

# Fire Safety for Wheelchair Users at Work and at Home



A Publication of



**United Spinal  
Association**



# **United Spinal Association**

## **Our Mission**

United Spinal Association's mission is to improve the quality of life of all people living with spinal cord injuries and disorders (SCI/D).

## **Who We Are**

United Spinal Association is the largest non-profit in the United States dedicated to helping people living with SCI/D. We are a 501(c)(3) national disability rights and veterans service organization founded in 1946. United Spinal Association provides active-lifestyle information, peer support and advocacy that empowers people with SCI/D to achieve their highest potential in all facets of life.

United Spinal played a significant role in writing the Americans with Disabilities Act, the landmark civil rights law of 1990 that protects people with disabilities from discrimination. It has also made important contributions to the Fair Housing Amendments Act and the Air Carrier Access Act, and was instrumental in getting New York City to create sidewalk curb ramps and accessible public transportation that is currently used as a model for many cities nationwide.

# Why was this brochure on fire safety for people with mobility impairments created?



NY (pre 9/11)

The tragedy of September 11, 2001, provided us with firsthand examples of the special evacuation needs of wheelchair users during an emergency.

John Abruzzo, a C-5-C-6 quadriplegic who relies on a power wheelchair for mobility, escaped from the 69th floor of Tower One of the World Trade Center on 9/11. In the first attack on the World Trade Center in February 1993, John's evacuation took 6 hours, during which his chair was carried from the 69th floor to the 44th floor, where he was then transferred to a stretcher and finally evacuated from the building.

As they were evacuating with their coworkers from a telecommunications company at the World Trade Center on 9/11, Michael Benfante and John Cerqueira met a woman in a wheelchair on the 68th floor. Knowing she'd never make it out on her own, the men helped her down the stairs. Their trek ended on the ground floor more than an hour later, and only a few minutes before the tower collapsed.

*The U.S. Census Bureau estimates that there are more than 8 million people 15 years old and over who live with mobility impairments.*

*By understanding their special evacuation needs, people with limited mobility and first responders can improve their chances of evacuating their workplace or home safely. This brochure will emphasize the evacuation protocol for wheelchair users from these two areas.*

This brochure was written for:

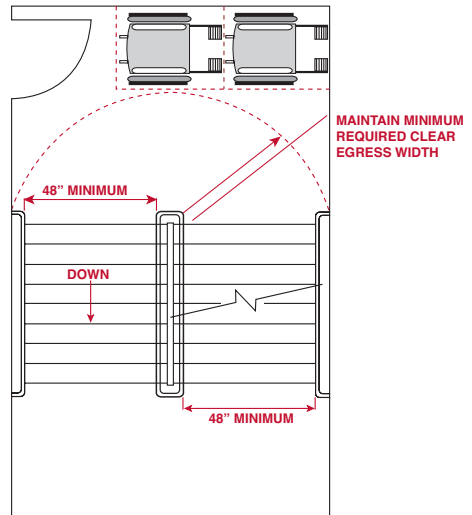
- Persons who use wheelchairs or who have limited mobility
- Fire, safety, and building code officials
- Emergency plan coordinators
- Building owners and managers
- Employers and supervisors
- Office fire marshals

There is no such thing as a “typical” or “model” evacuation plan for people with disabilities. “Boiler-plate” plans are worthless, as they do not take into account the unique circumstances of each facility and each person. Make sure your site is not using a boiler-plate disaster plan. Each building and sometimes building area (in large buildings) is unique and should have its own plan. The main goal is to get persons with limited mobility to a “safe area” until the fire department arrives.

## What’s New . . .

United Spinal Association has worked to ensure that new state and model building codes integrate specific requirements to improve the life safety afforded to wheelchair users and others with limited mobility in newly constructed buildings. Key features of these codes include:

- **Areas of Refuge** or fire-rated safe havens on a building’s upper and below-grade floors designed for persons with mobility impairments to await further evacuation from the responding fire company. These areas can be provided in stair landings, elevator lobbies or an area that is properly fire-rated, and provides two-way emergency communication so that a wheelchair user can alert authorities to his or her location.
- **Wide Exit Stairs** are required to provide 48 inches between handrails so that three fire fighters will have enough room to carry a person from a landing to safety.
- **Means of Egress Elevators** are elevators with stand-by power in addition to the fire service required of all elevators. The stand-by power enables fire fighters to travel to persons with mobility impairments on the upper or below-grade levels of a building and to evacuate them to the outdoors, even when a building’s normal electrical service is lost.

