

Audible and Visual Alarm Requirements

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There are numerous laws and codes that fire detection systems must meet. And while they may seem minor, the Fire Marshal can deny occupancy if you fail to meet any one of them.

For example, the American Disabilities Act (ADA) requires that all mission critical facilities such as data centers and telephone switch facilities install fire detection systems that have both audible and visual alarms. Seem simple enough? It gets much more complicated.

Below are several examples of laws set by the ADA and cases where we have seen them misapplied.

Audible alarms

Audible alarms are imperative because they benefit individuals that have a hearing impairment.

One law set by the ADA requires that audible alarms produce a sound that exceeds the prevailing sound level in the room by at least 15dbA or exceeds any maximum sound level with a duration of 60 seconds by 5dbA, whichever is louder. In one case, a data center met this requirement in the past, but had recently added racks of servers to the room, thus creating a higher noise level. Without realizing the change, the alarm was not modified and the facility failed to meet this requirement.

Another law set by the ADA requires that the sound levels for alarm signals not exceed 120dbA. Often, we see facilities where the audible alarms are so loud that they lead to occupant confusion.

Still another law set by the ADA requires that the sound of the alarm be distinguishable above and apart from the prevailing sound level within the space. We see facilities where the sound of the alarm blends with the surrounding noises in the room.

Visual alarms

Visual alarms alert occupants of danger. Requirements are set to ensure that they are not so intense as to be unsafe for direct viewing or cause seizures for individuals with epilepsy.

One law set by the ADA requires that a fire alarm strobe be visible from any location in the room. We see cases where companies try to space out the visual alarms to reduce costs. Unfortunately, occupancy is denied.

Another law set by the ADA requires that signal height be 80 inches above the highest floor level

within the space or 6 inches below the ceiling, whichever is lower. We see cases where the visual alarms are placed too low on the wall and are obstructed by equipment in the room.

Still another law set by the ADA requires that the color of the visual alarm be clear or nominal white and not to exceed 1000cd. Often, facilities use colors such as blue for their alarm. The colored light, combined with the other indicating lights in the room, is confusing and fails to serve its purpose

Abiding by the laws and codes set for fire detection systems is important. Failure to comply can result in lost time and high costs. But, more importantly, failing to meet the laws and codes can jeopardize life safety.

Bick Group has subject matter experts in this and many other topics. Talk to our Fire Protection experts by emailing: jknabe@bickgroup.com