



CANTON

BUILDING & SAFETY SERVICES

Construction Site Safety Plan & Checklists

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NFPA 241 Checklist

This document is based the NFPA 241 (2019) checklist used by the City of Canton Building & Safety Services for safeguarding construction, alteration, and demolition operations.

**Inspection Guide for Safeguarding Construction, Alteration, and Demolition Operations – NFPA 241
(2019)**

Address/Permit#: _____

Inspector: _____ Date: _____

☐ (1.3.4) A fire safety program has been established?

Program Manager: _____ Phone: _____

(7.2.4) Program Manager Responsibilities

- ☐ Records of the weekly self-inspection program are available for review?
- ☐ All necessary permits (hot work, blasting, etc.) have been obtained?
- ☐ Site security with guard service is provided for the site?
- ☐ Fire protection systems installed are being maintained appropriately, and records are available?
- ☐ Underground mains and hydrants are installed and in service? 8.7.2.3
- ☐ Location address is conspicuously posted?

(4.2) Temporary Offices and Sheds

- ☐ Separation distance between the building under construction and temporary construction-related structures are appropriate? (min. 30'; see table 4.2.1, NFPA 241)
- ☐ Only approved heating devices are in use, and are being used appropriately?

(4.4) Equipment

- ☐ Exhausts from compressors, pumps, hoists, etc. are located away from combustible materials?
- ☐ Equipment fuel and service areas are located outside of the structure?

(5.1) Hot Work

- ☐ Hot work precautions and fire watches are being performed in accordance with NFPA 51B?
- ☐ Fire watchers are dedicated to only the hot work for the duration of the work and after as appropriate?
- ☐ Bulk storage of Thermit welding materials are in a detached shed at least 50' from the buildings?

(5.2) Temporary Heating Equipment

- ☐ Equipment is listed and being used, installed, maintained in accordance with the manufacturer's instructions and recognized safe practices?
- ☐ Equipment is situated so that it is secured? Electrical equipment has tip-over and overheat cutoffs?

(5.3) Smoking

- ☐ Smoking is only permitted in designated areas where safe receptacles are provided?

(5.4) Waste Disposal

- ☐ Combustible waste materials are removed from in and around the structure at the end of each work shift (at a minimum)?
- ☐ If trash chute is present, it is non-combustible or protected with a sprinkler head connected to an available and appropriate water supply?

- ☐ Sprinkler protecting trash chute was reviewed and approved under permit?
- ☐ Sprinkler is protected from freezing?
- ☐ Sprinkler protection provided at intervals not to exceed 36' in chute length?

(5.5) Flammable and Combustible Liquids and Flammable Gases

- ☐ Not more than 60gal of Class I or II liquids within 50' of the structure?
- ☐ Storage areas have appropriate placards in accordance with NFPA 704, 2017 edition?

(5.6) Explosive Materials

- ☐ No explosives materials are stored on site?
- ☐ All explosive operations are done under permit?

(6.1) Electrical

- ☐ Extension cords are free from damage?
- ☐ Temporary lights are equipped with guards to prevent contact with bulbs?

(7.5) Access for Fire Fighting

- ☐ The fire department access road extends to within 150' of all portions of the exterior of the first level of the building?
- ☐ At least one stair reaching the level of work, in compliance with NFPA 101, is available at all times?
- ☐ The stairway is lighted and has signs indicating level, stair designation, and exit direction?

(7.5.8) Hydrants

- ☐ Pedestrian walkways are not blocking access to hydrants?
- ☐ Access to hydrants from street, FDC's, or other connections is clear at all times?

(7.6) Standpipes

- ☐ Where standpipes are required, they are maintained in conformity with the progress of the building and readily available for use? (Not more than 1 floor below highest forms, staging, combustibles, etc.)
- ☐ A FDC is readily available at street level and conspicuously marked? (8.7.4)

(7.8) Means of Egress

- ☐ Construction workers have adequate means of escape available to them at all times?

(8.2) Scaffolding, Shoring, and Forms

- ☐ Combustible forms or form lumber are removed from the structure when not in use?

(8.3) Construction Material and Equipment Storage

- ☐ Equipment to be installed, combustible packing materials, and combustible construction materials are not being stored in unprotected structures?

(8.6) Building Separation Walls

- ☐ Fire doors with closers and hardware once installed are not obstructed from closing?

(8.6.2) Temporary Separation Walls

- ☐ Occupied portions are separated from the area of work with temporary walls with a fire rating of 1hr and opening protective rating of ¾ hour? (not required to be rated if sprinkled)

(Ch9) Safeguarding Roofing Operations

- ☐ Asphalt and tar kettles are not located on roofs? They are outside the building at least 10' from exits?
- ☐ Roofing hot work fire watch is at least 2 hours after torches are extinguished?
- ☐ At least one 20-B rated fire extinguisher is between 5' and 25' from kettle while in operation? ☐ There is at least 1 multipurpose 2-A:20B:C extinguisher on the roof within 20' of equipment?
- ☐ Solid fuel or Class I liquids are not being used as fuel for roofing kettles?
- ☐ Uninsulated fuel containers greater than 1lb are at least 10' from the burner flame?
- ☐ LP-Gas Cylinders are secured to prevent tip-over?

