

**FIRE DEPARTMENT • CITY OF NEW YORK**



**STUDY MATERIAL FOR THE EXAMINATION FOR THE  
CERTIFICATE OF FITNESS  
FOR  
SUPERVISION OF DE-FUELING MOTOR VEHICLE FUEL TANKS**

**P-53**

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

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## **NOTICE OF EXAMINATION**

**Title:** Examination for Certificate of Fitness for Supervision of De-Fueling Motor Vehicle Fuel Tanks (P-53)

**Date of Exam:** Written exams are conducted Monday through Friday (except legal holidays) 8:00 AM to 2:30 PM.

### **REQUIREMENTS FOR WRITTEN EXAM**

Applicants who need to take the exam must apply in person and bring the following documents:

1. Applicants must be at least 18 years of age.
2. Applicants must have a reasonable understanding of the English language.
3. Applicant must provide two forms of identifications; at least one identification must be government issued photo identification, such as a State-issued Driver's License or Non Driver's License or a passport.
4. Applicants must present a letter of recommendation from his/her employer. The letter must be on official letterhead, and must state the applicant's full name, experience and the address where the applicant will work. If the applicants are self-employed or the principal of the company, they must submit a notarized letter attesting to their qualifications. For more info:  
[http://www.nyc.gov/html/fdny/html/c\\_of\\_f/cof\\_requirements.shtml](http://www.nyc.gov/html/fdny/html/c_of_f/cof_requirements.shtml)
5. Applicants must present a completed application for certificate of fitness (A-20 Form). <http://www.nyc.gov/html/fdny/pdf/a20.pdf>
6. Applicants not currently employed may take the exam without the recommendation letter. If the applicants pass the exam, FDNY will issue a temporary letter with picture for the job seeking purpose. The C of F card will not be issued unless the applicants are employed and provide the recommendation letter from his/her employer.

**7. APPLICATION FEE:**

Pay the **\$25** application fee in person by one of the following methods:

- Cash
- Credit card (*American Express, Discover, MasterCard, or Visa*)
- Debit card (*MasterCard or Visa*)
- Personal or company check or money order (*made payable to the New York City Fire Department*)

For fee waivers submit: ***(Only government employees who will use their C of F for their work-related responsibilities are eligible for fee waivers.)***

- A letter requesting fee waiver on the Agency's official letterhead stating applicant full name, exam type and address of premises; **AND**
- Copy of identification card issued by the agency

A convenience fee of 2.49% will be applied to all credit card payments.

**8. EXAM INFORMATION**

The **P-53** exam will consist of **25** multiple-choice questions, administered on a “touch screen” computer monitor. It is a time-limit exam. A passing score of at least 70% is required in order to secure a Certificate of Fitness. Call (718) 999-1988 for additional information and forms.

Please always check for the latest revised booklet at FDNY website before you take the exam.

[http://www.nyc.gov/html/fdny/pdf/cof\\_study\\_material/p\\_53\\_st\\_mat.pdf](http://www.nyc.gov/html/fdny/pdf/cof_study_material/p_53_st_mat.pdf)

9. If all the requirements are met and pass the exam a certificate will be issued the same day. Applicant who fails the exam will receive a failure report. To retake the exam applicants will need to submit a new application and payment.

### **RENEWAL REQUIREMENTS**

This Certificate of Fitness must be renewed every **THREE YEARS**. The renewal fee is **\$15**. FDNY also reserves the right to require the applicants to take a re-examination upon submission of renewal applications.

You will receive a courtesy notice of renewal 90 days before the expiration date. However, it is your responsibility to renew your Certificate. It is very important to renew your C of F before it expires. Renewals submitted 90 days (up to one year) after the expiration date will incur a \$25 penalty in addition to the renewal fee. Certificates expired over one year past expiration date will not be renewed. New exams will be required.

#### **To change a mailing address:**

- Submit a letter requesting the change of mailing address and a copy of your C of F with \$5.00 fee.

To change a work location,

Submit a letter from your current employer (on company letterhead) confirming that you are an employee and stating your new work location with a copy of your C of F and a \$5.00 fee

To request a replacement certificate:

Submit a driver's license or passport, social security number, mailing address and a \$5.00 fee.

The certificate can be renewed **On-line, by Mail or in Person**.

#### • **Renewal online**

If you are an individual, make sure you have your 12 digit Certificate of Fitness Access ID. This can be found on your Renewal Notice. If you do not have your Renewal Notice, your Access ID is your 8 digit Certificate of Fitness number and the last four digits of your social security number. If you are submitting

renewals on behalf of a company's employees, the company must be approved by FDNY and have an 8 digit Company Code. To request approval, email [pubrenew@fdny.nyc.gov](mailto:pubrenew@fdny.nyc.gov).

Renewal fee can be paid by one of the following methods:

- Credit card (American Express, Discover, MasterCard, or Visa)
- Debit card (MasterCard or Visa)
- E-check

A fee exempted applicants cannot renew online only by mail or in person.

If all the requirements are met, the certificate of fitness will be mailed out within 10 days.

For online renewal go to:

<https://paydirect.link2gov.com/FDNYCOF/ItemSearch>

- **Renewal by mail**

Mail your Renewal Notice (if you did not receive a Renewal Notice, a copy of your certificate), along with your fee payment

Personal or company check or money order (made payable to the NYC Fire Department)

For fee waivers submit: ***(Only government employees who will use their C of F for their work-related responsibilities are eligible for fee waivers.)***

- A letter requesting fee waiver on the Agency's official letterhead stating applicant full name, exam type and address of premises; **AND**
- Copy of identification card issued by the agency

and if applicable, supporting documents to:

### **NYC Fire Department (FDNY)**

Cashier's Unit

9 MetroTech Center, 1st Floor

Brooklyn, NY 11201

If all the requirements are met, the certificate of fitness will be mailed out within four to six weeks.

- **Renewal in person**

Submit your Renewal Notice (or if you did not receive a Renewal Notice, a copy of your certificate), along with your fee payment by one of the following methods:

- Cash
- Credit card (*American Express, Discover, MasterCard, or Visa*)
- Debit card (*MasterCard or Visa*)
- Personal or company check or money order (*made payable to the New York City Fire Department*)

For fee waivers submit: ***(Only government employees who will use their C of F for their work-related responsibilities are eligible for fee waivers.)***

- A letter requesting fee waiver on the Agency's official letterhead stating applicant full name, exam type and address of premises; **AND**
- Copy of identification card issued by the agency

and if applicable, your supporting documents to:

**NYC Fire Department (FDNY)**

Cashier's Unit

9 MetroTech Center, 1st Floor

Brooklyn, NY 11201

If all the requirements are met, the certificate of fitness will be issued the same day.

