Revised on 3-24-16

FIRE DEPARTMENT • CITY OF NEW YORK

STUDY MATERIAL FOR THE EXAMINATION FOR CERTIFICATE OF FITNESS FOR

SUPERVISION OF FLAMMABLE FINISHING OPERATIONS

C-30

Note: The C-30 Certificate of Fitness was previously the C-22 Certificate of Fitness for Supervision of Spray Painting.

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C-30 Study Guide

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NOTICE OF EXAMINATION

Title: Supervision of Flammable Finishing Operations (C-30)

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 form of identification must be government issued photo identification, such as a State-issued Drivers' 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:
   - Sample of recommendation letter: http://www1.nyc.gov/assets/fdny/downloads/pdf/business/cof-samplerec-letter.pdf
   - Sample of self-employed letter: http://www1.nyc.gov/assets/fdny/downloads/pdf/business/cof-sample-selfrec-letter.pdf
5. Applicants must present a completed application for certificate of fitness (A-20 Form). http://www1.nyc.gov/assets/fdny/downloads/pdf/business/cof-application-form.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. Special note for the C-30 Certificate of Fitness:

   The C-30 was previously the C-22 Certificate of Fitness, Supervision of Spray Painting. Only those individuals who are certified for the **C-30** Certificate of Fitness will be exempt from having to obtain a separate **C-92** Certificate of Fitness for Storage, Handling and Use of flammable/combustible liquids. **This exemption is for SPRAY OPERATIONS ONLY.**
8. **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.

9. EXAM INFORMATION

The **C-30** exam will consist of **35** multiple-choice questions, administered on a "touch screen" computer monitor. It is a time-limit exam. Based on the amount of the questions and reference material provided, you will have **53** minutes to complete the 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.

Special material provided during the exam: *The tables which appear in the booklet will be provided to you as a reference material when you take the exam at MetroTech, however, the booklet will not provide to you during the exam.*

Please always check for the latest revised booklet at FDNY website before you take the exam.
http://www1.nyc.gov/assets/fdny/downloads/pdf/business/cof-c30-noe-study-materials.pdf

10. If all the requirements are meet 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.

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://a836-citypay.nyc.gov/citypay/FDNYCOF**

- **Renewal by mail**

Mail your Renewal Notice (or 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 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, 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 his or her work-related responsibilities are eligible for fee waivers.)***

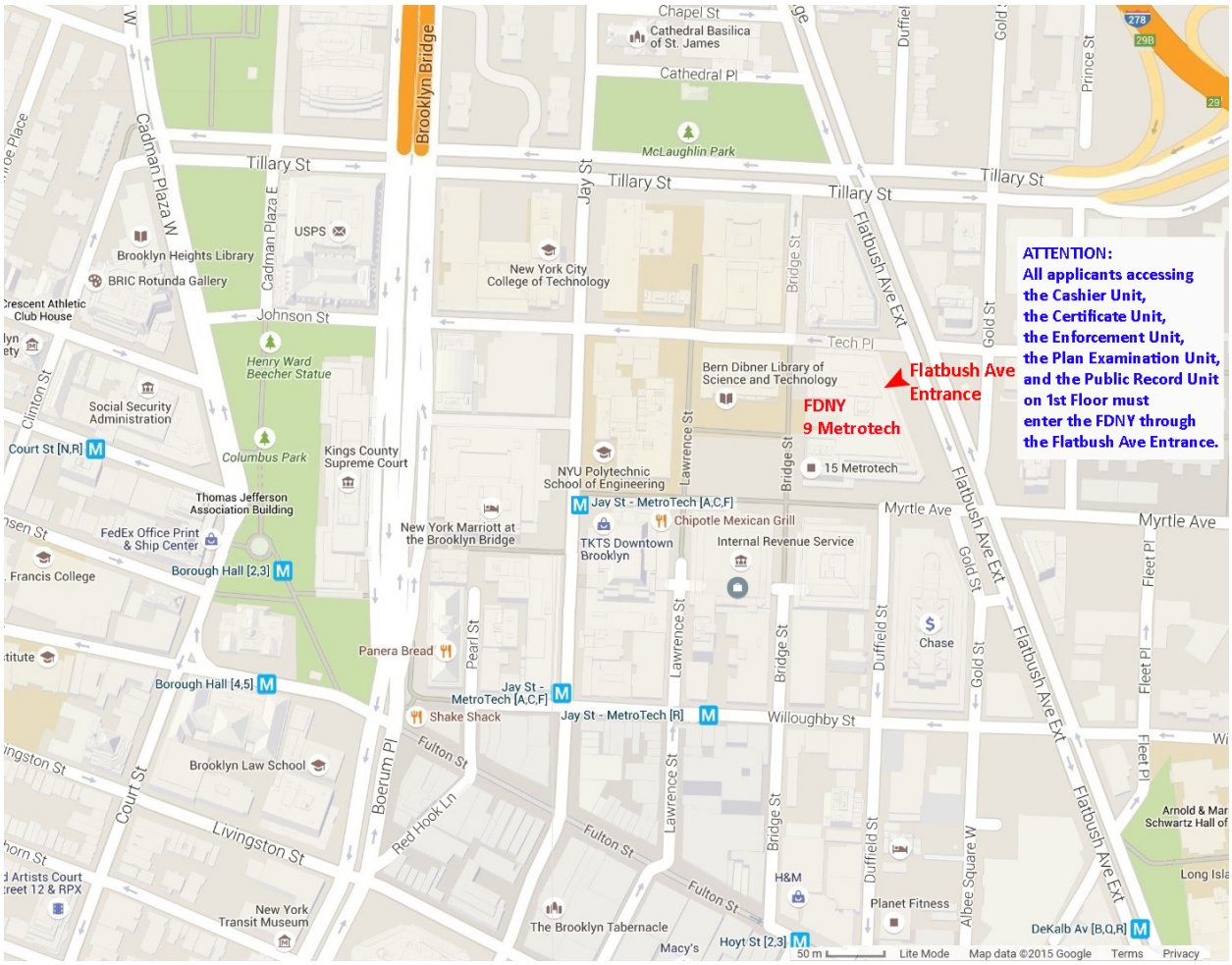
- A letter requesting fee waiver on the Agency's official letterhead stating applicant full name, exam type and address of premises; ***AND***
- Copy of identification card issued by the agency and if applicable, your supporting documents to:

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)**.



About the Study Material

This study material contains information you will need to prepare for the examination for the Certificate of Fitness for the Supervision of Flammable and Combustible Finishing Operations (previously known as the C-22 Certificate of Fitness, Supervision of Spray Painting). **This 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 examination.** The study material does not contain all of the information you need to know to supervise flammable and combustible finishing operations at your work location. 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 need to be familiar with the 2014 Fire Code, Chapters 15 and 34, National Fire Protection Association (NFPA) Sections 30 and 33, and the Rules of the Fire Department of the City of New York in order to adequately prepare for the examination.

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. You will take the examination on a touch screen computer monitor. A score of 70% is required on the examination in order to qualify for the Certificate of Fitness. There are **35** multiple choice questions on the examination. Read each question carefully before marking your answer. There is no penalty for guessing.

Sample Questions

1. Who was the first president of the United States?

(A) George Washington.
(B) Madonna.
(C) Abraham Lincoln.
(D) Elvis Presley.

The correct answer is "**A**". You would touch "**A**" on your touch-screen terminal.

2. What sports team plays at Madison Square Garden?

(A) Yankees.
(B) Nets
(C) Cardinals.
(D) Knicks.

The correct answer is "**D**". You would touch "**D**" on your touch-screen terminal.

1. Introduction

This document outlines New York City Fire Department (FDNY) regulations for the safe use, handling and storage of flammable and combustible liquids. This document also covers New York City Fire Department regulations for flammable and combustible finishing operations. Flammable and Combustible finishing operations include:

- the application of flammable or combustible paint, varnish, lacquer, stain, fiberglass resins or other flammable or combustible liquid applied by means of a spray apparatus in continuous or intermittent processes
- dip-tank operations
- the application of combustible powders applied by powder spray guns, electrostatic powder spray guns, fluidized beds or electrostatic fluidized beds
- floor finishing operations
- the application of dual-component coatings of Class I or II liquids when applied by brush or roller in quantities exceeding 1 gallon (4 liters).

At least one Certificate of Fitness holder must be on duty at all times when these chemicals or materials are being handled or used, or spray-finishing/dipping operations or floor finishing operations requiring a permit are taking place. Certificate of Fitness holders are responsible for ensuring that all Fire Department regulations related to the safe use, handling and storage of flammable/combustible liquids, and flammable finishing operations are obeyed on the premises.

The material on the C-30 Certificate of Fitness examination covers the contents of this booklet. **This booklet will not be provided to you during the test.**

1.1 Required Permits

Types of Permits

1. **Site Specific Permit** – Authorizes the permit holder to store, handle, and use flammable and combustible liquids at a specific premise or location. A site-specific permit can be a permanent permit or a temporary permit. Permanent permits are valid for 12 months only. Every permit or renewal shall require an inspection and shall expire after twelve months. Temporary permits may be valid from one day to 12 months depending on the construction/operation needed. For example, a 3 month temporary permit may be issued to a construction site.

2. **Citywide Permit** – Authorizes the permit holder to store, handle, use, sell or transport hazardous materials, or conduct an operation on a citywide basis, for which a permit is required by the Fire Department. A citywide permit is valid to store, handle, use, sell or transport hazardous materials or to conduct an operation at one or more locations, provided the duration of such activity at any individual location does not exceed 30 days. Periods of activity in excess of 30 days at any one location shall require a site-specific permit.

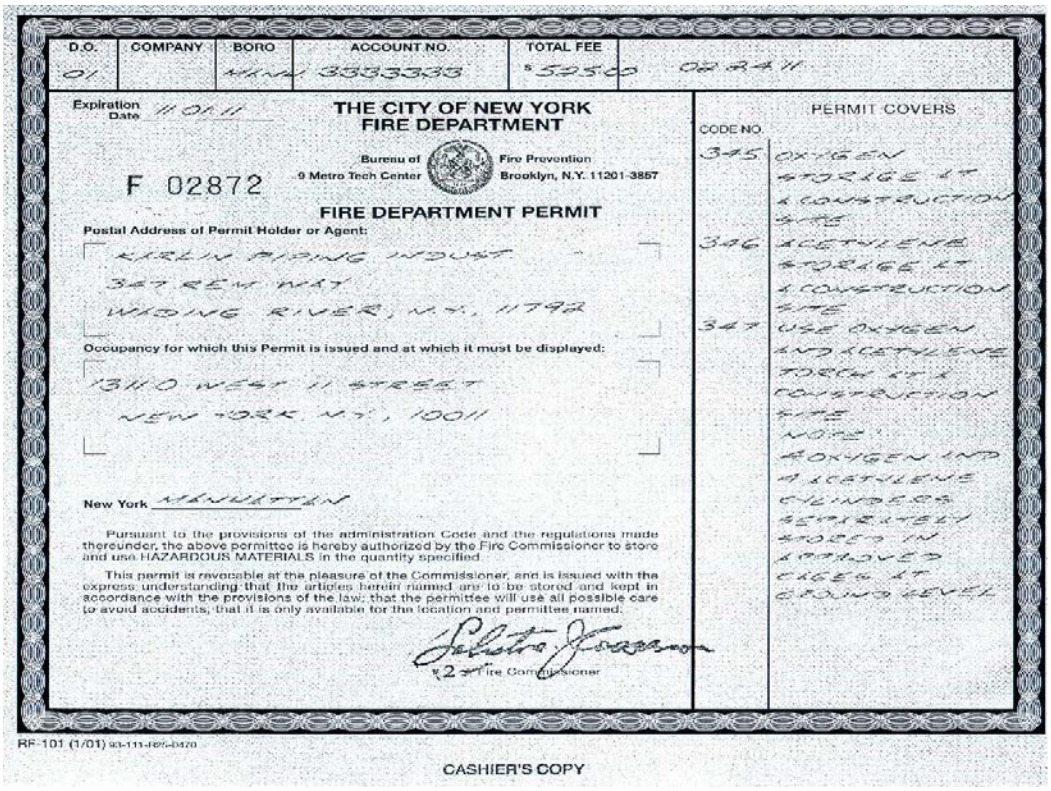
Permits are not transferable and any change in occupancy, operation, tenancy or ownership must require that a new permit be issued. The Certificate of Fitness holder is responsible for making sure that all fire safety regulations and procedures are obeyed on the premises. Permits and the Certificates of Fitness shall be readily available on the premises for inspection by Fire Department representatives.

There are **three** different permits that are relevant to a C-30 Certificate of Fitness holder. These three permits are listed below:

1. Permit for **Flammable and Combustible Liquids:** Required for storing, handling or using amounts in excess of **20 gallons of Class I, Class II or Class III liquids** having a flash point of 300° Fahrenheit (F) or less that are commonly used for **painting, varnishing, staining or other similar purposes**, including paint, varnish and lacquer.

