

**DEPARTMENT OF PUBLIC SAFETY
DIVISION OF FIRE AND LIFE SAFETY**



TRAINING & EDUCATION BUREAU

**CLASS I
FIRE EXTINGUISHER
TRAINING & TESTING
PAMPHLET**

(August 2009)

State of Alaska
Class I Portable Fire Extinguisher
Inspection Permit Program

Background

The State of Alaska Division of Fire and Life Safety issues Class I Fire Extinguisher permits for the annual inspection of portable fire extinguishers in accordance with 13AAC 50.030(h)(4)(A). To get the initial permit an individual must read this pamphlet, complete the application/compliance agreement form, and successfully complete the written exam at the end of the pamphlet. The application/compliance agreement and the exam must be returned to the Training & Education Bureau. Upon receipt, and after successfully completing the written exam, the State of Alaska Division of Fire and Life Safety will issue a Class I Fire Extinguisher permit. These permits are valid for 3 calendar years. Applicants for Class I permit must be at least 18 years of age.

To renew the permit an individual must complete the same application/compliance agreement and exam procedure as required for the initial permit. Permits are non-transferable and should be in possession of the applicant when engaged in activity for which the permit was issued. Violations of the permit law (13 AAC 50.30 and 13 AAC 55.100) will be subjected to the penalties prescribed in AS 18.70.100. Presently there is no charge for these permits.

Definitions

The Training & Education Bureau provides testing for three Fire Extinguisher permit levels. This particular pamphlet is only applicable to Class I. As identified in 13 AAC 50.030, the definitions of the three levels are as follows:

Class I: Inspection and non-invasive annual maintenance of portable fire extinguishers.

This includes all the annual inspection issues, as long as no invasive maintenance is required. This permit allows such things as weighing the unit, making sure the internal powder has not settled, inspecting tags, seals, hoses, locking items, etc. It does not include the removal or replacement of parts or pieces of the unit. Class I does not allow a seal to be replaced even if it appears that no other damage has occurred to the unit or the unit was not used, but it does allow a person to attach a new annual inspection record tag.

Class II: Inspection, recharge, distribution, and maintenance of portable fire extinguishers.

This includes the elements of Class I and also ability to recharge, install the units in buildings, decide on unit location within a facility, and perform general maintenance. General maintenance includes the removal and replacement of parts and/or powder, and any required internal inspections. Maintenance issues are further identified in NFPA 10.

Class III: Inspection, recharge, distribution, maintenance, and hydrostatic testing of portable fire extinguishers.

This includes all the elements of Class I and II, and also the ability to perform hydrostatic tests on the portable units.

Testing

The required test for a Class I permit is at the end of this pamphlet. The exam is open book and requires a passing score of 90%. If an applicant fails they may retake the test immediately upon learning of the failure. The re-test must include a new application and compliance agreement.

Examination Reference Material

Applicable reference materials for Class I are included in this pamphlet. The reference materials are taken from NFPA Standard 10, 2007 Edition, and the Alaska Administrative Code, 13 AAC 50.030. Completed copies of NFPA Standard 10 may be available for purchase at many local bookstores or directly through the NFPA at www.nfpa.org. It may also be available at most public libraries.

Class I Training Courses

The Training & Education Bureau is presently designing training courses for applicants to gain the necessary knowledge to successfully pass the fire extinguisher exams. Contact local TEB training offices for further information regarding these courses.

Class I Portable Fire Extinguisher Training and Testing Reference Material

The following information is provided as both a training tool and a reference document for individuals performing fire extinguisher inspection duties at Class I. The following includes the basic information needed for most Class I activities. Additional information is available by referring to NFPA Standard 10, 2007 Edition. It is expected that all individuals have a reference copy of this NFPA standard available and that they have read this standard prior to taking the Class I exam.

Classification, Ratings, and Performance, & Types of Fire Extinguishers.

Portable fire extinguishers are classified for use on certain classes of fires and rated for relative extinguishing effectiveness. This is based on the following classification of fires.

- a. Class A Fires: Fires in ordinary combustible materials, such as wood, cloth, paper, rubber, and many plastics.
- b. Class B Fires: Fires in flammable liquids, combustible liquids, petroleum greases, tars, oils, oil-based paints, solvents, lacquers, alcohols, and flammable gases.
- c. Class C Fires: Fires that involve *energized* electrical equipment. (When electrical equipment is de-energized, fire extinguishers for Class A or Class B fires can be used safely.)
- d. Class D Fires: Fires in combustible metals, such as magnesium, titanium, zirconium, sodium, lithium, and potassium.
- e. Class K Fires: Fires in cooking appliances that involve combustible cooking media (vegetable or animal oils and fats).