**A convenience fee of 2.49% will be applied to all credit card payments for original or renewal certificates.**

**EXAM SITE: FDNY Headquarters, 9 MetroTech Center, Brooklyn, NY. Enter through the Flatbush Avenue entrance (between Myrtle Avenue and Tech Place).**



**This sample letter is for general P-53 C of F applicants)**  
**FIRM OR COMPANY NAME**  
**BUSINESS ADDRESS**

DATE:

\_\_\_\_\_  
Fire Department  
Bureau of Fire Prevention  
9 Metro Tech Center  
Brooklyn, NY 11201-3857

Dear Sir/Madam:

I am pleased to recommend \_\_\_\_\_ to apply for  
(Applicant's name)

the P-53 Certificate of Fitness for Supervision of De-Fueling Motor Vehicle Fuel Tanks

He/she has \_\_\_\_\_ of related experience and will be working at  
(years, months)

an automotive salvage or Wrecking Facility site in the NYC area.

The applicant is of GOOD CHARACTER and is PHYSICALLY ABLE to perform the functions required by the holder of the Certificate of Fitness.

\_\_\_\_\_  
(Printed name of Employer)

\_\_\_\_\_  
(Employer's title)

\_\_\_\_\_  
(Signature of Employer)

***NOTE: The recommendation letter should be on employer's letterhead. If not on employer's letterhead, signature must be notarized.***

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## **STUDY MATERIAL AND TEST INFORMATION**

This study material will help you prepare for the written examination of the Certificate of Fitness (**C of F**) for the SUPERVISION OF DE-FUELING MOTOR VEHICLE FUEL TANKS. The study materials include information taken from the New York City Fire Code (**FC**) and Fire Department rules. The study material does not contain all the information you need to know in order to perform the responsibilities of conducting de-fueling motor vehicle fuel tanks operations safely. It is your responsibility to become familiar with all applicable laws, rules and regulations of the federal, state and city agencies having jurisdiction on subject matter, even though such requirements are not included in this study material. You need to be familiar with **FC317** which regulates automotive salvage and wrecking facilities, **FC906**, **FC2211** which regulates repair garages, **FC2604**, **FC2702**, **FC34** as well as **NFPA 10**, **NFPA 30** and **NFPA 704** that regulates storage, handling and use of flammable and combustible liquids in order to adequately prepare for the exam. **It is critical that you read and understand this booklet (including the appendix) to help increase your chance of passing this exam.**

### **About the Test**

You must pass the given multiple choice test to qualify for the Certificate of Fitness. A score of 70% correct is required in order to pass the test. All questions have four optional answers. There is **only one** correct answer for each question. If you do not answer a question, or if you mark more than one answer to a single question, your answer to that question will be scored as incorrect. Read each question carefully before marking your answer. There is no penalty for guessing.

### **Sample Questions**

**1. Which of the following are allowed to be used/displayed 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 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. you should not ask about test questions since FDNY staff cannot assist applicants

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

**3. 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 should ask the examiner in the testing room. Therefore, the correct answer would be C. You would touch "C" on the computer terminal screen.*

## **INTRODUCTION**

This Study Guide is intended to serve as an outline of the New York City Fire Code regulations for automotive salvage, wrecking facilities, and repair garages that de-fuel motor vehicle fuel tanks.

Automotive salvage, wrecking facilities, and repair garages should always maintain requirements of the New York State Department of Motor Vehicles and the New York City Department of Consumer Affairs in order to obtain permits and other approvals needed to remain in compliance with local laws.

These guidelines are intended to alert technicians, owners and recyclers to the potential hazards and safe practices when defueling motor vehicles. It is important that all fuel be removed from the fuel tank when changing the tank or replacing a sending unit in the tank (fuel pump). Fuel must always be removed from a motor vehicle fuel tank prior to performing such maintenance work or in the event of salvage/wrecking the motor vehicle. Although often times only a small amount of fuel or vapors are involved, the procedure of defueling is still very dangerous.

### **Hazardous Materials Reporting**

The storage of hazardous materials shall be reported as required by the New York State General Municipal Law Section 209-u. The Fire Commissioner may require an application for a permit pursuant to this code to include a copy of the current filing pursuant to such New York State General Municipal Law for the facility or premises for which a permit is sought.

### **Certificate of Fitness**

The P-53 Certificate of Fitness holder is responsible for making sure that all fire safety regulations and procedures are obeyed on the premises. The Certificate of fitness is valid for 3 years but can be revoked at any time if good cause exists. Defueling of a motor vehicle shall be under the **personal supervision** of a P-53 Certificate of Fitness holder.

## **PERMITS**

Every permit shall be valid for a period specified therein, not to exceed one year, and shall expire at the end of such period unless the Fire Commissioner approves its renewal. **All FDNY original permits shall be on site and available for inspection at all times.** Permits are not transferable and any change in occupancy, operation, tenancy or ownership shall require that a new permit be issued.

A FDNY permit is required to store, handle or use flammable and combustible liquids.

**Site-specific permit.** Such permit authorizes the permit holder to manufacture, store, handle, use or sell hazardous materials or combustible materials, or conduct an operation or maintain a facility at a specific premises or location, for which a permit is required by FC105.6.

Permits are not transferable and any change in occupancy, operation, tenancy or ownership must require that a new permit be issued. Permits and Certificates of Fitness shall be readily available on the premises for inspection by Fire Department representatives.

