

EVACUATION PROCEDURES FOR DIFFERENTLY ABLED

Sarvam Safety Equipment (P) Ltd.,



EMERGENCY EVACUATION PLANNING GUIDE **FOR PEOPLE WITH DISABILITIES**

General Information

This Guide was developed using the five general categories of disabilities recognized in the Fair Housing Act Design Manual. It addresses the four elements of “standard” building evacuation information that apply to everyone, but that may require modification or augmentation to be of use to people with disabilities. Most accessibility standards and design criteria are based on the needs of people defined by one of the following five general categories:

The Five General Categories of Disabilities

- Mobility impairments
- Visual impairments
- Hearing impairments
- Speech impairments
- Cognitive impairments

The Four Elements of Evacuation Information That People Need To Know.

- Notification (What is the emergency?)
- Way finding (Where is the way out?) / Emergency Escape Route.
- Use of the way (Can I get out by myself, or do I need help?)
 - Self
 - Self with device
 - Self with assistance
- Assistance (What kind of assistance might I need?) / Floor Warden / ERT / Special Aide.

GENERAL CATEGORIES OF DISABILITIES

Mobility Impairments

Wheelchair Users

People with mobility disabilities may use one or more devices, such as canes, crutches, a power-driven or manually operated wheelchair, or a three-wheeled cart or scooter, to maneuver through the environment. People who use such devices have some of the most obvious access/egress problems. Typical problems include maneuvering through narrow spaces, going up or down steep paths, moving over rough or uneven surfaces, using toilet and bathing facilities, reaching and seeing items placed at conventional heights, and negotiating steps or changes in level at the entrance/exit point of a building.

Ambulatory Mobility Disabilities

This subcategory includes people who can walk, but with difficulty or who have a disability that affects gait. It also includes people who do not have full use of their arms or hands or who lack coordination. People who use crutches, canes, walkers, braces, artificial limbs or orthopedic shoes are included in this category. Activities that may be difficult for people with mobility disabilities include walking, climbing steps or slopes, standing for extended periods of time, reaching and fine finger manipulation.

Generally speaking, if a person cannot physically negotiate, use or operate some part or element of a standard building egress system, like stairs or the door locks or latches, then that person has a mobility impairment that affects his or her ability to evacuate in an emergency unless alternatives are provided.

Respiratory Impairments

People with a respiratory impairments can generally use the components of the egress system but may have difficulty safely evacuating due to dizziness, nausea, breathing difficulties, tightening of the throat or difficulty concentrating. Such people may require rest breaks while evacuating.

Visual Impairments

This category includes people with partial or total vision loss. Some people with a visual disability can distinguish light and dark, sharply contrasting colors or

large print but cannot read small print, negotiate dimly lit spaces or tolerate high glare. Many people who are blind, depend on their sense of touch and hearing to perceive their environment. For assistance while in transit, walking or riding, many people with visual impairments use a white cane or have a service animal. There is a risk that a person with a visual impairment would miss a visual cue, such as a new obstruction that occurred during the emergency event, that could affect egress.

Generally speaking, if a person cannot use or operate some part or element of a standard building egress system or access displayed information, like signage, because that element or information requires vision in order to be used or understood, then that person has a visual impairment that could affect his or her ability to evacuate in an emergency unless alternatives are provided.

Hearing Impairments

People with partial hearing often use a combination of speech reading and hearing aids, which amplify and clarify available sounds. Echo, reverberation, and extraneous background noise can distort hearing aid transmission. People who are deaf or hard of hearing and who rely on lip reading for information must be able to clearly see the face of the person who is speaking. Those who use sign language to communicate may be adversely affected by poor lighting. People who are hard of hearing or deaf may have difficulty understanding oral communication and receiving notification by equipment that is exclusively auditory, such as telephones, fire alarms and public address systems. There is a risk that a person with a hearing loss or deafness would miss an auditory cue to the location of a dangerous situation, affecting his or her ability to find safe egress.

Generally speaking, if a person cannot receive some or all the information emitted by a standard building egress system, like a fire alarm horn or voice instructions, then that person has a hearing impairment that could affect his or her ability to evacuate in an emergency unless alternatives are provided.

