# FIRE CODE INTERPRETATION



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#### PORTABLE FIRE EXTINGUISHERS

#### **PURPOSE**

This Interpretation is to clarify the intent of the National Fire Code – 2019 Alberta Edition (NFC(AE)) requirements for portable fire extinguishers. In particular, clarity is provided for the reference to the Safety Codes Act (Ch.-S1, RSA 2000) (Act) and the National Fire Protection Association, Standard 10 (NFPA 10) "Standard for Portable Fire Extinguishers," for the inspection, maintenance, recharging, placement, sale, distribution and refurbishing of portable fire extinguishers and the applicable listing and labelling for use in Alberta.

This interpretation also clarifies requirements for portable fire extinguisher tags.

#### DISCUSSION

Fire protection and life safety in buildings and structures in Alberta are under the jurisdiction of the Act and the NFC(AE). The NFC(AE) is adopted as a Regulation (AR 32/2015 as amended) under the Act. Sections 7 and 9 of the Act prohibit the manufacture or sale of anything that is prohibited by the Act or Regulation. These include portable fire extinguishers and suppression devices.

Owners, certified fire extinguisher technicians, and authorities having jurisdiction (AHJ) have asked Municipal Affairs for an interpretation on how to properly assess the information required for portable fire extinguishers, including tags, under the NFC(AE).

Further, Municipal Affairs has received questions and concerns on products marketed to consumers that purport to extinguish or supress fires but do not bear a certification "mark" or "label" to indicate the device has been tested to a standard recognised under the Act. Some of these devices include aerosol spray can fire extinguishers, canister or ball type heat activated automatic fire extinguishers, and heat activated cylinder style fire extinguishers.

Unless stated otherwise, all Code references in this STANDATA are to Division B of the NFC(AE)

Issuance of this STANDATA is authorized by the Provincial Fire Administrator

[Original Signed] Tina Parker





#### **CODE REFERENCES**

Safety Codes Act (Revised Statutes of Alberta 2000, Chapter S1), Sections 7 and 9 states:

#### Manufacturers' duties

A person who manufactures any thing or undertakes a process or activity to which this Act applies shall ensure that the thing, the process or the activity complies with this Act.

# Vendors' duties

- **9(1)** A person who is a vendor in the ordinary course of business, other than as an employee or an agent, shall not advertise, display or offer for sale, for lease or for other disposal, or sell, lease or otherwise dispose of, any thing to which this Act applies unless that thing complies with this Act.
- (2) A person who sells, leases or otherwise disposes of a thing referred to in subsection (1) shall provide any warnings or instructions required by this Act.
- (3) No person shall advertise, display or offer for sale, for lease or for other disposal, or sell, lease or otherwise dispose of, any thing that is prohibited from being sold by the regulations.

# Article 1.4.1.2. of Division A states:

#### 1.4.1.2. Defined Terms

Authority having jurisdiction means a safety codes officer in the fire discipline exercising authority pursuant to designation of powers and terms of employment in accordance with the Safety Codes Act. (See Note A-1.4.1.2.(1).).

Approved means acceptable to the Provincial Fire Administrator.

Provincial Fire Administrator means a person in the fire discipline appointed as an Administrator under the Safety Codes Act.

# Article 2.1.3.6. states:

# **2.1.3.6.** Inspection, Maintenance and Testing of Fire Safety Devices (See Note A-2.1.3.6.)

1) Where specific references to the inspection, maintenance and testing of fire safety devices and *building* fire safety features are not made in this Code, such devices and features shall be maintained to ensure they operate as per their design or function according to their original intent.

#### Article 2.1.5.1. states:

# 2.1.5.1. Selection and Installation

- 1) Portable extinguishers shall be installed in all *buildings* except *dwelling units*. (See Note A-2.1.5.1.(1).)
- Except as otherwise required by this Code, portable extinguishers shall be selected and installed in accordance with NFPA 10, "Portable Fire Extinguishers."
  (See Note A-2.1.5.1.(2).)
- 3) Notwithstanding the requirements of Sentence (2), portable extinguishers used to comply with this Code shall conform to the following performance standards as applicable:



- a) CAN/ULC-S503, "Carbon-Dioxide Fire Extinguishers,"
- b) CAN/ULC-S504, "Dry Chemical Fire Extinguishers,"
- c) CAN/ULC-S507, "Water Fire Extinguishers,"
- d) CAN/ULC-S512-M, "Halogenated Agent Hand and Wheeled Fire Extinguishers,"
- e) CAN/ULC-S554, "Water Based Agent Fire Extinguishers," and
- f) CAN/ULC-S566. "Halocarbon Clean Agent Fire Extinguishers."
- 4) Notwithstanding the requirements of Sentence (2), portable extinguishers shall be rated and identified in conformance with CAN/ULC-S508, "Rating and Fire Testing of Fire Extinguishers."
- 5) Portable extinguishers in proximity to a fire hazard shall be located so as to be accessible without exposing the operator to undue risk. (See Note A-2.1.5.1.(5).)
- 6) Portable extinguishers that are subject to corrosion shall not be installed in a corrosive environment unless they are provided with appropriate corrosion protection.