A permit is required for the following situations:

1. To store, handle or use amounts of **Class I liquids**, other than paints, varnishes, lacquers, gasoline and other petroleum-based Class I liquids, in excess of **5 gallons**, except that a permit is not required for the storage or use of Class I liquids in the fuel tank of a motor vehicle, aircraft, or watercraft.
2. To store, handle or use amounts of **gasoline and other petroleum-based Class I liquids** other than paints, varnishes and lacquers, in excess of **2½ gallons**, except that a permit is not required for the storage or use of gasoline or other petroleum-based Class I liquids in the fuel tank of a motor vehicle, aircraft, or watercraft.
3. To store, handle or use amounts of **Class II or Class III liquids** with a flash point of 300°F or less, other than paints, varnishes and lacquers, in excess of **10 gallons**, except that a permit is not required for the storage or use of Class II or Class III liquids with a flash point of 300°F or less in the fuel tank of a motor vehicle, aircraft, or watercraft.
4. To store, handle or use amounts in excess of **70 gallons of petroleum based Class III liquids** (such as antifreeze (coolant), lube oil, transmission oil, etc) with a flash point exceeding 300°F.

D.O.	COMPANY	BORO	ACCOUNT NO.	TOTAL FEE	
01		MANH	33333333	\$ 525.00	022411

Expiration Date 11/01/11

**THE CITY OF NEW YORK  
FIRE DEPARTMENT**

Bureau of Fire Prevention  
9 Metro Tech Center  
Brooklyn, N.Y. 11201-3857

**FIRE DEPARTMENT PERMIT**

Postal Address of Permit Holder or Agent:

KIRLIN PIPING INDUST  
347 REM WAY  
WADING RIVER, N.Y., 11792

Occupancy for which this Permit is issued and at which it must be displayed:

1310 WEST 11 STREET  
NEW YORK, N.Y., 10011

New York MANHATTAN

Pursuant to the provisions of the administration Code and the regulations made thereunder, the above permittee is hereby authorized by the Fire Commissioner to store and use HAZARDOUS MATERIALS in the quantity specified.

This permit is revocable at the pleasure of the Commissioner, and is issued with the express understanding that the articles herein named are to be stored and kept in accordance with the provisions of the law; that the permittee will use all possible care to avoid accidents; that it is only available for the location and permittee named.

*Salvatore J. J...*  
Fire Commissioner

CODE NO.	PERMIT COVERS
345	OXYGEN STORAGE AT CONSTRUCTION SITE
346	ACETYLENE STORAGE AT CONSTRUCTION SITE
347	USE OXYGEN AND ACETYLENE TORCH AT CONSTRUCTION SITE
	NOTE: 4 OXYGEN AND ACETYLENE CYLINDERS SEPARATELY STORED IN APPROVED CAGES AT GROUND LEVEL

RF-101 (1/01) 93-111-R05-0470

CASHIER'S COPY

**An example of FDNY temporary permit**

<b>FIRE DEPARTMENT, CITY OF NEW YORK</b>				<b>BUREAU OF FIRE PREVENTION</b>		
ACCOUNT NUMBER <u>7777777</u>	TYPE <u>10</u>	A.P. <u>P</u>	D.O. <u>12</u>	ADM. CO. <u>E284</u>	ISSUANCE DATE <u>01/28/10</u>	PERMIT EXPIRES <u>01/11</u>
PREMISES ADDRESS <u>1111 YORK ST STATEN ISLAND NY 11111</u>				ACCOUNT NAME <u>CARI &amp; RENO</u>		
ITEM CODE <u>345</u>	SUB CODE <u>00</u>	QTY <u>1</u>	DESCRIPTION <u>COMPRESSED GASES ONLY STR/USE</u>	FLOOR NO. <u>1</u>	FEE <u>PAID</u>	
PERMIT TYPE <u>1</u>				ANNUAL FEE	PAID	
1=REGULAR 2=SUPPLEMENTAL 3=DUPLICATE				CARI & RENO 1111 YORK ST STATEN ISLAND NY 11111		
 <b>2011012938</b>				BY ORDER OF THE COMMISSIONER		

**An example of FDNY permanent permit**

**Material Safety Data Sheets (MSDS)  
(also known as Safety Data Sheet, SDS)**

Material Safety Data Sheet (MSDS) information should always be readily available. The material safety data sheet (MSDS) contains specific information about the health and physical hazards of the material used, as well as safe work practices and required protective equipment. It may also describe the material's physical characteristics and procedures that should be followed in case of an emergency. For example, the MSDS may list appropriate and inappropriate extinguishing agents. The P-53 Certificate of Fitness holder must refer to the MSDS when questions arise about how to handle, use, or store gasoline or diesel fuel. The MSDS may also be requested by health care personnel to facilitate proper medical care in the event of chemical exposure.

**DEFINITIONS**

**AUTOMOTIVE SALVAGE AND WRECKING FACILITY** – Any Premises used for dismantling and/or wrecking of motor vehicles in connection with the sale of auto parts or scrap metal.

**CERTIFICATE OF FITNESS.** A written statement issued by the Fire Commissioner certifying that the person to whom it is issued has passed an examination as to his or her qualifications or is otherwise deemed qualified to perform one or more of the following duties, for which such certificate is required by this code or the rules: supervise a facility; conduct or supervise an operation; supervise the storage, handling and/or use of a material; or conduct or supervise emergency planning and preparedness activities.

**COMBUSTIBLE LIQUID** - For purposes of transportation, a combustible liquid, as defined in the regulations of the United States Department of Transportation, as set forth in 49 CFR Section 173.120. For all other purposes, a liquid, other than a compressed gas or cryogenic fluid, having a closed cup flash point at or above 100°F (38°C), classified as follows:

**Class II.** Liquids having a closed cup flash point at or above 100°F (38°C) and below 140°F (60°C).

**Class IIIA.** Liquids having a closed cup flash point at or above 140°F (60°C) and below 200°F (93°C).

**Class IIIB.** Liquids having closed cup flash points at or above 200°F (93°C).

**DISPENSING** - The pouring or transferring by other means of any material from a container, tank or similar vessel, which would release dusts, fumes, mists, vapors or gases to the atmosphere, unless such release is prevented by a device, equipment or system designed for that purpose.

**FLAMMABLE AND COMBUSTIBLE LIQUID STORAGE SYSTEM** - A flammable or combustible liquid storage tank and all devices, equipment and systems associated with such tank, including the tank, piping, valves, fill connection, vent lines, pumps and any other auxiliary equipment, except liquid motor fuel storage and dispensing systems and flammable and combustible liquid storage systems at a bulk plant or terminal used for bulk transfer operations.

