

Loss Prevention News

Provided by the Texas Municipal League Intergovernmental Risk Pool

September 11, 2009

Smoke Detectors



There are basically two types of technologies on the market when considering what kind of smoke detector to purchase: Ionization or Photoelectric.

An Ionization model has electric current flowing continuously throughout its chambers. The electricity is like hundreds of tiny strings and when smoke particles enter into the chamber they break the strings. The broken strings causes the alarm to activate. This model is best at sensing tiny smoke particles and poisonous gases emitted by paper and wood fires.

A Photoelectric model contains a beam of light and a photocell within its chambers. The detector becomes activated when smoke particles enter the chamber and reflect a beam that causes it to hit the photocell activating the alarm. This model is best at sensing large particles of combustion from smoldering fires such as upholstery or bedding fires.

It is best to purchase a combination model which has the Ionization and Photoelectric features. Make sure the model has been approved by a safety testing laboratory such as Underwriters' Laboratories and has a manufacturer's warranty included. The best power source for a smoke detector is a combination of electricity and a battery for back-up. It is a good idea to choose a detector that makes a warning noise such as a chirping sound when the battery is low. Batteries should be tested once a week and replaced every six months. A general safety practice would be to change out smoke detectors every ten years because they lose effectiveness with age. Refer to the manufacturer's instructions on your model to find out the recommended life of the smoke detector.

The placement of smoke detectors should be based on the needs of each area. It is recommended that a smoke detector be placed on each level of a home (i.e. at the top of a stairwell) at minimum. Ideally, experts recommend that a smoke detector be placed in every bedroom and hallway outside of the sleeping area. Avoid placing smoke detectors near the kitchen because the grease from cooking could cause the smoke detector to fail. The smoke detectors should be placed 4 to 12 inches away from the ceiling and wall corners. Additionally, place smoke detectors at the lowest point on the ceiling if there are multiple ceiling levels.

Smoke detectors should also meet Americans with Disabilities Act (ADA) requirements. Audible alarms should have an intensity and frequency that can attract the attention of individuals who have a hearing loss. In situations where hearing impaired individuals reside or work alone, there should be a device that signals and spreads light reflections throughout the area. The light needed will vary depending upon a number of factors, including the size and configuration of the room, the distance between the source and the person, whether or not the light flashes, and the cycle of flashing. For more information on these requirements, you should refer to the ADA guidelines at www.access-board.gov or call 1-800-872-2253 (voice) or 800-993-2822 (TTY).