

PORTABLE FIRE EXTINGUISHERS

1.0 PURPOSE

To provide guidance for the safe selection, use and maintenance of portable fire extinguishers by City of Wilson employees and visiting contractors. This policy shall comply with OSHA's Portable Fire Extinguisher Standard 29 CFR 1910.157.

2.0 ORGANIZATIONS AFFECTED

This policy applies to all employees and contractors while working on any work site maintained by the City of Wilson and protected by portable fire extinguishers.

3.0 DEFINITIONS

- 3.1 **"AQUEOUS FILM FORMING FOAM (AFFF)"** means a fluorinated surfactant with a foam stabilizer which is diluted with water to act as a temporary barrier to exclude air from mixing with the fuel vapor by developing an aqueous film on the fuel surface of some hydrocarbons which is capable of suppressing the generation of fuel vapors.
- 3.2 **"CARBON DIOXIDE"** means a colorless, odorless, electrically nonconductive inert gas (chemical formula CO₂) that is a medium for extinguishing fires by reducing the concentration of oxygen or fuel vapor in the air to the point where combustion is impossible.
- 3.3 **"CLASS A FIRE"** means a fire involving ordinary combustible materials such as paper, wood, cloth, and some rubber and plastic materials.
- 3.4 **"CLASS B FIRE"** means a fire involving flammable or combustible liquids, flammable gases, greases and similar materials, and some rubber and plastic materials.
- 3.5 **"CLASS C FIRE"** means a fire involving energized electrical equipment where safety to the employee requires the use of electrically nonconductive extinguishing media.
- 3.6 **"CLASS D FIRE"** means a fire involving combustible metals such as magnesium, titanium, zirconium, sodium, lithium and potassium.
- 3.7 **"DRY CHEMICAL"** means an extinguishing agent composed of very small particles of chemicals such as, but not limited to, sodium bicarbonate, potassium bicarbonate, urea-based potassium bicarbonate, potassium chloride, or monoammonium phosphate supplemented by special treatment to provide resistance to packing and moisture absorption (caking) as well as to provide proper flow capabilities. Dry chemical does not include dry powders.
- 3.8 **"DRY POWDER"** means a compound used to extinguish or control Class D fires.
- 3.9 **"EDUCATION"** means the process of imparting knowledge or skill through systematic instruction. It does not require formal classroom instruction.

- 3.10 **"EXTINGUISHER CLASSIFICATION"** means the letter classification given an extinguisher to designate the class or classes of fire on which an extinguisher will be effective.
- 3.11 **"EXTINGUISHER RATING"** means the numerical rating given to an extinguisher which indicates the extinguishing potential of the unit based on standardized tests developed by Underwriters' Laboratories, Inc.
- 3.12 **"HALON 1211"** means a colorless, faintly sweet smelling, electrically nonconductive liquefied gas (chemical formula CBrClF₂) which is a medium for extinguishing fires by inhibiting the chemical chain reaction of fuel and oxygen. It is also known as bromochlorodifluoromethane.
- 3.13 **"HALON 1301"** means a colorless, odorless, electrically nonconductive gas (chemical formula CBrF₃) which is a medium for extinguishing fires by inhibiting the chemical chain reaction of fuel and oxygen. It is also known as bromotrifluoromethane.
- 3.14 **"INSPECTION"** means a visual check of fire protection systems and equipment to ensure that they are in place, charged, and ready for use in the event of a fire.
- 3.15 **"MAINTENANCE"** means the performance of services on fire protection equipment and systems to assure that they will perform as expected in the event of a fire. Maintenance differs from inspection in that maintenance requires the checking of internal fittings, devices and agent supplies.
- 3.16 **"MULTIPURPOSE DRY CHEMICAL"** means a dry chemical which is approved for use on Class A, Class B and Class C fires.
- 3.17 **"TRAINING"** means the process of making proficient through instruction and hands-on practice in the operation of equipment, including respiratory protection equipment, that is expected to be used and in the performance of assigned duties.

