

COMMERCIAL FIRE SURVEY (CFS)

This survey covers property coverage only and is to be completed on an **hourly-rated** basis requiring a thorough, interior and exterior survey with completion of the **Commercial Fire Survey (CFS)** form. This survey can also be ordered on a **flat-rated** basis which is the **Commercial Fire Short Survey (CFSS)** form. The flat-rated form is meant for smaller occupancies and should take less than one hour including write-up time.

This survey requires the inspector to do the following:

- Call the insured in advance to arrange an appointment.
- Upon visiting the premises, introduce yourself and ask to speak to the arranged contact person.
- Present your business card and restate the purpose of your visit, making your ID badge visible.
- Tour the premises with the contact person and ask any questions regarding the operations, fire protection, building/premises, machinery/equipment, etc.
- Answer any additional questions on the survey form.
- Measure the building using a measuring wheel. Include all changes of angles, enclosed attachments (e.g. loading docks, canopies), etc. to the nearest foot.
- Diagram with proper exposures and labeling (i.e. class of construction, story/foundation, sprinkled, exposures, public hydrants, and north arrow).
- Take photographs of FRONT/SIDE, REAR/SIDE, and any ADDITIONAL PHOTOS ORDERED.
- Complete the Commercial Building Valuation worksheet when building is owned, coverage is carried by the insured, or requested in special instructions.
- Make recommendations addressing or covering all observed/developed deficiencies and uncontrolled hazards. (Note the list of standard recommendation wordings at the end of each section)

PLEASE REVIEW ALL ADDITIONAL INFORMATION IN THIS SECTION!



CFS - Commercial Fire Survey

Account / Account Code:

Agency:

Insured:

Policy #:

Survey Address:

Telephone:

Alt. Phone:

Report Status: (Choose one value)

Productive Non-Productive Pending

Survey Date: 18 Feb 05

Special Attention / Idiosyncrasies / Hard-Copy items forwarded non-GISA (e.g., mail or fax): Yes (describe) No

Appointment was for 3:00pm. Contact was delayed on personal errand and did not arrive until 3:20pm. Also, during the course of the survey/interview, interruptions were experienced to serve customers. As a result, additional time was required to complete the survey.

Name / Title of Person Interviewed: Mr. Alimovski - President/Owner

Insured is: (Choose one value)

Owner and occupies premises Owner but does not occupy premises Tenant

Length of Ownership / Years in Business: 30 Years. At this location 25 Years

Occupancy: (Choose all that apply)

Business Office Manufacturing / Assembly Service / Repair / Dealer-Automotive
Care Facility / Day Care Medical Office / Healthcare / Clinic Service / Repair-Other
Educational Places of Public Assembly Vacant
Habitational Restaurant / Tavern Warehousing / Storage
Hotel / Motel / Dormitory Retail / Mercantile Other (describe)

Description of Operations:

Insured is Harvard Inc, DBA Tree Brothers, an Illinois corporation with Mr. Alimovski as President/Owner, active in the day to day operations. Insured owns and occupies entire building as a breakfast, lunch and dinner restaurant with service bar. No catering/off premises operations. No Banquets/Parties. No entertainment. No coin operated amusements. Some small amount of carry out. No delivery. Standard Breakfast, lunch and dinner menu.

Hours & Days of Operation (to M-S): 5am -12am daily

Off-premises operations: (Choose one value) Yes (describe) No

Licensed Maximum capacity of occupancy: Seating for 150

Occupancy Amenities: (Choose all that apply)

Athletic Fields / Courts Locker Rooms Storage Buildings
Banquet rooms Meeting / Party rooms Storage Lockers
Fitness Facility Playground Other (describe)
Garages Ponds / Lakes None
Indoor Recreational Facilities / Game Room Pool
Laundry Shuttle service

Cooking exposure: (Choose all that apply)

Commercial with Grease Vapor Exposure Domestic / Non-Commercial Cooking
Commercial without Grease Vapor Exposure None

If Cooking Exposure is Commercial without Grease Vapor Exposure or Domestic / Non-Commercial Cooking - Equipment: (Choose all that apply)

N/A Domestic Ovens / Ranges Microwaves
Commercial Ovens (e.g. Pizza / Bakery) / Ranges Domestic Built-in Ovens Other (describe)

If Occupancy is Places of Public Assembly - Type: (Choose all that apply)

N/A Museum Stadium Worship
Health Club Public / Meeting Hall Theater Other (describe)
Library Recreational Center Transportation Terminal (e.g. Airport - Bus / Rail - etc.)

Value of contents: Food/Beverages valued by contact at \$30,000; Fixtures/furnishings/equipment valued at \$200,000

Estimated receipts / sales: \$850,000

of Full-time employees: 15 # of Part-time employees: 0

Other Business locations: (Choose one value) No Yes (describe)

Other tenants in building / premises: (Choose one value) No Yes (describe)

Narrative:

See description of operations.

Fire Protection

Property outside city limits: (Choose one value) Yes No

Responding Fire Department: Woodstock F.D.

Nearest Responding Fire Station (miles): 3

Nearest Hydrant ('): 155'

of & Classifications of Fire Extinguishers present (include building ID# for multiple building properties):

One 2A10BC extinguisher in dining area. One 40BC and One Kclass in kitchen.

Extinguishers last inspected and tagged: June 2004

Detection / Alarm equipment: (Choose all that apply)

- | | | |
|--|---|---|
| <input type="checkbox"/> Annunciator Panel | <input type="checkbox"/> Heat detectors | <input type="checkbox"/> Other (describe) |
| <input type="checkbox"/> Audible / Flasher | <input type="checkbox"/> Manual Pull Alarm System | <input checked="" type="checkbox"/> None |
| <input type="checkbox"/> Automatic Fire Detection System | <input type="checkbox"/> Smoke detectors | |

If Detectors - Regular inspection & testing: (Choose one value)

N/A Annual Semi-Annual No

Building sprinklered: (Choose one value)

Yes - Combo wet/Dry Yes - Dry System Yes - Wet System Other (describe) No

If Building sprinklered - Inspector access to sprinkler controls / valves / risers: (Choose one value)

N/A Yes No - Room inaccessible No - Room in another occupancy

If Building sprinklered - % of floor space covered: _____

If Building sprinklered - Date of Last service: _____

If Building sprinklered - Name of servicing contractor: _____

If Building sprinklered - Spare sprinkler heads available: (Choose one value)

N/A Yes No

If Building sprinklered - Valves chained in open position: (Choose one value)

N/A Yes No

If Building sprinklered - System alarms: (Choose all that apply)

N/A Central Station Electric / Water Gong Flow Local Alarm Tamper

If Building sprinklered - Exterior Sprinkler Connection (e.g., Siamese or Y connection) properly capped: (Choose one value)

N/A Yes No

If Building sprinklered - Minimum 18 inch clearance between sprinkler heads and material storage: (Choose one value)

N/A Yes No

Narrative:

Adequate number of UL/FM approved all purpose (ABC) and special purpose (BC and Kclass) extinguishers. They are sufficient size and properly mounted. They have current inspection tags. No other fire protection provided. No reported fire losses.

