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## 1. Purpose

University of Alaska Anchorage (UAA) employees, student workers, faculty, staff, and outside contractors who work in areas equipped with portable fire extinguishers in the course of their work functions, risk injury if improperly managed. The hazards associated with portable fire extinguishers can be substantially reduced by using the equipment properly and taking precautions. This program for portable fire extinguishers is intended to ensure workers are knowledgeable in the hazards when using portable fire extinguishers and the steps to be taken to protect themselves and others.

## 2. Objective

UAA, in its continuing effort to provide employees with safe, healthful working conditions, and to comply with the Occupational Safety and Health Act is implementing the following program for portable fire extinguishers to protect people working at the University, by helping employees, student workers, faculty, staff, and outside contractors better understand general procedures for safe use of portable fire extinguishers.

## 3. Scope

This policy applies to UAA employees, student employees, faculty, staff, and outside contractors working on UAA equipment who work with or around portable fire extinguishers.

## 4. Definitions

Hydrostatic Testing - at certain intervals, fire extinguishers are required to be pressure tested using water or some other noncompressible fluid to help prevent unwanted failure or rupture of the cylinder [see NFPA 10(98), Chapter 5]

Incipient Fire - a fire in its beginning stage that can be controlled or extinguished with a portable fire extinguisher without the need for protective clothing or breathing apparatus.

Maintenance - a thorough examination and repair, as needed, of your facility's portable fire-extinguishers and is covered in NFPA 10(98), Sec. 4-4. Maintenance is required at least once a year – more frequently when indicated by a routine monthly inspection, Maintenance is also required whenever extinguishers undergo hydrostatic testing.

Portable Fire Extinguisher - a manually operated, pressurized container that contains an agent that when discharged can extinguish an incipient fire.

## 5. Authority and Responsibilities

In addition to the roles and responsibilities outlined in the UAA Training Program, the following apply to the portable fire extinguishers.

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### EHS/RM

- Assist with training when necessary
- Work with departments to determine proper extinguishers, placement, and inspections unique to each department's work activities
- Create, track, and/or conduct inspections on compressed portable fire extinguishers where applicable with this standard

### Supervisor

- Ensure portable fire extinguishers in their area are inspected and in good working condition
- Ensure defective, damaged, or prohibited portable fire extinguishers are replaced from service
- Conduct periodic inspections of portable fire extinguishers in their department to ensure proper storage inspections
- Assist in the determination of employees who may be required to have hands on portable fire extinguisher training

### Department Safety Coordinator

- Assist in the determination of placement and inspection of portable fire extinguishers
- Conduct periodic inspections of portable fire extinguishers in their department to ensure integrity
- Assist in the determination type and placement of portable fire extinguishers in their department

### Employees/Student Workers

- Only use portable fire extinguishers when properly trained on their use
- Visually inspect portable fire extinguishers cylinders prior to every use for defects and damage
- Alerts department supervisor when portable fire extinguishers and associated equipment need replacement

### Outside Contractors

- Perform all work in compliance with their company's portable fire extinguishers program, which will be reviewed and approved by the EHS/RM department
- If the company does not have a program, they must comply with this program

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## 6. Hazards Associated with portable fire extinguishers

The following hazards associated with portable fire extinguishers can lead to personal injury or death:

- Attempting to extinguish a fire when evacuation should take place
- Deployment of the wrong type of portable fire extinguisher for the fire type
- Personnel improperly use a fire extinguisher and excite or spread a fire
- Ergonomic injuries from improper handling of a **portable fire extinguishers**

## 7. Engineering Controls

Engineering controls are design plans or changes to the working environment to prevent or reduce employee exposure to potential fall hazards. The following examples of engineering controls should be considered in area design to reduce the risk of fire.

- Properly designed and maintained fire suppression systems installed in UAA buildings
- Properly designed and maintained fire alarm systems to notify occupants of a fire
- Proper storage facilities for flammable and combustible materials
- Proper and adequate ventilation
- Fire proofing of buildings
- Proper fire doors, fire walls and separators

## 8. Administrative Controls

Administrative controls are safe work practices and procedures designed to reduce the risks associated with fires. Examples of administrative controls include the following:

- Train personnel on emergency response procedures for their area
- Train personnel who may use fire extinguisher on their proper use
- Routine inspections of portable fire extinguishers to ensure they are in safe working condition
- Immediate removal of any fire extinguishers that are found to be damaged or defective
- Provide employees with the proper portable fire extinguishers for their job tasks
- Ensure proper portable fire extinguisher are selected based on hazards in the area

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## 9. Procedures

The following procedures will be followed when working with portable fire extinguishers.