2. Permit for **Spraying and Dipping:** Required to conduct **spraying or dipping operations** utilizing flammable or combustible liquids or the **application of combustible powders**.

3. Permit for **Floor Finishing:** Required to conduct floor finishing or surfacing operations over an area exceeding 350 square feet (33 square meters) using Class I or Class II liquids or where the quantity of floor finishing or surfacing products stored, handled or used requires a flammable or combustible liquid permits pursuant to this section.



D.O.	COMPANY	BORO	ACCOUNT NO.	TOTAL FEE
01		MAN	3333333	$525.00

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

F 02872

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.

Fire Commissioner

PERMIT COVERS

CODE NO.

345 OXYGEN STORAGE AT CONSTRUCTION SITE

346 ACETYLENE STORAGE AT CONSTRUCTION SITE

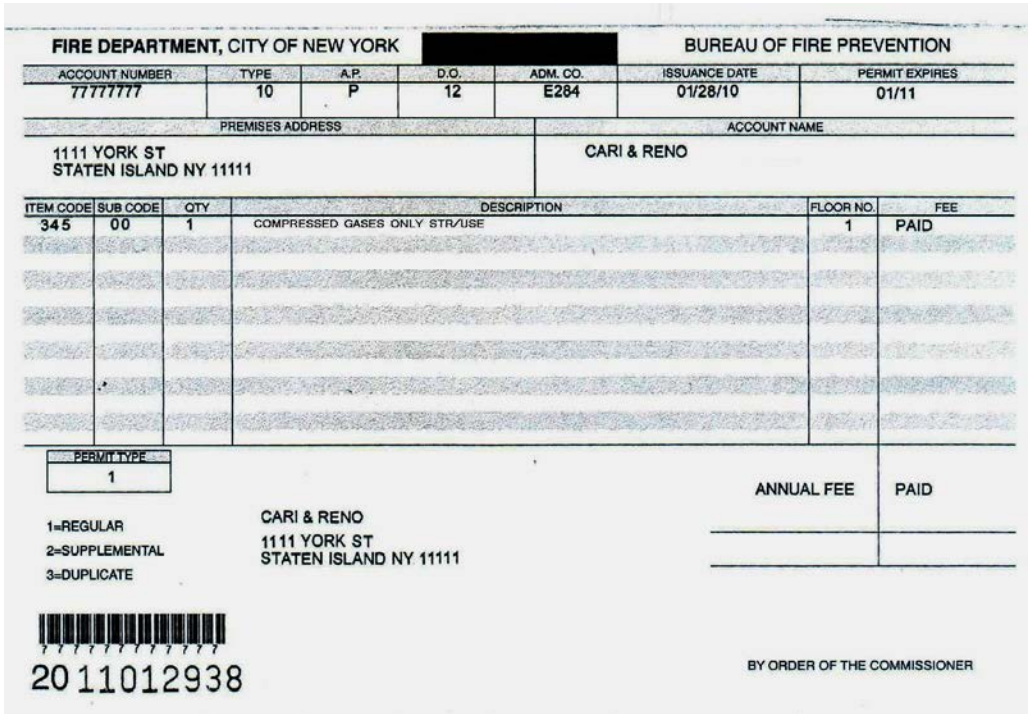
347 USE OXYGEN AND ACETYLENE TORCH AT CONSTRUCTION SITE

NOTE: OXYGEN AND ACETYLENE CYLINDERS ABSOLUTELY STORED IN LOCKED CAGE AT GROUND LEVEL

RF-101 (1/01) 93-111-F95-D470

CASHIER'S COPY

An example of an FDNY temporary permit



FIRE DEPARTMENT, CITY OF NEW YORK [redacted] BUREAU OF FIRE PREVENTION

ACCOUNT NUMBER	TYPE	A.P.	D.O.	ADM. CO.	ISSUANCE DATE	PERMIT EXPIRES
77777777	10	P	12	E284	01/28/10	01/11

PREMISES ADDRESS	ACCOUNT NAME
1111 YORK ST STATEN ISLAND NY 11111	CARI & RENO

ITEM CODE	SUB CODE	QTY	DESCRIPTION	FLOOR NO.	FEE
345	00	1	COMPRESSED GASES ONLY STR/USE	1	PAID

PERMIT TYPE
1

1=REGULAR
2=SUPPLEMENTAL
3=DUPLICATE

CARI & RENO
1111 YORK ST
STATEN ISLAND NY 11111

ANNUAL FEE PAID

2011012938

BY ORDER OF THE COMMISSIONER

An example of an FDNY permanent permit

1.2 Other Approvals

Installation of a spray booth, spray room, or dip tank requires approval from the Department of Buildings. Additionally, spray booth, spray room or dip tank plan approval is required from the Office of Technology Management of the Fire Department of New York.

1.3 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 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.

1.4 Certificate of Fitness

The C-30 Certificate of Fitness holder is responsible for supervising (1) the finishing operations and (2) the storage, handling and use of flammable/combustible liquids. This booklet incorporates the safety requirements of flammable/combustible finishes and flammable/combustible liquids. Only those individuals who are certified for the C-30 Certificate of Fitness for the Supervision of Flammable and Combustible Finishing Operations will be exempt from having to obtain a separate C-92 Certificate of Fitness for Storage,

Handling and Use of flammable/combustible liquids. **This exemption is valid for SPRAY OPERATIONS ONLY.**

The manufacturing, storage, handling and use of flammable and combustible liquids in certain quantities, including the dispensing of such liquids, shall be supervised by the C-30 Certificate of Fitness (C of F) holder. The manufacture, handling and use of flammable and combustible liquids shall be under the personal supervision of a C-30 C of F holder. The storage of flammable and combustible liquids shall be under the general supervision of a C-30 C of F holder.

Spray-finishing, dipping operations and floor finishing operations must be conducted under the personal supervision of a C-30 C of F holder. Spray finishing operations are defined as the application of flammable or combustible paint, varnish, lacquer, stain, fiberglass resins or other flammable or combustible liquid using a spray apparatus either continuously or intermittently. Dipping operations include those in which articles or materials are passed through contents of tanks, vats or containers of flammable or combustible liquids, including coating, finishing, treatment and similar processes.

C-30 Certificate of Fitness holders must also supervise the application of combustible powders when applied by powder spray guns, electrostatic powder spray guns, fluidized beds or electrostatic fluidized beds. Application of dual-component coatings of Class I or Class II liquids when applied by brush or roller in quantities exceeding 1 gallon (4 liters) must also be supervised by a Certificate of Fitness holder.

Exception:

The storage, handling and use of combustible liquids with a flash point over 300°F are **not** required to be supervised by the C-30 C of F holder.

1.5 Material Safety Data Sheets/ Safety Data Sheet (MSDS/SDS)

Material Safety Data Sheet/ Safety Data Sheet (MSDS/SDS) information should be readily available at your location. The material safety data sheet (MSDS/SDS) 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/SDS may list appropriate and inappropriate extinguishing agents. The Certificate of Fitness holder must refer to the MSDS/SDS when questions arise about how to handle, use or store hazardous chemicals or materials. The MSDS/SDS may also be requested by health care personnel to facilitate proper medical care in the event of chemical exposure. (Example in Appendix).

2. Definitions

COMBUSTIBLE LIQUID* –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)
**See Table 2.1, Class of Flammable and Combustible Liquids*

DETEARING – A process for rapidly removing excess wet coating material from a dipped or coated object or material by passing it through an electrostatic field.

DIP TANK – A tank, vat or other container of flammable or combustible liquid in which articles or materials are immersed for the purpose of coating, finishing, treating and similar processes.

FLAMMABLE FINISHES – Material coatings in which the material being applied is a flammable liquid, combustible liquid, combustible powder or flammable or combustible gel coatings.

FLAMMABLE LIQUID* – 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 degrees 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)
**See Table 2.1, Class of Flammable and Combustible Liquids*

Table 2.1 Class of Flammable and Combustible Liquids

		Flash point	Boiling point	Examples
Flammable liquids (Class I liquids)	**Class IA**	< 73°F	< 100°F	Acetaldehyde, Ethyl ether, formate, Pentane, Motor and Aviation Gasoline
	Class IB	< 73°F	≥ 100°F	Lacquers, Lacquer Thinners
	Class IC	≥ 73°F but < 100°F	Not Applicable	Some paints, some solvent based cements, turpentine
Combustible liquids (Class II & III liquids)	**Class II**	≥ 100°F but < 140°F	Not Applicable	Diesel Fuel, Paint Thinner
	Class IIIA	≥ 140°F but < 200°F	Not Applicable	Home Heating Oil
	Class IIIB	≥ 200°F	Not Applicable	Lubricating Oil, Motor Oil

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.

LIMITED SPRAYING SPACE – An area in which spraying operations for touch-up or spot painting of a surface area are conducted.

POWDER COATING – operations using finely ground particles of protective finishing material applied in dry powder form by a fluidized bed, electrostatic fluidized bed, powder spray guns or electrostatic powder spray guns.

ROLL COATING – The process of coating, spreading and impregnating fabrics, paper or other materials as they are passed directly through a tank or trough containing flammable or combustible liquids, or over the surface of a roller revolving partially submerged in a flammable or combustible liquid.

SPRAY AREA – A room or other area in which spraying operations are conducted that generate flammable vapors, or combustible residues, dusts or deposits, including spray spaces, spray booths, spray rooms, ducts exhausting from

spraying processes, any area in the direct path of spray, any area containing dangerous quantities of air-suspended powder, combustible residue, dust, deposits, vapor or mists as a result of spraying operations or other such areas approved for spraying operations.

SPRAY BOOTH – A mechanically ventilated appliance of varying dimensions and construction provided to enclose or accommodate a spraying operation and to confine and limit the escape of spray vapor and residue and to exhaust it safely.

SPRAY ROOM – A room designed to accommodate spraying operations constructed in accordance with the Building Code and separated from the remainder of the building by a minimum 1-hour fire barrier.

SPRAY SPACE – The interior of spray booths, the interior of exhaust ducts or any area in the direct path of spray operations.

VAPOR AREA – An area containing flammable vapors in the vicinity of dip tanks, drain boards or associated drying, conveying or other equipment during operation or shutdown periods, the dimensions of which are as determined by the commissioner, taking into consideration the characteristics of the liquid, the degree of sustained ventilation and the nature of the operations.

3. Common Flammable and Combustible Liquids used in Finishing Operations

The following section gives a brief overview of some of the flammable and combustible liquids that are commonly used in flammable and combustible finishing operations. The name of each flammable and combustible liquid is followed by its hazard 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.

3.1 Flammable Liquids

A. Ethyl ether
(Hazard Signal: 1 Health; 4 Flammability; 1 Instability)

Ethyl ether, is also known as Diethyl ether, simply ether, or ethoxyethane. It is a colorless, highly volatile, flammable liquid with a characteristic odor. It is commonly used as a solvent. Ethyl ether is a **Class IA** flammable liquid.

Handling and Storage
- **Handling Precautions:**

Keep away from heat and sources of ignition. Ground all equipment containing this material. Do not ingest or breathe gas, fumes, vapor or spray. Wear suitable protective clothing when handling. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the medical professional the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, acids, and moisture.

- **Storage:**
  Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Do not store above 86°F (30°C). Ethyl ether is air and light sensitive.

Fire Hazards

Extremely flammable in the presence of open flames, sparks, and heat. Ethyl ether ranges from slightly flammable to flammable in the presence of oxidizing materials and acids. Vapors may travel to the source of ignition and flash back. Most vapors are heavier than air. Ethyl ether burns with a smoky green flame.

Health Hazards

- **Inhalation:**
  Ethyl ether is an irritant. General anesthesia by inhalation can occur. Continued exposure may lead to respiratory failure or death. Symptoms of inhalation include irritation of nose and throat, vomiting, and irregular respiration, followed by dizziness, drowsiness, and unconsciousness.
- **Skin Contact:**
  Ethyl ether can be irritating and drying to the skin and mucous membranes. It can also cause dermatitis if exposure is prolonged. It may also be absorbed through the skin.
- **Eye Contact:**
  Ethyl ether may cause irritation, redness and pain in the eye. Prolonged exposures to high concentrations of vapor can cause eye damage.
- **Chronic Exposure:**
  Repeated exposures may be habit forming. Prolonged exposures may result in headache, drowsiness, excitation, and psychic disturbances. Teratogenic effects are possible.

C. Gasoline

(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. Gasoline is a **Class IA** flammable liquid.

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 in the area 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 sources 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. However, gasoline 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:**
  Gasoline is a moderate irritant. Contact with liquid or vapor may cause irritation.
- **Chronic Exposure:**
  Gasoline contains benzene, which is a known 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.