Premises

Adjacent hazardous exposures (occupancy types and/or condition of adjacent buildings): (Choose one value)

No Yes (describe)

Age of building: 1980

of Floors (excluding basement): 1

Foundation: (Choose all that apply)

Basement - Full Basement - Partial Crawl Slab Stilts None

of Fire divisions: 1

Exterior wall construction: (Choose all that apply)

- | | | |
|---|--|--|
| <input type="checkbox"/> Brick on masonry | <input checked="" type="checkbox"/> EIFS on masonry | <input type="checkbox"/> Siding metal / other on masonry |
| <input type="checkbox"/> Brick on studs | <input type="checkbox"/> EIFS on studs | <input type="checkbox"/> Siding metal / other on studs |
| <input type="checkbox"/> Brick solid | <input type="checkbox"/> Glass / metal curtain wall | <input type="checkbox"/> Siding wood on masonry |
| <input type="checkbox"/> Concrete block | <input type="checkbox"/> Insulated sandwich panel | <input type="checkbox"/> Siding wood on studs |
| <input type="checkbox"/> Concrete poured-in-place | <input type="checkbox"/> Native stone on masonry | <input type="checkbox"/> Stucco on masonry |
| <input type="checkbox"/> Concrete precast panels | <input type="checkbox"/> Native stone on studs | <input type="checkbox"/> Stucco on studs |
| <input type="checkbox"/> Concrete tilt-up panels | <input type="checkbox"/> Siding metal / other on girts | <input type="checkbox"/> None |

Roof covering: (Choose all that apply)

- | | | | |
|---|--|---|--|
| <input type="checkbox"/> Aluminum | <input type="checkbox"/> Fiberglass shingles | <input type="checkbox"/> Slate | <input type="checkbox"/> Tin (terne) |
| <input type="checkbox"/> Asphalt shingles | <input type="checkbox"/> Fiberglass translucent panels | <input type="checkbox"/> Steel | <input type="checkbox"/> Wood shakes or shingles |
| <input type="checkbox"/> Built-up smooth | <input type="checkbox"/> Metal sandwich panels | <input type="checkbox"/> Steel porcelain coated | <input type="checkbox"/> Unknown |
| <input type="checkbox"/> Built-up tar and gravel / rock | <input type="checkbox"/> Mineral fiber | <input type="checkbox"/> Tile clay | <input type="checkbox"/> None |

Copper Single-ply membrane Tile concrete
Roof Age: 2004

Roof deck construction: (Choose all that apply)

Flexicore Metal Wood Unknown
Gypsum Poured concrete Other (describe)

Roof deck support: (Choose all that apply)

Fire retardant insulation on steel Steel Bar Joist Steel Truss Wood Truss Unknown
Flexicore Steel Beam Wood Joist Other (describe)

Evidence of roof leakage: (Choose all that apply)

Ceiling discoloration Floor discoloration Other (describe)
Ceiling support discoloration Furniture / Equipment discoloration / rusting None

If Evidence of roof leakage - Roof repair been completed: (Choose one value)

N/A Yes No (describe)

Floor construction at grade: (Choose all that apply)

Flexicore Metal Poured concrete Wood Other (describe) Unknown

Floor construction above grade: (Choose all that apply)

N/A Flexicore Metal Poured concrete Wood Other (describe) Unknown

Wall Construction between Units:

Total square feet of building: 5,300 sqft.

Total square feet occupied by insured: 5,300 sqft.

Building protected from vehicle damage from parking locations: (Choose one value) Yes No

Evidence of possible mold exposure: (Choose one value) Yes (describe) No

Condition of overall structure: (Choose one value)

Good Other (describe)

Narrative:

One story joisted masonry building with no basement. Exterior walls are "Exterior Insulation Finishing System" (EIFS) over brick/masonry. Floor is poured reinforced concrete on earth. Roof is coated rubber membrane on flat wood roof deck on wood joists. Constructed for occupancy in 1980. Appeared in good condition.

Common Hazards

HVAC systems: (Choose all that apply)

Boiler and piping only Steam / Hot water with radiators Evaporative coolers
Electric baseboard / wall unit Steam / Hot water with unit heaters Forced cool air
Forced warm air Thru-wall units Unit AC - air cooled
Gas/Oil/Electric suspended unit heat Ventilation only Unit AC - water cooled
Heat pump Chilled water with air handlers Other (describe)
Rooftop unit Chilled water with fan coil units None

HVAC systems fuel: (Choose all that apply)

Coal Fuel Oil Natural Gas Other (describe)
Electricity LP Gas Wood Unknown

HVAC system updates: (Choose all that apply)

New air-conditioning units New heating units Update heating units None
New ductwork / pipes Update air-conditioning units Other (describe) Unknown

Last HVAC update: Roof top units range in age from 1-5 years.

HVAC service frequency: (Choose one value)

Annually Every 2 years Other (describe) Never Unknown

HVAC system deficiencies: (Choose all that apply)

Corrosion Leaks Rusting None
Excessive dirt / dust accumulation Major dents Other (describe)

Overcurrent Protection: (Choose all that apply)

Circuit Breakers Fuses Other (describe) Unknown - Panels not Accessible

Wiring: (Choose all that apply)

Conduit Knob & Tube Unable to determine
Flexible Conduit (e.g. BX) NM or NMC (Non-Metallic Sheathed Cable e.g. Romex)

If Building built / renovated between mid 1960s and late 1970s - Aluminum wiring (other than main feeds) present per insured: (Choose one value)

N/A Yes (describe) No

If Aluminum wiring - Thermal Scan completed: (Choose one value)

N/A Never Other (describe)

Electrical system updates: (Choose all that apply)

- Add / Update circuits New service panels New wiring - Partial None
 New fixtures New wiring - All Other (describe) Unknown

Last Electrical update: Completely re-wired in 2003

Electrical system deficiencies: (Choose all that apply)

- Absence of GFCI outlets near water sources Fuses blowing / Breakers tripping
 Excessive use of extension cords Other (describe)
 Frayed and/or Loose: wiring / sockets / switches / etc. None

Plumbing system updates: (Choose all that apply)

- New water heater Some new pipes Update / New fixtures Other (describe) None

Last Plumbing update: All plumbing replaced 2003

Plumbing system deficiencies: (Choose all that apply)

- Floor drain back-ups Leaking pipes Leaking water tank Pipe corrosion Other (describe) None

Interior / Exterior housekeeping: (Choose one value)

- Good Other (describe)

Narrative:

Common hazards appeared in good condition and well maintained.

