



## INFORMATION SHEET

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**NO. FS-04**

**DATE** : April 21, 2014

**CATEGORY** : Fire Safety

**SUBJECT** : **Fire Safety Requirements for Wood-frame Buildings during Construction**

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**PURPOSE** : The purpose of this Information Sheet is to establish fire safety requirements, provide guidelines to minimize the potential for the occurrence and spread of fires, and to facilitate firefighting efforts during construction of wood frame buildings

**REFERENCE** : California Fire Code Chapters 33 and 35  
San Francisco Building Code - Sections 3309, 3311

**SCOPE** : This Information Sheet applies to activities occurring during the construction of certain wood frame buildings as specified herein. Nothing contained in this Information Sheet shall be construed to alter such building occupancy standards or fire protection measures for wood frame or other construction methods as may otherwise be deemed appropriate.

### **GENERAL REQUIREMENTS:**

A. The provisions of this Information Sheet shall apply only to activities occurring during the construction of certain wood frame buildings as specified herein. Nothing contained in this Information Sheet shall be construed to alter such building occupancy standards or fire protection measures for wood frame or other construction methods as may otherwise be set forth in the California Building or Fire Codes.

B. No person shall engage in any aspect of construction on a Wood Frame Building Project, or permit or authorize any such construction to occur, except in full compliance with this Information Sheet.

C. The property owner, as identified on the application for a building permit for a Wood Frame Building Project, shall be liable for full compliance with this Information Sheet.

**DEFINITIONS:**

The definitions contained in this part shall govern the interpretation of this Information Sheet. Where terms are not specifically defined in this Information Sheet, the definitions contained in Chapter 2 of the California Building and Fire Codes shall apply.

**Pre-Fire Plan (PFP).** A document, which specifies measures and practices to be incorporated into the construction process to minimize the potential for the occurrence and spread of fires, and to facilitate firefighting efforts, during building construction.

**Exposed Wood Framing.** The area of a Wood Frame Building Project that has wood stud framing and/or decking of the floor or roof

**Fire Prevention Program Superintendent.** An individual employed on a construction job site whose job function is to minimize the potential for the occurrence and spread of fires in accordance with the requirements of this Information Sheet and the approved PFP. The duties of a Fire Prevention Program Superintendent shall be in addition to, and do not supersede, the duties of any contractor or individual engaging in activities which have the potential to cause the occurrence or spread of fire, including but not limited to the duties specified in Chapters 33 (3308 and 35 of the 2013 California Fire Code, or such other fire safety code as may be adopted by the City from time to time. (see section: Duties and Responsibilities in the attached Fire Prevention Program Superintendent form.)

**Hot Work.** Operations including cutting, welding, Thermit welding , brazing, soldering, grinding, thermal spraying, thawing pipe, installation of torch-applied roof systems or any other similar activity.

**Maximum Allowable Exposed Wood Framing Limit:**

Three hundred fifty thousand (350,000) gross square feet.

**Temporary Mitigating Fire Protection Barriers.** At least one layer of 5/8 inch type X gypsum board with metal studs, two sides of one layer of 5/8 inch type X gypsum board with wood studs, or other fire resistive construction/blocking located at the end of a fire resistive area, separation wall, or party wall, and installed such that the Temporary Mitigating Fire Protection Barrier(s) and fire resistive wall(s) enclose area(s) of not more than fifty thousand (50,000) square feet. Penetrations and openings shall also be protected with one-hour fire-resistive assembly(s)/firestop system(s).

**Total Square Footage.** Measurement of wood framing and any adjacent on-going wood frame construction when adjacent structures are separated by less than sixty (60) feet of open air shall be considered to be within the project.

**Large Wood-Frame Building Project.** A building project utilizing Exposed Wood Framing in the construction of fifty (50) or more attached dwelling units, or construction exceeding a total of three hundred fifty thousand (350,000) gross square feet

**SPECIFIC REQUIREMENTS:****Pre-Fire Plan Requirements**

- A. No building permit shall be issued which allows the commencement of wood frame construction on a Wood Frame Building Project, unless the Fire Department has provided written approval of a PFP for the project.



