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CODE CORNER

ABOUT CODE CORNER

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CHAPTER 4

Emergency Planning and Preparedness

Part 4 of 4

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SECTION 408

USE AND OCCUPANCY-RELATED REQUIREMENTS

408.1 General. In addition to the other requirements of this chapter, the provisions of this section are applicable to specific occupancies listed herein.

▫ *This section provides specific occupancy and use requirements for emergency planning and preparedness and evacuation procedures. As noted, the occupancies and uses dealt with in this section have unique needs based on the abilities of the occupants; the density and number of occupants; the size and layout of the building and the perceived risk to the occupants.*

This section states that these requirements are in addition to the general requirements found in the rest of Chapter 4.

408.2 Group A occupancies. Group A occupancies shall comply with the requirements of Sections 408.2.1 and

408.2.2 and Sections 401 through 406.

▫ *Group A occupancies are a special concern because of the high density and number of occupants. Additionally, occupants in Group A occupancies are generally not very familiar with the building, since they tend to consist of the general public.*

408.2.1 Seating plan. The fire safety and evacuation plans for assembly occupancies shall include the information required by Section 404.3 and a detailed seating plan, *occupant load* and *occupant load limit*. Deviations from the *approved* plans shall be allowed provided the *occupant load limit* for the occupancy is not exceeded and the *aisles* and *exit accessways* remain unobstructed.

▫ *Proper planning for an assembly occupancy must consider the number, capacity and physical arrangement of exits. In turn, these factors will dictate how seating may be arranged to prevent obstruction of aisles and exits. The number of seats provided may not exceed what is permitted by the number, arrangement and capacity of exits. Floor area factors are only one ele-*

ment in determining whether the exit capacity is adequate. Additionally, the egress plan must be approved by the fire code official with a copy of the approved plan maintained on the premises for review by employees and inspectors. Many facilities have several approved plans to accommodate various situations and functions. The seating plan selected for any event should reflect the needs of the group and the requirement to keep aisles and exits clear. Deviations from an approved plan may be permitted only if they do not obstruct the complete egress path, including aisles and exits.

408.2.2 Announcements. In theaters, motion picture theaters, auditoriums and similar assembly occupancies in Group A used for non-continuous programs, an audible announcement shall be made not more than 10 minutes prior to the start of each program to notify the occupants of the location of the exits to be used in the event of a fire or other emergency.

Exception: In motion picture theaters, the announcement is allowed to be projected upon the screen in a manner approved by the fire code official.

□ Announcements are intended to familiarize occupants with life safety system features that they may need to use if a fire occurs. Information is the most valuable commodity during fires and other emergencies; however, it is often difficult, if not impossible, to override the excitement and confusion caused by a fire or other emergency. Studies have generally shown, however, that occupants do not panic as once thought; therefore, it is imperative that occupants receive information necessary for them to make decisions before an emergency occurs. To convey information and motivate an adaptive response to fires or other emergencies, the message must stimulate interest and speak directly to the topic. Many movie theaters currently use “trailers” or “shorts” to market concession items, as well as fire safety. These messages can be especially effective if they are specific and adequately distinguished from other promotions. Any message should reflect the life safety strategy and must point out specific features of the occupancy. Occupants in most theaters and auditoriums are usually expected to leave the building immediately upon notification of a fire using the nearest available exit. This is largely a reflection upon the building type and arrangement of exits. In these cases, the locations of all exits must be identified. Raising the house lights along the egress path or modulating aisle

lighting at appropriate times during the message can reinforce the message.

This section specifically requires an audible announcement, but the exception for motion picture theaters would allow the message to be visually displayed upon the screen as approved. A combination of both an audible and visual message would most likely be the most effective. This section also has a maximum time from the start of the show to provide such announcements; otherwise, an announcement that comes too early will lose its effectiveness.

408.3 Group E occupancies and Group R-2 college and university buildings. Group E occupancies shall comply with the requirements of Sections 408.3.1 through 408.3.4 and Sections 401 through 406. Group R-2 college and university buildings shall comply with the requirements of Sections 408.3.1 and 408.3.3 and Sections 401 through 406.

