

Visible Notification in Corridors

by Dean K. Wilson, P.E.

In providing fire alarm system notification for hearing impaired persons throughout a building that has a large number of corridors, the challenge rests with trying to design a layout of notification appliances that meets the requirements of NFPA 72-2002, *National Fire Alarm Code*, and still makes maximum use of the available resources. You may well wonder whether any designer can do this and still design a cost effective system.

NFPA 72-2002—Section 7.5.4.2 and its related subsections—contains the requirements for the installation of visible notification appliances in corridors. There are only a relatively few key requirements that I can summarize as follows:

1. The design, under the requirements of this Section, contemplates a corridor width that does not exceed 20 feet.
2. If a particular corridor exceeds 20 feet in width, the designer should treat that corridor like a room.
3. The design should specify the use of visible notification appliances that will deliver a rated output of 15 cd.
4. The designer should always locate a visible notification appliance within 15 feet of any end of a corridor.
5. The distance between visible notification appliances should not exceed 100 feet.

6. The designer may specify the use of either listed wall-mounted or listed ceiling-mounted appliances.
7. The wall-mounted visible notification appliances may mount on either the end wall or the side wall of the corridor.
8. The designer must treat any interruption in the concentrated viewing path, such as a fire door, as a separate corridor.
9. If more than two visible notification appliances will exist in any field of view, they must flash in synchronization.

The key to implementing these nine simple requirements lies in carefully observing the flow of every corridor in a particular building to take advantage of the fact that strategically placed visible notification appliances may serve corridors that branch in more than one direction. In many cases a single, carefully placed visible notification appliance will adequately serve corridors that branch in at least two directions. If a building has an extensive series of corridors, the designer will, in fact, use a rather large number of visible notification appliances in order to satisfy the requirements of NFPA 72.

In most cases, the designer should locate the visible notification appliances independent of the audible notification appliances. By treating them separately during the initial design phase, the designer can maximize the location of each type of appliance. Then, in a later design phase, where the locations of the two types of appliances coincide, the designer can choose to use a combination audible/visible notification appliance.

The designer must also carefully consider the routing of the notification appliance circuits to minimize the likelihood that a fire in one area will affect the operation of notification appliances

in another area. This just makes good sense. However, if the fire evacuation plan for the building calls for partial or selective evacuation of the occupants, then NFPA 72 *requires* the use of survivable wiring methods and techniques to ensure the operability of the system during the life of a fire. The use of cable that can maintain its integrity when attacked by fire offers one way of meeting the survivability requirements of *Code*.

Finally, the designer must make certain that the power supply for the fire alarm system control unit can provide sufficient power to operate the required number of notification appliances. In some cases, the designer may need to specify the use of additional power supplies to provide power when the particular design requires a large number of visible notification appliances.

With very careful study of the layout of the building and very careful location of visible notification appliances, a designer can provide a cost effective fire alarm system design that meets the requirements of NFPA 72-2002, *National Fire Alarm Code*.

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