B. Lacquer Thinner

(Hazard Signal: 2 Health; 3 Flammability; 0 Instability)

Lacquer thinner is an extremely flammable liquid that is commonly used as paint thinner and for clean up of paint spills or stains. Lacquer Thinner is a **Class IB** flammable liquid.

Handling and Storage

- **Handling Precautions:**
  Read carefully all cautions and directions on product label before use. Since empty containers retain residue, follow all label warnings even after the container is empty. Dispose of the empty container according to all regulations. Do not reuse this container. Do not use in small enclosed spaces, such as basements and bathrooms. Vapors can accumulate and explode if ignited.
- **Storage:**
  Keep container tightly closed when not in use. Store containers in a cool, dry place. Do not store near flames or at elevated temperatures.

Fire Hazards:

Lacquer thinner is extremely flammable. Keep away from heat, sparks, flame and all other sources of ignition. Vapors may cause flash fire or ignite explosively. Do not smoke near lacquer thinner. Extinguish all flames and pilot lights and turn off stoves, heaters, electric motors and all other sources of ignition during use and until all vapors are gone. Beware of static electricity that may be generated by clothing and other sources.

Health Hazards

- **Inhalation:**
  Lacquer thinner can emit a harmful vapor. It may cause dizziness; headache; watering of eyes; irritation of the respiratory tract; weakness; drowsiness; nausea; numbness in fingers; arms and legs; depression of central nervous system; loss of appetite; fatigue; hallucinations; light headedness; visual disturbances; giddiness and intoxication; sleepiness; cough and dyspnea; cold, clammy extremities; diarrhea; vomiting; dilation of pupils; spotted vision. Severe overexposure may cause convulsions; unconsciousness; coma; and death. Intentional misuse of this product by deliberately concentrating and inhaling it can be harmful or fatal.
- **Skin Contact:**
  May cause irritation; numbness in the fingers and arms; drying of skin; and dermatitis. May increase the severity of symptoms listed under inhalation.
- **Eye Contact:**
  May cause irritation; burns; conjunctivitis of eyes; and corneal ulcerations of the eye. Vapors may irritate eyes.
- **Ingestion:**
  Ingestion is poisonous, may be fatal or cause blindness. May cause dizziness; headache; nausea; vomiting; burning sensation in mouth, throat and stomach; loss of coordination; depression of the central nervous system; narcosis; stupor;

gastrointestinal irritation; liver, kidney, and heart damage; diarrhea; loss of appetite, coma and death. May produce symptoms listed under inhalation.

- **Chronic Exposure:**
  Reports have associated repeated and prolonged overexposure to lacquer thinner with neurological and other physiological damage. Prolonged or repeated contact may cause dermatitis. Prolonged skin contact may result in absorption of a harmful amount of this material. May cause conjunctivitis; gastric disturbances; insomnia; dizziness; headache; weakness; fatigue; nausea; heart palpitations; skin irritation; numbness in hands and feet; permanent central nervous system changes; some loss of memory; pancreatic damage; giddiness; visual impairment or blindness; kidney or liver damage; and death.

D. Turpentine

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

Turpentine is a fluid with a strong odor obtained by the distillation of tree resin. The two primary uses of turpentine in industry are as a solvent and as a source of materials for organic synthesis. As a solvent, turpentine is used for thinning oil-based paints and for producing varnishes. Turpentine is also used as a source of raw materials in the synthesis of fragrant chemical compounds. Turpentine is a **Class IC** flammable liquid.

Handling and Storage

- **Handling Precautions:**
  Keep away from heat. Keep away from sources of ignition. Ground all equipment containing this material. Do not ingest. Do not breathe in gas, fumes, vapor or spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show them the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents.
- **Storage:**
  Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition such as sparks and flames.

Fire Hazards

Turpentine is flammable in the presence of oxidizing materials.

Health Hazards

- **Inhalation:**
  May cause dizziness, headache, watering of the eyes, irritation of the respiratory tract, nausea, depression of the central nervous system, and serious irritation to the kidneys. Severe overexposure may cause unconsciousness.
- **Skin Contact:**
  This material is a skin irritant.

- **Eye Contact:**
  This material is a severe eye irritant.
- **Chronic Exposure:**
  Reports have associated repeated and prolonged overexposure to solvents with neurological and other physiological damage. May cause jaundice, bone marrow damage, liver damage, anemia, nausea, skin irritation, headache, dizziness, some loss of memory, heart palpitations, and kidney damage, central nervous system damage, mental confusion, convulsions, coma, and death.

3.2 Combustible Liquids

A. Paint Thinner
(Hazard Signal: 1 Health; 2 Flammability; 0 Instability)

Paint thinner is a liquid that has a watery, white appearance and a free and clear odor. Paint thinner is stable, but it is incompatible with strong acids, alkalies, and oxidizers such as liquid chlorine and oxygen. Its decomposition may produce carbon monoxide and carbon dioxide. Paint thinner is a **Class II** combustible liquid.

Handling and Storage
- **Handling Precautions:**
  Read carefully all cautions and directions on product label before use. Since empty containers retain the residue, follow all label warnings even after container is empty. Dispose of empty container according to all regulations. Containers should not be reused. A static electrical charge can accumulate when this material is flowing through pipes, nozzles, or filters, and when it is agitated. A static spark discharge can ignite accumulated vapors particularly during dry weather conditions. Always use proper bonding and grounding procedures.
- **Storage:**
  Keep container tightly closed when not in use. Store in a cool, dry place. Do not store near flames or at elevated temperatures.

Fire Hazards
Keep away from heat, sparks, flames and all other sources of ignition. Vapors may cause fire. Vapors may travel distances to other areas and rooms away from work site. Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and all other sources of ignition anywhere in the structure, dwelling or building during use and until all vapors are gone from work site and all areas away from work site. Keep away from electrical outlets and switches. Beware of static electricity that may be generated by synthetic clothing and other sources.

Health Hazards

- **Inhalation:**
  May cause dizziness; headache; watering of eyes; eye irritation; weakness; nausea; muscle twitches, and depression of central nervous system. Severe overexposure may cause convulsions; unconsciousness; and death. Intentional misuse of this product by deliberately concentrating and inhaling can be harmful or fatal.
  Eye Contact:
  This material is an eye irritant. It may cause irritation, burns, conjunctivitis of eyes, and corneal ulcerations of the eye. Vapors may irritate eyes.
- **Skin Contact:**
  It may cause irritation; numbness in the fingers and arms; drying of skin; and dermatitis. May cause increased severity of symptoms listed under inhalation

- **Chronic Exposure:**
  Reports have associated repeated and prolonged overexposure to solvents with neurological and other physiological damage. Prolonged or repeated contact may cause dermatitis. May cause jaundice; bone marrow damage; liver damage; anemia; and skin irritation. Diseases of the skin, eyes, liver, kidneys, central nervous system and respiratory system are medical conditions aggravated by exposure.

4. Protection of Operations

A representative of the business owner where the Flammable and Combustible finishing operations are taking place must file paperwork with the Electrical Unit of the Department of Buildings to gain approval for their electrical equipment.

4.1 Electrical Wiring and Equipment

1. Electrical wiring and equipment in spray spaces, vapor areas, and resin application areas should be explosion proof, or non-sparking.

2. Electrical wiring and equipment in and surrounding spray areas, dip tanks or associated drain boards, or drying operations must be approved for locations containing deposits of readily ignitable residue and explosive vapors.

Exceptions:

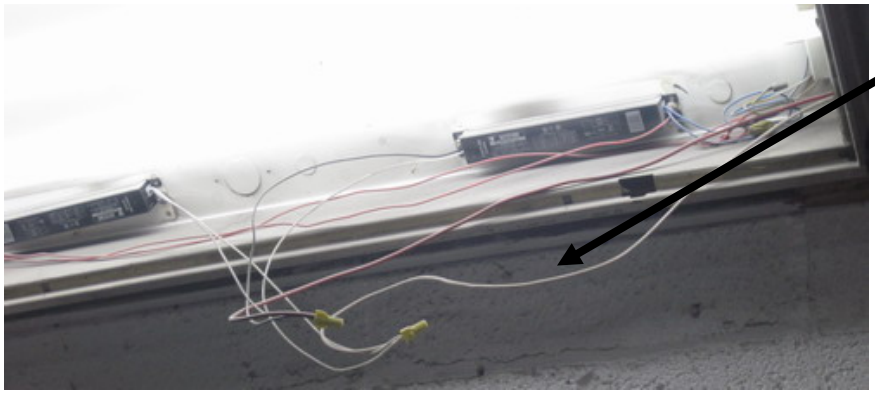
a. Does not apply to wiring in rigid conduit, threaded boxes or fittings not containing taps, splices, or terminal connections
b. Does not apply to electrostatic equipment used in connection with paint spraying and paint-detearing operations

3. Electrical wiring and equipment in resin application areas should be installed as required for hazardous (classified) locations if it could possibly come in contact with deposits of combustible residues. If it will not come in contact with deposits of combustible residues, the electrical wiring and equipment shall be installed as required for ordinary hazard locations.

4. Electrical wiring and equipment located outside of, but within 5 feet (1524 mm) horizontally and 3 feet (914 mm) vertically of the opening of a spray booth or a spray room must be approved for Class I, Division 2 or Class II, Division 2 hazardous locations, whichever is applicable.

Electrical equipment must be properly protected in a spray space.

Light fixture wiring should not be exposed in a spray area.



4.2 Sources of Ignition

1. Open flames and sparks are prohibited in spray spaces and areas, and also within 20 feet (6096 mm) of those areas, unless they are separated by a permanent partition.

Exception:

a. Drying and baking apparatus used for drying operations

2. Hot surfaces that have temperatures high enough to ignite vapors should not be located in a vapor area. Space-heating appliances, steam pipes or hot surfaces that are located in a spray or resin-application area should not be subject to the accumulation of deposits of combustible residues.

Exception:

a. Drying and baking apparatus used for drying operations

3. Any equipment that may produce sparks or hot metal must be enclosed on all sides.

4. Exhaust ducts, piping systems, and anything with metal parts must be electrically grounded.

5. Smoking is **PROHIBITED** in powder coating areas, organic peroxide and dual-component coating areas, any spray spaces, limited spraying spaces, or vapor areas. Durable "No Smoking" signs must be noticeably posted in these areas and other locations throughout the facility.

6. Hot work is **PROHIBITED** in or adjacent to spray areas or dipping or coating operations. Durable signs must be noticeably posted in these areas, and should read as follows: "NO WELDING. THE USE OF WELDING OR CUTTING EQUIPMENT IN OR NEAR THIS AREA IS HAZARDOUS BECAUSE OF FIRE AND EXPLOSION HAZARDS."

7. Powered industrial trucks used in electrically classified areas should be listed for such use.

5. Spray Finishing

Spray-Finishing operations conducted in buildings used for Group A, E, I or R occupancies must be located in a spray room protected throughout by a sprinkler system, and separated vertically and horizontally from other areas in accordance with the Building Code. In other occupancy groups, spray-finishing operations should be conducted in either a spray room, spray booth, or a limited spraying space approved for such use.

Spray operations cannot take place outside of spray spaces approved for such use.

5.1 Spray Booths and Spray Rooms

Construction

- Floors must be noncombustible. Combustible coverings may be used on the floors to facilitate cleaning operations.
- Pre-manufactured spray booths and spray rooms should be of a type for which a certificate of approval has been issued in accordance with the 2014 Fire Code, or which was previously approved by the Department of Buildings or the Board of Standards and Appeals, unless such approval is amended or repealed by the commissioner.

Spray Booth Specific Requirements

- Must be constructed of approved noncombustible materials. Aluminum cannot be used.

- Structural sections of spray booths are allowed to be sealed with latex based or similar caulks and sealants.
- Interior surfaces should be smooth to permit the free passage of exhaust air from all parts of the interior and to facilitate washing and cleaning. Surfaces should also be designed to confine residues within the booth.

Interior of a spray booth

- Means of egress in a spray booth should never be blocked.

- All parts of the spray booth must be installed so that they are accessible for cleaning. A clear space of no less than 3 feet (914 mm) must be maintained on all sides. No storage or combustible construction should be placed in this clear space.

Exceptions:

1. Spray booths that are located closer than 3 feet (914 mm) to or directly against an interior partition, wall or floor/ceiling assembly that has a fire-resistance-rating of not less than 1 hour, provided the spray booth can be adequately cleaned and maintained.

2. Spray booths located closer than 3 feet (914 mm) to an exterior wall or a roof assembly provided the wall or roof is constructed of

noncombustible material and provided the spray booth can be adequately cleaned and maintained.

Interior surfaces of spray booths should be smooth to permit the free passage of exhaust air from all parts of the interior and to facilitate washing and cleaning.