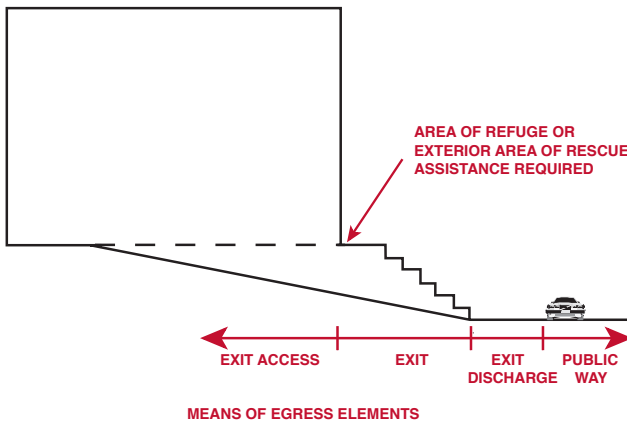




- **Exterior Areas of Assisted Rescue** are protected areas outside the exit doors of buildings designed to provide a safe area for persons with mobility impairments when the terrain or grade surrounding a building can't be easily ramped to provide a safe route to a public area away from the building.

*Ideally, an office occupancy has a written plan, reviewed by the authority having jurisdiction, that is read, understood, and practiced by the occupants. Such a plan will take into account everyone in the building, with or without a disability, and provide them with the knowledge of how to evacuate during a real emergency.*

*Evacuation plans are required by many jurisdictions and for certain classes of buildings (e.g., school buildings).*



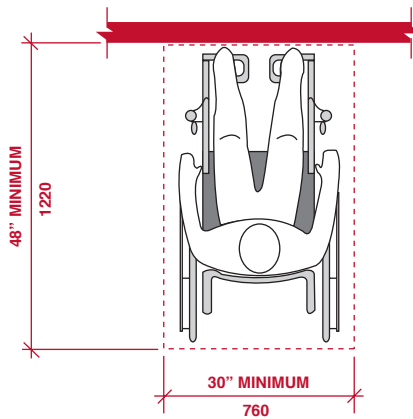
MEANS OF EGRESS ELEMENTS

# Protocols and Procedures

1. Establish a relationship with the fire department or other first responders that would respond to your home or business in the event of a fire or other emergency. The relationship should include:

- Developing an evacuation plan with the fire department.
- Reviewing the plan with the fire department at least once per year.
- Practicing the evacuation plan throughout the year.

*Employers, in turn, should review evacuation plans annually, and practice and evaluate them regularly. Even a brief discussion during a staff meeting can help to remind everyone what he or she needs to do. Ultimately, a solid level of preparedness should become part of the fabric of the facility.*



2. Any evacuation plan should incorporate the following:

- **Know the locations of your usable exits** on the grade level of the building and how to get to them.
- Once outside, determine if a wheelchair user can get to a **“public way”** that is a safe distance away from the building and identify a safe meeting place. Earlier, this brochure described a protected area for people with limited mobility outside the exit door. In many office buildings, even exits on the grade level of the building are elevated above the adjoining grade. In these instances, landings beyond the exit door should be reviewed to determine if they are adequate to accommodate a wheelchair user. Simply measure the landing. The

clear floor space needed for a wheelchair user is 30 inches by 48 inches, but keep in mind that this area must be located beyond the swing of the exit door and clear of the exit path that others will use.

- **Establish a Floor Warden System**—these individuals are responsible for overseeing and coordinating evacuation activities, conducting a final pass through the office space, ensuring that everyone receives the necessary assistance as appropriate, ensuring all doors to the elevator lobby are closed, and reporting the floor evacuation status to the first fire or emergency officials arriving on the scene. **When the alarm goes off**, the **Floor Warden** should immediately verify circumstances and inform the person with a disability accordingly. It is of great importance to designate an alternate **Floor Warden** in the instance when the initial designee is absent. The names of these designated individuals should be updated and posted on a regular basis.
- **Identify a location or locations for an area of refuge**—In the event of a need for evacuation from an upper floor, wheelchair users should make their way, either accompanied or on their own, to a designated area of refuge or other place of safety on the same floor (e.g., a closed staircase landing as described earlier). They should inform their supervisor, a colleague, or other available person that they will remain in that place of safety and wait for assistance. Two-way radios or a telephone in these areas should be provided to ensure that communication is available. The supervisor or other designated person should inform the first fire or emergency officials arriving on the scene of the person's location.
- **Evaluate the need for evacuation devices** from upper and lower floors. If used, their location(s) should be identified and their use should be practiced during regularly scheduled drills.

The use of evacuation devices can be directed through the installation of signage (e.g., individuals using evacuation chairs must use the east stairwell next to the men's room).