□ This is a general section noting to the fire code official that compliance with Sections 408.3.1 through 408.3.4 is applicable to Group E occupancies and compliance with Sections 408.3.1 and 408.3.3 is applicable to Group R-2 college and university. Group E occupancies are one of the primary occupancies that need emergency evacuation drills. They are one of the few occupancies that require all occupants to participate in evacuation drills. The effectiveness of pre-emergency planning in Group E occupancies has been significant, as evidenced by a remarkable decline in tragic fires in schools over the years. The evacuation skills learned by children in school are often carried with them into adulthood.

The section also establishes the applicability of certain provisions to residential school, college and university residence halls and dormitories classified in Group R-2. Fire represents a significant risk to life and property in dormitory occupancies, particularly at residential schools, colleges and universities. The large number of young people living in close proximity to one another creates the potential for a relatively small fire to have serious and possibly fatal consequences. Applying these requirements in conjunction with the drills required by Table 405.2 will enhance the likelihood of occupants being familiar with exiting buildings under emergency conditions at varying times throughout the day.

408.3.1 First emergency evacuation drill. The first emergency evacuation drill of each school year shall be conducted within 10 days of the beginning of classes.

▫ *Group E occupants vary from year to year as children enter and leave grade levels. In addition, even though a child may be in the same school for a number of years, location within the building and leaders change. It is important, therefore, that the first evacuation drill occurs within the first 10 days of school. This provides students with nearly immediate training and the school and emergency responders with information about where problems exist. Additionally, in more recent years schools have been immersing students with disabilities into the general classroom. The location and number of these students vary each year. The ability to evacuate them must be assessed early in the school year.*

408.3.2 Emergency evacuation drill deferral. In severe climates, the fire code official shall have the authority to modify the emergency evacuation drill frequency specified in Section 405.2.

▫ *This section provides the fire code official with the authority to delay required fire drills based on extreme climate conditions. For instance, it would be unreasonable to send students and teachers out during a hurricane or in subzero temperatures; however, all inclement weather should not be avoided since it provides a more realistic evacuation scenario. This section simply recognizes that extreme weather conditions can be considered when scheduling drills.*

408.3.3 Time of day. Emergency evacuation drills shall be conducted at different hours of the day or evening, during the changing of classes, when the school is at assembly, during the recess or gymnastic periods, or during other times to avoid distinction between drills and actual fires. In Group R-2 college and university buildings, one required drill shall be held during hours after sunset or before sunrise.

▫ *If evacuation drills are done routinely, they will be easily distinguished as drills and not an actual fire. This is potentially dangerous because the behavior patterns will be different and actual preparedness for emergency will be lessened. Time of day, therefore, should be varied whether it is convenient or not. A fire will not differentiate between a convenient and an inconvenient time. In the residential environment of school dormitories, at least one of the drills required by Table 405.2 must be conducted between sunset and sunrise so that residents can experience nighttime evacuation.*

408.3.4 Assembly points. Outdoor assembly areas shall be designated and shall be located a safe distance from

the building being evacuated so as to avoid interference with fire department operations. The assembly areas shall be arranged to keep each class separate to provide accountability of all individuals.

▫ *A key element in safe evacuation is the exit discharge portion of the evacuation route. Once occupants are outside the building, they need to be located far enough away from it to avoid further hazards. Additionally, there is a potential for the people at the assembly point to interfere with the emergency operations of the fire department, even if they are not present during an evacuation drill. Locations, therefore, need to be designated such that they avoid hazards and keep the evacuated occupants away from probable paths of emergency response. Also, to simplify accounting for the occupants once outside, the code requires each class to remain together as a group and separate from other classes.*

408.4 Group H-5 occupancies. Group H-5 occupancies shall comply with the requirements of Sections 408.4.1 through 408.4.4 and Sections 401 through 407.

▫ *Group H-5 occupancies are semiconductor fabrication facilities. These types of facilities are unique in that they have a very large allowable area and house a significant amount of hazardous materials. Essentially, the building is divided into fabrication areas, hazardous production materials (HPM) rooms, which are Group H occupancy storage rooms, and networks of service corridors and spaces. The area of the building needs to be large to incorporate all of the operations needed by the semiconductor industry. To facilitate these operations, a special package of requirements and occupancy classification was created. This package is found within the occupancy requirements in the IBC and Chapter 27 of the code. As part of the package, special emergency preparedness and preparation is also required. Sections 408.4.1 through 408.4.4 provide the specific requirements for emergency preparedness and preparation. These requirements are in addition to others pertaining to hazardous materials found in Section 407.*

408.4.1 Plans and diagrams. In addition to the requirements of Section 404 and Section 407.6, plans and diagrams shall be maintained in approved locations indicating the approximate plan for each area, the amount and type of HPM stored, handled and used, locations of shut-off valves for HPM supply piping, emergency telephone locations and locations of exits.

