



Fire Protection Training

Procedures Handbook 4300

PORTABLE FIRE EXTINGUISHERS

TOPIC: Portable Fire Extinguisher; Basic Operation and Safety

TIME FRAME: 1 Hour

LEVEL OF INSTRUCTION:

BEHAVIORAL OBJECTIVE:

Condition: A written quiz

Behavior: The student will list and describe the operating procedures for several common extinguishers and the safety considerations associated with portable fire extinguishers.

Standard: With a minimum of 70% accuracy

MATERIALS NEEDED:

- Dry chemical
- Pressurized water
- CO₂
- Pump type portable fire extinguishers
- Appropriate visual aids
- Audio visual equipment

REFERENCES:

- IFSTA, Essentials of Fire Fighting, 2nd Edition, Chapter 2

PREPARATION:

Occasionally, the best extinguishing techniques on emergency incidents include the use of portable fire extinguishers. Failure to follow proper and safe procedures may jeopardize the firefighter's safety and effectiveness.



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PRESENTATION	APPLICATION
<p>I. FIRE EXTINGUISHER RATINGS</p> <p>A. Purpose - State the Relative Effectiveness of a Specific Extinguisher Under Laboratory Conditions</p> <p>B. Traditional Alpha-Numeric System</p> <ol style="list-style-type: none">1. Class A fire extinguishers<ol style="list-style-type: none">a. "Numeric" component states effectiveness of an extinguisher regardless of extinguishing agent in terms of gallons of waterb. "Alpha" components "A" indicates appropriate for Class A fires<p>EXAMPLE - (2:A) extinguishes the same amount of ordinary combustibles as two gallons of water</p>2. Class B fire extinguishers<ol style="list-style-type: none">a. "Numeric" component states effectiveness in terms of how many square feet of deep based flammable liquid will be extinguishedb. "Alpha" component "B" indicates appropriate for use on flammable liquid fires<p>EXAMPLE: (10:B) extinguisher should extinguish ten square feet of deep base flammable liquid fire</p><p>NOTE: Rating is 40% of what trained operator can extinguish</p>3. Class C fire extinguishers<ol style="list-style-type: none">a. No "numeric" component exists	



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<p>b. "C" indicates appropriate for use on energized electrical fires</p> <p>EXAMPLE: "C" Agent is a non-conductor</p> <p>4. Class D fire extinguishers</p> <p>a. No "Numeric" component exists</p> <p>b. Combustible metal fires on which effective listed on face plate or label</p> <p>EXAMPLE: "D"</p> <p>5. Multi-class rating</p> <p>a. An extinguisher effective against more than one class of fire will be so labeled</p> <p>EXAMPLE: (2A: 40B: C) = As effective as 2 gallons of water on ordinary combustibles will extinguish 40 Sq. Ft. of flammable liquids and is a non-conductor</p>	
<p>II. OPERATIONS</p> <p>A. Selection of the Proper Extinguisher Depends on Numerous Factors</p> <ol style="list-style-type: none"> 1. Type of fuel, (class A, B, C or D) 2. Intensity of the fire 3. Atmospheric conditions 4. Personnel available 	<p>What factors would help determine the type of fire extinguisher to be used?</p>



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<ul style="list-style-type: none"> 5. Life hazards B. Operating Procedure <ul style="list-style-type: none"> 1. General operating procedure follows the letters PPPS <ul style="list-style-type: none"> a. P=Pull the locking pin that keeps the handle from being pressed after breaking the plastic or wire inspection band b. P=Point the nozzle or outlet toward the base of the fire c. P=Press the handle to discharge extinguishing agent d. S=Sweep back and forth across the base of the flame C. Pump Tank Extinguishers <ul style="list-style-type: none"> 1. Use on class A fires only 2. Stream reaches between 30' and 40' 3. Must protect extinguishing agent from freezing 4. Vent hole must be kept clear so air may replace water discharged 5. May be equipped with spray and/or straight stream tip D. Stored Pressure Water Extinguisher <ul style="list-style-type: none"> 1. Use on class A fires 	<p>Show a pump type extinguishers (e.g. CDF Backpump)</p> <p>Show Example</p>