(Ch10) Safeguarding Demolition Operations

- ☐ Standpipes are being maintained in conformity with the demolition progress of the building?
- ☐ Fire doors are closed at the end of each work day?
- ☐ Sprinkler control valves are checked at the end of each work day to ensure protection is in service?

(Ch11) Safeguarding Underground Operations

- ☐ The aboveground entrance has security keeping an accurate record of who is underground at all times using a check-in/check-out system?
- ☐ A written fire prevention, fire suppression, and emergency plan is available for review?
- ☐ Records of evacuation and disaster drills for each shift, at least once at the start of operations, and every 6 months, are available for review?
- ☐ Audible and visual alarm and emergency lighting for evacuation is installed?
- ☐ Two means of communication with the underground are available and are tested weekly?
- ☐ Class I liquids are not underground or within 100' of a tunnel or shaft opening?
- ☐ Class II and III liquids are in approved closed containers and are limited to that necessary for one work shift?
- ☐ Metal containers with self-closing lids are used to store combustible waste and trash and is taken to the surface daily?
- ☐ Air-sampling logs showing tests before and after each shift are available for review?

Notes:

Model Fire Safety Plan

A fire safety plan is not one size fits all. Use this template for the future and fire protection planning between building owners, contractors and members of the fire service.

Model Fire Safety Plan

According to 2020 NFPA Research Report, between 2013 and 2017, each year, fire departments in the US responded, to an estimated 3,840 fires in structures under construction. With annual “4 civilian deaths, 49 civilian injuries, and \$304 million in direct property damage.” The report identifies the leading cause of fires in structures under construction between 2013 and 2017 were to be; cooking equipment (22%), intentionally-set fires (11%) and heating equipment with 15%, followed by hot work at 7%.

During construction, a building is at its most vulnerable state. Buildings under construction or renovation may have any of these conditions that supports fire development and spread:

- Combustible material and waste material are present in significant amounts
- Buildings under construction are generally unprotected. Fire protection systems, detection systems, and compartmentation is unavailable or incomplete.
- Hot work; such as, welding, cutting, soldering, brazing, and grinding are performed
- Fire apparatus access and fire protection water supply may be limited or hampered due to conditions present at the construction site.
- Use of temporary heating and cooking devices.

This requirement is intended to prescribe minimum safeguards for new building construction and significant building alteration projects in order to provide a reasonable degree of safety to life and property from fire. The requirement is based on the provisions for fire safety during building construction and demolition as set forth in Chapter 33 of the International Fire Code (IFC) or Chapter 16 of NFPA 1; and 2019 edition of Standard 241 of the National Fire Protection Association (NFPA 241), Standard for Safeguarding Construction, Alteration, and Demolition Operations. This requirement shall not be construed to be in lieu of any other applicable State or Federal law or regulation related to construction site safety. The general contractor or other designee of the building owner shall be responsible for compliance with these standards. When the term “shall” is used in this document, it means a mandatory requirement.

A written Fire Protection Program (FPP) complying with Chapter 33 of the International Fire Code (IFC) or Chapter 16 of NFPA 1 and NFPA 241 shall be developed for building projects that exceed *5,000 sqft. and exceeds one stories. The FPP shall be developed prior to proceeding past foundation work for new buildings or commencement of demolition work in alteration projects. A hard copy of the FPP shall be available on site for Fire Department and Building and Safety review. Projects of any size may require a Fire Protection Program (FPP) when determined by the Fire Department when:

- construction is located creating the potential for construction fire exposure of adjacent occupied structures
- a feature such as a court yard, alley way or other feature limits fire department access creating the potential for a construction fire to burn around a fire wall
- the project is in or adjacent to a wild land urban (WUI) area
- it is determined other site or project specific conditions would exacerbate a fire suppression operation
- project fire protection requires on-site water storage or pumping facilities
- where required in the discretion of the fire official

A. Fire Protection Program

FPP shall be consistent with the fire safety precautions as specified in this Bulletin, **IFC or NFPA 1** and its referenced standards. The general contractor or other designee of the building owner is responsible for carrying out the provisions of the Fire Protection Plan and communicating it to all subcontractors. The Fire Protection Program shall include the following:

1. Procedures for reporting emergencies to the Fire department.
2. Procedures for emergency notification, evacuation and/or relocation of all persons in the building under construction and on the site.
3. Procedures for hot work operations, management of hazardous materials and removal of combustible debris and maintenance of emergency access roads.
4. Floor plans identifying the locations of exits, exit stairs, exit routes and portable fire extinguishers.
5. Site plans identifying the designated exterior assembly areas for each evacuation route.
6. Site plans identifying required fire apparatus access roadways and on-site fire hydrants.
7. The name and contact phone number of the person(s) responsible for compliance with the Fire Protection Program.

B. Access and Parking

1. **Fire Department Access Roadways:** All construction sites shall be accessible by fire department apparatus by means of roadways having an all-weather driving surface of not less than 20 feet of unobstructed width. The roads shall have the ability to withstand the live loads of fire apparatus, and have a minimum 13½ feet (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.

