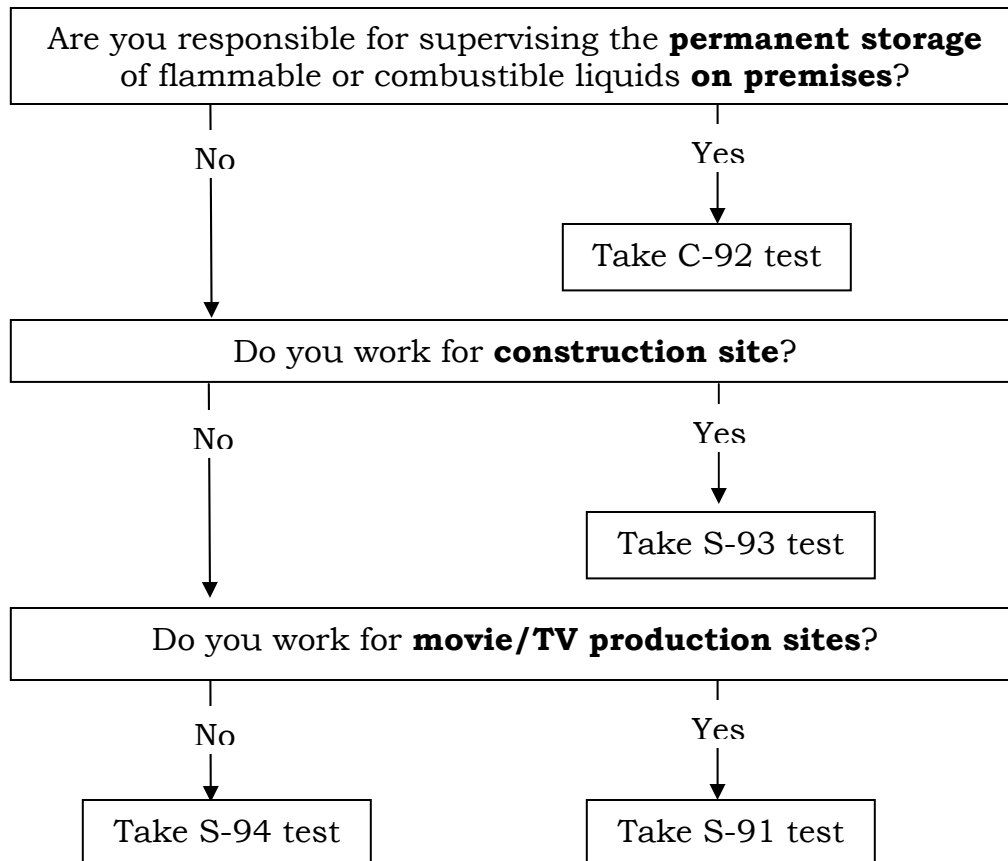


**FIRE DEPARTMENT • CITY OF NEW YORK**



**STUDY MATERIAL FOR THE  
CITYWIDE CERTIFICATE OF FITNESS EXAMINATION**

**TO SUPERVISE TEMPORARY STORAGE AND DISPENSING  
FLAMMABLE AND COMBUSTIBLE LIQUIDS  
AT MOVIE/TV PRODUCTION SITES (S-91)**



## CONTENT

<b>NOTICE OF EXAMINATION</b> .....	I
<b>STUDY MATERIAL AND TEST DESCRIPTION</b> .....	VII
<b>1. GENERAL REGULATIONS</b> .....	1
<b>Variance, Permit and Certificate of Fitness Requirement</b> .....	1
<b>Material Safety Data Sheets (MSDS)</b> .....	3
<b>Class of Flammable and Combustible Liquids</b> .....	3
<b>2. DEFINITION</b> .....	4
<b>3. FUEL TRUCK</b> .....	6
<b>3.1 Protections and clearance from ignition and combustibles</b> .....	6
<b>3.2 No Smoking Sign</b> .....	7
<b>3.3 Warning signs</b> .....	7
<b>4. HANDLING AND DISPENSING</b> .....	7
<b>4.1 Liquid Transfer</b> .....	8
<b>4.2 Dispensing Fuel</b> .....	9
<b>4.3 Liquid Handling Devices</b> .....	9
<b>5. PORTABLE FIRE EXTINGUISHERS AND EMERGENCY RESPONSES</b> ..	11
<b>5.1 Fire Extinguishers</b> .....	11
5.1.1 Different types of fire extinguishers .....	11
5.1.2 Fire extinguisher inspections .....	13
<b>5.2 Emergency Procedures</b> .....	14
5.2.1 Fire notification .....	14
5.2.2 Spill notification .....	14
<b>6. COMMON FLAMMABLE AND COMBUSTIBLE LIQUIDS</b> .....	15
<b>6.1 Flammable Liquids</b> .....	15
<b>6.2 Combustible Liquids</b> .....	17

