



## Portable Fire Extinguishers 101: Are Students and Faculty Properly Trained on Your Campus?

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With Fire Prevention Week right on the horizon, what better time than now to test your knowledge on fire extinguishers? Do you know there are numerous types of fire extinguishers, and not all of them work the same? Did you know that not all types of fire extinguishers are appropriate for all types of fires, and that using the improper fire extinguishers can make some fires even worse? If one were to use a fire extinguisher without knowing the answers to these questions, they could be unknowingly creating a more hazardous condition and could potentially increase the chances of injury. With the proper education and training, both students and faculty should not only be able to answer the above questions, but should also be able to identify the location of fire extinguishers and know when and how to correctly use them.

The number of fires that occur on college and university campuses across the country continues to be a growing problem. While fire extinguishers themselves will not prevent these fires from occurring, their proper use could be instrumental in limiting injuries and property damage. According to data collected by U.S. Fire Administration National Fire Incident Reporting System (NFIRS) Version 5.0 and the National Fire Protection Association's (NFPA) annual fire department experience survey, there were an estimated 54 civilian fire injuries and \$29.4 million in property damage annually from 2003-2006 in dormitories, fraternities, sororities, and barracks [1]. These estimates do not even take into account cafeterias, laboratories, and other portions of campus where fire hazards exist. Had all of the students and faculty at the colleges and universities that these fires occurred at been properly trained to use fire extinguishers, these annual estimates may be much lower.

Before learning how extinguishers work and how to properly use them, one must first understand when it

is appropriate to use them. First and foremost, students and faculty should take the necessary means of providing notification in case of a fire. This includes notifying appropriate personnel, such as campus police and fire departments, and activating a manual pull station. Once the appropriate notification measures have been taken and all of the building occupants have begun to evacuate, only those who are familiar with the location of fire extinguishers and who are trained to properly operate fire extinguishers should attempt to use them. Fire extinguishers should never be used until it is determined that a clear escape route exists in case the fire cannot be put out.

One must also understand that not every extinguisher is made to put out every type of fire. *NFPA 10, Standard for Portable Fire Extinguishers*, breaks down the various types of fires into five different classes, Class A, B, C, D and K. Class A fires involve ordinary combustibles, such as wood, cloth, and paper. Class B fires involve flammable liquids, such as gasoline, oil, and some paints and solvents. Class C fires involve energized electrical equipment, such as power tools, wiring, fuse boxes, computers, TVs, and electrical motors. Class D fires involve combustible metals, such as magnesium and sodium. Class K fires involve cooking oils used in commercial cooking equipment. Understanding these classes is important because every fire extinguisher is designed and manufactured to extinguish the different classes of fires. Every fire extinguisher is labeled with letters and symbols that indicate the class of fire that it is suitable for use on.

An important aspect of training students and faculty is to ensure that the type and location of fire extinguishers is recognized. For example, those working in cafeterias should know where Class K fire extinguishers are located, but should also know where any other fire extinguishers are located in case a fire starts in an area

away from the commercial cooking equipment. Class K fire extinguishers work by saponifying the enflamed cooking oil, which prevents oxygen from reaching the fire. It could be very dangerous and actually increase the fire hazard if one was to inadvertently use a Class A, B or C fire extinguisher on a fire involving cooking oil, as these fire extinguishers do not extinguish flames using the same mechanism as a Class K fire extinguisher.

Once students and faculty can identify when it is appropriate to use fire extinguishers, and they under-

stand the differences between the various types of fire extinguishers, it is also imperative that they learn proper technique for extinguishment. Proper use of fire extinguishers follows a simple four-step process known as the P.A.S.S. method. This simple approach is depicted in the figure below.

Knowing the P.A.S.S. method is essential for properly using fire extinguishers to fight small fires. However, there are other key factors that must be kept in mind to avoid injury and successfully extinguish the flames. Most importantly, always stay in between the fire and

## TO USE YOUR EXTINGUISHER, REMEMBER "P.A.S.S."



### P.A.S.S.

- **PULL** the pin that unlocks the lever.



### P.A.S.S.

- **AIM** low, pointing the extinguisher nozzle or hose at the base of the fire.



### P.A.S.S.

- **SQUEEZE** the lever above the handle to discharge the extinguishing agent. To stop the discharge, release the lever.



### P.A.S.S.

- **SWEEP** the nozzle or hose from side to side. Keep the nozzle aimed at the base of the fire and sweep back and forth until the flames are out.

the closest, safe escape route. One must never forget that exiting the building safely is the number one priority. If extinguishment is unsuccessful and conditions worsen, it is imperative that a clear exit path is easily accessible without being exposed to excessive heat and smoke from the flames. Another important thing to remember is to remain a safe distance from the fire. As the extinguishing agent begins to knock down the flames, it may be necessary, if conditions permit, to move closer to the fire. One should never put him or herself in a dangerous situation. If smoke begins to impair one's breathing or visibility, or heat from the flames becomes too great, it is important to exit the building immediately.

If used properly, fire extinguishers can be a great first line of defense for small fires. It is important that the topics discussed in this article be integrated into any type of fire awareness training on your campus; however, these topics are just the basics of fire extinguishers. For more information of fire extinguishers, visit <http://www.nfpa.org/fireextinguishersatwork>. NFPA also has a video and brochure set (NFPA Catalog Item # SET106V) available to assist with fire extinguisher training.

