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CODE CORNER

ABOUT CODE CORNER

CCFS would like to remind you to check with your local "Authority Having Jurisdiction (AHJ)" for questions and opinions concerning your local Fire and Building Codes. The information contained in this article is supplied as a courtesy by the International Code Council (ICC) and is based on the International Fire and Building Codes and their respective commentaries. Your local codes or ordinances may vary.

SECTION 903.4.2 ALARMS

About the 2012 Edition ... CCFS will be publishing sections of the 2012 IFC for your review and comparison. Please note that CCFS is not suggesting you adopt this new regulation. Any regulations used in your state/organization should be in accordance with the recommendations set forth by your local Building Regulations Organization and State Fire Marshal's Office.

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903.4.2 Alarms. An approved audible device, located on the exterior of the building in an approved location, shall be connected to each automatic sprinkler system. Such sprinkler water-flow alarm devices shall be activated by water flow equivalent to the flow of a single sprinkler of the smallest orifice size installed in the system. Where a fire alarm system is installed, actuation of the automatic sprinkler system shall actuate the building fire alarm system.

The audible alarm, sometimes referred to as the "outside ringer" or "water-motor gong," sounds when the sprinkler system has activated. The alarm device may be electrically operated or it may be a true water motor gong operated by a paddle-wheel-type attachment to the sprinkler system riser that responds to the flow of water in the piping. Though no longer the alarm device of choice, water-motor gongs do have the advantage of not being subject to power failures within or outside the protected building (see Sections 6.9 and 8.17 of NFPA 13 for further information on these devices). The alarm must be installed on the exterior of the building in a

location approved by the fire code official. This location is often in close proximity to the fire department connection (FDC), serving a collateral function of helping the responding fire apparatus engineer more promptly locate the FDC.

The alarm is not intended to be an evacuation alarm. The requirement is also not intended to be an indirect requirement for a fire alarm system. Unless a fire alarm system is required by some other code provision, only the exterior alarm device is required. However, when a fire alarm system is installed, the sprinkler system must be interconnected with the fire alarm system so that when the sprinkler system actuates, it sounds the evacuation alarms required for the fire alarm system.

The primary purpose of the exterior alarm is to notify people outside the building that the sprinkler system is in operation. Originally, it was to act as a supplemental alert so that passersby could notify the fire department of the condition. However, because the code now requires electronic supervi-

sion of sprinkler systems, that function is mostly moot. The exterior notification now primarily serves the function of alerting the arriving fire department of which building or sprinkler system is in operation before staging firefighting activities for the building.

903.4.3 Floor control valves. Approved supervised indicating control valves shall be provided at the point of connection to the riser on each floor in high-rise buildings.

In high-rise buildings, sprinkler control valves with supervisory initiating devices must be installed at the point of connection to the riser on each floor. Sprinkler control valves on each floor are intended to permit servicing activated systems without impairing the water supply to large portions of the building.

903.5 Testing and maintenance. Sprinkler systems shall be tested and maintained in accordance with Section 901.

Section 901 contains requirements for the testing and maintenance of sprinkler systems. Acceptance tests are necessary to verify that the system performs as intended by design and by the code. Periodic testing and maintenance are essential to verify that the level of protection designed into the building will be operational whenever a fire occurs. Water-based extinguishing systems must be tested and maintained as required by NFPA 25.

The time schedule for testing and maintenance is included in the various standards referenced in Section 901 and listed in Table 901.6.1. Such maintenance includes annual visual inspection of seismic bracing, periodic lubrication of valves and quarterly testing of water flow alarm devices. An ongoing program for such maintenance and testing should be established and reports prepared and maintained as noted in Section 901.6.2.

903.6 Where required in existing buildings and structures. An automatic sprinkler system shall be provided in existing buildings and structures where required in Chapter 11.

This section states the situations in which an auto-

matic fire-extinguishing system must be added to an existing building. This section would not apply to a structure that complies with the requirements for new construction in the IBC. Chapter 11 of this code, specifically Section 1103.5, requires sprinklers for existing buildings used for the manufacture and storage of pyroxylin plastics, and in existing Group I-2 occupancies.

Automatic sprinkler protection of existing hospitals and nursing homes is of critical importance due to the nature of the occupants. In Group I-2 occupancies, the occupants are “not capable of self-preservation.” Since the occupants are not capable of self-preservation, reliance must be placed on an active fire suppression system to provide the first line of life-safety protection to these occupants. According to the NFPA report on Facilities that Care for the Aged,

“The death rate per 1,000 fires was 82 percent lower when automatic suppression systems were present.” Furthermore, the report states that “Residents of these facilities are particularly vulnerable. People over 65 face twice the risk of dying in a home fire as the general population. The risk increases with age. Consequently, the elderly are considered a high-risk population. Institutional facilities that care for older adults must work diligently to prevent fires and to train staff and to equip the property (e.g., active systems) for effective response should a fire occur. The deadliest fire in U.S. history in this property class was the 1957 Katie Jane Nursing Home fire in Warrenton, Missouri, that killed 72 people.” In more recent history, in Nashville on September 25, 2003, a fire at a nursing home resulted in 15 deaths. The Hartford Nursing Home Fire on February 26, 2003, resulted in 16 deaths. Both of these fires were in nonsprinklered properties.

See commentary for Sections 1103.5.1 and 1103.5.2 for more detail on the requirements for both pyroxylin plastics and Group I-2 occupancies.

Next Month ... SECTION 904

ALTERNATIVE AUTOMATIC

FIRE-EXTINGUISHING SYSTEMS