## **NOTICE OF EXAMINATION**

**Title:** **Certificate of Fitness for supervising temporary storage and dispensing flammable and combustible liquids at movie/TV production sites (S-91).**

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

**Test Site:** **FDNY Headquarters, 9 Metrotech Center, Brooklyn, NY. Enter through the Flatbush Avenue entrance (between Myrtle Avenue and Tech Place).**



## **QUALIFICATION REQUIREMENTS**

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 identification, at least one identification must be government issued photo identification, such as a State-issued Drivers' License or Non Drivers 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. The sample letters could be referred to page V of this document.
5. Applicants not currently employed may take the test without the recommendation letter. If the applicants pass the test, 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.
6. *Special note* for current **S-93 C of F holders** who supervise temporary storage and dispensing flammable and combustible liquids at **movie/TV production sites**: you can exchange your S-93 C of F card for S-91 C of F without test by one of the following methods. (note: this exchange service will **no longer be available on or after 04/10/2017**)

- A. Walk in (You can have your S-91 C of F card on the same day):  
visit the FDNY Headquarter with (1) **a letter from the employer** (see the sample letter on page VI of this study material) (2) **the signed and dated personal statement** on page VII of this study material, and (3) **the original S-93 C of F card**.

If you don't need to keep your S-93 C of F card, you can exchange for S-91 C of F card without additional payment. However, if you would like to keep your S-93 C of F card, you will need to pay additional \$25 fee to apply the S-91 C of F card.

- B. Mail in (the S-91 C of F card will be mailed in 4-6 weeks):

- If you want to keep your S-93 C of F card, the required documents:
  - (1) a letter from the employer (see the sample letter on page VI of this document)
  - (2) the signed and dated personal statement on page VII of this document
  - (3) the copy of your S-93 C of F card
  - (4) a fee of \$25, money order or personal check payable to "Fire Department City of New York"
- If you don't need your S-93 C of F card, the required documents:
  - (1) a letter from the employer (see the sample letter on page VI of this document)
  - (2) the signed and dated personal statement on page VII of this document
  - (3) the original S-93 C of F card

Mail the required documents mentioned above to:  
FDNY (C of F Unit), 9 MetroTech Center, Brooklyn, NY 11201.

## **APPLICATION INFORMATION**

**Application Fees:** \$25 for originals and \$15 for renewals. The fee may be paid by cash, money order, credit card, debit card or personal check made payable to the New York City Fire Department. The \$25 fee must be paid by all applicants prior to taking the Certificate of Fitness test.

**Application Forms:** Application forms are available at the Public Certification Unit, 1<sup>st</sup> floor, 9 Metro Tech Center, Brooklyn, NY 11201.

## **RENEWAL REQUIREMENTS**

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. For renewal, send the renewal notification or a letter stating the C of F # with a fee of \$15, money order or personal check payable to "Fire Department City of New York" to:

FDNY (Cashier's Unit)  
9 MetroTech Center,  
Brooklyn, NY 11201

Late renewals (90 days after the expiration date, up to 1 year) will incur a \$ 25 penalty in addition to the renewal fee. Certificates expired over one year past expiration date will not be renewed. New tests will be required. FDNY also reserves the right to require the applicants to take a re-examination upon submission of renewal applications.

