



ONTARIO FIRE DEPARTMENT FIRE PROTECTION STANDARD

FIRE EXTINGUISHER PLACEMENT

STANDARD #C-001

EFFECTIVE 10-31-05

PAGES 11

PURPOSE: To provide guidance information on the portable fire extinguisher requirements consistent with the current City Ordinance adopting the International Fire Code, incorporating therein the California Fire Code, with amendments, known as the "Ontario Fire Code".

POLICY: Pursuant to the requirements of the Ontario Fire Code relating to installation and maintenance of Fire Protection, Life Safety Systems and Appliances, the following information is designated by the Fire Chief as governing the placement of portable fire extinguishers in occupancies other than single-family dwellings.

PROCEDURE:

A. **CLASSIFICATION OF HAZARDS.** In order to properly place fire extinguishers in occupancies, the authority having jurisdiction must first determine the classification of the hazard in the occupancy. Fire personnel in making this determination should use the following information:

1. **LIGHT (LOW) HAZARD.** Locations where the total amount of Class A combustible materials, including furnishings, decorations and contents, is of minor quantity.
 - a. These may include buildings or rooms occupied as offices, classrooms, churches, assembly halls, etc.
 - b. This classification anticipates that the majority of contents items are either noncombustible or so arranged that a fire is not likely to spread rapidly.
 - c. Small amounts of Class B flammables used for duplicating machines, art departments, etc., are included provided that they are kept in dosed containers and safely stored.
2. **ORDINARY (MODERATE) HAZARD.** Locations where the total amount of Class A combustibles and Class B flammables are present in greater amounts than expected under light (low) hazard occupancies.

These occupancies could consist of offices, classrooms, mercantile shops and allied storage, light manufacturing, research operations, auto showrooms, parking garages, workshop or support service areas of Light (Low) Hazard occupancies and warehouses containing Class I or Class II commodities.

3. **EXTRA (HIGH) HAZARD.** Locations where the total amount of Class A combustibles and Class B flammables are present in storage, production use and / or finished product over and above those expected and classed as Ordinary (Moderate) Hazards.

These occupancies could consist of woodworking, vehicle repair, aircraft and boat servicing, individual product display showrooms, product convention center displays, storage and manufacturing processes such as painting, dipping, coating, including flammable liquid handling. Also included in warehousing of, or in-process storage of other Class I and Class II commodities.

- B. **GENERAL REQUIREMENTS.** Should questions arise relative to the general requirements of portable fire extinguishers, the following information is provided:

1. **IDENTIFICATION.** The classification of extinguishers shall consist of a LETTER, which indicates the class of fire on which an extinguisher has been found to be effective, preceded by a rating NUMERAL (Class A and B only) which indicates the relative extinguishing effectiveness.

Exception: Extinguishers classified for use on Class C or D hazards shall not be required to have a numeral preceding the classification letter.

2. **MAINTENANCE.** Portable extinguishers shall be maintained in a fully charged and operable condition and kept in their designated places at all times when they are not being used.
3. **LOCATION.** Extinguishers shall be conspicuously located where they will be readily accessible and immediately available in the event of fire. Preferably they shall be located along normal paths of travel, including exits from an area.

- a. Cabinets housing extinguishers shall not be locked.

- (1) **Exception No. 1:** Where extinguishers are subject to malicious use, locked cabinets may be used provided they include means of emergency access.

