

Building Evacuations and Fire Drills: How to Empower your Workplace



2022

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EVACUATION CHECKLIST

Date: _____

Time: _____

Address: _____

SUITE #: _____

MINUTES TO EXIT FLOOR: _____

NAME: _____

MINUTES TO EXIT BLDG: _____

Each Floor Warden should be given a copy of this form before your evacuation drill. If they are instructed to turn one in every time the alarm goes off, they will be familiar with them when you do your drill. It also gives you a current snapshot of what happens in your building when the alarm activates...Is everyone following the plan? Do the persons with functional and access needs know what to do and where to go? Do the buddies know what to do if their person is in danger for any reason?

ARE STROBES, HORNS AND VERBAL DEVICES WORKING? YES _____ NO _____ N/A _____

ARE THE FIRE DOORS OPERATIONAL? (If applicable.) YES _____ NO _____ N/A _____

ARE ALL DOORS CLOSED? YES _____ NO _____

Closed doors limit the spread of smoke and fire damage. Doors may be locked for security reasons, unless a locked door prevents a person from exiting.

DID ANYONE BRING FOOD, DRINKS, LARGE ITEMS INTO STAIRS? YES _____ NO _____

Spilled drinks and food can cause slips and falls. Large items are trip hazards, which may cause injury or panic. Have evacuees wait until they have fully exited the building before utilizing their phones.

IS EVERYONE EXITING WITH EFFICIENCY? YES _____ NO _____

No one should be returning to their offices or going back inside for items. Furthermore, they should be calmly finding the most efficient and safe exit.

WHO IS STILL IN THE BUILDING? _____

WHERE? _____ REASON? _____

HOW WAS THIS INFORMATION COMMUNICATED? _____

PERSONS WITH FUNCTIONAL/ACCESS NEEDS ON THE FLOOR? YES _____ NO _____

WHERE? _____

WERE THEY ABLE TO EXIT? YES _____ NO _____

DOES THIS PERSON HAVE AN EVALUATION ASSISTANT? DO THEY KNOW HIS/HER JOB?

YES _____ NO _____

DID YOU CHECK IN WITH THE BUILDING STAFF & REPORT WHO IS LEFT ON YOUR FLOOR OR IN THE AREA OF REFUGE?

YES _____ NO _____

An evacuation assistant supports egress, minimally to the closest stairwell. The assistant should call 9-1-1 to communicate their location or walk downstairs to get help if the phones are not working. Additionally, this location should be communicated to floor wardens who will then communicate this location to staff and/or fire dept..

South Metro Fire Rescue Fire Drill Record

Keep this record of the drill with your building records for at least 3 years. This should generally be in a red binder in the fire command center with all inspection records.

Address:

Date:

Time:

All doors closed?

Food, beverages, large items or texting in the stairwell?

Total Evacuation Time:

Approximate number of evacuees

How was the evacuation initiated?

Smoke detector ____ **Pull station** ____ **Drill button** ____ **Announcement** ____

Weather Conditions:

Anyone remaining in the building, because they were unwilling or unable to evacuate.
(Use another page if necessary)

Name	Location	Reason

NOTES and suggestions to improve during the next drill:

III. HOW TO RUN YOUR FIRE DRILL:

Read all the way through. Be sure you have the correct pull station keys before you begin.

1. Take the fire alarm system offline. (5-10 minutes before the drill)

a. If you have a building fire alarm:

1. Call the monitoring company and take it offline for 30 minutes to 1 hour. You may have and need a passcode to take the system offline.
2. Call South Metro Fire Rescue Dispatch at 720-258-8911 to inform them that you are having a drill.
3. Call **both** the monitoring company & South Metro Fire Rescue Dispatch when the drill is complete to put the system back online.

2. Activate Alarm by one of these methods:

If you use the pull stations, make sure you HAVE THE RESET KEY before the drill begins. Have the building engineer onsite.

a. **Manual pull stations.** Pull stations MUST be reset before the alarm panel is able to reset. Use key or hex key to open the box & reset it. **PRO:** Inexpensive. **CONS:** Requires keys to reset and is personnel intensive.

b. **Smoke** from a can of test smoke sprayed on a smoke detector in the hallway or the elevator lobby. Ask your fire alarm service company how to obtain these, or you may order them online. **PROS:** Smoke clears by itself and is easy to use. If you smoke the detector in the elevator lobby, not only does the alarm sound, but the elevators will recall and the pressurization fans (if you have them) will engage. **CONS:** The cost of buying the cans of test smoke and every 3rd floor must be smoked unless the whole building alarms at one time.

c. **Drill Button.** Some fire alarms systems have a “fire drill” button. Your fire alarm company or building engineer will need to find out what systems will be activated if you use it. **PROS:** Easy and inexpensive. This method only takes one staff person to operate the panel. **CONS:** Not all fire alarm systems are activated by a “fire drill” button. At a minimum, the button should activate BOTH horns and strobes. Drill buttons generally do not engage other systems like pressurization fans if you have them.