5.2 Limited Spraying Spaces

Limited spray spaces can be used when the aggregate surface area of any workpiece to be sprayed shall not exceed 9 square feet. Limited spray spaces can be used when spraying operations are not of a continuous nature and are not incidental to the operation of the facility. This means that if your business is an auto body shop or auto collision shop, spraying operations would not be incidental to your operations. Ventilation in limited spray spaces must meet the requirements of the NYC Mechanical Code for flammable vapor areas. Electrical wiring must meet the requirements of the NYC Electrical Code for Class I Division 2 locations.

5.3 Ventilation in Spray Booths and Spray Rooms

Operation

Mechanical Ventilation must be in operation while spraying operations are occurring, and also for a period of time after the spraying operations have been concluded to allow vapors and finishing material residue to be removed. Spraying

equipment must be **interlocked** with the ventilation system to ensure that spraying cannot take place unless the ventilation system is operating.

Ventilation cannot be obstructed or blocked in the spray area. Additionally, articles that are being sprayed should never be positioned in a manner that blocks the collection of overspray.

5.4 Filters

Air intake filters that are part of the wall or ceiling of a spray booth or spray room should be listed as Class I or Class II in accordance with UL 900. Exhaust filters must be provided. Prior to beginning any sort of spraying operation, the following requirements must be met:

1. Filter supports and holders must be constructed of noncombustible materials
2. Filters that collect overspray must be easily accessible so they can be removed for cleaning or replacement
3. The spray area must have visible gauges, audible alarms, or pressure-activated devices that will monitor air velocity and ensure it stays at the required level
4. Spray booths with filter rolls that advance automatically if the air velocity drops to less than 100 linear feet per minute (51 meters per second) should ensure that spray operations automatically shut down if the filter roll does not advance automatically
5. Filter pads that are discarded should be removed immediately and placed in a non-combustible waste can, and then disposed of lawfully
6. Spray booths that use dry filters must not be used for spraying materials that are highly susceptible to spontaneous heating and ignition. Filters must be changed prior to spraying materials that may react with other materials previously sprayed.

7. Waterwash spray booths should be arranged so that air and overspray are drawn through a continuously flowing water curtain before entering an exhaust duct to the outdoors. Design of the waterwash spray booth should prevent excessive accumulation of deposits in ducts and residue at duct outlets.

In addition to these requirements, C-30 Certificate of Fitness holders are responsible for ensuring that any filter requirements specific to the building plans are also in place.

5.5 Different Coatings

Spray booths, rooms and spaces should not be alternately used for different types of coating materials when the combination of materials could cause spontaneous ignition, unless all deposits of the first material are removed from the booth, room or space and exhaust ducts prior to spraying with a different material.

5.6 Illumination

Fixed lighting units are the only source of illumination allowed for spray spaces, rooms, or booths illuminated through glass panels or other transparent materials. Panels for light fixtures or for observation should be constructed of heat treated glass, wired glass or hammered-wire glass and must be sealed to confine vapors, mists, residues, dusts and deposits to the spray area. Panels for light fixtures should be separated from the fixture to prevent the surface temperature of the panel from exceeding 200°F (93°C).

Exterior light fixtures are attached to the walls or ceilings of a spray area, but are outside of any classified area and are separated from the spray area by vapor-tight glass panels. Exterior light fixtures must be suitable for use in ordinary hazard locations. If the exterior light fixtures need to be serviced, they must be serviced from outside of the spray area.

Integral fixtures are light fixtures that are part of the walls or ceiling of a spray area and are allowed to be separated from the spray area by glass panels that are an integral part of the fixture. These fixtures must be suitable for use in Class I, Division 2, or Class II, Division 2 locations and must be suitable for accumulations of deposits of combustible residues. If the integral fixtures need to be serviced, they can be serviced from inside the spray area.

Portable electric lamps are **prohibited** in spray areas during spraying operations. If portable electric lamps are used during cleaning or repairing, they must be approved for hazardous locations.

6. Drying Operations

Spray booths and spray rooms are not to be used for the purpose of drying when it could cause an increase in the surface temperature of the spray booth or spray room.

Exceptions:

1. Spraying procedures using low-volume spray application
2. A fixed drying apparatus with an **interlock** system that includes the spraying apparatus, the drying apparatus and the ventilation system for the spray booth or spray room.

   This **interlock** system will:

   a. Ensure that spraying cannot operate when the drying apparatus is on
   b. Purge spray vapors from the spray booth or spray room for a period of no less than 3 minutes before the drying apparatus is turned on
   c. Ensure that the ventilating system maintains a safe atmosphere within the spray booth or spray room during the drying process and automatically shuts off the drying apparatus in case the ventilation system fails
   d. Shuts off the drying apparatus automatically if the air temperature within the booth exceeds 200°F (93°C)

If a **portable infrared drying apparatus** is used, the electrical wiring and portable infrared drying equipment must comply with the requirements of the Electrical Code. Electrical equipment located within 18 inches (457 mm) of floor level shall be approved for Class I, Division 2 hazardous locations. All of the metal parts of the drying apparatus must be electrically bonded and grounded. When spraying operations are occurring, the portable drying apparatus is prohibited from the spray booths, spray rooms, or spray areas, where it is possible that residue will accumulate.

Drying or baking units utilizing a heating system having open flames or which are capable of producing sparks are **prohibited** from being installed in a spray area.

7. Dipping Operations

Dip-tank operations must be located in a room that is:

- Specifically designed for that purpose
- Protected by a Fire Extinguishing System
- Separated vertically and horizontally from other areas as in accordance with the construction and Building Code in Group A, I or R occupancies.

Installation of a dip tank at a facility requires approval from the Commissioner of Buildings of the Department of Buildings, and must meet the requirements of the 1998 Fire Code and NFPA 34. Dip tanks, including drain boards, must be constructed of noncombustible material and their supports shall be of heavy metal, reinforced concrete or masonry.
When dipping liquids are heated directly, or heated by the surface temperature of the object being dipped, protection must be provided against the accumulation of vapors, self-ignition and excessively high temperatures.

When a dip tank uses a conveyor to move materials through the dipping tank, the conveyor system should be set up where in the event of a fire, the conveyor system will automatically cease motion and the required tank bottoms will open.

Vapor areas surrounding dipping operations must be mechanically ventilated.

7.1 Hardening and Tempering Tanks

Installation of a hardening and tempering tank at a facility must meet the requirements of the 1998 Fire Code and NFPA 34.

7.2 Flow Coating Operations

Flow Coating operations must comply with the same requirements listed above regarding dipping tanks. The areas of the sump and any areas on which paint flows should be considered to be the area of a dip tank. During flow-coating operations, paint should be supplied by a gravity tank not exceeding 10 gallons (37.9 L) in capacity or by direct low-pressure pumps arranged to shut down automatically in case of fire by means of approved heat-activated devices.

7.3 Electrostatic Apparatus

Electrostatic Apparatus' are used in connection with paint-spraying and paint-detearing operations. All electrical portions of this equipment with the exception

of high-voltage grids and electrostatic atomizing heads/connections should be located outside of the spray area or vapor area, or shall be explosion proof and made of noncombustible materials. Electrodes and electrostatic atomizing heads (equipment that is part of the electrostatic apparatus) must be rigidly supported in permanent locations and effectively insulated from the ground. Insulators must be both nonporous and noncombustible. Clear space must be maintained between materials being painted/deteared and electrodes, electrostatic atomizing heads or conductors. This clear space must be equivalent to at least twice the sparking distance. A sign indicating the sparking distance must be posted conspicuously near the electrostatic apparatus.

8. Powder Coating

Powder Coating is defined as operations using finely ground particles of protective finishing material applied in dry powder form by a fluidized bed, electrostatic fluidized bed, powder spray guns or electrostatic powder spray guns

Powder coating operations must be conducted in an enclosed room that is constructed of noncombustible materials, enclosed powder coating facilities which are ventilated or ventilated spray booths.

Exception:

Listed spray booth assemblies that are constructed of other materials shall be allowed

9. Organic Peroxides and Dual-Component Coating

Spray Operations involving the use of organic peroxides and other dual-component coatings must meet the following requirements:

- Organic Peroxide initiators should not be contaminated with foreign substances.
- Spray guns and other equipment that will be used with organic peroxides must be of a type manufactured for such use.
- Separate pressure vessels and inserts specific for the application should be used for the resin and the organic peroxide and should not be interchanged.
- Organic peroxide pressure tank inserts should be constructed of stainless steel or polyethylene.
- Materials should not be contaminated by dusts and overspray residues resulting from the sanding or spraying of finishing materials containing organic peroxides

Spilled organic peroxides must be immediately removed and disposed of lawfully so that there are no remaining residues. Spraying operations using organic

peroxides and dual component coatings must be conducted in spray booths protected by a sprinkler system. When handling organic peroxides, handlers should avoid any shock or friction procedures that could produce decomposition or a violent reaction. Organic peroxides must not be mixed directly with accelerators or promoters. Only non-sparking tools are allowed to be used in areas where organic peroxides are stored, mixed or applied.

10. Floor Finishing Operations

10.1 General Requirements of Floor Finishing Operations

1. Storage, handling and use of floor finishing operations must be conducted in accordance with the manufacturer's instructions.
2. Containers holding floor finishing product must be closed when not in use.
3. Empty containers of floor finishing products and all other floor finishing product waste and residue must be removed from the premises not less than once a day.
4. Gas burners, pilot lights, electrical devices, electronic devices and other sources of ignition in vapor areas must be turned off prior to beginning work.
5. At least one portable fire extinguisher with a minimum rating of 20-B must be immediately accessible during floor finishing operation. Travel distance to the extinguisher cannot exceed 30 feet (9144 mm).
6. Quantities of floor finishing products at a site must not exceed the amount necessary for one day's operations. The quantity should never exceed 20 gallons (76 liters).

When conducting Floor Finishing Operations using Class I or Class II Liquids, it is **unlawful** to:

1. Use flammable floor finishing products with a flash point below 80°F (27°C) indoors
2. Smoke, use or maintain open flames in rooms or other indoor areas in which floor finishing products are being stored and/or conducted
3. Conduct floor finishing operations in rooms or other indoor areas occupied by anyone other than the individuals engaged in such operations

Floor finishing operations cannot be conducted when an establishment is open to the public.

Mechanical ventilation at a rate of 1 cubic foot per minute per square foot of area being finished is **required** to prevent the accumulation of flammable vapors. Ventilation must be operated by approved temporary or portable means, and

vapors must be exhausted outdoors. Ventilation must be kept in operation while the floor finishing operations are conducted and for a period of time after.

Heating, ventilation, and air conditioning systems should not be operated during refinishing operations or within 4 hours of the application of flammable or combustible liquids

10.2 Retail Sale of Floor Finishing Products

Floor finishing products with a flash point below 80°F (27°C) must be provided with a conspicuous and durable tag bearing the words:

WARNING: INDOOR USE OF THIS PRODUCT IS PROHIBITED IN NEW YORK CITY

The sign must be conspicuously posted in the area in which the floor finishing product is displayed, warning that the product is prohibited for indoor use in NYC.

11. Indoor Manufacturing of Reinforced Plastics

Indoor manufacturing processes involving spray or hand application of reinforced plastics and using more than 5 gallons (19 liters) of resin in a 24-hour period shall be conducted in accordance with this section.

- Equipment used for the spray application of resin must be designed, installed, operated and maintained in the same way as equipment used for organic peroxides and dual component coatings.

- Electrical wiring and equipment must be explosion proof and non combustible in resin application areas.

- Mechanical ventilation is required. The ventilation rate must be adequate to maintain the concentration of flammable vapors in the resin application area at or below 25 percent of the lower flammable limit (LFL).

Exception:

- Buildings that are unenclosed for at least 75 % of the perimeter

- Local ventilation must be provided inside of workpieces where personnel will be under or inside of the workpiece during operations.

11.1 Handling of excess catalyzed resin

A non-combustible, open top container must be available for the disposal of excess catalyzed resin. Excess catalyzed resin must be drained into the container while still liquid. Enough water should be provided in the container to maintain a minimum 2 inch (51 mm) water layer over contained resin.

11.2 Control of Overchop

In areas where chopper guns are used, exposed wall and floor surfaces should be covered with paper, polyethylene film, or other approved materials to allow for the removal of overchop. Overchop must be allowed to cure for no less than 4 hours prior to removal. Following removal, used wall and floor covering materials must be placed in a noncombustible container and removed from the facility.

12. Storage

12.1 Container Storage and Indoor Storage

Containers of flammable and combustible liquids with spray nozzles should be closed, or possess metal covers which are kept closed. These containers should either rest on the floor, on noncombustible supports, or be suspended by wire cables.

Storage Below Grade

Class I liquids shall not be permitted in basements, cellars or other areas below grade. Class II and III liquids shall be allowed to be stored in basements, cellars or other areas below grade provided that such basement, cellar or other below grade area is protected throughout by a sprinkler system, and other fire protection required by the Fire Department and Building Department.