The following types of fire extinguishers are generally used on the following types of fires. Prior to using a fire extinguisher on a specific fire, a person should first confirm that the extinguisher is approved for use on that type of fire.

- a. Class A Fires: Water, Multipurpose Dry Chemical
- b. Class B Fires: Multipurpose Dry Chemical, Foam, AFFF, Halon, Carbon Dioxide
- c. Class C Fires: Multipurpose Dry Chemical, Halon, Carbon Dioxide
- d. Class D Fires: Dry Powder
- e. Class K Fires: Class K Extinguisher

The following types of fire extinguishers are considered obsolete and shall be removed from service:

- a. Soda acid
- b. Chemical foam (excluding film-forming agents)
- c. Vaporizing liquid (e.g., carbon tetrachloride)
- d. Cartridge-operated water
- e. Cartridge-operated loaded stream
- f. Copper or brass shell (excluding pump tanks) joined by soft solder or rivets

Extinguisher Location

Individuals certified at Class II are primarily responsible for the placement and location of fire extinguishers within a facility. The following is offered as support information to Class I applicants.

Portable fire extinguishers shall be maintained in a fully charged and operable condition, and kept in designated places at all times when they are not being used.

Fire 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 areas.

Cabinets housing fire extinguishers shall not be locked. Locked cabinets may be permitted in areas where the fire extinguisher may be subject to malicious use, provided they include means of emergency access.

Fire extinguishers shall not be obstructed or obscured from view. In large rooms, and in certain locations where visual obstruction cannot be completely avoided, means shall be provided to indicate the location.

Portable fire extinguishers other than wheeled types shall be securely installed on the hanger or in the bracket supplied or placed in cabinets or wall recesses. The hanger or bracket shall be securely and properly anchored to the mounting surface in accordance with the manufacturer's instructions. Wheeled-type fire extinguishers shall be located in a designated location.

Fire extinguishers installed under conditions where they are subject to dislodgement shall be installed in brackets specifically designed to cope with this problem.

Fire extinguishers installed under conditions where they are subject to physical damage, (e.g., from impact, vibration, the environment) shall be adequately protected.

Fire extinguishers having a gross weight less than 40 lb. shall be installed so that the top of the fire extinguisher is not more than 5 ft above the floor. Fire extinguishers having a gross weight greater than 40 lb (except wheeled types) shall be so installed that the top of the fire extinguisher is not more than 3 ½ ft. above the floor. In no case shall the clearance between the bottom of the fire extinguisher and the floor be less than 4 in.

Fire extinguishers mounted in cabinets or wall recesses shall be placed so that the fire extinguisher operating instructions face outward. The location of such fire extinguishers shall be marked conspicuously.

Water-type (e.g., water, AFFF, FFFP) fire extinguishers shall not be installed in areas where the temperatures are outside the range of 40°F to 120°F. All other types shall not be installed in areas where temperatures are outside the range of -40°F to 120°F. See NFPA for further information regarding this issue.

The owner shall be provided with a fire extinguisher instruction manual that details condensed instructions and cautions necessary to the installation, operation, inspection, and maintenance of the fire extinguisher(s). The manual shall refer to this standard as a source of detailed instruction.

The NFPA publishes a number of standards and/or documents that outline the installation locations for special specific hazard areas. These types of applications include areas such as automotive

and marine service stations, dry cleaning plants, commercial ovens and furnaces, marinas, aircraft hangers and others. These documents shall be reviewed for the occupancies outlined in their respective scopes.

Fire Extinguisher Selection and Distribution

Fire extinguishers shall be provided for the protection of both the building structure and the occupancy hazards. The selection of fire extinguishers for a given situation shall be determined by the type of fires anticipated, the construction and occupancy of the individual property, the vehicle or hazard to be protected, ambient-temperature conditions, and other factors. The selection and distribution of extinguishers, and the minimum number of fire extinguishers needed to protect a property is identified within NFPA Standard 10. The selection and distribution of fire extinguishers for a particular structure may only be accomplished by an individual that possesses a Class II Portable Fire Extinguisher permit issued by the Alaska State Division of Fire and Life Safety.

Inspection & Maintenance

Inspection and maintenance of portable fire extinguishers is defined by the Alaska State Division of Fire and Life Safety as follows:

Monthly inspection

Monthly inspections do not require a permit. This is a “quick check” that a fire extinguisher is available and will operate. It is intended to give reasonable assurance that the fire extinguisher is fully charged and operable. This is done by verifying that it is in its designated place, that it has not been actuated or tampered with, and that there is no obvious or physical damage or condition to prevent its operation. A monthly inspection may be performed by anyone who has received training and has been approved by the facility manager and/or owner.