- (2) **Exception No. 2:** In the City of Ontario, where a commercial occupancy is unattended or unsupervised during normal hours of operation and the occupancy is of a light (low) hazard type such as coin operated laundromats or car washes and the loss experience from theft and/or vandalism has become excessive, it is the policy of the Ontario Fire Department to require the installation of extinguisher(s) of sufficient size, type and number to be placed in service or equipment areas not generally available to the public so that they may be used by the operators or maintenance personnel in the event of an emergency occurring during service operations. It is necessary for this exception to be reviewed in relation to the specific occupancy by the Fire Marshal's office (FSCD) prior to its implementation. Allowance of this exception requires that there shall be a sign posted in a prominent location having minimum 2" block letters stating:

"IN CASE OF FIRE OR EMERGENCY, CALL:
911"

THIS SIGN SHALL BE 18" WIDE BY 24" HIGH
MINIMUM DIMENSION AS IN SAMPLE
SHOWN:

Background to be white.	IN CASE OF FIRE
Letters are to be red in color, having a minimum brush stroke of 1/2".	OR EMERGENCY CALL 911

- b. Extinguishers shall not be obstructed or obscured from view.

Exception: In large rooms and in certain locations where visual obstruction cannot be completely avoided, means shall be provided to indicate the location.

4. **INSTALLATION.** Extinguishers shall be installed on the hangers or in the brackets supplied, mounted in cabinets or set on shelves unless the extinguishers are of the wheeled type.
- a. Extinguishers installed under conditions where they are subject to dislodgement shall be installed in brackets specifically designed to cope with this problem.
- b. Extinguishers installed under conditions where they are subject to physical damage shall be protected from impact.

- c. Extinguishers having a gross weight not exceeding 40 **lb.** shall be installed so that the top of the extinguisher is not more than 5' above the floor. Extinguishers having a gross weight greater than 40 lb. (except wheeled types) shall be so installed that the top of the extinguisher is not more than 3.5' above the floor. In no case shall the clearance between the bottom of the extinguisher and the floor be less than 4".
- d. Operating instructions shall be located on the front of the extinguisher.
- e. Extinguishers mounted in cabinets or wall recesses or set on shelves shall be placed in a manner such that the extinguisher operating instructions face outward.

C. **SELECTION OF EXTINGUISHERS.** The selection of extinguishers for a given situation shall be determined by the character of the fires anticipated, the construction and occupancy of the individual property, the vehicle or hazard to be protected, ambient temperature conditions, and other factors.

1. **SELECTION BY HAZARD.** Extinguishers shall be selected for the specific class or classes of hazards to be protected in accordance with the following subdivisions.

- a. **CLASS A HAZARDS.** Extinguishers shall be selected from the following: Water-type, halogenated agent types, multipurpose dry chemical and wet chemical type.
- b. **CLASS B HAZARDS.** Extinguishers shall be selected from the following: carbon dioxide, dry chemical types, halogenated agent types, and water-type and water chemical extinguishers rated for Class B hazards.
- c. **CLASS C HAZARDS.** Extinguishers shall be selected from the following: carbon dioxide, dry chemical types, halogenated agent types, and water mist types rated for Class C. **Note:** Carbon dioxide extinguishers equipped with metal horns are not considered safe for use on fires in energized electrical equipment and, therefore, are not classified for use on Class C hazards.
- d. **CLASS D HAZARDS.** Extinguishers and extinguishing agents for the protection of lass D hazards shall be of types approved for use on the specific combustible metal hazard.
- e. **CLASS K HAZARDS.** Fire Extinguishers provided for the protection of cooking appliances that use combustible cooking media (vegetable or animal oils and fats) shall be listed and labeled Class K fires.

2. **SELECTION BY OTHER FACTORS.** Where extinguishers are required but a specific class, size, number or location is not given, the selection shall be subject to the approval of the Fire Chief and the following criteria:

- a. The gross weight of the extinguisher and the physical ability of the user.
- b. Exposure of the extinguisher to corrosive atmospheres.
- c. Adverse reaction between the extinguishing agent and the material or equipment being protected.
- d. Mobility of wheeled units over the specific terrain and the configuration of access routes available.
- e. The effective range of the extinguishers that may be subject to wind or draft conditions.
- f. The ability and number of personnel available to operate the extinguishers.
- g. The health and safety of the user. To protect the health and safety of the user, the Fire Chief may require installation of remote control extinguishers, extra-long extinguisher nozzles, special ventilation, breathing apparatus and other protective measures, including training of personnel.

