehood cleaning or select **Add a PCD** for a Pollution Control Device cleaning.

**Note:** we will use **Add a RH** for this guide.



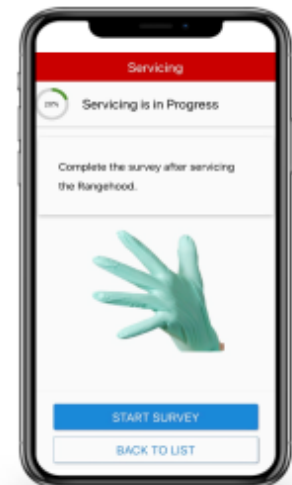
## 7. Enter existing decal information

1. Select **No, it is a new system** if it is a new system and tap the **Start Servicing** button if you are servicing a new system.
2. Select **Yes, it has been serviced before** if there is an existing decal.
3. Scan the decal by tapping the **Scan** button and hovering your phone's camera over the decal. The decal serial number should populate.
  - Select **The barcode is unreadable** if the barcode is damaged or removed.

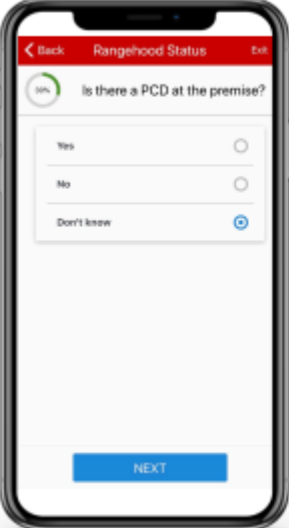
## 8. Start servicing

Complete the survey **AFTER** you have completed servicing the Rangehood

1. Tap the **Start Survey** button.







9. Tell us if there is a PCD (Pollution Control Device) at the client's location.

- Select **Yes** if you know there is a PCD is on the site.
- Select **No** if you know there is NO PCD on the site.
- Select **Don't know** if you do not know if a PCD is on the site.

**If you don't choose an option and click NEXT, your job becomes INCOMPLETE. This screen may be subject to change.**

## APPENDIX A

### **\*\*Cleaning and Operating Instructions\*\***

**(CUSTOMERS ARE REQUIRED TO POST THIS DOCUMENT CONSPICUOUSLY)**

#### **OPERATING INSTRUCTIONS FOR EXHAUST SYSTEM:**

1. Exhaust system (fan) must be in operation at all times during cooking operations.
2. Filters must be in place during all cooking operations.
3. The exhaust fan must remain on for several hours after all cooking has stopped for the day. This is required to permit hood and duct cool down as to avoid a rapid rise in temperature in the exhaust system.

#### **FIRE EXTINGUISHING SYSTEM INSPECTION:**

1. Inspection and servicing of the fire extinguishing system must be done by a licensed “Master Fire Suppression Piping Contractor” having a Class A or C license and who is authorized by the manufacturer of the particular system being serviced at least once every six months.
2. All components of the fire extinguishing system including control heads must be checked for proper operation in accordance with the manufacturer’s specifications.
3. Fusible links (detectors) must be changed every year in accordance with the manufacturer’s specifications.

#### **CLEANING INSTRUCTIONS:**

1. The entire cooking exhaust system including hoods, grease filters, exhaust fans, ductwork, and additional devices must be cleaned at least once every three months or as often as necessary to minimize the accumulations of grease by a person or company holding a Certificate of Fitness.
2. Cleaning performed by employees of the owner must be permitted providing the employee holds a Certificate of Fitness and that the entire exhaust system including hoods, grease filters, exhaust fans, ductwork and additional devices must be cleaned to bare metal.
3. A record of such cleaning must be maintained on the premises for inspections by the Fire Department.

#### **PORTABLE FIRE EXTINGUISHERS:**

1. At least one “K Class” portable fire extinguisher must be provided at each cooking location. Other extinguishers may be needed for class A or B fires.

#### **IN CASE OF FIRE:**

1. Call the Fire Department immediately by calling 911.
2. Pull the manual pull station to activate the system manually.
3. Contact your fire system service contractor to recharge and restore your fire system to proper working order.