All Risk

Building vulnerable to snow / ice accumulation from flat / low pitch roof: (Choose one value)

- No Yes (describe)

Evidence of settling or cracking in foundation / building walls: (Choose one value)

- No Yes (describe)

Property in flood area: (Choose one value)

- Yes (describe) No Unknown

Area susceptible to erosion or landslide: (Choose one value)

- No Yes (describe)

Operational Exposures - General

Vehicles inside: (Choose all that apply)

- N/A Parking Service or Repair Storage Other (describe)

If Vehicles inside - Interior walls and supports protected against vehicle contact: (Choose one value)

- N/A Yes (describe) No

If Public / Self-storage facility occupancy - Rules / Restrictions: (Choose one value)

- N/A Yes No

Smoking controls for occupancy: (Choose one value)

- Yes No

Compressors safely arranged & free of oil / grease / debris build-up: (Choose one value)

- N/A Yes No (describe)

Laboratory present: (Choose one value)

- N/A Yes No

Hazardous Materials / Waste storage: (Choose one value)

- No N/A Yes (describe)

If Hazardous Materials / Waste storage - Evidence of leakage or improper disposal: (Choose one value)

- N/A Yes (describe) No

If Hazardous Materials / Waste storage - Removal of batteries / chemicals / tires / waste fluids / other hazardous materials by: (Choose one value)

- N/A Insured Licensed waste hauler Non-licensed waste hauler Other (describe)

Narrative:

Losses

Losses: (Choose one value)

- No Yes (describe)

Summary

Based upon the survey we consider the risk: (Choose one value)

- Satisfactory - No deficiencies observed Unsatisfactory (describe) Satisfactory with Recommendation Compliance



Front / Side



Rear / Side



Kitchen

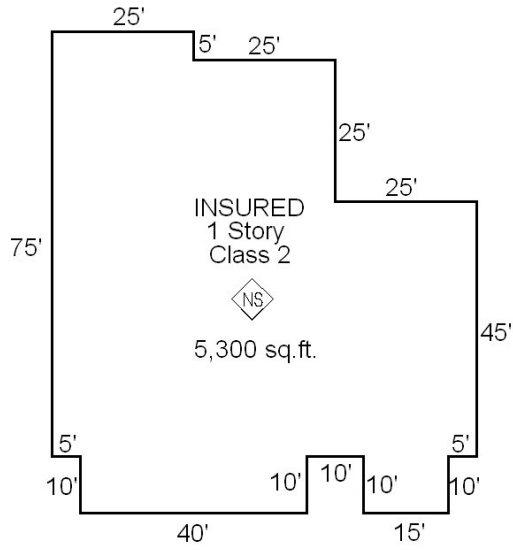


Kitchen – Main Line

135' - 1 & 2 Story Class 4
DAYS INN



85'
1 Story
Class 2
SEPIA SUN
FURNITURE



L A K E
A V E
Open

E A S T W O O D D R I V E

Open

155'

Sketch by Apex IV™



Commercial Lines Issues for Teleconference Review

1) Description of Operations needs to be enhanced on all CL surveys. The required data varies depending upon each general Occupancy Type. Please review the following listing and include at least this information at the minimum. Additional information should also be included when warranted.

Habitational Occupancy - Description of Operations to include:

- Condo, Townhouse, or Apartment rental
- # of buildings & design types
- # of units total & per bldg
- # of vacant units
- Average occupancy rate
- On site / Off site management office or person
- Amenities (clubhouse, pool, park/playground, recreational areas, etc.)

Restaurant Occupancy - Description of Operations to include:

- Restaurant type (full service, tavern, fast food w/seating, etc., etc.)
- Meals served (breakfast, lunch, and/or dinner)
- General type of cuisine (American, Italian, Mexican, etc.)
- Alcohol / No Alcohol (% of Alcohol if served)
- Entertainment / No Entertainment (type & frequency if present)
- Dancing / No Dancing (size of dance floor if present)
- Delivery or Catering / No Delivery or Catering (provide details if present)

Service Occupancy - Description of Operations to include:

- Service occupancy type (automotive, small appliance, computers, etc.)
- Specific type(s) of service provided (list all general services offered)
- Off-Premise exposures / No off-premise exposures (type, frequency, & radius of operation if present)

Manufacturing - Description of Operations should include:

- Type of Manufacture (automotive parts, furniture, toy, etc., etc.)
- Specific products / components made (list all general product types)
- Raw Materials used (list all general materials – metal, wood, plastic, rubber, chemicals, adhesives, etc.)

- Processes performed (list all general processes – cutting, welding, drilling, stamping, heat treating, molding, gluing, painting, packaging, etc., etc.)

Contractors - Description of operations should include:

- Type of Contractor (carpentry, HVAC, plumbing, electrical, roofing, landscape, home builder, general contractor, janitorial, etc., etc.)
- Specific types of work performed (list all general types of work/trades offered)
- Residential / Commercial / Industrial and % of each
- New construction / Existing Construction and % of each
- State(s) of operation and Radius of Operation
- Business run from home or separate office/business location

2) Narrative recap at the end of each Section of pertinent information provided. The recap should state the deficiencies or no deficiencies developed at a minimum. Any additional information that is relative to the specific section but is not addressed by the questions of that section should be stated.

“We shall have a couple examples to be distributed.”

Fire Protection:

The road leading to the insured resort is narrow with steep grades that may delay or hamper the fire department.

Premises:

The risk has a flexicore roof deck creating a Class 6 structure under the wood truss and deck pitch roof.

Example “Descriptions of Operations” for Teleconference

Habitational Occupancy:

Risk is a Town home association consisting of 12 buildings with a total of 60 units with four bldg's each of 4 units, 5 units, and 6 units. 100% of the units are sold with 100% occupancy by owner; no vacancies. No rentals allowed per association by-laws. Association managed by off-site property manager who visits the property weekly to check for any apparent problems, as well as to discuss any owner issues, etc. Property Mgr. reports to association board (elected) and is also responsible for hiring outside contractors for all regular maintenance (lawn care & snowplowing), as well as exterior repairs. No association employees. Amenities include 1-stall attached garage for each unit owner, along with a small clubhouse with an outdoor in-ground pool (open from Memorial Day to Labor Day) for use by residents and guests only.

Restaurant Occupancy:

Risk is a full service restaurant known as Don Giovanni's specializing in Italian cuisine serving lunch and dinner only 7 days a week. There is a bar & lounge area separate from the main dining area with dance floor (225 sq. ft.) and live piano music Friday & Saturday evenings only. Alcohol sales average 20% of gross revenue with license for on premises consumption only. No banquet or separate party room. No catering, delivery, or other off premises exposure.

Service Occupancy:

Risk is a small engine repair shop that performs repairs on both electrical & gas powered engines up to 20 horsepower for lawn mowers, snow blowers, small tractors, etc. Repair work will include cleaning and/or replacement of defective parts such as spark plugs, plug wires, carburetors, etc., along with engine rebuilding. Business is run out of the insured's residential garage with all work performed here. No off-site exposure developed.

Manufacturing Occupancy:

Risk is a custom furniture manufacturer making wooden dining room furniture including tables, chairs, hutches/cabinets, and serving tables. Raw materials include various woods (oak, maple, cherry, etc.) which are received from various mills, along with adhesives, screws, staples, and stains purchased from local suppliers, which are used in the assembly/finishing process. Wood is cut, routed, drilled, sanded, etc. based on each custom order, and then assembled and stained. Once the staining has dried, each individual furniture piece is then wrapped in heavy plastic and/or cardboard packaging for shipment via common carrier to the appropriate customer outlet.

Contractor:

Risk is a small electrical contractor providing residential (75%) & commercial (25%) electrical repair service; no new construction work exposure. Work includes repair and/or replacement of wiring, panels, fixtures, switches, outlets, etc., along with the occasional installation of 220 volt circuitry. No high voltage work or exposure reported. Insured runs business from his personal residence where he maintains a small business office. All work is performed at customer sites within a 50 miles radius with no out-of-state exposure developed.



Fire Extinguishers

Types of fire extinguishers

Different types of fire extinguishers are designed to fight different types of fire. The three most common types of fire extinguishers are:

- [Air pressurized water extinguishers](#)
- [CO2 \(carbon dioxide\) extinguishers](#)
- [Dry chemical extinguishers](#)

All portable fire extinguishers must be approved by a nationally recognized testing laboratory such as Underwriters Laboratories, Inc. (UL) or Factory Mutual Research (FM) to verify compliance with applicable standards [1910.157\(c\)\(2\)](#). Equipment that passes the laboratory's tests are labeled and given an alpha-numeric classification based on the type and size of fire it will extinguish.

