



CAMPUS FIRE SAFETY CODE TALK

Campus Fire Safety e-NewZone

High-Rise Building Fire Safety on College Campuses*

High-rise buildings present a unique set of challenges with regards to occupant and fire fighter safety, and high-rise buildings on college campuses are no different.

Buildings on college campuses range in uses from classrooms, offices, laboratories, assembly, and residential (dormitories). Many of these uses are often located in building that is classified as high-rise. The National Fire Protection Association defines a high-rise building as a “building where the floor of an occupiable story is greater than 75 ft (23 m) above the lowest level of fire department vehicle access.”

Some of those challenges associated with high-rise buildings include large numbers of occupants to evacuate, long evacuation times and extended distances to travel to get to the outside. In addition, firefighting strategies for high-rise buildings can be completely different than those for non-high-rise buildings as the height and size of the building requires a different firefighting tactic to ensure both occupant and fire fighter safety.

NFPA 101, *Life Safety Code*®, provides a package of protection criteria required for all new high-rise buildings, and many existing high-rise buildings if required by the specific occupancy, that address these many challenges. While the requirements in NFPA 101 are written with the primary goal of occupant life safety from fire, it should be recognized that these many features may also benefit the safety of occupants or firefighters during a non-fire event as well. The following fire safety features are required by NFPA 101 for high-rise buildings:

1. **Automatic Sprinkler System.** First, high-rise buildings must be provided with an automatic sprinkler system throughout the building. The sprinkler system must be approved, supervised, and must have a control valve and water-flow device provided for each floor. Among other benefits, sprinkler systems help confine the fire and allow for the greater evacuation time necessary in high-rise buildings.
2. **Standpipe System.** In addition to the sprinkler system for extinguishment, a Class I standpipe should be provided throughout the building. Standpipe systems assist fire



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fighters by providing a fire hose connection and allowing the manual application of water on a fire.

3. **Fire Alarm and Communication System.** A fire alarm system using a voice/alarm communication system and provided two-way telephone service for fire department use is required as part of the high-rise package. This telephone system is required to operate between the emergency command center and every elevator car, elevator lobby, and at each floor level of exit stairs. This fire alarm systems assists with both occupant notification as well as firefighting operations.
4. **Standby Power.** High-rise buildings contain many types of building systems, both emergency and non-emergency, for everyday functions of the building. It is important that most of these systems stay up and running during an emergency, thus, standby power is required. The standby power system must be connected to a variety of systems including but not limited to the fire pumps, sprinkler system components, emergency lighting, and at least one elevator. This ensures, that upon loss of power, a standby power system will maintain the necessary systems for emergency use and occupancy evacuation.
5. **Emergency Command Center.** Because of the large size and complexity of high-rise buildings, an emergency command center is required. This central location in the building contains a variety of panels and instruments that notify the staff of fire alarms, location of the alarm, elevator operation and recall, sprinkler impairments, emergency generator status, and additional necessary functions of the building system. This allows for a faster response to a building emergency, a greater level of safety for occupants in the building, and more efficient firefighter operations.
6. **Emergency Plans.** Emergency plans are a critical component to high-rise building safety for both occupants and fire fighters, and are required as part of the protection package in NFPA 101. Emergency plans include information for building occupants such as appropriate procedures for reporting emergencies, staff and occupant responsibilities during emergencies, evacuation procedures and strategies, use of elevators, conduct of fire drills, and information on the buildings layout and fire protection systems. Emergency plans contain vital information that can assist occupants on what to look for and how to act in an emergency. These plans are useful in all types of occupancies whether in a residential building, an office building, or a classroom building. One resource that is available for developing these plans in high-



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rise office buildings is NFPA's "[Guidelines to Developing Emergency Action Plans for All-Hazard Emergencies in High-Rise Office Buildings.](#)"

Whether a dormitory, classrooms, laboratories, or offices, high-rise buildings come with challenges during emergency events. However, with the right protection and awareness, these challenges can be addressed and occupants and firefighters can remain safe during a fire or other emergency event.

*For additional information on high-rise building safety, visit www.nfpa.org/highrise

Sources: NFPA 101 *Life Safety Code*®, 2012 edition. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169.



Kristin Bigda, P.E. is a Senior Fire Protection Engineer in NFPA's Building Fire Protection and Life Safety Division. She is staff liaison to four Building Code and Life Safety Code technical committees as well as NFPA 80, NFPA 105, and various other NFPA technical committee projects. She serves as co-editor of the NFPA 1 Handbook.



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