3. **DISTRIBUTION OF EXTINGUISHERS.** The minimum number of extinguishers needed to protect a property is outlined below. Additional extinguishers may be installed if needed to provide more suitable protection. Extinguishers having ratings less than specified in the attached Title 19, Division 1, Section 568, Table 2 and Title 19, Division 1, Section 568, Table 3 may be installed provided they are not used in fulfilling the minimum protective requirements listed.

- a. Fire extinguishers shall be provided for the protection of both the building structure and the occupancy hazards contained therein.
- b. Required building protection shall be provided by fire extinguishers suitable for Class A fires.
- c. Occupancy hazard protection shall be provided by fire extinguishers suitable for such Class A, B, C, D, or K fire potentials as may be present.
- d. Extinguishers provided for building protection may be considered also for the protection of occupancies having a Class A fire potential.

- e. Combustible buildings having an occupancy hazard subject to Class B and/or Class C fires shall have a standard complement of Class A fire extinguishers for building protection, plus additional Class B and/or C extinguishers. Where fire extinguishers have more than one letter classification (such as 2-A:20-B:C), they may be considered to satisfy the requirements of each letter class. When using multipurpose extinguishers for the protection of Class B hazards, the maximum travel distances described in Title 19, Division 1, Section 568, Table 2 must be observed.
- f. Rooms or areas shall be classified generally as light (low) hazard, ordinary (moderate) hazard, or extra (high) hazard. Limited areas of greater or lesser hazard shall be protected as required.

4. FIRE EXTINGUISHER SIZE AND PLACEMENT FOR CLASS A HAZARDS.

- a. Minimal sizes of fire extinguishers for the listed grades of hazards shall be provided on the basis of Title 19, Division 1, Section 568, Table 2 except as modified by paragraph 4c below. Extinguishers shall be so located so that the maximum travel distances shall not exceed those specified in Title 19, Division 1, Section 568, Table 2, except as modified by paragraph 4c below .
 - (1) Certain smaller extinguishers which are charged with multi-purpose dry chemical or halogenated agent are rated on Class B and Class C fires, but have insufficient effectiveness to earn the minimum 1-A rating even though they have value in extinguishing smaller Class A fires. They shall not be used to meet the requirements of paragraph C4a above.
- b. Extinguishers as specified in Title 19, Division 1, Section 568, Table 2 may be replaced by uniformly spaced 1.5" hose stations for use by the occupants of the building.
 - (1) When hose stations are so provided they shall conform to NFPA 14, "Installation of Standpipe and Hose Systems".
 - (2) The location of hose stations and the placement of fire extinguishers shall be in such a manner that the hose stations do not replace more than every other extinguisher.
- c. Where the floor area of a building is less than that specified in Title 19, Division 1, Section 568, Table 2, at least one extinguisher of the minimum size recommended shall be provided.

- d. The protection requirements may be fulfilled with extinguishers of higher rating provided the travel distance to such larger extinguisher shall not exceed 75'.

5. FIRE EXTINGUISHER SIZE AND PLACEMENT FOR CLASS B FIRES OTHER THAN FOR FIRES IN FLAMMABLE LIQUIDS OF APPRECIABLE DEPTH.

- a. Minimal sizes of fire extinguishers for the listed grades of hazard shall be provided on the basis of Title 19, Division 1, Section 568, Table 3.
 - (1) Extinguishers shall be located so that the maximum travel distances shall not exceed those specified in the table used.
 - (2) Extinguishers of lesser rating, desired for small specific hazards within the general hazard area, may be used, but shall not be considered as fulfilling any part of the requirements of Title 19, Division 1, Section 568, Table 3.
- b. Two or more extinguishers of lower rating shall not be used to fulfill the protection requirements of Title 19, Division 1, Section 568, Table 3.
- c. The protection requirements may be fulfilled with extinguishers of higher ratings provided the travel distance to such larger extinguishers shall not exceed 50'.