Let's take a look at the label pictured. The classification is:

1-A:10-BC



The letters (A, B, and C) represent the [type\(s\) of fire](#) for which the extinguisher has been approved.

The number in front of the A rating indicates how much water the extinguisher is equal to and represents 1.25 gallons of water for every unit of one. For example, a 4-A rated extinguisher would be equal to five (4 x 1.25) gallons of water.

The number in front of the B rating represents the area in square feet of a class B fire that a non-expert user should be able to extinguish. Using the above example, a non-expert user should be able to put out a flammable liquid fire that is as large as 10 square feet.

Extinguisher Type



[Water](#)

Type of Fire

Ordinary Combustibles

Fires in paper, cloth, wood, rubber, and many plastics require a water type extinguisher labeled A.





CO₂

Flammable Liquids

Fires in oils, gasoline, some paints, lacquers, grease, solvents, and other flammable liquids require an extinguisher labeled B.



OR



Dry Chemical

Electrical Equipment

Fires in wiring, fuse boxes, energized electrical equipment, computers, and other electrical sources require an extinguisher labeled C.



Ordinary Combustibles, Flammable Liquids, or Electrical Equipment

Multi-purpose dry chemical is suitable for use on class A, B, and C.



Multi-Purpose



Metals

D

Combustible metals such as magnesium and sodium require special extinguishers labeled D.

Placement & Selection of Extinguishers

Where to place fire extinguishers

To avoid putting workers in danger, fire extinguishers should be located throughout the workplace and readily accessible in the event of a fire. [1910.157\(c\)](#) You can usually find them in hallways, laundry rooms, meeting rooms, kitchens, mechanical/electrical rooms, and near exit doors.

Selection and placement

If employees use portable fire extinguishers, they must be selected and positioned based on the potential type and size of fire that can occur. [1910.157\(d\)\(1\)](#) The following guidelines will help you identify the number and types of portable fire extinguishers you should have.

Type of Fire

Size and Spacing

Class A

The NFPA recommends that locations such as offices, classrooms, and assembly halls that contain mainly Class A combustible materials have one 2-A extinguisher for every 6,000 square feet (NFPA Standard 10, Table 5.2.1). OSHA requires that all employees have access to an extinguisher within 75 feet travel-distance. [1910.157\(d\)\(2\)](#)

Note: Uniformly spaced standpipe systems or hose stations connected to a sprinkler system for emergency use can be used instead of Class A portable fire extinguishers, if they meet the respective requirements of [1910.158](#) or [1910.159](#), provide total coverage of the area to be protected, and employees are trained at least annually in their use. [1910.157\(d\)\(3\)](#)

Class B

Locations that contain Class B flammables, such as workshops, storage areas, research operations, garages, warehouses, or service and manufacturing areas, must size and space their extinguishers based on the degree of hazard associated with the flammable liquids and gases in the area: [1910.157\(d\)\(4\)](#)

Hazard	Extinguisher	Spacing
Low - Small amounts of flammable liquids used for copy machines, art departments, etc., that are stored safely and kept in closed containers.	5-B	30'
	10-B	50'
Moderate - The total amount of flammable liquids are present in greater amounts than expected under low-hazard locations. This can include garages, workshops, or support service areas.	10-B	30'
	20-B	50'
High - Locations where flammable liquids	40-B	30'

vehicle repair, aircraft and boat servicing, or where painting, dipping, and coating, operations are performed with flammable liquids.

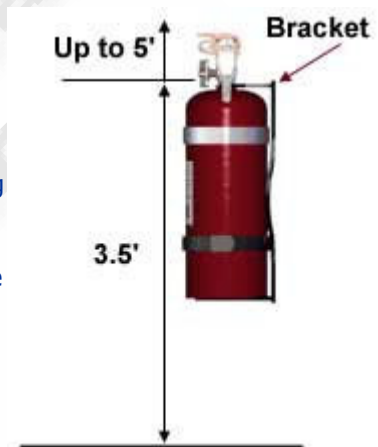
Class C Class C extinguishers are required where energized electrical equipment is used. The extinguisher size and spacing is based on its Class A or B hazard. [1910.157\(d\)\(5\)](#)

Class D Locations where combustible metal powders, flakes, shavings, or similarly sized materials are generated at least once every two weeks must install Class D portable fire extinguishers not more than 75 feet from the hazard. [1910.157\(d\)\(6\)](#)

Installation

To prevent fire extinguishers from being moved or damaged, they should be mounted on brackets or in wall cabinets with the carrying handle placed 3-1/2 to 5 feet above the floor. Larger fire extinguishers need to be mounted at lower heights with the carrying handle about 3 feet from the floor.

Before installing any portable fire extinguisher, check the label to be sure it is approved by a nationally recognized testing laboratory such as Underwriters Laboratory (UL) or Factory Mutual (FM). [1910.157\(c\)\(2\)](#)



Prohibited fire extinguishers

The following types of portable fire extinguishers are considered dangerous and should not be used:



1. Any extinguisher having a shell construction of copper or brass joined by soft solder and/or rivets;
2. Any extinguisher that must be turned upside down to rupture a cartridge or to start an uncontrollable pressure generating chemical reaction to expel the agent. [1910.157\(c\)\(5\)](#) This includes:
 - Soda acid
 - Foam
 - Water-cartridge
 - Loaded stream cartridge
3. Extinguishers that use chlorobromomethane (Halon 1011) or carbon tetrachloride as an extinguishing agent. These agents are toxic and carbon tetrachloride may cause cancer and can produce phosgene gas (used as a chemical weapon during World War I) when used on electrical fires. [1910.157\(c\)\(3\)](#)

NFPA PORTABLE FIRE EXTINGUISHER CODES & SPRAY PAINT BOOTH RECOMMENDATION WORDING

The proper selection, installation, inspection, maintenance and testing of portable extinguishing equipment is important in every occupancy. Portable extinguishers are intended as a first line of defense to cope with fires of limited size. They are needed even if the property is equipped with automatic sprinklers, standpipe and hose, or other fixed protection equipment.

Selection is determined in part by classification of hazards and the character of fires anticipated. (Hazards are classified as light (low), ordinary (moderate) or extra (high).

Types of fires include:

- Class A** - Ordinary combustible materials such as wood, cloth, paper, rubber and many plastics.
- Class B** - Flammable liquids, oils, greases, tars, oil-base paints, lacquers and flammable gases.
- Class C** - Fires that involve energized electrical equipment where the electrical non-conductivity of the extinguishing agent is of importance.
- Class D** - Fires in combustible metals such as magnesium, titanium, zirconium, sodium, lithium and potassium.
- Class K** - Fires in cooking appliances that involve combustible cooking media (vegetable or animal oils and fats).

THE FOLLOWING ARE MINIMUM REQUIREMENTS:

Light (Low) Hazard Occupancies

Locations where the total amount of Class A (combustible materials), including furnishings, decorations and contents, is of minor quantity. These may include buildings or rooms occupied as offices, classrooms, churches, assembly halls, etc. This classification anticipates that the majority of contents/items are either noncombustible or so arranged that a fire is not likely to spread rapidly. Small amounts of Class B (flammables) used for duplicating machines, art departments, etc. are included provided that they are kept in closed containers and safely stored.

