

FIRE SAFETY PLAN – CONSTRUCTION AND DEMOLITION SITES

PURPOSE

The purpose of this interpretation is to further clarify the content, format and use of the required construction and demolition fire safety plans as per the National Fire Code – 2019 Alberta Edition (NFC(AE)). This clarification was requested during the public review of recommendations for High Intensity Residential Fires (HIRF) that was held in 2007.

DISCUSSION

Safety provisions at construction and demolition sites are established in Division B, **Section 5.6 Construction and Demolition Sites** of the NFC(AE).

Article 5.6.1.3. Fire Safety Plan sets out specific items for inclusion in a mandatory fire safety plan to provide a safe environment for workers and outline emergency procedures at sites where construction, alteration and demolition are occurring. These provisions also ensure that hazard control measures are in place and maintenance of firefighting measures and systems required elsewhere in Section 5.6 occurs.

CODE REFERENCES

Article 5.6.1.3. states

5.6.1.3. Fire Safety Plan

- 1) Except as required in Sentence (2), prior to the commencement of construction, alteration or demolition operations, a fire safety plan, accepted in writing by the fire department and the *authority having jurisdiction*, shall be prepared for the site and shall include
 - a. the designation and organization of site personnel to carry out fire safety duties, including a fire watch service if applicable,
 - b. the emergency procedures to be followed in the event of a fire, including
 - i. initiating a fire warning,
 - ii. notifying the fire department,
 - iii. instructing site personnel on the procedures to be followed once the warning has been initiated, and
 - iv. confining, controlling and extinguishing the fire,
 - c. measures for controlling fire hazards in and around the *building* (see Note A-5.6.1.3.(1)(c)), and
 - d. a maintenance procedure for firefighting measures required in Section 5.6.

Unless stated otherwise, all Code references in this STANDATA are to Division B of the National Fire Code-2019 Alberta Edition

Issue of this STANDATA is authorized by
the Provincial Fire Administrator

[original signed]
Tina Parker

The logo for the province of Alberta, featuring the word "Alberta" in a stylized, cursive font with a small blue square at the end of the word.

- 2) Where construction, alteration or demolition operations occur in an existing *building* that is required to have a fire safety plan conforming to Section 2.8., the fire safety plan shall take into account the changes occurring to the *building*.

A-5.6.1.3.(1)(c) The control of fire hazards in and around buildings being constructed, renovated or demolished includes fire protection for combustible construction materials and combustible refuse on the site. The sizes of piles of materials and refuse and the location of such piles in relation to adjacent buildings are factors that should be taken into consideration in determining which fire protection measures to implement. The selection of fire protection measures for demolition operations will also depend on the demolition procedure being used, the specific conditions existing on the site and the firefighting capabilities of the responding fire department.

It is the intent of this Code that requirements regarding the outdoor storage of materials stated in Section 3.3. be referred to and applied at construction and demolition sites.

APPLICATION

This interpretation applies to all construction and demolition sites.

INTERPRETATION

The NFC(AE) applies to all construction and demolition sites, including single family residential developments. The owner, developer or contractor responsible for a construction or demolition site is required to develop a fire safety plan acceptable to the *authority having jurisdiction* (AHJ), which is the Fire Safety Codes Officer. There is only one fire safety plan for each site and it applies to inspectors, workers, suppliers and contractors on that site. Should circumstances change, the fire safety plan must be modified appropriately and resubmitted to the AHJ for approval.

In addition to covering water supply, access for firefighting and protection of adjacent buildings, the fire safety plan must also specifically address the following:

- a) Assignment of responsibility for fire safety duties to workers,
- b) Emergency procedures to provide fire warning, notify the fire department, evacuate the site and conduct first aid firefighting,
- c) Control of fire hazards on the site, and
- d) Procedures to ensure maintenance of firefighting measures.

A fire safety plan must address, in a manner acceptable to the AHJ, all of the topics applicable to the site covered in each of the prescriptive Articles in Section 5.6 of the NFC(AE). It is highly recommended that the fire safety plan be reviewed by the AHJ (i.e. Fire Safety Codes Officer) prior to the issuance of any Building or Demolition Permit to ensure that the parties responsible for the site and the AHJs (both building and fire) have discussed the project and dealt with any concerns prior to commencement of on-site work.

As projects vary greatly in size, scope, cost and complexity it is unreasonable to expect that one standard template or example will serve as the basis for all fire safety plans. It is reasonable that a template be used for smaller projects, particularly structures that are covered under Part 9 of

the National Building Code – 2019 Alberta Edition (NBC(AE)), which would provide consistent formatting and require minor modification of the plan from site to site. When used consistently on each site within a municipality, a consistent set of expectations, behaviours and activities can be expected on every site.