6. FIRE EXTINGUISHER SIZE AND PLACEMENT FOR CLASS B FIRES IN FLAMMABLE LIQUIDS OF APPRECIABLE DEPTH.

For dip tanks containing flammable or combustible liquids exceeding 150 gal liquid capacity or having a liquid surface area exceeding 4 sq. ft., see NFPA 34, "Dip Tanks", for the requirements of automatic extinguishing facilities.

- a. Portable fire extinguishers shall not be installed as the sole protection for flammable liquid hazards of appreciable depth (greater than 1/4") where the surface area exceeds 10 sq. ft.

Exception: Where personnel who are trained in extinguishing fires in the protected hazards, or are available on the premises, the maximum surface area shall not exceed 20 sq. ft.

b. For flammable liquid hazards of appreciable depth, a Class B fire extinguisher shall be provided on the basis of at least two numerical units of Class B extinguishing potential per square feet of flammable liquid surface of the largest area.

(1) **Exception No. 1:** Where approved automatic fire protection devices or systems have been installed for a flammable liquid hazard, additional portable Class B fire extinguishers may be waived.

(a) Where so waived, Class B extinguishers shall be provided as covered in paragraph 5a above, to protect areas in the vicinity of such protected hazards.

(2) **Exception No. 2:** Foam or AFFF type extinguishers may be provided on the basis of 1-B of protection per square foot of hazard.

c. Two or more extinguishers of lower ratings shall not be used in lieu of the extinguishers required for the largest tank.

Exception: Up to three AFFF or FFFP extinguishers may be used to fulfill the requirements provided the sum of the Class B ratings meets or exceeds the value required for the largest hazard area.

d. Travel distances for portable extinguishers shall not exceed 50'.

e. Scattered or widely separated hazards shall be individually protected.

An extinguisher in the proximity of a hazard shall be carefully located so as to be accessible in the presence of a fire without undue danger to the operator.

7. FIRE EXTINGUISHER SIZE AND PLACEMENT FOR CLASS C HAZARDS.

a. Extinguishers with Class C ratings shall be required where energized electrical equipment can be encountered which would require a non-conducting extinguishing medium. This will include fire either directly involving or surrounding electrical equipment.

Since the fire itself is a Class A or Class B hazard, the extinguishers are sized and located on the basis of the anticipated Class A or B hazard.

8. SIZE AND PLACEMENT FOR CLASS D HAZARDS.

- a. Extinguishers or extinguishing agents with Class D ratings shall be provided for fires involving combustible metals.
- b. Extinguishing equipment shall be located not more than 75' from the Class D hazard.
- c. Size determination shall be on the basis of the specific combustible metal, its physical particle size, area to be covered and recommendations by the extinguisher manufacturer on data from control tests conducted.

9. SIZE AND PLACEMENT FOR COMMERCIAL COOKING.

- a. Fire extinguishers with a Class K rating shall be provided for hazards where there is a potential for fires involving combustible cooking media (vegetable or animal oils and fats).
- b. Maximum travel distance shall not exceed 30 feet from the hazard to the extinguishers.
- c. Additional fire extinguishers, required for the control of other classes of fires, shall be provided for commercial cooking areas as required by the Ontario Fire Code.

II. The above information and the accompanying Charts and Sample forms have been taken from the International Fire Code, incorporating therein the California Fire Code, with amendments, known as the "Ontario Fire Code". They are provided for your reference and guidance.

Note: References to specific Code sections in this Standard Operating Procedure refer to the International Fire Code, incorporating therein the California Fire Code, with amendments, known as the "Ontario Fire Code".