4.0 **GENERAL REQUIREMENTS**

- 4.1 Portable fire extinguishers shall be provided for employee use and selected and distributed based on the classes of anticipated workplace fires on the size and degree of hazard which would affect their use.
- 4.2 Fire extinguishers rated for Class A fires shall be mounted so that the travel distance for employees to any extinguisher is 75 feet or less.
- 4.3 Fire extinguishers rated for Class B fires shall be mounted so that the travel distance for employees to any extinguisher is 50 feet or less.
- 4.4 Fire extinguishers rated for Class C fires shall be mounted so that the travel distance for employees to any extinguisher is 75 feet or less.
- 4.5 City vehicles will have fire extinguishers available mounted within the vehicle. The City Warehouse will coordinate the annual inspection for extinguishers assigned to City vehicles.

5.0 CLASSES OF FIRES

- 5.1 Class A Fires - Fires involving ordinary combustible materials (wood, cloth, rubber, etc.)
- 5.2 Class B Fires - Fires involving flammable liquids (oils, grease, paints, etc.)
- 5.3 Class C Fires - Fires involving energized electrical equipment.
- 5.4 Class D Fires - Fires involving combustible metals (magnesium, sodium, etc.)

6.0 PROCEDURES

- 6.1 Portable fire extinguishers will be mounted, located and identified, so that they are readily accessible to employees without subjecting the employee to possible injury. Extinguishers having a gross weight not exceeding 40 lbs. will be installed so that the top of the extinguisher is no more than five (5) feet above the floor. Extinguisher having a gross weight greater than 40 lbs. will be so installed so that the top of the extinguisher is no more than three and one-half (3 1/2) feet above the floor.
- 6.2 Portable fire extinguishers will be maintained in a fully charged and operable condition. They should be kept in their designated place at all times, except during use.
- 6.3 Portable fire extinguishers should be located so as to be easily identified from a reasonable distance.

7.0 INSPECTION, MAINTENANCE AND TESTING

- 7.1 Portable fire extinguishers shall be visually inspected **monthly**. This inspection shall include a check of at least the following items:
 - 7.1.1 Located in a designated space.
 - 7.1.2 No obstructions to access or visibility.
 - 7.1.3 Operating instructions on nameplate legible and facing outward.
 - 7.1.4 Seals and tamper indicators not broken or missing.
 - 7.1.5 Determine fullness by weighing or "lifting".
 - 7.1.6 Examine for obvious physical damage, corrosion, leakage, or clogged nozzle.
 - 7.1.7 Pressure gauge reading or indicator in the operable range or position.
- 7.2 This inspection will be recorded on the inspection tag and kept with the extinguisher.
- 7.3 Extinguishers will be subject to an annual maintenance check by qualified personnel.

- 7.4 Stored pressure dry chemical extinguishers require a 12-year hydrostatic test will be emptied and subjected to applicable maintenance procedures every 6 years. Dry chemical extinguishers having non-refillable disposable containers are exempt from this requirement. When recharging or hydrostatic testing is performed, the 6-year requirement begins from that date.
- 7.5 Portable extinguishers shall be hydrostatically tested according to the following table:

Type of extinguishers	Test interval (years)
Soda acid (soldered brass shells) (until 1/1/82)	(1)
Soda acid (stainless steel shell)	5
Cartridge operated water and/or antifreeze	5
Stored pressure water and/or antifreeze	5
Wetting agent	5
Foam (soldered brass shells) (until 1/1/82)	(1)
Foam (stainless steel shell)	5
Aqueous Film Forming foam (AFFF)	5
Loaded stream	5
Dry chemical with stainless steel	5
Carbon Dioxide	5
Dry chemical, stored pressure, with mild steel, brazed brass or aluminum shells	12
Dry chemical, cartridge or cylinder operated, with mild steel shells	12
Halon 1211	12
Halon 1301	12
Dry powder, cartridge or cylinder operated with mild steel shells	12

- 7.6 A replacement fire extinguisher or an equivalent protection will be provided when portable fire extinguishers are removed from service for maintenance and recharging.

8.0 TRAINING AND EDUCATION

- 8.1 Where portable fire extinguishers are provided for employee's use in the workplace, an education program to familiarize employees with the general principles of fire extinguisher use and the hazards involved with incipient stage fire fighting will be in place. Division heads are responsible for coordinating instruction and ensuring training is performed.
- 8.2 Fire extinguisher training will be provided upon initial employment and at least annually thereafter.

8.3 Training programs will include, but are not limited to the following:

8.3.1 Classification of A, B, and C fires.

8.3.2 Types of fire extinguishers.

8.3.3 How to operate fire extinguishers.

8.3.4 How to extinguish fires (hands-on training).