Speech Impairments

Speech impairments prevent a person from using or accessing information or building features that require the ability to speak. Speech impairments can be caused by a wide range of conditions, but all result in some level of loss of the ability to speak or to verbally communicate clearly.

The only "standard" building egress systems that may require a person to have the ability to speak in order to evacuate a building are the emergency phone systems in areas of refuge, elevators or similar locations. These systems need to be assessed in the planning process.

Cognitive Impairments

Cognitive impairments prevent a person from using or accessing building features due to an inability to process or understand the information necessary to use those features.

Cognitive impairments can be caused by a wide range of conditions, including but not limited to developmental disabilities, multiple sclerosis, depression, alcoholism, Alzheimer's disease, Parkinson disease, traumatic brain injury, chronic fatigue syndrome, stroke and some psychiatric conditions, but all result in some decreased or impaired level in the ability to process or understand the information received by the senses.

All standard building egress systems require a person to be able to process and understand information in order to safely evacuate a building.

Other Impairments and Multiple Impairments

In addition to people with permanent or long-term disabilities, there are others who have temporary conditions that affect their usual abilities. Broken bones, illness, trauma or surgery can affect a person's use of the built environment for a short time. Diseases of the heart or lungs, neurological diseases with a resulting lack of coordination, arthritis and rheumatism can reduce a person's physical stamina or cause pain. Other disabilities include multiple chemical sensitivities and seizure disorders. Reduction in overall ability is also experienced by many people as they age. People of extreme size or weight often need accommodation as well.

It is not uncommon for people to have multiple disabilities. For example, someone could have a combination of visual, speech and hearing disabilities. Evacuation planning for people with multiple disabilities is essentially the same process as for those with individual disabilities, although it will require more steps to develop and complete more options or alternatives.

SERVICE ANIMALS

Service animals assist people with disabilities in their day-to-day activities. While most people are familiar with guide dogs trained to assist people with visual impairments, service animals can be trained for a variety of tasks, including alerting a person to sounds in the home workplace, pulling a wheelchair, picking up items or assisting with balance.

Only under the following rare and unusual circumstances can a service animal be excluded from a facility:

- The animal's behavior poses a direct threat to the health or safety of others.
- The animal's presence would result in a fundamental alteration to the nature of a business or a state or local government's program or activity.
- The animal would pose an "undue hardship" for an employer. Such instances would include a service animal that displays vicious behavior toward visitors or co-workers or a service animal that is out of control. Even in those situations, the public facility, state or local government, or employer must give the person with a disability the opportunity to enjoy its goods, services, programs, activities, and/or equal employment opportunities without the service animal (but perhaps with some other accommodation).

A person with a service animal should rely on emergency management personnel, and should clarify his or her specific preferences regarding the evacuation and handling of the animal. These preferences need to be put in the person's evacuation plan and shared with the appropriate building and management personnel.

People with service animals should also discuss how they can best be assisted if the service animal becomes hesitant or disoriented during the emergency

situation. The procedure should be practiced so that everyone, including the service animal is comfortable with it.

First responders should be notified about the presence of a service animal and should be provided with specific information in the evacuation plan. Extra food and supplies should be kept on hand for the service animal.

STANDARD BUILDING EVACUATION SYSTEMS

A standard building evacuation system has three components:

- 1) The circulation path / Emergency Escape Route.
- 2) The occupant notification system(s)
- 3) Directions to and through the circulation paths / Signages / Emergency Escape Route Plans.

Circulation Path

A circulation path is a continuous and unobstructed way of travel from any point in a building or structure to a public way.

The components of a circulation path include but are not limited to rooms, corridors, doors, stairs, smoke proof enclosures, horizontal exits, ramps, exit passageways, escalators, moving walkways, fire escape stairs, fire escape ladders, slide escapes, alternating tread devices, areas of refuge, and elevators.

A circulation path is considered a usable circulation path if it meets one of the following criteria:

- A person with disabilities is able to travel unassisted through the circulation path to a public way / Safe Assembly Point.
- A person with disabilities is able to travel unassisted through that portion of the circulation path necessary to reach an area of refuge / Safe Assembly Point.

