



SAN DIEGO FIRE-RESCUE

COMMUNITY RISK REDUCTION DIVISION

FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION

I. PURPOSE

The purpose of this guideline is to prescribe minimum safeguards for new building construction, demolition and significant building alteration projects in order to provide a reasonable degree of safety to life and property from fire. This guideline is based on the provisions of the 2022 California Fire Code (CFC) and NFPA 241 (2019 ed.). The building owner or owner's authorized agent is responsible for compliance with the provisions of this guideline and all applicable codes and standards.

II. OWNER'S RESPONSIBILITY FOR FIRE PROTECTION

The owner or owner's authorized agent shall be responsible for the development, implementation and maintenance of an approved, written site safety plan establishing a fire prevention program at the project site applicable throughout all phases of the construction, repair, alteration or demolition work. The plan shall be submitted and approved before a building permit is issued. Any changes to the plan shall be submitted for approval.

A. Components of Site Safety Plans

Site safety plans shall include the following as applicable:

1. Name and contact information of site safety director.
2. Documentation of the training of the site safety director and fire watch personnel.
3. Procedures for reporting emergencies.
4. Fire department vehicle access routes.
5. Location of fire protection equipment, including portable fire extinguishers, standpipes, fire department connections and fire hydrants.
6. Smoking and cooking policies, designated areas to be used where approved, and signage locations in accordance with [Section 3305.8](#).
7. Location and safety considerations for temporary heating equipment.
8. Hot work permit plan.
9. Plans for control of combustible waste material.
10. Locations and methods for storage and use of flammable and combustible liquids and other hazardous materials.
11. Provisions for site security.
12. Changes that affect this plan.
13. Other site-specific information required by the fire code official.

B. Site Safety Director

The owner shall designate a person to be the site safety director.



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The site safety director shall be responsible for ensuring compliance with the site safety plan. The site safety director shall have the authority to enforce the provisions of this guideline and other provisions as necessary to provide for a reasonable degree of safety to life and property from fire. Where guard service is provided in accordance with NFPA 241, the site safety director shall be responsible for the guard service.

Site safety directors shall acquire training specific to their roles and responsibilities. Upon request, the training and qualifications of the site safety director shall be submitted to the fire code official for approval.

C. Daily Fire Safety Inspection

The site safety director shall be responsible for completion of a daily fire safety inspection at the project site. Each day, all building and outdoor areas shall be inspected to ensure compliance with the inspection list in accordance with CFC 3303.3. The results of each inspection shall be documented and maintained on-site until a certificate of occupancy has been issued. Documentation shall be immediately available on-site for presentation to the fire code official upon request.

Failure to properly conduct, document and maintain documentation required by this section shall constitute an unlawful act in accordance with CFC Section 112.1 and shall result in the issuance of a notice of violation to the site safety director in accordance with CFC Section 112.3. Upon the third offense, the fire code official is authorized to issue a stop work order in accordance with CFC Section 113, and work shall not resume until satisfactory assurances of future compliance have been presented to and approved by the fire code official.

III. ACCESS FOR FIREFIGHTING

A. Command Post

A suitable location at the site shall be designated as a command post and provided with plans, emergency information, keys, communications, and equipment, as needed. The location of the command post and their contents shall be approved by SDFD.

The site safety director or their alternate shall be available to respond to the command post whenever fire occurs.

B. Required Access

All construction sites shall be readily accessible by fire department apparatus by means of roadways having an all-weather driving service of not less than 20 feet of unobstructed width. The roads shall withstand the live loads of fire apparatus, and have a minimum 13 feet, 6 inches of vertical clearance. Dead end fire access roads in excess of 150 feet in length shall be provided with approved turnarounds.



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The required width of access roadways shall not be obstructed in any manner, including obstruction by parked vehicles. “No Parking” signs or other appropriate notices, or both, prohibiting obstruction shall be permitted to be required and shall be maintained.

The access roadway shall be extended to within 200 feet of all portions of the exterior walls of the first story of any building. Where an access roadway cannot be provided, an approved fire protection system or systems shall be provided as required and approved by SDFD.

Access for use of fire department apparatus shall be provided to the immediate job site at the start of the project and maintained until completion.

C. Premises Identification

While under construction, alteration, or demolition, buildings shall have approved address numbers placed in a position to be plainly legible and visible from the street or road fronting the property. Address numbers shall be Arabic numerals or alphabetical letters and shall contrast with their background.