**FLAMMABLE LIQUID**- For purposes of transportation, a flammable liquid defined in the regulations of the United States Department of Transportation, as set forth in 49 CFR Section 173.120. For all other purposes, a liquid, other than a compressed gas or cryogenic fluid, having a closed cup flash point below 100°F (38°C), classified as follows:

**Class IA.** Liquids having a flash point below 73°F (23°C) and having a boiling point below 100°F (38°C).

**Class IB.** Liquids having a flash point below 73°F (23°C) and having a boiling point at or above 100°F (38°C).

**Class IC.** Liquids having a flash point at or above 73°F (23°C) and below 100°F (38°C).

**FLAMMABLE VAPORS OR FUMES**- The concentration of flammable constituents in air that exceeds 25 percent of their lower flammable limit (LFL).

**FLAMMABLE LIQUID MOTOR FUEL** - Gasoline or other flammable liquids used as fuel in the operation of motor vehicles, motorcycles, watercraft and aircraft

**FLASH POINT**- The minimum temperature in degrees Fahrenheit at which a liquid will give off sufficient vapors to form an ignitable mixture with air near the surface or in the container, but will not sustain combustion. The flash point of a liquid shall be determined by appropriate test procedure and apparatus as specified in ASTM D 56, ASTM D 93 or ASTM D 3278.

**FIRE EXTINGUISHING SYSTEM** - An approved system of devices and equipment which detects a fire and discharges an approved fire extinguishing agent onto or in the area of a fire. This definition includes automatic systems and, where such systems are authorized by this code or the Building Code, manually activated systems.

**HANDLING**- The movement of a material in its container, the removal of the material from its container, or any other action or process that may affect the material, other than its storage or use.

**LIQUID MOTOR FUEL** - Gasoline, diesel fuel or other flammable or combustible liquids used as fuel in the operation of motor vehicles, motorcycles, watercraft and aircraft.

**LISTED** - A material, device, equipment or system included on a list published by a nationally recognized testing laboratory or other approved organization. They perform product evaluations that maintain periodic inspection of production of such listed material, device, equipment or system, and whose listing indicates compliance with nationally recognized standards and designates suitable usage.

**LOWER EXPLOSIVE LIMIT (LEL)** - See “Lower flammable limit.”

**LOWER FLAMMABLE LIMIT (LFL)** - The minimum concentration of vapor in the air at which propagation of flame will occur in the presence of an ignition source. The LFL is sometimes referred to as LEL or lower explosive limit.

**MATERIAL SAFETY DATA SHEET (MSDS, SDS):** A document prepared in accordance with the regulations of the United States Department of Labor, as set forth in 29 CFR Part 1910.1200 or a federally approved state OSHA plan which sets forth information concerning a hazardous material.

**MOTOR VEHICLE** - A vehicle or other means conveyance having more than 2 running wheels and using liquid motor fuel or flammable gas as fuel for generating motive power, except such vehicles as have a storage tank with a maximum capacity for less than 2 gallons (7.6 L) of liquid motor fuel or flammable gas that generates energy that is equivalent to the energy generated by 2 gallons (7.6 L) of gasoline.

**PERSONAL SUPERVISION** - A method of supervision by the holder who is required to be personally present on the premises, or other proximate location acceptable to the department, while performing the duties for which the certificate is required.

**REPAIR GARAGE**- A building, structure or portion thereof used for servicing or repairing motor vehicles or motorcycles.

**TANK, PROTECTED ABOVEGROUND** - an atmospheric aboveground tank listed in accordance with UL 2085 or equivalent standard that is provided with integral secondary containment, protection from physical damage, and an insulation system intended to reduce the heat transferred to the primary tank when the tank is exposed to a high intensity liquid pool fire.

**TRAVEL DISTANCE** - The actual walking distance from any point to the nearest fire extinguisher fulfilling hazard requirements.

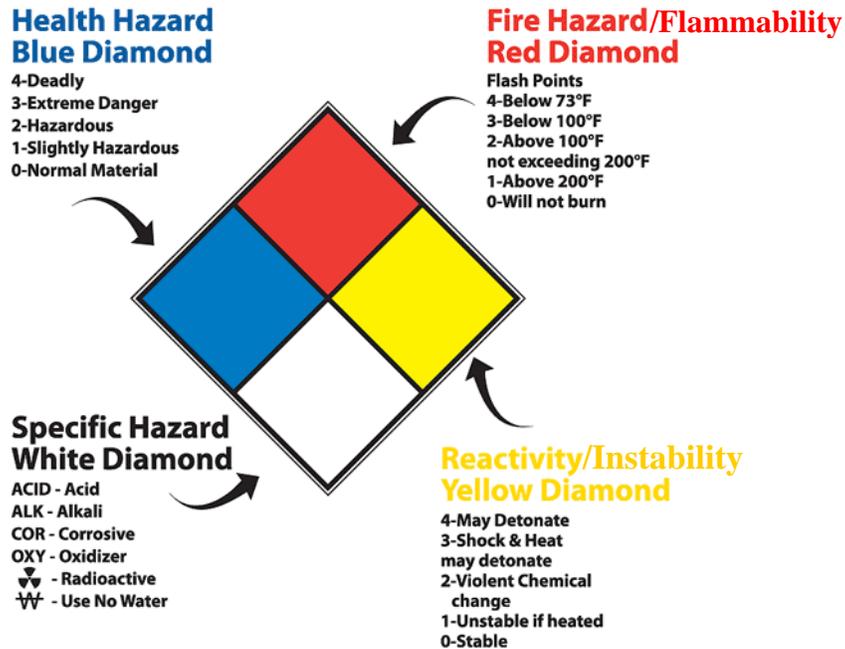
**Class of Flammable and Combustible Liquids Reference Chart**

As per the Fire Code, there are 3 classes of flammable liquids and 3 classes of combustible liquids defined as the following table.

