

Fire Hazard Identification Checklist¹

Date: _____

(Component of a BC Fire Code (BCFC) compliance inspection)

BUILDING INFORMATION

Company name:		Building Name:	
Address:	Street # and name	City/Province	Postal Code

Instructions: Place a '✓' for 'Yes', an 'X' for 'No', or "N/A" for 'Not Applicable' to each statement.
Relevant information can be recorded in the Inspection Notes section on last page.

Fire Hazard: Any situation, process, material or condition that, on the basis of applicable data, can cause a fire, deflagration, or explosion, or that can provide a ready fuel supply to augment the spread or intensity of a fire, deflagration, or explosion, all of which pose a threat to life or property. See page 6 for further information.

Workplace Hazardous Materials Information System (WHMIS) is a requirement of the Occupational Health and Safety Regulation. Every workplace is required to maintain a copy of a current (i.e., less than three years old) Material Safety Data Sheet (MSDS) for every controlled product on the property. MSDSs include information on reactivity data and fire/explosion hazard data. A site visit can identify all the controlled products and their MSDS then reviewed for fire/explosion hazard information to assist complete the checklist below.

1. Potential Fuel Source (Note: not an exhaustive list):

<input type="checkbox"/>	a. Aerosols are used or significant quantities stored on site. (If applicable, refer to the provisions in the BCFC, Division B, Part 3, Indoor and Outdoor Storage, for applicable requirements.)
<input type="checkbox"/>	b. Compressed gases are used or stored on site. (If applicable, refer to the provisions in the BCFC, Division B, Part 3, Indoor and Outdoor Storage, for applicable requirements.)
<input type="checkbox"/>	c. Flammable or combustible liquids are handled, stored or used on site. (If applicable, refer to the provisions in the BCFC, Division B, Part 3, Indoor and Outdoor Storage, and Part 4, Flammable and Combustible Liquids (bulk), for applicable requirements.)
<input type="checkbox"/>	d. Oxidizing, reactive, explosive, or radioactive substances are stored or used on site. (If applicable, refer to the provisions in the BCFC, Division B, Part 3, Indoor and Outdoor Storage, for applicable requirements.)
<input type="checkbox"/>	e. Combustible materials are stored or used on site. (Note: not an exhaustive list) <ul style="list-style-type: none">• Plastics, any type• Rubber, including tires – whole or shredded

¹ Can be used in conjunction with one or both of the following:
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	<ul style="list-style-type: none"> • Wood products – chemically treated or not • Paper, cardboard • Liquid/solid chemicals, organic oils/ solvents/grease • Linen and other fabrics for manufacture of clothing and home furnishings • Other
<input type="checkbox"/>	f. Combustible dusts, combustible fibres or combustible metals are present or produced on site. (If applicable, refer to the provisions in the BCFC, Division B, Part 3, Indoor and Outdoor Storage, and Part 5, Hazardous Processes and Operations, for applicable requirements.)
<input type="checkbox"/>	g. Substances are present that would be prone to spontaneous combustion. (Table A.10 of NFPA FPH 2008, "Fire Protection Handbook," provides a list of materials that are susceptible to spontaneous heating and ignition.)
<input type="checkbox"/>	h. Products or materials are stored or warehoused on site. (If applicable, refer to the provisions in the BCFC, Division B, Part 3, Indoor and Outdoor Storage, for applicable requirements.)
<input type="checkbox"/>	i. There is bulk storage of flammable and/or combustible liquids. (If applicable, refer to the provisions in the BCFC, Division B, Part 4, Flammable and Combustible Liquids, for applicable requirements.)
<input type="checkbox"/>	j. Industrial trucks and lift equipment are used on site, including lift trucks or forklifts, clamp trucks, tractors, sweepers and motorized hand trucks or automatic guided vehicles. (If applicable, refer to the provisions in the BCFC, Division B, Subsection 3.1.3, Industrial Trucks, for applicable requirements.)
<input type="checkbox"/>	k. Battery-charging operations for industrial truck and lift equipment are conducted on site. (If applicable, refer to the provisions in the BCFC, Division B, Subsection 2.4.1, Combustible Material, for applicable requirements.)
<input type="checkbox"/>	l. There are refueling operations taking place on site (vehicles or machinery). (If applicable, refer to the provisions in the BCFC, Division B, Section 4.6, Fuel Dispensing Stations, for applicable requirements.)
<input type="checkbox"/>	m. Other (please identify)

2. Potential Ignition Sources (Note: not an exhaustive list):

(Applicable requirements for Ignition Sources near fuel sources for fires can be found in the BCFC Part 3, Part 4 and/or Part 5)