- B. No person shall engage in, permit, authorize or allow any aspect of construction on any project for which a PFP has been required unless the Chief of the Fire Department or their designee has provided written approval of a Pre-Fire Plan for the project.
- C. The approved PFP shall be a condition of the building permit and a copy of the Plan shall be maintained on site at all times during construction of the project.
- D. The PFP shall state how the requirements of this Information Sheet and all other fire safety requirements shall be met during construction of the project.
- E. The PFP shall state how off hours security will be addressed, and how construction sequencing, including the installation of Temporary Mitigating Fire Protection Barriers, will be utilized to minimize the potential for the occurrence and spread of fire (e.g. cameras, guard, monitoring company, etc.)

### **Fire Prevention Program Superintendent Requirements**

- A. Fire Prevention Program Superintendent shall be trained and/or certified by an organization which will provide the core competencies of occupational safety and health for the construction site to carry out the duties as detailed in the PFP in addition to any other job site duties.
- B. No person shall perform, permit, authorize or allow any Hot Work on any Wood Frame Building Project, after wood framing has commenced, unless a Fire Prevention Program Superintendent is present on the project site at all times while Hot Work is being performed.
- C. A Fire Prevention Program Superintendent shall monitor, confirm and document the following:
  - 1. That a fire watch has been provided during all Hot Work operations as required by Chapters 33 and 35 of the California Fire Code (CFC), as adopted in the San Francisco Fire Code, or provision as may be adopted by the City at any time;
  - 2. That storage, use and handling of flammable liquids conforms to the CFC Chapters 50 and 57 in addition to all federal, state, local, legal and administrative requirements;
  - 3. That construction debris and waste disposal is promptly removed from the project site as required by CFC Chapter 33;
  - 4. That fire protection equipment, including fire extinguishers, fire hydrants; standpipes, and other fire service connections, are in place and operational, as required by law or specified in the approved PFP;
  - 5. That Temporary Mitigating Fire Protection Barriers are in place on any Wood Frame Building Project, in accordance with this Information Sheet and the construction sequencing requirements of the approved PFP;
  - 6. That such other requirements relating to fire safety have been met, as may be specified in the San Francisco Fire Code, in the regulations adopted pursuant to this Information Sheet, or in the approved PFP.

### **Basic Fire Protection Requirements**

No person shall commence, permit, authorize or allow wood framing or engage in any construction activity after the commencement of wood frame construction, on a Wood Frame Building project unless:

- A. An all-weather access road is in place meeting the requirements of this Information Sheet, or such other fire apparatus access requirements as may be specified in the PFP for the project, or in any development or building permit for the project, are in place and functional.
- B. All fire protection equipment, including fire extinguishers, low pressure fire hydrants, standpipes, and other fire service connections, are in place and operational, as required by the building or fire codes, or as specified in the approved PFP.
- C. An Auxiliary Water Supply System (AWSS) is in place or equivalent as agreed upon by the SFFD (e.g. temporary water storage tanks equivalent to the required fire sprinkler demand with hose allowance, high pressure (AWSS) hydrants, fully equipped hose tender on-site).
- D. Signage for Fire Department Connections (FDC), temporary FDCs, and Truss Joist I-beam (TJI) construction has been installed and approved by the Fire Inspector and as specified in the approved PFP.

### **Temporary Mitigating Fire Protection Barriers**

No person shall continue, permit, authorize or allow any construction activity on any Wood Frame Building Project, unless Temporary Mitigating Fire Protection Barriers are in place and operational, in accordance with the approved PFP, to maintain the project at or below the applicable Maximum Allowable Exposed Wood Framing Limit.