An area of refuge / Safe Assembly Point serves as a temporary haven from the effects of a fire or other emergency. The person with disabilities must have the ability to travel from the area of refuge to the public way, although such travel might depend on the assistance of others. If elevation differences are involved, an elevator or other evacuation device might be used or the person might be moved by other people using a cradle carry, a swing (seat) carry, or an in-chair carry or by a stair descent device.

Occupant Notification System

The occupant notification systems include but are not limited to alarms and public address systems.

NFPA 72, National Fire Alarm Code, defines a notification appliance as “a fire alarm system component such as a bell, horn, speaker, light or text display that provides audible, tactile or visible outputs or any combination thereof”.

Directions to and through the Usable Circulation Path

Directions to and through the usable circulation path include signage, oral instructions passed from person to person and instructions, which may be live or automated, broadcast over a public address system.

Personal notification devices, which have recently come into the market, can be activated in a number of ways, including but not limited to having a building’s alarm system relay information to the device. The information can be displayed in a number of forms and outputs. Because this technology is new to the market, such devices and systems are not discussed here; however, emergency evacuation personnel and people with disabilities would want to investigate them further.

Evacuation Plan for Persons with Mobility Impairment



Occupant Notification Systems

No Special Requirements. People with mobility impairments can hear standard alarms and voice announcements. They can also see activated visual notification appliances (strobe lights) that warn of danger and the need to evacuate. No additional planning towards occupant notification systems is required.

FINDING THE WAY

Emergency Escape Route. People with mobility impairments need to know if there is a usable emergency escape route through which they can reach the area of refuge / Safe Assembly Point unassisted. If not, they have to plan alternate escape routes. A circulation path is considered a usable circulation path if it meets one of the following criteria:

- A person with disabilities is able to travel unassisted through it to a public way.
- A person with disabilities is able to travel unassisted through that portion of the circulation path necessary to reach an area of refuge.

An area of refuge serves as a temporary haven from the effects of a fire or other emergency. A person with severe mobility impairment must have the ability to travel from the area of refuge to the public way, although such travel might depend on the assistance of others. If elevation differences are involved, an elevator or other evacuation device might be used or others might move the person by using Rescue/Evacuation Chair.

Which Circulation Paths Are Usable Circulation Paths?

Exits, other than main exterior exit doors that obviously and clearly are identifiable as exits, should be marked by approved signs that are readily visible from any direction of approach in the exit access.

In cases where not all the circulation paths are usable by people with disabilities, the usable circulation path(s) should be clearly identified by the international symbol of accessibility.

Locations of exit signs and directional exit signs are specified by model codes. Usually the signs are placed above exit doors and near the ceiling.

Supplemental directional exit signs may be necessary to clearly delineate the route to the exit. Exit signs and directional exit signs should be located so they are readily visible and should contrast against their surroundings.

While deciding the usability of the escape routes to a safe assembly point or area of refuge, the following points have to be duly considered.

- a. Can they reach the safe assembly point unassisted?
- b. Are there any obstructions or sharp bends in the way?
- c. Can their personnel aids such as Wheel Chairs, Crutches, Walking Stick or any other aid pass through the escape routes?
- d. Do they have to use lifts to reach the safe assembly point?
- e. Do they have to push doors / pull doors in order to evacuate?
- f. Do they require any special equipment such as evacuation chairs / lifts to evacuate?
- g. Do they require specially trained aides / Floor wardens /ERT to assist?

Special Note

Not all people using wheelchairs or other assistive devices are capable of navigating a usable circulation path by themselves. It is important to verify that each person using any assistive device, can travel unassisted through the usable circulation path to a public way. Those who cannot, must have the provision of appropriate assistance detailed in their emergency evacuation plans.

Additionally, the plans should provide for evacuation of the device or the availability of an appropriate alternative once the person is outside the building. Otherwise, the person with the mobility impairment will no longer have independent mobility once he or she is out of the emergency situation.

Can the Person with a Mobility Impairment Use Stairs?

Not all people with mobility impairments use wheelchairs. Some mobility impairments prevent a person from using building features that require the use of one's arms, hands, fingers, legs or feet. People with mobility impairments may be able to go up and down stairs easily but have trouble operating door locks, latches and other devices due to impairments of their hands or arms. The evacuation plans for these people should address alternative routes, alternative devices or specific provisions for assistance.

