

June 2009 Safety Meeting Fire Extinguishers

The portable fire extinguisher, one of the most common fire protection appliances in use today, is found in fixed facilities and on propane vehicles. A portable fire extinguisher is excellent to use on incipient (beginning) fires. In many cases, a portable extinguisher with a trained operator can extinguish a small fire before the fire department arrives. This month we will cover the requirements, rating system and inspection of a portable fire extinguisher. In July, we will conclude with the proper usage of portable fire extinguishers.

Occupational Safety Health Act (OSHA) requirements state that employees must have fire extinguisher training yearly. Department of Transportation (DOT), NFPA 58, state and local authorities require propane vehicles to carry at least one portable fire extinguisher with a minimum capacity of eighteen pounds of fire chemical with a B:C rating. NFPA 10 and state and local codes require that fire extinguishers be inspected annually for serviceability and recharged and/or repaired as necessary. NFPA 10 also requires monthly visual inspections of all fire extinguishers. The rules and regulations of the Alabama Liquefied Petroleum Gas Board, in section 530-X-2-.04 (m), state that each cylinder filling station shall be provided with at least one twenty (20) pound portable fire extinguisher of the dry chemical type B:C rated. DOT requires that extinguishers be inspected as part of your pre-trip.

Portable fire extinguishers are classified according to the types of fire (A, B, C & D) for which they are intended. Class A and B extinguishers are also rated according to performance capability, which is represented by a number. The classification and numerical rating system are based on tests by Underwriters Laboratories, Inc. (UL). These tests are designed to determine the extinguishing capability for each size and type.

Class A (ordinary combustibles) extinguishers are rated 1-A through 40-A. The Class A rating of water extinguishers is based on the amount of extinguishing agent and the duration and range of the discharge used in extinguishing test fires. For 1-A rating, 1.25 gallons of water are required. A 2-A rating requires 2.50 gallons of water, or twice the 1-A capacity.

Class B (flammable liquids) extinguishers are classified with numerical ratings ranging from 1-B through 640-B. The rating is based on the approximate square foot area of a flammable liquid fire that a non-expert operator can extinguish. The non-expert operator is expected to extinguish one square foot for each numerical rating of the extinguisher.

Class C (electrical equipment) extinguishers have no fire extinguishing capability tests. The Class C rating confirms the extinguishing agent will not conduct electricity and has been tested for non-conductivity. The Class C rating is assigned in addition to the rating for Class A and/or Class B fires.

Class D (combustible metals) extinguishers vary with the type of combustible metal being tested. When an extinguishing agent is determined to be safe and effective for use on a combustible metal, the details of instruction are included on the face-plate, but no numerical rating is given. Class D agents cannot be given a multipurpose rating.

Extinguishers suitable for more than one class (most are) of fire are identified by a combination of the letters A, B and/or C. The most common combinations are Class ABC, Class BC and Class AB. Any extinguisher not properly marked is not a listed unit and should not be used. The ratings for each separate class of extinguisher are independent and do not effect each other. For example, a twenty pound BC extinguisher will extinguish twenty times as much Class B fire as a 1-B extinguisher and will extinguish a flammable liquid fire of a twenty square foot area. It is also safe to use on fires involving energized electrical equipment.

Fire extinguishers must be inspected as required to ensure that they are accessible and operable. Verify that extinguishers are in their designated locations, that they have not been activated or tampered with and that there is no obvious physical damage or condition present that prevents their operation. The following should be part of every fire extinguisher inspection:

- Check to ensure the extinguisher is in the proper location and that it is accessible;
- Inspect the discharge horn or nozzle for obstruction; check for cracks and dirt or grease accumulations;
- Inspect the extinguisher shell for any physical damage;
- The operating instructions should be legible;
- Check the lock pins and tamper seals to ensure that the extinguisher has not been tampered with;
- Determine if the extinguisher is full of agent and fully pressurized by checking the pressure gauge;
- Check the inspection tag for the date of the previous inspection, maintenance or re-charging;
- During inspections, an old practice of removing the dry chemical extinguisher from its mounting brackets and inverting it to keep the agent from caking may be used; the extinguisher should then be properly returned to its mounting brackets;

If any of the above items are deficient, the extinguisher should be removed from service and repaired in accordance with company policy.

Class Discussion

Ask your employees to review the federal, state and local requirements for extinguishers. Discuss the locations of all company extinguishers. Review the rating and maintenance for each extinguisher.

Closing

Each employee should understand the importance of knowing all recommended practices for selecting and maintaining your fire safety equipment. Knowing this before the emergency may reduce property damage or, more importantly, save someone from injury or death.

June 2009 Safety Test
Fire Extinguishers

Name _____

Date _____

Instructions: Read and answer each of the following questions. When complete, grade the test and review incorrect answers so each employee is “armed” with the correct answers before they leave the training.

- (1) According to NFPA 58, vehicles used to transport propane shall be equipped with at least one fire extinguisher having a capacity of eighteen pounds of dry chemical rated as _____
- (A) D:C
 - (B) A:B
 - (C) B:C
 - (D) B
- (2) Fire extinguishers should be _____ inspected monthly and tested yearly.
- (A) manually
 - (B) visually
 - (C) hydrostatically
 - (D) all of the above
- (3) The rules and regulations of the Alabama Liquefied Petroleum Gas Board states that each cylinder filling station be provided with at least one _____ pound portable fire extinguisher B:C rated.
- (A) 5
 - (B) 20
 - (C) 50
 - (D) 100
- (4) The classification and numerical rating system are based on tests conducted by _____ .
- (A) Department of Transportation (DOT)
 - (B) Alabama Liquefied Petroleum Gas Board
 - (C) American Society of Mechanical Engineers (ASME)
 - (D) Underwriters Laboratories (UL)

- (5) The non-expert operator is expected to extinguish _____ square foot for each numerical rating of the extinguisher.
- (A) 1
 - (B) 1.5
 - (C) 2
 - (D) 4
- (6) The Class C rating confirms the extinguishing agent will not conduct electricity and has been tested for non-conductivity.
- (A) True
 - (B) False
- (7) The ratings for each separate class of extinguisher are independent and do not effect each other.
- (A) True
 - (B) False

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Answer Key

1. C
2. B
3. B
4. D
5. A
6. A
7. A