### **PROCEDURES FOR PRE-FIRE PLAN IMPLEMENTATION:**

#### **Plan Check Process**

- A. INTAKE. Two (2) copies of the Pre-Fire Plan (PFP) are required at intake of permit application for building utilizing exposed wood framing in the construction of 50 or more dwelling units or construction exceeding a total of 350,000 square feet.
- B. FIRE PLAN CHECK. The Fire Department plan checker will review the PFP for compliance with the CFC and other codes, regulations and standards for the following:
  - 1. Fire flow and fire hydrants;
  - 2. Fire Department access roads;
  - 3. Fire protection equipment such as portable fire extinguishers, standpipes and associated fire department connections (when required);
  - 4. AWSS – temporary, permanent, or existing installation(s);
  - 5. Procedures during hot work activities;
  - 6. Storage, use and handling of flammable liquids;
  - 7. Removal of construction debris from project site;



8. Construction sequencing and temporary mitigating fire protection barriers;
9. Off-hours security solution;
10. Other requirements relating to fire safety.

When all issues are resolved, the fire plan checker will approve the PFP.

NOTE: The plans will include a statement to inform the contractor/developer that the wood frame construction shall not commence without the written approval of the PFP by the Fire Department.

### **INSPECTION PROCESS**

A. Wood frame construction shall not commence without a written approval of the San Francisco Fire Department (SFFD). To acquire a written approval, the contractor shall be advised to:

1. Call the district fire inspector (415) 558-3300 to schedule a Fire Department inspection of the following before the start of wood framing construction.
  - a. All weather access roads;
  - b. Water flow and fire hydrants;
  - c. Portable fire extinguishers;
  - d. Horizontal standpipes and associated fire department connections (when required);
  - e. Signage – exit, FDC, TJI, etc.
  - f. Verify proper training of all fire watch personnel is consistent with PFP.

NOTE: When adequate compliance is verified, the SFFD inspector will indicate on the inspection report that wood framing may commence.

2. During regular inspections of the project, both building and fire inspectors shall check that fire safety measures are in place.
3. Fire Safety Measure inspections shall include the following:
  - a. Verification wood framing activity has been approved and authorized by the SFFD.
  - b. During hot work activities, the Fire Prevention Program Superintendent is present on the project site to monitor, confirm and document the fire watch and that a fire extinguisher is readily available.

NOTE: The fire watch shall continue for a minimum of 30 minutes after the conclusion of the hot work activity. Duties shall be required but not limited to 2013 CFC Chapters 33 and 35.
  - c. Fire department apparatus access roads are maintained and clear of any debris, construction material and/or construction equipment.
  - d. Storage, use, and handling of flammable liquids shall conform to all required codes and standards.
  - e. Combustible debris, rubbish and waste material shall be removed from buildings at the end of each shift of work.

- f. Verify that all required fire protection equipment, such as fire extinguishers, fire hydrants, standpipes, etc. are in place and operational.
- g. Verify the approved construction sequencing is followed and the temporary mitigating fire protection barriers are in place to ensure that the "maximum allowable exposed wood-framing limit" is maintained.

**Attachment A**

**PRE-FIRE PLAN  
WOOD FRAME BUILDING PROJECTS**

This plan is required for any building utilizing exposed wood framing in the construction of 50 or more dwelling units or construction exceeding a total of 350,000 gross square feet. Attach diagrams or plans to supplement this document. For the purpose of measuring total square footage of wood framing, any adjacent on-going wood frame construction is considered to be within the project when less than sixty (60) feet of open air separates adjacent structures.

**PROJECT CONTACT INFORMATION**

Project Name: \_\_\_\_\_

Project Address: \_\_\_\_\_

**General Contractor:**

Address: \_\_\_\_\_

Primary Contact Name & Title: \_\_\_\_\_

24hr/7days Cell Number: \_\_\_\_\_ Email: \_\_\_\_\_

Secondary Contact Name & Title: \_\_\_\_\_

24hr/7days Cell Number: \_\_\_\_\_ Email: \_\_\_\_\_

**Developer:**

Address: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Cell Number: \_\_\_\_\_

Email: \_\_\_\_\_

**Fire Prevention Program Superintendent:**

Contact Name: \_\_\_\_\_

Phone Number: \_\_\_\_\_ 24hr/7days Cell Number: \_\_\_\_\_

Email: \_\_\_\_\_

**BUILDING INFORMATION**

Permit Application Number: \_\_\_\_\_

Construction Type(s): \_\_\_\_\_ TJI Construction: YES NO Floors Roof  
circle circle circle circle