When approved by the Fire Official, temporary access roadways may be utilized until such time as permanent roadways are installed. As 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 95%. The perimeter edges of the roadway shall be contained and delineated by curb and gutter or other approved method. The use of geotextile reinforcing fabric underlayment or soils lime-treatment may be required if so determined by the project civil engineer. Provisions for surface drainage shall also be provided where necessary. The integrity of the roadway shall be maintained at all times.

2. **Premises Identification:** The address numbers of the property or project location shall be plainly visible and legible from the street or road fronting the property at the fire apparatus access point or as otherwise approved.
3. **Vehicle Parking:** All vehicles shall be parked a minimum of 20 feet from new buildings under construction.

Exceptions: a.) Vehicles that are temporarily parked for loading/unloading or other construction related operations. Such vehicles shall not be left unattended. b.) Private vehicles may be parked in parking garages of Type I construction if the automatic fire sprinkler system is in service and vertical openings are protected.

4. **Site Security:** The site shall be secured by fencing designed to prevent climbing and monitored periodically so that the site is secure. A fire watch shall be provided during nonworking hours for construction that exceeds 40 feet in height above the lowest adjacent grade or when otherwise required as a element of the FPP.

C. Fire Protection Systems

1. **Fire Hydrants:** Where underground water mains and hydrants are required for the building(s) under construction, they shall be installed, completed, and in service prior to combustible construction materials accumulating on site.
2. **Standpipes:** Where standpipes are required, the standpipes shall be installed when the progress of construction is not more than 35 feet in height above the lowest level of the fire department access. Standpipes shall be provided with fire department hose connections and outlets at accessible locations adjacent to usable stairs. The standpipe system shall be extended as construction progresses to within one floor of the highest point of construction having secured decking or flooring. Each floor shall be provided with a 2½-inch valve outlet for fire department use. Where construction height requires installation of a Class III standpipe, fire pumps and water main connections shall be provided to serve the standpipe.
3. **Fire Walls:** When fire walls are required, the wall construction shall be completed (with all openings protected) immediately following framing so no more than two upper stories of active construction have incomplete fire walls or unprotected fire wall openings at any point in time.
4. **Fire Sprinkler Systems:** Where automatic fire sprinkler systems are required to be installed in new buildings, the system shall be placed in service as soon possible. Immediately upon the completion of sprinkler pipe installation on each floor level, the piping shall be hydrostatically tested and inspected. After inspection approval, each floor level of sprinkler piping shall be connected to the system supply riser and placed into service with all sprinkler heads uncovered. Protective caps may be installed on the active sprinklers during the installation of drywall, texturing and painting, but shall be removed immediately after this work is completed. For system activation notification, an exterior alarm bell can be installed and connected to the sprinkler water flow device prior to installation of the monitoring system. For buildings equipped with fire sprinkler systems that are undergoing alterations, the sprinkler system(s) shall remain in service at all times except when system modifications are necessary. Fire sprinkler systems undergoing modifications shall be returned to service at the end of each workday unless otherwise approved by the fire department. The General contractor or his/her designee shall check the sprinkler control valve(s) at the end of each work day to confirm that the system has been restored to service
5. **Fire Alarm Systems:** Fire alarm systems shall be maintained operational at all times during building alterations. When an alteration requires modification to a portion of the fire alarm system, the portion of the system requiring work shall be isolated and the remainder of the system shall be kept in service whenever practical. When it is necessary to shut down an entire fire alarm system, a fire watch or other mitigation approved by the fire department shall be implemented by the general contractor until the system is returned to full service.

6. **Fire Extinguishers:** Portable fire extinguishers shall be provided and shall be mounted on a wall or post at each usable stairway and such that the travel distance to any extinguisher does not exceed 75 feet. Mounting height to the top of the extinguisher shall not exceed 4 feet. Extinguishers shall not have less than a 2A10BC rating or as otherwise directed by the fire department. The general contractor shall ensure that an adequate number of individuals are trained in the proper use of portable fire extinguishers.
7. **Smoking:** Smoking is prohibited anywhere inside or on the roof of new buildings under construction or in the project work area of buildings undergoing alteration. A suitable number of 'No Smoking' signs shall be posted to ensure that smoking is controlled.
8. **Telephone Service:** Provisions shall be provided at the construction site for emergency notification of the fire department via telephone. The street address of the construction site shall be posted adjacent to the telephone, along with the number for the public safety answering point.

D. Exit Requirements

1. **Minimum Number of Exits:** All new buildings under construction shall have a least one unobstructed exit. All exits shall be identified in the Fire Protection Program.
2. **Multi-Story Buildings:** Each level above the first story in new multi-story buildings shall be provided with at least two usable exit stairs after the floor decking is installed. The stairways shall be continuous and discharge to grade level. Stairways serving more than two floor levels shall be enclosed (with openings adequately protected) after exterior walls/windows are in place. Exit stairs in new and in existing, occupied buildings shall be lighted and maintained clear of debris and construction materials at all times.

Exception: For new multi-story buildings, one of the required exit stairs may be obstructed on not more than two contiguous floor levels for the purposes of stairway construction (i.e., installation of gypsum board, painting, flooring, etc.).