*The best possible drill is one that most closely mirrors the conditions during a true emergency. If only the horns sound with no strobes blinking, many occupants do not know if they are in alarm and may **not** evacuate thinking it is just an “oops”. The Drill button on some panels can be programmed to include strobes, horns, fire doors, elevator recall and pressurization.*

3. Time: How long is recommended to clear each floor and the total time to clear the building?

Although there is not a requirement on how fast an evacuation must be completed, it should be done efficiently. Most drills are completed between 5 and 15 minutes.

4. “Acknowledge” and then “Silence” the alarm at the panel after everyone has left the building.

5. **Get tenant/occupant accountability.** Has everyone checked in? Have they moved to their meeting area? Is there anyone requiring additional assistance? Where are they?

6. Place the system back online.

Remember to notify your alarm monitoring company and South Metro Fire Rescue Dispatch that you are back online. SMFR 720-258-8911

7. Allow occupants back inside.

You may have to go outside and call everyone in. In large buildings using a bullhorn can be helpful. Consider using a mass notification system for this, sending texts and/or emails to everyone to notify everyone when it is safe to return. Mass notification works very well for drills, updates during alarms, and lock-down situations such as an active shooter in the building.

IV. Tips for Floor Wardens

- **Close every door inside your unit/residence and every door behind you as you exit.** A closed door can help slow fire's spread and keep dangerous smoke away from you. The number one cause of death related to fires is smoke inhalation; it is the most common cause of death at the scene of a fire.
- **As you exit, check the stairwell landings and elevator lobbies to see if anyone is waiting for assistance.** Make a note of who is waiting for assistance by name, if you can. Note the exact location, whether they are okay or need immediate assistance due to a medical emergency and report this information to building staff as you leave the building. You do **NOT** have to rescue or force people to leave. Firefighters will handle the situation.
- **Do not allow anyone to take coffee, food, large items or drinks of any kind (including water bottles) into the stairs during emergency evacuations or drills.** Tell them to "Leave it." Many people are injured by slips, trips, and falls, so hands should be free of all items so they can use the handrails. They should NOT be on the phone in the stairwell. Talking and texting while going down the stairs is dangerous. Even a dropped water bottle can be a trip hazard, injuring someone and possibly blocking the stairwell.
- **If a person is physically unable to evacuate,** assign an evacuation assistant and guide them to a stairwell, or the elevator lobby (if the elevator lobby is an enclosed and labeled area of refuge.) Tell the assistant to stay with their person until the alarm is cleared. If persons are needing additional assistance or are in danger for any reason (like a medical emergency), call 911 to get help. If able, provide first aid to the level of your training. If the cell phones are not working, try a landline if it is safe, or walk down the stairs and notify the fire department and/or building staff.
- **Know the location of all emergency stairwell exits and where your evacuation meeting place is outside.**
- **Notify the building staff that your unit/suite/floor is clear.** Report if anyone is left in the building, and where they are located. Are they just refusing to evacuate? Does anyone need immediate medical assistance? The fire department will need this information as soon as possible in the event of a real emergency, so they can triage where to send rescue teams first.

High Rise Evacuation Drill Staffing Sheet

Address: _____		Date: _____	
FLOOR	Pull Station activated?	Staff Member Assigned	Notes
12			
11			
10			
9			
8			
7			
6			
5			
4			
3			
2			
1			
Has the building fire alarm been taken offline with the monitoring company?			
Can Alarm be set off from the panel? Using pull stations? Cans of test smoke?			
Do I have pull station reset keys?			
Do I have keys to access floors? <i>(Each person activating a pull station should also have keys to get onto every floor)</i>			
Stand outside the exit doors and collect accountability information from Floor Wardens.			
Make sure evacuees go to their meeting place away from the building for safety.			
NOTES:			
**	STAIRWELL DOORS: Locked? Unlocked? Fire doors close on alarm?		
**	AREA OF REFUGE IS: STAIRWELLS? ELEVATOR LOBBY?		
**	Complete Evac? YES		
**	People needing assistance do buddies know what to do? Yes ? No?		
**	Elevators in service? Yes Recalled to 1st Floor? Recall at panel ?		
**	Pressurization fans: Bypassed?		
Contacts:		Property Manager: Asst. Prop. Mgr.	
Engineer:			

START TIME: _____

FINISH: _____

FREQUENTLY ASKED QUESTIONS

The following questions concern both residential and business fire evacuations.

1. What happens if someone simply refuses to leave during a mandatory drill?

According to International Fire Code (2021)405.2, "Emergency fire and evacuation drills shall involve the actual evacuation of occupants to a selected assembly point and shall provide occupants with the experience in exiting through required exits." Fire and evacuation drills shall include the complete evacuation from the building of all required participants. The required participants are defined by the occupancy class. We recommend including verbiage in your lease agreement(s) to include penalties for non-compliance of fire drills.