Number of Buildings: \_\_\_\_\_ Project Gross Square Footage: \_\_\_\_\_

Height(s) of Buildings: \_\_\_\_\_ Number of Floors: \_\_\_\_\_

Mezzanine(s): YES NO Number of Mezzanines: \_\_\_\_\_  
circle circle

Number of Units: \_\_\_\_\_ Estimated Date of Completion: \_\_\_\_\_

**PROJECT INFORMATION**

(Check applicable items below)

**Site Emergency Notification: (check as many as apply)**

Air horn cabinets at all means of egress: YES NO  
circle circle

Temporary initiation devices: YES NO  
circle circle

- wireless, hardwired, pull stations, waterflow, other: \_\_\_\_\_  
circle circle circle circle

Temporary notification devices: YES NO  
circle circle

wireless, hardwired, horn, strobe, other: \_\_\_\_\_  
circle circle circle circle

Temporary monitoring of initiation devices: YES NO - cellular, hardwired  
circle circle circle circle

Other \_\_\_\_\_

**Fire Suppression: (check as many as apply)**

Sprinkler system active (water supply locked open) during non-work hours.

Sprinkler system active (water supply locked open and zone valves locked in appropriate positions) on completed floors with no work/workers.

Sprinkler system pressurized (water supply locked closed and zone valves locked in appropriate positions) on completed zones.

Sprinkler system valve per zones on approved drawings.



Other \_\_\_\_\_

**Water supply for fire suppression: (check as many as apply)**

Contact information for person responsible for all valving:

Name: \_\_\_\_\_ cell number: \_\_\_\_\_

All valving shall be checked at the end of each work period to ascertain that sprinkler protection is in service.

Other \_\_\_\_\_

**Separation of Buildings: (check as many as apply)**

Multiple Buildings (see attached plans showing distances between buildings) and Area Separation Walls (see attached plans)

One Building (see attached plans if applicable for mixed construction types, area separation walls for over area allowances, etc.)

**Automobile Parking: (check as many as apply)**

Detached Garage

Carport

Part of Building

Adjacent to Building (on-grade)

Enclosed parking areas being used during construction. (See attached fire-life safety plan for garage use.)

**Access Roads: (check as many as apply)**

Fire Apparatus Access is provided by public roads and streets (no on-site roads).

See attached plans showing permanent access roads.

See attached plan showing temporary access roads during construction.

See attached narrative on phasing of access roads.

Access Roads comply with San Francisco Fire Department Information Sheet FS-04 and 5.12.

**Fire Flow and Hydrants: (check as many as apply)**

- Water flow information from the fire department is attached.
- Hydraulic calculations to verify the required water and fire flow is attached.
- Fire flow is provided by existing fire hydrants (no additional fire hydrant(s) is/are required).
- New public fire hydrant(s) on public street will be installed for this project (see attached plan and schedule for installation).
- New on-site/private fire hydrant(s) will be installed for this project (see attached plan and schedule for installation).
- All required fire hydrants will be operable before wood framing is started.
- See attached plans showing locations of existing and proposed fire hydrants.
- See attached narrative indicating phasing and schedule of fire hydrants.
- Inoperative fire hydrants will be bagged.
- PUC will install all new fire hydrants.
- Contractor will install all new fire hydrants and shall purchase all equipment from PUC.

**Standpipes: (check as many as apply)**

- Building(s) is/are less than three (3) stories (30 feet) and temporary/permanent standpipes are not required
- Temporary standpipes will be provided and made active when construction reaches not more than 40 feet (buildings that have three or more stories).
- Horizontal standpipes will be installed and made active before wood framing is started.

**Monitoring Hot Work: (check as many as apply)**

- All contractors conducting hot work operations shall be required to comply with the CFC, Chapters 33, 35, and 57.
- All contractors conducting hot work operations will be required to notify the Fire Department and obtain a hot work operational use permit.
- Safety Officer shall be responsible for confirming that a fire watch is being conducted in accordance with the approved PFP, and CFC Chapters 33, 35, and 57.