Certificate of Fitness can also be renewed on-line. For more information:

[http://www.nyc.gov/html/fdny/pdf/cof\\_study\\_material/cof\\_renewal\\_online\\_information\\_9\\_13\\_13.pdf](http://www.nyc.gov/html/fdny/pdf/cof_study_material/cof_renewal_online_information_9_13_13.pdf)

## **TEST INFORMATION**

The S-91 will consist of **20** multiple-choice questions, administered on a "touch screen" computer monitor. It is a time-limit test. 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.

## **WEBSITE**

Please always check for the latest revised booklet at FDNY website before you take the test, the Certificate of Fitness Study Material link, below

[http://www.nyc.gov/html/fdny/html/c\\_of\\_f/cof\\_study\\_materials.shtml](http://www.nyc.gov/html/fdny/html/c_of_f/cof_study_materials.shtml)

**(This sample letter is for general S-91 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 S-91 Certificate of Fitness for supervising the temporary and dispensing  
flammable and combustible liquids at movie/TV production sites.

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

different movie/TV production sites in NYC areas.

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.**

=====

**(This sample letter is only for current S-93 C of F holders)**

**FIRM OR COMPANY NAME**

**BUSINESS ADDRESS**

DATE: \_\_\_\_\_

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

Dear Sir/Madam:

\_\_\_\_\_ is currently holding the S-93 Certificate of Fitness for  
(Applicant's name)

*supervising temporary storage and dispensing Flammable or combustible liquids at*

*construction sites, however, his job duty is **mainly supervising the temporary and***

**dispensing flammable and combustible liquids at movie/TV production sites.**

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

different movie/TV production sites in NYC areas. As a result, I highly recommend

\_\_\_\_\_ to exchange his current S-93 Certificate of Fitness card for the  
(Applicant's name)

S-91 Certificate of Fitness card to adequately perform his job duties.

Applicant is of GOOD CHARACTER and is PHYSICALLY ABLE to perform the function  
required by the holder of the S-91 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.**

=====

**(This sample letter is only for current S-93 C of F holders)**

## **Personal Statement**

Date \_\_\_\_\_

I hereby certify that I have fully read the S-91 examination study material and understand its content. I understand that the rules and regulations relating to the temporary storage and dispensing of flammable and combustible liquids at movie/TV production sites are different from the regulations for the construction sites.

I also understand that the Department reserves the right to require me to take a re-examination upon submission of renewal applications, and that failure to submit this document with my Certificate of Fitness exchange application may require me to retake the examination.

\_\_\_\_\_  
Name (Print)

\_\_\_\_\_  
Certificate of Fitness Number

\_\_\_\_\_  
Name (Signature)



## **STUDY MATERIAL AND TEST DESCRIPTION**

This study material will help you prepare for the Certificate of Fitness test for supervising temporary storage and dispensing flammable or combustible liquids at movie/TV production sites. The study material **will not be provided to you during the test. It is critical that you read and understand this booklet to help increase your chance of passing this exam.** The study material does not contain all of the information you need to know to supervise the storage and dispensing flammable and combustible liquids. It is your responsibility to become familiar with all applicable rules and regulations of the City of New York, even if they are not covered in this study material. You should read the Fire Code Chapter 27 and 34, and NFPA 30 which regulate the storage, handling and use of flammable or combustible liquids in order to adequately prepare for the exam.

If you are responsible for supervising **PERMANENT STORAGE of flammable or combustible liquids** on premises and the storage requires a FDNY permanent permit, you should take **the C-92 Certificate of Fitness** test: supervising storage, handling, and use of flammable or combustible liquids. If you are responsible for supervising the **temporary storage, dispensing and use** of flammable or combustible liquids on **construction site** requiring a FDNY permit, you should take the **S-93 Certificate of Fitness** test.

### **About the Test**

All questions on the Certificate of Fitness examination are of the multiple choice type with four alternative answers to each question. Only one answer is most correct for each question. If you do not answer a question, or if you mark more than one alternative your answer will be scored as incorrect. A score of 70% is required on the examination in order to qualify for the Certificate of License. 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
- C. the examiner in the testing room
- D. you should not ask about test questions since FDNY staff can not 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
- 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.*

## 1. GENERAL REGULATIONS

This document outlines New York City Fire Department regulations for temporary storage and dispensing flammable and combustible liquids. According to the FDNY regulations, a Certificate of Fitness is needed for general supervision of the storage and personal supervision of the dispensing of flammable and combustible liquids.