D. Surface

Temporary access roadways may be utilized until such time that the permanent roadways are installed. At a minimum, the roadway shall consist of a compacted sub-base and 6 inches of road base material (class 2 aggregate base rock) both compacted to a minimum of 95%. The perimeter edges of the roadway shall be contained and delineated by curb and gutter or other approved methods. Provisions for surface drainage shall also be provided where necessary. The integrity of the roadway shall be maintained in all weather conditions.

E. Fire Department Connections

Vehicle access shall be provided to within 100 feet of temporary or permanent fire department connections.

F. Knox Box

Where access to or within a structure or an area is unduly difficult because of secured openings or where immediate access is necessary for lifesaving or firefighting purposes a Knox Box shall be installed in an accessible location. Gates providing emergency access or access to equipment may be secured with a Knox padlock or a breakaway lock and chain.



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G. Stairs

Where building construction exceeds 40 feet in height above the lowest level of fire department vehicle access, a temporary or permanent stairway shall be provided. As construction progresses, such stairway shall be extended to within one floor of the highest point of construction having secured decking or flooring.

All exit stairs shall be provided with lighting, stair identification signs to include the floor level, stair designation, and exit path direction as required to provide for safe egress. Combustible materials shall not be stored in exits or enclosures for stairways and ramps.

1. **Maintenance** - Required means of egress and required accessible means of egress shall be maintained during construction and demolition, remodeling or alterations and additions to any building unless a temporary means of egress has been approved by the AHJ.
2. **Storage** - Combustible materials associated with construction, demolition, remodeling or alterations to an occupied structure shall not be stored in exits, enclosures for stairways and ramps, or exit access corridors serving an occupant load of 30 or more.

Exceptions:

- a. Where the only occupants are construction workers.
- b. Combustible materials that are temporarily accumulated to support work being performed when workers are present.

IV. WATER SUPPLY FOR FIRE PROTECTION

An approved water supply for fire protection, either temporary or permanent, shall be made available prior to:

1. Combustible building materials arriving on the site
2. Commencement of vertical combustible construction
3. Installation of a standpipe system in buildings under construction

The water supply shall be provided by fire hydrants unless otherwise approved by the fire code official. Unobstructed access to fire hydrants and to outside connections for standpipes, sprinklers, or other fire protection equipment, whether permanent or temporary, shall be provided and maintained at all times. No material or construction activities shall interfere with access to fire protection features or equipment.



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A. Combustible Building Materials

The fire hydrant used to provide the required fire-flow supply shall be within 500 feet of the combustible building materials, as measured along an approved fire apparatus access lane. Where the site configuration is such that one fire hydrant cannot be located within 500 feet of all combustible building materials, additional fire hydrants shall be required to provide coverage.

B. Vertical Construction of Types III, IV and V Construction

Prior to commencement of vertical construction of Type III, IV or V buildings, hydrants must be provided in sufficient quantity to provide the required fire flow for the building when constructed unless otherwise approved by the fire code official.

C. Vertical Construction of Type I and II Construction

If combustible building materials are delivered to the construction site, water supply in accordance with Section IV A. shall be provided. Additional water supply for fire flow is not required prior to commencing vertical construction of Type I and II buildings.

D. Standpipe Supply

Regardless of the presence of combustible building materials or the construction type, where a standpipe is required in accordance with Section V. A., a water supply providing a minimum flow of 500 gallons per minute shall be provided. The fire hydrant used for this water supply shall be located within 100 feet of the fire department connection supplying the standpipe.

V. STANDPIPES

A. Where Required

In buildings required to have standpipes by CFC [Section 905.3.1](#), not less than one standpipe, either temporary or permanent, shall be provided for use during construction. Such standpipes shall be installed prior to construction exceeding 40 feet in height above the lowest level of fire department vehicle access. Such standpipes shall be provided with fire department hose connections at locations adjacent to stairways complying with CFC [Section 3312.1](#). As construction progresses, such standpipes shall be extended to within one floor of the highest point of construction having secured decking or flooring.

The number and location of temporary standpipes shall be in accordance with the Site Safety Plan.



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B. Access

Readily accessible standpipe fire department connections shall be provided on the outside of the building at street level. Access shall not be obstructed by fencing, construction equipment or other materials. Standpipes may be required to be extended through fencing to an area providing immediate access to the fire department.

C. Hose Connections

2 1/2 inch hose connections shall be provided at accessible locations and at least one approved hose connection shall be provided at each floor level in the exit stairway.