Recommendation Wording:

A UL/FM approved class 2A-10 B:C (or better) fire extinguisher should be provided for every 6000 square feet of floor space per floor, properly mounted in a conspicuously marked location, and serviced & tagged on an annual basis by a qualified fire extinguisher service contractor. The max. travel distance to reach an extinguisher should not exceed 50 feet.

Ordinary (Moderate) Hazard Occupancies

Locations where the total amount of Class A (combustibles) and Class B (flammables) are present in greater amounts than expected under light (low) hazard occupancies. These occupancies could include offices, classrooms, mercantile shops and allied storage, light manufacturing, research operations, auto showrooms, parking garages, workshops or support service areas of light (low) hazard occupancies and warehouses containing Class I* or Class II* commodities.

*Class I commodities are essentially non-combustible products on combustible pallets, in ordinary corrugated cartons with or without single-thickness dividers, or in ordinary paper wrappings with or without pallets. Foods, glass products, metal products etc. are examples.

*Class II commodities are defined as Class I products in slatted wooden crates, solid wooden boxes, multiple thickness paperboard cartons or equivalent combustible packaging material with or without pallets.

Recommendation Wording:

A UL/FM approved Class 2A-20 B:C (or 2A-30 B:C, or better) fire extinguisher should be provided for every 3000 square feet of floor space per floor, properly mounted in a conspicuously marked location, and serviced & tagged on an annual basis by a qualified fire extinguisher service contractor. The max. travel distance to reach an extinguisher should not exceed 50 feet.

Extra (High) Hazard Occupancies

Locations where the total amount of Class A (combustibles) and Class B (flammables) are present in storage, production use and/or finished product over and above those expected and classed as ordinary (moderate) hazards. These occupancies could include woodworking, vehicle repair, aircraft and boat servicing, individual product display showrooms, product convention center displays, storage and manufacturing processes such as painting, dipping, coating, including flammable liquid handling. Also included is warehousing of, or in-process storage of other than Class I and Class II commodities.

Recommendation Wording:

A UL/FM approved Class 4A-80 B:C (or better) fire extinguisher should be provided for every 4000 square feet of floor space per floor, properly mounted in a conspicuously marked location, and serviced & tagged on an annual basis by a qualified fire extinguisher service contractor. The max. travel distance to reach an extinguisher should not exceed 50 feet.

APPLICATION FOR SPECIFIC HAZARDS

Portable Fire Extinguisher Size & Placement For Cooking Grease Fires

Extinguishers provided for the protection of cooking grease fires shall be listed and labeled for Class K fires. **Note:** Sodium Bicarbonate or Potassium Bicarbonate dry chemical type extinguishers with a minimum rating of 40 B:C (or better) are permitted if installed prior to June 30th, 1998 and continuously in service since that time.

Recommendation Wording:

The cooking area should be provided with a portable fire extinguisher listed and labeled for Class K fires, to be properly mounted in a conspicuously marked location in close proximity to the cooking operation, and serviced & tagged on an annual basis by a qualified fire extinguisher service contractor. Max. travel distance should not exceed 30 feet. **NOTE:** Do not use an ABC multi-purpose dry chemical or class BC gas type fire extinguishers such as Halon or Carbon Dioxide in the cooking area.

Fixed Pipe Extinguishing Systems for Commercial Cooking

Automatic fixed pipe extinguishing / suppression systems shall be listed to the UL300 Fire Testing Standard. **Note:** Existing Dry and Wet Chemical extinguishing systems are permitted if mfg. Prior to 11/24/94 & installed prior to 1/31/95, and have been under continuous semi-annual service by a qualified fire extinguishing equipment service company, and there has been no addition of new equipment, modification or change of location of existing cooking appliances since the installation of the system. *If there has, then the existing extinguishing system is considered to be inadequate.

Recommendation Wording:

A UL/FM approved fixed pipe extinguishing/suppression system listed to the UL 300 Fire Test Standard should be professionally installed to include hood, duct, and surface protection over all grease vapor producing cooking appliances. The system should be inter-connected for automatic fuel/power shut-off, remote manual actuation with posted operating instructions, and inspected/serviced on a semi-annual contract basis by an authorized fire extinguishing equipment contractor.

APPLICATION FOR SPECIFIC HAZARDS: (Continued)

Electronic Equipment Fires

Extinguishers for the protection of delicate electronic equipment should be of the “Clean Air” type. **Clean Air Extinguishing Agents are now available for both Fixed Pipe Suppression Systems, as well as Portable Fire Extinguishers. These agents are listed in NFPA 2001 – Clean Agent Extinguishing Systems.** (A list of these new Clean Air Agents is attached.)

Recommended Wording for

Portable Fire Extinguisher:

A UL/FM approved Class 2-A:10B:C (or better) “Clean Air” fire extinguisher should be properly mounted in conspicuously marked areas or rooms containing limited pieces of electronic equipment, and serviced & tagged on an annual basis by a qualified fire extinguisher service contractor.

Recommended Wording for Fixed

Pipe Extinguishing Systems:

A UL/FM approved Clean Air Extinguishing Agent system should be installed within areas or rooms with large concentrations of electronic equipment, serviced & tagged on an annual basis by a qualified fire extinguishing.

Fire Extinguisher Size and Placement for Class B Fires in Flammable

Liquids of Appreciable Depth

Portable fire extinguishers shall not be installed as the sole protection for flammable liquid hazards of appreciable depth (greater than ¼ in. (0.64 cm) where the surface area exceeds 10 sq. ft. (0.93 m²).

*Exception: Where personnel, who are trained in extinguishing fires in the protected hazards, or a counterpart, are available on the premises, the maximum surface area shall not exceed 20 sq. ft. (1.86 m²).

For flammable liquid hazards of appreciable depth such as in dip or quench tanks, a Class B fire extinguisher shall be provided on the basis of at least two

Numerical units of Class B extinguishing potential per sq. ft. (0.0929 m²) of flammable liquid surface of the largest tank hazard within the area.

**For dip tanks containing flammable or combustible liquids exceeding 150 gal. (568 L) liquid capacity or having a liquid surface exceeding 4 sq. ft. (.38 m²), see NFPA 34, Dip Tanks, for requirements of automatic extinguishing facilities.

APPLICATION FOR SPECIFIC HAZARDS: (Continued)

Recommendation Wording:

A UL/FM approved Class 80-B:C (or better) fire extinguisher should be properly mounted in a conspicuously marked location in close proximity to the (identify the specific hazard), and serviced & tagged on an annual basis by a qualified fire extinguisher servicing contractor.

STANDARD RECOMMENDATION WORDING FOR SPRAY PAINT BOOTH

Spray painting should be discontinued until an approved manufactured booth is professionally installed or an approved booth or room is professionally constructed in accordance with NFPA Code #33 guidelines, which require at least the following features as a minimum:

Recommendation Wording:

Walls, ceiling, and floor shall be constructed of noncombustible materials with interior surfaces being smooth and designed to prevent pocketing or residues, facilitate ventilation, and installed so that all portions are readily accessible for cleaning and washing.