Annual Inspection

This is an in depth inspection that must be performed at least once per year. This inspection is intended to give an assurance that the extinguisher is fully charged and operable. The scope of this annual inspection is outlined below. The annual inspection may only be performed by someone with at least a Class I permit. This is a complete external examination of the fire extinguisher. It includes a thorough examination of the unit, weighing the unit, “shaking the powder” and any other procedure that does not include the removal of any part or piece of the unit

Maintenance

A complete and thorough examination of the fire extinguisher including internal and external inspections, intended to give maximum assurance that a fire extinguisher will operate effectively and safely. This maintenance also includes any necessary repairs or replacements. It will normally reveal if hydrostatic testing or internal maintenance is required. Maintenance requires a Class II or III permit.

Recharging

The replacement of the extinguishing agent (also includes the expellant for certain types of fire extinguishers). Recharging requires a Class II or III permit.

Inspection Procedures

The owner or designated agent or occupant of a property in which fire extinguishers are located shall be responsible for such inspection, maintenance, and recharging.

Fire extinguishers shall be inspected when initially placed in service and thereafter at approximately 30-day intervals (monthly inspection). Fire extinguishers may be inspected at more frequent intervals when circumstances require. The monthly inspection may be accomplished by any trained individual approved by the facility manager/owner.

The “monthly inspection” includes only the following elements:

- a. Located in the designated place
Confirm that the extinguisher is in the correct location, mounted in the cabinet or hanger correctly and is available for use.
- b. Extinguisher is unobstructed and visible
In its correct location, the extinguisher should be unobstructed and visible from any location in a room or space. If the extinguisher itself is not visible, a sign shall be placed that identifies the location.
- c. Operating instructions are on extinguisher, legible and facing outward
The monthly inspection includes making sure that the each extinguisher has the instructions on the face of the unit and that they are easily readable and facing outward toward the user.
- d. Safety seals and tamper indicators are not broken or missing
All safety and tamper seals must be in place. These may not be replaced unless a person holds a Class II permit, even though it appears that the unit has not been used and is still in an operational condition.
- e. Pressure gauge reading or indicator is in the operable range or position
The pressure gauge or indicator must be in the green or operable condition or range. This is the indication that the unit is still charged and ready to be activated.
- f. Initial and date the inspection tag.
At the completion of the monthly inspection the inspector must initial and date the tag on the unit. This indicates that the above items have been completed and that the unit is ready to operate in case of an emergency.

The “annual inspection” includes the following elements:

- a. Located in the designated place
Confirm that the extinguisher is in the correct location, mounted in the cabinet or hanger correctly and is available for use.
- b. Extinguisher is unobstructed and visible
In its correct location, the extinguisher should be unobstructed and visible from any location in a room or space. If the extinguisher itself is not visible, a sign shall be placed that identifies the location.
- c. Operating instructions are on extinguisher, legible and facing outward
The monthly inspection includes making sure that the each extinguisher has the instructions on the face of the unit and that they are easily readable and facing outward toward the user.
- d. Safety seals and tamper indicators are not broken or missing
All safety and tamper seals must be in place. These may not be replaced unless a person holds a Class II permit, even though it appears that the unit has not been used and is still in an operational condition.