Exceptions:

a. Class IIIB liquids may be stored in basements, cellars and other areas below grade that are not protected throughout by a sprinkler system when stored in a room or other area that is separated, vertically and horizontally, from surrounding spaces by a fire separation of not less than 2-hour fire-resistance rating and such room or other area is protected throughout by a sprinkler system.

Quantity limits for indoor container storage

It shall be unlawful to store flammable and combustible liquids in containers with an individual capacity of greater than 60 gallons. Spray nozzle containers should not exceed 10 gallons (37.9 liters) in capacity.

12.2 Liquid Storage Cabinets

Where the Fire Department requires that liquid containers be stored in a storage cabinet, such cabinets and storage shall be in accordance with the following:

1. The cabinet must be listed in accordance with UL 1275. All cabinets must be provided with a conspicuous label in red letters on a contrasting background which reads: FLAMMABLE – KEEP FIRE AWAY. The door must be well fitted, self-closing and equipped with a three-point latch. The bottom of the cabinet must be liquid-tight to a height of at least 2 inches.

2. The combined total quantity of liquids in a cabinet must not exceed 120 gallons. A maximum of 3 cabinets are allowed to be located in a single fire area, except that in a Group F occupancy (e.g. a factory and industrial occupancy or repair garage), additional cabinets are allowed to be located in the same fire area if the additional cabinets (or groups of up to 3 cabinets) are separated from other cabinets or groups of cabinets by at least 100 feet.

3. **In all occupancies, quantities of flammable and combustible liquids requiring a permit, used for maintenance purposes and the operation of equipment, shall be stored in a liquid storage cabinet.** Quantities not requiring a permit are allowed to be stored outside of a cabinet when in approved containers and locations.

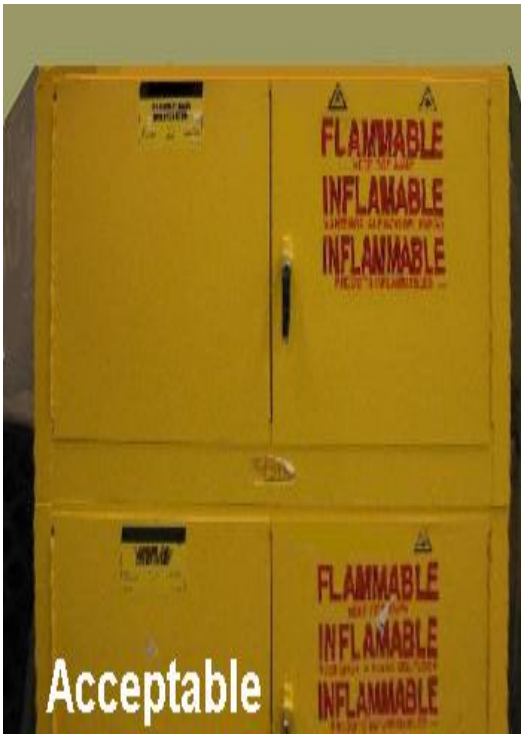
Exceptions:

If the premises were approved for a permit or approved plans prior to July 1, 2008, then the premises are allowed to operate with the metal cabinets that are stated in the Board of Standards and Appeals rule. These cabinets were required to be vented metal cabinets in accordance with the following amounts:

1. A maximum of 100 gallons may be stored in a single walled metal cabinet ventilated to the outer air. Cabinet is metal covered on all sides, including the door, and arranged for ventilation at top and bottom, to the outer air.

2. A maximum of 200 gallons may be stored in a double walled metal cabinet ventilated to the outer air or wood cabinets covered in metal on all sides, including the door, and arranged for ventilation at top and bottom, to the outer air.

3. Liquid Storage totaling over 200 gallons must be stored in a separate exterior storage building of fire-proof or fire-resisting material with a ventilated plain glass skylight or in a storage room constructed of fire-proof material in a fireproof building or fire resisting material in a non-fireproof building.



12.3 Indoor Storage of Containers

Empty Containers

Empty containers and tanks previously used for the storage of flammable or combustible liquids shall be free from residual material and vapor in compliance with the requirements of DOT, the Resource Conservation and Recovery Act (RCRA) or other governmental agencies having jurisdiction, or shall be stored, handled and used in compliance with the requirements of the Fire Code.

The storage of empty containers previously used for the storage of flammable or combustible liquids shall be stored as required for filled containers. Containers, when emptied, shall have the covers or plugs immediately replaced in openings, be removed to an outdoor location and, if not cleaned on the premises, the empty containers shall be removed from the premises as soon as practical, but at least daily.

Combustible Materials

Limited quantities of combustible commodities are allowed to be stored in liquid storage areas where the ordinary combustibles, other than those used for packaging the liquids, are separated from the liquids in storage by a minimum of 8 feet horizontally, either by open aisles or by open racks, and where fire protection is required by the Fire Department.

Storage of empty or idle combustible pallets inside an unprotected liquid storage area shall be limited to a maximum pile size of 2,500 square feet and to a maximum storage height of 6 feet. Storage of empty or idle combustible pallets inside a protected liquid storage area shall comply with the requirements of the Fire Department. Pallet storage shall be separated from liquid storage by aisles that are at least 8 feet wide.

In control areas that are inaccessible to the public, Class I, II and IIIA liquids shall not be stored in the same pile or rack section as ordinary combustible commodities unless such materials are packaged together as kits.

12.4 Outdoor Storage of Containers

Protections and Clearance from Combustibles

Storage areas shall be protected against tampering or trespassers by 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.

Empty Containers Storage

Empty containers and tanks previously used for the storage of flammable or combustible liquids shall be free from residual material and vapor in compliance with the requirements of DOT, the Resource Conservation and Recovery Act (RCRA) or other governmental agencies having jurisdiction, or shall be stored, handled and used in compliance with the requirements of the Fire Code.

The storage of empty containers previously used for the storage of flammable or combustible liquids shall be stored as required for filled containers. Containers, when emptied, shall have the covers or plugs immediately replaced in openings.

12.5 General Storage Requirements

Clearance from Incompatible Materials

The MSDS's should be consulted regarding specific incompatibilities. Materials that will react with water or other liquids to produce a hazard shall not be stored in the same room/cabinet with flammable and combustible liquids. Incompatible materials shall be separated while in storage except for stored materials in individual containers each having a capacity of not more than 5 pounds or 0.5 gallons. Separation shall be accomplished by:

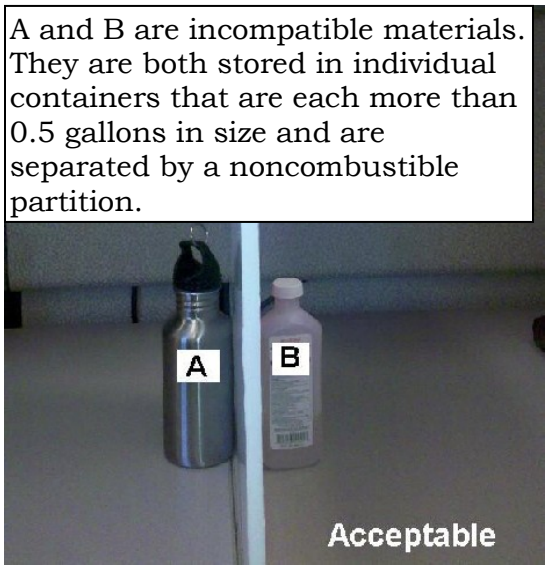
- Segregating incompatible materials in storage by a distance of not less than 20 feet.

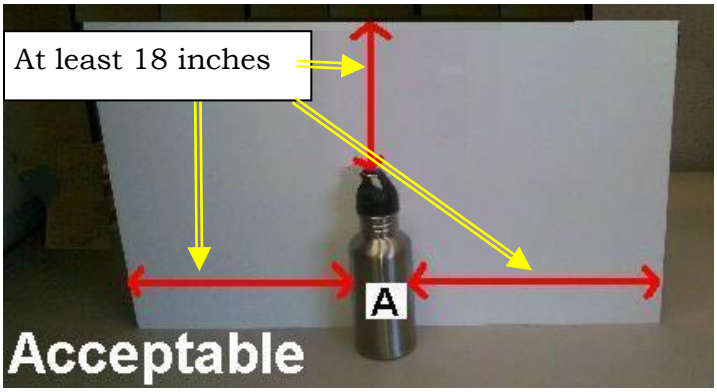
or

- Storing liquid and solid materials in hazardous material storage cabinets. Materials that are incompatible shall not be stored in the same cabinet.

or

- Isolating incompatible materials in storage by a noncombustible partition extending not less than 18 inches above and to the sides of the stored material.





Means of Access to an Exit

It shall be unlawful to obstruct or impede access to any required means of egress. All required means of egress shall be continuously maintained free from obstructions and impediments to immediate use in the event of fire or other emergency. Storage of any liquids, including stock for sale, shall not be stored near or be allowed to physically obstruct the route of egress.

13. Handling and use of Flammable and Combustible Liquids

- Hoses or flexible connections that are attached to containers or piping must have a "shut off" valve at the connection. The "shut-off" valve must be closed when the hose or connection is not being used.
- Spray nozzles that are used for spraying operations are supplied with flammable or combustible liquids by positive displacement pumps. Pump discharge lines should be provided with an approved relief valve which will empty out to pump suction or a safe detached location.

13.1 Liquid Transfer

Liquid transfer equipment and methods for transfer of Class I, II and IIIA liquids shall be subject to the approval of an FDNY representative. 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 or 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. If a flammable liquid (Class I liquid) needs to be transferred from one portable container to another, a bond must be provided between the two containers. At least one container must be grounded. Class I and Class II liquids should have permanently grounded piping systems.

- **Class I and II liquids or Class III liquids in containers exceeding 5.3 gallon capacity** that are within 20°F of their flash point 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: A 6 gallon container of 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.

Indoor Use

Indoor use of flammable and combustible liquids includes the dispensing and mixing of such liquids.

13.2 Limitations on handling and use

Gasoline and other flammable liquid motor fuels in portable containers in quantities requiring a permit are subject to the approval of the commissioner, regardless of the occupancy classification of the premises. The quantity of all other flammable or combustible liquid handled and used, including the quantity dispensed and mixed, shall be limited by occupancy as follows:

(I) Group A, B, E, F, I, M and S occupancies. Flammable and combustible liquids shall be handled and used only for lawful uses incidental to the occupancy, including maintenance and operation of equipment, and in quantities not to exceed those which are necessary for such use.

(II) Group R occupancies. Flammable and combustible liquids shall be handled and used only for maintenance and operation of equipment, and in quantities not to exceed those which are necessary for such use. Quantities used within a dwelling unit shall be for household uses only and in quantities below permit amounts. It shall be unlawful to handle or use gasoline or other flammable liquid motor fuel within a dwelling unit.

13.3 Solvents

Class I Liquids

Class I liquids are used as solvents in spray gun and equipment cleaning machines which have been listed and approved for that specific purpose. The cleaning machines must be located in areas open to the public and shall be separated from ignition sources in accordance with their listings or by a distance of 3 feet (914 mm), whichever is greater. The amount of solvent used in a cleaning machine should not exceed the design capacity of the machine. Class I liquids can also be used in spray booths and spray rooms to clean spray nozzles and auxiliary equipment. Mechanical ventilation equipment must be operated when Class I liquids are utilized as solvents, and for a period of time after in both spray booths and spray rooms.

Class II and Class III Liquids

Class II and Class III Liquids should only be used **outside** of spray booths or spray rooms and listed and approved spray gun and equipment cleaning machines.

Operations and Maintenance

Deposits of combustible residues must not accumulate in spray areas, on exhaust fan blades, or in exhaust ducts. If excessive accumulation does occur, spraying operations must be discontinued until the residue is removed from those areas and properly disposed of. Tools used to remove residue must be constructed of non-sparking materials. Once the residue is removed, it should be immediately removed from the premises and disposed of lawfully.

Metal waste cans should be located wherever rags or waste may be contaminated with finishing material. Rags or waste that is contaminated with finishing material should be disposed of immediately. The metal waste cans should be self closing, and should be emptied at the end of each work shift, but are required to be emptied at least daily.

13.4 Solvent Distillation Units

Solvent distillation equipment used to recycle Class I, II or IIIA liquids should meet the requirements below:

A. It is unlawful to process Class I, II and IIIA liquids, also classified as unstable or reactive in solvent distillation units.
B. Equipment must be permanently labeled by the manufacturer. Label should indicate the capacity of the distillation chamber, the distance the unit should be placed away from sources of ignition, and the products for which the unit has been listed for use.
C. A manufacturer's instruction manual should be readily available to the user and to present for inspection purposes to a member of the Fire Department. Manuals should include installation, use and servicing instructions. They should also indicate the liquids for which the unit has been listed for distillation purposes, along with each liquid's flash point and auto-ignition temperature. Manuals for units with adjustable controls should include directions for setting the heater temperature for each liquid to be distilled.
D. The location of the solvent distillation unit should be in accordance with the listing, but not used in basements, cellars, or other below grade areas.
E. At least one portable fire extinguisher having a rating of not less than 40-B shall be located not less than 10 feet (3048 mm) or more than 30 feet (9144 mm) from any solvent distillation unit.