## APPENDIX B

### MECHANICAL CODE – CHAPTER 5

**504.3 Cleanout.** Each vertical riser must be provided with a means for cleanout.

**506.3.8** Grease duct systems must not have openings therein other than those required for proper operation and maintenance of the system. Any portion of such system having sections not provided with access from the duct entry or discharge must be provided with cleanout openings. Cleanout openings must be provided at every change in direction, within 3 feet of the exhaust fan, and as required under Section **506.3.9**.

Cleanout openings must be equipped with tight-fitting doors constructed of steel having a thickness not less than that required for the duct. Doors must be equipped with a substantial method of latching, sufficient to hold the door tightly closed. Doors must be designed so that they are operable without the use of a tool.

Door assemblies must have a gasket or sealant that is noncombustible and liquid tight and must not have fasteners that penetrate the duct. Listed and labeled access door assemblies must be installed in accordance with the terms of the listing. Signage must be provided at all required access doors and openings in accordance with Section **506.3.12**.

**506.3.8.1 Personnel entry.** Where ductwork is large enough to allow entry of personnel, not less than one approved or listed opening having dimensions not less than 22 inches by 20 inches must be provided in the horizontal sections, and in the top of vertical risers.

Where such entry is provided, the duct and its supports must be capable of supporting the additional load and the cleanouts specified in **Section 506.3.8** are not required. Where personnel entry is not possible for cleaning the interior of vertical ducts suitable provisions must be made to clean the vertical duct in its entirety as well as for cleaning the base of the vertical riser.

**506.3.9 Grease duct horizontal cleanouts.** Cleanouts located on horizontal sections of ducts must be spaced not more than 20 feet apart, unless the opening prescribed by **Section 506.3.8.1** is not possible, in which case openings large enough to permit thorough cleaning must be provided at 12 feet intervals. The cleanouts must be located on the side of the duct with the opening not less than 1.5 inches above the bottom of the duct, and not less than 1 inch below the top of the duct.

The opening minimum dimensions must be 12 inches (305 mm) on each side. Where the dimensions of the side of the duct prohibit the cleanout installation prescribed herein, the openings must be on the top of the duct or the bottom of

the duct. Where located on the top of the duct, the opening edges must be a minimum of 1 inch from the edges of the duct.

Where located in the bottom of the duct, cleanout openings must be designed to provide internal damming grease down the duct around the dam and must be approved for the application.

Where the dimensions of the sides, top or bottom of the duct preclude the installation of the prescribed minimum-size cleanout opening, the cleanout must be located on the duct face that affords the largest opening dimension and must be installed with the opening edges at the prescribed distances from the duct edges as previously set forth in this section.

## APPENDIX C

### FIRE SUMMARY

**Location: Harlem, NY**

**Date: June 13, 2014**

### Businesses Reeling Following Harlem Restaurant Fire

The future of several Harlem businesses destroyed in a fire remains uncertain.

A fire broke out inside Mama's Fried Chicken on Frederick Douglass Boulevard and 155th Street just before 7 p.m. Friday.

The flames quickly spread through the building and nearby businesses, including a deli and a Chinese restaurant.



NY1 spoke to the owner of the fried chicken restaurant, who says it was hard to see his business being destroyed.

"All of my store is damaged. I am trying to do some reacting to open again. Of course, no one can lose their own business," said Mama's Fried Chicken owner Edem Khan.

The fire also affected apartments above the businesses. A FDNY chief on scene said 33 units and 138 firefighters responded to the scene.

The FDNY chief said duct work helped spread the fire.

Six firefighters and a DEP worker suffered minor injuries, according to a FDNY chief on scene.

The Red Cross says it's helping one family in need of temporary housing.

The cause of the fire is under investigation.

#### **Lessons Learned:**

Periodic mandatory duct cleaning should be conducted as required.

Commercial cooking exhaust cleaning Certificate of Fitness holders must be properly certified.

Kitchen staff should pay more attention while working at the kitchen.

## **FIRE SUMMARY**

**Location: Lake Zurich, IL**

**Date: June 11, 2014**

### **No injuries, minor damage in Lake Zurich restaurant fire.**

No one was injured and minimal damage was caused by a fire Tuesday at Rics Dog-Gone Good Food in Lake Zurich, Fire Chief David Wheelock said.

No employees or customers were inside when a fire broke out at the restaurant, which sits in a strip mall at 670 E. Route 22, Wheelock said. No adjacent businesses were damaged, he said.