UAA provides portable fire extinguishers to be used by designated personnel as authorized and trained to use them to fight incipient fires. All other personnel must evacuate immediately upon the sounding of a fire alarm or when instructed by authorized personnel. Even if trained to use a fire extinguisher, designated personnel's first priority is to get themselves to safety and sounding the alarm to notify other personnel of the fire. Designated personnel are not required to use a fire extinguisher in the event of a fire.

Prior to using any portable fire extinguisher personnel must ensure the following:

- The alarm has been sounded to evacuate others and notify the fire department
- The fire is small and confined
- The appropriate type of fire extinguisher is available
- There is always a safe path to evacuate if the fire grows

### **Selection, Types and Locations of Portable Fire Extinguishers**

Portable fire extinguishers have been selected and distributed at the facility by the UAA Facilities and Maintenance Operations Department according to the potential fire hazard, the construction and occupancy of facilities, hazards to be protected against, and other factors pertinent to the situation

Fires are classified into five general classes depending on the type of material or fuel involved. The type of fire determines the type of extinguisher that should be used to extinguish it. The fire risk from the different classes of fire in your business premises will determine which fire extinguisher types you need. The portable fire extinguisher will be clearly labeled with classification correlating to the type of fire it is intended to extinguish. When making the determination of the proper type of fire in the area, the fuel sources must be considered to ensure the proper extinguisher is selected.

- **Class A** fires involve materials such as wood, paper, and cloth which produce glowing embers or char
- **Class B** fires involve flammable gases, liquids, and greases, including gasoline and most hydrocarbon liquids which must be vaporized for combustion to occur
- **Class C** fires involve fires in live electrical equipment or in materials near electrically powered equipment
- **Class D** fires involve combustible metals, such as magnesium, zirconium, potassium, and sodium

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- **Class K** fires involve cooking media (fats, grease, and oils) in commercial cooking sites such as restaurants

Extinguishers will be conspicuously located and readily accessible for immediate use in the event of fire. They will be located along normal paths of travel and egress. Wall recesses and/or flush-mounted cabinets should be used as extinguisher locations whenever possible. Employees should not have to travel more than the distance prescribed in either NFPA 10 or OSHA 29 CFR 1910.157. Extinguishers will be clearly visible. In locations where visual obstruction cannot be completely avoided, directional arrows will be provided to indicate the location of extinguishers and the arrows will be marked with the extinguisher classification. If extinguishers intended for different classes of fire are located together, they will be conspicuously marked to ensure that the proper class extinguisher selection is made at the time of a fire. Extinguisher classification markings will be located on the front of the shell above or below the extinguisher nameplate. Markings will be of a size and form to be legible from 3 feet.

Portable fire extinguishers will be maintained in a fully charged and operable condition. They will be kept in their designated locations at all times when not being used. When extinguishers are removed for maintenance or testing, a fully charged and operable replacement unit will be provided.

Portable fire extinguishers may be installed on hangers, brackets, shelves, in cabinets, or in company vehicles as long as employees can access them in time to fight an incipient fire that is still in the incipient stages. Extinguishers weighing less than 40 pounds will be installed so the top of the extinguisher is less than 3-1/2 feet above the floor. Portable fire extinguishers mounted in cabinets, wall recesses, or set on shelves will be placed so that the extinguisher operating instructions face outward. The location of such extinguishers will be made conspicuous by marking the cabinet, wall recess, or shelves in a contrasting color (normally, that color will be red) that will distinguish it from the normal décor. portable fire extinguishers must be distributed in such a way that the amount of time needed to travel to their location and back to the fire does not allow the fire to get out of control. OSHA requires that the travel distance for Class A and Class D extinguishers is less than 75 feet. The maximum travel distance for Class B extinguishers is 50 feet because flammable liquid fires can get out of control faster than Class A fires. There is no maximum travel distance specified for Class C extinguishers, but they must be distributed on the basis of appropriate patterns for Class A and B fire hazards.

### **Portable Fire Extinguisher Operating Procedures**

Authorized Personnel who have been properly trained in the use of portable fire extinguishers will use the **Pull–Aim–Squeeze–Sweep** (PASS) method for extinguishing incipient fires.

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Following are the basic required conditions under which personnel may fight an incipient fire:

- The fire is small and at its beginning stage
- Heavy smoke is not present
- An appropriate fire extinguisher is readily available
- There is an unblocked exit immediately available for evacuation

Authorized UAA personnel are authorized to get hold of the nearest appropriate extinguisher(s), move to a position upwind of the fire if the air is moving, and operate the extinguisher following the PASS procedure:

**P** – Pull the pin located in the extinguisher’s handle.

**A** – Aim the nozzle at the base of the fire.

**S** – Squeeze the lever or handle.

**S** – Sweep from side to side at the base of the fire until the fire is extinguished or the canister is empty.

### **Safety Precautions**

Personnel will evaluate the risks of fighting an incipient fire before attempting to extinguish it.