It is also possible that small and simple projects that do not require building permits may also be exempted from the need for a fire safety plan based upon a risk assessment and at the discretion of the AHJ and the accredited municipality. Such exemptions should be clearly outlined in explanatory materials from the AHJ.

While the topics will be consistent it would be considerably more difficult to develop a standard template for larger and more complex projects, particularly those which are covered under Part 3 of the NBC(AE), although headings, format and organization should be consistent with any templates developed for simpler situations.

As such, with the assistance of Alberta's fire departments the following sample documents are provided as Appendices to this Interpretation. Fire departments are encouraged to review, amend as appropriate and adopt a version of each of these or similar documents and provide them as templates or guidelines for fire safety planning to owners, developers and contractors.

Appendix A – Fire Safety Plan for Small Buildings

Appendix B – Emergency Procedures/Evacuation Plan for Small Buildings

Appendix C – Construction Fire Safety Guidelines

Appendix D – When is a Fire Safety Plan required?

Appendix E – Fire Safety Plan Guidelines for Customized Fire Safety Plans

This information is being provided for the construction industry as an aid in preventing injury and fires in and around construction sites and to address life and property fire safety issues. Note that it is the **sole responsibility of the owner** or representatives of the owner to be aware of all regulations within the jurisdiction and to carry out or make provision to adhere to the various codes and standards applicable to their project or business.

For further information, assistance or to arrange for a site visit contact your local Fire Safety Codes Officer, Fire Department or the AHJ.

Please also refer to the following Standatas:

- 19-FCI-005 Protection of Adjacent Buildings, and
- 19-FCV-018/19-BCV-015 Construction Site Fire Safety Plans

This Interpretation replaces the following:

FCI-09-03, "Fire Safety Plan – Construction and Demolition Sites".

This INTERPRETATION is applicable throughout the province of Alberta.

Appendix A – Sample Fire Safety Plan for Small Buildings

Fire Safety Plan for Construction, Renovation or Demolition (Small Buildings)

THIS PLAN MUST BE POSTED AT EACH JOB SITE AND EMPLOYEES ARE EXPECTED TO BE TRAINED IN HOW TO FOLLOW ITS PROVISIONS

- **No Fire Safety Plan required** - **Under \$5 000.00**
- **Small Buildings Fire Safety Plan** - **Over \$5 000.00**
- **Small Buildings Fire Safety Plan** - **Housing and Small Buildings (ABC Part 9)**
- **Small Buildings Fire Safety Plan** - **Unoccupied building**
- **Small Buildings Fire Safety Plan** - **Buildings under 600m² or 3 stories or less in building height**
- **Customized Fire Safety Plan submitted to the Fire Department for approval for all other projects**

Job # _____ Address: _____

Building Name/Site Name: _____

Description of Project: _____

General Considerations:

- A warning system will be in place at all sites to warn of potential threats, and facilitate evacuation
- Each site will have a muster point where workers can be accounted-for
- A method of notifying the fire department, or other emergency agency shall be available at all times
- Fire extinguishers will be available at all times at every site while workers are present
- Access to fire hydrants and buildings for fire apparatus must be maintained

Hazards Control:

- At the end of each day combustibles will be cleared from the site area, disposed of in bins, or stored in neat piles
- No open-flame devices will be used inside buildings unless a dedicated watch is in place – this includes hot works
- LPG tanks or flammable liquids containers are not allowed within buildings

Emergency Response Numbers:

FIRE/POLICE/AMBULANCE: 9-1-1

Contact Personnel:

Provide a list of names and telephone numbers of person(s) to be contacted during non-operating hours or in emergency situations. Contact (24 hr.)

This plan is designed in conformance with Section 2.8.2 of the National Fire Code – 2019 Alberta Edition, and on signature, becomes an agreement between the building owner/contractor and the Municipality of *Anywhere* Fire Department.

