


CITY AND COUNTY OF DENVER		POLICY	DENVER FIRE DEPARTMENT
Subject:	FLAMMABLE/COMBUSTIBLE LIQUID STORAGE/USE, INCLUDING USTs, ASTs, AND USE/STORAGE AT CONSTRUCTION SITES		
Reference:	2015 IFC, Denver Fire Code Amendments, and NFPA		
Approved:			Manuel Almaguer Division Chief, Fire Prevention Division
Number:	IFC – Ch. 3, 27, 34, 50, 57 NFPA - 30, 33, 704	Effective Date: February 1, 2017	Page 1 of 9

This policy is meant to provide basic information for the most common conditions and situations. In any given occupancy, many other Fire Code requirements may be enforced. The Fire Inspector will address these during a premise inspection. Questions can be addressed by contacting the Fire Prevention Division between 7:00 a.m. and 4:00 p.m. Monday thru Friday at 720-913-3474. Walk-in hours are 7:00 a.m. to 9:30 a.m. ONLY, Monday - Friday, at 745 W. Colfax Ave.

I. SCOPE

This policy covers installation, maintenance, operation, and permitting requirements as they pertain to the use and storage of flammable and combustible liquids within the City and County of Denver. UST's and AST's, flammable and/or combustible liquids, storage, and use over exempt amounts are covered in this policy.

II. DEFINITIONS

A. Flammable liquid is a liquid having a closed cup flash point below 100 degrees Fahrenheit. The category of flammable or combustible liquids does not include compressed gas or cryogenic fluids. Flammable liquids are further categorized into a group known as Class I liquids, subdivided as follows:

1. **Class I-A** liquids include those having a flash point below 73 degrees F and having a boiling point below 100 degrees F.
2. **Class I-B** liquids include those having a flash point below 73 degrees F and having a boiling point at or above 100 degrees F.
3. **Class I-C** liquids include those having a flash point at or above 73 degrees F and below 100 degrees F.

B. Combustible liquid is a liquid having a flash point at or above 100 degrees F., subdivided as follows:

1. **Class II liquids** are those having closed cup flash point at or above 100 degrees F and below 140 degrees F.
2. **Class III-A liquids** are those having closed cup flash points at or above 140 degrees F and below 200 degrees F.
3. **Class III-B liquids** are those having a closed cup flash point at or above 200 degrees F.

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III. ANNUAL PERMIT (for permanent site)

The following permit(s) must be obtained from the Denver Fire Department, Fire Prevention Division:

- A. ANNUAL- Flammable and Combustible Liquids Use/Storage Permit**
- B. TEMPORARY PERMIT (for construction site)**
- C. TEMPORARY- Flammable and Combustible Liquids Use/Storage Permit**

EXCEPTIONS: If you have less than 1 unit of Flammable/Combustible liquids, a permit is not required.

IV. TO OBTAIN PERMIT

A permit shall be obtained from the Denver Fire Department, Fire Prevention Division. The permit shall be kept on site for inspection. To obtain a permit, the following information must be provided:

- A.** Business name, address, phone number, fax number and email address
- B.** Contact name, phone number, and fax number
- C.** Property/business owner's name, address, phone number, fax number and email
- D.** Site address
- E.** List the use of flammables/combustibles, i.e. diesel generator tank.
- F.** List the size of tank(s); include the volume, in gallons, of each tank.
- G.** List total gallons of flammables/combustibles on site; include inside and outside use and/or storage, i.e. 61 gallons Class II (diesel) equals 1 unit; total on site 1 unit
- H.** Diagram of site location indicating flammable/combustible use/storage area.
- I.** Show distances from all buildings, property lines, utility poles, power lines, etc. (For storage area include distance from all building openings: windows, doors, vents, etc.)
- J.** Presence/absence of Code complying/functional sprinkler system.

V. FIRE DEPARTMENT PERMIT

To obtain the required Denver Fire Department permit(s), owner, contractor, or responsible party shall complete the Flammable and Combustible Permit Application Form (attached) and include form with initial packet submitted to Denver Fire Prevention Division, Flammables Section. All required permits shall be current and posted on site.