### **Variance, Permit and Certificate of Fitness Requirement**

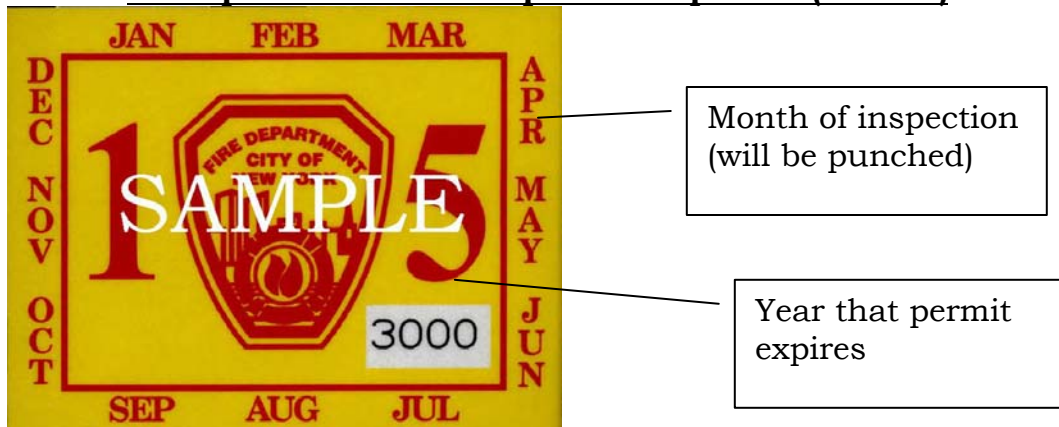
A modification (variance) must be applied for the dispensing operation for fueling generators, campers and other production vehicles. An application (BFP-MOD) for modification (variance) of provisions of the New York City Fire Code or Fire Department Rules shall be submitted and approved prior to dispensing operations.

In addition to the variance, FDNY transportation permit (sticker) and approval letter issued by the Hazardous Cargo Vehicle Inspection Unit are also required. The permit and the approval letter will be issued after the tank truck passing the inspection.

The FDNY transportation permit (sticker) must be displayed on the tank truck. A copy of the approved variance and the approval letter shall be kept in the vehicle performing the dispensing operation at all time, and shall be presented to the FDNY upon request.

The fuel truck driver must be an S-91 Certificate of Fitness holder. **The Certificate of Fitness holder must keep the Certificates of Fitness upon his or her person or otherwise readily available for inspection by any representative of the Department, at all times while conducting or supervising the material, operation or facility for which the certificate is required.**

### **Example of FDNY Transportation permit (sticker)**



Example of an approval letter



**FIRE DEPARTMENT**

**Hazardous Cargo Vehicle  
Inspection Unit**

245 Meserole Ave. Brooklyn, NY 11222

Phone: (718) 752-0296 / 0341 Fax: (718) 752 - 0402

Date: \_\_\_\_\_

Account No.: \_\_\_\_\_

Permit No.: \_\_\_\_\_  
(Sticker No.)

Name & Address of Permit Applicant,

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The above referenced company has made an application for a (Transportation / Citywide) permit to Transport and or use:

\_\_\_\_\_

And the Vehicle / Trailer was inspected satisfactorily on \_\_\_\_/\_\_\_\_/\_\_\_\_.

The approval applies only to the Vehicle / Trailer listed below:

Truck No. \_\_\_\_\_ Trailer No. \_\_\_\_\_

Make of truck: \_\_\_\_\_ Year: \_\_\_\_\_ Identification No. \_\_\_\_\_

Make of trailer: \_\_\_\_\_ Identification No. \_\_\_\_\_

Inspected By: \_\_\_\_\_  
Badge No.