▫ *The requirements for plans and diagrams are in addition to those required in Sections 404 and 407. More spe-*

cifically, the additional details required include the approximate plan for each area of the building. This includes the amount of HPM stored, handled and used in both the fabrication areas and the HPM rooms. Additionally, since it is typical that such facilities tend to pipe HPM throughout the building for efficiency, all shutoff valves must be identified. Finally, exits must be clearly marked. This is specifically necessary because many service corridors for the transport of materials are not considered part of the means of egress. These details will assist both the occupants and the emergency responders.

408.4.2 Plan updating. The plans and diagrams required by Section 408.4.1 shall be maintained up to date and the fire code official and fire department shall be informed of all major changes.

□ *Semiconductor facilities are constantly changing because of the needs of new technology; therefore, the types and amounts of materials and their application are constantly changing. These changes must be accounted for within the plans and diagrams required in Sections 408.4.1 and 407; otherwise, the critical information needed by the emergency responders may not be available.*

408.4.3 Emergency response team. Responsible persons shall be designated the on-site emergency response team and trained to be liaison personnel for the fire department. These persons shall aid the fire department in pre-planning emergency responses, identifying locations where HPM is stored, handled and used, and be familiar with the chemical nature of such material. An adequate number of personnel for each work shift shall be designated.

□ *This section is similar to Section 407.4 but has some specific requirements unique to semiconductor facilities. More specifically, on-site liaisons need to be available who are familiar with the location of HPM and the associated hazards related to those materials. For example, semiconductor facilities make use of silane gas, which is a pyrophoric material—it will instantly ignite when exposed to atmospheric conditions. Knowing the characteristics of the material, where it is located and the quantity of the material used is critical information to the responding emergency personnel.*

408.4.4 Emergency drills. Emergency drills of the on-site emergency response team shall be conducted on a regular basis but not less than once every three months. Records of drills conducted shall be maintained.

□ *This section specifically requires employees to conduct drills every three months to practice specific emergency procedures for the facilities. Again, this requirement is specific to semiconductor facilities because of their unique layout and contents. The emergency responders rely heavily on the on-site actions of the employees because of their intimate knowledge of the site and the complexity of these buildings. Records must be maintained.*

408.5 Group I-1 occupancies. Group I-1 occupancies shall comply with the requirements of Sections 408.5.1 through 408.5.5 and Sections 401 through 406.

□ *A Group I-1 occupancy is one that houses over 16 individuals who live in a supervised residential care facility on a 24-hour basis. This would include residential board and care homes, congregate care facilities, social rehabilitation facilities, alcohol and drug centers, assisted living facilities and convalescent facilities. Generally, occupants of these facilities are able to respond to an emergency with some assistance from staff.*

408.5.1 Fire safety and evacuation plan. The fire safety and evacuation plan required by Section 404 shall include special staff actions including fire protection procedures necessary for residents and shall be amended or revised upon admission of any resident with unusual needs.

□ *This section is in addition to the general requirements found in Section 404. More specifically, any special requirements based on the specific needs of residents must be included as part of the plan. These plans must be reviewed each time a new occupant arrives to assess whether there are any special features that need to be included in the plan to address those particular needs.*

408.5.2 Staff training. Employees shall be periodically instructed and kept informed of their duties and responsibilities under the plan. Such instruction shall be reviewed by the staff at least every two months. A copy of the plan shall be readily available at all times within the facility.

□ *These types of facilities are normally occupied by people who have the ability to evacuate or relocate with a certain level of assistance from the staff; therefore, staff training is critical. This section requires that training occur every two months because the needs of the occupants may change over time as certain physical or mental conditions progress or new occupants arrive.*

408.5.3 Resident training. Residents capable of assisting

in their own evacuation shall be trained in the proper actions to take in the event of a fire. The training shall include actions to take if the primary escape route is blocked. Where the resident is given rehabilitation or habilitation training, training in fire prevention and actions to take in the event of a fire shall be a part of the rehabilitation training program. Residents shall be trained to assist each other in case of fire to the extent their physical and mental abilities permit them to do so without additional personal risk.