Emergency Evacuation Route Plans / Signages / Exit Lamps/ Safe Assembly Points

The above equipments / systems form vital tools of evacuation. Personalised training and awareness of these tools makes a huge difference during evacuation. Mobility impaired people should make an effort to know the floor evacuation plans, Escape routes and related Signages. The authority having jurisdiction (AHJ) should check the installation of the above and whether it is in working condition. Periodic Reviews of the above equipments is a must as the following changes might occur:

- a. Modification /change of internal layouts and hence change in escape route.
- b. Change in Emergency contact telephone numbers.
- c. Change of floor wardens or special aides - people could have left organization or transferred to another department.

It is also advisable to check the emergency lighting system & its working condition. Normally when the state grid supply fails we have generator backups stops, when generator backup fails we have UPS backups. There are possibilities that the UPS Lighting may also fail as they are generally centralized. Moreover Fire accidents or instrument failures can disrupt the UPS lighting systems. Keeping the above reasoning in mind, many



establishments have independent stand alone floor level emergency lamps. In addition good safety practices call for provision for Escape Signages /fire exits, which are lamps with emergency backups. Good quality L.E.D lit emergency exit lamps are also readily available.

Periodic – Sequential checking of the lamp systems at night, by putting off the grid / generator supply is a must. Such simulated excercises bring out a lot of realities into the open.

Floor Warden / Special Aide / ERT Training

The appointed /designated /authorized special aide /floor warden should have a thorough understanding of the nature of mobility impairment of the concerned personnel. There can be different approaches, depending upon the nature of mobility impairment.

- a. A person who is able to move on his/her own, may not really require any physical help. In such cases a special aide is only expected to escort him/her during evacuation.
- b. In general, a person may be able to move on his own but may require a special aide's help at specific points-viz. to open a door, cross an obstruction or a step in the escape route.
- c. High rise building evacuation through lifts (there are provisions for different abled people to use regular lifts during emergencies, but only with the help of Emergency personnel people. The lift must have an emergency power backup and independent fire man switch at the ground level)
- d. Evacuation through escape stairs which might call for special Rescue/ evacuation chairs.
- e. If the nature of mobility impairment is such that the special aide may have to lift / carry the person, then the special aides have to be thoroughly conversant with the adaptable lift techniques.

Generally special aides can be trained in

Two Hand Lift

Three hand lift

Four arm Lift

Four and aft Lift

The illustrations are given below.

Two Hand Lift



Three hand lift



Four hand Lift



Four arm Lift



Four and aft Lift



It is of utmost importance and practical value that the mobility impaired people and their special aides should take trials of various lift techniques and identify the one most convenient & suitable for them. If the special aides are using evacuation chairs, it calls for repetitive trials of the same. Evacuation chair usage definitely needs a certain amount of practice.

Personal Notifications







People with mobility impairments should be provided with some form of written directions, a brochure or a map showing all the routes, directions and signs to all usable circulation paths. For new employees and other regular users of the facility, it may be practical to physically show them the usable circulation paths as well as provide them with written information. In addition, simple floor plans of the building that show the locations of and routes to usable circulation paths should be available and given to visitors with mobility impairments when they enter the building. A large sign could be posted at each building entrance, stating the availability of written directions or other materials and where they can be collected. Building security personnel, including those staffing entrance locations, should be trained in all the building evacuation systems for people with disabilities and should be able to direct anyone to the nearest usable circulation path. Personal notification should contain:

- a. Building Evacuation Procedures
- b. Emergency Escape Route plans / Safe Assembly Point.
- c. Details of Emergency contact numbers.
- d. Emergency Management Organisation.
- e. Their Special aides and their numbers.

Personal alert notifications using Mobile (SMS), Pager, E-Mail can be explored.

Special Equipments

A good safety practice is to maintain the following equipment at the designated points. Floor wardens / Special aides should be well versed with the usage and location of these equipments

A	Emergency torches	
B	Megaphones	
C	L.E.D Batons	
D	Evacuation chairs	
E	Fire Man Axe	
F	Stretcher	

EVACUATION PLAN FOR PERSON WITH VISUAL IMPAIRMENT



Occupation notification systems:

No special requirements are needed, as people with visual impairments can hear standard building fire alarms and voice announcements over the public address systems that warn of danger, need to evacuate or those that provide instructions. Therefore no additional planning or special accommodations for this function are required.

