DeTech Fire Alarm Representatives Must Understand Smoke Movement by Mabon Dallan

Article published on December 10th 2011 | Technology

Even though DeTech Fire Alarms are the most reliable products on the market today, a DeTech Fire Alarm Dealer and their representatives must understand the potential dynamics of air movement in the homes they protect. This is why all DeTech Fire Alarm Consultants must participate in continuing education training sponsored by DeTech, Inc. These programs were developed by trained professionals who have performed years of research through Texas A&M University, Colorado State University and have taught at the U.S. Fire Academy.

One of the areas of training is analysis of smoke movement within a dwelling. Smoke can spread further and often faster than flames. Itâ€™s consequences, both in life loss and property damage, are often greater than those of flames. It contributes to panic and obscures vision, impeding both occupant escape and fire fighting operations. In addition, it carries toxic products that can harm or kill when either concentration or exposure time exceeds allowable levels. Therefore, a basic understanding of the major driving forces is critical since they may influence the proper location of fire alarms.

Here are several factors a DeTech Fire Alarm expert is taught and must understand when evaluating a residential structure.

1. Buoyancy â€“ refers to the tendency of heated smoke to rise due to its reduced density. It causes smoke to rise through leakage paths in the ceiling, and to move through any leakage paths in the walls or around the doors of the room of origin. This affect usually decreases with distance as the temperature drops. This may cause the smoke to stall if no other forces are introduced to drive the smoke further. This is why a DeTech fire alarm in each room of a home is critical.

2. Expansion â€“ occurs when the smoke is heated. It expands in proportion to its absolute temperature and seeks to occupy a greater volume. In sealed environments the pressure will increase, driving smoke to flow through every pinhole available. If oxygen is suddenly introduced, an explosion is possible. As distance increases, other factors become more significant and building air currents take over.

3. Wind â€“ may be significant driving force of smoke within a home. This often occurs when there are open windows or doors on the windward side of the structure. During installation of fire alarms in various rooms, consideration of the prevailing winds and possible window or door openings should become part of the evaluation.

4. Stack Effect â€“ is the tendency of air or smoke in a two story structure to move upward when outside temperatures are much colder than those in the building and may be the strongest influence of air currents and smoke on a winter day. Basically, as warm air rises to the top of a building due to buoyancy, colder air enters the structure to fill the space below, then becomes heated and also rises. This causes pressure at the top of the home forcing the air to move outwards at its upper level. The reverse affect occurs during the summer months if a home is air conditioned. When evaluating the placement of a DeTech fire alarm it is best to locate the neutral plane, the elevation at which pressure inside and outside a building is equal.

5. HVAC â€“ heating, ventilation, and air-conditioning systems in a home may contribute greatly to smoke movement. HVAC units with a return air system may distribute smoke from a fire area to other parts of the home or may aid combustion by providing a constant supply of air. Duct systems

may penetrate barriers such as walls and floors, permitting the movement of heated gases into protected areas. Processed air (either heated or cooled) is distributed to all rooms through a system of ducts that may run from the basement to the second floor in a space called a chase. It is very important to evaluate the direction of the fins in the ceiling diffusers since the air flow across a smoke alarm will delay the activation of the alarm. The DeTech smoke alarm should be installed in an area away from the influence of air movements from the ceiling grille.

When evaluating rooms for the proper location of DeTech smoke alarms, consider the different systems that will influence smoke movement. Since the return air grille will have a negative pressure, air and smoke will be drawn toward the return grille. This air/or smoke movement should be considered when evaluating the proper location of the smoke alarm.

This is another example why proper placement and installation of DeTech fire alarms is critical to life safety. This is why it makes sense to have a professional, that has access to the above mentioned information and training, evaluate your home and install high quality technology in the optimum locations.

Article Source:
http://www.articleside.com/technology-articles/detech-fire-alarm-representatives-must-understand-smoke-movement.htm - Article Side

Mabon Dallan - About Author:
For more details please visit our site to a DeTech fire alarms or a Click here.

Article Keywords:
DeTech fire alarms

You can find more free articles on Article Side. Sign up today and share your knowledge to the community! It is completely FREE!