Exceptions include:

1. Solvent distillation units installed in dry cleaning facilities.
2. Solvent distillation units used in continuous through-put industrial processes where the source of heat is remotely supplied using steam, hot water, oil or other heat transfer fluids, and the temperature of which is below the auto-ignition point of the solvent.
3. Solvent distillation units listed for and used in laboratories.
4. Approved research, testing and experimental processes.

14. LABELING AND SIGNS

14.1 HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS)

The system was been developed by the National Paint and Coatings Association (NPCA) in response to the requirement by the Occupational Safety and Health Administration's (OSHA) Hazard Communication Standard (HCS) that all chemicals in the workplace be labeled. It is broken down into 4 hazard categories:

- **Health:** The Health section conveys the health hazards of the material. In the latest version of HMIS®, the blue Health bar has two spaces, one for an asterisk and one for a numeric hazard rating. If present, the asterisk signifies a chronic health hazard, meaning that long-term exposure to the material could cause a health problem such as emphysema or kidney damage.
- **Flammability,**
- **Reactivity/Instability**, and
- **Personal Protection.**

Hazardous Materials Identification System (HMIS) Explanation

TYPE OF HAZARD

- HEALTH — blue
- FLAMMABILITY — red
- REACTIVITY — yellow
- PROTECTIVE EQUIPMENT — white

DEGREE

- 4- EXTREME
- 3- SERIOUS
- 2- MODERATE
- 1- SLIGHT
- 0- MINIMAL

Example of a HMIS Label Commonly Used Paint Thinner

HAZARD RATING

HEALTH	FLAMMABILITY	REACTIVITY
4- EXTREME: Highly toxic – May be fatal on short term exposure. Special protective equipment required **3- SERIOUS: Toxic – Avoid inhalation or skin contact.** **2- MODERATE: May be harmful if inhaled or absorbed** **1- SLIGHT: Slightly toxic – May cause slight irritation** **0- MINIMAL: All chemicals have some degree of toxicity**	**4- EXTREME: Extremely flammable gas or liquid. Flash point below 73° F.** **3- SERIOUS: Flammable – Flash point 73 ° F to 100° F** **2- MODERATE: Combustible – Requires moderate heating to ignite. Flash point 100° F to 200° F** **1- SLIGHT: Slightly combustible – Requires strong heating to ignite** **0- MINIMAL: Will not burn under normal conditions**	**4- EXTREME: Explosive at room temperature** **3- SERIOUS: May explode if shocked, heated under confinement or mixed with water** **2- MODERATE: Unstable, may react with water** **1- SLIGHT: May react if heated or mixed with water** **0- MINIMAL: Normally stable, does not react with water**

PERSONAL PROTECTIVE EQUIP.

A	Safety Glasses, Gloves
B	Safety Glasses, Gloves
C	Safety Glasses, Gloves, Protective Apron
D	Face Shield, Gloves, Protective Apron
E	Safety Glasses, Gloves, Dust Respirator
F	Safety Glasses, Gloves, Dust Respirator, Protective Apron
G	Safety Glasses, Gloves, Vapor Respirator
H	Face Shield, Gloves, Protective Apron, Vapor Respirator
I	Safety Glasses, Gloves, Vapor Respirator, Dust Respirator
J	Splash Goggles, Gloves, Dust Respirator, Protective Apron, Vapor Respirator
K	Air Line Mask or Hood, Gloves, Full Suit, Boots
X	ASK YOUR SUPERVISOR FOR SPECIAL HANDLING INSTRUCTIONS

14.2 NFPA HAZARD DIAMOND SIGN

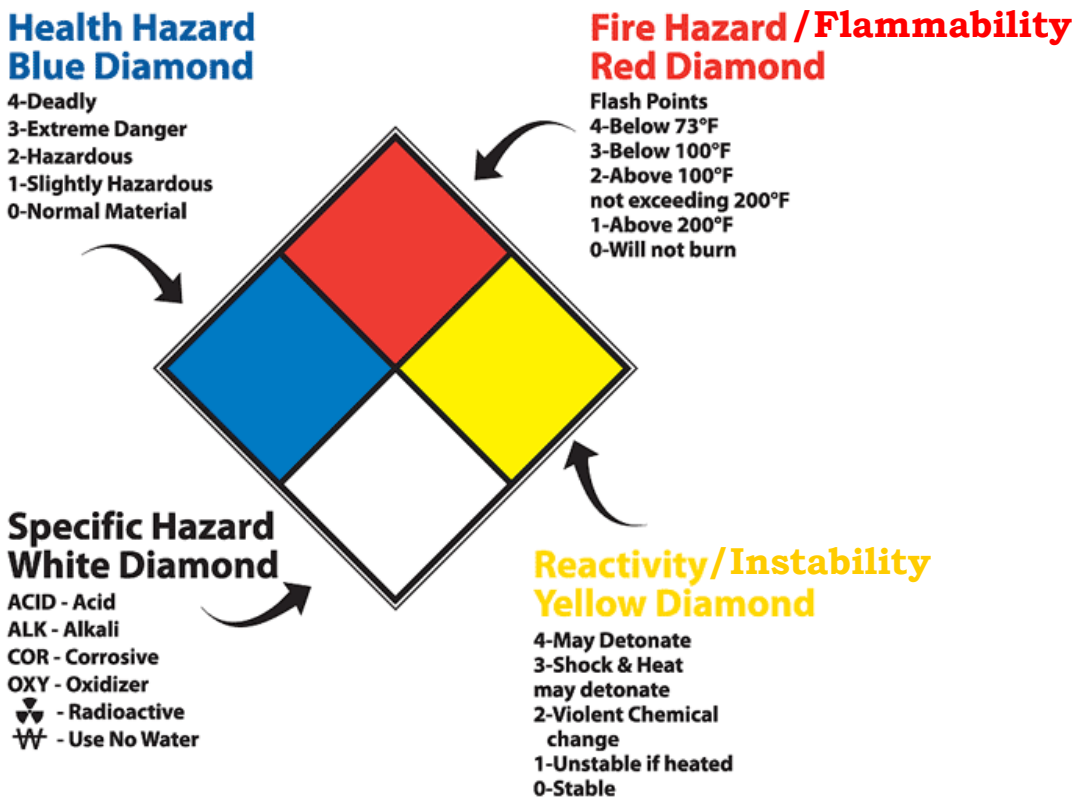
The *transport* of hazardous materials is accompanied by the use of US DOT compliant placards and labels to assist identification of hazardous materials on the roadway, railway, waterway and in the air. In a similar manner the *storage, handling and use* of hazardous materials is accompanied in the Fire Code by a requirement for the use of consistent signage to alert people, including first responders, to the presence of hazardous materials in a facility. The intent of the signage is to provide an indication of both the *type* of hazardous material present and the relative *degree of harm* that the material may pose. This simplistic system uses symbols, colors and numbers to readily communicate these concerns in a visual manner, and recognizes the fact that a material may pose more than one type of hazard.

The basis of the system is a diamond-shaped sign that is divided into four 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* of the material. The last quadrant, at the bottom, is white in color and serves to convey *"special"* information such as "OX" for oxidizer.

The diamond-shaped sign is required by the Fire Code to be conspicuously displayed at the entrance to locations where hazardous materials are stored, handled and used, and on stationary containers and aboveground tanks containing hazardous materials. Note that the sign requirement also applies to locations at which a hazardous material is dispensed. The triggering amount for the sign requirement is the **amount required for a permit**.

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 "4" that is present in the "health" quadrant of the example. This is indicative of a material that can be deadly upon exposure.

NFPA HAZARD DIAMOND SIGN EXPLANATION

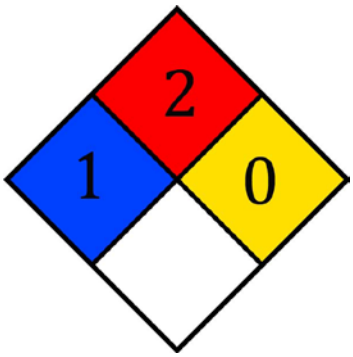


Sign with Hazards Indicated
(Paint Thinner)

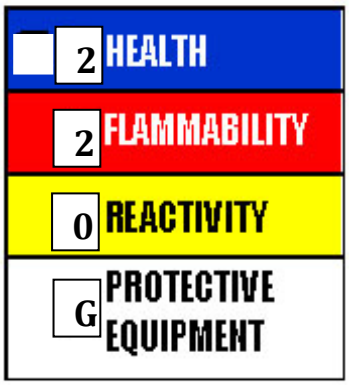
14.3 Personal Protection

This is by far the largest area of difference between the NFPA and HMIS® systems. In the NFPA system, the white area is used to convey special hazards whereas HMIS® uses the white section to indicate what personal protective equipment (PPE) should be used when working with the material.

NFPA 704 Hazard Diamond



HMIS



Where more than one chemical is present in a building or specific area, professional judgment shall be exercised to indicate ratings using the following methods:

(1) **Composite Method** - Where many chemicals are present, a single sign shall summarize the maximum ratings contributed by the material(s) in each category and the special hazard category for the building and/or the area. That is, it shows the highest value in each hazard category for any chemical at that location. It may be that one chemical poses the highest health hazard, while another poses the highest flammability hazard.

(2) **Individual Method** - Where only a few chemicals are present or where only a few chemicals are of concern to emergency responders (taking into account factors including physical form, hazard rating, and quantity), individual signs shall be displayed. The chemical name shall be displayed below each sign.

(3) **Composite – Individual Combined Method**. A single sign shall be used to summarize the ratings via the Composite Method for buildings or other areas containing numerous chemicals. Signs based on the Individual Method shall

be used for rooms or smaller areas within the building containing small numbers of chemicals.

14.4 Warning Signs and Labels

Signage for identification and warning such as for the inherent hazard of flammable liquids or prohibiting smoking shall be provided. Signs and markings shall not be obscured or removed, shall be in English as a primary language or in symbols allowed by the Fire Code, shall be durable, and the size, color and lettering shall be acceptable to the commissioner. The commissioner may require warning signs for the purpose of identifying the hazards of manufacturing, storing, handling or using flammable liquids, including the dispensing or mixing of such liquids.

(1) 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 MATERIALS. Letters shall not be less than 3 inches in height and 0.5 inches in stroke. See Warning Sign examples below:

Signs shall be posted in locations as required by the commissioner.

(2) No-smoking signs

Signs shall be posted in storage areas prohibiting open flames and smoking. "No Smoking" signs shall be required even in buildings that prohibit smoking. The signs shall be provided in English as a primary language and conspicuously posted in the following locations:

a) In rooms or areas where hazardous materials are stored or used.

b) Within 25 feet of outdoor hazardous material storage, handling and use areas, including dispensing areas.

c) Facilities or areas within facilities in which smoking has been entirely prohibited.

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.

Examples of acceptable signs

15. FIRE PROTECTION

15.1 Fire Protection of Spray Booths and Spray Rooms

Spray spaces, rooms and booths should be protected throughout by a fire extinguishing system. The fire extinguishing system must also protect the exhaust plenums, exhaust ducts and both sides of the dry filters where such filters are used.

Sprinkler systems in spray areas must be protected from the accumulation of residue as a result of spraying operations. Sprinkler heads must be inspected at least once per week and cleaned as often as necessary. To protect against residue accumulation, sprinkler heads may be covered by 0.003-inch-thick (0.076 mm) polyethylene or cellophane or thin paper. If sprinkler heads become contaminated by overspray particles they must be replaced.

Sprinkler head covered by 0.003-inch-thick (0.076 mm) polyethylene

Automated spray application operations must be protected by a fire extinguishing system that is equipped with an **interlock** system. The **interlock** system prevents spraying operations from occurring and stops workpiece conveyors when the fire extinguishing system is activated. Activation of the fire extinguishing system must also activate the building alarm system.

Each spray area must have a manual fire alarm and an emergency system shutdown station installed. When the emergency system shutdown station is activated, it should activate the interlock system and stop any spraying operations or workpiece conveyors. Personnel who are operating the spray equipment must have at least one emergency system shutdown station that is readily accessible to them. If access to this station may cause exposure to danger in case of an emergency, an additional station must be located adjacent to an exit from the area.

Prior to moving a vehicle into a spray booth or spray area, the Fire Department of New York recommends that the vehicle battery is disconnected and removed.

The fire extinguishing system should **NOT** be interlocked with makeup air and spray area exhaust systems. During a fire alarm condition, makeup air and spray area exhaust systems should remain IN OPERATION.

Exception:

When the type of fire extinguishing system used requires that ventilation be discontinued, makeup air and exhaust systems should shut down and dampers must close. Portable fire extinguishers must be provided for spray areas in accordance with the requirements of an extra (high) hazard occupancy.