**Class of Flammable and Combustible Liquids**

		<b>Flash point</b>	<b>Boiling point</b>	<b>Examples</b>
<b>Flammable liquids (Class I liquids)</b>	<b>Class IA</b>	< 73°F	< 100°F	<b>Gasoline</b> , Acetaldehyde, Ethyl ether, formate, Pentane
	<b>Class IB</b>	< 73°F	≥ 100°F	Acetone, Ethanol, Methyl alcohol, Propyl alcohol
	<b>Class IC</b>	≥ 73°F but < 100°F	Not Applicable	Turpentine, Butyl alcohol, Hydrazine, Styrene, Xylene
<b>Combustible liquids (Class II &amp; III liquids)</b>	<b>Class II</b>	≥ 100°F but < 140°F	Not Applicable	Kerosene, <b>Diesel</b> , WD-40 lubricant
	<b>Class IIIA</b>	≥ 140°F but < 200°F	Not Applicable	Butyric Acid, Creosote Oil
	<b>Class IIIB</b>	≥ 200°F	Not Applicable	Formalin, Glycerine, Picric acid, Propylene glycol

## NFPA HAZARD 704 DIAMOND SIGN EXPLANATION



The basis of the system is a diamond-shaped sign that is divided into color-coded quadrants. The left-most quadrant is colored blue and represents the *health* hazard posed by the material. The upper quadrant is red in color and indicates the relative *fire* hazard. The right-most quadrant is yellow and conveys the relative potential for *reactivity* (instability) of the material. The last quadrant, at the bottom, is white in color and serves to convey “*special*” or “*specific*” information.

The numbering system that is used to convey the hazards of a material uses a scale of 0 through 4 for each of the three hazard types (health, fire and reactivity). A number is placed in each box, specific to the material at hand. In each quadrant, a “0” represents the least concern and “4” represents the highest degree of hazard posed by a material. For instance, a “0” in the upper quadrant indicates a material that will not burn, while a “4” in the same quadrant indicates a gaseous material that will burn very readily. Intermediate numbers represent increasing levels of hazard in all categories, such as the “3” that is present in the “health” quadrant. This is indicative of a material that can cause permanent or serious injury upon exposure.

### Material Safety Data Sheets (MSDS) Information

The following paragraphs give a brief overview of gasoline and diesel which are two flammable and combustible liquids that are associated with defueling. The name of each flammable and combustible liquid is followed by its hazard signal

classification for flammability, instability (reactivity), and health. The Certificate of Fitness holder must know the properties of both of these liquids and their handling and storage requirements. He or she must also know the procedures that must be followed when dealing with fire or spill emergencies for these liquids.

It is recommended that all personnel wear hand protection, chemical safety goggles and properly fitted self-contained breathing apparatus (if available) when handling the flammable liquids described below. If a person becomes exposed to the liquids or their irritating vapors, or if their breathing becomes compromised because of exposure, immediately remove them from the contaminated environment to an unaffected area with plenty of fresh air. Contact qualified medical personnel to provide medical attention.

### **Gasoline**

Class IB (chart page 17)



*(Hazard Signal: 1 Health 3 Flammability 0 Instability)*

Gasoline is a toxic translucent, petroleum-derived liquid that is primarily used as a fuel in internal combustion engines. It consists mostly of organic compounds obtained by the fractional distillation of petroleum, enhanced with a variety of additives. Some gasoline also contains ethanol as an alternative fuel. In North America, the term "gasoline" is often shortened in colloquial usage to "gas", whereas most current or former Commonwealth nations use the term "petrol."

#### Handling and Storage

##### ▪ **Handling Precautions:**

USE ONLY AS A MOTOR FUEL. DO NOT SIPHON BY MOUTH. Handle as a flammable liquid. Keep away from heat, sparks, and open flame! Electrical equipment should be approved for classified area. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion. Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil) is loaded into tanks previously containing low flash point products (such as this product).

##### ▪ **Storage:**

Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition. Store in a well-ventilated area. Avoid storage near incompatible materials.

### Fire Hazards

Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. Flowing product may be ignited by self-generated static electricity. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

### Health Hazard

#### ▪ **Inhalation:**

Excessive exposure may cause irritations to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

#### ▪ **Skin Contact:**

Practically non-toxic if absorbed following acute (single) exposure. May cause skin irritation with prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are exposed repeatedly.

#### ▪ **Eye Contact:**

Moderate irritant. Contact with liquid or vapor may cause irritation.

#### ▪ **Chronic Exposure:**

Contains benzene, a regulated human carcinogen. Benzene has the potential to cause anemia and other blood diseases, including leukemia, after repeated and prolonged exposure. Exposure to light hydrocarbons in the same boiling range as this product has been associated in animal studies with systemic toxicity.

### Diesel

Class II (Chart page 17)

(Hazard Signal: 0 Health 2 Flammability 0 Instability)



Diesel in general is any liquid fuel used in diesel engines. The most common is a specific fractional distillate of petroleum fuel oil. Diesel fuel is refined into several sub-categories or grades. From highest to lowest viscosity are Number 1 Diesel Fuel (1-D), Number 2 Diesel Fuel (2-D) and Number 4 Fuel Diesel (4-D). Number 4 Fuel Diesel Fuel is used in low and medium speed engines that operate at a constant or near-constant speed, such as stationary powerplants or railroad locomotives. Numbers 1 and 2 Diesel Fuels are the primary fuel for mobile diesel engine applications. Volatility is one of the primary factors which distinguish #1 from #2 diesel fuel. No. 1 diesel typically has greater volatility than No. 2. Number 1 Diesel Fuel is commonly labeled at the pump as

"Premium Diesel". While Number 2 Diesel Fuel has a higher lubricating quality than Number 1 Diesel, its thickness can cause rough starting in a cold engine and rough-running in cold weather.

Home heating oil is closest to Number 2 diesel fuel in ignition quality and lubricating ability. But home heating oil is not intended to be used in an internal combustion engine because it may not have the smoke suppressants, ignition accelerators and biocides.

### Handling and Storage

#### ▪ **Handling Precautions:**

Handle as a combustible liquid. Keep away from heat, sparks, and open flame! Electrical equipment should be approved for classified area. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion. Diesel fuel, and in particular low and ultra-low sulfur diesel fuel, has the capability of accumulating a static electrical charge of sufficient energy to cause a fire/explosion in the presence of lower flashpoint products such as gasoline. The accumulation of such a static charge occurs as the diesel flows through pipelines, filters, nozzles and various work tasks such as tank/container filling, splash loading, tank cleaning; product sampling; tank gauging; cleaning, mixing, vacuum truck operations, switch loading, and product agitation. There is a greater potential for static charge accumulation in cold temperature and low humidity conditions.

#### ▪ **Storage:**

Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition. Store in a well-ventilated area.

### Fire Hazards

Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to a sewer may cause fire or explosion hazard.