- e. Fullness determined by weighing
Extinguisher must be weighed. The weight of the unit must be within approved limits or exact weight as printed on the extinguisher. If the weight is below the approved amount the unit must either be refilled or replaced.
- f. Powder is “fluffed” by turning extinguisher over and either shaking or gently pounding on the bottom with a rubber hammer.
Fire extinguisher powder is very light and will pack or cake in the bottom of the unit. During the annual inspection the inspector must turn the unit over and either shake it to fluff the powder, or may gently pound on the bottom of the unit to loosen the powder. Generally a person can feel if the powder is caked at one end or is loose in the unit. By turning the extinguisher back and forth a person should be able to feel the powder flowing within the unit.
- g. Examination for obvious physical damage, corrosion, leakage, or clogged nozzle
This includes any rust or corrosion, any dents or damage, or if the labels are missing or damaged. This also includes inspection of the hose/nozzle to make sure it is not clogged. This also includes making sure the required inspection record tags are on the unit.
- h. Pressure gauge reading or indicator in the operable range or position
The pressure gauge or indicator must be in the green or operable condition or range. This is the indication that the unit is still charged and ready to be activated.
- i. Condition of tires, wheels, carriage, hose, and nozzle checked (for wheeled units)
As with item “g” above this is a careful, in depth inspection of the unit to make sure all the additional items of the unit are in good condition and ready for service.
- j. HMIS label in place
This is the Hazardous Materials Identification System label. This is the triangle shaped, multi-color/number label that identifies the Hazardous Material content of the unit.
- k. Replacement of an extinguisher with a similar unit with the same class and number rating.
If the unit does not pass the annual inspection, a Class I permit holder may replace the unit with one of the same class and number rating. This does not allow the individual to replace the unit with one that is of different class or rating. If the unit is replaced the Class I inspector must attach the inspection tag to the unit and must sign the date of the installation. The Class I inspector must also put their permit number on this new tag.
- l. Sign and date the inspection tag.
At the completion of the annual inspection the inspector must sign and date the tag on the unit. The inspector must also record their Class I permit number on the tag. In some cases this means putting on a new tag with the inspectors name and permit number preprinted. Under the scope of the annual inspection, the inspector must sign, date, and number the tag that is in place, or may put a new tag on the unit and then sign and date the new tag. This new tag must also include the permit number of the inspector. By completing this element it indicates that the annual inspection has been completed, and that the unit is ready to operate in case of an emergency. The permit number also gives State Fire Marshal Inspectors the ability to identify which “certified” inspector approved the unit for operation.

When an inspection of any fire extinguisher reveals a deficiency in any of the conditions listed above, it shall be subjected to applicable maintenance procedures. In most cases a person must hold a Class II permit to fix a deficiency.

Inspection and maintenance tags or labels shall not be placed on the front of the fire extinguisher.

When an inspection of any non-rechargeable dry chemical fire extinguisher reveals a deficiency in any of the conditions listed above it shall be removed from further use, discharged, and destroyed at the direction of the owner or returned to the manufacturer.

When an inspection of any non-rechargeable fire extinguisher containing a halon agent reveals a deficiency in any of the conditions listed above, it shall be removed from service, not discharged, and returned to the manufacturer. If the fire extinguisher is not returned to the manufacturer, it shall be returned to a fire equipment dealer or distributor to permit recovery of the halon.

Personnel making inspections shall keep records of all fire extinguishers inspected, including those found to require corrective action. At least monthly, the date the inspection was performed and the initials of the person performing the inspection shall be recorded. Records shall be kept on a tag or label attached to the fire extinguisher, on an inspection checklist maintained on file, or in an electronic system (e.g., bar coding) that provides a permanent record. For the annual inspection the Class I individual must also record their certificate number on the inspection record.

Maintenance Procedures

Maintenance, servicing, and recharging of portable fire extinguishers may only be performed by trained and permitted persons having available the appropriate servicing manual(s), the proper types of tools, recharge materials, lubricants, and manufacturer's recommended replacement parts or parts specifically listed for use in the fire extinguisher. Maintenance, servicing, and recharging of portable fire extinguishers may only be accomplished by individuals that possesses a Class II or Class III Portable Fire Extinguisher permit issued by the Alaska State Division of Fire and Life Safety. Maintenance, servicing, and recharging is outside the scope of an Alaska certified Level I Fire Extinguisher technician,

Additional Explanatory Material

Principles of Fire Extinguishment

Many fires are small at origin and can be extinguished by the use of proper portable fire extinguishers. It is strongly recommended that the fire department be notified as soon as a fire is discovered. This alarm should not be delayed by awaiting results of the application of portable fire extinguishers.

Fire extinguishers can represent an important segment of any overall fire protection program. However, their successful functioning depends upon the following conditions having been met:

- a. The fire extinguisher is properly located and in working order.
- b. The fire extinguisher is of the proper type for a fire that can occur.
- c. The fire is discovered while still small enough for the fire extinguisher to be effective.
- d. The fire is discovered by a person ready, willing, and able to use the fire extinguisher.

Responsibility

The owner or occupant of a property in which fire extinguishers are located has an obligation for the care and use of these extinguishers at all times. To discharge this obligation, the owner or occupant should give proper attention to the inspection, maintenance, and recharging of this fire-protective equipment and should also train personnel in the correct use of fire extinguishers on the

different types of fires that could occur on the property. An owner or occupant should recognize fire hazards on his or her property and plan in advance the exact means and equipment with which a fire will be fought. The owner/occupant needs to ensure that everyone knows how to call the fire department and stress that they do so for every fire, no matter how small.