Lake Zurich police and fire officials responded to the fire at 9:30 p.m. after a neighboring business reported seeing smoke rising inside of Rics, which was closed for the day, Wheelock said.

Just minutes after their arrival, fire personnel could see the fire moving toward the kitchen in the back of the building and forced their way in, using an extinguisher and hose to put it out, he said.

A burner on a grill inside the restaurant had been left on and likely began to burn up excess grease, causing the heavy smoke and ultimately a growing fire, Wheelock said.

Damage to the inside of the building was not extensive but will require “a lot of cleanup” and a re-inspection by the Lake County Health Department before the business can open again, he said.

“Any time we have smoke or a fire in a building that deals with food, we have to make a call to the Health Department because they have to re-inspect the place before it’s allowed to re-open,” Wheelock said.

Fires like the June 10 blaze aren’t rare, he said.

“We have these occasionally in restaurants where a stove is left on and it takes a while for a fire to build up,” Wheelock said.

### **Lessons Learned:**

- K fire extinguisher should be made available for grease fires.
- Employees have to be cautious and check surrounding premises prior to leaving work.
- Lack of fire prevention devices in the premises increases the probability of fatal fires.

## **FIRE SUMMARY**

**Location: NYC, NY**

**Date: June 6, 2014**

### **Three-Alarm Fire at Midtown TGI Fridays.**



A fire broke out in a TGI Friday's restaurant in midtown Manhattan last night. The FDNY says the fire started in the basement of 604 5th Avenue at 48th Street, where the kitchen is, just before 9 p.m. Friday. Then, as WCBS 2 reports, "Flames and smoke raced to the top of the building through the duct work."

According to NBC New York, "There appeared to be some sort of malfunction while crews were working on a duct in the basement, and a fire was sparked, quickly shooting through the duct up to the roof, where it spread to a connecting duct in the building next door."

#### **Lessons Learned:**

- Excess of grease presents a fire hazard; duct work should be properly inspected to make sure no grease exists.
- Scraping, Pressure Washing, Steam Cleaning or combination of such should be completed on quarterly bases.
- Nearby storage should be checked to make sure no flammable material is left unattended.

## **FIRE SUMMARY**

**Location: Boston, MA**

**Date: August 29, 2007**

### **Four-Alarm Fire at Tai Ho Chinese Restaurant.**



A fire broke out around 9pm at 1727 Centre St the location of Tai Ho Chinese restaurant in Boston, Massachusetts. The fire was slowly burning in the ceiling of the premises for about an hour before it suddenly exploded into a fireball.

Two firefighters were killed when they became trapped, and the roof collapsed on top of them. Two other firefighters were taken to the hospital on life support. A total of 12 firefighters were injured battling this four-alarm fire.

The fire was mainly contained to the restaurant and the neighboring pet-grooming store as well as an art gallery.

#### **Lessons Learned:**

- Excess of grease presents a fire hazard; duct work should be properly inspected to make sure no grease exists.
- Excess of flammables were found in the kitchen. No flammables should be present in the kitchen area.
- All kitchen exhaust and ventilation cleaners must be licensed and certified by the city of Boston.
- The Inspectional Services Department took action to monitor closely the quality and frequency with which kitchen cleaners clean each restaurant.
- Kitchen cleaners are now required to take a certification test based on the most recent edition of NFPA 96.