Reference Section 14.8A for more detail on Portable Fire Extinguishers.

15.2 Fire Protection for Dipping Operations

Fire extinguishing systems must be provided for dip tanks with a 150 gallon (568 liters) or more capacity, or 10 square feet (0.93 square meters) or larger in a liquid surface area.

Dip tank covers should be capable of manual operation and should also activate automatically in the event of a fire. Covers should be constructed of a noncombustible material, and should be kept closed when the tanks are not in use.

Portable fire extinguishers must be available in the areas in the vicinity of the dip tanks and should be suitable for use against flammable and combustible liquid fires as specified for extra (high) hazard occupancies. A fire extinguishing cover system or dip tank cover must be provided for the following dip tanks:

1. Dip tanks less than 150 gallons (568 liters) in capacity or 10 square feet (0.93 square meters) in liquid surface area.
2. Dip tanks containing a liquid with a flash point below 110°F (43°C), used in such a manner that the liquid temperature could equal or be greater than its flash point from artificial or natural causes, and having a capacity of more than 10 gallons (37.9 liters) and a liquid surface area of more than 4 square feet (0.37 square meters)

Reference Section 14.8B for more detail on Portable Fire Extinguishers.

15.3 Fire Protection for Hardening and Tempering Tanks

Hardening and Tempering tanks should not be located near furnaces or on combustible floors. These tanks should have a noncombustible hood and vent or another approved venting means which terminates outdoors, in case of a fire. Vent ducts should be treated as flues, and proper clearances shall be maintained from combustible materials. These tanks should be equipped with a high temperature limit switch, which is set to sound an alarm when the temperature of the quenching medium reaches 50°F (10°C) below the flash point.

Tanks that are larger than 500 gallons (1893 L) in capacity or 25 square feet (2.3 square meters) in liquid surface area should be protected by a **fire extinguishing system**. Air under pressure should never be used to fill or agitate oil in the hardening and tempering tanks.

15.4 Fire Protection for Electrostatic Apparatus

If any of the following situations occur, the power supply to the high voltage transformer in the electrostatic apparatus should be disconnected automatically without a time delay. This action should also signal the operator of the electrostatic apparatus:

1. Stoppage of ventilation fans or failure of ventilating equipment from any cause
2. Stoppage of the conveyor carrying articles past the high-voltage grid
3. Occurrence of a ground or an imminent ground at any point of the high-voltage system
4. Reduction of clear space below the requirements

Electrostatic equipment must be **interlocked** with the ventilation system for the spray area so that the equipment cannot be operated unless the ventilating system is in operation.

Automated Liquid electrostatic application equipment must be protected by an approved, supervised flame detection apparatus that in the event of a fire must react within 0.5 seconds and accomplish the following:

1. Activation of a local alarm in the vicinity of the spraying operation and activation of the building alarm system, if such system is provided
2. Shutting down of the coating material delivery system
3. Termination of all spray application operations
4. Stopping of conveyors into and out of the spray area
5. Disconnection of power to the high-voltage elements in the spray area and disconnection of power to the system

Electrostatic Apparatus equipment shall be surrounded by booths, fencing, railing or guards to ensure that there is a separation between the process and plant storage and personnel. Railing, fencing and guards must be made of conductive material, grounded, and should be a minimum of 5 feet (1524 mm from the processing equipment.

Conspicuous signs must be posted in these areas which should:

1. Designate the process zone as dangerous with respect to fire and accidents
2. Identify the grounding requirements for all electrically conductive objects in the spray area, including persons
3. Restrict access to qualified personnel only

The spray area must be ventilated; insulators shall be kept clean and dry. Drip plates and screens that are subject to paint deposits must be removable and taken to a safe place for necessary cleaning.

Areas used for electrostatic spray finishing with fixed equipment must be protected throughout by a fire extinguishing system.

15.5 Fire Protection for Powder Coating

During Powder Coating operations, precautions should be taken to minimize the possibility of ignition by static electrical sparks by static bonding and grounding where possible. When parts of the equipment used are heated prior to powder

coating, the temperature of the parts shall not exceed the ignition temperature of the powder to be used.

Powder coating areas must be kept clear from the accumulation of powder coating dusts. Surfaces must be cleaned to avoid scattering dusts to other places or creating dust clouds. Vacuum sweeping equipment must be approved for use in a hazardous location. Iron or spark producing metals must be prevented from being introduced into the powders being applied by magnetic separators, filter-type separators, or by other approved means.

Powder Coating operations must be protected by a fire extinguishing system, similar to the requirements when using an Electrostatic Apparatus.

Powder Coating operations must also be protected by the installation of an approved, supervised flame detection apparatus that should react to the presence of flames within 0.5 seconds and must also complete the following:

1. Shut down energy supply (electrical and compressed air) to conveyor, ventilation, application, transfer and powder collection equipment
2. Close segregation dampers in associated ductwork to interrupt airflows from application equipment to powder collectors
3. Activate an alarm that is audible throughout the powder coating room or booth

Portable fire extinguishers complying with the requirements for extra (high) hazard occupancies must be provided for areas used for powder coating.

Reference Section 14.8C for more detail on Portable Fire Extinguishers.

15.6 Fire Protection for Floor Finishing Operations

No electrical equipment or device that is a potential source of ignition of floor finishing product vapors, including switches and outlets, should be operated during floor finishing operations. Precautions must be taken prior to starting floor finishing work to prevent accidental operation of such equipment or devices. Precautions should include:

- Shutting down electrical power
- Unplugging equipment
- Taping over switches and outlets

At least one portable fire extinguisher with a minimum rating of 20-B shall be immediately accessible during floor finishing operations. The travel distance to the fire extinguisher shall not exceed 30 feet (9144 mm).

Reference Section 14.8D for more detail on Portable Fire Extinguishers.

15.7 Fire Protection for Indoor Manufacturing of Reinforced Plastics

Resin application areas must be protected throughout by a sprinkler system. Sprinkler system design must meet the requirements for Ordinary Hazard, Group 2, with a minimum design area of 3,000 square feet (279 square meters). A higher level sprinkler system must be provided when materials or storage arrangements require it.

15.8 Portable Fire Extinguishers

The following five areas specifically require Portable Fire Extinguishers:

A. Spray Areas

Spray areas are required to have a minimum of one extra high hazard occupancy portable fire extinguisher either having a rating of 40-B with a maximum of 30 feet travel distance or having a rating of 80-B with a maximum of 50 feet travel distance to the finishing operation area.

B. Dipping Operations

Portable fire extinguishers must be available in the areas in the vicinity of the dip tanks and should be suitable for use against flammable and combustible liquid fires as specified for extra high hazard occupancies. A fire extinguishing cover system or dip tank cover must be provided for the following dip tanks:

1. Dip tanks less than 150 gallons (568 liters) in capacity or 10 square feet (0.93 square meters) in liquid surface area.

2. Dip tanks containing a liquid with a flash point below 110°F (43°C), used in such a manner that the liquid temperature could equal or be greater than its flash point from artificial or natural causes, and having a capacity of more than 10 gallons (37.9 liters) and a liquid surface area of more than 4 square feet (0.37 square meters)

C. Powder Coating Operations

Extra high hazard occupancy portable fire extinguishers must be provided for areas used for powder coating.

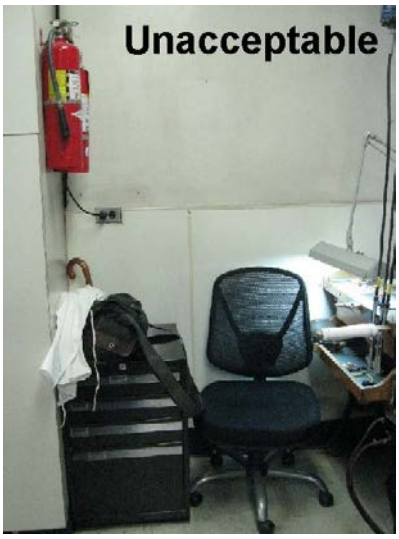
D. Floor Finishing Operations

At least one portable fire extinguisher with a minimum rating of 20-B shall be immediately accessible during floor finishing operations. The travel distance to such extinguisher shall not exceed 30 feet (9144 mm).

E. Liquid Storage

A minimum of one portable fire extinguisher having a rating of not less than 20-B shall be located between 10 and 50 feet from any Class I or II liquid storage area that is located outside of a liquid storage room. A minimum of one portable fire extinguisher having a rating of not less than 20-B shall be located outside of, but not more than 10 feet from, the door opening into a liquid storage room.

Fire extinguishers must be located in conspicuous locations where they will be readily accessible and immediately available for use. These locations must be along normal paths of travel. Fire extinguishers having a gross weight of 40 pounds or less must be installed so that the top of the extinguisher is not more than 5 feet above the floor. Hand-held fire extinguishers having a gross weight exceeding 40 pounds shall be installed so that their tops are not more than 3.5 feet above the floor. The clearance between the floor and the bottom of installed hand-held extinguishers shall not be less than 4 inches. No **fire extinguisher is allowed to be on the floor.**



(1) The top of a fire extinguisher weighing 40 pounds or less must be no more than 5 feet off the floor.
(2) The fire extinguishers must be accessible and unobstructed.

(1) The bottom of the fire extinguisher must be at least 4 inches above the floor.
(2) The fire extinguisher must be properly mounted.

In the event that 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, 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.

15.9 Different Types of Fire Extinguishers

The Certificate of Fitness holder must be familiar with the different types of fire extinguishers that are present. The Certificate of Fitness holder must know how to operate the extinguishers in a safe and efficient manner and know the difference between the various types of extinguishers and when they should be used. A description of the classes of fire and the type of extinguisher used for each 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 Carbon Dioxide (CO_2), 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.

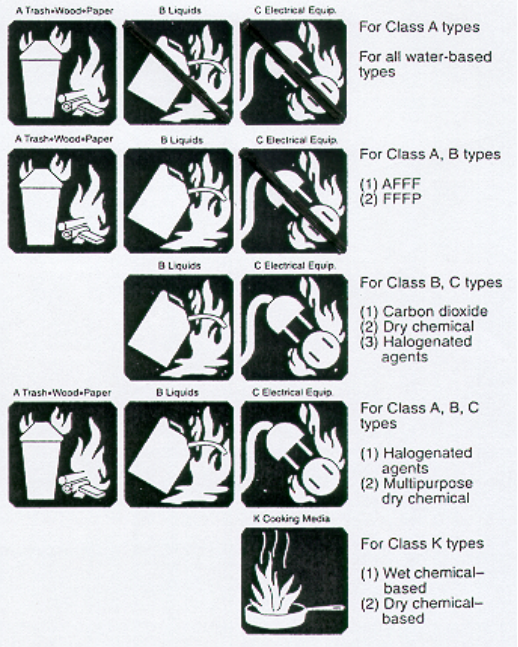
Class D fires are caused by ignitable metals, such as magnesium, titanium, and metallic sodium, or metals that are combustible under certain conditions, such as calcium, zinc, and aluminum. Generally, water should not be used to extinguish these fires.
Class K fires involve vegetable oils, animal oils, or fats in cooking appliances. Class K fires occur in commercial kitchens, including those found in restaurants, cafeterias and caterers. Class K Wet Chemical Fire Extinguishers should be used on Class K fires.

A multi-purpose dry chemical fire extinguisher may be used to extinguish multiple classes of fire. No one type of fire extinguisher can be used for all classes of fire.

Examples of some fire extinguishers are shown below.

Symbols may also be painted on the extinguisher. The symbols indicate what type of fires the extinguisher may or may not be used on. Examples of these symbols are shown below.

CLASSES OF FIRES	TYPES OF FIRES	PICTURE SYMBOL
A	Wood, paper, cloth, trash & other ordinary materials.	
B	Gasoline, oil, paint and other flammable liquids.	
C	May be used on fires involving live electrical equipment without danger to the operator.	
D	Combustible metals and combustible metal alloys.	D
K	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.

15.10 Fire Extinguisher Inspections

Fire extinguishers are required to be **inspected monthly**. The owner of the premises is responsible for designating a person to perform a monthly inspection. 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 either be 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.

Dry chemical fire extinguishing systems **protecting spray facilities must be** inspected semi-annually.

Monthly inspection record located on the front of a portable fire extinguisher

16. EMERGENCY PROCEDURES

16.1 Fire Notification

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

Manhattan properties	(718) 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. The building's designated fire safety person who is familiar with the building must be notified and then can meet the responding emergency units upon their arrival, and direct them quickly to the fire area.

The Certificate of Fitness holder should know how to respond when an individual's clothing has caught fire. The most important action to take regarding clothing fires is to have the affected person immediately drop to the floor and roll. If the person is panicking and running, other people in the area should immediately knock that person to the floor and roll that person around to smother the flames. If the safety shower is near, the use of this shower would also be an effective way to smother the flames. If after smothering the fire, the clothing that caught fire can be removed, remove it. If the clothes are burnt onto the person's skin, do not remove the clothes but soak with water and keep cool. In all cases, immediately seek medical attention.