WAY FINDING:

Emergency Escape Route: People with visual impairments, need to know if there is a usable emergency escape route, through which they can reach the area of refuge safe assembly point unassisted. If not, they have to plan alternate escape routes. While deciding the usability of the escape routes to a safe assembly point or area of refuge, the following points have to be duly considered

- a) Can they reach the safe assembly point/area of refuge unassisted?
- b) Are there any obstructions or sharp bends in the way?
- c) Can their personal aids such as walking sticks, service animals pass through the escape routes?
- d) Do they have to use lifts to reach out to the SAP/ area of refuge?
- e) Do they have to push doors/pull doors in order to evacuate?

Emergency Evacuation

The above equipments/ systems form vital tools of evacuation. Personalized training and awareness of these tools makes a huge difference during evacuation. Visually impaired people should make an effort to know the floor evacuation plans, escape routes and related signages.

Exits should be marked by *tactile signs* that are properly located so that they can be readily found by a person with visual impairment from any direction of approach to the exit access.

In cases where all circulation paths are not usable by people with disabilities, the usable circulation paths should be clearly identified by the *tactile international symbol of accessibility*.

The location of exit signages and directional signages for those with visual impairments is clearly and strictly by codes. The requirements include but are not limited to the type, sign, spacing and color of letters for visual characters and the type, size, location, character, height, stroke width, and line spacing of *tactile letters or Braille characters*

Simple floor plans of the building indicating the location and routes to usable circulation path should be available in alternative formats such as Braille or tactile language. These plans can also be given to visitors with visual impairments, when they enter the building so that they can find the exits in an emergency. *Tactile and Braille signs* should be hosted at the building entrances stating the availability of the floor plans and where to pick them up. Building security personnel, front office staff should know all building evacuation systems and be able to direct anyone to the nearest usable circulation path.

Directional sound: Traditional fire alarm systems are designed to notify people but not to guide them. Directional sound is an audible sound that leads people to safety by communicating the location of exits using broadband noise. The varying forces and intensities coming from directional sound devices offer an easy method of finding a way out.

As soon as people hear the devices, they can follow them and can get out of the building quickly.

This is a technology that warrants investigation by building devices management

Emergency Evacuation Route Plans / Signages / Exit Lamps/ Safe Assembly Points

The above equipments / systems form vital tools of evacuation. Personalised training and awareness of these tools makes a huge difference during evacuation. Visual impaired people should make an effort to know the floor evacuation plans, Escape routes and related Signages. All the Signages and special instructions should be in ***Tactile or Braille characters***.

The authority having jurisdiction (AHJ) should check the installation of above installation and its working condition. Periodic Reviews of the above equipments is a must as the following might change.

- a. Modification /change of internal layouts and hence change of escape route.
- b. Change of Emergency contact telephone numbers.
- c. Change of floor wardens or special aides - people would have left organization.

It is also advisable to check the emergency lighting system & its working condition. Normally when the state grid supply fails we have generator backups stops, when generator backup fails we have UPS backups. There are possibilities UPS Lighting may also fail as they are generally centralised, fire accidents or instrument failures can disrupt UPS lighting systems. Keeping the above reasoning in minds lots establishment do have independent standalone floor level emergency lamps. In addition good practice call for Escape Signages /fire exits, which are lamps with emergency backups. Good quality L.E.D lit emergency exit lamps are also readily available.

Periodic – Sequential checking of the lamping systems in the night hours by putting off the grid / generator supply is a must. Such simulated excises bring out lots of realities into the open.



FLOOR WARDEN/SPECIAL AIDES TRAINING

The appointed/designated/authorized special aides/floor wardens should have a thorough understanding of the nature of visual impairment of the concerned person. It could be low vision, night blindness, colour blindness or total blindness. There can be different approaches depending upon the nature of visual impairment.