Make check payable to: Denver Manager of Finance.

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Walk-in permit processing is located at 745 West Colfax Avenue from 7:00 a.m. to 9:30 a.m. Monday - Friday.

Mail-in permit application to:
Denver Fire Prevention Division
Attn: Flammables Unit
745 W. Colfax Avenue
Denver, CO 80204

VI. SITE INSPECTION

Upon approval of Flammable and Combustible Liquid Use and Storage Permit Form, a Denver Fire Department Fire Prevention Inspector will conduct a field inspection of the site. Compliance with **all** Fire Code requirements shall be maintained at all times. Permits shall be kept on site and posted. Permit is valid for business/property owner, time frame, and site address indicated on the permit.

A permit may be revoked when:

- A. Any of the conditions or limitations set forth in the permit have been violated.
- B. Compliance with written orders has not been achieved.
- C. False statements or misrepresentations of information provided in the permit application are discovered.
- D. The permit is issued in error or in violation of a City ordinance, or a Fire Code violation exists.

VII. BASIC REQUIREMENTS AND CONDITIONS:

- A. "NO SMOKING" and "FLAMMABLE" or "COMBUSTIBLE" signs shall be posted conspicuously, and warnings strictly enforced.
 - 1. Warning signs shall be of a durable material with white lettering on a red background. Letters shall not be less than 3 inches in height and ½ inch in stroke. **IFC 5703.5.**
 - 2. All sources of ignition shall be eliminated within 25 feet of areas used for the storage, use, or dispensing of flammable liquids **5003.7**
 - 3. Tanks on construction sites shall be marked with:
 - a. The name of the product they contain and the words:
 - b. "FLAMMABLE – KEEP FIRE AND FLAME AWAY" and:
 - c. "KEEP 50 FEET AWAY FROM BUILDINGS." **IFC 5706.2.2**
- B. Portable fire extinguishers shall be provided in accordance with **IFC 906.**
 - 1. Minimum Size 3A 40BC

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2. Travel Distance to an extinguisher shall not be less than 10 feet or more than 50 feet from areas where flammable liquids are stored/dispensed.
 3. Mounted with the top of the extinguisher no more than 5 feet above the ground. **IFC 5704.3.7.5.2**
- C.** Vehicle Protection shall be provided in accordance with **IFC 312** - Approved Vehicle Protection for LPG cylinders/tanks. Jersey Barriers for temporary LPG use. Guard post for permanent use.
1. Post's shall be constructed of steel not less than 4 inches in diameter and be concrete-filled
 2. Spaced not more than 4 feet between posts on center
 3. Set not less than 3 feet deep in a concrete footing of not less than a 15-inch diameter
 4. Set with the top of post not less than 3 feet above ground. Located not less than 5 feet from the tank. **IFC 312.2 & 312.3**
- D.** The storage area shall be kept free from weeds, debris, and combustible materials for a minimum distance of 15 feet. **IFC 5704.4.6.**
- E.** Secondary containment shall be provided according to **IFC SECTION 50** Required when an individual vessel exceeds 55 gallons or the aggregate capacity of multiple vessels exceeds 1000 gallons. **IFC 5004.2.2**
- F.** Outdoor control areas – shall be located not closer than 20 feet from a lot line, public alley or public way. **IFC 5003.12**
- G.** The storage of empty tanks and containers previously used for the storage of flammable or combustible liquids, unless free from explosive vapors, shall be stored as required for filled tanks and containers. Tanks and containers, when emptied, shall have the covers or plugs immediately replaced in openings. **IFC 5704.4.8**
- H.** Class I, II, or III-A liquids, including stock for sale, shall not be stored near an exit, access doorway, stairway, or in a location that would impede egress. **IFC 5704.3.3.3**
- I.** Tanks over 100 gallons in capacity, permanently installed or mounted and used for the storage of Class I, II, or III-A liquids shall bear a label or placard identifying the material **IFC 5704.2.3.2.** Placards shall be in accordance with **NFPA 704**
- J.** Storage of flammable and combustible liquids shall be separated from incompatible materials in accordance with **IFC 5003.9.8.**
- K.** Electrical Service at construction sites