### Health Hazards

#### ▪ **Inhalation:**

Excessive exposure may cause irritations to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

WARNING: the burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products,

including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

- **Eye Contact:**

Contact with liquid or vapor may cause mild irritation.

- **Skin Contact:**

May cause skin irritation with prolonged or repeated contact. Practically non-toxic if absorbed following acute (single) exposure. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed.

- **Chronic Exposure:**

Similar products produced skin cancer and systemic toxicity in laboratory animals following repeated applications.

**DE-FUELING EQUIPMENT (Fuel Caddy, as seen below)** is a portable tank with a pump and hose attached. Its primary purpose is to safely transfer fuel from the fuel tank; safely store the fuel during the repair process; and, safely transfer the fuel back into the fuel tank after the repair is made. If fuel is not returned to the repaired vehicle it must be disposed of in an appropriate manner.



Defueling equipment must be **listed** and its capacity cannot exceed **65gal.** Fuel Caddy's should be labeled for type of fuel it is used for and fuel should never be mixed.

## DE-FUELING MAINTENANCE AND OPERATION

### MAINTENANCE

It is always important to check that all parts of the de-fueling equipment are in proper working order including:

- No leaks or cracks in hoses
- The tank is of the manufacturer's standard of integrity

### OPERATION

#### *Warning Signs*

Must be easily read, constructed of a durable metal and visibly posted. The signs must reflect that no smoking is permitted on the premises.

A sample of a No Smoking sign is shown below:



**NO SMOKING SIGN**



**Unacceptable Warning Sign**

Before the de-fueling operation starts the C of F holder must inspect the following -

- that electrical equipment, open flame devices, or any other spark source are not in the immediate area of the de-fueling;
- All **warning signs** including no smoking signs and danger signs are visibly displayed;
- The fire extinguisher shall be readily accessible, in proper operating condition and within a **travel distance** of **30ft** of the de-fueling area
- De-fueling must be on a concrete surface to avoid soil contamination in the event of a **spill**;
- All fluid draining, removal, and collection activities shall be conducted on asphalt or concrete surface or other surface that allows equivalent protection to surface and groundwater. Such surfaces shall be cleaned

daily, or more frequently when spillage has occurred, using absorbent materials that are collected and properly disposed.

**SPILL** - any escape of petroleum from the equipment or ordinary containers employed in the normal course of storage, transfer, processing or use.

De-fueling of motor vehicles and the transfer of fuel from the defueling equipment shall be done under the **personal supervision** of a Certificate of Fitness holder.

**Salvage yards must also:**

- Conduct defueling operations at an approved location protected by a **fire extinguishing system**. The type of system (extinguishing agent used in the system) requires FDNY approval.
- Ensure that the defueling location is sealed off on all sides by a solid fence or a wall that is at least 8 feet high and accessible to a fire hydrant and other fire equipment access roads.
- Not fuel motor vehicles with defueling equipment. The fuel recovered shall be transferred into a storage tank.

**Dangerous Areas-**

**Clearance from Ignition Sources-** Clearance between ignition sources (such as light fixtures, heaters and open-flame devices) and defueling operations (including all combustible materials) shall be maintained in an approved manner.

Sources of ignition shall not be located 18 inches from the floor.

A P-53 holder should also be aware that a **G-60** Certificate of Fitness and FDNY permit **are required** when any torch operation is being performed and that:

- Torch operation should be conducted no less than 35 feet from combustible waste or other motor vehicles.
- Torch operations should not be conducted in any location where hazardous gases or vapors are present.
- In repair garages, that house more than one vehicle, hot-work shall be conducted within a fire-rated enclosure or behind a noncombustible screen that is positioned and of sufficient size to prevent the passage of sparks, slag and heat from the hot work area.
- Compressed gas containers when in use, shall be properly supported and placed a safe distance from torch operations.

- Valves of compressed gas containers when not in use shall be closed and protected from any type of damage with protective caps. **Empty containers should always be treated as if they are full.**

### ***Worst Case Scenario***

#### **HEADLINE: Fire heavily guts Broadway garage.**

February 2009

Fort Wayne, Indianapolis



*“They had just replaced the gas tank and were welding the exhaust system when a spark ignited the gas fumes that had built up in the garage”*

### **GENERAL DE-FUELING PROCEDURE**

First and foremost, safety while de-fueling a vehicle is the number one priority. There are different procedures used to defuel motor vehicles depending on the location as well as the type of equipment available. Some use an air or crank operated siphoning device whereas other procedures use a non-parking punch tool to punch a hole in the tank for fuel to drain.

It is advised the defueling be conducted in a well-ventilated area to avoid the possible accumulation of flammable vapors.

***Never use droplights with incandescent bulbs while de-fueling a motor vehicle because of a spark risk which can result in fire.***

***Lights with florescent, L.E.D., or fiber optic bulbs are recommended.***

### **Worst Case Scenario**

#### **Headline: Coram auto repair shop fire ignited by light dropped on gas, cops say**

June 2014  
Coram, NY



*“an employee dropped a light on the gas he was draining from a car... the drop light broke, igniting a fires...”*

#### **Headline: Darlington auto repair shop fire damages five cars**

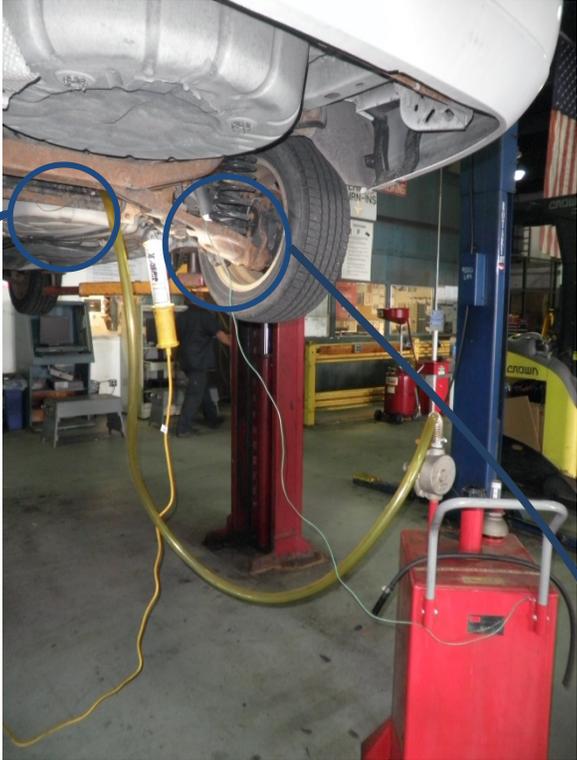
March 2014  
Darlington, South Carolina



*“Darlington City Firefighters say a Joe's Repairs employee was working on a vehicle and somehow mixed gasoline with a light, which sparked a small explosion. That set off a fire in the shop. Darlington's license and inspections office says the shop violated city code, which says the shop can have up to only ten cars outside. ... it had more than three times that amount”*