**Fire Extinguisher: (check as many as apply)**

- Fire extinguishers shall be located at all welding and other hot work locations.

- Minimum 2-A: IO-B:C Rating will be provided throughout the building under construction with a maximum travel distance of 75 feet to an extinguisher.
- Minimum 2-A:20-B:C rating shall be readily accessible within 30 feet of the location where hot work is performed.

**Egress Signage: (check as many as apply)**

- Egress paths to have signage visible for entire length of travel
- Type of signage (wall, stanchion, low level, etc.) - \_\_\_\_\_
- Egress path and/or signage will be powered: YES NO \_\_\_\_\_  
circle circle (battery, photoluminescent, etc.)
- Fire Prevention Program Superintendent to verify signage locations whenever paths change.

**Ingress Signage: (check as many as apply)**

- All stair openings on the exterior shall have signage (comparable to FDC size) stating floor levels (e.g. 1-4, roof access, etc.) and building orientation (Stair 2, northeast stair, etc.)
- Fire Prevention Program Superintendent shall verify signage whenever stair level/ingress changes

**Truss Joint I-Beam Construction: (check as many as apply)**

- Comparable signage at FDC signage locations with triangle FR per San Francisco Fire Code Information Sheet FS-04 5.05.

**Site Information Box: (check as many as apply)**

- Locked box for fire department use located \_\_\_\_\_
- Fire Prevention Program Superintendent to keep information current.
- Fire Prevention Program Superintendent 24hour/7days contact phone number: \_\_\_\_\_
- Project overview – Finished levels, stud only portions, sprinkler system policy, temporary construction site emergency notification/monitoring.
- Special hazards (LPG, diesel, high voltage, etc.) \_\_\_\_\_
- Site map
- Ingress/egress points and levels of access
- FDC locations



- Hydrant locations
- Ingress/egress paths per level
- Open shaft/floor locations
- Finished walls/stud only areas
- Special hazards locations

**Fuel Storage: (check as many as apply)**

- There will be no on-site fuel storage in this project
- There will be no temporary fuel source in this project that exceeds 60 gallons
- There will be no propane in this project that exceeds 125 gallons
- On-site fuel storage will be in accordance with the CFC Chapter 50.
- Required operational use permits will be obtained from the SFFD.

**Construction Debris: (check as many as apply)**

- Personnel will be hired as necessary to maintain a clean construction site and building per CFC Chapter 33.
- Subcontractors will be required to maintain a clean work area
- Combustible debris shall not be accumulated within buildings. Combustible debris, rubbish and waste material shall be removed from buildings at the end of each shift of work.
- Other: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Emergency Plan: (check as many as apply)**

- An emergency plan shall be developed and posted in the construction site.
- All construction personnel will be briefed \_\_\_\_\_ (e.g. weekly) on the emergency plan by the Fire Prevention Program Superintendent.
- All briefings will be documented with sign-in sheet, date and material covered.
- See attached duties and responsibilities of the Fire Prevention Program Superintendent.



**FIRE PREVENTION PROGRAM SUPERINTENDENT FOR THIS PROJECT**

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

24hour/7days Cell Number: \_\_\_\_\_ Email: \_\_\_\_\_

Qualifications: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

On behalf of \_\_\_\_\_, this Pre-Fire Plan  
(Developer)

is submitted to the City of San Francisco in accordance with San Francisco Fire Department Information Sheet FS-04.

Authorized Agent \_\_\_\_\_ Date \_\_\_\_\_  
(print name and sign)

Fire Prevention Program Superintendent \_\_\_\_\_  
Date \_\_\_\_\_  
(print name and sign)

Reviewed by:

San Francisco Fire Department

Fire Inspector \_\_\_\_\_ Date \_\_\_\_\_  
(print name and sign)

NOTE: This Pre-Fire Plan including all attachments shall be posted in a conspicuous place at the job site.



