

A collection of various portable fire extinguishers, including red, blue, and black models, arranged in a row. The extinguishers are of different sizes and types, with some having black handles and others having red handles. They are set against a background of a workshop or storage area with shelves and equipment.

Portable Fire Extinguishers

Objectives

- Identify the system used to classify fire extinguishers including symbols, pictures and color-coding
- Identify the portable extinguisher rating system
- Identify the types of fire extinguishers
- Identify common defects found during a visual inspection of fire extinguishers
- Identify the appropriate extinguisher and its application technique for various classes of fire

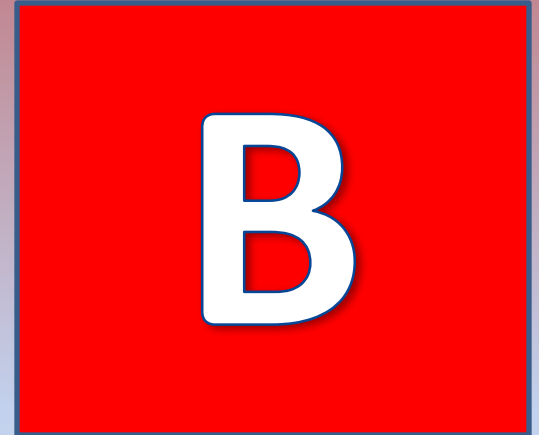
Fire Extinguisher Classifications

- Class A
 - Ordinary combustibles
 - Wood
 - Paper
 - Clothing
 - Symbol is triangle
 - Picture is trash can and campfire
 - Color is green



Fire Extinguisher Classifications

- Class B
 - Flammable liquids
 - Gasoline
 - Kerosene
 - Alcohol
 - Symbol is square
 - Picture is gasoline can
 - Color is red



Fire Extinguisher Classifications

- Class C
 - Energized electrical equipment
 - Symbol is circle
 - Picture is plug and socket
 - Color is blue



Fire Extinguisher Classifications

- Class D
 - Combustible metals
 - Magnesium
 - Potassium
 - Titanium
 - zirconium
 - Symbol is star
 - Picture is broken gear
 - Color is yellow
 - Should be left to the experienced firefighter



Fire Extinguisher Classifications

- Class K
 - Unsaturated cooking oils
 - Vegetable oil
 - Peanut oil
 - Canola oil
 - Symbol is hexagon
 - Picture is cooking pan on fire
 - Color is black



Extinguisher Rating System

- Class A
 - Rated 1-A through 40-A
 - 1-A requires 1 ¼ gallons of water
 - 2-A requires 2 ½ gallons of water
 - Rating based on tests conducted by
 - Underwriters laboratories (UL)
 - Underwriters Laboratories of Canada (ULC)
 - Test determine extinguishing capability



Extinguisher Rating System

- Class B
 - Rated 1-B through 640-B
 - Number rating based on square foot area that a non-expert operator can extinguish



Extinguisher Rating System

- Class D
 - No numerical rating given
 - Considerations for rating
 - Reaction between metal and agent
 - Toxicity of agent
 - Toxicity of the fumes produced and the products of combustion
 - Time to allow metal to burn out without fire suppression efforts versus time to extinguish
 - Cannot be given a multipurpose rating



Extinguisher Rating System

- Class K
 - No numerical rating given
 - Minimum extinguishments capabilities 2.25 square feet of surface area
 - Typically enclosed in a commercial cooking hood
 - Contain a wet chemical which turns the oil and fat into a soap



Types of Extinguishers

- Water (pump tank) extinguisher
 - Sizes from 1 ½ to 5 gallons
 - Discharge time is 45 seconds to 3 minutes
 - Agent discharged by pumping action of operator
 - Range is 30 to 40 feet
 - Need freeze protection
 - Class A



Types of Extinguishers

- Stored-pressure water extinguisher
 - Sizes from 1 ¼ to 2 ½ gallons
 - Agent discharged by compressed air stored in tank
 - Discharge time is 30 to 60 seconds
 - Range is 30 to 40 feet
 - Need freeze protection
 - Class A



Types of Extinguishers

- Aqueous film forming foam (AFFF)
 - Most are 2 ½ gallons
 - Agent discharged by compressed air stored in tank
 - Discharge time is 50 seconds
 - Range is 20 to 25 feet
 - Need freeze protection
 - Class A and B



Types of Extinguishers

- Dry Chemical

- Ratings

- Ordinary: Class B/C
 - Multipurpose: Class A, B & C

- Sizes from 2 ½” to 30 pounds

- Range from 5 to 20 feet

- Discharge time is 10 to 25 seconds

- Agent discharged by

- Stored pressure
 - Cartridge



Types of Extinguishers

- Dry Chemical
 - Does not need freeze protection
 - Ordinary agents
 - Sodium bicarbonate
 - Potassium bicarbonate
 - Ammonium phosphate
 - Potassium chloride
 - Multi-purpose agents
 - Mono-ammonium phosphate
 - Barium sulfate

Types of Extinguishers

- Carbon Dioxide
 - Class B/C extinguisher
 - Sized from 2 to 20 pounds
 - Range is 3 to 6 feet
 - Discharge time is 8 to 30 seconds
 - Avoid contact with skin
 - Large horn with no gauge
 - Agent discharged by its own stored pressure



Types of Extinguishers

- Dry powder
 - Class D extinguisher
 - Hand-carried or wheeled
 - Agent varies depending on the metal fuel
 - Hand-carried size is typically 30 pounds
 - Wheeled size is 150 to 350 pounds
 - Discharge time is 28-30 seconds

Types of Extinguishers

- Wet chemical
 - Class K extinguisher
 - Hand-carried
 - Agent Potassium Acetate
 - Size is typically 2 ½ gallon
 - Range is 8-12 feet
 - Discharge time is 75 to 85 seconds

Visual Inspection

- Corroded or damaged shells
- Obstructed hoses, horn or nozzles
- Illegible labels and instructions
- Depleted or incorrect stored pressure
- Unit not completely full
- Damaged nozzles, hose and fittings
- Tampering of lock pins and tamper seals
- Inspection tag out of date
- Leaking hoses, gaskets, nozzles and loose labels

Application Techniques

- Water (pump tank)
 - Determine if unit is full
 - Carry tank to fire
 - Unfold foot pad
 - Pump with one hand and direct stream with other hand
 - Sweep nozzle at base of fire
 - Move in and complete extinguishment

Application Techniques

- Stored-pressure (water, dry chemical, CO₂)
 - Select appropriate extinguisher
 - Pull pin, breaking plastic or wire seal
 - Point the nozzle or horn in safe direction and discharge to ensure proper operation
 - Carry extinguisher to fire
 - Aim nozzle or horn toward fire.
 - Squeeze the carrying handle
 - Sweep nozzle at base of fire.
 - Check that fire is out
 - Back away from fire area.

Application Techniques

- Dry chemical, dry powder cartridge-operated
 - Select appropriate extinguisher
 - Remove hose from stored position
 - If Cartridge-operated - Position to one side and depress activation plunger
 - Point the nozzle or horn to safe direction and discharge to ensure proper operation
 - Carry extinguisher to fire
 - Aim nozzle or horn toward base of fire
 - Squeeze the discharge
 - Sweep nozzle at base
 - Check that fire is out
 - Back away from fire area

Application Techniques

- PASS
 - Acronym used to help remember the steps to using an extinguisher

- Pull pin
- Aim nozzle
- Squeeze the lever
- Sweep the base of fire