WHY? Studies of several fatal fire tragedies have shown a common disregard for safety and evacuation training. Those who do not participate in regularly scheduled drills do not know where to go and what to do. Unfortunately, in a real fire situation, there may not be time to find out. Smoke can easily disorient you, and confusion and panic may result. A single breath of hot, heavy smoke may knock you down from poisonous gasses.

Why is it so difficult for people to escape a fire in their own home even though they know the layout well and it likely is small enough that multiple escape routes are close at hand? One reason cited is that the smoke may be so thick and dense that occupants are disoriented. In order to burn, fire requires oxygen and consumes much of the available oxygen individuals need to breathe and remain conscious. This can happen so quickly that occupants are overcome and unable to reach easily accessible exits.

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- There are some people who believe they have lots and lots of time to evacuate when the fire alarm activates. For a real-life demonstration of how fast fires grow, take a minute, go online, and watch the Underwriters Laboratories' Legacy Fire test video. Internet search "UL Legacy Room"
 - They conducted a side-by-side comparison of two simulated living room fires. The purpose was to gain knowledge on the difference between modern and older furnishings. Both rooms contain similar amounts of like furnishings. Both rooms were ignited by placing a lit stick candle on the sofa. The fires were allowed to grow until flashover, the near-simultaneous ignition of everything in a room. Not survivable.
 - The room with Legacy furnishings made of solid wood and natural fibers took almost **30 minutes** to reach flashover. The room made with modern materials like synthetics, plastics and foam rubber, took less than **3 ½ minutes** until the *entire room was in flames!*
 - That is not even the worst danger. Plastics and synthetics put off poisonous gasses like cyanide and phosgene when they burn. Therefore, 83% of fire fatalities today are from smoke, not the flames. One or two breaths of that black, heavy hot smoke may be enough to knock a person down. It is fatal.

By studying fatal fires, it has been proven over and over that *in times of great stress people revert to what they know and have practiced.* Please take every fire alarm as an opportunity to practice saving your own life. Hopefully, by explaining the "why" behind the rule to evacuate immediately if you can, everyone will realize it is the best course of action to save their life in a true emergency.

2. What do I do if I can't walk down the stairs?

For this discussion, a person with functional and access needs is anyone who cannot evacuate using the stairs.

When a fire alarm activates, all persons with a functional and access need may use an enclosed stairwell landing as a temporary area of refuge. If able, assign an evacuation assistant to this person. Some buildings also have fire doors that close automatically around the elevator lobby during an alarm, which becomes another area of refuge. These lobbies should be labeled. You may choose either the stairwell or elevator lobby (if it is an enclosed area of refuge) during an alarm. If the stairwell is too crowded with people evacuating, you may need to wait in the hallway, if it is safe to do so, until there is room in the stairwell. Call 911. Do NOT open any windows or doors, unless there is no other option; this can make fire conditions worse. Place something light colored in the window or use a light to signal firefighters for help.

As floor wardens leave the building, they are responsible to report to building staff that there are _____ persons that are unable to evacuate in _____ location , or as soon as possible. The staff will relay this information to incoming responders.

Anyone waiting for assistance will be glad to know the walls of modern building stairwells are usually engineered to withstand flame for one to two hours. That is why it is so important to never store anything in the stairwells, or utilize doorstops to leave open fire doors.

Some buildings also have pressurization systems. Pressurization fans turn on automatically during fire alarms and “pressurize” areas to keep out smoke. In other buildings, only the stairs are pressurized. In others, you might have pressurization in the stairs, elevator shaft and the floors above and below the alarm floor to keep smoke out, and help you evacuate or wait for assistance safely. That means the first arriving fire crews may respond directly to the fire area to start search and rescue operations for anyone who may be trapped and in immediate danger. The firefighters will also begin fire attack and stop spread of smoke and fire. The safest thing for everyone in the building is usually for firefighters to stop the fire, as quickly as possible.

If dispatch receives a 911 call that the person inside a building in alarm is in danger for any reason, they will notify responding fire units by radio. One of the first units on scene will come directly to your location to help. Dispatch will call for another fire crew to take over the fire attack and searching duties.

3. What do I do if I start down the stairs and I can't walk all the way down?

If you are in a high rise, the enclosed stairwells are generally the safest place to be as they are built to be a temporary area of refuge. If you cannot make it all the way down for any reason, or just need to stop and take a breather, don't worry. You may stop on a stair landing out of the flow of traffic. Make sure the doors to the enclosed stairwell are closed, as smoke can still make the stairwell deadly if allowed in.

If your building has floor wardens, you can ask for assistance. Floor wardens should be easily visible as they should be wearing a brightly colored vest or cap. The floor warden can:

(1) Stay with you long enough to “catch your breath” and then escort you the rest of the way down.