<input type="checkbox"/>	a. Smoking – restricted to safe outdoor location or prohibited.
<input type="checkbox"/>	b. There is heating, ventilating and/or air conditioning equipment on site. Radiant type heaters Force air heaters – electric and open-flame/fuel fired Temporary (construction type) heaters Other (please identify)
<input type="checkbox"/>	c. There are hot surfaces on site. Commercial cooking equipment (ovens and similar heat producing equipment) Hot pipes – e.g., steam, hot liquids, etc. Cooling systems Friction points from moving parts Machines, process equipment and motors with potential to overheat Facility Lighting <input type="checkbox"/> Other (please identify) <input type="checkbox"/> Other (please identify)
<input type="checkbox"/>	d. There are hot works activities carried out on site, including but not limited to, cutting, welding, soldering, brazing, grinding, adhesive bonding, thermal spraying or thawing pipes. (Refer to BCFC, Division B, Section 5.2, Hot Works, for applicable requirements) There are hot work procedures that address: Nearby flammable and combustible materials

	<p>Provisions for protection of flammable and combustible materials by non-combustible materials, thermal barrier or other means</p> <p>Provision for proper ventilation</p> <p>Immediate availability of fire extinguisher(s) of sufficient quantity and type on-site to meet the minimum extinguisher rating (confirm with BCFC & NFPA 10). Examples include:</p> <ul style="list-style-type: none"> - Light Hazard (low): 2A - Ordinary Hazard (Moderate): 2A - Extra Hazard (High): 4A - Movable equipment: 30B:C (minimum) - Fuel Dispensing: 40B:C <p>Fire watch assigned during a hot works operation and for 60 minutes after its completion</p> <p>Final inspection of the hot works area four hours after completion</p>
<input type="checkbox"/>	<p>e. There are electrical installations, temporary wiring, electrical equipment or machinery on site.</p>
<input type="checkbox"/>	<p>f. There is the potential for static electricity discharge.</p>
<input type="checkbox"/>	<p>g. There is the opportunity for mechanical sparks. E.g., tramp metal/foreign contamination from processes that cut, shape, or pulverize material</p>

NFPA codes and standards define hazards differently

NFPA codes and standards define a “hazard” using the perspective of the document’s purpose. There is no one definition for hazard or level of hazard because the common definition as a “potential for harm” is overshadowed by document-specific differences with regard to the potential of the kind of harm. When moving among documents, a user could be confused by the changes or, worse, not even notice the same words are used in different concepts and contexts.

For example, Section 6.2.2.2, Low Hazard Contents, of NFPA 101®, Life Safety Code®, defines low-hazard contents as those of “such low combustibility that no self-propagating fire therein can occur.” Section 6.2.2.3, Ordinary Hazard Contents, defines ordinary-hazard contents as those “that are likely to burn with moderate rapidity or to give off a considerable volume of smoke.” And Section 6.2.2.4, High Hazard Contents, defines high-hazard contents as those that “are likely to burn with extreme rapidity or from which explosions are likely.”

These definitions of hazard are based on the hazard to life safety and apply only to the contents, not the building structure. It is interesting to note that the low-hazard definition will apply to very few buildings as the phrase “no self-propagating fire therein can occur” excludes buildings with any combustible contents. A building storing salt for the state highway department may be an example of a low hazard.

NFPA 10, Portable Fire Extinguishers, uses a different definition for hazard that is based on the ability of someone using a portable fire extinguisher to extinguish a fire. For example, Section 5.4.1.1, Light (Low) Hazards, defines light (low) hazard occupancies as “locations where the quantity and combustibility of Class A combustibles and Class B flammables is low and fires with relatively low rates of heat release are expected. These occupancies consist of fire hazards having normally expected quantities of Class A combustible furnishings and/or the total anticipated quantity of Class B flammables present is expected to be less than 1 gal (3.8 L) in any room or area.”

This definition may leave one wondering what “low quantity and combustibility” is and how that may apply to a particular occupancy, but the Annex note provides several examples of low-hazard occupancies—another reason you should always read those Annex notes!

So the Life Safety Code would consider an office building an ordinary hazard, but NFPA 10 would consider it a light hazard for the placement of portable fire extinguishers.

NFPA 13, Installation of Sprinkler Systems, includes a different series of definitions of hazard in Chapter 5 that are based on the ability of sprinklers to control a fire, and other standards also have different definitions of hazard levels.

This complexity tells us this is an area that needs further development, and it is one for which we have the quantifying tools to make an important improvement.

For now, when discussing hazards, make sure that all parties involved understand the context or the code or standard in which the term is being used. The proper classification of hazard may be different within the same building or facility depending on which code or standard is being applied.