## FIRE PREVENTION PROGRAM SUPERINTENDENT DUTIES AND RESPONSIBILITIES

Including but not limited to:

1. Maintain the Pre-Fire Plan ("PFP") that addresses fire prevention and fire exposure. The plan shall identify both general safety guidelines and specific objectives tailored to the project and shall be kept as an active part of the job site management. A specific individual shall be designated responsible for on-site safety coordination. This person shall be called the Fire Prevention Program Superintendent (PFPS).
2. Inform on-site personnel of the "No Smoking" policy per CFC Chapter 33. Enforcement shall be for the duration of the project. Violations of the policy shall be reported to senior on-site management.
3. Perform on-site inspections on a regular basis to ensure that fire lanes are clear, material storage is located in accordance with the Fire Safety Plan and not blocking fire access. Verify flammable and combustible liquids are not stored in the buildings.
4. Maintain a clean site and building per CFC Chapter 33. Ensure that construction debris will be properly disposed in a timely and end of each shift.
5. Confirm each contractor provides a "Fire Watch" during all "hot work" operations in accordance with CFC Chapters 33 and 35.
6. Confirm that portable heating equipment complies with CFC Chapter 33. Confirm the equipment is placed on non-combustible flooring or platforms, with adequate clearance and maintenance in accordance with manufacturer's specifications and/or recognized standards. Fueling shall be conducted out of the buildings accordance with manufacturer's specifications and CFC Chapters 33, 50, 53, 57, and 61.
7. Confirm that portable, properly rated (2A, 10BC minimum for egress points and 2-A:20-B:C for hot work) and California State Fire Marshal approved fire extinguishers are in their required positions per CFC Chapters 9, 33, and 35. Conduct and/or monitor monthly tag sign off inspections of each fire extinguisher.
8. Review proper identification and labeling requirements on flammable liquid and gas containers and cylinders. Confirm safe storage areas are designated and identified by clearly demarcated signs and surrounded by stable barriers or fencing.
9. Confirm the fire access roads, fire hydrants, and horizontal standpipes are in place and in service prior to combustible construction.
10. Confirm approved vertical temporary standpipes are installed when the construction reaches the third floor and not more than 40feet in height in accordance with the Pre-Fire Plan.
11. Be available along with the Site Superintendent during Fire Department Inspections.
12. Observe final testing along with the Site Superintendent (operational flow) of the hydrants and standpipes to confirm required systems are in service for the appropriate construction phase.

Confirm contractor is properly marking ("bagged") any inoperative equipment in accordance with San Francisco Fire Department Standards. Report impairments of required hydrants to the Fire Department Communication Center unless repair is immediately initiated.

13. Observe and confirm final tests along with the Site Superintendent of the fire protection equipment (automatic sprinklers, fire alarm, and other equipment noted in the Fire Safety Plan).

14. Conduct \_\_\_\_\_ (e.g. weekly) safety briefings with construction personnel. All briefings will be documented with sign-in sheet, date and material covered

**Qualifications of a Fire Prevention Program Superintendent**

The PFPS shall be generally familiar with construction methods, sprinkler systems, fire alarm systems, fire vehicle access requirements and hot work fire safety.

The name of the PFPS and additional qualification documentation shall be submitted with the Pre-Fire Plan.

***I have read and accept the duties and responsibilities of the Fire Prevention Program Superintendent as delineated in this document:***

Fire Prevention Program Superintendent \_\_\_\_\_

Date \_\_\_\_\_

(Signature)

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

24hour/7days Cell Number: \_\_\_\_\_ Email: \_\_\_\_\_



## FIRE WATCH

This is a guide and may not include all requirements. Please review The 2013 California Fire Code, Chapters 2, 3, 9, 33, and 35 for additional information and requirements.

**Definition - FIRE WATCH.** A temporary measure intended to ensure continuous and systematic surveillance of a building or portion thereof by one or more qualified individuals for the purposes of identifying and controlling fire hazards, detecting early signs of unwanted fire, raising an alarm of fire and notifying the Fire Department.

A fire watch, sometimes referred to as standby personnel, provides temporary fire safety where there are potential hazards, such as during hot work operations or when fire protection systems are out of service. A fire watch is not simply to watch for a fire but also to prevent fire by identifying and controlling fire hazards, such as the separation of combustibles from areas where welding is to occur. A fire watch also provides a method of notifying the fire department if a fire should occur.