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<ul style="list-style-type: none"> 2. Stream reaches 30' to 40' 3. Discharge time - 30 to 60 seconds 4. Use finger over nozzle if necessary to break up stream 5. Pressurized with air 	
<p>E. Aqueous Film Forming Foam Extinguishers</p>	<p>Show Example</p>
<ul style="list-style-type: none"> 1. Use on class A or B fires 2. Stream reaches 20' to 25' 3. Discharge time 50 seconds 4. Generally has an aerating nozzle 5. Pressurized with air 	
<p>F. Halon 1211 Extinguishers</p>	<p>Show Example</p>
<ul style="list-style-type: none"> 1. Use on class C fires 	<p>Wind may have a radical affect on the stream of extinguishing agent.</p>
<ul style="list-style-type: none"> a. Limited effectiveness on class A & B fires 2. Stream 8' to 18' 	<p>Halon linked to destruction of the ozone layer.</p>
<ul style="list-style-type: none"> 3. Discharge time - 8 to 22 seconds 	



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<ul style="list-style-type: none">4. Best used in confined spaceG. Carbon Dioxide Extinguishers<ul style="list-style-type: none">1. Use on class B and C fires<ul style="list-style-type: none">a. Limited effectiveness on class A fires2. Stream reaches 3' to 8'3. Discharge time 30 seconds4. Best used in confined spaceH. Dry Chemical Extinguishers<ul style="list-style-type: none">1. Use ordinary dry chemical on Class B and C fires2. Use tri-class dry chemical on Class A, B, & C fires3. Stream reaches 5' to 20'4. Discharge time 8 to 25 seconds	<p>Show Example</p> <p>Caution - frost will form on the nozzle - contact could cause injury.</p> <p>Show Example</p>
<p>III. SAFETY - COMMON TO ALL TYPES OF PORTABLE FIRE EXTINGUISHERS</p> <ul style="list-style-type: none">A. Wear Full Protective ClothingB. Use SCBAC. Choose Correct Type of Extinguisher for Fire Encountered	



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<ul style="list-style-type: none"> D. Approach from Upwind/Upslope E. Check for Serviceability <ul style="list-style-type: none"> 1. Pressure gauge 2. Short burst prior to reaching fire F. Back Away from Fire Checking for Re-ignition G. Conserve Extinguishing Agent Once Fire Suppressed to: <ul style="list-style-type: none"> 1. Use on new fire 2. Use on rekindle 3. Protect environment H. Don't Run While Carrying I. Do Not Use CO2 Extinguisher with Metal Horn on Class "C" Fires J. Do Not Mix Different Dry Chemical Extinguishing Agents K. When Used on Flammable Liquids, Avoid Splashing of Burning Fuel, Bounce or Lob Agent 	<p>Could conduct electricity</p> <p>Could cause chemical reaction</p>
<p>IV. SERVICING PORTABLE FIRE EXTINGUISHERS</p> <ul style="list-style-type: none"> A. Recharging 	<p>Who may recharge a portable fire extinguisher?</p>



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<ul style="list-style-type: none">1. By trained personnel2. In accord with instructions printed on the extinguisher3. After each useB. Inspections and Repairs<ul style="list-style-type: none">1. Performed only by a certified repair person2. Interval<ul style="list-style-type: none">a. Annuallyb. After each usec. When subjected to extreme conditions<ul style="list-style-type: none">(1) Heat or cold(2) Corrosive environment(3) Abusive use (dents, etc.)d. Evidence of tampering<ul style="list-style-type: none">(1) Broken seal(2) Low pressure reading(3) Missing locking pin3. Check manufacturers recommendations for further information	<p>Who may repair a defective fire extinguisher?</p>



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SUMMARY:

Acquiring a basic knowledge of how fire extinguishers work and following safe procedures will help fire fighting personnel be more effective and could extend your firefighting career.

EVALUATION:

A written quiz.

ASSIGNMENT:

To be determined by instructor(s).