Building Owner/Contractor Signature: _____ Date: _____

Appendix B – Sample Emergency Procedures/Evacuation Plan for Small Buildings

Small Buildings
CONSTRUCTION, DEMOLITION AND/OR RENOVATION SITE
EVACUATION PLAN
Post on construction site

Address: _____

Emergency Contact person/ phone number: _____

Muster Point: _____

FIRE EMERGENCY**Upon Discovery of Fire:**

- Leave fire area immediately
- Close all doors behind you, turn off equipment if safe to do so
- Notify occupants verbally or sound horn or activate fire alarm system
- Call the Fire Department **9-1-1** (from a safe location)
- Use nearest exit, do not use man lifts or elevators
- Try to extinguish a very small fire only
- Go to mustering point, stay there until instructed to do otherwise
- A supervisor must await the arrival of the Fire Department at the main access point

Upon Hearing of a Fire Condition:

- Turn off equipment
- Use nearest exit, do not use man lifts
- Close doors behind you where practical
- Go to mustering point, be accounted for
- Do not leave the mustering point until instructed to do so
- Designates must account for all people expected to be on site

Emergency Numbers**Fire, Rescue, Dangerous Goods, Ambulance, Police: 911****POWER: (xxx)-xxx-xxxx****WATER: (xxx)-xxx-xxxx****GAS: (xxx)-xxx-xxxx**

Appendix C – Sample Construction Fire Safety Guidelines

CONSTRUCTION FIRE SAFETY GUIDELINES

The primary purpose of these guidelines is to protect life and property. These guidelines are aimed mainly at contractors managing smaller work sites.

Most issues at construction sites can be dealt with using simple precautions.

- Street address of the site is to be posted and **clearly visible at all times** for all emergency response personnel including police, fire and ambulance. Address numbers should be affixed in a visible location at a level of about 2 m from the ground, or taped to the inside of a front facing window.
- Smoking shall not be permitted in areas where conditions are hazardous or potential of ignition exists.
- Fire Department Access is to be maintained at ALL times from start to completion of construction. Blocking or obstruction of access roads or hydrants with construction materials, equipment or excavation materials is not permitted.
- Construction Heaters shall be connected so as to minimize danger of mechanical damage and upset and be installed on a solid level base. Temporary heaters must be placed at least 5 m from combustible tarpaulins or similar coverings. Tarps must be securely fastened to prevent wind from blowing where they could upset the heater or be set on fire. Piping, tubing, hose and fittings shall be supported, secured and protected from damage and strain. Propane regulators shall be properly fastened within the protective cover.
- Outdoor Refuse Containers shall be kept at least 3 metres from a combustible building and any building overhang or opening. Combustible waste materials in and around buildings shall not be permitted to accumulate in quantities or locations that will constitute a fire hazard. Burning of waste material at construction sites is **NOT PERMITTED.**
- Hot works shall be performed only by personnel trained in the safe use of hot work equipment. A fire watch shall be provided for a period of not less than 60 minutes after its completion. At least one 4-A:40-B:C portable extinguisher and a pail of water shall be provided in the hot work area.
- If fire breaks out the alarm should be raised as soon as the person discovers it and should be heard by everyone working on the site. **Immediately Dial 911. Provide the operator with a street address and a description of the emergency.**

For further information, please call:

Appendix D – When is a Fire Safety Plan required?

Fire Safety Plan - Construction, Renovation and Demolition Sites

A fire safety plan establishes minimum requirements that will provide a reasonable degree of life safety from fire and similar emergencies. Plans must comply with the National Building Code – 2019 Alberta Edition, National Fire Code – 2019 Alberta Edition, and other applicable laws and regulations.

WHEN DO I NEED A FIRE SAFETY PLAN?

1) No Fire Safety Plan - Projects Under \$5 000.00

Examples

- Building a utility shed under 10 m² (108 ft²)
- Re-shingle of a roof, provided there is no structural work
- Installing eaves troughs
- Reinstall/replace kitchen or bathroom cupboards without plumbing, gas or electrical work
- Erecting a fence

2) Small Buildings Fire Safety Plan

Use the ready made template for small buildings – submit 2 copies (one for client, one for fire department)

- Projects Over \$5 000.00
- Housing and Small buildings (ABC Part 9)
- Unoccupied building
- Buildings under 600 m²
- Structures 3 storeys or less in building height

3) Customized Fire Safety Plan

Use the fire safety plan guidelines (Appendix E) to develop fire safety plan. Submit to fire department for approval

- All Demolition projects
- All buildings that are occupied during construction or renovation
- Buildings over 600m²
- 4 storeys or more in building height

WHAT HAPPENS IF I DO NOT PROVIDE A FIRE SAFETY PLAN?

It is unlawful to start construction, renovation and demolition without a fire safety plan. If you begin without a plan in place, you may be ordered to stop work, ordered to remove work already done, or prosecuted.

WHAT DOES THE SAFETY CODES OFFICER - FIRE / FIRE PREVENTION OFFICER DO?

