

How Safe are Your Smoke Detectors?

A number of fire safety experts are questioning whether popular models of smoke detectors meet the threat of fast-burning synthetic materials now common in many facilities. There are two common types of smoke alarms:

- Ionizing alarms use a small, safe radioactive pellet to detect smoke particles. These alarms tend to sound earlier in fast-burning, flaming fires.
- Photoelectric alarms detect changes in light patterns. These alarms tend to sound earlier in smoky fires that take time to transition to flames.

Either alarm is usually acceptable to meet National Fire Protection Association (NFPA) and state fire safety standards. Experts say both save lives, but the time needed to escape once flames start has gotten dangerously short because of fast-burning synthetic materials in furniture and carpets. Synthetics like nylon and polyester tend to smolder for a long time, melting and pooling, then give off substantially more energy than natural products like cotton or wool when they ignite.

The time from first flames to combustion of the entire room has dropped from an average of 12 to 14 minutes 30 years ago to about two to four minutes today. Current UL smoke alarm standards, first developed in the 1970s, require alarms to respond within four minutes of a flaming fire and in a smoldering fire before smoke obscures visibility by more than 10 percent. Bottom line is that your staff and students may have little if any time to respond or evacuate.

Here are several responses that your facility may want to employ:

- Install both an ionizing smoke alarm and a photoelectric alarm on every building level, and test them quarterly to ensure they work properly.
- Invest in a sprinkler system, especially for new building construction.
- Make sure that there are at least two evacuation routes that everyone can use in the event of a fire.
- Make sure fire extinguishers are easily accessible and observable. Too often, they end up in closets and are emptied by students fooling around. If you can't find fire extinguishers or they aren't functional, lives can be quickly lost.