## **FREQUENTLY ASKED QUESTIONS AND RESPONSES**

### **COMMERCIAL COOKING EXHAUST SYSTEM CLEANING (Fire Code Guide, Chapter 6, #5-12)**

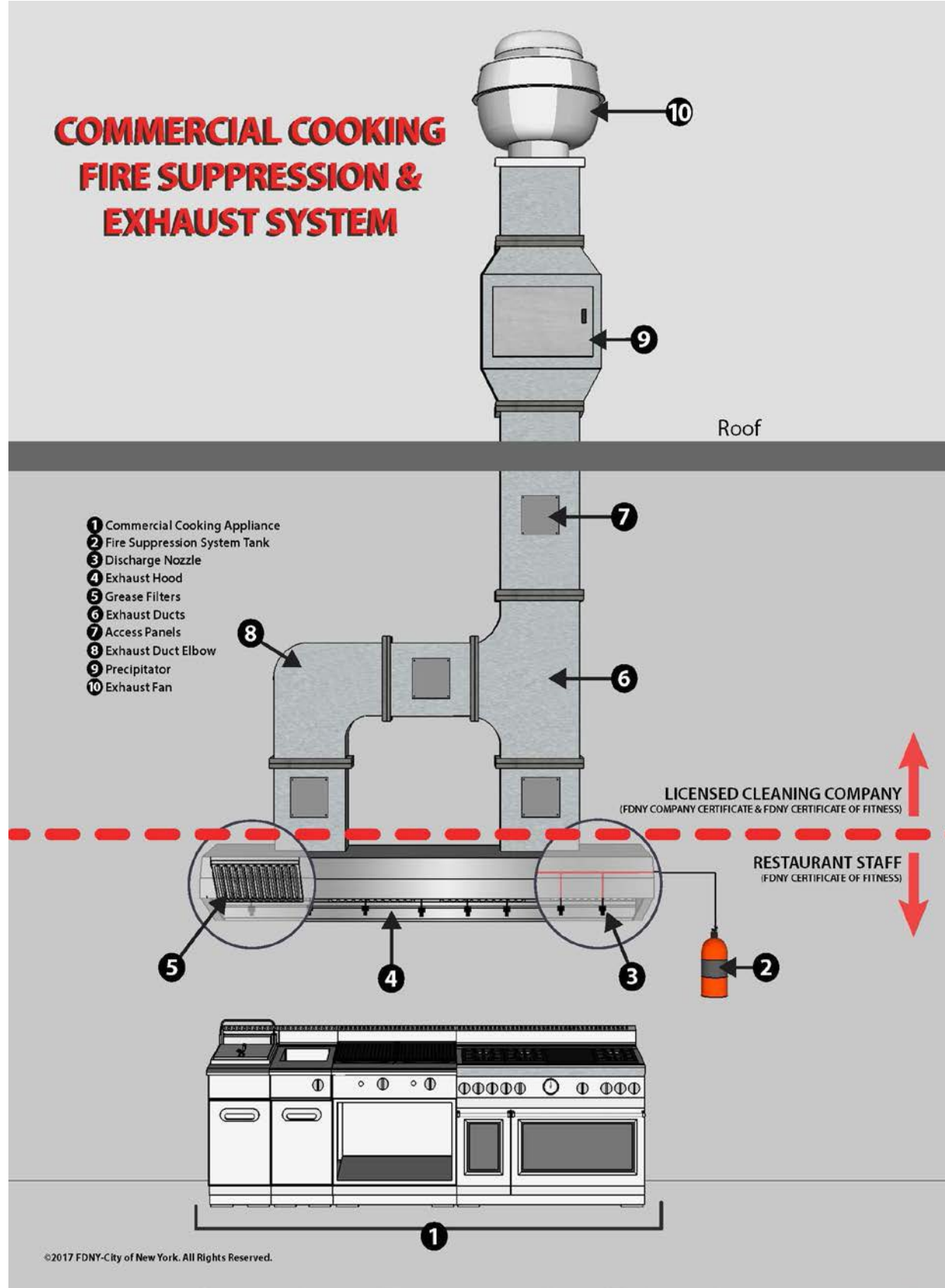
Q. I understand that the Fire Code requires that commercial cooking appliances and exhaust systems must be cleaned by companies licensed by the Fire Department. What is a commercial cooking appliance and what is a commercial cooking exhaust system?

A. 2022 NYC FC202 defines “commercial cooking appliance” as an appliance used in a commercial food service establishment (commercial kitchen) for heating or cooking food and which produces grease-laden vapors, steam, fumes, smoke or odors that must be removed by a ventilation system. Such appliances include broilers, deep fat fryers, griddles, grills, ovens, rotisseries and similar appliances. Domestic (non-commercial) cooking appliances that are used for commercial purposes are also subject to the requirements for commercial cooking appliances.

Because of the health and fire safety hazards associated with grease-laden vapors, Chapter 5 of the New York City Mechanical Code (and the industry standard it references, National Fire Protection Association Standard 96) requires that commercial cooking appliances be equipped with ventilation systems that exhaust the vapors to the outdoors (exhaust systems). The exhaust system consists of hoods, filters, fans and ducts, and, in many systems, air pollution control devices, such as precipitators, as illustrated below.