#### Article 3.2.9.4. states:

# 3.2.9.4. Portable Extinguishers

1) In addition to the requirements of Part 2, pressurized water portable fire extinguishers having a rating of 2-A or larger shall be installed. (See Note A-3.2.9.4.(1).)

**A-3.2.9.4.(1)** Dry chemical extinguishers are not permitted to be used to fight fires involving ammonium nitrate, but may be used to extinguish fires involving industrial trucks, conveyors, etc.

#### Article 3.3.2.10. states:

# 3.3.2.10. Portable Extinguishers

- 1) Any building located in an outdoor storage area shall be provided with portable extinguishers.
- 2) Each motorized vehicle operating in an outdoor storage area shall be equipped with at least one portable extinguisher having a minimum rating of 2-A:30-B:C.

# Article 4.10.8.1. states:

# 4.10.8.1. Portable Extinguishers

- 1) Except as permitted in Sentence (2), in maturing warehouses, at least one portable extinguisher having a rating of 4-A:30-B:C shall be located adjacent to each exit.
- 2) Hose stations are permitted to be installed in lieu of portable extinguishers at locations required in Sentence (1), and spaced so that the travel distance to the nearest hose is not greater than 25 m.
- 3) At least one portable extinguisher having a rating of 30-B:C shall be located on each industrial lift truck.

# Article 4.11.2.1. states:

# 4.11.2.1. Portable Extinguishers

- 1) A *tank vehicle* shall be provided with at least one portable extinguisher having a minimum rating of 80-B:C.
- 2) Portable extinguishers on a *tank vehicle* shall be readily accessible.

# Sentence 4.11.3.8.(2) states:

# 4.11.3.8. Dispensing into Vehicles

2) Dispensing Class II or IIIA liquids into the fuel tank of vehicles directly from a tank vehicle



having a capacity greater than 3 000 L shall be permitted only if

b) at least 2 portable extinguishers having a minimum rating of 80-B:C are provided on the *tank vehicle*,

# Sentence 6.1.1.5.(3) states:

#### 6.1.1.5. Records

- 3) Except as permitted by Sentence (4), each portable extinguisher shall have a tag securely attached to it showing
  - a) the type of extinguisher,
  - b) the size of extinguisher,
  - c) the serial number of extinguisher,
  - d) the date of last annual maintenance,
  - e) the date of last recharge,
  - f) a five-year monthly inspection and annual maintenance record,
  - g) the name of the owner of the extinguisher,
  - h) the name, address and telephone number of the service agency,
  - i) the certification number of the approved testing agency, and
  - j) the printed name and signature of the service person.

# Article 6.2.1.1. states:

# 6.2.1.1. Inspection, Testing and Maintenance

1) Portable extinguishers shall be inspected, tested and maintained in conformance with NFPA 10, "Portable Fire Extinguishers."

#### Article 2.2.3.2. of Division C states:

# 2.2.3.2. Fire Extinguishers

- 1) All agencies servicing, recharging or carrying out the repair and overhaul of fire extinguishing equipment shall have their facilities and equipment certified
  - a) annually by an approved fire testing agency, and
  - b) by Transport Canada or its appointee for high-pressure hydrostatic testing equipment.

#### Article 2.2.4.2. of Division C states:

# 2.2.4.2. Portable Fire Extinguishers

- 1) Only qualified persons shall install, test or perform maintenance on portable extinguishers.
- 2) Persons are considered qualified in the installation and maintenance of portable fire extinguishers when they have acquired an approved certificate of training from a public post-secondary educational institution, and they own or are employed by an agency that is certified annually by a recognized certification body as being compliant with CAN/ULC-S532, "Regulation of the Servicing of Portable Fire Extinguishers."

# NFPA 10, Chapter 3 Definitions states:

\*\*3.2.3 Labeled. Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.