(2) If you can't go on without injuring yourself, but you are otherwise okay, the floor warden should ask someone with you, or ask someone exiting, to be your evacuation assistant and stay with you until the alarm is over. We have found that most people are willing to help others in an emergency. The floor warden will continue to exit so they can notify the building management and firefighters your location. They will also state whether you need immediate assistance.

The evacuation assistant should call 911 for you if you have a medical emergency, and then stay with you and give aid to the level of their training if it is safe to do so. Some buildings have emergency phones in the stairwells that may be used. If neither the emergency phone nor your cell phone works in the stairwell, your evacuation assistant should walk down the stairs and notify any firefighter or the building staff.

(3) What if you are alone and can't continue down the stairs? Stop where you are and call 911 if you have a cell phone. Some buildings have emergency phones in the stairwells. Wait where you are. Make sure the doors to the enclosed stairwell are closed, as smoke can still make the stairwell deadly if allowed in. Modern building stairwells walls may have some fire resistance to keep you safe.

4. The exit is blocked. What should I do?

Another strategy that may save your life in the event of a fast-moving, life-threatening emergency of any kind is to **locate a second, or even third, way out from a building when you first arrive**. When something bad is happening, almost everyone will head toward the path they came in; it's just human nature. But if everyone is running for the main entrance that means the alternate exits will not be crowded. Next time you go to the store, restaurant, mall, etc., take 30 seconds to find the other exits; this one easy tactic can make a difference to your survival if the worst happens. Knowing how to survive is also a great way to keep some control and not panic.

5. I have a dog and/or a cat. What do I do if I must evacuate?

All pets should be on a leash or in a pet carrier when you evacuate for their safety. Pets can become panicked by the noise of the alarms and smoke. They may hide. Or they may run away and be lost and/or injured. If you are unable to quickly evacuate with your pet, close doors as you exit. Do not leave doors open, as this provides more oxygen for the fire. Notify responders of their last known location.

Even if you cannot physically take your pet with you when you evacuate, having a leash or pet carrier available will help the firefighters rescue them quickly and safely.

It is always helpful to have the following information available.

- A handout containing identification information (in the event you get separated from your pet)
 - Current photo of pet
 - Pet's descriptive features (age, sex, neutered/non-neutered status, color(s), and approximate weight)
 - Microchip number
 - Owner contact information (cell phone, work phone, home phone)

- Health information, including medications.
 - Contact information of a close relative or friend.
 - Boarding instructions, like feeding schedule, medications, and any allergies or behavior concerns.
-

6. The alarm we have is a pre-recorded message. What if someone gets on the P.A. system and gives us different directions?

Listen and pay attention! Stay off your phone and be aware that a real emergency is a dynamic situation, and that directions given for your safety may change...and may change again. **Any directions given over the public address (P.A.) system by the Fire Department or Police Department take priority over a pre-recorded message.** This can be confusing because some systems go back to the original pre-recorded message after the person has made an announcement and put the microphone down. Again, the directions given by a real-life person are always to be followed if they differ from a pre-recorded message.

7. What do I do if I can't make it to an area of refuge because of smoke or fire?

If you cannot make it to the stairwell area of refuge due to smoke or fire, the best option is to take refuge behind a closed door, block any cracks to keep smoke out, keep windows and doors closed, and call 911. Stay low under any smoke.

Since over 80% of fire fatalities are caused by toxic smoke, saving your life might be as easy as putting as many closed doors as you can between you and the smoke and fire. Block any cracks where smoke might get in. If you are not in immediate danger inside the room where you have taken refuge, the first-arriving fire crews may do search and rescue closer to the fire in case someone needs to be rescued immediately. Did you know that the walls in most exit hallways are constructed with a 1-hour fire resistance rating? It is also a good idea to put something light colored in a window to help firefighters locate you. You may use a light to signal us, hang a sheet or towel out of the window, or drop something that is not heavy out of the window and close it again.

8. There is smoke in the stairwell I am using. What do I do?

Smoke is toxic. Get low and try to go under the smoke. Or leave the stairwell and find another way out. There are always at least two stairwells for evacuation. Try to continue to move downstairs and out of the building. Smoke and heat go up, so it is safer to be on a floor below the fire.

9. I've heard sprinklers are not like I see on TV. How do they work?

Most people do not understand how fast fires spread and how they can go from a tiny flame to total destruction in as little as 3 ½ minutes. Fire sprinklers can suppress, and often extinguish a fire before the fire department arrives, giving people time to escape.

The high temperature of an early-stage fire (135°-165°F) will cause the sprinkler to activate. **Only high heat initiates the sprinkler to flow water.** Neither smoke or a smoke alarm can activate a fire sprinkler.

Only a sprinkler close to heat will activate, flowing water directly on the flames. This quick action controls or extinguishes the flames (often before the fire department arrives). Fire sprinklers slow the spread of deadly heat and toxic smoke, preventing flashover. This also provides occupants with more time to safely escape.