▫ *As noted, Group I-1 occupants are capable of responding to an emergency but will most likely need direction from staff and perhaps physical assistance to ensure the appropriate response. Unlike other Group I occupancies, I-1 occupancies rely on the abilities of the residents to take some level of responsibility for their own evacuation or relocation; therefore, training residents in these occupancies is critical. One major element that must be communicated to the residents is what to do when the main exit route is blocked.*

If residents are receiving rehabilitation or habilitation, fire prevention and appropriate actions to take during a fire should be communicated as part of the sessions. This section also requires the occupants to assist one another as long as a physical or mental condition would not limit their ability to do so.

408.5.4 Drill frequency. Emergency evacuation drills shall be conducted at least six times per year, two times per year on each shift. Twelve drills shall be conducted in the first year of operation. Drills are not required to comply with the time requirements of Section 405.4.

▫ *Occupants of Group I-1 facilities need to be reminded often of the evacuation procedures because mental capabilities to recall procedures, changes in the residents' abilities over time and the introduction of new residents to the facility may not be remembered. Drills, therefore, are to occur six times a year, and of those six drills, two drills are to occur on each shift. To ensure that the staff is fully aware of the procedures for a facility, these drills are required to occur 12 times in the first year of operation.*

408.5.5 Resident participation. Emergency evacuation drills shall involve the actual evacuation of residents to a selected assembly point.

▫ *This section clarifies that the drills must include all occupants, not just the staff. In other institutional occupancies where the occupants are not capable or it is not*

desirable to evacuate them on their own, inclusion of the residents in drills is not necessary. Since dependence is placed on the residents to react in Group I-1 occupancies, their involvement is critical.

408.6 Group I-2 occupancies. Group I-2 occupancies shall comply with the requirements of Sections 408.6.1 and 408.6.2 and Sections 401 through 406. Drills are not required to comply with the time requirements of Section 405.4.

▫ *Group I-2 occupancies are medical occupancies where the occupants are not capable of self-preservation, and in many cases, it is not in their best interest to fully evacuate or even move; therefore, the code generally has a unique set of requirements specific to such occupancies. Some of the elements include quick response sprinklers and the division of the building into smoke zones to assist in the compartmentation of the building. In terms of emergency preparedness and procedures, this section has requirements that address the specific needs of the occupants.*

408.6.1 Evacuation not required. During emergency evacuation drills, the movement of patients to safe areas or to the exterior of the building is not required.

▫ *As noted above, patients in many cases are not capable of self-preservation and in most cases, it is not in their best interest to move unless absolutely necessary. Additionally, the relocation and evacuation procedures do not involve the patients in training activities; therefore, the code does not require patients to participate in evacuation and relocation drills.*

408.6.2 Coded alarm signal. When emergency evacuation drills are conducted after visiting hours or when patients or residents are expected to be asleep, a coded announcement is allowed instead of audible alarms.

▫ *Because sounding an alarm could have serious negative effects, and the staff are the only ones participating in training procedures, the code allows use of a call system or similar approach to notify staff of a drill in place of sounding the regular alarm.*

408.7 Group I-3 occupancies. Group I-3 occupancies shall comply with the requirements of Sections 408.7.1 through 408.7.4 and Sections 401 through 406.

▫ *Group I-3 occupancies are institutional occupancies where the occupants are under restraint. Typically, the occupants are physically able but are restrained from moving freely. Several levels of restraint in such occu-*

pancies are described in more detail in Chapter 2 under the definition of “Group I-3 occupancies.” As in Group I-2 occupancies, the only participants in drills will be the staff.

408.7.1 Employee training. Employees shall be instructed in the proper use of portable fire extinguishers and other manual fire suppression equipment. Training of new staff shall be provided promptly upon entrance on duty. Refresher training shall be provided at least annually.

▫ *Group I-3 facilities are more likely to have incendiary activity; therefore, staff needs to be trained in the use of various fire protection equipment, including fire extinguishers. Additionally, any new employees need to be immediately trained in the use of this equipment. Because of difficulties presented by relocating or evacuating confinees, fires should be managed, when practical, to minimize the threat to occupants. Since combustibles are strictly limited in most of these occupancies, accidental fires generally remain small—at least long enough to be manageable. Incendiary fires often pose greater challenges and generally reflect a breakdown in security discipline. Notwithstanding this problem, fire extinguisher training, and even incipient fire brigades, may be especially effective elements of a fire safety plan in restrained care occupancies. This training is required of new employees before they can begin their official duties. This training must then be refreshed once a year.*

408.7.2 Staffing. Group I-3 occupancies shall be provided with 24-hour staffing. Staff shall be within three floors or 300 feet (91 440 mm) horizontal distance of the access door of each resident housing area. In Use Conditions 3, 4 and 5, as defined in Chapter 2, the arrangement shall be such that the staff involved can start release of locks necessary for emergency evacuation or rescue and initiate other necessary emergency actions within 2 minutes of an alarm.

