

## Fire Suppression Systems

There are many types of fire suppression systems installed in buildings on FSU campuses. They are classified by the type of suppression agent used to extinguish fires.

The most common fire suppression systems are the pre-engineered automatic sprinkler systems. These systems use water to suppress fires in buildings. Each individual sprinkler head is actuated by a frangible bulb or fusible link. The sprinkler head is designed so that when the frangible bulb or fusible link reach a specific temperature (typically 155 degrees Fahrenheit) the bulb breaks or the link melts away and allows water to flow through an orifice creating an umbrella pattern of water to extinguish the fire.

Clean agent systems are installed in areas that have specific materials to protect that would be damaged by water like computer server rooms. These agents suppress fires by secluding oxygen to smother the fire or by breaking down the chemical chain reaction of the fire. These agents are usually not compatible with human life and are equipped with warning devices that alarm prior to system activation. These systems can be actuated by automatic system detection devices or a manual pull station.

Wet chemical agent systems are pre-engineered systems that can be found in many applications but they are most commonly found in kitchen locations on campus. Kitchen fire suppression hood systems are designed to remove grease laden vapors and suppress cooking fires under the hood. The wet chemical agent mixes with cooking oils in a process called saponification. This process creates a layer of soap over the cooking oil to smother the fire and cool the cooking oil below its ignition temperature. Wet chemical systems can be automatically actuated by a fusible link or by a manual pull station. The fixed suppression system should always be activated prior to using a portable fire extinguisher to attempt to extinguish a cooking oil fire in an appliance under the kitchen hood.