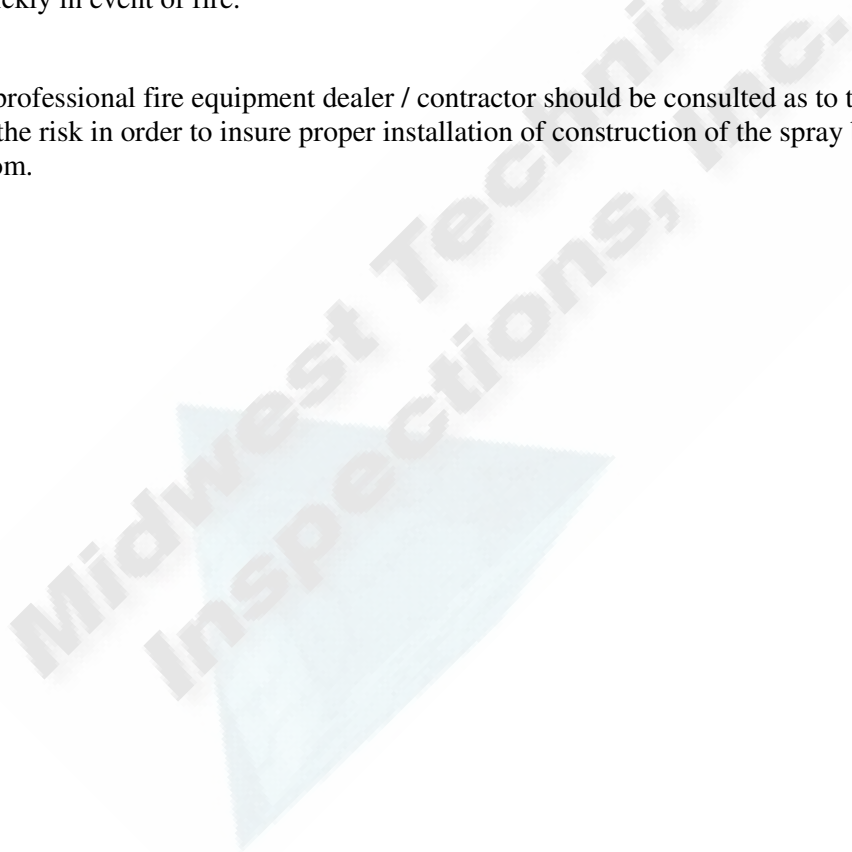
All electrical wiring, fixtures, switches, etc. should be installed outside the booth or room, or shall be of UL listed explosion proof or other type designed for this specific type of installation and conform to the National Electrical Code. All electrical wiring and equipment

outside the booth or room within a 3' space in all directions from any opening shall be of similar explosion proof type.

All spray booths or rooms shall be provided with mechanical ventilation adequate to confine and remove flammable or combustible vapors or mists to a safe location, to confine and control combustible residues, dusts, or deposits, and must be kept in operation while spraying is being conducted as well as for a sufficient time thereafter to allow flammable vapors to be exhausted.

Spray booths or rooms shall be protected by an approved automatic fire extinguishing system, which may be either an automatic sprinkler system, a UL listed dry chemical fire extinguishing system, or a listed alternative extinguishing system. Sprinklers protecting spray areas shall be cleaned and protected against over spray residue so that they will operate quickly in event of fire.

A professional fire equipment dealer / contractor should be consulted as to the specific needs of the risk in order to insure proper installation of construction of the spray booth or spray room.



CFS	
Building-Maintenance	
Consult Contractor - Asbestos - Evaluate / Abate	A qualified and licensed asbestos abatement contractor should be contacted to evaluate the suspected asbestos exposure. If found to be asbestos and it is friable / deteriorating, appropriate abatement measures should be taken.
Consult Contractor - Carpentry - Evaluate / Repair	A qualified carpentry contractor should be contacted to evaluate the extent of damage / deterioration to fascia, soffit, and walls; and to make repairs as determined necessary.
Consult Contractor - Masonry - Chimney - Evaluate / Repair	A qualified masonry contractor should be contacted to evaluate the extent of masonry chimney deterioration and to make repairs as determined necessary.
Consult Contractor - Masonry - Wall - Evaluate / Repair	A qualified masonry contractor should be contacted to evaluate the extent of masonry wall deterioration and to make repairs as determined necessary.
Consult Contractor - Mold - Evaluate / Remediate	A qualified and licensed mold remediation contractor should be contacted to evaluate the suspected mold exposure. If found to be mold, appropriate remediation measures should be taken.
Consult Contractor - Paint - Scrape & Paint	A qualified painting contractor should be contacted to scrape and paint exterior woodwork as determined necessary.
Consult Contractor - Roof - Evaluate / Repair / Replace	A qualified roofing contractor should be contacted to evaluate roof condition and to repair or replace as determined necessary.
Consult Contractor - Structural Engineer - Evaluate / Repair	A qualified structural engineer should be contacted to evaluate the structural integrity of the building / support members and to make repairs as determined necessary.
Housekeeping - Exterior - Foliage Maintenance	Weeds and grass should be trimmed on a regular basis around building.
Protective Barriers - Tire Stops - Building Walls	Tire stops should be installed in the parking areas immediately adjacent to building walls to reduce the potential of vehicle contact.

Common Hazards-Premises	
Compliance - Boiler Inspection	A current boiler inspection certificate, bearing the signature of the authorized inspector, should be obtained and posted in the boiler room.
Consult Contractor - Electric - Evaluate / Update / Repair	A qualified electrical contractor should be contacted to evaluate the electrical system for adequacy and to update and/or make repairs as determined necessary.
Consult Contractor - HVAC - Annual Service	Heating equipment should be serviced on an annual basis by a qualified heating contractor.
Consult Contractor - HVAC - Evaluate / Update / Repair	A qualified HVAC contractor should be contacted to evaluate the heating system for adequacy and to update and/or make repairs as determined necessary.
Consult Contractor - Plumbing - Evaluate / Update / Repair	A qualified plumbing contractor should be contacted to evaluate the plumbing system for adequacy and to update and/or make repairs as determined necessary.
Electric - Extension Cords - Use Permanent Wiring or Approved Overhead Drops	The use of extension cords or other temporary wiring should be discontinued and replaced with permanent wiring where possible. If permanent wiring is unable to be installed and/or run in one or more locations, then approved overhead drop cords should be installed in place of the existing cords.
Electric - Junction Boxes - Enclose Unused Openings	All exposed junction boxes and/or unused openings should be covered with UL listed cover plates or properly enclosed.
Electric - Junction Boxes - Use for Splices	All electrical splices should be placed inside a UL Listed junction box.