Grease is deposited in the exhaust system from cooking vapors. The grease deposits are combustible and can be ignited by the flames, heat and particles generated by cooking. The exhaust system must be regularly cleaned to prevent grease build-up from becoming a serious fire hazard. Grease fires are not uncommon, given the number of restaurants in New York City and the volume of cooking that they do on a daily basis. Because the exhaust ducts are installed inside the building, frequently all the way to the roof, a grease fire in the exhaust system can spread throughout the building.

# COMMERCIAL COOKING FIRE SUPPRESSION & EXHAUST SYSTEM



- Q. What are the cleaning requirements for commercial cooking exhaust systems?
- A. 2022 NYC FC609 sets forth Fire Code requirements for commercial cooking systems, including the cleaning of commercial cooking appliances. The Fire Code does not specify the amount of grease build-up at which cleaning should be conducted. 2022 NYC FC609.4.1 only requires that it be done at least every three months (every sixth months in ducts more than three floors above the cooking equipment), and more frequently “as necessary”. Grease filters must be cleaned at least once a month.

The minimum cleaning requirements set forth in the Fire Code may not be adequate to prevent grease build-up in commercial kitchens that generate a large volume of grease-laden vapors by making constant use of char broilers, chicken rotisseries or deep fat fryers; by a large amount of meat grilling; and/or by extended daily cooking operations.

The particulates generated by wood or charcoal-burning (solid fuel) cooking appliances compound the fire safety hazards associated with grease-laden cooking fumes, and therefore such systems must be inspected on a monthly basis by a trained and knowledgeable and knowledgeable person, as set forth in 2022 NYC FC609.4.1(1).

Businesses generating a large volume of grease-laden vapors or using solid fuel will need to clean the *grease filters* in the hoods above the cooking appliances more frequently than once a month. To maintain sanitary conditions and prevent grease build-up, they may need to be cleaned weekly or even daily.

Such businesses will likely also need to clean the *exhaust ducts* more frequently than once every three months, but because the ducts are enclosed and less accessible, businesses may be less aware of the grease build-up.

The industry standards for commercial cooking exhaust system cleaning (as set forth in Section A.11.6.2 of NFPA 96-2014 and Section 9.1.3 of ANSI/IKECA Standard C10-2011) recommend use of a depth gauge comb, a comb-like device, to measure the amount of grease build-up. The depth gauge comb recommends cleaning of the ducts and fans when there is grease build-up of as little as one-thirteenth inch (.078”) and deems a grease build-up of one-eighth inch (.125”) to require immediate cleaning.

This industry standard offers a useful guideline for ensuring that ducts are being maintained in a safe condition and are being cleaned “as necessary” in accordance with 2022 NYC FC609.4.1.

Q. Who can clean commercial cooking exhaust systems?

The hood and the grease filters (which are installed in the hood) may be cleaned by trained and knowledgeable restaurant employees with a valid Certificate of Fitness. However, all cleaning of the exhaust system ducts and other system components above the hood must be conducted by licensed companies and individuals.

Commercial cooking exhaust system servicing company certificates. 2022 NYC FC609.3.1.1 requires that all companies that clean commercial cooking exhaust systems hold a Fire Department commercial cooking exhaust system servicing company certificate. This is to ensure that the cleaning is properly done and to prevent unqualified companies from charging business owners for duct cleaning. The Fire Department posts on its website the list of companies who have been issued a company certificate. Here is the link: <http://www1.nyc.gov/site/fdny/business/all-certifications/certificates-commercial-cooking-exhaust.page>.

Restaurants and other business owners can, if they wish, clean their own commercial cooking exhaust systems, but they will be required to obtain the same licenses and possess the same type of equipment as businesses that perform such cleaning.

To ensure a proper cleaning is being conducted, effective August 1, 2017, all servicing companies and other businesses holding a Fire Department commercial cooking exhaust system servicing company certificate must have at least two employees holding a Fire Department Certificate of Fitness. Company certificates will not be approved or renewed unless two Certificate of Fitness holders are listed on the application.

Individual certificates of fitness. Each person engaged in cleaning commercial cooking exhaust systems must be employed by a servicing company licensed by the Fire Department (or employed by the restaurant or business) AND must personally hold a valid, current (not expired) Fire Department Certificate of Fitness. This includes any “helpers” who assist the persons who actually perform the cleaning.