- **Practice** dealing with different circumstances and unforeseen situations, such as blocked paths or exits.
- **Remember** never to open doors that are hot.
- **Ensure** that all workers, including those on other shifts and those who are at the site after typical hours (e.g., cleaning crews, evening meeting coordinators, etc.) are aware of wheelchair users who are typically in the building. Such off-hour employees should be involved in fire emergency drills.

# Home Evacuation for Persons with Limited Mobility

United Spinal Association has some important tips to handle situations before and during a fire, and to address fire prevention within private homes. It is important to recognize that all people with limited mobility do not have the same type of home. Therefore, the following tips should be used only as a model to be modified and adjusted to fit each individual's private residence.

## What to do Before a Fire Occurs . . .

- Identify and determine the nearest emergency exit or exits within your home. It is important to always know the safest and quickest exit from any location you are in and it should always be based on your physical capabilities. If it is at all possible, try to have your sleeping area close to an accessible exit. Then, in the event of an emergency, you will have the quickest escape route. You might require some accommodations to facilitate an emergency exit such as a ramp or removal of barriers. Make the adjustments necessary to ensure a safe escape route. In addition, be sure that you can also open all locks on windows and doors throughout your home.
- Install heat or smoke detectors throughout your home. Key locations for smoke alarms are: the kitchen, basement, storage areas, trash areas, accessible attics, sleeping areas, and hallways. Please note that there are various types of smoke alarms. The chart below describes what heat or smoke detectors are appropriate for each living space.

Location to Install Alarm	Rate of Temperature Rise	Fixed Temperature, Adjustable	Fixed Temperature, Permanent Setting 175° to 240°F (79° to 116°C)	Smoke/Products of Combustion
<b>Kitchen</b>	Preferred			
<b>Basement</b>	Preferred	Acceptable		
<b>Storage</b>	Preferred	Acceptable		
<b>Trash</b>	Preferred	Acceptable		
<b>Garage</b>		Preferred		
<b>Accessible Attic</b>			Preferred	
<b>Sleeping Area</b>				Preferred
<b>Hallways</b>	Acceptable			Preferred

Source: Based on Robert James Sorensen, *Design for Accessibility* (New York: McGraw-Hill Book Company), 1979, taken from U.S. Fire Administration & the Federal Emergency Management Agency's *Fire Risks for the Mobility Impaired*, December 1999.





- Heat and smoke detectors can reduce the chance of dying in a home fire by approximately 60%. This device is important to have in your home. It is also important to make sure that your smoke alarms are functioning properly. Make sure that smoke alarms are kept cleaned and vacuumed regularly to remove dust particles. In addition to this, you should test the batteries monthly and replace batteries twice per year to ensure that they are working properly. If your smoke alarms are connected to the electric circuits of your residence, you should have battery backups in case of an electrical failure. If you are unable to perform these tasks yourself, ask your friends, family members, building managers, or someone from the fire department to help you out.
- In addition to smoke detectors, carbon monoxide or CO detectors should also be installed in your home in areas near fuel burning devices. CO is a colorless and odorless compound produced by incomplete combustion—such as open flames, space heaters, water heaters, or blocked chimneys—that is lethal at high concentrations. Dual smoke/CO detectors are available for purchase at most home improvement stores.
- Learn how to use a fire extinguisher. For those who use wheelchairs, you might want to consider mounting a small personal extinguisher in an accessible place. This will be beneficial if you cannot “stop, drop, and roll” if your clothing catches on fire.
- Another beneficial resource of information is your local fire department. They can provide valuable information regarding better escape routes, equipment, and potential hazards within your home. Become knowledgeable of the fire department’s restrictions and inform them of yours.

# What to Do in Case a Fire Occurs . . .

- If possible, always test doors before opening them. To do this safely, use the back of your hand and reach up high and touch the door, the doorknob, and the space between the door and the frame. If the door feels hot, keep it closed and use a second exit if available. If the door feels cool, open the door slowly and exit, staying as low to the ground as possible. If it is impossible for you to stay low to the ground, cover your mouth and nose and safely exit the room as quickly as possible. Covering your mouth and nose protects you from breathing in dangerous fumes.
- Exit your home as quickly as possible. Leave all personal possessions and belongings inside. These items are not worth your life. Do not use any elevators and ***do not go back inside after exiting your home.*** Get help from your neighbors and contact the fire department if they have not already been called to the fire.



- If you get trapped in your room close all doors between you and the fire. Fill cracks in all open spaces so no smoke enters the room. If possible, contact the fire department and inform them what room you are in. Depending on your physical abilities, you may also try to signal emergency responders when they arrive by hanging or waving a towel out a window (if window is close by, not above or near the fire, and safe to use).
- If you own a cell phone, keep it with you at all times. Keeping it next to your bed at night, or even in the bathroom while you are taking a shower gives you a constant means of communication, even if you are trapped in a room and unable to reach a house phone.