- a. A person, who is able to move on their own, may not really require any physical help. In such cases the special aide is only expected to be with him/her during evacuation.
- b. In general if a person is able to move on their own, but may require special aide help at specific points viz. to open a door, cross an obstruction or step in the floor.
- c. High rise building evacuation through lifts (there are provision to use regular lifts during emergencies only for different abled people but only with the help of Emergency personnel people. The lift must have emergency power backup and independent fire man switch in the ground level)
- d. Escorting the person with visual impairment offering the person an arm or allowing the person to place a hand on special aids and assisting the person to/through escape routes.
- e. Evacuation through escape stairs which might call for special evacuation chairs.
- f. If required the special aids may have to carry/lift the person. Then the special aides should have relevant training.

Personal notifications







Visually impaired people should be provided with customised written notification in **Braille**, large type or **tactile characters**. The notification should contain

- a. Building Evacuation Procedures
- b. Emergency Escape Route plans / Safe Assembly Point.
- c. Details of Emergency contact numbers.
- d. Emergency Management Organisation.
- e. Their Special aides and their numbers.
- f. Availability of Rescue\Evacuation Chair.

Personal alert notifications using Mobile (SMS), Pager, E-Mail can be explored.

Special Equipments

A good safety practice is to maintain the following equipment at the designated points. Floor wardens / Special aides should be well versed with the usage and location of these equipments

A	Emergency torches	
B	Megaphones	
C	L.E.D Batons	
D	Evacuation chairs	
E	Fire Man Axe	
F	Stretcher	

EVACUATION PLAN FOR PERSONS WITH SPEECH IMPAIRMENT

Occupant Notification Systems

No special Requirements. People with speech impairments can hear standard alarms and voice announcements and can see visual indicators that warn of danger and the need to evacuate. Therefore, no additional planning or special accommodations for this function are required.

WAY FINDING

No special Requirements. Once notified, people with speech impairments can use any standard means of egress from the building.

Simple floor plans of the building indicating the location of and routes to usable circulation paths should be available in alternative formats such as single-line, high contrast plans. These plans should be given to visitors when they enter the building so they can find the exits in an emergency. Signs in alternative formats should be posted at the building entrances stating the availability of the floor plans and where to pick them up. Building security personnel, including those staffing the entrances, should be trained in all accessible building evacuation systems and be able to direct anyone to the nearest usable circulation path.

USE OF THE WAY

The only standard egress system that may require the ability to speak in order to evacuate a building, is an emergency phone in an elevator. Elevators are required to have both a telephone and an emergency signaling device. People with speech impairments should be aware of whether the telephone is limited to voice communications and where the emergency signaling device rings--whether it connects or rings inside the building or to an outside line--and who would be responding to it.

Emergency Evacuation Route Plans / Signages / Exit Lamps/ Safe Assembly Points

The above equipments / systems form vital tools of evacuation. Personalised training and awareness of these tools makes a huge difference during evacuation. Speech impaired people should make an effort to know the floor evacuation plans, Escape routes and related Signages. The authority having jurisdiction (AHJ) should check the installation of the above and whether it is in working condition. Periodic Reviews of the above equipments is a must as the following changes might occur:

- a. Modification /change of internal layouts and hence change in escape route.
- b. Change in Emergency contact telephone numbers.
- c. Change of floor wardens or special aides - people could have left organization or transferred to another department.

It is also advisable to check the emergency lighting system & its working condition. Normally when the state grid supply fails we have generator backups stops, when generator backup fails we have UPS backups. There are possibilities that the UPS Lighting may also fail as they are generally centralized. Moreover Fire accidents or instrument failures can disrupt the UPS lighting systems. Keeping the above reasoning in mind, many establishments do have independent stand alone floor level emergency lamps. In addition good safety practices call for provision for Escape Signages /fire exits, which are lamps with emergency backups. Good quality L.E.D lit emergency exit lamps are also readily available.

Periodic – Sequential checking of the lamp systems at night, by putting off the grid / generator supply is a must. Such simulated exercises bring out a lot of realities into the open



FLOORWARDEN/ERT/SPECIAL AIDE TRAINING:

Once notified, many people with speech impairments can read and follow standard exit and directional signs and use any standard means of egress from the building. However, floor wardens/ERT/ special aids can help them in to notifying and also guiding them to the area of refuge/ safe assembly point.