Portable fire extinguishers are appliances to be used by the occupants of a fire-endangered building or area. They are primarily of value for immediate use on small fires. They have a limited quantity of extinguishing material and, therefore, need to be used properly so this material is not wasted. Fire extinguishers are mechanical devices. They need care and maintenance at periodic intervals to ensure they are ready to operate properly and safely. Parts or internal chemicals can deteriorate in time and need replacement. They are pressure vessels, in most cases, and so need to be treated with respect and handled with care.

Locating Extinguishers

Determining the correct placement of an extinguisher must be accomplished by a Class II or III permitted individual. The following is offered as additional information for Class I individuals performing annual inspections.

Acceptable means of identifying the fire extinguisher locations could include arrows, lights, signs, or coding of the wall or column. In situations where it is necessary that fire extinguishers be temporarily provided, a good practice is to provide portable stands, consisting of a horizontal bar on uprights with feet, on which the fire extinguishers can be hung. Precautions should be noted where fire extinguishers are located in areas that have temperatures outside the range of 40°F to 120°F (4°C to 49°C). NFPA 10 gives further guidance on “freeze protected” fire extinguishers.

Operation and Use

Although not required for a Class I permit, it is expected that an individual who is responsible for inspecting extinguishers should also be familiar with their use. To that end the following has been provided.

The proper operation of a fire extinguisher requires the operator to execute several basic steps in a certain sequence. Where a person has not been trained, operation of fire extinguishers could be seriously delayed, the extinguishing material could be wasted due to poor application techniques, and more fire extinguishers could have to be used, or the fire could possibly not be extinguished.

The methods of operation of fire extinguishers are most conveniently arranged by grouping fire extinguishers according to how the unit operates. Five most common types of fire extinguishers are:

- a. **Stored Pressure** - The extinguishing material and expellant are kept in a single container. These are the most common types of extinguishers seen in businesses and homes.
- b. **Cartridge** – A separate cartridge attached to the extinguisher stores the operating pressure until the operator releases the pressure into the extinguisher shell.
- c. **Mechanically Pumped** - The operator provides expelling energy by means of a pump, and the vessel containing the agent is not pressurized.
- d. **Self-Expelling** - The agents have sufficient vapor pressure at normal operating temperatures to expel themselves.
- e. **Hand-Propelled**. The material is applied with a scoop, pail, or bucket.

Basic Steps to Operate Extinguishers.

To operate a fire extinguisher the acronym PASS may be used. This acronym is most specific toward stored pressure type units, but will also work for cartridge style units.

P – Pull the pin

Pull the pin that unlocks the operating lever. There is generally some type of seal securing the pin. (Some models may have other release mechanisms.)

A – Aim Low

Point the extinguisher nozzle or hose at the base of the fire.

S – Squeeze

Squeeze the lever above the handle to discharge the extinguisher. To stop the discharges release the handle. (some models may have other discharge mechanisms)

S – Sweep

Sweep the nozzle or hose from side to side. Moving carefully toward the flames, keep the extinguisher aimed at the base of the fire and sweep back and forth.

For complete use instructions always refer to the manufacturers use manual supplied with the extinguisher.

Selection of Home Fire Extinguishing Equipment

(The following is offered as additional information but is not part of the Class I permit test)

Residential fires continue to be the leading type of fires throughout the country. The following is offered as a tool for Class I individuals to assist local home owners in providing adequate fire extinguisher protection within their residence. It is also presented to assist home owners in the selection of a fire extinguisher to adequately protect their residence. The following is based on the information contained in NFPA 10.

This section applies to the selection, installation, and maintenance of fire extinguishing equipment for one- and two-family dwellings and living units within multifamily structures. The fire extinguishing equipment is intended as a first line of defense to cope with fires of limited size. This equipment is needed even though the dwelling or living unit is protected by an automatic sprinkler system; fire or smoke alarm systems, or both; single station smoke detectors; or other fixed fire suppression or detection systems. The recommendations given herein are minimum.

Responsibilities

The homeowner/occupant has an obligation for the installation, care and use of the fire-extinguishing equipment at all times. The nameplate(s) and instruction manual should be read and thoroughly understood by all persons who are expected to use the equipment. The instruction manual should be kept in a safe place and periodically reviewed.

The presence of an extinguisher in a residence is not worthwhile unless the homeowner is willing to do the following:

- a. Understand how to use the device properly.
- b. Instruct family members who might have to use it.
- c. Maintain and recharge it according to the manufacturer's instructions. The owner/occupant should see that everyone understands how to call the fire department and stress that they should do so for every fire, no matter how small it is.