- **3.2.4\* Listed.** Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.
- **3.3.14\* Extinguisher Inspection.** A quick check that a fire extinguisher is in its designated place, that it has not been actuated or tampered with, and that there is no obvious physical damage or condition to prevent its operation.
- **3.3.15\* Extinguisher Maintenance.** A thorough examination of the fire extinguisher that is intended to give maximum assurance that a fire extinguisher will operate effectively and safely and to determine if physical damage or condition will prevent its operation, if any repair or replacement is necessary, and if hydrostatic testing or internal maintenance is required.
- **3.3.19 Hydrostatic Testing.** Pressure testing of the extinguisher to verify its strength against unwanted rupture.
- **3.3.24 Recharging.** The replacement of the extinguishing agent (also includes the expellant for certain types of fire extinguishers).
- **3.3.25 Servicing.** Performing maintenance, recharging, or hydrostatic testing on a fire extinguisher.
- \*\*NOTE: Labeled is spelled "Labelled" in Canada and will be written as such throughout this document.

#### NFPA 10, Section 4.1.1 of Chapter 4 states:

- **4.1.1\*** Portable fire extinguishers used to comply with this standard shall be listed and labeled and shall meet or exceed all the requirements of ANSI/UL 711, CAN/ULC-S508, *Standard for Rating and Fire Testing of Fire Extinguishers*, and one of the following applicable performance standards:
  - 1) Carbon dioxide types: ANSI/UL 154, CAN/ULC-S503, Standard for Carbon-Dioxide Fire Extinguishers
  - 2) Dry chemical types: ANSI/UL 299, CAN/ULC-S504, Standard for Dry Chemical Fire Extinguishers
  - 3) Water types: ANSI/UL 626, CAN/ULC-S507, Standard for Water Fire Extinguishers
  - 4) Halon types: CAN/ULC-S512, Standard for Halogenated Agent Hand and Wheeled Fire Extinguishers
  - 5) Film-forming foam types: ANSI/UL 8, CAN/ULC-S554, Water Based Agent Fire Extinguishers
  - 6) Halocarbon types: ANSI/UL 2129, CAN/ULC-S566, Standard for Halocarbon Clean Agent Fire Extinguishers

# **APPLICATION**

This interpretation applies to the inspection, maintenance, recharging, placement, sale, distribution and refurbishing of portable fire extinguishers and the applicable listing and labelling for use throughout Alberta.



# **INTERPRETATION**

All portable fire extinguishing devices used in Alberta must meet the minimum requirements specified in the NFC(AE) and NFPA 10 to ensure that Albertans who purchase and use portable fire extinguishers can have a reasonable assurance that the device will function as intended during a fire emergency.

Similarly, proper completion of the tags as per the NFC(AE) are required and gives AHJs and owners reasonable assurance that the portable fire extinguisher will function as intended during a fire emergency.

As such, all portable fire extinguishers in Alberta must be subjected to the following:

# 1) Inspection

The inspection of a fire extinguisher is a "quick check" that ensures it is available for use and is in operable condition when required. This is done by verifying that it is in its designated place, that it has not been actuated or tampered with (i.e. it is fully charged and the seal is intact), and that there is no obvious physical damage or condition to prevent its operation.

Fire extinguishers shall be **inspected monthly** by the owner, by an employee designated by the owner, or by a designated representative (i.e. commercial company). More frequent inspections are required when it is obvious that the extinguisher may be subjected to corrosive or damaging environments. If the owner is in any doubt about the condition of a fire extinguisher following an inspection, they should contact a certified fire extinguisher servicing company to evaluate the operational integrity of the fire extinguisher.

#### 2) Maintenance

Routine maintenance is intended to give assurance that a fire extinguisher will operate effectively and safely. It includes a thorough examination of the unit for physical damage and indicates necessary repair or replacement work or any conditions that might prevent the extinguisher from operating as intended. For example, an examination will usually reveal if hydrostatic testing or internal maintenance is required.

All fire extinguishers shall be maintained at intervals not more than one year apart or when an inspection indicates a fire extinguisher is in need of maintenance.

Only companies certified by an approved fire testing agency and only a qualified person working for the certified fire extinguisher servicing agency shall carry out the maintenance and recharge fire extinguishers (see below for more information on certification and training).

#### 3) Recharging

Every 6 years, stored pressure fire extinguishers that require a 12-year hydrostatic test shall be emptied and subjected to the applicable internal examination procedures as detailed in the manufacturer's service manual and as per NFPA 10.

The practice of "topping up" is not permitted.



# 4) Hydrostatic Testing

Any extinguishers that show evidence of corrosion or mechanical damage shall be hydrostatically tested. However, non-refillable disposable containers and pump tanks do not require hydrostatic tests.

Only servicing companies certified by Transport Canada or its appointee shall carry out hydrostatic testing of high-pressure portable extinguishers.