3. **Assembly Points:** Designated exterior assembly points shall be established for all construction personnel to relocate to upon evacuation. The assembly points shall also be identified in the Fire Protection Program.

E. Flammable and Combustible Liquids

1. **Storage Areas:** The following requirements shall apply to storage areas for flammable and combustible liquids:
 - a. Storage areas shall be kept free of weeds and extraneous combustible material.
 - b. Open flames and smoking shall be prohibited in storage areas.
2. **Containers:** Metal containers for Class I or II liquids shall be in accordance with DOT requirements or shall be of an approved design. Discharge devices shall not cause an internal pressure on the container. Individual containers shall not be interconnected and shall be kept closed when not in use.

3. **Secondary Containment:** Secondary containment or a means of spill control, drainage control, and diking shall be required for containers and tanks as approved by the fire department and, if applicable, local hazardous materials program agency.
4. **Marking:** Tanks and containers shall be marked with the name of the product and "FLAMMABLE — KEEP FIRE AND FLAME AWAY." Tanks (i.e., containers in excess of 60 gallons) shall also be labeled "KEEP 50 FEET FROM BUILDINGS."
5. **Fueling of Equipment:** All fueling of equipment must take place outside of the structure under construction and away from any potential ignition sources.
6. **Tank Installation Plans/Permit:** Plans for the installation/use of any aboveground storage tank (i.e., container greater than 60 gallons) shall be submitted to the fire department and, if applicable, local hazardous materials program agency for review and permit prior to the proposed tank arriving at the site.

F. Other Combustible Materials

1. **Combustible Material Storage:** Combustible construction materials shall be stored a minimum of 20 feet from buildings under construction or undergoing remodel.

Exceptions: a.) Materials that are staged for installation on a floor level. b.) When approved by the Fire Department, materials may be stored in parking garages of Type I construction if the automatic fire sprinkler system is in service and vertical openings are protected.

2. **Garbage Chutes and Dumpsters:** All combustible garbage chutes must have an automatic sprinkler head recessed into the top of the chute and supplied by a temporary water supply. The supply must be a commercial rubber hose a minimum of ¾" diameter. Dumpsters must be removed from the site as soon as filled to prevent debris from clogging the chute. Dumpsters, not associated with a garbage chute, must be a minimum of 20' away from the structure under construction where practicable.
3. **Combustible Debris:** Wood, cardboard, packing material, form lumber, and similar combustible debris shall not be accumulated within buildings. Such debris, rubbish, and waste material shall be removed from buildings on a daily basis.
4. **Oily Rags:** Oily rags and similar material shall be stored in metal or other approved containers equipped with tight-fitting covers.

G. Compressed Gases

1. **Protection of Gas Containers:** Gas containers/cylinders shall be protected as follows:
 - a. Combustible materials shall be kept a minimum of 10 feet from gas containers.
 - b. Cylinders shall be protected against physical damage.
 - c. Cylinders shall be stored upright and secured to prevent falling.

- d. Cylinders shall not be placed near elevators, unprotected platform edges or other areas where they would drop more than 2 feet.
 - e. Cylinders shall not be placed in areas where they may be damaged by falling objects.
 - f. When cylinders are not in use, valve protective caps shall be in place.
 - g. Ropes, chains or slings shall not be used to suspend gas cylinders, unless the cylinder was manufactured with appropriate lifting attachments.
- 2. **Separation:** When stored, gas cylinders shall be separated from each other based on their hazard classes.
 - 3. **Marking:** Gas cylinders shall be marked with the name of the contents.

H. Liquefied Petroleum Gas (LP-Gas)

- 1. **Use in Buildings:** Propane containers may be used in buildings under construction or undergoing major renovation as a fuel source for temporary heating for curing concrete, drying plaster and similar applications in accordance with the following:
 - a. Heating elements (other than integral heater-container units) shall be located at least 6 feet from any LP- Gas container.
 - b. Integral heater-container units specifically designed for the attachment of the heater to the container, or to a supporting standard attached to the container, may be used provided they are designed and installed so as to prevent direct or radiant heat application to the LP-Gas container.
 - c. Blower and radiant type units shall not be directed toward any LP-Gas container within 20 feet.
 - d. Heat producing equipment shall be installed with clearance to the combustibles in accordance with the manufacturer's installation instructions.
 - e. Cylinders shall comply with DOT cylinder specifications and shall be secured in an upright position.
 - f. Regulators shall be approved for use with LP-Gas. Fittings shall be designed for at least 250 p.s.i.g. service pressure.
 - g. Hose shall be designed for a working pressure of at least 350 p.s.i.g. (unless limited to 5 p.s.i.g.) and shall be a maximum of 6 feet in length.
 - h. Portable heaters shall be equipped with an approved automatic device to shut off the flow of gas to the main burner and to the pilot in the event of flame extinguishment or combustion failure. Portable heaters with an input of more than 50,000 Btu/hr shall be equipped with either a pilot that must be proved before the main burner can be turned on or an approved electronic ignition system.
- 2. **Occupied Buildings:** In addition to the above, for LPG storage/use in buildings undergoing alteration and that are fully or partially occupied, the following shall also apply:
 - a. Specific approval must be obtained from the fire department prior to bringing LP-Gas containers on-site.
 - b. The maximum water capacity of individual containers shall be 5-gallon water capacity and the number of containers in the building shall not exceed the number of workers assigned to using the LP-Gas.
 - c. Containers having a water capacity greater than 2½ pounds (1 quart) shall not be left unattended.