## Tips on Fire Prevention

### When Cooking:

- Never leave a stove unattended. If you need to leave, even for a minute, make sure you turn the stove off.
- Always wear tight fitting clothing when cooking over an open flame.
- If food or grease catches fire, put a lid on the pan to smother the flames.  
*Never use water to put out a grease fire!*
- Turn pot handles away from the front of the stove so they cannot be knocked over or pulled down.

### When Using Electrical Appliances/Machines:

- Unplug any appliance that begins to smell funny or produce smoke. Never use any appliance that has any exposed wires.
- Always replace frayed and damaged electrical cords.
- Never overload extension cords with too many wires.
- Keep all extension cords out of high traffic areas.
- Electric blankets should have protection from overheating. Never over wash electric blankets because it may cause damage to the electrical circuitry.



### **When Smoking:**

- Never smoke in bed.
- Make sure that you never leave smoking materials (i.e., a lit cigarette) unattended.
- Always be alert when smoking cigarettes. Avoid smoking while under the influence of alcohol or prescription drugs that may make you drowsy.
- Soak ashes in water before disposing them in the garbage can.

### **When Using Heaters or Heating Systems Within Your Home:**

- Make sure there is adequate room surrounding space heaters.
- Position heaters at least 3 feet away from flammable material.
- Keep a safe distance between you and a space heater.
- Have heating systems and chimneys checked and cleaned once per year.
- Do not leave flammable materials such as fuel within your home. It is a good idea to keep materials such as these outside or in a detached garage or shed.
- Always have fireplaces covered with the appropriate protective products.

## **Fire Safety Resources**

*State Code Contacts*

**[www.access-board.gov/links/statecodes.htm](http://www.access-board.gov/links/statecodes.htm)**

*International Code Council*

**[www.iccsafe.org](http://www.iccsafe.org)**

*National Fire Protection Association*

**[www.nfpa.org](http://www.nfpa.org)**

*United States Fire Administration*

**[www.usfa.fema.gov](http://www.usfa.fema.gov)**

*American Red Cross*

**[www.redcross.org](http://www.redcross.org)**

Additional Information provided by the U.S. Fire Administration and the Federal Emergency Management Agency. (*Fire Risks for the Mobility Impaired*, October 1999).

## Did You Know . . .

That United Spinal Association does not receive any taxpayer money from the government?

Our programs depend on people like you and the gifts you give. In fact, without generous people like you, our organization could not exist.

For more information on the important programs that you help support, or for information on the different ways that you can make a gift, call **1-800-404-2899** or go to our Website at: **[www.unitedspinal.org](http://www.unitedspinal.org)**

## Who We Serve

United Spinal Association's diverse membership includes wheelchair-users, veterans with disabilities and people living with multiple sclerosis, amyotrophic lateral sclerosis (ALS), post-polio, spina bifida and other spinal cord disorders. Each year, United Spinal Association helps thousands of people of all ages overcome the daily challenges of living life with a disability. And we extend our unending support to those most important in their lives— their family members and caregivers.

## Publications

To download any of United Spinal Association's informative publications free of charge, visit [www.unitedspinal.org/publications](http://www.unitedspinal.org/publications) or call 1-800-444-0120 to order printed copies.

## Membership

National Spinal Cord Injury Association is the membership program of United Spinal Association, and welcomes all individuals with a strong interest in our community. Individual membership is free. Visit [www.spinalcord.org](http://www.spinalcord.org) or call 800-962-9629.

## Join the Community.



National Spinal Cord Injury Association has more than 60 chapters and peer support groups nationwide. Individual membership is free and open to individuals with spinal cord injuries or disorders, family members, caregivers and professionals. Member benefits include:

- ◊ Connections to chapters and local resources
- ◊ Discounts on products & services
- ◊ Priority access to Spinal Cord Central
- ◊ Subscription to *Life in Action*
- ◊ Monthly e-newsletter
- ◊ Legislative alerts
- ◊ Peer support
- ◊ Much more!

Learn more or join at [www.spinalcord.org](http://www.spinalcord.org)  
or call 800-962-9629.

Improving the Quality of Life of People with  
Spinal Cord Injuries and Disorders

**United Spinal Association**

75-20 Astoria Boulevard  
East Elmhurst, NY 11370-1177

Tel. 718 803 3782

Fax 718 803 0414

[www.unitedspinal.org](http://www.unitedspinal.org)