NFPA 10, Chapter 8, Table 8.3.1. identifies the extinguisher type and the testing intervals required. Access to NFPA 10 may be found at <a href="https://www.nfpa.org">www.nfpa.org</a>.

# 5) Refurbishing

The only companies allowed to refurbish portable fire extinguishers are those who have specific permission to do so from Underwriters Laboratories of Canada (ULC) and the Original Equipment Manufacturer (OEM). ULC and OEM investigate and monitor the service company for quality control in the same manner as manufacturers. To obtain more information regarding the extinguisher rebuild program, contact ULC at 1-866-937-3852.

# 6) Placement of fire extinguishers

The NFC(AE) and NFPA 10 advise on the placement and size of fire extinguishers.

The NFC(AE) does not regulate the installation of portable fire extinguishers on vehicles unless these vehicles are:

- a. tank vehicles,
- a motor vehicle operating in an outdoor storage area, as defined by the NFC(AE), or
- c. a vehicle utilized for the compliance of Variances at remote/unmanned facilities. (Note: only companies that have received written approval from the Provincial Fire Administrator fall within this category.)

There are, however, organizations that may require you to have portable fire extinguishers on your vehicle in order to gain access to their operating/commercial sites. These requirements are part of their Standard Operating Procedures and may be site specific.

There may also be organizations that require you to have fire extinguishers in or on the vehicles as part of their Occupational Health and Safety plan, and must adhere to the standards set out by the Alberta Commercial Vehicle Safety Regulation.

# 7) Listed and Labelled

All portable fire extinguishers for sale, use, and servicing in Alberta are to be listed and labelled in accordance with NFPA 10. Listed equipment are subject to periodic evaluation and meets designated tests and standards set forth by the National Standards of Canada and Underwriters Laboratories of Canada (ULC). Labelled equipment have marks to indicate that the device is compliant with such designated tests and standards and will perform safely, effectively, and reliably in the advertised manner. This label also identifies the size and classification of fire that the fire extinguishing device can be expected to control or extinguish.



All portable fire extinguishers for sale, use, and servicing in Alberta will comply with ALL of the following:

- a. Labels will have metric measures and may have imperial equivalents,
- b. Labels will be bi-lingual in English/French and may represent additional languages,
- c. Labels will indicate which CAN/ULC Standard the portable extinguisher is in conformance with (e.g. CAN/ULC S504),
- d. Extinguishers will exhibit the mark of a Certification Body as being in conformance with one of the referenced National Standards (CAN/ULC). This mark will most typically be that of ULC.

Portable fire extinguishers that exhibit only a UL (Underwriters Laboratories) label are NOT acceptable for sale, use or allowed to be serviced in Alberta. Special dispensation is allowed for certified fire extinguisher shops to "refill" only vehicle fire extinguishers that have been discharged in an emergency situation from transportation drivers or other travellers from the United States.

All non-compliant (non-Canadian labelled) portable fire extinguishers in Alberta must be taken out of service and rendered inoperable by December 31, 2021 or at the next recharge date, whichever date occurs first.

# Certification Program for Fire Extinguisher Service Agencies (CAN/ULC S532)

Information on how to become a certified portable fire extinguisher servicing company can be obtained from one of the following companies:

<u>ULC</u> 1-866-937-3852 <u>Intertek</u> 1-800-967-5352

The following are the four categories of Certification:

- Category 1 Full extinguisher service including shop servicing of all types of extinguishers, hydrostatic retesting to CTC requirements, reclaiming of Halon 1211, and annual maintenance field inspections.
- Category 2 Extinguisher service as in Category 1, but excluding hydrostatic retesting to Transport Canada (TC) requirements or Halon extinguisher service.
- Category 3 Recharging and annual maintenance field inspections of specific types of extinguishers only, excluding hydrostatic retesting.
- Category 4 Annual maintenance field inspections only of extinguishers owned or insured by the service agency.

Categories 1, 2 and 3 are recognized certification in Alberta. Category 4 is not a recognized certification in Alberta.

Fire extinguisher recharge companies that do not have the equipment to undertake hydrostatic testing, or the recharge of CO2 and Halon (clean agent) extinguishers may contract with another testing and recharge facility, providing the contracted testing facility is certified to a Category 1 or 2. The testing facility will attach their tag to the extinguisher. The tag shall not be tampered with or removed. There is no requirement for the original company to place their service tag on the extinguisher as the recharge tag from the testing facility indicates compliance.