### **Chapter 33: Fire Safety during Construction and Demolition** **SECTION 3304 PRECAUTIONS AGAINST FIRE**

**3304.5 Fire watch.** When required by the fire code official for building demolition, or building construction during working hours that is hazardous in nature, qualified personnel shall be provided to serve as an on-site fire watch. Fire watch personnel shall be provided with at least one approved means for notification of the fire department and their sole duty shall be to perform constant patrols and watch for the occurrence of fire.

### **SECTION 3308 OWNER'S RESPONSIBILITY FOR FIRE PROTECTION**

**3308.1 Program superintendent.** The owner shall designate a person to be the Fire Prevention Program Superintendent who shall be responsible for the fire prevention program and ensure that it is carried out through completion of the project. The Fire Prevention Program Superintendent shall have the authority to enforce the provisions of this chapter and other provisions as necessary to secure the intent of this chapter. Where guard service is provided, the superintendent shall be responsible for the guard service.

**3308.2 Pre-fire plans.** The Fire Prevention Program Superintendent shall develop and maintain an approved prefire plan in cooperation with the fire chief. The fire chief and the fire code official shall be notified of changes affecting the utilization of information contained in such prefire plans.

**3308.3 Training.** Training of responsible personnel in the use of fire protection equipment shall be the responsibility of the Fire Prevention Program Superintendent.

**3308.5 Hot work operations.** The Fire Prevention Program Superintendent shall be responsible for supervising the permit system for hot work operations in accordance with Chapter 35.

### **Chapter 35: Welding and Other Hot Work** **SECTION 3504 FIRE SAFETY REQUIREMENTS**

**3504.1.2 Openings.** Openings or cracks in walls, floors, ducts or shafts within the hot work area shall be tightly covered to prevent the passage of sparks to adjacent combustible areas, or shielded by metal fire-resistant guards, or curtains shall be provided to prevent passage of sparks or slag.



**3504.1.8 Sprinkler protection.** Automatic sprinkler protection shall not be shut off while hot work is performed. Where hot work is performed close to automatic sprinklers, noncombustible barriers or damp cloth guards shall shield the individual sprinkler heads and shall be removed when the work is completed. If the work extends over several days, the shields shall be removed at the end of each workday. The *fire code official* shall approve hot work where sprinkler protection is impaired.

One of the major sources of losses related to hot work occurs either at buildings under construction or under renovation where an installed sprinkler system has been shut off. In many cases, there is a concern that the sprinkler system will be damaged or will accidentally activate during construction so the system is shut off. Unfortunately, this is the most likely time for an ignition to occur. Frequently, large manufacturing, storage and institutional occupancies intentionally perform much of their heavy maintenance work during slow periods to reduce service disruptions. Under such circumstances, care must be exercised so that sprinkler outages do not coincide with welding or cutting operations. To reduce the likelihood of accidental operation of sprinklers if welding or cutting operations must be performed in close proximity to sprinklers or sprinkler piping, this section includes some methods of protecting the sprinkler without shutting the system down. It is important to note that any protection placed onto or near the sprinklers is to be removed at the end of each workday. Field welding or cutting operations performed on sprinkler piping is prohibited by NFPA 13.

**3504.2 Fire watch.** Fire watches shall be established and conducted in accordance with Sections 3504.2.1 through 3504.2.6.

This section is critical to avoiding ignition as a result of hot work operations. The six subsections list criteria for setting a fire watch and how it should be undertaken.

**3504.2.1 When required.** A fire watch shall be provided during hot work activities and shall continue for a minimum of 30 minutes after the conclusion of the work. The *fire code official*, or the responsible manager under a hot work program, is authorized to extend the fire watch based on the hazards or work being performed.

**Exception:** Where the hot work area has no fire hazards or combustible exposures.

Fire watches are required any time hot work is undertaken and are to extend a minimum of 30 minutes beyond completion of the work. The time may need to be extended, depending on the specific hazards present, such as a large amount of combustibles or the facility being open to the public. There is an exception for those situations when combustibles are simply not present. The combustibility of the floor should also be considered.

