CHRISTIAN BUILDING INSPECTORS INCORPORATED

Home Tips®

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Q & A

ASHI Smoke Alarm Position

The American Society of Home Inspectors (ASHI) Board of Directors was furnished with evidence that deficiencies exist in the ionization smoke alarm technology installed in a vast majority of homes in the United States. After a thorough examination of the reports and information available, it became clear to the board there is substantial and credible evidence that ionization smoke alarms will not provide sufficient warning in certain types of fires that can be deadly to the occupants of a home. At the October 2012 ASHI Board of Directors meeting, a motion was passed that ASHI will advocate "the use of photoelectric smoke alarms in single and multifamily housing and discourage the use of ionization smoke alarms."

Smoke Alarm Position Statement

ASHI believes smoke alarms that use photoelectric sensing technology are superior to those that use ionization chamber sensing technology. ASHI recommends that homeowners replace existing ionization alarms with photoelectric alarms whenever possible.

Smoke alarms are intended to provide quick warning to allow people the chance to escape from a building before being overcome by smoke or heat from a fire. In too many cases, though, these safety devices fail to provide that warning, and people die as a result. Smoke alarms are widely available with two different sensing technologies: ionization and photoelectric. Ionization alarms have proven themselves to be particularly prone to nuisance alarms, which tend to cause people to disable them. Those that are not disabled fail to detect certain kinds of smoldering fires. Photoelectric alarms, in contrast, tend to be less susceptible to nuisance alarms and dramatically superior at detecting smoldering fires, particularly those that involve synthetic materials. Smoke inhalation from smoldering fires is a far more common cause of death in home fires than exposure to flaming fires.

In the Smoke Characterization Project Technical Report, prepared for The Fire Protection Research Foundation by researchers with Underwriters Laboratories, the researchers found that ionization alarms were only slightly faster than photoelectric alarms in flaming-mode fires. But in smoldering fires, they were consistently slower than photoelectric alarms and, of much greater concern, ionization alarms failed to trigger at all in 91% of the cases of smoldering fires in synthetic materials such as mattress foam and nylon carpet. This might lead people to conclude that it would be best to have both kinds of alarms or, perhaps, an alarm with both kinds of sensors in it.

The Consumer Product Safety Commission's Pilot Study of Nuisance Alarms Associated with Cooking found that ionization alarms produced far more nuisance alarms than photoelectric alarms, a trait that makes people tend to disable them. Surprisingly, combination alarms, which combine ionization and photoelectric sensors in the same device, produced more nuisance alarms than devices that had only one sensor of either kind - in some cases, the nuisance alarm rate for the combination units was twice as high as that of single-sensor units.

Texas A&M University's Risk Analysis of Residential Fire Detector Performance was a 3-year study that tested the

effectiveness of both types of alarms in two types of fire conditions: smoldering-ignition and flaming-ignition. This risk analysis found that, in smoldering-ignition fires, the probability of fatality due to failure of the alarm was 55.8% for ionization alarms vs. 4.06% for photoelectric alarms. In flaming-ignition fires, the probability of fatality due to failure of the alarm was 19.8% for ionization alarms vs. 4.06% for photoelectric alarms.

It's easy to view these facts and studies in the abstract and allow political concerns to mitigate the discussion. The sobering reality, however, is that people die when smoke alarms fail. Therefore, the ASHI's position on this topic is based solely on the facts that are available to us today and has not been mitigated *by* the opinions of other groups or organizations.

Given the current state of smoke alarm technology, ASHI advocates the use of photoelectric smoke alarms and discourages the use of ionization smoke alarms. ASHI recommends that homeowners replace existing ionization alarms with photoelectric alarms.

http://www.nfpa.org/safety-information/fire-prevention-week

Keep your family safe with a working smoke alarm in every bedroom.

Did you know that roughly half of home fire deaths result from fires reported between 11 p.m. and 7 a.m., when most people are asleep?

Smoke alarms save lives. If there is a fire in your home, smoke spreads fast and you need smoke alarms to give you time to get out. In fact, having a working smoke alarm cuts the chances of dying in a reported fire in half!

If you have a question, comment, or home tip, send to us at rod@cbiga.com. We reserve the right to edit published questions for length.

Daylight Saving Time Ends November 1st.

Quote Of The Month

"ANYONE CAN BECOME ANGRY. THAT IS EASY. BUT TO BE ANGRY WITH THE RIGHT PERSON, TO THE RIGHT DEGREE, AT THE RIGHT TIME, FOR THE RIGHT PURPOSE AND IN THE RIGHT WAY – THAT IS NOT EASY."

- ARISTOTLE

A Tip Of The Hat To:

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Thank You