**Note: PERMIT EXPIRES (1) ONE YEAR FROM THE ABOVE DATE.**

**THIS LETTER SHALL BE CARRIED IN THE CAB OF THE TRUCK AND IT SHALL BE PRESENTED UPON REQUEST TO FIRE DEPARTMENT REPRESENTATIVE.**

\_\_\_\_\_  
**Chief of Fire Prevention**

**Material Safety Data Sheets (MSDS)**

Material Safety Data Sheet (MSDS) information should 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 Certificate of Fitness holder must refer to the MSDS when questions arise about how to handle, use, or store hazardous chemicals or materials. The MSDS may also be requested by health care personnel to facilitate proper medical care in the event of chemical exposure.

**Class of Flammable and Combustible Liquids**

For the current 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	Gasoline, 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
<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

## 2. DEFINITION

**CARGO TANK.** A vehicle other than a railroad tank car or marine vessel, with a tank mounted thereon or built as an integral part thereof, used for the transportation of flammable or combustible liquids, LPG or other hazardous materials, including self-propelled vehicles and full trailers and semi-trailers, with or without motive power, and carrying part or all of the load.

**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).

**CONTAINER.** For solid and liquid hazardous materials, a vessel of 60 gallons (227 L) or less in capacity used for storage or transportation. For compressed gases, a cylinder, pressure vessel or tank designed for pressures greater than one atmosphere at 68°F (20°C). Pipes, piping systems, engines and engine fuel tanks associated with solid or liquid hazardous materials or compressed gases, shall not be deemed to be containers if in active use.

**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 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).

**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.

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

**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.

**INCOMPATIBLE MATERIALS.** Materials that, if mixed or combined, could explode, generate heat, gases or other byproducts, or react in a way hazardous to life or property.

**LIQUID.** A material having a melting point that is equal to or less than 68°F (20°C) and a boiling point that is greater than 68°F (20°C) at 14.7 psia (101 kPa). When not otherwise identified, the term “liquid” includes both flammable and combustible liquids.

**MATERIAL SAFETY DATA SHEET (MSDS).** 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.

**PERSONAL SUPERVISION.** Supervision by the holder of any department certificate 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.

**PROCESS TRANSFER.** The transfer of flammable or combustible liquids between cargo tanks or tank cars and containers, tanks piping and other equipment that is to be used in process operations.

**SAFETY CAN.** An approved container (e.g. approved metal safety cans must meet the requirement of ANSI/UL 30, Standard for Metal Safety Cans) with a capacity of not more than 5-gallons (19 L) and equipped with a spring-closing lid and spout cover designed to relieve internal pressure when exposed to fire.

**TANK, PORTABLE.** A container of more than 60-gallon (227 L) capacity, and designed to be loaded into or on or temporarily attached to a transport vehicle or marine vessel and equipped with skids, mountings or accessories to facilitate handling of the tank by mechanical means. It does not include any cargo tank or tank car. It is not intended for fixed installation.

**Tank, TEMPORARY.** The capacity of temporary aboveground tanks containing flammable or combustible liquids shall not exceed 660 gallons (2498 L) at construction sites. Tanks shall be of the single-compartment design, shall be constructed of steel, and shall meet the requirements of the New York State Department of Environmental Conservation regulations, as set forth in 6 NYCRR Parts 613 and 614.

### 3. FUEL TRUCK

The fuel truck must be continuously under the personal supervision of an S-91 Certificate of Fitness holder when it is being used or temporary stored on the film location. Each fuel truck shall utilize a maximum of **two** on board refueling tanks, in accordance with the following:

- A. Tanks shall be metallic only; fiber glass is unacceptable
- B. One tank shall be dedicated to gasoline storage only, and the other tank shall be dedicated for diesel storage only



Tanks must be metallic.

Two separate storage tanks: one for gasoline, one for diesel.

- C. Each tank shall be limited in capacity to no greater than 110 gallons
- D. Tanks shall be approved and/or listed for the intended use
- E. Tanks shall be properly secured to the non-combustible bed of the fuel truck
- F. Tanks shall have secondary containment, and this containment shall be keep free of liquids and debris at all times.

Each fuel truck shall utilize hoses, nozzles, and pumps/motors that are approved and/or listed for the intended use. The fuel truck dispensing hose shall not exceed 100 feet in length.