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1. Electrical service to electric pumps shall be protected from physical damage. Any electrical within three (3) feet of the pump or any damage area shall be at least Class I, Division I.
 2. At construction sites, vent stacks shall extend a minimum of three (3) feet above any electrical service and a minimum of three (3) feet above any electrical pump head.
- L. Venting of tanks containing flammable liquids / vapors shall be in accordance with **IFC 5704.2.7.3.3** – Vapors may not be released less than 12 feet above finished ground level

VIII. GENERAL INFORMATION ON FLAMMABLE LIQUIDS

- A. Class I, II, and III-A liquids in excess of ten (10) gallons that are used for maintenance purposes and the operation of equipment shall be stored in an approved container, location, and UL listed flammable liquid storage cabinet. Not to Exceed 120 gallons total **IFC 5704.3.2.2**
- B. Class I liquids shall not be stored below grade or in basement areas. **NFPA 30 – 9.3.6**
- C. Containers for flammable liquids shall be either the original shipping container or an approved “safety container.”
 1. Shall be made of metal
 2. Containers shall not exceed 5 gallons of capacity
 3. Shall not be used to increase maximum allowable quantity total. **IFC 5704.3.6.1&.2 / IFC 5003.9.10**
- G. Class I, II, or III-A liquids shall not be stored (including stock for sale) near exit doorways, stairways, or in locations that would impede egress. **IFC 5704.3.3**
- H. The storage and dispensing of flammables and combustibles shall be limited to no more than 10 gallons in approved safety containers for the use in maintenance and operation of equipment in assembly buildings, hotels, apartment houses, one- and two-family dwellings, lodging Houses, and in drinking and eating establishments. **IFC 5704.3.4.4**
- I. It is unlawful for any person to sell or offer for sale Class I or Class II liquids with a flash point of 100 degrees F or less for the express purpose of domestic cleaning. **IFC 5705.3.6.1**
- J. Class I and Class II liquids with a flashpoint below 110 degrees F shall not be used within a building for cleaning parts or degreasing, unless used in an approved closed machine or in a room specifically designed for open use of flammables. **IFC 5705.3.6.2**
- K. When heated, sprayed, or mixed, Class II and Class III liquids may assume the characteristics of lower flash point liquids, and therefore required to meet additional requirements as set forth in the IFC and NFPA.

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- L. Liquids which have unusual burning characteristics or that are subject to self-ignition or are highly reactive or are subject to explosive decomposition or have other special properties shall also be regulated by **IFC Chapter 50**.
- M. Reactive materials, those which will react with water or other liquids to produce a hazard, shall not be stored in the same room with flammable or combustible liquids.
IFC 5003.9.8
- N. Information on flammable liquid storage cabinets and storage control areas may be found in **IFC Section 57**.

IX. THE FOLLOWING IS A LIST OF THE MOSE WIDELY USED LIQUIDS GROUPS, ACCORDING TO THEIR RESPECTIVE CLASS:

<u>CLASS IA</u>	<u>FLASH POINT</u>	<u>BOILING POINT (F)</u>
BENZINE	0	95-140
ETHYL ETHER	-40	95
NAPHTHA (PETROLEUM)	0	95-140
PENTANE	-40	97
VINYL ETHYL ETHER	-50	96
PETROLEUM	0	95-140

<u>CLASS IB</u>	<u>FLASH POINT</u>	<u>BOILING POINT(F)</u>
ACETONE	0	134
<u>ALCOHOL:</u>		
BUTYL ALCOHOL	52-84	181
DENATURED ALCOHOL	60	175
ETHYL (GRAIN) ALCOHOL	55	173
METHYL ALCOHOL	52	147
WOOD ALCOHOL	52	147
BENZENE (BENZOL)	12	176