I. 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 requirements, including a pre-site inspection, fire watch and post inspection procedures.

1. **Pre-Site Inspection:** An inspection of the hot work site shall be conducted by the General Contractor or his/her designee prior to hot work operations to ensure that:
 - a. The hot work site is clear of combustibles or that combustibles are protected;
 - b. Exposed construction is of noncombustible materials or that combustible materials are protected;
 - c. Openings are protected;
 - d. There are no exposed combustibles on the opposite side of partitions, walls, ceilings, floors, etc.;
 - e. Fire extinguishers are available, fully charged and operable; and
 - f. Fire watch personnel are assigned, equipped and trained.
2. **Fire Watch:** The sole duty of fire watch personnel shall be to watch for the occurrence of fire during and after hot work operations. Individuals designated to fire watch duty shall have fire extinguishing equipment readily available and shall be trained in the use of such equipment. Personnel assigned to fire watch shall be responsible for extinguishing spot fires and communicating an alarm. Hot work conducted in areas with vertical and horizontal fire exposures that cannot be observed by a single individual shall have additional personnel assigned to fire watches to ensure that all exposed areas are monitored.
3. **Post-Work Inspection:** The fire watch shall be maintained a minimum of 30 minutes after the conclusion of the work to look out for leftover sparks, slag or smoldering combustibles.
4. On red flag declared fire days (due to temperature, humidity and/or wind conditions), hot work operations shall be curtailed and the fire watch shall be extended through the night.

J. Special Equipment

1. **Motorized Equipment:** Motorized equipment, including internal-combustion-powered construction equipment, shall be used in accordance with the following;
 - a. Fuel for equipment shall be stored in an approved area outside of the building.
 - b. Equipment shall not be refueled while in operation.
 - c. Equipment shall be located so that exhausts do not discharge against combustible materials.
 - d. When possible, exhausts should be piped to the outside of the building.
2. **Temporary Heating Equipment:** Temporary heaters, such as those that are LPG fueled, shall be listed and shall be installed, used, and maintained in accordance with the manufacturer's instructions (See LPG storage and use requirements, above). Heating devices shall be secured properly and kept clear from combustible materials. Refueling operations shall be conducted in an

approved manner.

3. **Asphalt and Tar Kettles:** Asphalt kettles shall not be located within 20 feet of any combustible material, combustible building surface or building opening. With the exception of thermostatically controlled kettles, 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 attendance and the kettle. Kettles shall be equipped with tight-fitting covers. A minimum 20-B:C rated portable fire extinguisher shall be located within 30 feet of each asphalt kettle when the heat source is operating. Minimum 20-B:C rated portable fire extinguishers also shall be located on roofs during asphalt coating operations.

Hot Work Checklist

A self-audit checklist when performing hot work (welding and cutting) operations.

HOT WORK SELF-AUDIT

Address: _____ Room: _____ Date: _____

Supervisor: _____ Audit Performed by: _____

| General Welding/ Cutting | Y | N | N/A | COMMENTS |
|-------------------------------------------------------------------------------|---|---|-----|----------|
| 1. Welding/ cutting restricted to authorized employees | | | | |
| 2. Fire permit Obtained | | | | |
| 3. Hot work performed in shop area, if possible | | | | |
| 4. Combustible material at least 35' from worksite | | | | |
| 5. Floor/ wall openings covered min. 35' from worksite | | | | |
| 6. Policy for preventing hot work in explosive or toxic environments in place | | | | |
| 7. Fire resistant blankets/ shields provided | | | | |
| 8. Personal protective equipment in use | | | | |
| 9. Local or general exhaust ventilation adequately used | | | | |
| 10. Appropriate fire extinguisher in vicinity of the hot work | | | | |
| 11. Building sprinkler system is operation (when applicable) | | | | |
| 12. Fire watch procedures in place | | | | |
| 13. Hot work permit system is being used | | | | |

General Welding and Cutting Controls

1. Welding and cutting operations should be restricted to workers who have been properly trained.
2. Fire code permits are required for all welding and cutting operations. Permits are obtained from the local fire official.
3. Whenever possible, hot work should be performed in a properly designed shop area equipped with all necessary controls and adequate ventilation.
4. Combustible materials, such as building construction materials or other building contents, must be located at least 35 feet from the hot work area or properly protected to prevent hot sparks from contacting them. Floors within this area must also be swept clean of all combustible materials.
5. All openings in floors and wall within 35 feet of the hot work area must be covered to prevent hot sparks from entering walls or falling beneath floors or to a lower level.
6. Hot work should not be conducted in the presence of explosive mixtures of flammable gases, vapors, liquids, or dusts or where explosive mixtures could develop inside improperly prepared tanks or equipment. Atmospheric testing and monitoring for combustible gases and vapors should be conducted before work

begins and at predetermined intervals thereafter.