Escape if the fire grows. If personnel elect to put out a fire and it grows too large to control, they will immediately escape through the nearest exit, and close – but NEVER LOCK – the door behind them if possible.

Keep away from hazardous substances. When hazardous substances are involved, smoke and gases released from a fire can be toxic, so personnel should never attempt to put out a fire if they have any doubts about their own safety and health. If they have any doubts, personnel will evacuate the area and wait for emergency responders who have the proper equipment and are trained in fire-fighting procedures.

## **10. Inspections and Maintenance**

To ensure portable fire extinguishers at UAA are maintained in safe condition and personnel do not use defective equipment the following inspections are required:

### **Monthly Inspections**

Departments will visually inspect all portable fire extinguishers monthly according to the following guidelines:

- Portable fire extinguishers must be located in their designated location, secured

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properly and the proper type for the hazard area

- Access to extinguishers is not obstructed
- Portable fire extinguishers are examined for obvious physical damage, corrosion, leakage, or clogged nozzles
- Legible operating instructions are on the extinguisher nameplate facing outward
- Seals and tamper indicators are not broken or missing
- Pressure-gauge readings or indicators are in the operable ranges
- Inspection tags must be initialed and dated
- Fullness – confirmed by weighing or lifting

Each fire extinguisher must have an inspection tag affixed, and personnel who perform the inspection must initial and date after each inspection.

### **Annual Inspection and Maintenance**

UAA will use a licensed inspector or contract with a 3rd party portable fire extinguisher servicing company to conduct a maintenance check at least annually according to the following NPFA guidelines:

- Inspect the hose and nozzle for cracks, blockages, or other damage
- Inspect the extinguisher shell for corrosion, dents, or other damage
- Weigh carbon dioxide extinguishers to ensure no weight deviation greater than 10%
- Examination of mechanical parts
- Examination of extinguishing agent
- Determine if extinguisher requires hydrostatic testing

### **Six-Year Inspection and Maintenance**

Every 6 years, stored pressure fire extinguishers that require a 12-year hydrostatic test (e.g. dry chemical extinguishers) must be emptied and proper maintenance procedures performed. The exception to this rule is non-rechargeable extinguishers, which are required to be removed from service 12 years from the date of manufacture. This maintenance must be performed by an approved extinguisher servicing company. Any extinguisher found to be defective must be replaced immediately by contacting facilities and maintenance operations.

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## **Hydrostatic Testing**

At certain intervals, fire extinguishers are required to be hydrostatically tested. The required hydrostatic testing includes both an internal and external examination of the cylinder. Because this testing requires special training and equipment, it needs to be performed by an approved extinguisher servicing company. Hydrostatic testing intervals for fire extinguishers are outlined in NFPA 10(98), Sec. 5-2 and Table 5-2. Test intervals for some of the most commonly found extinguishers are as follows:

- Pressurized water, carbon dioxide and wet chemical extinguishers – every 5 years
- Dry chemical extinguishers – every 12 years

The exception to the rule for hydrostatic testing is non-rechargeable stored pressure extinguishers (e.g. dry chemical extinguishers), which are required to be removed from service 12 years from the date of manufacture.

## **11. Training**

UAA shall provide a training program for each employee who will be authorized to use a portable fire extinguisher.

The program shall enable each employee to recognize hazards related to portable fire extinguishers and shall train each employee in the procedures to be followed to minimize these hazards.

The employer shall ensure that each employee has been trained by a competent person in the following areas, as applicable:

- The different types of fires and appropriate extinguishers used to put them out
- The correct procedures for responding to and attempting to put out a fire with a portable fire extinguisher
- Safety precautions for extinguishing incipient fires
- Hands on training utilizing a portable fire extinguisher similar to that found in the workplace

Retraining shall be provided for each employee as necessary if an accident occurs, new workplace hazards are identified, a near loss incident has occurred, or there is a change in the type of extinguisher used, so that the employee maintains the understanding and knowledge acquired through compliance with this section.

## **12. Program Evaluation**

The Portable Fire Extinguisher program shall be evaluated on an annual basis utilizing the protocols set forth by EHS/RM. The evaluation team will consist of a department safety coordinator and a designee from EHS/RM. EHS/RM will define the scope of the evaluation. The

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final report will be developed by the EHS/RM utilizing the information received during the evaluation. The deficiencies determined in the report will be documented and corrective action plans will be developed.

### 13. References

OSHA and NFPA regulations that apply to Portable Fire Extinguishers are included below.

- 29 CFR 1910.157
- 29 CFR 1926.150
- NFPA 10

### 14. Revision History

Revision Number	Date Revised	Description of Change	Revised By	Approved By
0	12/14/18	Initial issue		
1	06/03/21	Format and wording	N VanG	
2				
3				