Each Sprinkler Works Individually

When high temperatures initiate a sprinkler, the sprinkler quickly cools down the fire. This usually stops the fire from activating other sprinklers. A fire is typically kept in its small incipient beginning stage with one or two sprinklers. Unlike movie scenes, sprinklers do not all “pop” at the same time. They also do not activate in response to smoke, burned toast, cooking vapors, steam, an activating smoke alarm, or anything other than high heat.

Fire Sprinklers Are Good for the Environment

According to a groundbreaking joint research project from FM Global and the Home Fire Sprinkler Coalition on the environmental impact of fires, automatic fire sprinklers can reduce greenhouse gas emissions by 98%, reduce fire damage by up to 97%, reduce water usage to fight a fire by as much as 91%, and reduce water pollution. **

* Scottsdale, AZ 15-year Report
** Environmental Impact of Automatic Fire Sprinklers,” FM Global, March 2010

10. How do I know if my building has to do a fire drill, and how often?

2021 International Fire Code: SECTION 405 EMERGENCY EVACUATION DRILLS

405.3 Required emergency evacuation drills shall be held at the intervals specified in Table 405.3 or more frequently where necessary to familiarize all occupants with the drill procedure.

**TABLE 405.3
FIRE AND EVACUATION DRILL FREQUENCY AND PARTICIPATION**

GROUP OR OCCUPANCY	FREQUENCY	PARTICIPATION
• Group A	• Quarterly	• Staff
• Group B ^a	• Annually	• All occupants
• Group B (Ambulatory care facilities)	• Quarterly on each shift	• Staff
• Group B ^a (Clinic, outpatient)	• Annually	• Staff
• Group E	• Monthly ^a	• All occupants
• Group F	• Annually	• Employees
• I-1	• Semiannually on each shift	• All occupants
• I-2 and I-3	• Quarterly on each shift ^a	• Employees
• I-4	• Monthly on each shift ^a	• All occupants

• R-1	• Quarterly on each shift	• Employees
• R-2 ^b	• Four annually	• All occupants
• R-4	• Semiannually on each shift	• Employees

- a. Emergency evacuation drills are required in Group B buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.
- b. Emergency evacuation drills in Group R-2 college and university buildings shall be in accordance with Section 403.9.2.1 Other Group R-2 occupancies shall be in accordance with Section 403.9.2.2

403.9.2.2 Emergency Guide. Fire emergency guides shall be provided for Group R-2 occupancies. Guide contents, maintenance and distribution shall comply with Sections 403.10.2.2.1 through 403.10.2.2.3

11. How do I know which occupancy group my building is?

If you do not need to look up your occupancy classification, skip to page 30 for Additional Resources.

2015 International Fire Code: OCCUPANCY CLASSIFICATION. For the purposes of this code, certain occupancies are defined as follows:

Assembly Group A. Assembly Group A occupancy includes, among others, the use of a building or structure, or a portion thereof, for the gathering of *persons* for purposes such as civic, social, or religious functions; recreation, food or drink consumption; or awaiting transportation.

Exceptions:

1. A building or tenant space used for assembly purposes with an *occupant load* of less than 50 *persons* shall be classified as a Group B occupancy.
2. A room or space used for assembly purposes with an *occupant load* of less than 50 *persons* and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.
3. A room or space used for assembly purposes that is less than 750 square feet (70 m²) in area and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.
4. Assembly areas that are accessory to Group E occupancies are not considered separate occupancies except when applying the assembly occupancy requirements of Chapter 11 of the *International Building Code*.
5. Accessory religious educational rooms and religious auditoriums with *occupant loads* of less than 100 are not considered separate occupancies.

Assembly occupancies shall include the following:

A-1 Assembly uses, usually with fixed seating, intended for the production and viewing of performing arts or motion pictures including, but not limited to:

Motion picture theaters
Symphony and concert halls
Television and radio studios admitting an audience
Theaters

A-2 Assembly uses intended for food and/or drink consumption including, but not limited to:

Banquet halls
Night clubs
Restaurants
Taverns and bars

A-3 Assembly uses intended for worship, recreation or amusement and other assembly uses not classified elsewhere in Group A, including, but not limited to:

Amusement arcades
Art galleries
Bowling alleys
Community halls
Courtrooms
Dance halls (not including food or drink consumption)
Exhibition halls
Funeral parlors
Gymnasiums (without spectator seating)
Indoor swimming pools (without spectator seating)
Indoor tennis courts (without spectator seating)
Lecture halls
Libraries
Museums
Places of religious worship
Pool and billiard parlors
Waiting areas in transportation terminals

A-4 Assembly uses intended for viewing of indoor sporting events and activities with spectator seating including, but not limited to:

Arenas
Skating rinks
Swimming pools
Tennis courts

A-5 Assembly uses intended for participation in or viewing outdoor activities including, but not limited to:

Amusement park structures
Bleachers
Grandstands
Stadiums

Business Group B. Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:

