

Kansas State University uses various types of fire suppression equipment including portable fire extinguishers, sprinkler systems, dry chemical systems, Halon systems, and carbon dioxide systems. The following sections discuss each type of fire suppression equipment.

Fires are classified according to three basic categories. Each type of fire requires special treatment to control and extinguish it. Therefore, all fire extinguishers are clearly marked to indicate the fire classes for which they are designed.

Fires are classified as indicated below. Refer to the table on the following page for additional information.

- **Class A:** Fires involving ordinary combustibles such as wood, textiles, paper, rubber, cloth and trash. The extinguishing agent for a Class A fire must be cool. Water and multi-purpose dry chemical fire extinguishers are ideal for use on these types of fires.
- **Class B:** Fires involving flammable or combustible liquids or gases such as solvents, gasoline, paint, lacquer and oil. The extinguishing agent for a Class B fire must remove oxygen or stop the chemical reaction. Carbon dioxide, multi-purpose dry chemical and Halon fire extinguishers are ideal for use on these types of fires.
- **Class C:** Fires involving energized electrical equipment or appliances. The extinguishing agent for a Class C fire must be a nonconducting agent. Carbon dioxide, multi-purpose dry chemical and Halon fire extinguishers are ideal for use on these types of fires. Never use a water fire extinguisher on a Class C fire.
- **Class D:** Fires involving metals or alkali metals. These materials are typically found in chemical laboratories, but they can occur where lithium batteries are stored or used. Special fire extinguishers are used for these types of fires. Water will actually make the fire worse. If you work with metals or alkali metals you should contact EHS for assistance in choosing the correct fire extinguisher.

There are numerous types of fire extinguishers; however, most extinguishers contain water, carbon dioxide, or dry chemicals. The Halon agent is no longer available for purchase because they are ozone-depleting agents. Older Halon fire extinguishers are safe to use, however, the extinguisher will be replaced by a different type after use. Today there are alternative replacements for Halon.

## Inspection, Testing and Recharging

The Department of EHS inspects and tests fire extinguishers regularly. The Environmental Health & Safety Office is responsible the recharge of extinguishers. Fire extinguishers must be recharged after every use. To move a fire extinguisher to a new location or report a missing or damaged fire extinguisher, call EHS.

## Using Fire Extinguishers

Most fire extinguishers provide operating instructions on their label; however, the time to learn about fire extinguishers is not during a fire. The sooner you know how to use a fire extinguisher, the better prepared you are.

NOTE: Portable fire extinguishers are located throughout all University facilities. They are mounted in readily accessible locations such as hallways, near exit doors and areas containing fire hazards. Make sure that fire extinguishers are accessible and securely mounted.

EHS provides fire extinguisher training . When using a fire extinguisher to fight or control a fire, aim the spray at the base of the fire. Because most extinguishers only work for a short time, employ a sweeping motion and work quickly to control the fire. Use the entire contents of the extinguisher.

IMPORTANT: Do not attempt to fight a fire unless it is small and controllable. Use good judgement to determine your capability to fight a fire. When fighting a fire, always maintain an escape route. Never allow a fire to block your egress.

## Sprinkler Systems

The purpose of water sprinkler systems is to help extinguish and minimize the spread of fires. Sprinklers are normally activated only by heat . They are not connected to emergency pull stations. To ensure that sprinklers are effective in the event of a fire, maintain at least 18 inches of clearance from the ceiling. (Anything close to the ceiling can defeat the sprinkler system.) Never hang anything from a sprinkler head or pipe. Arrange work areas to facilitate sprinklers and allow even water distribution. All ceiling tiles should be in place.

## Halon and Carbon Dioxide Systems

Special work areas, such as computer rooms and chemical storage rooms, may contain specialized fire suppression systems. For example, many computer rooms contain Halon systems and many chemical storage rooms contain dioxide systems. Areas with special fire suppression systems will be clearly identified on the room door.

- Keep all room doors and windows closed.
- Know how the fire suppression system works (i.e., operation, abort switch, etc.)
- Do not tamper with ceiling tiles.

## Questions

Direct questions to EHS by phone: 785-532-5856 or email: [safety@ksu.edu](mailto:safety@ksu.edu)