Hose valves shall be kept closed at all times and hose threads guarded against mechanical damage. Hose valves shall have National Hose Standard (NHS) external threads for the valve size specified in accordance with NFPA 1963.

D. Fire Department Connection Identification

Fire department connections shall be identified by a durable sign that is clearly visible from the street or fire department access road. The sign shall be constructed of a reflective material for visibility at night or a light shall be provided above the FDC to identify the location.

VI. PRECAUTIONS AGAINST FIRE

A. Smoking

Smoking shall be prohibited at or in the vicinity of hazardous operations or combustible/flammable materials. "No Smoking" signs shall be posted in each location where smoking is prohibited. In approved areas where smoking is permitted, approved ashtrays shall be provided in accordance with CFC [Section 310](#).

B. Combustible Waste Material

Accumulations of combustible waste material, dust, and debris shall be removed from the structure and its immediate vicinity at the end of each work shift or more frequently as necessary for safe operations. Materials susceptible to spontaneous ignition, such as oily rags, shall be stored in a listed disposal container.

Yard storage of equipment to be installed or combustible construction materials shall not be stored closer than 30 feet from the structure under construction or alteration.

C. Fire Watch

A fire watch shall be provided during nonworking hours for new construction that exceeds 40 feet in height above the lowest adjacent grade at any point along the building perimeter, for new multistory construction with an aggregate area exceeding 50,000 square feet per story or as required by the fire code official.



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1. **Duties** - The primary duty of fire watch personnel shall be to perform constant patrols and watch for the occurrence of fire. The combination of fire watch duties and site security duties is acceptable.
2. **Training** - Personnel shall be trained to serve as an on-site fire watch. Training shall include the use of portable fire extinguishers.
3. **Means of notification** - Fire watch personnel shall be provided with not fewer than one approved means for notifying the fire department.
4. **Records** - Fire watch personnel shall keep a record of all time periods of duty, including the log entry for each time the site was patrolled and each time a structure was entered and inspected. Records shall be made available for review by the fire code official upon request.

D. Flammable and Combustible Liquids

1. **Storage** - Flammable and combustible liquid storage areas shall be maintained clear of combustible vegetation and waste materials. Such storage areas shall not be used for the storage of combustible materials. Smoking and other sources of ignition shall be prohibited in areas where flammable and combustible liquids are stored or used.

Storage of Class I and Class II liquids shall not exceed 60 gallons within 50 feet of the structure unless approved by SDFD.

2. **Tanks** - Tanks and containers for the storage of liquids above ground shall be conspicuously marked with the name of the product that they contain and the words: "FLAMMABLE—KEEP FIRE AND FLAME AWAY." Tanks shall bear the additional marking: "KEEP 50 FEET FROM BUILDINGS."
 - a. Tanks more than 100 gallons in capacity, which are permanently installed or mounted and used for the storage of Class I, II or III liquids, shall be provided with a placard in accordance with NFPA 704.
 - b. Portable fire extinguishers with a minimum rating of 20-B:C shall be provided within 30 feet of the tank.
3. **Handling at Point of Final Use** - The storage, use and handling of flammable and combustible liquids at construction sites shall be in accordance with CFC [Section 5706.2](#). Ventilation shall be provided for operations involving the application of materials containing flammable solvents. Class I and Class II liquids shall be kept in approved safety containers.
4. **Leakage and Spills** - Leaking vessels shall be immediately repaired or taken out of service and spills shall be cleaned up and disposed of properly.



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E. Portable Fire Extinguishers

Structures under construction, alteration or demolition shall be provided with not less than one approved portable fire extinguisher in accordance with CFC Section 906 and sized for not less than ordinary hazard as follows:

1. At each stairway on all floor levels where combustible materials have accumulated.
2. In every storage and construction shed.
3. Additional portable fire extinguishers shall be provided where special hazards exist including, but not limited to, the storage and use of flammable and combustible liquids.

Extinguishers shall be mounted on a wall or post at a height not to exceed 5 feet measured at the top of the extinguisher.

F. Temporary Heating Equipment

1. **Listed** - Temporary heating devices shall be listed and labeled. The installation, maintenance and use of temporary heating devices shall be in accordance with the listing and the manufacturer's instructions.
2. **Refueling** - Refueling operations for liquid-fueled equipment or appliances shall be conducted in accordance with CFC [Section 5705](#). The equipment or appliance shall be allowed to cool prior to refueling.
3. **Installation** - Clearance to combustibles from temporary heating devices shall be maintained in accordance with the labeled equipment. When in operation, temporary heating devices shall be fixed in place and protected from damage, dislodgement or overturning in accordance with the manufacturer's instructions.
4. **Supervision** - The use of temporary heating devices shall be supervised and maintained only by competent personnel.
5. **Inspection** - The area where heating equipment is utilized shall be inspected not less than daily for safe conditions. Heating equipment and devices determined to be damaged or unsafe shall not be used.