7. Fire resistant curtains and tinted shields should be used to prevent fire, employee burns, and ultra-violet light exposure.
8. Personal protective equipment specifically designed for hot work should be provided to and used by workers. Potential for material being worked on or surface coatings to emit toxic fumes should be considered.
9. A fire extinguisher rated at not less than 2-A:20-B:C must be available in shop areas where hot work is performed. A fire extinguisher rated at not less than 2-A:10-B:C must be attached to all portable welding carts.
10. The building's sprinkler system, if so equipped, must be operational before hot work can begin.
11. A person other than the operator should perform fire watch duties and should remain at the worksite for at least 30 minutes after hot work operations have ended.
12. A written hot work permit can serve as a checklist for operators and helps minimize the risk of fire from such activities.

| Hot Work in Confined Spaces | Y | N | N/A | COMMENTS |
|----------------------------------------------------------------------------------------------|---|---|-----|----------|
| 1. Confined space rescue procedures in place | | | | |
| 2. Ventilation & respiratory protection provided | | | | |
| 3. Welding equipment stored outside of space | | | | |
| 4. Electrodes removed from holders and/or gas supply shut off while operations are suspended | | | | |
| 5. Hot work permit issued | | | | |
| Compressed Gas Cylinders | Y | N | N/A | COMMENTS |
| 1. Oxygen and fuel gas cylinders stored separately w/ caps in place | | | | |
| 2. Regulators compatible w/ cylinders | | | | |
| 3. Cylinders carts used for transport | | | | |
| 4. Cylinders secured against tipping | | | | |
| 5. Empty cylinders returned to supplier | | | | |
| Training | Y | N | N/A | COMMENTS |
| 1. Workers trained in safe hot work procedures | | | | |
| 2. Personal protective gear provided | | | | |
| 3. Confined space entry training provided | | | | |

1. When working in poorly ventilated spaces, exposure to air contaminants generated by welding or cutting must be controlled by ventilation, respiratory protection, or a combination of the two.
2. Gas cylinders and welding machines must be left outside the space when work is performed in spaces such as boilers, tanks, or pressure vessels. Heavy portable equipment mounted on wheels must be securely blocked to prevent movement.

3. A substantial period of time can be defined as lunch breaks or longer.
4. written hot work permit should be used for all hot work operations.

Compressed Gas Cylinders

1. Except when in use, oxygen and fuel gas cylinders must be stored separately, at least 20 feet apart or separated by a noncombustible wall at least 5 feet high.
2. Many regulators are similar in design and construction. Ensure that regulators are designed for the cylinder used by checking the manufacturer's model number and comparing that with the gas supplier's requirements.
3. Cylinders should always be secured in an upright position. Information is available through EHS on methods for securing cylinders.

Training

1. Workers should be trained in proper equipment operation, handling and storage of welding materials, compressed gas safety, chemical hazards, and in working procedures including the written hot work permit.
2. Workers must receive training on personal protective equipment selection and use. Documentation of the training must be maintained.
3. Workers must receive training before working in confined spaces.

Fire Watch Policy

This document is a model fire watch policy, for the purpose of identifying and controlling fire hazards, detecting early signs of unwanted fire, raising an alarm of fire and notifying the fire department.

Model Fire Watch Policy

Purpose: To provide Fire Watch requirements for an owner or responsible party when a Fire Watch is deemed to be necessary.

What is a Fire Watch?

A temporary measure intended to ensure continuous and systematic surveillance of a building or a portion thereof by one or more qualified individuals for the purpose of identifying and controlling fire hazards, detecting early signs of unwanted fire, raising an alarm of fire and notifying the fire department.

Requirements: The individual assigned as Fire Watch shall conduct periodic patrols of the entire facility. They shall be knowledgeable of the Fire Plan for the site. Patrol of the facility should provide an opportunity to observe all areas within a 15-minute travel time. Fire Watch's shall be responsible for observing the perimeter for any security violations.

Duties Fire Watch Personnel Shall:

- Have access to one approved means of communication with emergency responders.
- Know the exact address of the property, how to report a fire or other emergency by calling 911.
- Know the proper procedure for interfacing with responding fire companies and law enforcement.
- Be familiar with the buildings and the property and have an approved written plan for patrolling the property
- Be informed of all Hot Work conducted on-site, special emphasis should be placed on these locations
 - **Checking on areas affected by any fire system outage, to include storage areas, hazardous areas, resident rooms, employee work areas, break rooms and exit corridors.**
- Be properly trained in fire behavior and fire causes, and the use of fire extinguishers and shall have access to all facility fire extinguishers and know their locations
- Keep a log of all Fire Watch related activities. The log shall include; address of the facility, time out and time in of each patrol, name of the Fire Watch designee and notes regarding other related activities observed.
- **NOT** be permitted, while on duty, to perform any other duties.
- **NOT** be impaired and shall remain awake and alert always.

