



# BUILDING AN EFFECTIVE FIRE PROTECTION SYSTEM FOR THE RETAIL ENVIRONMENT

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There are a number of criteria to be considered when choosing a fire alarm system for a retail operation. By paying close attention to these criteria, retail building owners and managers can feel quite comfortable that their choices will translate to a level of fire detection that will effectively protect their employees, their patrons and their products.

This article is meant to provide some basic guidelines that will assist owners and managers of diverse retail operations in addressing these criteria. The “real” starting line in the fire protection race is at the point of building construction or renovation. In fact, the most important piece of advice for an owner or manager of a retail building in terms of fire prevention and control is to comply with the most current local fire codes. What’s more, it is critical not to cut corners with materials, whether in new construction or renovations.

It is necessary to conform to the national codes set forth by the National Fire Protection Association (NFPA), the overall governing body on how fire alarm systems must be wired and what basic functions they must perform. However, because the NFPA governs only the minimum requirements, throughout the United States, the local jurisdiction has the authority to augment the basic minimal requirements and to tailor exactly how fire alarm systems work in their area.

For example, in Houston, Texas, there is a special statute regarding voice evacuation systems that requires a time limit on how long a paging microphone can be activated. The three-minute limit on the microphone activation was enacted primarily because of a dangerous situation that had occurred locally. In Houston, technicians working on a fire alarm system had taped down the switch activating the microphone and left it in that condition. Unfortunately, when the microphone is activated the automatic evacuation messages are no longer outputted from the speakers.

The building subsequently had a fire that same evening, causing damage with no fire alarm warning coming out because the microphone was locked down. That’s an example of a local code that the local jurisdiction implemented outside of NFPA’s basic requirements.

With regards to the actual fire alarm system, it’s difficult to surpass the advantages of a distributed network fire alarm system. To begin with, distributed network fire alarm systems

offer a high level of reliability due to their survivability – that is, the ability of a system to continue to function, providing early detection and appropriate notification, even when portions of the system are damaged by fire.

A distributed system is literally “distributed” throughout the retail building so that the area currently engulfed in fire will be the only area to lose fire alarm system protection. Each distributed piece of the fire alarm system should be located within or adjacent to the area it is protecting. If the emergency damages that portion of the fire alarm system, the remainder of the building can continue to operate and continue to inform people of the optimal routes for evacuation.

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A particularly valuable feature on some distributed systems is the capacity to be programmed using decision-making logic that would alter or adjust the evacuation routes, - and subsequently the instructions to the occupants of the affected areas - according to where the fire is located.

Take, for example, a three-floor retail building. If there were a fire near the north stairwell exit and smoke was filling the north stairwell with smoke from the 3rd floor to the roof, all the floors above that area could be instructed to evacuate using the south stairwell. At the same time, the system would tell everyone below the affected area to evacuate using the north stairwell below the fire and smoke. This means that two stairwells are still being employed to get people out, rather than creating congestion in a single stairwell. What’s more, priority is given to the people above the fire (who, incidentally, should have priority because fire travels upwards, as does the smoke) and allow them to use one stairwell by themselves. The intelligent network fire alarm system ultimately improves the ability of people to take the appropriate action under any given emergency conditions.

A retail environment such as a mall provides a perfect application for a distributed network alarm system, since each store can be set up as a region within the network. This would establish each region, as far as each single store is concerned, as its own private alarm system. While each alarm would network to the other stores as well, the important factor is the identification of the specific store involved and the system’s ability to notify the fire department, sending them directly to a given floor and store.