Exception: Staff shall not be required to be within three floors or 300 feet (9144 mm) in areas in which all locks are unlocked remotely and automatically in accordance with Section 408.4 of the *International Building Code*.

▫ *Group I-3 occupancies place a lot of weight on the actions of the staff in emergencies. This particular section provides specific direction as to where the staff is to be located and how they are to react in an emergency. Staff members who are responsible for initiating the relocation or evacuation of confinees must be constantly alert*

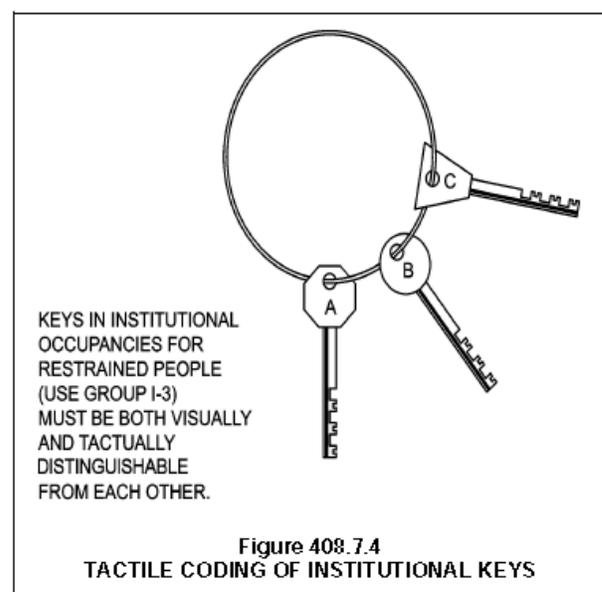
to potential fire hazards and incipient fires. If a fire occurs, 2 minutes will seem like a long time to confined people. When a remote release locking system is neither required nor provided, the number of locks requiring manual unlocking should be limited with due regard to staff and confinee safety. This may require additional staff to accomplish the unlocking procedure in a timely manner. This section does have a specific exception for systems that utilize a remote locking and unlocking system.

408.7.3 Notification. Provisions shall be made for residents in Use Conditions 3, 4 and 5, as defined in Chapter 2, to readily notify staff of an emergency.

▫ *Group I-3 occupancies under Use Conditions 3, 4 and 5 where the occupants are very limited in their freedom would be considered moderate- and high security facilities. Because the occupants are so limited and could be located remotely from guards or other staff members as a result of confinement within a compartment, a method is necessary for staff notification of a fire. In open cell blocks, staff members may be within earshot of occupants but generally this requirement necessitates monitors, intercoms or other communication appliances.*

408.7.4 Keys. Keys necessary for unlocking doors installed in a means of egress shall be individually identifiable by both touch and sight.

▫ *Keys must be distinctive from one another so they may be promptly and reliably identified under emergency conditions. Fumbling for the right key can cost valuable seconds, and possibly lives, in the event of a fire (see Figure 408.7.4).*



408.8 Group R-1 occupancies. Group R-1 occupancies shall comply with the requirements of Sections 408.8.1 through 408.8.3 and Sections 401 through 406.

▫ *Group R-1 occupancies are residential occupancies that include hotels and boarding houses. These occupancies contain residents that are temporary in nature; therefore, they are more unfamiliar with their surroundings than Group R-2 and R-3 occupants. Sections 408.8.1 through 408.8.3 provide specific requirements that take into account characteristics of Group R-1 occupancies.*

408.8.1 Evacuation diagrams. A diagram depicting two evacuation routes shall be posted on or immediately adjacent to every required egress door from each hotel or motel sleeping unit.