#### 3.1 Protections and clearance from ignition and combustibles

Electrical devices and wiring in areas where fuel dispensing is conducted shall be in accordance with the NYC Electrical Code. Fuel dispensing shall be conducted at least 50 feet from combustible material/ and combustible waste.



### 3.2 No Smoking Sign

Signs prohibiting smoking and open flames shall be prominently and conspicuously posted on the two sides of the fuel truck. The signs shall be provided in English as a primary language. The Fire Department has published an approved “No Smoking” sign as set forth in Fire Department Rules. However, the Fire Department does not mandate that this design be used. Other legible, durable signs, clearly communicating the “no smoking” requirement, may be used, but are subject to Fire Department enforcement action if found to be inadequate.

Smoking or any open flames within 25 feet of the fuel truck and equipment being refueled shall be prohibited.



Examples of an acceptable sign

### 3.3 Warning signs

Warning signs shall be constructed of a durable material. Signs warning of the hazard of flammable liquids shall have red, black or white lettering on a contrasting background and shall read: DANGER—FLAMMABLE LIQUIDS. Letters shall not be less than 3 inches in height and 0.5 inch in stroke. Signs shall be posted in locations as required by the FDNY representatives.



(An example of the warning sign)

## 4. HANDLING AND DISPENSING

The C of F holder should:

- (1) prevent dispensing flammable and/or combustible liquids into any non-approved portable containers;
- (2) be familiar with the dispensing system and emergency shutoff controls;

- (3) personally perform the fueling operation and maintain a direct, clear, unobstructed view of the emergency fuel shutoff control

Before fueling, the truck engine and the motor or the engine of the equipment/generator that is fueled shall be shut down. Fueling shall not be undertaken at night except under well-lighted conditions.

#### 4.1 Liquid Transfer

Liquid transfer equipment and methods for transfer of Class I, II and IIIA liquids shall be subject to the approval of the Fire Department representatives. Positive-displacement pumps shall be provided with pressure relief discharging back to the tank, pump suction or other approved location, or shall be provided with interlocks to prevent over-pressure. Any piping, hoses and valves used in liquid transfer operations shall be subject to the approval of the commissioner or listed for the intended use. **Compressed gases shall not be used to pressurize containers or tanks to provide for transfer.** Container-filling operations for Class I liquids involving conveyor belts or other automatic-feeding operations shall be designed to prevent static accumulations.

- A. **Class I and II liquids or Class III liquids in containers exceeding 5.3 gallons capacity** that are at a temperature higher than 20°F less than their flash points shall **not be dispensed by gravity**, but shall be transferred by one of the following methods:
1. From safety cans complying with the requirements of UL 30.
  2. Through an approved closed piping system.
  3. From containers or tanks by an approved pump taking suction through an opening in the top of the container or tank.
  4. Approved engineered liquid transfer systems.

Example: Turpentine having a flash point of 95°F would NOT be allowed to be dispensed by gravity if the material temperature was to exceed 75°F.

- B. The following liquids shall not be transferred into containers unless the nozzle and containers are **electrically interconnected**:
- (1) **Any Class I liquids;**
  - (2) **The Class II or III liquids at a temperature higher than 20°F less than their flash points**

Acceptable methods of electrical interconnection include:

1. Metallic floor plates on which containers stand while filling, when such floor plates are electrically connected to the fill stem; or
2. Where the fill stem is bonded to the container during filling by means of a bond wire.

## 4.2 Dispensing Fuel

Discharge devices shall be of a type that **do not develop an internal pressure** on the container. Pumping devices or approved self-closing faucets used for dispensing liquids shall not leak and shall be well-maintained. Normally, gasoline and diesel are dispensed into the generator using a fuel pump. These pumps are usually powered by electricity. All of the pumps are connected to an electrical circuit breaker. The breaker allows the pumps to be quickly shut off in case of an emergency. The fuel is pumped through a hose when filling the generator.

The pump has a dispensing control device installed. The control device is usually a lever installed next to a nozzle holding bracket. The control device may be turned on only when the dispensing nozzle is taken out of its holding bracket. It may be shut off when the dispensing nozzle is placed back into the holding bracket. No attempt should be made to bypass this control device.