Airport traffic control towers
Ambulatory health-care facilities
Animal hospitals, kennels and pounds
Banks
Barber and beauty shops
Car wash
Civic administration
Clinic-outpatient
Dry cleaning and laundries: pick-up and delivery stations and self-service
Educational occupancies for students above the 12th grade
Electronic data processing
Laboratories: testing and research
Motor vehicle showrooms
Post offices
Print shops
Professional services (architects, attorneys, dentists, physicians, engineers, etc.)
Radio and television stations
Telephone exchanges
Training and skill development not within a school or academic program

Educational Group E. Educational Group E occupancy includes, among others, the use of a building or structure, or a portion thereof, by six or more *persons* at any one time for educational purposes through the 12th grade. Religious educational rooms and religious auditoriums, which are accessory to places of religious worship in accordance with Section 508.3.1 of the *International Building Code* and have *occupant loads* of less than 100, shall be classified as Group A-3 occupancies.

Day care. The use of a building or structure, or portion thereof, for educational, supervision or personal care services for more than five children older than 2¹/₂ years of age shall be classified as an E occupancy.

Factory Industrial Group F. Factory Industrial Group F occupancy includes, among others, the use of a building or structure, or a portion thereof, for assembling, disassembling, fabricating, finishing, manufacturing, packaging, repair or processing operations that are not classified as a Group H high-hazard or Group S storage occupancy.

Factory Industrial F-1 Moderate-hazard occupancy. Factory industrial uses which are not classified as Factory Industrial F-2 Low Hazard shall be classified as F-1 Moderate Hazard and shall include, but not be limited to, the following:

Aircraft (manufacturing, not to include repair)
Appliances
Athletic equipment
Automobiles and other motor vehicles
Bakeries
Beverages; over 16-percent alcohol content
Bicycles
Boats
Brooms or brushes
Business machines
Cameras and photo equipment
Canvas or similar fabric
Carpets and rugs (includes cleaning)
Clothing

Construction and agricultural machinery
Disinfectants
Dry cleaning and dyeing
Electric generation plants
Electronics
Engines (including rebuilding)
Food processing
Furniture
Hemp products
Jute products
Laundries
Leather products
Machinery
Metals
Millwork (sash and door)
Motion pictures and television filming (without spectators)
Musical instruments
Optical goods
Paper mills or products
Photographic film
Plastic products
Printing or publishing
Refuse incineration
Shoes
Soaps and detergents
Textiles
Tobacco
Trailers
Upholstering
Wood; distillation
Woodworking (cabinet)

Factory Industrial F-2 Low-hazard Occupancy. Factory industrial uses involving the fabrication or manufacturing of noncombustible materials which, during finishing, packaging or processing do not involve a significant fire hazard, shall be classified as Group F-2 occupancies and shall include, but not be limited to, the following:

Beverages; up to and including 16-percent alcohol content
Brick and masonry
Ceramic products
Foundries
Glass products
Gypsum
Ice
Metal products (fabrication and assembly)

High-hazard Group H. High-hazard Group H occupancy includes, among others, the use of a building or structure, or a portion thereof, that involves the manufacturing, processing, generation or storage of materials that constitute a physical or *health hazard* in quantities in excess of those allowed in *control areas* complying with Section 2703.8.3, based on the maximum allowable quantity limits for *control areas* set forth in Tables 2703.1.1(1) and 2703.1.1(2). Hazardous occupancies are classified in Groups H-1, H-2, H-3, H-4 and H-5 and shall be in accordance

with this code and the requirements of Section 415 of the *International Building Code*. Hazardous materials stored or used on top of roofs or canopies shall be classified as outdoor storage or use and shall comply with this code.

Exceptions: The following shall not be classified as Group H, but shall be classified as the occupancy that they most nearly resemble.

1. Buildings and structures occupied for the application of flammable finishes, provided that such buildings or areas conform to the requirements of Chapter 15 of this code and Section 416 of the *International Building Code*.
2. Wholesale and retail sales and storage of flammable and *combustible liquids* in mercantile occupancies conforming to Chapter 34.
3. Closed piping system containing flammable or *combustible liquids* or gases utilized for the operation of machinery or equipment.
4. Cleaning establishments that utilize *combustible liquid* solvents having a *flash point* of 140°F (60°C) or higher in *closed systems* employing equipment *listed* by an *approved* testing agency, provided that this occupancy is separated from all other areas of the building by 1-hour *fire barriers* in accordance with Section 707 of the *International Building Code* or 1-hour *horizontal assemblies* in accordance with Section 712 of the *International Building Code*, or both.
5. Cleaning establishments that utilize a liquid solvent having a *flash point* at or above 200°F (93°C).
6. Liquor stores and distributors without bulk storage.
7. Refrigeration systems.
8. The storage or utilization of materials for agricultural purposes on the premises.
9. Stationary batteries utilized for facility emergency power, uninterrupted power supply or telecommunication facilities, provided that the batteries are equipped with safety venting caps and ventilation is provided in accordance with the *International Mechanical Code*.
10. *Corrosives* shall not include personal or household products in their original packaging used in retail display or commonly used building materials.
11. Buildings and structures occupied for aerosol storage shall be classified as Group S-1, provided that such buildings conform to the requirements of Chapter 28.
12. Display and storage of nonflammable solid and nonflammable or noncombustible liquid hazardous materials in quantities not exceeding the *maximum allowable quantity per control area* in Group M or S occupancies complying with Section 2703.8.3.5.
13. The storage of black powder, smokeless propellant and small arms primers in Groups M and R-3 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements of this code.