▫ *This section requires an evacuation plan diagram to be posted in each hotel or motel sleeping unit. Both the format of the diagram and its location must be approved by the fire code official. This diagram is to display both a primary and a secondary exit route in case a fire or other obstacle blocks the primary route. The plan should be prepared so that the orientation of rooms in relation to the exits is accurately portrayed and easily discernible to the occupant. Often, additional safety information is included on the plan diagram, such as fire alarm box and fire extinguisher locations; however, those added items should not clutter the diagram to the extent that they detract from the clarity of its primary purpose of showing exit routes and exit locations.*

408.8.2 Emergency duties. Upon discovery of a fire or suspected fire, hotel and motel employees shall perform the following duties:

1. Activate the fire alarm system, where provided.
2. Notify the public fire department.
3. Take other action as previously instructed.

▫ *This section contains specific actions employees are to take if a fire occurs. More specifically, requiring that they first activate the fire alarm and then call the fire department is intended to avoid a situation in which the employee first investigates or calls security. The section requires immediate notification of the occupants to facilitate evacuation or relocation as necessary and notification of the fire department. Notifying the fire department as early as possible will enable them to reach the building at an earlier stage in the fire.*

408.8.3 Fire safety and evacuation instructions. Infor-

mation shall be provided in the fire safety and evacuation plan required by Section 404 to allow guests to decide whether to evacuate to the outside, evacuate to an *area of refuge*, remain in place, or any combination of the three.

▫ *The procedures for isolating occupants from a fire depend on the layout and overall fire protection design of a building. More specifically, a hotel in a high-rise building may be specifically designed to evacuate in phases; therefore, the occupants need to know the procedures to facilitate a smooth and organized reaction to a fire. The appropriate actions that are available should be communicated. Options may include remaining in their rooms, evacuation or relocation.*

408.9 Group R-2 occupancies. Group R-2 occupancies shall comply with the requirements of Sections 408.9.1 through 408.9.4 and Sections 401 through 406.

▫ *Group R-2 occupancies are permanent residential occupancies that house multiple occupants in multiple dwelling units. Typically, this includes apartment buildings, dormitories and other related residential occupancies. Generally, the occupants tend to be familiar with their surroundings but may be sleeping when an emergency occurs. Sections 408.9.1 through 408.9.3 provide specific requirements in addition to the general requirements of Chapter 4.*

408.9.1 Emergency guide. A fire emergency guide shall be provided which describes the location, function and use of fire protection equipment and appliances accessible to residents, including fire alarm systems, smoke alarms, and portable fire extinguishers. The guide shall also include an emergency evacuation plan for each dwelling unit.

▫ *This section requires that a guide illustrating the fire safety features of the building be provided to each dwelling unit. This guide must contain the intended evacuation plan for each unit. Providing this information to residents increases the likelihood of a proper response, which in turn, increases resident safety and also makes the fire department's job a little easier when responding to a scene.*

408.9.2 Evacuation diagrams in Group R-2 dormitories. A diagram depicting two evacuation routes shall be posted on or immediately adjacent to every required egress door from each Group R-2 dormitory sleeping unit.

▫ *See the commentary to Section 408.8.1.*

408.9.3 Maintenance. Emergency guides shall be reviewed and approved in accordance with Section 401.2. Evacuation diagrams shall be reviewed and updated in accordance with Section 404.4.

▫ *This section is a mechanism for the fire code official to make sure that correct and complete information is contained in the emergency guide and evacuation diagrams. It gives the fire code official the ability to ask for changes in the manual if a change in the character of the building or occupants occurs.*

408.9.4 Distribution. A copy of the emergency guide shall be given to each tenant prior to initial occupancy.

▫ *The guides are effective only when they are properly distributed to the residents. This section requires that residents be provided with the guide prior to occupancy.*

408.10 Group R-4 occupancies. Group R-4 occupancies shall comply with the requirements of Sections 408.10.1 through 408.10.5 and Sections 401 through 406.

▫ *A Group R-4 occupancy is a residential care/assisted living facility for more than five but not more than 16 residents. The occupants are similar to those found in a Group I-1 occupancy; therefore, they are capable of self-preservation but, in many cases, may have mental or physical conditions that could impede their reactions.*

408.10.1 Fire safety and evacuation plan. The fire safety and evacuation plan required by Section 404 shall include special staff actions, including fire protection procedures necessary for residents, and shall be amended or revised upon admission of a resident with unusual needs.