**Recommended Repair Garage practice**

**Proper Gasoline Defueling Procedure**



Hose Grounded



Defueler grounded

### **Preparation of vehicle:**

- \*Entire fuel system integrity should be evaluated
- inspection should include testing the entire fuel system for leaks

### **Defueling procedure:**

- Check fuel level;
- Depressurize fuel system according to manufacturer's guidelines;
- Disconnect negative (-) battery terminal;
- Put car on lift;
- An **absorbent pad** should be placed on the ground underneath a raised car before the hose is removed, just in case there is any residual gas drips while de-fueling;
- Disconnect fuel fill hose from the fuel gas tank (if vehicle is equipped with anti-siphoning);
- Ground Hose and defueler equipment to a clean area on car fuel tank or chassis are both viable areas);
- Put defueler hose inside connection line on fuel tank and crank (or turn on air operated machine);
- Recovered fuel should be either be returned back into vehicle, used for another vehicle or removed from premises by the end of the shift.



**Absorbent pad**

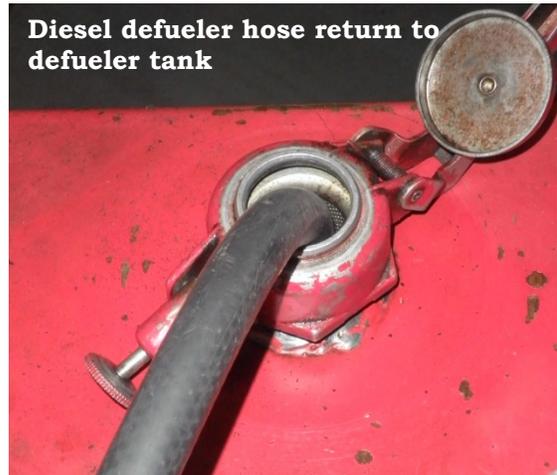
**Anti-siphoning feature:** a feature in most vehicles that prevents both fuel theft and excessive fuel spills. Also, many new cars have an anti-rollover valve, which prevents fuel from leaking out if a car is involved in an accident.

***Proper Diesel Defueling Procedure***



**Defueler grounded to a diesel vehicle.**

**Defueler hose in diesel gas tank**



**Diesel defueler hose return to defueler tank**

***Always refer and read the manufacturer operating manual for the de-fueling equipment prior de-fueling operations.***

## Worst Case Scenario

### Headline: Man seriously burned as fire engulfs Brooklyn auto-body shop

January 2014  
Brooklyn, NY



*“The mechanic at Eastern Auto Center was swapping out a fuel pump on an Isuzu Rodeo inside his Bushwick Ave. shop near Vanderveer St. in Cypress Hills when the SUV — which was resting on a six-foot lift — burst into flames.*

*The Isuzu’s gas tank fell out of the burning vehicle, spraying gasoline all over the floor, Florentino said. Within seconds, the victim was trapped in a circle of fire underneath the burning SUV.”*

### Salvage Yard Practice

- connect hose to the vehicle’s fuel fill connection;
- punch a hole using a **non-sparking punch tool** into the vapor space (above the liquid level) of the fuel tank of vehicle;
- when de-fueling from punched hole ensure tight connections;
- Spark free tool must be used to punch a hole in fuel tank;
- the fuel connection should be closed after de-fueling;
- the punched hole in the fuel tank must be plugged before shredding;
- de-fueling equipment should be shut down and cool to the touch;
- salvaged fuel can be transferred with fueler/defueler equipment to a steel container with a maximum capacity of 55 gallons.

**NON-SPARKING PUNCHING TOOL-** tools specifically designed to puncture but eliminate the risk of sparks. Non-sparking hand tools are made of metals such as brass, bronze, Monel metal (copper-nickel alloy), copper-aluminum alloys (aluminum bronze), or copper-beryllium alloys (beryllium bronze) such as hammers, flange wedges, striking wrenches are safe for punching tanks with hazardous, flammable or combustible vapors.



### **Worst Case Scenario**

#### **Headline: Crews extinguish two-alarm fire at salvage yard**

February 2014  
Flinn Springs, CA



*“a raging two-alarm fire at a salvage yard... the fire was started when a worker using backhoe attempted to crush a vehicle that had gasoline in its tank.*

*“He probably punctured a hole in the tank that still had fuel in it, not supposed to be in it,”*

#### **Headline: Crews extinguish two-alarm fire at salvage yard**

February 2014  
Harrisburg, PA



*“...the spark was caused by a short in pumping equipment used to empty fuel tanks from the vehicles  
...investigation showed vapors at the tanks ignited, and the fire was off and running.”*

## **STORAGE**

Volatile flammable liquids are easily ignited; therefore, smoking is prohibited at all times at all automotive salvage, wrecking facilities, and repair garages.

### **For Repair Garages**

Liquid motor fuel shall not be dispensed into a portable container, unless such container is of approved material and construction, and has a tight closure with screwed or spring-loaded cover so designed that the contents can be dispensed without spilling. Liquids shall not be dispensed into portable or cargo tanks.

Combustible liquid should never be dispensed into glass or plastic containers. An example of an approved and listed gasoline container is shown below:



### **APPROVED PORTABLE CONTAINER**

The capacity of the approved portable container should not exceed 2½ gallons (9.5 L).

### **For Salvage/ Wrecking Facilities**

The fuel recovered by the defueler must be transferred to storage containers or tanks. This fuel cannot be used for **RESALE**. The fuel can **ONLY** be used for self-consumption.

The Certificate of Fitness holder also may pump volatile flammable liquid into an approved storage container or tank. The contents of a container must be clearly marked on the side of the container. The maximum capacity of the container is 60 gallons.