**3504.2.2 Location.** The fire watch shall include the entire hot work area. Hot work conducted in areas with vertical or horizontal fire exposures that are not observable by a single individual shall have additional personnel assigned to fire watches to ensure that exposed areas are monitored.

This section states that a fire watch is required in all hot work areas. The term "hot work area" is defined but is necessarily a general definition because many things will affect the extent of the area. These factors include the type and application of hot work, the configuration and layout of the space and the types of materials in the area. Also, in some situations the fire watch may need to consist of more than one person because the layout of the area may prevent one person from watching an entire area, such as when many pieces of equipment act as obstructions or the shape of the room or placement of partitions blocks a line of sight.



**3504.2.3 Duties.** Individuals designated to fire watch duty shall have fire-extinguishing equipment readily available and shall be trained in the use of such equipment. Individuals assigned to fire watch duty shall be responsible for extinguishing spot fires and communicating an alarm.

The individuals who undertake a fire watch have specific duties. They not only need to watch for and notify of an ignition of combustibles, they also need to be prepared to extinguish spot fires with portable extinguishers. Intervention when fires are small is the best line of defense in extinguishing and controlling fires. Waiting until the fire department or fire brigade arrives will allow a fire to increase dramatically in size and intensity.

**3504.2.4 Fire training.** The individuals responsible for performing the hot work and individuals responsible for providing the fire watch shall be trained in the use of portable fire extinguishers.

A person conducting a fire watch must be trained to operate fire extinguishers located in the watch area. As noted previously, intervention in the incipient stages of a fire is extremely effective.

**3504.2.5 Fire hoses.** Where hose lines are required, they shall be connected, charged and ready for operation.

This section states that when a hose line is required, it should be properly charged and ready for use during a fire watch. Otherwise, the effectiveness is much lower. As noted already, fires are more likely to be extinguished or controlled when intervention occurs early. An uncharged hose line will defeat the purpose of the equipment.

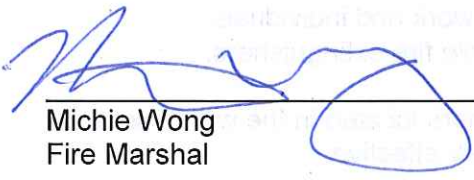
**3504.2.6 Fire extinguisher.** A minimum of one portable fire extinguisher complying with Section 906 and with a minimum 2-A:20-B:C rating shall be readily accessible within 30 feet (9144 mm) of the location where hot work is performed.

This section specifies that the fire extinguishers required for a fire watch must be an all-purpose extinguisher for all fire types; the potential fire type will vary with the type of hot work and the surrounding combustibles. The 30-foot (9144 mm) travel distance specified here is more restrictive than what is required for similar ratings of extinguishers in Section 906. Table 906.3(2) would allow a maximum travel distance of 50 feet (15 240 mm) for other applications with the same rating of extinguisher.

**3504.3.1 Pre-hot-work check.** A pre-hot-work check shall be conducted prior to work to ensure that all equipment is safe and hazards are recognized and protected. A report of the check shall be kept at the work site during the work and available upon request. The pre-hot-work check shall determine all of the following:

1. Hot work equipment to be used shall be in satisfactory operating condition and in good repair.
2. Hot work site is clear of combustibles or combustibles are protected.
3. Exposed construction is of noncombustible materials or, if combustible, then protected.
4. Openings are protected.
5. Floors are kept clean.

- 6. No exposed combustibles are located on the opposite side of partitions, walls, ceilings or floors.
- 7. Fire watches, where required, are assigned.
- 8. *Approved* actions have been taken to prevent accidental activation of suppression and detection equipment in accordance with Sections 3504.1.8 and 3504.1.9.
- 9. Fire extinguishers and fire hoses (where provided) are operable and available.

 5/14/14  
Date

Michie Wong  
Fire Marshal

Tom C. Hui 5/13/14  
Date

Tom C. Hui, S.E., C.B.O.  
Director  
Department of Building Inspection

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