There are two types of Certificate of Fitness for cleaning commercial cooking exhaust systems.

City-Wide (W-64). This Certificate of Fitness authorizes the cleaning of all standard kitchen cooking appliances at any premises, citywide.

Pollution Control (P-64). This Certificate of Fitness authorizes the cleaning of all standard kitchen cooking appliances citywide, and additionally authorizes the cleaning of air pollution control devices, such as precipitators, that are installed in exhaust ducts to filter out particulates (soot particles) generated by the burning of solid fuel (such as from wood-burning ovens). Precipitators and other air pollution control devices are generally more difficult to clean as the filters and other components first need to be removed.

Fire Department rule 3 RCNY 113-08(d) requires that applicants for the P-64 Certificate of Fitness demonstrate to the satisfaction of the Fire Department that they possess the training and knowledge necessary to properly service particular types of precipitators or other air pollution control devices, and possess the manufacturer's certification and servicing manuals (or other acceptable verifiable training) for such devices. The types of air pollution control devices they are qualified to service will be endorsed on their Certificate of Fitness.

The Certificate of Fitness specifies the name of the commercial cooking servicing company (or employer) for which the individual is authorized to work. An individual working for two servicing companies must apply for and maintain two separate Certificates of Fitness, and each company must list the individual on their company application. If the holder changes employment, the individual submits to the Public Certification Unit a letter from the servicing company who is now employing him or her, and request that the Certificate of Fitness be updated.

- Q. Who is responsible for ensuring that the commercial cooking exhaust system is properly cleaned?
- A. The owner of the commercial cooking exhaust system, and the servicing company that has been retained, are both responsible for complying with the Fire Code's cleaning requirements.

The owner must ensure that the commercial cooking exhaust system is cleaned on a regular basis, use companies and individuals that hold the required Fire Department certificates, and otherwise ensure compliance with Fire Code requirements.

The servicing companies and personnel that clean the exhaust systems must do so in compliance with Fire Code standards for cleaning such systems, including cleaning down to bare metal, and must keep their Fire Department certificates current and comply with all other terms and conditions of their certificates.

Servicing companies are also responsible for advising their customers if the amount of grease build-up requires more frequent cleaning than the schedule originally established by the company. Such notice should be in writing and include photographs of conditions in the ducts found upon arrival.

Servicing companies are required to advise their customers if they cannot access any portion of the exhaust duct system and are unable to perform the cleaning required by the Fire Code. Such notice should be in writing and include photographs of the inaccessible areas or equipment. The owner is responsible for promptly addressing any access issues to allow a proper cleaning. If the owner does not promptly address the access issues, the servicing company should report the unsafe condition to the Fire Department. Failure to do so may be deemed to constitute misconduct relating to the company's Fire Department certificate.

- Q. Can a servicing company conduct cleaning if their approval expired?
- A. No. A commercial cooking exhaust system servicing company can submit a renewal application as early as 60 days prior to the date of expiration. The Fire Department promptly processes such renewal applications and mails to the company a new approval letter. This allows sufficient time for renewal without interfering with the company's business operations.
- Q. Can a servicing company conduct cleaning if their insurance expired?
- A. No. Pursuant to 2022 NYC FC115.10, the commercial cooking exhaust system servicing company certificate expires by operation of law any time general liability insurance coverage lapses. The servicing company must submit proof of insurance coverage (ACORD form) to Fire Department's Public Certification Unit prior to the expiration of the current insurance policy. The new insurance expiration date will be reflected on the list of approved servicing company, or the company can request a new approval letter.

Before hiring a company to clean a commercial cooking exhaust system, the owner should check the Fire Department's list of

commercial cooking exhaust system servicing companies who have been issued a company certificate to clean such systems (see above).

- Q. What records must be kept of the cleaning?
- A. The servicing company is required to place a decal on one or more hoods identifying the servicing company, its address and phone number, FDNY certificate number; the individual Certificate of Fitness holders who conducted the cleaning, and the date the cleaning was performed.

Service companies will be held responsible for failing to affix a decal documenting its cleaning of a commercial cooking exhaust system, and the lack of a decal will be considered evidence of misconduct if the cleaning is found to have been inadequate. Service companies must safeguard the decals to prevent misuse of decals to misidentify the company that performed the cleaning.