High-hazard Group H-1. Buildings and structures containing materials that pose a *detonation* hazard shall be classified as Group H-1.

High-hazard Group H-2. Buildings and structures containing materials that pose a *deflagration* hazard or a hazard from accelerated burning shall be classified as Group H-2.

High-hazard Group H-3. Buildings and structures containing materials that readily support combustion or that pose a *physical hazard* shall be classified as Group H-3.

High-hazard Group H-4. Buildings and structures which contain materials that are *health hazards* shall be classified as Group H-4.

High-hazard Group H-5. Semiconductor fabrication facilities and comparable research and development areas in which hazardous production materials (HPM) are used and the aggregate quantity of materials is in excess of those listed in Tables 2703.1.1(1) and 2703.1.1(2) shall be classified as Group H-5. Such facilities and areas shall be designed and constructed in accordance with Section 415.8 of the *International Building Code*.

Institutional Group I. Institutional Group I occupancy includes, among others, the use of a building or structure, or a portion thereof, in which people are cared for or live in a supervised environment, having physical limitations because of health or age, are harbored for medical treatment or other care or treatment, or in which people are detained for penal or correctional purposes or in which the liberty of the occupants is restricted. Institutional occupancies shall be classified as Group I-1, I-2, I-3 or I-4.

Group I-1. This occupancy shall include buildings, structures or parts thereof housing more than 16 *persons*, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment that provides personal care services. The occupants are capable of responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to, the following:

- Alcohol and drug centers
- Assisted living facilities
- Congregate care facilities
- Convalescent facilities
- Group homes
- Half-way houses
- Residential board and care facilities
- Social rehabilitation facilities

A facility such as the above with five or fewer *persons* shall be classified as Group R-3 or shall comply with the *International Residential Code* in accordance with Section 101.2 of the *International Building Code*. A facility such as above, housing at least six and not more than 16 *persons*, shall be classified as Group R-4.

Group I-2. This occupancy shall include buildings and structures used for medical, surgical, psychiatric, nursing or custodial care for *persons* who are not capable of self-preservation. This group shall include, but not be limited to, the following:

- Child care facilities
- Detoxification facilities
- Hospitals
- Mental hospitals
- Nursing homes

Group I-3. This occupancy shall include buildings and structures which are inhabited by more than five *persons* who are under restraint or security. An I-3 facility is occupied by *persons* who are generally incapable of self-preservation due to security measures not under the occupants' control. This group shall include, but not be limited to, the following:

- Correctional centers
- Detention centers

Jails
Prerelease centers
Prisons
Reformatories

Buildings of Group I-3 shall be classified as one of the occupancy conditions indicated below:

Condition 1. This occupancy condition shall include buildings in which free movement is allowed from sleeping areas and other spaces where access or occupancy is permitted, to the exterior via *means of egress* without restraint. A Condition 1 facility is permitted to be constructed as Group R.

Condition 2. This occupancy condition shall include buildings in which free movement is allowed from sleeping areas and any other occupied smoke compartment to one or more other smoke compartments. Egress to the exterior is impeded by locked *exits*.

Condition 3. This occupancy condition shall include buildings in which free movement is allowed within individual smoke compartments, such as within a residential unit comprised of individual sleeping units and group activity spaces, where egress is impeded by remote-controlled release of *means of egress* from such smoke compartment to another smoke compartment.

Condition 4. This occupancy condition shall include buildings in which free movement is restricted from an occupied space. Remote-controlled release is provided to permit movement from sleeping units, activity spaces and other occupied areas within the smoke compartment to other smoke compartments.

Condition 5. This occupancy condition shall include buildings in which free movement is restricted from an occupied space. Staff-controlled manual release is provided to permit movement from sleeping units, activity spaces and other occupied areas within the smoke compartment to other smoke compartments.

Group I-4, day care facilities. This group shall include buildings and structures occupied by *persons* of any age who receive custodial care for less than 24 hours by individuals other than parents or guardians, relatives by blood, marriage, or adoption, and in a place other than the home of the *person* cared for. A facility such as the above with five or fewer *persons* shall be classified as Group R-3 or shall comply with the *International Residential Code* in accordance with Section 101.2 of the *International Building Code*. Places of worship during religious functions are not included.