Property Address: _____

Designated Fire Watch Name: _____ Signature: _____

Date Issued: _____

Note: If in the opinion of the Fire & Life Safety Manager, the life safety hazard is too great, the Fire & Life Safety Manager may require a licensed/bonded security company be utilized in lieu of staff members. For a copy of the City of Canton Fire Watch Log, go to: <https://www.cantonga.gov/home/showpublisheddocument/30/637551337199800000>

Standards for Construction Site Fire Policy

This guideline enhances regional consistency in application and enforcement of the Building Code.

January 14 , 2022

Standards for Construction Site Fire Safety

Policy

This guideline is developed by the City of Canton Building & Safety Services and is intended to enhance regional consistency in application and enforcement of the Building Code. Please verify acceptance of this guideline with your local building department prior to its application.

ISSUE(S):

The purpose of this policy is intended to prescribe minimum safeguards for new building construction projects in order to provide a reasonable degree of safety to life and property from fire during construction involving combustible materials. This document shall not be construed to be in lieu of any other applicable State or Federal law or regulation related to construction site safety. The general contractor or other designee of the building owner shall be responsible for compliance with these standards. When the term “shall” is used in this document, it means a mandatory requirement.

PROPOSED GUIDELINE:

A. Fire Protection Plan

A written Fire Protection Plan (**FPP**) shall be developed for significant or complex construction projects at the discretion of the building department. The plan shall be approved by the building department prior to proceeding past foundation work for new buildings. The written plan shall be consistent with the fire safety precautions as specified in this Standard. The general contractor is responsible for carrying out the provisions of the FPP and communicating it to all subcontractors. The FPP shall, as a minimum, include the following:

1. Removal of combustible debris
2. Maintenance of emergency access roads
3. Site plans and Floor plans identifying the locations of the following
 - a) Portable fire extinguishers
 - b) Locations of hose bibs during combustible construction
 - c) Fire hydrants
 - d) Standpipes
 - e) Fire sprinkler systems including temporary shut-off valves (see below)
 - f) Fire walls
 - g) Compartmentalization walls
 - h) Fire water meter locations
 - i) Detailed sprinkler plans during combustible construction

4. Site security plan
5. Name and contact phone number of the person(s) responsible for compliance with the FPP

B. Site Security

1. Controlled access points / site fencing
2. Security guard(s) to perform fire watch patrols after hours
3. Detex (door exit alarm) check points located throughout buildings for fire watch patrol to verify during patrols
4. Security camera coverage during combustible construction. Utilization of portable cameras is recommended
5. Identify measures taken to prevent tampering of powering devices supplying power to security cameras

C. Fire Protection Systems

1. **Fire Hydrants:** Where underground water mains and hydrants are required for the building(s) under construction, they shall be installed, completed, and in service prior to combustible construction materials accumulating on site.
2. **Standpipes:** Where standpipes are required, the standpipes shall be installed when the progress of construction is not more than 35 feet in height above the lowest level of the fire department access. Standpipes shall be provided with fire department hose connections and outlets at accessible locations adjacent to usable stairs. The standpipe system shall be extended as construction progresses to within one floor of the highest point of construction having secured decking or flooring. Each floor shall be provided with a 2½-inch valve outlet for fire department use. Where construction height requires installation of a Class III standpipe, fire pumps and water main connections shall be provided to serve the standpipe.
3. **Fire Extinguishers:** Portable fire extinguishers shall be provided and shall be mounted on a wall or post at each usable stairway and such that the travel distance to any extinguisher does not exceed 75 feet. Mounting height to the top of the extinguisher shall not exceed 5 feet. Extinguishers shall not have less than a 2A10BC rating or as otherwise directed by the fire department. The general contractor shall ensure that an adequate number of individuals are trained in the proper use of portable fire extinguishers.
4. **Fire Walls (Area Separation Walls):** When Fire Walls (area separation walls) are required, the wall construction shall be completed (with all openings protected) immediately after the building is sufficiently weather-protected at the location of the wall(s).
5. **Fire Sprinkler Systems:** Where automatic fire sprinkler systems are required to be installed in new buildings, the system shall be placed in service as soon possible. For buildings of Type I or II non- combustible construction, activation of the fire sprinkler system may be delayed until combustible finishes, furnishings or equipment are installed, and the building or area is not used for combustible storage or any other purpose.

Immediately upon the completion of sprinkler pipe installation on each floor level, the piping shall be hydrostatically tested and inspected. After inspection approval from the Fire department, each floor

level of sprinkler piping shall be connected to the system supply riser and placed into service with all sprinkler heads uncovered. Protective caps may be installed on the active sprinklers during the installation of drywall, texturing and painting, but shall be removed immediately after this work is completed. For system activation notification, an exterior alarm bell can be installed and connected to the sprinkler water flow device prior to installation of the monitoring system.

6. **Fire Sprinkler Systems during construction:** Fire suppression system must be installed and energized during combustible construction for floors below active wood framing level. A centralized shut-off valve maybe installed under the following conditions to prevent accidental release of water during construction activities:

- a) The shut-off valve must be located in a highly secure location.
- b) Access to the shut-off valve is accessible only to site superintendent protected with lock and key.
- c) The shut-off valve must be in an "open" status during non-working hours.
- d) The shut-off valve must be under surveillance 100% of the time via security cameras.