A checklist has been included in the Study Material for the Certificate of Fitness (W-64 or P-64) to facilitate proper recordkeeping of each cleaning. The checklist (or an equivalent record) should be completed and kept on file by the servicing company for a minimum of three years (the time period required by 2022 NYC FC107.7).

Business owners must keep a record of all hood inspections and grease filter cleaning.

The record must be kept in the electronic form and format that is acceptable to the FDNY and must be filed with the FDNY in a manner as the FDNY prescribes.

The FDNY has developed a Mobile App free of charge that give the approved companies the ability to easily and quickly capture and submit required data to the FDNY. Every W-64/P-64 Certificate of Fitness holder who are performing the cleaning must use this FDNY Mobile App for the actual job information.

Companies may use their own mobile app but must approved by the FDNY. The FDNY would not be able to troubleshoot or assist companies with step-by-step instructions on how to implement the API. However, companies can email specific questions to [tags.decal@fdny.nyc.gov](mailto:tags.decal@fdny.nyc.gov) for clarification and issue they may encounter.

All FDNY approved Commercial Cooking Exhaust System Servicing companies will receive the instruction from the FDNY Certificate Of Fitness unit regarding the FDNY COF Mobile App program.

As a W-64/P-64 Certificate Of Fitness holder, you must receive a hands-on training prior to using the COF Mobile App from your company.

- Q. What are the consequences for a servicing company or Certificate of Fitness holder that performs an inadequate cleaning, continues to clean exhaust systems after their certificate or insurance coverage expires, fails to maintain proper recordkeeping, or fails to affix or safeguard decals?
- A. The company, its principals and/or individual employees may be issued a Criminal Court summons or subjected to other civil or criminal enforcement action.

Pursuant to Fire Department rules 3 RCNY 113-01(g) and 115-01(i), Certificate of Fitness and company certificate holders who commit acts of misconduct may have their certificates suspended or revoked and be denied renewal of their certificates, and their acts and omissions may be taken into consideration in connection with other Certificate of Fitness applications.

- Q. What happens in case of unauthorized use and misuse?
- A. Unauthorized use of proof of compliance, by a company or individual other than the company to which the proof of compliance was issued (and its authorized representatives), and misuse of proof of compliance, by the company to which it was issued (and its authorized representatives):
- (A) is a violation of the Fire Code, this section, R113-01 and R115-01;
  - (B) may result in imposition of a civil or criminal penalty;
  - (C) may result in denial of an application for a company certificate or certificate of fitness; and
  - (D) constitutes misconduct within the meaning of R113-01(g) and R115-01(i), and may result in suspension, revocation and/or non-renewal of a company certificate and/or certificate of fitness.



**Portable Fire Extinguisher Tags**

Installed portable fire extinguishers must have an FDNY standard PFE tag affixed. This tag will have important information about the extinguisher. As of November 15, 2019, all portable fire extinguishers must have the new PFE tags. The FDNY will only recognize new PFE tags and will be issuing violations to businesses that have PFE installed without a proper tag.

The color of the fire extinguisher tags may be changed by the FDNY every few years. The FDNY recommends two ways to verify the tag’s legitimacy:

1. Hologram:

A real hologram strip shown on the tag is 3 inches long by ¼ inch wide. Counterfeit tags will NOT have a high-quality silver hologram. The hologram on a counterfeit tag will NOT change color as it is moved against the light.

2. QR code

IF you scan the QR code, it should direct you to the updated FDNY approved fire extinguisher company list. You could use the company list to verify if the company printed on the list is currently approved by the FDNY.

If your PFE tags cannot be verified via these two methods, contact your supervisor. If you suspect your PFE is a counterfeit, contact FDNY immediately by e-mail: Tags. Decal@fdny.nyc.gov



PFE tag (This tag is released for 2021-2023)

### **Portable fire extinguisher inspections**

#### **MONTHLY**

The portable fire extinguishers are required to be checked monthly. The owner of the business is responsible to select a person to do a monthly inspection. This monthly inspection is called a "quick check".

The **QUICK CHECK** should check if:

- (1) the fire extinguisher is fully charged;
- (2) it is in its designated place;
- (3) it has not been actuated or tampered with;
- (4) there is no obvious or physical damage or condition to prevent its operation.