Homeowners/occupants should recognize fire hazards on their properties and plan in advance exactly how, and with what, a fire will be fought. It is important for homeowners to understand that extinguishers of the sizes discussed have a discharge time of only 8 seconds to 60 seconds; in actual use, no time can be wasted determining the best way to use the device. Instruction on fire extinguisher use can also be obtained from local fire department personnel.

General Recommendations

Selection of a fire extinguisher for home use should be made with the understanding of an extinguisher's capacity (or its rating) along with the potential fire hazards in the home. Depending on the conditions existing in each living unit, additional extinguishers or extinguishers of larger capacity might be advisable.

The following are minimum recommendations per floor level:

- a. A single extinguisher rated 2-A:10-B:C or higher
- b. One extinguisher rated 2-A or higher, and a second extinguisher rated 10-B:C or higher

The maximum travel distance to an extinguisher should be 40 ft.

One extinguisher rated 2-A: 10-B: C or higher should be provided to protect an attached garage that is under the home or connected to the home by a common wall. Extinguishers for detached garages should have a rating of 2-A: 10-B:C or higher. Due to the volume of flammable liquids normally present in garages (those liquids associated with automobiles, lawn mowers, snow blowers, workshops, etc.), a larger extinguisher than that meeting the minimum recommendations should be specifically installed for protection. If similar flammable liquids are kept in partially open carports, an extinguisher of this type should also be provided.

Extinguishers for the protection of delicate electronic equipment, such as TVs, computers, and stereos, should have a 1-B:C rating or higher and should be of the carbon dioxide or halogenated agent types.

For personal safety and proper operation, it is essential that the instructions on the extinguisher label and contained in the manual be followed. It is also essential that once the extinguisher is used, it must be refilled or replaced promptly. Even if only a short burst of agent is released, the extinguisher can lose the rest of its pressure.

Portable fire extinguishers should be installed as follows:

- a. In an accessible spot, free from blocking by storage and equipment, and near room exits that provide an escape route
- b. So that the top of the extinguisher is not more than 5 ft above the floor and not less than 4 in. above the floor; the extinguisher should be easy to reach and remove and should be placed where it will not be damaged

- c. On hangers, or in the brackets supplied by the manufacturer, mounted in cabinets or placed on shelves
- d. Placed so that the operating instructions on the extinguisher face outward

Safety Precautions

For personal safety, observe the following precautions for locating and using a fire extinguisher:

- a. Most fires produce toxic decomposition products of combustion, and some materials can produce highly toxic gases. Fires can also consume available oxygen or produce dangerously high exposure to convected or radiated heat. All of these can affect the degree to which a fire can be safely approached with extinguishing equipment.
- b. Discharging portable fire extinguishers from too close a distance on cooking grease fires can cause splashing of the burning grease or oil and spread the fire. The recommended distance for operating portable fire extinguishers is shown on the label.
- c. Portable fire extinguishers should not be installed adjacent to the location of a potential fire hazard but should be accessible to the hazard.
- d. Halogenated agent extinguisher labels contain information such as the minimum volume of room that can be properly and safely protected. When using these extinguishers, avoid breathing the discharged agent or the gases produced by the thermal decomposition of the agent. Evacuate and ventilate the area immediately after use.
- e. The use of a carbon dioxide extinguisher(s) in an unventilated space can dilute the oxygen supply. Prolonged occupancy of such spaces can result in loss of consciousness due to oxygen deficiency.
- f. Extinguishers not classified for Class C hazards present a shock hazard if used on fires involving energized electrical equipment.
- g. Dry chemical extinguishers, when used in a small unventilated area, can reduce visibility for a period of up to several minutes.

Inspection Home Fire Extinguishers

The homeowner or occupant is responsible for ensuring that inspection, maintenance, and servicing of fire extinguishers is performed in a timely manner by competent individuals. Inspections should be performed when the fire extinguisher is initially placed in service and thereafter at approximately 30-day intervals. Inspections should be performed in accordance with the owner's manual supplied with the fire extinguisher.

Principles of Fire Extinguishment.

Many fires are small at origin and can be extinguished by the use of fire extinguishers or small hose streams. The fire department should be notified as soon as a fire is discovered. This alarm should not be delayed by awaiting the results of application of residential fire-extinguishing equipment.

Portable fire-extinguishing equipment can represent an important segment of a residential fire protection program. If a fire starts in your residence, get people out of the house and call the fire department; then use a fire extinguisher. These rules should be followed when fighting a residential fire:

- a. Keep near a door that can be used as an escape route.
- b. Stay low. Avoid breathing the heated smoke, vapors, or fumes as much as possible, as well as the extinguishing agents.