▫ *This section adds to the general requirements found in Section 404. More specifically, any special requirements based on the specific needs of residents must be included as part of the plan. These plans must be reviewed each time a new occupant arrives to assess whether there are any special features that need to be included in the plan to address those particular needs.*

408.10.2 Staff training. Employees shall be periodically instructed and kept informed of their duties and responsibilities under the plan. Such instruction shall be reviewed by the staff at least every two months. A copy of the plan shall be readily available at all times within the facility.

▫ *Residents of these types of facilities normally have the ability to evacuate or relocate with a certain level of*

assistance from staff; therefore, it is critical that the staff is properly trained. The requirement that training occur every two months is critical because the needs of the occupants may change over time as certain physical or mental conditions progress or new occupants arrive.

408.10.3 Resident training. Residents capable of assisting in their own evacuation shall be trained in the proper actions to take in the event of a fire. The training shall include actions to take if the primary escape route is blocked. Where the resident is given rehabilitation or habilitation training, training in fire prevention and actions to take in the event of a fire shall be a part of the rehabilitation training program. Residents shall be trained to assist each other in case of fire to the extent their physical and mental abilities permit them to do so without additional personal risk.

▫ *Occupants are capable of responding to an emergency but will most likely need direction from staff and perhaps physical assistance to ensure the appropriate response; therefore, training the residents in these occupancies is critical. One major element that must be communicated to the residents is what to do when the main exit route is blocked. If residents are receiving rehabilitation or habilitation, fire prevention and appropriate actions to take during a fire should be communicated as part of the sessions.*

This section also requires the occupants to assist one another as long as a physical or mental condition would not limit their ability to do so.

408.10.4 Drill frequency. Emergency evacuation drills shall be conducted at least six times per year, two times per year on each shift. Twelve drills shall be conducted in the first year of operation. Drills are not required to comply with the time requirements of Section 405.4.

▫ *Occupants of Group R-4 facilities need to be reminded often of the procedures because they may lack the mental capabilities to recall procedures, changes in the residents' abilities over time and the introduction of new residents to the facility. Drills are to occur, therefore, six times a year, and of those six drills, two drills are to occur on each shift. To ensure that the staff is fully aware of the procedures for a facility, these drills are required to occur 12 times in the first year of operation.*

408.10.5 Resident participation. Emergency evacuation drills shall involve the actual evacuation of residents to a selected assembly point and shall provide residents with experience in exiting through all required exits. All re-

quired exits shall be used during emergency evacuation drills.

Exception: Actual exiting from windows shall not be required. Opening the window and signaling for help shall be an acceptable alternative.

□ *Group R-4 occupancies have fewer occupants than Group I-1 occupancies. For that reason, some leniency in construction requirements is allowed in such buildings. Also, the level of staffing may not be equivalent; therefore, residents are required to utilize all of the available exits during various drills. This means requiring them to try different routes from one drill to the next. Additionally, in many cases, Group R-4 occupancies include emergency egress windows as part of the possible exit routes. During a drill, the residents are not required to physically exit through the window; instead, they are allowed to simply open the window and signal for help. Exiting unassisted through windows could lead to serious injuries or death.*

408.11 Covered and open mall buildings. Covered and open mall buildings shall comply with the provisions of Sections 408.11.1 through 408.11.3.

□ *A covered mall building is a special use as described in Section 402 of the IBC and as defined in Chapter 2 of the code. Generally, a covered mall building is a single building housing multiple occupancies, including, but not limited to retail, assembly, drinking, dining and entertainment in which two or more tenants have a main entrance into a mall area. A mall area is also defined in Chapter 2 of the IBC as “a roofed or covered mall building that serves as access for two or more tenants and does not exceed three levels that are open to each other;” therefore, it presents some unique issues concerning fire department response to an emergency.*

An open mall is an uncovered common pedestrian walk that is open to the sky above and to tenant spaces within the open mall building and typically connects to the anchor buildings. Unless noted otherwise, open malls must comply with all of the IBC provisions for malls. The open mall building includes all of the buildings housing a number of tenants wherein two or more tenants have a main entrance into one or more open malls. Because the open mall is characterized by there not being a roof connecting one side of the pedestrian mall to the other, the covered mall “building” may actually be a collection of separate buildings that all rely on a shared pedestrian concourse for egress. Similar to the covered mall build-

ing, the open mall “building” does not include the anchor buildings. Unless noted otherwise, open mall buildings have to comply with all the provisions for covered mall building.

The requirements of Sections 408.11.1 through 408.11.3 are related primarily to the complexity of the building and provide appropriate information to emergency responders so they can more effectively respond to a fire or other emergency.