Electric - Outdoor Exposure - Use Weatherproof Components	All non-weatherproof electrical boxes and fixtures exposed to outdoor weather conditions should be replaced with UL Listed weatherproof boxes and fixtures.
Electric - Outlets & Switches - Enclose Unused Openings	All exposed outlets / switches and unused openings should be covered with UL listed cover plates or properly enclosed.
Electric - Secondary Lightning Surge Arrestor for Building	A secondary lightning surge arrestor should be installed on the service entrance panel at the building to provide a means for secondary voltage surges to be dissipated to ground before entering the building's electrical wiring.
Electric - Service Panel - Clean	All dust and debris should be removed from the electrical service panel.
Electric - Service Panel - Enclose Unused Openings	All unused openings in electrical panel should be properly enclosed.
Electric - Service Panel - Use Cover Panel	Exposed electrical panel should have front cover re-installed.
Electric - Water Exposure - Use GFCI	Ground-fault circuit interrupters (GFCI) should be provided for electrical usage near water exposure.
Fire - Combustibles - Storage Away from Heating Appliances	Combustible storage should be kept 36 inches from all heating appliances (e.g., Furnace, Boiler, Water Heater, etc.).
HVAC - Heating / Water Heating Unit - Reinstall from Flammable Vapor Location to Ceiling Mount	Heating units / water heating units located within areas where flammable vapors are present should be re-installed at a minimum height of 8 feet above floor surface.
HVAC - Heating Unit - Replace Door	Front cover panel should be re-installed on heating unit to properly enclose burners.
HVAC - Portable Heating Unit - Replace with Permanent	Portable heaters should be replaced with a permanent / conventional heating system listed for the occupancy.
Plumbing - Water Heater - Replace Floor Mount with Ceiling Mount	Floor mounted water heater is not suited for occupancy. Heater should be installed at least 8 feet above floor level.
WBS - Unit Removal Relocation & Installation	The solid fuel burning stove / device should be removed or relocated to a separate room. The installation must meet NFPA 211 or manufacturer's minimum guidelines.
WBS - Vent Inspection & Cleaning	Flues and chimneys of solid fuel (e.g., wood, coal, etc.) burning devices should be inspected annually and cleaned as needed.

Fire Protection

Alarms - Fire - Manual System	A manual fire alarm system should be provided with manual alarm stations positioned within maximum visibility in the natural path of escape near each exit in accordance with the NFPA Life Safety Code.
Alarms - Fire - Manual System with Annunciator Panel	A manual fire alarm system should be provided with manual alarm stations positioned within maximum visibility in the natural path of escape near each exit in accordance with the NFPA Life Safety Code. An annunciator panel should be connected with the fire alarm system to visually indicate the floor of fire involvement in apartment buildings greater than 4 stories or with more than 50 living units.
Consult Contractor - Portable Extinguishers - Service / Tag	The required annual servicing & tagging of the existing fire extinguishers is past due and should be immediately completed by a qualified fire extinguishing equipment contractor with annual service performed thereafter.
Consult Contractor - Sprinkler - Inspect / Test	Automatic sprinkler system should be inspected and tested by a qualified automatic sprinkler system contractor with certification provided to underwriting.
Extinguishing - Extinguisher - 2A10BC	A UL/FM approved Class 2-A:10-B:C (or better) fire extinguisher should be provided for every 6,000 square feet of floor space per floor, properly mounted in a conspicuously marked location, and serviced & tagged on an annual basis by a qualified fire extinguishing equipment contractor. The maximum travel distance to reach an extinguisher should not exceed 50 feet.

Extinguishing - Extinguisher - 2A20BC	A UL/FM approved Class 2-A:20-B:C (or better) fire extinguisher should be provided for every 3,000 square feet of floor space per floor, properly mounted in a conspicuously marked location, and serviced & tagged on an annual basis by a qualified fire extinguishing equipment contractor. The maximum travel distance to reach an extinguisher should not exceed 50 feet.
Extinguishing - Extinguisher - 4A80BC	A UL/FM approved Class 4-A:80-B:C (or better) fire extinguisher should be provided for every 4,000 square feet of floor space per floor, properly mounted in a conspicuously marked location, and serviced & tagged on an annual basis by a qualified fire extinguishing equipment contractor. The maximum travel distance to reach an extinguisher should not exceed 50 feet.
Extinguishing - Extinguisher - Clean Agent	A UL/FM approved "Clean Agent" fire extinguisher should be properly mounted in a conspicuously marked location in areas or rooms containing limited pieces of electronic equipment, and be serviced & tagged on an annual basis by a qualified fire extinguishing equipment contractor.
Fire - Rubbish - Storage - Container Type	Combustible rubbish should be stored in covered metal receptacles.
Grease & Rubbish - Dumpster Location	Grease and/or rubbish dumpsters should be moved away from building to reduce the potential for loss in the event of a dumpster fire.
Alarms - Fire - Testing/Maintenance	All smoke detectors should be tested and maintenance performed annually.

Liability-Premises-Injury

Housekeeping - Interior - Floors - Oil & Grease	Floors should be kept clean and free of oil and grease accumulation.
Housekeeping - Interior and Exterior - Debris / Materials / Tools / Inventory	Interior / exterior housekeeping should be improved with non-essential debris / materials removed from premises. Rack and shelf storage should be utilized as much as possible for tools and inventory.
Oil - Waste - Storage - Procedures	Waste oil storage procedures should be improved with oil spills cleaned as they occur.

Operational Exposures

Consult Contractor - Refrigeration - Inspect / Service	A qualified refrigeration contractor should be contacted to inspect and maintain refrigeration equipment on a regular frequency as determined necessary by the servicing contractor.
Fire - Cylinders - Separation from Other Cylinders	Oxygen and Argon compressed gas cylinders should be kept separated from all other compressed gas cylinders by 20 feet or by a non-combustible 5 foot high barrier with a minimum 1/2 hour fire rating.
Fire - Rubbish - Burning Location	Burning of rubbish should be discontinued or moved at least 100 feet from building and restricted to a metal container.
Fire - Welding & Cutting - Protecting Adjacent Areas	Welding screens or curtains should be provided to segregate welding operations from areas where flammable liquids or combustible materials are stored or in use.
Liability - Cylinders - Secured	All compressed gas cylinders should be secured by lashing, chaining or placing within a stand to prevent them from falling.
Protective Barriers - Gas Meters	Protective barriers should be installed to protect the gas meter and inlet piping from vehicle damage.
Signs - Clean Lint Filter - Post in Laundry Area	A sign should be posted near common area laundry equipment reminding residents to clean the lint filters on the clothes dryers before and after each use.
Signs - No Smoking - Post in Shop Area	"No Smoking" signs should be posted throughout shop area and strictly enforced.