# **Fire Extinguisher Technician Training**

Municipal Affairs does not certify companies or technicians. Anyone wishing to become a Certified Fire Extinguisher Technician in Alberta may contact the following institutions to obtain approved training:

<u>Lakeland College</u> 1-800-661-6490 Southern Alberta Institute of Technology 1-877-284-7248

# **Fire Extinguisher Tags**

Companies that are certified to perform inspection, testing and maintenance on portable fire extinguishers within Alberta must place an approved tag on each portable fire extinguisher in accordance with sentence 6.1.1.5.(3). Tags are to be completed, in their entirety, by a Certified Fire Extinguisher Technician.

See Appendix "A" for illustrations of approved tags.

Standata Variance <u>19-FCV-023</u>, "<u>Alternative Tags for Outdoor Portable Fire Extinguishers</u>" is still valid and those tags need to follow the example set out in this Interpretation.

# **Frequently Asked Questions:**

1) "We installed devices that are not required by either the National Building Code – 2019 Alberta Edition (NBC(AE) nor the NFC(AE). Do these devices need to meet the requirements of these codes?"

All fire extinguishing devices, whether required by the NBC(AE) or the NFC(AE) or installed in addition to these codes, shall be listed (certified), labelled (marked), and maintained to meet the appropriate referenced standard in the NFC(AE). This is to ensure that during a fire emergency, users can expect these devices to be safe, reliable, and perform to an identified standard when activated. During fire emergencies, users would not consider whether the fire extinguisher device is required by the NBC(AE) or NFC(AE).

Without the testing and certification of a fire extinguisher device by a reputable third party, to a standard which identifies and measures the device's performance, there is no valid assurance that the fire extinguisher device will function to provide the fire and life safety protection it was purported to provide when the fire extinguisher device activates or is used during a fire event. In most of these devices there is also no visible or other means of notifying a user that the device is functional.

2) "If our device is meant to be affixed within a space, is it still considered a portable fire extinguisher and is it still subject to the requirements of the NFC(AE)?"

Regardless of whether the device is affixed or portable, if the fire extinguishing devices use the same types of fire suppressant agents, utilize similar components and are expected to contain or suppress fires when activated, the devices are deemed equivalent to a portable fire extinguisher in operation and purpose. As such, they are required to be listed and labelled in accordance with the NFC(AE) in order to be distributed, sold or installed in Alberta.



3) "Our product is unique in its design, application or operating principles and there is no appropriate standard that can be used to certifying its safety, efficacy and reliability. As such, distribution of our product must be allowed."

National Standard of Canada (NSC) is Canada's organization that develops effective and efficient standards that protect the health, safety and well-being of Canadians. All referenced standards from the NFC(AE) are approved standards that have been developed with NSC and all products have to meet an approved standard.

4) Are all portable fire extinguisher required to be certified?

**All** portable fire extinguishing devices are required to be certified for the inspection, maintenance, recharging, placement, sale, distribution and refurbishing and the applicable listing and labelling for use in Alberta.

Uncertified fire extinguishing or suppression devices are not acceptable for sale, distribution or use in Alberta. Anyone who comes across uncertified fire extinguishing or suppression devices that are sold or being used are requested to advise their local AHJ.

Note that there are aerosol, point-and-spray extinguishing devices and portable fire extinguishers on the market that only have ULC certification for the wetting agent and not the extinguisher as a whole. These devices are not considered certified or listed with ULC and are NOT acceptable for sale, use and servicing within Alberta.

Access to the NFC(AE) may be found at the <u>National Research Council</u> for access or purchase options. Access to NFPA 10 may be found at <u>www.nfpa.org</u>.

# This Interpretation replaces the following:

97-FCB-002, "Inspection of Fire Extinguishers"

97-FCB-005, "Inspection, Maintenance & Recharging of Fire Extinguishers"

14-FCB-001, "Inspection, Maintenance & Recharging of Fire Extinguishers"

14-FCB-002, "Portable Fire Extinguishers"

FCI-16-001, "Uncertified Consumer Fire Extinguishing/Suppression Devices"

14-FCI-004, "Portable Fire Extinguisher Tags"

19-FCB-002, "Portable Fire Extinguishers"

19-FCI-009, "Portable Fire Extinguisher Tags"

This INTERPRETATION is applicable throughout the province of Alberta.



# Appendix "A"

Sentence 6.1.1.5.(3)

- (a) the size of extinguisher,
- (b) the serial number of extinguisher,
- (c) the date of last annual maintenance,
- (d) the date of last recharge,
- (e) a five-year monthly inspection and annual maintenance record,
- (f) the name of the owner of the extinguisher,
- (g) the name, address and telephone number of the service agency,
- (h) the certification number of the approved testing agency, and
- (i) the printed name and signature of the service person.