The nozzle must be placed back into holding bracket after use. **The hose and nozzle must never be left laying on the ground.** If the hose and nozzle are on the ground they are exposed to physical damage. This damage may result in leaks and malfunctions of the system. Keeping the nozzle in the holding bracket reduces the risk of the hose being damaged. The hose and nozzle must always be replaced in the holding bracket when not in use. The length of the dispensing hose shall be such that at least 1 inch clearance between the hose and the ground is maintained when the nozzle is rested on its bracket.

Before pumping motor fuel into a generator the nozzle must be grounded. This is done by touching the nozzle against the steel bumper or chassis of the generator. Grounding eliminates static electricity. Static electricity has the potential to cause a spark when pumping the fuel. A single spark may ignite the flammable/combustible vapors. Grounding makes sure that a fire or explosion does not occur while dispensing the fuel. **The generator's motor must always be turned off before fuel is pumped into it.**

## 4.3 Liquid Handling Devices.

Individual containers shall not be interconnected and shall be kept closed when not in use.

Any containers filled with motor fuel at a motor fuel dispensing facility is only allowed to have a maximum individual capacity of 2.5 gallons.

**Motor fuel liquids in portable containers shall not be dispensed into portable tanks or cargo tanks.** Portable containers shall not be filled while located inside the trunk, passenger compartment or truck bed of a vehicle or upon a watercraft. This is to make sure that no motor fuel is accidentally spilled into the trunk of the vehicle. No motor vehicle, motorcycle or watercraft shall be fueled from a portable container while inside a building or structure.

Examples of an  
approved gasoline  
container



## 5. PORTABLE FIRE EXTINGUISHERS AND EMERGENCY RESPONSES

### 5.1 Fire Extinguishers

**A portable extinguisher with a minimum rating of 2A:20BC shall be carried on the fuel truck at all times.**

In the event of a fire extinguisher has been discharged, a fully charged replacement is required before work can resume. Portable fire extinguishers are important in preventing a small fire from growing into a catastrophic fire, however, they are not intended to fight large or spreading fires. By the time the fire has spread, fire extinguishers, even if used properly, will not be adequate to extinguish the fire. Such fires should be extinguished by the building fire extinguishing systems or trained firefighters only.



In case of any fire, 911 must be called. 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.

#### 5.1.1 Different types of fire extinguishers

The Certificate of Fitness holder must be familiar with the different types of fire extinguishers that are present. He/she must know how to operate the extinguishers in a safe and efficient manner. He/she must know the difference between the various types of extinguishers and when they should be used. A description of the five classes of fires and the appropriate extinguishers are described below.

**Class A** fires are caused by ordinary combustible materials (such as wood, paper, and cloth). To extinguish a Class A fire, these extinguishers utilize either the heat-absorbing effects of water or the coating effects of certain dry chemicals.

**Class B** fires are caused by flammable or combustible liquids and gases such as oil, gasoline, etc. To extinguish a Class B fire, the blanketing-smothering effect of oxygen-excluding media such as CO<sub>2</sub>, dry chemical or foam is most effective.

**Class C** fires involve electrical equipment. These fires must be fought with fire extinguishers that do not conduct electricity. Foam and water type extinguishers must not be used to extinguish electrical fires. After the power has been isolated from the electrical equipment, extinguishers for Class A or B fires may be used.

**Class D** fires are caused by ignitable metals, such as magnesium, titanium, and metallic sodium, or metals that are combustible under certain conditions, such as calcium, zinc, and aluminum. Generally, water should not be used to extinguish these fires.




A multi-purpose dry chemical fire extinguisher may be used to extinguish more than 2 Classes fires. Examples of some fire extinguishers are shown below.