D. **Special Fire Protection Systems – During the Installation of Combustible Framing Members**

1. **Fire Walls:** Fire walls and doors should be installed ASAP during combustible construction activities to assist in compartmentalizing wood framed zones.
2. **Compartmentalization Walls:** Compartmentalization wall construction shall be provided as follows:
 - a) Interior walls shall be completed with approved sheathing into areas not exceeding 2,500 square feet per compartment. Openings are not required to be protected.
 - b) In addition, corridor wall construction shall be completed with approved sheathing in each 5,000 square foot segments of buildings. Openings are not required to be protected.

DI. **Other Combustible Materials**

1. **Combustible Debris:** Wood, cardboard, packing material, form lumber, and similar combustible debris shall not be accumulated within buildings. Such debris, rubbish, and waste material shall be removed from buildings on a daily basis.
2. **Oily Rags:** Oily rags and similar material shall be stored in metal or other approved containers equipped with tight-fitting covers.

The permittee/contractor shall be responsible for all job site access, including ladders if necessary. The permit, inspection record and approved compliance forms shall be readily available to the field inspector.

The inspector may require visual inspection of (or spot check) as many luminaires as necessary to verify compliance.

REFERENCES:

Engineering News-Record Article: <https://www.enr.com/articles/44497-builders-seek-new-defenses-against-jobsite-fires?v=preview>

Code of Safe Practices Acknowledgement

A sample form to have your construction team sign as acknowledgment of receipt and review of your Code of Safe Practices.

Sample Form for acknowledging receipt of Code of Safe Practices (COSP)

If a company has adopted a Code of Safe Practice they should have each employee sign a receipt that they have read and will comply with the code. If you do not already have your own, the following format might be useful.

Acknowledgment of Receipt and Review of (insert company name here) Code of Safe Practices

To all employees:

Attached is a copy of the Code of Safe Practices for our company. These guidelines are provided for your safety. It is the responsibility of: _____

Manager or Supervisor

to provide and review this code with each employee. It is the employee's responsibility to read and comply with this code. Attached copy of the code of safe practices order are for you to keep. Please sign and date below and return this page only to

Name

I have read and I understand the code of safe practices

Date

Employee Print Name

Employee Signature

Outline for Evacuation Planning

This document is a sample fire safety evacuation plan, which should be developed and implemented by the general contractor, or project manager before work starts.

Outline for Evacuation Planning

Background: The general contractor, or project manager should develop and implement a fire safety evacuation plan before work starts. The plan should be in writing and distributed to all workers and sub-trades on the project, including site visitors.

Here are some examples:

- Document and post the name and phone numbers of all personnel responsible for managing the fire safety evacuation plan, including after-hours contact information.
- Post emergency evacuation procedures, including warnings not to use elevators when a fire alarm sounds.
- Post floor plans identifying means of egress, exit stairwells, portable fire extinguishers, fire-hose stations, and the outside assembly area.
- Appoint fire warden(s) to ensure that everyone evacuates work areas when a fire alarm is activated.
- Post contact information for security company that oversees "hot work" requirements as part of the fire code. Ensure that all construction employees are made aware of "hot work" requirements.
- Where other portions of a building remain occupied during construction or renovation, ensure that those other portions have an evacuation plan and that yours aligns with it.
- Include notice and awareness of the evacuation plan in all meetings with project management, worker, foremen, subcontractors, suppliers, and others who may be on site.
- Hold fire drills using the existing alarm system or an alternative such as compress air horns shouts of "fire", etc. Conduct a post-mortem on response, performance, and awareness of personnel.
- When work is to be done on alarm or sprinkler systems, the sections involved must be isolated and the remainder of the system kept in service. When it is necessary to shut down an entire alarm or sprinkler system, implement and enforce a 24-hour fire watch until the system is returned to full service. Post notices to this effect, including the order to call 911 immediately in the event of fire.

Sample of Instructions to Occupants

As an instruction sheet this form can be used to develop a sign that can be posted on construction sites. It can be printed for any guests that are on the property. They can also be used as part of the training program for subcontractors and employees.

| | |
|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| If You Discover a Fire: | Remain calm and leave the fire area is the nearest safe exit. |
| | Do not use elevators. |
| | Immediately activate the nearest means of notifying emergency services that a fire is occurring. |
| | Give them the address of the building. |
| | At your discretion, you might consider attempting to control the fire will available fire extinguishers if you have received training on their use. Do not remain in the fire area any longer than necessary. |
| | Go to the designated assembly area. |
| | Do not go back into the building for any reason |
| | The fire department will advise all personnel when it is safe to return to the structure |
| When you hear a Fire Alarm: | Remain calm and leave the fire area is the nearest safe exit. |
| | Do not use the elevator! |
| | If there any doors that you enclosed behind you when proceeding along corridors or down stairways close them. |
| | When you reach the outside to move away from the building. |
| | Once you have exited the building and are safe report the fire to the emergency number and give them the street address |
| | Do not go back into the building for any reason |
| | Go to the designated assembly area |
| | The fire department will advise when it is safe to return to the building |
| The designated assembly area for this building is:(to be filled in onsite) | |