16.2 Spill Notification

In case of a major spill, the Fire Department must be notified by phone immediately. Additionally, the Fire Department Dispatcher in the borough where the building is located must also be notified. These phone numbers must be posted near the phones most likely to be used in case of an emergency.

17. Appendix

Sample MSDS/SDS

MATERIAL SAFETY DATA SHEET
PCI PAINT THINNER

HEALTH	2
FLAMMABILITY	2
PHYSICAL HAZ.	0
PPE	G

Printed: 05/15/2015
Revision: 04/30/2015

Date Created: 04/20/2015

1. Product and Company Identification

Product Code: PCI 1676
Product Name: PCI PAINT THINNER
Reference #: PCI 1676
Manufacturer Information
Company Name: F.D. Bass
12345 Central Avenue
Astoria, TN 22113
Phone Number: (321)555-1234
Emergency Contact: 24 Hour Emergency Contact (800)123-2468
Information: F.D. Bass Customer Service (800)333-4455
Web site address: www.fdbassinc.fdny

2. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Concentration	OSHA TWA	ACGIH TWA	Other Limits
1 Stoddard solvent {Mineral spirits; Aliphatic Petroleum Distillates; White spirits}	8A52-4B-5	94.0-100.0 %	510 ppm	130 ppm	No data.
2. 1,2,4-Trimethylbenzene {Pseudocumene}	9W-6T-6	1.1-2.1 %	230 ppm	40 ppm	No data.
3. Raffinates (petroleum), sorption process	68741-45-B	93.0-100.0 %	1030 ppm	560 ppm	No data.

Hazardous Components (Chemical Name)	CAS #	OSHA STEL	OSHA CEIL	ACGIH STEL	ACGIH CEIL
1. Stoddard solvent {Mineral spirits; Aliphatic Petroleum Distillates; White spirits}	8A52-51-A	No data.	No data.	220 ppm	No data.
2. 1,2,4-Trimethylbenzene {Pseudocumene}	96-6B-6	515 ppm/(12min)	370 ppm	No data.	No data.
3. Raffinates (petroleum), sorption process	64L41-A5-2	No data.	No data.	560 ppm	No data.

3. Hazards Identification

Emergency Overview

Caution! Combustible. Keep away from heat, sparks, flame and all other sources of ignition. Vapors may cause fire. Vapors may travel long distances to other areas and rooms away from work site. Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and all other sources of ignition anywhere in the structure, dwelling or building during use and until all vapors are gone from work site and all areas away from work site. Keep away from electrical outlets and switches. Beware of static electricity that may be generated by synthetic clothing and other sources.

OSHA Regulatory Status:

This material is classified as hazardous under OSHA regulations.

Health Hazards (Acute and Chronic)

Inhalation Acute Exposure Effects:
May cause dizziness; headache; watering of eyes; eye irritation; weakness; nausea; muscle twitches, and depression of central nervous system. Severe overexposure may cause convulsions; unconsciousness; and death. Intentional misuse of this product by deliberately concentrating and inhaling can be harmful or fatal.

Skin Contact Acute Exposure Effects:
May cause irritation; numbness in the fingers and arms; drying of skin; and dermatitis. May cause increased severity of symptoms listed under inhalation.

Eye Contact Acute Exposure Effects:
This material is an eye irritant. May cause irritation; burns; conjunctivitis of eyes; and corneal ulcerations of the

Sample MSDS . Key Information has been changed. Information for test taking purposes only.

eye. Vapors may irritate eyes.

Ingestion Acute Exposure Effects:
Harmful or fatal if swallowed. May cause nausea; weakness; muscle twitches; gastrointestinal irritation; and diarrhea. Severe overexposure may cause convulsions; unconsciousness; and death.

Chronic Exposure Effects:
Reports have associated repeated and prolonged overexposure to solvents with neurological and other physiological damage. Prolonged or repeated contact may cause dermatitis. May cause jaundice; bone marrow damage; liver damage; anemia; and skin irritation.

Signs and Symptoms Of Exposure

Inhalation, ingestion, and dermal are possible routes of exposure.

Medical Conditions Generally Aggravated By Exposure

Diseases of the skin, eyes, liver, kidneys, central nervous system and respiratory system.

4. First Aid Measures

Emergency and First Aid Procedures

Inhalation:
If user experiences breathing difficulty, move to air free of vapors, Administer oxygen or artificial medical assistance can be rendered.

Skin Contact:
Wash with soap and large quantities of water and seek medical attention if irritation from contact persists.

Eye Contact:
Flush with large quantities of water for at least 15 minutes and seek immediate medical attention.

Ingestion:
Do not induce vomiting. Call your local poison control center, hospital emergency room or physician immediately for instructions to induce vomiting.

Note to Physician

Call your local poison control center for further information.

5. Fire Fighting Measures

Flammability Classification:	Class II
Flash Pt:	105.00 F Method Used: Unknown
Explosive Limits:	LEL: 1.00 UEL: No data.

Special Fire Fighting Procedures

Self-contained respiratory protection should be provided for fire fighters fighting fires in buildings or confined areas. Storage containers exposed to fire should be kept cool with water spray to prevent pressure build-up. Stay away from heads of containers that have been exposed to intense heat or flame.

Unusual Fire and Explosion Hazards

No data available.

Extinguishing Media

Use carbon dioxide, dry powder, or foam.

Unsuitable Extinguishing Media

No data available.

6. Accidental Release Measures

Steps To Be Taken In Case Material Is Released Or Spilled

Clean up:

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind, out of low areas, and ventilate closed spaces before entering. Shut off ignition sources; keep flares, smoking or flames out of hazard area.

Small spills:

Take up with sand, earth or other noncombustible absorbent material and place in a plastic container where applicable.

Large spills:

Dike far ahead of spill for later disposal.

Waste Disposal:

Dispose in accordance with applicable local, state and federal regulations.

7. Handling and Storage

Precautions To Be Taken in Handling

Read carefully all cautions and directions on product label before use. Since empty container retains residue, follow all label warnings even after container is empty. Dispose of empty container according to all regulations. Do not reuse this container.

Precautions To Be Taken in Storing

Keep container tightly closed when not in use. Store in a cool, dry place. Do not store near flames or at elevated temperatures.

8. Exposure Controls/Personal Protection

Respiratory Equipment (Specify Type)

For OSHA controlled work place and other regular users. Use only with adequate ventilation under engineered air control systems designed to prevent exceeding appropriate TLV. For occasional use, where engineered air control is not feasible, use properly maintained and properly fitted NIOSH approved respirator for organic solvent vapors. A dust mask does not provide protection against vapors.

Eye Protection

Safety glasses, goggles or face shields are recommended to safeguard against potential eye contact, irritation, or injury. Contact lenses should not be worn while working with chemicals.

Protective Gloves

Wear impermeable gloves. Gloves contaminated with product should be discarded. Promptly remove clothing that becomes soiled with product.

Other Protective Clothing

Various application methods can dictate use of additional protective safety equipment, such as impermeable aprons, etc., to minimize exposure. A source of clean water should be available in the work area for flushing eyes and skin. Do not eat, drink, or smoke in the work area. Wash hands thoroughly after use. Before reuse, thoroughly clean any clothing or protective equipment that has been contaminated by prior use. Discard any clothing or other protective equipment that cannot be decontaminated, such as gloves or shoes.

Ventilation

Use only with adequate ventilation to prevent build-up of vapors. Open all windows and doors. Use only with a cross ventilation of moving fresh air across the work area. If strong odor is noticed or you experience slight dizziness, headache, nausea, or eye-watering - Stop - ventilation is inadequate. Leave area immediately.

9. Physical and Chemical Properties

Physical States: [ ] Gas [X] Liquid [ ] Solid
Melting Point: No data.
Boiling Point: > 310.00 F
Autoignition Pt: No data.
Flash Pt: 105.00 F Method Used: Unknown
Explosive Limits: LEL: 1.00 UEL: No data.
Specfic Gravity: No data.
Bulk density: 6.659 LB/GA
Vapor Presure: No data.
Vapor Density: No data.
Evaporation Rate: No data.
Solubility in Water: No data.
Percent Volatile: 100.0 % by weight.
VOC / Volume: 800.0000 G/L
Heat Value: No data.
Particle Size: No data.
Corrosion Rate: No data.
pH: No data.
Appearance and Odor

Water White / Free and Clear

10. Stability and Reactivity

Stability: Unstable [ ] Stable [X]
Conditions To Avoid - Instability

No data available.

Incompatibility - Materials To Avoid

Incompatible with strong oxidizing agents.

Hazardous Decomposition Or Byproducts

Decomposition may produce carbon monoxide and carbon dioxide.

Hazardous Polymerization: Will occur [ ] Will not occur [X]
Conditions To Avoid - Hazardous Polymerization

No data available.

11. Toxicological Information

No data available.

Carcinogenicity/Other Information

No data available.

Hazardous Components (Chemical Name)	CAS #	NTP	IARC	ACGIH	OSHA
1. Stoddard solvent {Mineral spirits; Aliphatic Petroleum Distillates; White spirits}	80A2-42-B	n.a.	n.a.	n.a.	n.a.
2. 1,2,4-Trimethylbenzene {Pseudocumene}	9A-65-6	n.a.	n.a.	n.a.	n.a.
3. Raffinates (petroleum), sorption process	64L41-A5-1	n.a.	n.a.	n.a.	n.a.

Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No

12. Ecological Information

No data available.

13. Disposal Considerations

Waste Disposal Method

Dispose in accordance with federal, state, and local regulations.

14. Transport Information

LAND TRANSPORT (US DOT)

DOT Proper Shipping Name No data available.

15. Regulatory Information

US EPA SARA Title III

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Stoddard solvent {Mineral spirits; Aliphatic Petroleum Distillates; White spirits}	80A2-42-B	No	No	No	
21,2,4-Trimethylbenzene {Pseudocumene}	9G-63A6	No	No	Yes	
3. Raffinates (petroleum), sorption process	6A741-A5-L	No	No	No	

US EPA CAA, CWA, TSCA

Hazardous Components (Chemical Name)	CAS #	EPA CAA	EPA CWA NPDES	EPA TSCA	CA PROP 65
1. Stoddard solvent {Mineral spirits; Aliphatic Petroleum Distillates; White spirits}	80A2-41-S	No		Inventory	
2. 1,2,4-Trimethylbenzene {Pseudocumene}	9G-6A-6	No		Inventory, 4 Test	
3. Raffinates (petroleum), sorption process	64L41-B5-1	No		Inventory	

SARA (Superfund Amendments and Reauthorization Act of 1986) Lists:

Sec.302: EPA SARA Title III Section 302 Extremely Hazardous Chemical with TPQ. * indicates 10000 LB TPQ if not volatile.

Sec.304: EPA SARA Title III Section 304: CERCLA Reportable + Sec.302 with Reportable Quantity. ** indicates statutory RQ.

Sec.313: EPA SARA Title III Section 313 Toxic Release Inventory. Note: -Cat indicates a member of a chemical category.

Sec.110: EPA SARA 110 Superfund Site Priority Contaminant List

TSCA (Toxic Substances Control Act) Lists:

Inventory: Chemical Listed in the TSCA Inventory.
5A(2): Chemical Subject to Significant New Rules (SNURS)
6A: Commercial Chemical Control Rules
8A: Toxic Substances Subject To Information Rules on Production
8A CAIR: Comprehensive Assessment Information Rules - (CAIR)
8A PAIR: Preliminary Assessment Information Rules - (PAIR)
8C: Records of Allegations of Significant Adverse Reactions
8D: Health and Safety Data Reporting Rules
8D TERM: Health and Safety Data Reporting Rule Terminations
12(b): Notice of Export

Other Important Lists:

CWA NPDES: EPA Clean Water Act NPDES Permit Chemical
CAA HAP: EPA Clean Air Act Hazardous Air Pollutant
CAA ODC: EPA Clean Air Act Ozone Depleting Chemical (1=CFC, 2=HCFC)
CA PROP 65: California Proposition 65

International Regulatory Lists:

EPA Hazard Categories:

This material meets the EPA 'Hazard Categories' defined for SARA Title III Sections 311/312 as indicated:

[ ] Yes [X] No Acute (immediate) Health Hazard
[ ] Yes [X] No Chronic (delayed) Health Hazard
[ ] Yes [X] No Fire Hazard
[ ] Yes [X] No Sudden Release of Pressure Hazard
[ ] Yes [X] No Reactive Hazard

16. Other Information

Company Policy or Disclaimer

The information contained herein is presented in good faith and believed to be accurate as of the effective date shown above. This information is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determination of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. Any use of this data and information must be determined by the user to be in accordance with applicable federal, state and local laws and regulations.