- c. If you feel confident in attacking the fire, use the appropriate fire-fighting equipment. If the fire is not quickly extinguished, get out of the building, closing door(s) behind you, and do not re-enter.

Additional Fire Extinguisher Definitions

(some of the following may be on the Class I test)

Carbon Dioxide - A colorless, odorless, electrically nonconductive inert gas that is a suitable medium for extinguishing Class B and Class C fires. Liquid carbon dioxide forms dry ice ("snow") when released directly into the atmosphere. Carbon dioxide gas is 1 1/2 times heavier than air. Carbon dioxide extinguishes fire by reducing the concentrations of oxygen, the vapor phase of the fuel, or both in the air to the point where combustion stops.

Dry Chemical - Various mixtures of finely divided solid particles additionally supplemented with special treatments to provide resistance to packing and moisture absorption (caking) and to promote proper flow characteristics. These agents are designed for extinguishment of Class A and Class B fires. They are nonconductors and are approved for use on energized electrical Class C fires.

Dry Powder - Solid materials in powder or granular form designed to extinguish Class D combustible metal fires by crusting, smothering, or heat-transferring means.

Film-Forming Foam Agents. The film-forming foam agents referenced in this standard are AFFF (aqueous film-forming foam) and FFFP (film-forming fluoroprotein foam). AFFF and FFFP include both grades: those that are not approved for polar solvents (water-soluble flammable liquids), and those that are approved for polar solvents.

Halogenated Agents – Halons such as Halon 1211, Halon 1301, and mixtures of Halon 1211 and Halon 1301.

Hydrostatic Testing. Pressure testing of the extinguisher to verify its strength against unwanted rupture.

Loaded Stream Charge. A water-based extinguishing medium that uses an alkali metal salt as a freezing point depressant.

Nonrechargeable Fire Extinguisher. A nonrechargeable (nonrefillable) fire extinguisher is not capable of (nor intended to be capable of) undergoing complete maintenance, hydrostatic testing, and being restored to its full operating capability by the standard practices used by fire equipment dealers and distributors. Nonrechargeable (nonrefillable) fire extinguishers are marked "Discharge and Dispose of After Any Use" or "Discharge and Return to the Manufacturer After Any Use" or with a similar equivalent marking. Some fire extinguishers that are physically rechargeable are marked "nonrechargeable" and are therefore considered to be nonrechargeable (nonrefillable) fire extinguishers.

Rechargeable (Refillable) Fire Extinguisher. A rechargeable (refillable) fire extinguisher is capable of undergoing complete maintenance, including internal inspection of the pressure vessel, replacement of all substandard parts and seals, and hydrostatic testing. The fire extinguisher is capable of being recharged with agent and restored to its full operating capability. Rechargeable

(refillable) fire extinguishers are marked "Recharge Immediately After Any Use" or with a similar equivalent marking.

Recharging. The replacement of the extinguishing agent (also includes the expellant for certain types of fire extinguishers).

Self-Expelling Fire Extinguisher. A fire extinguisher in which the agents have sufficient vapor pressure at normal operating temperatures to expel themselves.

Service Pressure. The normal operating pressure as indicated on the gauge and nameplate of a fire extinguisher.

Stored-Pressure Fire Extinguisher. A fire extinguisher in which both the extinguishing material and expellant gas are kept in a single container, and that includes a pressure indicator or gauge.

Travel Distance. The actual walking distance from any point to the nearest fire extinguisher fulfilling hazard requirements.

Water-Type Fire Extinguisher. A water-type fire extinguisher contains water-based agents, such as water, AFFF, FFFP, antifreeze, and loaded stream.

Wheeled Fire Extinguisher. A portable fire extinguisher equipped with a carriage and wheels intended to be transported to the fire by one person.

Class I Fire Extinguisher Certification Procedures

Following is the process to complete certification at the Class I level.

- Read this training pamphlet
- Complete the application
- Complete the Class I examination (at the end of this pamphlet)
- Mail the completed application and test to:

Department of Public Safety
Division of Fire and Life Safety
Training & Education Bureau
5700 E. Tudor Road
Anchorage, AK 99507

CLASS I FIRE EXTINGUISHER PERMIT
APPLICATION AND COMPLIANCE AGREEMENT

(Authority 13AAC 50.030 (h))

**Department of Public Safety
Division of Fire and Life Safety
Training & Education Bureau
5700 E. Tudor Road
Anchorage, AK 99507
(907) 269-5490**

The completed application and compliance agreement shall be sent to the above address.
The completed Class I Examination Test must be attached.