The information of the monthly inspection record must include the date of the inspection, the name/initials of the person who did the inspection. This monthly quick check record must be kept on the back of the PFE tag or by an approved electronic method that provides a permanent record.

#### **ANNUALLY**

At least annually all Portable Fire Extinguishers must be checked by a W-96 Certificate of Fitness holder from FDNY approved company. After each annual inspection W-96 Certificate Of Fitness holder will replace the PFE tag. The information of the annual inspection record must be indicated on the new PFE tag.

**Lithium-ion safety**

Lithium-ion batteries are rechargeable batteries found in electric bikes, scooters, cars, laptops, tablets, phones, and many other common household devices.


Lithium-ion battery fires have caused deaths, serious injuries, and devastating damage to property around the city. It’s important to follow rules for safe storage, charging, and disposal for these types of batteries.

If you own a lithium-ion powered device or plan to buy one, the FDNY has important safety tips that you should follow. These tips apply to all devices powered by lithium-ion batteries, including phones, tablets, laptops, e-cigarettes, toys, high-tech luggage, and even robotic vacuum cleaners.

**Immediately stop** using or charging battery and call 911 if you notice:

- Fire or Smoke
- Overheating
- Change in color or shape
- Odd noises
- Leaking
- Strange smell

**ALWAYS:**

- purchase and use devices certified by a Nationally Recognized Testing Laboratory (NRTL). 
- follow the manufacturer’s instructions for:
  - charging and storage.
  - correct battery, cord, and power adapter
- keep exit path clear at all times.
- plug directly into a wall electrical outlet for charging.
- keep batteries and devices at room temperature.
- store and/or charge batteries away from anything flammable.
- keep away from heat sources.
- bring batteries to a **NYC Battery Recycling Center**. Visit [nyc.gov/batteries](http://nyc.gov/batteries) for more information.

**NEVER:**

- use aftermarket batteries or chargers.
- use damaged or altered batteries
- plug into a power strip or overload an outlet.
- overcharge or leave battery charging overnight.
- charge a battery or device under your pillow, on your bed, or near a couch.
- leave e-bikes or e-scooters unattended while charging.
- block your primary way in or out of a room/space with e-bikes, e-scooters, wheelchairs, etc.
- place batteries in Trash or Recycling bin. **It is ILLEGAL.** Visit [nyc.gov/batteries](http://nyc.gov/batteries) for disposal locations and information.

**In the event of a Fire,  
Leave and CLOSE the door.  
Call 911 once you are in  
a safe location.**



## Charging Lithium Ion

Lithium-ion batteries do not have to be fully charged; partial charge is the most suitable.

When **charging more than five (5)** personal mobility devices or their removable batteries, it must be in a **dedicated room with ventilation** and a self-closing door.

For a total battery capacity of 20 kilowatt-hours (kWh), a 2-foot separation between charging batteries is required. For a total battery capacity up to 50 kWh, a 3-foot separation is needed.

Chargers must only be used with a compatible battery pack. The original equipment manufacturer (OEM) charger interplays with the battery pack using the battery management system (BMS). The wrong battery/charger combination may not work safely. For example, the 100% cutoff to prevent overcharging, which damages batteries, may not work which can easily create hazardous conditions such as fires, explosions and/or injuries.

Always check with the manufacturer or retailer of the personal mobility device, an authorized repair shop or a testing laboratory such as Underwrites Laboratories (UL) to see if replacement is recommended or listed and safe for use with that device. Using unauthorized parts, including batteries and/or chargers, may cause damage, fire and possibly void your warranty.

## Extinguishing Lithium-ion

Water may not prevent a battery from burning and spreading. Battery cells are known to explode and quickly spread to another battery. It can spread to another devices.



**Fire Extinguishers**  
**do not work**  
on lithium-ion batteries  
fires.

**Unexpected Re-ignition.**

Reignition is common. Lithium-Ion Batteries are known to unexpectedly re-ignite (without warning) minutes, hours and even days after all visible fire has been put out.

Lithium-ion batteries can enter an uncontrollable, self-heating state. This can result in the release of gas, cause fire and possible explosion.

These batteries may continue to generate heat even when there is no visible sign of fire. Once heat reaches a certain level fire may reignite on the battery and surrounding area.