408.11.1 Lease plan. A lease plan shall be prepared for each covered and open mall building. The plan shall include the following information in addition to that required by Section 404.3.2:

1. Each occupancy, including identification of tenant.
2. Exits from each tenant space.
3. Fire protection features, including the following:
 - 3.1. Fire department connections.
 - 3.2. Fire command center.
 - 3.3. Smoke management system controls.
 - 3.4. Elevators, elevator machine rooms and controls.
 - 3.5. Hose valve outlets.
 - 3.6. Sprinkler and standpipe control valves.
 - 3.7. Automatic fire-extinguishing system areas.
 - 3.8. Automatic fire detector zones.
 - 3.9. Fire barriers.

□ *Item 1 assists the emergency responders by requiring detailed documentation regarding the identification of each tenant, location and occupancy. This will let them know where the highest density of occupants and the types of hazards that may be anticipated.*

Item 2 is the identification of exits. This will assist the emergency responders in the identification of necessary access routes and how they may interact with the exits.

Item 3 is a report of the available fire protection features. These features, such as identification of the fire detector zones, will help responders quickly assess where a fire is located. If the mall has a smoke control system, access to the controls may be necessary; therefore, the location of those controls is critical. This information gives the fire department a general feel for how the building is intended to perform during a fire. This information is valuable in the sense that they will have

more information to promote effective use of the fire protection features installed. If little information is provided, the fire department could actually disrupt the essential activation of a system, such as smoke control.

408.11.1.1 Approval. The lease plan shall be submitted to the *fire code official* for approval, and shall be maintained on site for immediate reference by responding fire service personnel. □ The lease plan must be approved. This allows the fire department to determine whether all necessary information, from their perspective as the responders, is addressed. Also, this section provides a requirement to make sure this document is available on site for use by the emergency responders.

408.11.1.2 Revisions. The lease plans shall be revised annually or as often as necessary to keep them current. Modifications or changes in tenants or occupancies shall not be made without prior approval of the *fire code official* and building official.

□ *This section provides the authority to require a review of the lease plan at least once each year. In addition, the fire code official has the authority to ask for more frequent reviews of the plan. If a change occurs within the building, the lease plan may no longer be valid; therefore, this section requires that no changes to any tenant space be made without approval and review by the fire code official. These changes would have to be documented in the lease plan.*

408.11.2 Tenant identification. Each occupied tenant space provided with a secondary exit to the exterior or exit *corridor* shall be provided with tenant identification by business name and/or address. Letters and numbers shall be posted on the *corridor* side of the door, be plainly legible and shall contrast with their background.

Exception: Tenant identification is not required for anchor stores.

□ *Identifying secondary exits from tenant spaces that enter into an exit passageway or lead directly outside is a critical need for emergency responders. This identification can either be the address or the name of the business. Having multiple tenants within a building makes this identification necessary. Anchor stores do not need these labels, since they are fairly recognizable without them.*

408.11.3 Maintenance. Unoccupied tenant spaces shall be:

1. Kept free from the storage of any materials.

2. Separated from the remainder of the building by partitions of at least 0.5-inch-thick (12.7 mm) gypsum board or an *approved* equivalent to the underside of the ceiling of the adjoining tenant spaces.

3. Without doors or other access openings other than one door that shall be kept key locked in the closed position except during that time when opened for inspection.

4. Kept free from combustible waste and be broom-swept clean.

□ *This section is primarily concerned with the hazards posed by a tenant space that is not in use or that is not under the supervision of employees. These spaces are more likely to be targeted by vandalism and possibly incendiary activity. Generally, a fire can grow unnoticed in such spaces as a result of the lack of supervision or activity in the space. To reduce these risks, several requirements are found in Section 408.11.3 that focus on reducing the fire ignition, growth and spread potential by limiting combustibles in the space, securing the space through the use of locks and installing fire separations constructed of 1/2-inch-thick (12.7 mm) gypsum or similar materials. Note that mall buildings are required to be sprinklered throughout and that the systems in the tenant spaces must be independent of the mall area.*

Bibliography

The following resource materials were used in the preparation of the commentary for this chapter of the code:

Code Changes Resource Collection *International Fire Code—2012*. Washington, DC: International Code Council, 2011.

Evacuation Planning Guide for Stadiums. Washington, DC: U.S. Department of Homeland Security, 2008.