Adult care facility. A facility that provides accommodations for less than 24 hours for more than five unrelated adults and provides supervision and personal care services shall be classified as Group I-4.

Exception: Where the occupants are capable of responding to an emergency situation without physical assistance from the staff, the facility shall be classified as Group R-3.

Child care facility. Child care facilities that provide supervision and personal care on less than a 24-hour basis for more than five children 2¹/₂ years of age or less shall be classified as Group I-4.

Exception: A child day care facility that provides care for more than five but no more than 100 children 2¹/₂ years or less of age, where the rooms in which the children are cared for are located on a *level of exit discharge* serving such rooms and each of these child care rooms has an *exit* door directly to the exterior, shall be classified as Group E.

Mercantile Group M. Mercantile Group M occupancy includes, among others, the use of a building or structure or a portion thereof, for the display and sale of merchandise, and involves stocks of goods, wares or merchandise

incidental to such purposes and accessible to the public. Mercantile occupancies shall include, but not be limited to, the following.

- Department stores
- Drug stores
- Markets
- Motor fuel-dispensing facilities
- Retail or wholesale stores
- Sales rooms

Residential Group R. Residential Group R includes, among others, the use of a building or structure, or a portion thereof, for sleeping purposes when not classified as an Institutional Group I or when not regulated by the *International Residential Code* in accordance with Section 101.2 of the *International Building Code*. Residential occupancies shall include the following:

R-1 Residential occupancies containing sleeping units where the occupants are primarily transient in nature, including:

- Boarding houses* (transient)
- Hotels (transient)
- Motels (transient)

Congregate living facilities (transient) with 10 or fewer occupants are permitted to comply with the construction requirements for Group R-3.

R-2 Residential occupancies containing *sleeping units* or more than two *dwelling units* where the occupants are primarily permanent in nature, including:

- Apartment houses
- Boarding houses* (nontransient)
- Convents
- Dormitories
- Fraternities and sororities
- Hotels (nontransient)
- Live/work units
- Monasteries
- Motels (nontransient)
- Vacation timeshare properties

Congregate living facilities with 16 or fewer occupants are permitted to comply with the construction requirements for Group R-3.

R-3 Residential occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4 or I, including:

- Buildings that do not contain more than two *dwelling units*.
- Adult care facilities that provide accommodations for five or fewer *persons* of any age for less than 24 hours.
- Child care facilities that provide accommodations for five or fewer *persons* of any age for less than 24 hours.
- Congregate living facilities with 16 or fewer *persons*.

Adult care and child care facilities that are within a single-family home are permitted to comply with the *International Residential Code*.

R-4 Residential occupancies shall include buildings arranged for occupancy as residential care/assisted living facilities including more than five but not more than 16 occupants, excluding staff.

Additional Not Required Resources

How to build an Emergency Action Plan from OSHA

<https://www.oshatrain.org/courses/mods/717m1.html>

OSHA Evacuation Tips and Shelter in Place Information

<http://emergency.cdc.gov/preparedness/shelter/>

<https://www.osha.gov/SLTC/etools/evacuation/>

OSHA Tornado Preparedness and Response

<https://www.osha.gov/dts/weather/tornado/preparedness.html>

Emergency Tool Kit Preparation and Office Emergency Team recommendations

<http://www.ready.gov/business>

Shelter-In-Place Medical Information

<http://www.hhs.gov/od/disabilitytoolkit/shelter/medical.html>

FEMA Tornado Fact Sheet

[https://www.fema.gov/media-library-](https://www.fema.gov/media-library-data/a4ec63524f9fd1fa5d72be63bd6b29cf/FEMA_FS_tornado_508_8-15-13.pdf)

[data/a4ec63524f9fd1fa5d72be63bd6b29cf/FEMA FS tornado 508 8-15-13.pdf](https://www.fema.gov/media-library-data/a4ec63524f9fd1fa5d72be63bd6b29cf/FEMA_FS_tornado_508_8-15-13.pdf)

Pets and Disasters

<http://www.cdc.gov/features/Petsanddisasters/>

Active Shooter - *You can get free training videos online:*

Houston Run Hide Fight <http://www.readyhouston.tx.gov/videos.html>

LASD Active Shooter <http://www.activeshooter.lasd.org/>

Dept. of Homeland Security <https://www.dhs.gov/active-shooter-preparedness>

Health Care Active Shooter <https://vimeopro.com/lmpgeneral/armed-are-you-ready/video/74108006>

I love you guys Foundation. <https://iloveguys.org/The-Standard-Response-Protocol.html>

NFPA's (National Fire Protection Association) Fire Sprinkler Initiative

www.firesprinklerinitiative.org

NFPA: U.S. Experience with Sprinklers Report

<https://www.nfpa.org/news-and-research/fire-statistics-and-reports/fire-statistics/fire-safety-equipment/us-experience-with-sprinklers>