A Safety Codes Officer – Fire/Fire Prevention Officer reviews projects during key stages of construction to ensure the work site is safe and complies with the Fire Code. The inspector may visit a site several times depending on the project.

Appendix E – Fire Safety Plan Guidelines for Customized Fire Safety Plans

Fire Safety Plan Guidelines for Construction, Renovation and Demolition Sites

- National Fire Code – 2019 Alberta Edition Section 5.6. This Section applies to *buildings*, parts of *buildings*, and associated areas undergoing construction or demolition operations including renovations.
- National Fire Code – 2019 Alberta Edition, Division B, Sentence 5.6.1.2.(1) Prior to the commencement of construction or demolition operations, a fire safety plan shall be prepared for the site.

The fire safety plan will be **site specific** and may be reviewed at any time by the *authority having jurisdiction*. (Fire Department and/or Fire Safety Codes Officer). The fire safety plan should be reviewed and updated as the construction site progresses. The contractor, as a representative of the owner, is responsible for the fire safety plan until occupancy.

A fire safety plan should include, but is not limited to the following information.

1. Emergency Procedures to be used in THE EVENT OF AN EMERGENCY

- Sounding of the fire alarm (horn). Who is the designate and backup person?
- Notify the fire department (911). Who is the designate and back up person?
- Instruction for site personnel to follow when an alarm is sounded
- Are exit routes clearly identified within the site or from floors.
- Designated gathering location, off site
- List of personnel on site, updated and current - you should know who is on site
- Person assigned to meet the fire department and give information
 - Where is the fire or injury located on site?
 - Is everybody on site accounted for?
- Assigned site fire warden(s), various trades represented
- Directions and training on confining or controlling the fire

2. Training of site personnel on evacuation procedures including:

- Site orientation
- Regular site fire safety meetings incorporated into regular safety meetings
- Simulated fire drills as applicable and warranted

3. Assigned site personnel are responsible to implement and maintain fire safety duties such as:

- Control of combustibles on the site and around the buildings
- General site house keeping
- Removal of excess garbage material on a regular basis
- Maintain separation of combustibles from open flame devices
- Maintain clear unobstructed access for fire department apparatus to structure and hydrants
- Maintaining and operation of at least one exit from every floor
- Separation of access routes from materials stored on site, combustibles, etc.
- Parking of vehicles or delivery trucks, directed so as not to obstruct fire department access to the site and buildings. (offsite parking and storage may be considered)

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4. **Fire Fighting Services** – hydrant, siamese, sprinkler, temporary access route
 - Installed, tested and activated at the start of construction
 - Maintained and accessible for fire fighters
 - Access to the building – listing primary and secondary access points
 - Firefighting services (standpipes, hydrants) are in place, are they accessible
 - Provide drawings showing location of firefighting systems, as they are operational.
 - The site properly addressed and the sign visible and legible to emergency crews

 5. **Fire Extinguishers:**
 - Sufficient numbers on site
 - Up to date, serviced within the last year
 - At or near gas or propane fuel operated equipment
 - Mounted, with proper signage, at exit locations or required travel distance on site
 - Adjacent to any hot works operations – cutting torch, welding or torching

 6. **Hot works operations:**
 - The area shall be clear of flammable and combustible materials
 - Fire watch assigned during hot works operation and for a period of 60 minutes after its completion
 - A final inspection of the hot works area 4 hours after completion or after completion of the fire watch required above, in which case a more comprehensive inspection shall be conducted as per the National Fire Code – 2019 Alberta Edition.
 - Are the hot works in the proximity of combustible or flammable materials? Have provisions been made for protection of such materials by noncombustible materials, thermal barrier or other means?
 - Work being performed by trained or certified personal
 - Are fire extinguishers present at all times?
 - Proper ventilation, as required
 - Are there hot tar pots on site c/w extinguishers, trained personnel, and located away from combustible materials?

 7. **Flammable and Combustible Storage**
 - Storage area separated from combustible material by 3m
 - Storage area locked and vented
 - Storage area protected from vehicular/ industrial motorized traffic
 - Portable pressurized (new or used) cylinders secured when not in use
 - Area have proper signage or placard in place
 - A current or updated list of dangerous goods on site
 - A portable extinguisher in close proximity to storage and work areas
 - Storage area away from egress and access routes to the site

 8. **Security**
 - Is there 24-hour security on site, by locked gate, video, alarm system, nightly rounds, or on-site provisions?

 9. **Contact Personnel**
 - Is there a list of names, addresses, and telephone numbers of persons to be contacted during non-operating hours or in emergency situations?
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