<u>CLASS IB</u>	<u>FLASH POINT</u>	<u>BOILING POINT(F)</u>
CARBON BISULFIDE	-22	115
DIETHYL KEYTONE	55	217
GASOLINE	-45	100-400
GIN	62-144	
HEXANE	-7	156
ISOPROPYNOL	53	181
JP4 (JET FUEL)	30	250
LACQUER	0-80	190-225
LACQUER THINNER	20-34	190-225

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METHYL-ETHYL KETONE (M-E-K)	21	176
OCTANE	56	258
PERFUMES	55	173
PETROLEUM (CRUDE OIL)	20-90	
PROPYL ACETATE	58	215
PROPANAL	15-19	120
RESIN (ACRYLIC DENTURE)	51	
RESIN (SURFACE COATING)	39-76	
RUBBER CEMENT	15-50	100-280
RUBBER SOLVENT	-40	100-280
RUM	55	173
SHELLAC	40-70	
TOLUENE (TOLUOL)	40	231
VARNISH SHELLAC	40-70	
WHISKEY	55	173
WINE	55	173

CLASS IC	FLASH POINT	BOILING POINT (F)
AMYL AGETATE (BANANA OIL)	77	
BRANDY	84	
TRICHLORETHYLENE	90	
TURPENTINE	95	
VARNISH	80-103	
XYLENE	81-90	

CLASS II	FLASH POINT	BOILING POINT (F)
ACETIC ACID	109	
DIESEL FUEL OIL	100-130	
KEROSENE	100	
M-E-K PEROXIDE	110-155	
MINERAL SPIRTS	104	
NAPHTHA (COAL TAR)	107	
NAPHTHA (SAFETY SOLVENT)	100-110	
PAINT REMOVER	116	
PAINT THINNER	100-125	
SOLVENT (CLEANING)	138	

CLASS IIIA (COMBUSTIBLE LIQUIDS)	FLASH POINT (F)
BENZALDEHYLE	148
PHENOL	175

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PINE OIL	172
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<u>CLASS IIIB (FP 200° F OR OVER)</u>	<u>FLASH POINT (F)</u>
CASTER OIL	
CODLIVER OIL	
LUBRICATING OIL	
NEATS FOOT OIL	
NITROCHLORO BENNZE	
OIL OF WINTERGREEN	
OLIVE OIL	
PEANUT OIL	175
QUENCHING OIL	138-172
ROSIN OIL	
SOYBEAN OIL	
TRANSFORMER OIL	

Visit DenverGov.org/DFD and select “Fire Safety Permits” for current Fire Permit Fee Calculation Tables.

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FLAMMABLE/COMBUSTIBLE LIQUIDS PERMIT APPLICATION FORM

THIS FORM SHALL BE FILLED OUT AND SIGNED BY A REPRESENTATIVE OF THE SITE APPLYING FOR FLAMMABLE AND COMBUSTIBLE LIQUID PERMITS. A PERMIT WILL NOT BE ISSUED IF THIS FORM IS NOT COMPLETE AND ACCOMPANIED WITH BUILDING DEPARTMENT APPROVAL.

NAME OF BUSINESS: _____

BUSINESS ADDRESS: _____

CITY: _____, STATE: _____, ZIP CODE: _____

PERMIT SITE ADDRESS: _____ DENVER, Colorado _____

CONTACT'S NAME: _____

CONTACT'S PHONE NUMBER(S): _____

EMAIL: _____

LIST THE AMOUNT OF FLAMMABLES/COMBUSTIBLE LIQUIDS BY TYPE OR NAME (IN GALLONS) ON SITE:

TOTAL NUMBER OF UNITS: _____

I HAVE READ AND UNDERSTAND THE DENVER FIRE DEPARTMENT'S POLICY REGARDING FLAMMABLE AND COMBUSTIBLE LIQUIDS. I ALSO UNDERSTAND THAT A SITE INSPECTION WILL BE CONDUCTED BY DENVER FIRE PREVENTION DIVISION PERSONNEL, AND IF THE INSTALLATION DOES NOT COMPLY WITH DENVER'S FIRE CODE (2015 IFC WITH CITY AMENTMENTS), THE PERMIT MAY BE REVOKED WITHOUT A REFUND.

SIGNATURE: _____

DATE: _____