Storage areas shall be protected against tampering or trespassers other approved control measures. Posts or other means shall be provided to protect outdoor storage tanks from vehicular damage.

The storage location shall be kept free from vegetation and other combustible waste. Rubbish and other combustible waste shall not be allowed to accumulate within 15 feet of a flammable or combustible liquid storage

location. Brush, grass, vines, weeds and other vegetation capable of being ignited that is located within 15 feet of a flammable or combustible liquid storage location shall be regularly mowed or pruned and the clippings removed from the premises.

### Unacceptable Storage



### Acceptable Storage



## **EMERGENCY PROCEDURES**

### **In the Case of a Spill –**

The Certificate of Fitness holder should pour an absorbent material on a fuel spill. An absorbent material is commonly used to contain and soak up fuel spills. The area should then be cleaned. If a large spill (more than 5 gallons) or leak occurs it must be reported to the New York State (NYS) Spill Hotline (1-800-457-7362) **within 2 hours of discovery**, except spills which meet **ALL of the following criteria**:

1. The quantity is known to be less than 5 gallons; and
2. The spill is contained and under the control of the spiller; and
3. The spill has not and will not reach the State's water or any land; and
4. The spill is cleaned up within 2 hours of discovery.

A spill is considered to have not impacted land if it occurs on a paved surface such as asphalt or concrete. **A spill in a dirt or gravel parking lot is considered to have impacted land and is reportable.**

More details on notification and reporting requirements can be found in the document posted by the Department of Environmental Conservation ([http://www.dec.ny.gov/docs/remediation\\_hudson\\_pdf/1x1.pdf](http://www.dec.ny.gov/docs/remediation_hudson_pdf/1x1.pdf)).

(The spill responses can be referred to <http://www.dec.ny.gov/chemical/8692.html>)

### **Emergency operations –**

The owners of **automotive salvage and wrecking facilities** having cranes for moving or stacking motor vehicle should develop a procedure that a crane operator is available in a reasonable period of time in the event that crane operation is required during a fire or other emergency.

- **Excessive fires:** If more than two (2) fires occur in 1 year (12 months) it is evident that the owner has not maintained requirements and will be at risk for violations as well as cancellation of FDNY permits and other approvals

\*The FDNY reserves the right to revoke a permit issued if good cause exists.

## **FIRE EXTINGUISHERS**

At least one (1) portable fire extinguisher with a minimum rating of 40BC shall be provided within 30 feet of the de-fueling area but not more than 75 feet **travel distance** from the storage tank and de-fueling operation area.

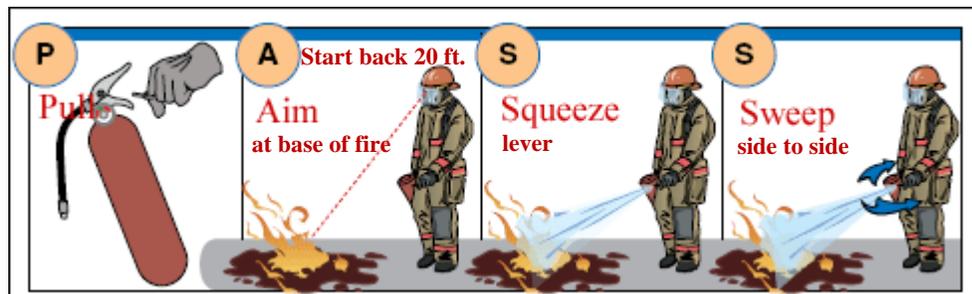
According to the **National Fire Protection Association (NFPA) and New York City Fire Department's Rule**, fire extinguishers are categorized according to their compatibility with the fuel they are expected to extinguish, or the danger of energized electrical equipment. Fuels include four basic groups: wood,

liquids, metals, and animal fats; and the hazard of electrical conductivity. Further, extinguishers are designated by alphabetical letters and symbols as shown in the table below:

CLASSES OF FIRES	TYPES OF FIRES	PICTURE SYMBOL
<b>A</b>	Wood, paper, cloth, trash & other ordinary materials.	
<b>B</b>	Gasoline, oil, paint and other flammable liquids.	
<b>C</b>	May be used on fires involving live electrical equipment without danger to the operator.	
<b>D</b>	Combustible metals and combustible metal alloys.	
<b>K</b>	Cooking media (Vegetable or Animal Oils and Fats)	

**In case of any fire, immediately call 911.**

Fire extinguishers must be used in accordance with the instructions painted on the side of the extinguisher. They clearly describe how to use the extinguisher in case of an emergency. The Certificate of Fitness holder should be familiar with the use of portable fire extinguishers. When it comes to using a fire-extinguisher just remember the acronym P.A.S.S. to help make sure you use it properly. **P.A.S.S. stands for Pull, Aim, Squeeze, Sweep.** An example of these instructions is depicted in the picture below.



## Monthly Inspection-

is a "quick check" that a portable fire extinguisher is available and will operate. It is intended to give reasonable assurance that the portable fire extinguisher is fully charged and operable.

This is done by verifying that:



- Fire extinguishers are in their assigned place;
- Fire extinguishers are not blocked or hidden;
- it has not been actuated or tampered with;
- Fire extinguishers show no visual sign of damage or abuse that prevents its operation;
- Pressure gauge reading or indicator in the operable range or position;
- Ensure that the fire extinguishers tags are current;
- Pin and seals are in place;
- Nozzles are free of blockage.

A basic inspection is a *visual examination* of the portable fire extinguisher.

## Annual Inspection

In addition, fire extinguisher maintenance should be done once per year. It is a "thorough check" of the extinguisher. It is intended to give maximum guarantee that an extinguisher will operate successfully and safely in the event of a fire. It includes a thorough examination, any necessary repair, recharging and/or replacement. This annual inspection must be performed by W-96 Certificate of Fitness holder employed by a FDNY approved portable fire extinguisher company.



**Unacceptable**

- (1) Fire extinguisher must be unobstructed.
- (2) The bottom of the fire extinguisher must be at least 4 in above the floor.
- (3) The fire extinguisher must be properly mounted.



**Acceptable**

- (1) For a fire extinguisher having 40 pounds or less, its top must not be more than 5 ft above the floor
- (2) The fire extinguishers must be accessible.