G. Hot Work

Hot work includes any work involving operations capable of initiating fires or explosions, including cutting, welding, brazing, soldering, grinding, thermal spraying, thawing pipe, torch applied roofing, or any other similar activity. The use of hot work equipment shall be in accordance with the following guidelines, including a pre-site inspection, fire watch and post inspection procedures.

1. **Area Review** - Before hot work is permitted and not less than once per day while the permit is in effect, the area shall be inspected by the individual responsible for authorizing hot work operations to ensure that it is a fire safe area.



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2. **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:
 - a. Hot work equipment to be used shall be in satisfactory operating condition and in good repair.
 - b. Hot work site is clear of combustibles or combustibles are protected.
 - c. Exposed construction is of noncombustible materials or, if combustible, then protected.
 - d. Openings are protected.
 - e. Floors are kept clean.
 - f. Exposed combustibles are not located on the opposite side of partitions, walls, ceilings or floors.
 - g. Fire watches, where required, are assigned.
 - h. Approved actions have been taken to prevent accidental activation of fire protection system equipment in accordance with CFC [Sections 3504.1.8](#) and [3504.1.9](#).
 - i. Fire extinguishers and fire hoses (where provided) are operable and available.
3. **Fire Watch**
 - a. **When Required** - A fire watch shall be provided during hot work activities and shall continue for not less than 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.
 - b. **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.
 - c. **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.
 - d. **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.
 - e. **Fire Hoses** - Where hoselines are required, they shall be connected, charged and ready for operation.



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- f. **Fire Extinguisher** - Not less than one portable fire extinguisher complying with CFC Section 906 and with a minimum 2-A:20-B:C rating shall be provided with ready access within 30 feet of the location where hot work is performed.

H. Motorized Construction Equipment

Internal-combustion-powered construction equipment shall be used in accordance with all of the following conditions:

1. Equipment shall be located so that exhausts do not discharge against combustible material.
2. Exhausts shall be piped to the outside of the building.
3. Equipment shall not be refueled while in operation.
4. Fuel for equipment shall be stored in an approved area outside of the building.

I. Asphalt Kettles

Asphalt kettles shall not be located within 20 feet of any combustible material, combustible building surface or building opening(s). An attendant shall be within 100 feet of a kettle when the heat source is operating. Ladders or similar obstacles shall not form a part of the route between the attendant and the kettle.

Kettles shall be equipped with tight-fitting covers. A minimum 40-B:C rated portable fire extinguisher shall be located within 25 feet of each asphalt kettle when the heat source is operating. Additionally, a 3-A:40-B:C rated portable fire extinguishers shall also be located on roofs during asphalt coating operations.

VII. FIRE PROTECTION SYSTEMS

The site safety director shall ensure that all fire protection equipment is maintained and serviced in accordance with the CFC. Fire protection equipment shall be inspected in accordance with the fire protection program.

A. Smoke Detectors and Smoke Alarms

Smoke detectors and smoke alarms located in an area where airborne construction dust is expected shall be covered to prevent exposure to dust or shall be temporarily removed. Smoke detectors and alarms that were removed shall be replaced upon conclusion of dust-producing work. Smoke detectors and smoke alarms that were covered shall be inspected and cleaned, as necessary, upon conclusion of dust-producing work.



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B. Automatic Sprinkler System

In buildings where an automatic sprinkler system is required by the CFC or CBC, it shall be unlawful to occupy any portion of a building or structure until the automatic sprinkler system installation has been tested and approved, except as provided in CFC [Section 105.3.4](#).

Operation of sprinkler control valves shall be allowed only by properly authorized personnel and shall be accompanied by notification of duly designated parties. Where the sprinkler protection is being regularly turned off and on to facilitate connection of newly completed segments, the sprinkler control valves shall be checked at the end of each work period to ascertain that protection is in service.

C. Impairments

The site safety director shall ensure impairments to any fire protection system are in accordance with CFC [Section 901](#).

Coverings placed on or over fire protection devices to protect them from damage during construction processes shall be immediately removed upon the completion of the construction processes in the room or area in which the devices are installed.