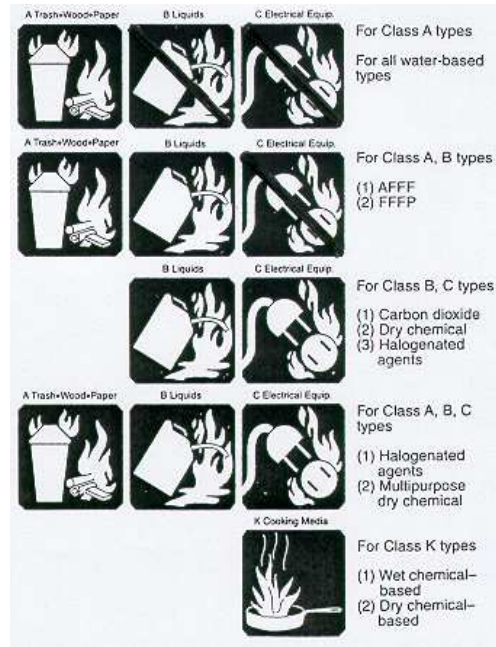
Examples of fire extinguishers



Symbols may also be painted on the extinguisher. The symbols indicate what kind of fires the extinguisher may be used on. Examples of these symbols are shown 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)	



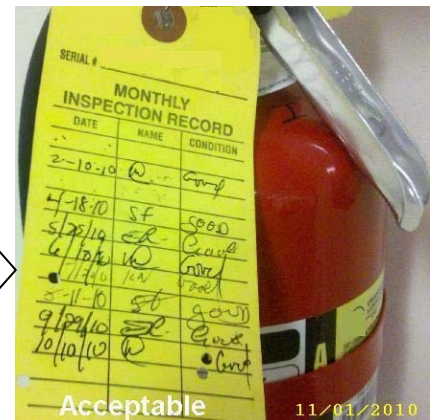
**Fire Extinguisher Identification Symbols**

The symbol with the shaded background and the slash indicates when the extinguisher must not be used. The Certificate of Fitness holder must understand these symbols. All fire extinguishers should be kept in good working order at all times.

### 5.1.2 Fire extinguisher inspections

The extinguishers are required to be inspected monthly. This inspection is a "quick check" that a fire extinguisher is available and will operate. It is intended to give reasonable assurance that the fire extinguisher is fully charged and operable. This is done by verifying that it is in its designated place, that it has not been actuated or tampered with, and that there is no obvious or physical damage or condition to prevent its operation. The information of the monthly inspection record must include the date the inspection was performed, the person performing the inspection, and those portable fire extinguishers found to require corrective action. Such recordkeeping must be either attached to the extinguisher or on an inspection checklist maintained on file. Labels or markings indicating fire extinguisher use, or classification, or both shall be placed on the front of the fire extinguisher. At least once per year, all fire extinguishers must be maintained by a FDNY approved company and a W-96 Certificate of Fitness holder.

Monthly inspection tag.



## 5.2 Emergency Procedures

### 5.2.1 Fire notification

Anyone becoming aware of any fire is required to immediately notify the emergency operator (911) or, depending upon the borough in which the property is located, insert one of the following the Fire Department Dispatcher numbers:

Manhattan properties	(212) 999-2222
Bronx properties	(718) 999-3333
Brooklyn properties	(718) 999-4444
Queens properties	(718) 999-5555
Staten Island properties	(718) 999-6666

The New York City Fire Department will respond. No supervisor or other person shall issue any directive or take any action to prevent or delay the reporting of a fire or other emergency to the department. You should also notify the building's designated fire safety person who is familiar with the building and can meet the responding emergency units upon their arrival, and direct them quickly to the fire area.

### 5.2.2 Spill notification

**Provisions shall be made to control and mitigate the accidental spill of gasoline and/ or diesel.** In case of a major spill, the Certificate of Fitness holder must notify the Fire Department by phone immediately. The Certificate of Fitness holder must know the telephone number of the Fire Department Dispatcher number in the borough where the building is located. These phone numbers must be posted near the phones most likely to be used in case of an emergency.

In addition, All petroleum spills that occur within New York State (NYS) must be reported to the 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>)



## 6. COMMON FLAMMABLE AND COMBUSTIBLE LIQUIDS

The following paragraphs give a brief overview of the flammable and combustible liquids that are commonly used in the workplace. 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 each 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 proper protective equipments (PPE) including rubber safety gloves, chemical safety goggles when handling the flammable or combustible liquids.

### 6.1 Flammable Liquids

#### **Gasoline (Class IA Liquid)**

(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.

## 6.2 Combustible Liquids

### **Diesel (Class II liquid)**

(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 Fuel 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, 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 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.