Operational Exposures-Cooking

Compliance - AES - UL300	The existing automatic extinguishing system should be updated and brought into compliance with the current UL 300 standard. A qualified servicing company should be consulted for the installation.
Consult Contractor - AES - Inspect / Service	A qualified automatic extinguishing equipment contractor should be contacted to inspect and maintain the AES on a semi-annual basis. The system should be tagged indicating the name of the service contractor and the last date of service.
Consult Contractor - Hood & Duct System - Clean / Service	A qualified hood and duct-cleaning contractor should be contacted to clean the hood and duct system on a semi-annual basis. A service tag should remain mounted on the hood indicating the name of the service contractor and the last date of service.
Cooking - Clearance of Deep Fat Fryers to Flames	A clearance of at least 16 inches should be maintained between the deep-fat fryer and the open surface flames of adjacent cooking equipment. If this cannot be done, a minimum 8 inch height stainless steel barrier or tempered baffle plate should be constructed between the deep-fat fryer and any surface flames.
Extinguishing - AES - Expansion to Protect All Grease Vapor Producing Equipment	Automatic extinguishing system should be expanded to provide surface nozzle protection above all grease vapor producing equipment.
Extinguishing - AES - Manual Station in Cooking Area	Manually activated pull station to activate the automatic extinguishing system should be installed away from the cooking equipment but in a location easily accessible in case of a fire emergency and in the path of egress from the kitchen.
Extinguishing - AES - UL300	A UL/FM approved fixed-pipe fire extinguishing / suppression system listed to the UL300 Fire Test Standard should be professionally installed to include hood, duct and surface protection over all grease vapor producing cooking appliances. The system should be inter-connected for automatic fuel / power shut-off, provided with remote manual actuation with posted operating instructions, and inspected / serviced on a semi-annual contract basis by an authorized fire extinguishing equipment service contractor.
Extinguishing - Extinguisher - K Class	The cooking area should be provided with a portable fire extinguisher listed and labeled for Class K fires, to be properly mounted in a conspicuously marked location in close proximity to the cooking operation, and serviced & tagged on an annual basis by a qualified fire extinguishing equipment contractor. The maximum travel distance should not exceed 30 feet.
Grease - Accumulation on Hood & Equipment	Grease accumulation within hood, on equipment, or on surrounding surfaces should be removed.
Grease - Hood & Duct System - Hood Level Filter Cleaning	The metal filters located at the hood level of the exhaust system over the cooking operation should be cleaned at least weekly, or more frequently if required, to prevent an accumulation of grease on the filters.
Hood & Duct System - Electrical Fixtures - Liquid Tight Conduit for Electrical Components	All wiring for lighting and ventilation equipment located in hood system should be placed in liquid-tight conduit.
Hood & Duct System - Expansion of Hood to Exhaust Vent All Grease Vapor Producing Equipment	Hood system should be expanded to provide exhaust ventilation for all grease vapor producing equipment.
Hood & Duct System - Filter Design	Mesh type filters are no longer approved for use in the hood and duct exhaust system and should be replaced with listed baffle type filters.
Hood & Duct System - Lighting Fixture - Vapor Proof Globe for Light	Lighting fixtures within hood should be equipped with protective vapor-proof globes.

Operational Exposures-Flammable Liquids

Consult Contractor - Underground Tanks - Inspect / Test / Service	All underground fuel storage tanks should be serviced and tested for leakage annually by a qualified servicing contractor.
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Flammable Liquids - Storage - Cabinet Type & Quantity of Liquids	All flammable liquids should be stored in UL/FM approved metal cabinets or removed from location. Limit storage to 60 gallons of Class I (Flammable) and Class II (Combustible) liquids per cabinet. Not more than three cabinets should be located in a single fire area unless separated by at least 100 feet.
Flammable Liquids - Storage - Container Type	All flammable liquids used on a daily basis should be stored in UL/FM approved containers equipped with self-closing lids.
Flammable Liquids - Storage - Room Construction	Flammable liquid storage rooms should be constructed of 2 hour fire resistance rated walls and ceilings. Construction options include poured concrete, concrete block, or two layers of 5/8 inch fire rated sheet rock on metal studs. Doors should be listed for 1 1/2 hour fire resistance rating having a minimum of a 4 inch sill. Ventilation and electrical equipment should be UL Listed, Class I, Division I, Group D, or effectively isolated from the area.
Flammable Liquids - Transfer - Container Bonding & Grounding	When transferring flammable liquids from one container to another, the containers should be effectively bonded or grounded.
Protective Barriers - Fuel Pumps	Protective barriers should be installed to protect the fuel dispensing equipment from vehicle damage.
Signs - No Smoking - Post in Flammable Liquids Area	"No Smoking" signs should be posted in areas utilized for storage and handling of flammable liquids.
Tanks - Above Ground - Placement	Above-ground fuel tanks should be located a minimum of 40 feet from building or in accordance with NFPA 30.
Tanks - Above Ground - Protective Barriers	Protective barriers should be installed to protect the above-ground fuel tanks from vehicle damage.
Tanks - Above Ground - Spill Containment	The above-ground fuel tanks should be placed within a spill containment system.
Tanks - Underground - Cathodic Protection	An EPA approved form of a Cathodic Protection System or equivalent should be provided for each steel underground storage tank.
Tanks - Underground - Protective Barriers for Vents	Protective barriers should be installed to protect the vent pipes of underground storage tanks from vehicle damage.
Tanks - Underground - Vent Placement	Vent pipes for underground storage tanks should be a minimum of 18 inches above exterior wall of building.

Operational Exposures-Habitational

Alarms - Fire - Mixed Occupancy	If not already present, approved smoke alarms should be provided for all non-habitational occupancies within the building. Mount alarms according to manufacturer's specifications.
Alarms - Fire - Rental Dwellings	If not already present, approved smoke alarms should be provided for each level of the dwelling unit. Mount alarms according to manufacturer's specifications.
Fire - Rubbish - Chute Access Door - Self Closing	The access doors for the rubbish chute should be arranged to be self-closing and to latch in the closed position.
Fire - Rubbish - Chute Internal Door (bottom opening of chute) - Self Closing Impact Type	A metal door of the impact type, or otherwise arranged to close automatically in the event of fire, should be provided for the bottom opening of the rubbish chute.
Sprinkler - Placement - Rubbish Collection Room	Automatic sprinkler system protection should be provided in the rubbish collection room.

Operational Exposures- Repair/Painting

Fire - Rags - Storage - Container Type	An approved metal receptacle with tight fitting lid should be provided for use of rag storage.
Oil - Waste - Storage - Container Type	Waste oil for disposal should be stored in labeled tanks or drums suitable for such purpose.
Parts Washer - Use Non Flammable Cleaning Solvents	A non-flammable solvent should be used for parts cleaning.

Parts Washer - Washer Repair	Replace missing / defective fusible link for parts washer / solvent tank.
Parts Washer - Washer Type	An approved parts washer with hinged lid and attached fusible link should be provided for shop area.
Spray Booth or Room - AES Requirements	Spray painting should be discontinued until the following modifications have been completed: Spray booths or rooms shall be protected by an approved automatic fire extinguishing system which may be: an automatic sprinkler system, a UL Listed dry chemical fire extinguishing system, or a listed alternative extinguishing system. Sprinklers protecting spray areas shall be cleaned and protected against over-spray residue so that they will operate quickly in event of fire.
Spray Booth or Room - Construction Requirements	Spray painting should be discontinued until the following modifications have been completed: Walls, ceilings, and floor shall be constructed of non-combustible materials with interior surfaces being smooth and designed to prevent pocketing of residues, facilitate ventilation, and installed so that all portions are readily accessible for cleaning.
Spray Booth or Room - Electric Requirements	Spray painting should be discontinued until the following modifications have been completed: All electrical wiring, fixtures, switches, etc., should be installed outside the booth or room, or shall be of UL Listed explosion-proof or other type designed for this specific type of installation, conforming to the National Electrical Code. All electrical wiring and equipment outside the booth or room within a 3 foot space in all directions from any opening shall be of similar explosion-proof type.
Spray Booth or Room - Portable Ignition Source Removal	Ignition sources (e.g., portable heating equipment, electrical devices, open flames, etc.) should be removed from spray area during operations.
Spray Booth or Room - Ventilation Requirements	Spray painting should be discontinued until the following modifications have been completed: Spray booths or rooms shall be provided with mechanical ventilation adequate to confine and remove flammable or combustible vapors or mists to a safe location, to confine and control combustible residues, dusts or deposits, and must be kept in operation while spraying is being conducted as well as for a sufficient time thereafter to allow flammable vapors to be exhausted.
Ventilation - Vehicle Repair	Vehicles should be exhausted directly to building exterior to prevent accumulation of carbon monoxide in the shop area.