Please print or type the following information:

First Name:	Middle Initial:	Last Name:
Mailing Address:		City, State, Zip Code:
Phone Number:	Date of Birth (mm,dd,yyyy): (applicant must be at least 18 years of age)	

Social Security Number:
Employer Name:
Employer Mailing Address:

Employer City, State, Zip Code:
Work Number:

This application is: New Permit Renewal Name Change

Class I Fire Extinguisher Inspection Compliance Agreement

The below signed applicant acknowledges their intention to comply with the policies and procedures of their Alaska Class I Fire Extinguisher Permit, and the fire extinguisher inspection program under their purview. This includes placement of the permit number and signature on extinguisher tags following the completion of the annual inspection.

Permit Applicant Signature

Date

This signed agreement will be kept on file at the Alaska State Division of Fire and Life Safety.

**CLASS I FIRE EXTINGUISHER
EXAMINATION**

Circle or mark the correct answer

1. A water type fire extinguisher should only be used on what type of fire?

- A. Class A
B. Class B
C. Class C
D. Class D

2. A person with a Class I fire extinguisher permit may replace a broken seal around the pin as long as unit appears to not have been discharged.

- A. True
B. False

3. The Class I permit is valid for 3 years. To renew the permit an individual simply needs to send a letter to the Alaska State Division of Fire and Life Safety asking for renewal.

- A. True
B. False

4. A fire extinguisher cabinet may be locked during which of the following times.

- A. When the building is not occupied.
B. When the unit may be subject to malicious use, provided there is a means of emergency access.
C. When the building is occupied, but the manager is close by with a key.
D. When the extinguisher may fall over and be damaged if the cabinet is not locked.

5. If a person with a Class I permit has a copy of NFPA Standard 10 they may select extinguishers for their building and may also place them in the correct location.

- A. True
B. False

6. A Class I permit is required to conduct an annual inspection of fire extinguisher.

- A. True
B. False

7. A Class I permit is required to conduct a monthly inspection of a fire extinguisher.

- A. True
B. False

8. The primary responsibility of inspection, maintenance, and recharging of portable fire extinguishers rests with:

- A. The State Fire Marshal
B. The property owner and/or occupant.
C. The local Fire Department
D. The fire extinguisher manufacturer

9. The definition of a Class B fire is:

- A. Fires involving combustible metals
- B. Fires involving kitchen cooking appliances.
- C. Fires involving energized electrical equipment
- D. Fires involving gasoline, diesel, and other flammable or combustible liquids.

10. A person without a Class I, II, or III permit may accomplish which of the following:

- A. Replace the unit with one of similar size or rating.
- B. Fluff the powder in the unit by turning over the tapping with a rubber mallet.
- C. Verify that tamper seals have not been broken.
- D. Weigh the unit to determine that it needs to be serviced.

11. To correctly operate a fire extinguisher, a person may remember the acronym PASS. The letter A in the acronym stands for:

- A. *Alert* the Fire Department
- B. *Advance* toward the fire.
- C. *Aim* low at the base of the fire.
- D. *Always* approach the fire upwind.

12. A person without a Class I permit may complete the annual inspection of extinguishers at their place of business provided they are working under the “direct supervision” of a person with a Class I, II, or III permit.

- A. True
- B. False

13. A person with a Class I permit may accomplish which type of inspection(s):

- A. Only a monthly inspection.
- B. A monthly and annual inspection.
- C. A maintenance criteria inspection.
- D. A pre-hydrostatic compliance inspection.

14. Obvious physical damage, corrosion, or leakage may be corrected by a person with a Class I permit.

- A. True
- B. False

15. Where there is a potential for a fire involving combustible cooking vegetable or animal oils and fats, what type of fire extinguisher should be used:

- A. Class A
- B. Class B
- C. Class K
- D. Class D

16. Which of the following is NOT included in the list of annual inspection elements:

A. Replacing of the unit with a new one of the same size and rating.

B. Turning the unit and fluffing the powder.

C. Replacing a broken seal on a safety pin.

D. Weighing the unit to determine that it needs to be serviced.

17. When completing an annual inspection, a person with a Class I permit must record their permit number and signature on the inspection tag.

A. True

B. False

18. A person holding a Class I permit finds a stored pressure dry chemical extinguisher that has a low pressure gauge. He replaces it with a new unit of the same class rating and size. This is allowed under his Class I permit authorization.

A. True

B. False

19. A person with a Class I permit may replace a broken seal on a fire extinguisher.

A. True

B. False

20. A multipurpose dry chemical extinguisher is suitable for what type of fire.

A. Class A only

B. Class B only

C. Class A, B, & C

D. Class A, B, C, D, & K