TITLE 19, DIVISION 1, SECTION 568, TABLE 2

	LIGHT (LOW) HAZARD OCCUPANCY	ORDINARY (MODERATE) HAZARD OCCUPANCY	EXTRA (HIGH) HAZARD OCCUPANCY
Minimum rated single extinguisher	2-A	2-A	4-A*
Maximum floor area per unit of A	3,000 sq ft	1,500 sq ft	1,000 sq ft
Maximum floor area for extinguisher	11,250 sq ft	11,250 sq ft	11,250 sq ft
Maximum travel distance to extinguisher	75 ft	75ft	75ft

* Two 2 1/2 gal (9.46L) water type extinguishers can be used to fulfill the requirement of one 4-A rated extinguisher.
 Note: 1ft =0.305m , 1 sq ft =0.0929 m²

TITLE 19, DIVISION 1, SECTION 568, TABLE 3

TYPE OF HAZARD	BASIC MINIMUM EXTINGUISHER RATING	MAXIMUM TRAVEL DISTANCE TO EXTINGUISHERS	
		(in feet)	(in meters)
Light (low)	SB 10B	30 SO	9.15 15.25
Ordinary (moderate)	10B 20B	30 SO	9.15 15.25
Extra (high)	40B 80B	30 SO	9.15 15.25

Notes:

1. The specified rating does not imply that fires of the magnitudes indicated by these ratings will occur, but rather to give the operators more time and agent to handle difficult spill fires that may occur.
2. For fires involving water soluble flammable liquids see California Code of Regulations, Title 19, Division 1, Section 566(d).
3. For specific hazard applications see California Code of Regulations, Title 19, Division 1, Section 566.

A fire extinguisher is an absolute necessity in any home or office. While there's a good chance that the extinguisher will never be used to fight a fire, it could end up saving your property and even your life.

Types of Extinguishers

Fire extinguishers are rated by the type of fire they can put out. It is important to choose the proper fire extinguisher for each fire.

Fire extinguishers are labeled with letters and/or pictures to indicate the type of fire on which the extinguisher is effective.

Ordinary Combustibles Fire



Paper, wood, plastics, fabric, rubber, trash.

Flammable Liquids Fire



Gasoline, oil, grease, some paints and solvents.

Electrical Fire

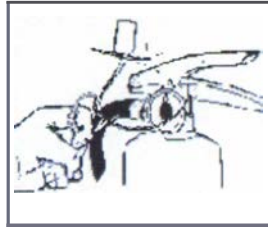


Energized electrical equipment; appliances, computers, circuit breakers, wiring

A combination **ABC Dry Chemical** extinguisher can be used on more than one type of fire, and is a good choice for home use.

Remember the P.A.S.S. Word

There are four basic steps to using a fire extinguisher.

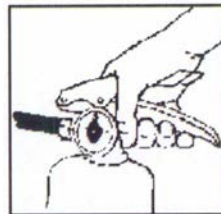


Pull

Place the extinguisher on the floor. Hold it by the tank (pressure on the handle could pinch the pin). Pull the pin straight out.

Aim

Start 10 feet back from the fire. Aim at the base of the fire.



Squeeze

Squeeze the lever on the fire extinguisher.

Sweep

Sweep from side to side, moving in slowly until the fire is out.



Get Out

If the fire gets bigger, close the door and evacuate.

Be Prepared

Training and practice are the best ways to prepare for emergencies. Make certain you know the P.A.S.S. system and understand how to safely use a fire extinguisher before you ever need to.

- Don't force yourself to fight a fire that makes you uncomfortable or puts you at risk.
- Always let someone know and make certain 911 has been called before using an extinguisher on a fire.
- Fire extinguishers are small quick fixes. If you are unable to put out the fire with one extinguisher, leave and close the door behind you.
- A fire involving any portion of building structure is too big for a portable fire extinguisher.
- While using a fire extinguisher stay low, the smoke is filled with carbon monoxide and many other toxic gases.
- Don't let the fire come between you and your exit. Keep your back to the exit and the fire in front of you