Personal Notifications







People with speech impairments should be provided with some form of written directions, a brochure or a map showing all directional signs to all usable circulation paths. For new employees and other regular users of the facility it may be practical to physically show them the usable circulation paths as well as provide them with written information. In addition, simple floor plans of the building that show the locations of and routes to usable circulation paths should be available and given to visitors with speech impairments when they enter the building. A large sign could be posted at each building entrance stating the availability of written directions or other materials and where to pick them up. Building security personnel, including those staffing entrance locations, should be trained in all the building evacuation systems for people with disabilities and be able to direct anyone to the nearest usable circulation path. Personal notification should contain.

- a. Building Evacuation Procedures
- b. Emergency Escape Route plans / Safe Assembly Point.
- c. Details of Emergency contact numbers.
- d. Emergency Management Organisation.
- e. Their Special aides and their numbers.
- f. Availability of Rescue\ Evacuation Chair.

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F	Stretcher	

EVACUATION PLAN FOR PERSON WITH HEARING IMPAIRMENT



Occupant notification systems

Visual Devices for the Fire Alarm System

People with hearing impairments cannot hear alarms and voice announcements that warn of danger and the need to evacuate. Many codes require new buildings to have flashing strobe lights (visual devices) as part of the standard building alarm system, but because the requirements are not retroactive, many buildings do not have them. In addition, strobes are required only on fire alarm systems and simply warn that there may be a fire. Additional information that is provided over voice systems for a specific type of emergency, such as a threatening weather event or an announcement that directs people to use a specific exit, are unavailable to people with hearing impairments.

It is extremely important for people with hearing impairments to know if any *visual notification systems* are in place. They also need to be aware of which emergencies will activate the *visual notification system* and which emergencies will not. Alternative methods of notification need to be put into the emergency evacuation plans for people with hearing impairments, so that they can get all the information they need to evacuate in a timely manner.

Devices or Methods for Notification of Other Emergencies

The following is a partial list of emergencies that should be considered in the development of alternative warning systems:

- Natural events
 - Storms (hurricanes, tornadoes, floods, snow, lightning, hail etc..)
 - Earthquakes (Although a system would provide only a few seconds' notice, it may lessen anxiety and prevent panic.)
- Human-caused events (robbery, hostile acts, random violence, etc..)

Special Note



LINE DOWN!
ALERT

Scrolling reader boards are becoming more common and are being applied in creative ways. In emergency situations, they can flash to attract attention and provide information about the type of emergency or situation. Some major entertainment venues use this technology to provide those with hearing impairments with 'closed captioning' at every seat, for very little cost. A reversed scrolling reader board is mounted in the back of the room. Guests with hearing impairments are provided with teleprompter-type screens mounted on small stands. The guests place the stands directly in front of themselves and adjust the screens so they can see the reader board reflected off the screens are transparent, so they don't block the view of guests behind the screen users.

If a person with a hearing impairment is likely to be in one location for a significant period of time, such as at a desk in an office, installation of a reader board in the work area might be considered to provide appropriate warning in an emergency.

Personal notification devices are also now available in the market. Such devices can be activated in a number of ways, including having a building's alarm system relay information that can be displayed in a variety of forms and outputs.

E-mail and TTY phone communications are other alternative methods of notification for people with hearing impairments.

WAY FINDING

No Special Requirements. Once properly notified by appropriate visual notification devices of an alarm or special instructions, people with hearing impairments can use any standards means of egress from the building.

Simple floor plans of the building indicating the location of and routes of and routes to usable circulation paths should be available in alternative formats such as single-line high contrast plans. These plans should be given to visitors when they enter the building so they can find the exits in an emergency. Signs in alternative formats should be posted at the building entrances stating the availability of the floor plans and where to pick them up. Building security personnel, including those staffing the entrances, should be trained in all accessible building evacuation systems and able to direct anyone to the nearest usable circulation path.

Is Identification of the Path(s) to the Means of Egress Necessary?

No Special Requirement. Once notified, people with hearing impairments can read follow standard exit and directional signs.

USE OF THE WAY

No Special Requirement. Once notified, people with hearing impairments can read follow standard exit and directional signs and use any standard means of egress from the building

Elevators are required to have both a telephone and an emergency signaling device. People with hearing or speech impairments should be aware of whether the telephone is limited to voice communications and where the emergency signaling device rings—whether it connects or rings inside the building or to an outside line—and who would be responding to it.

Emergency Evacuation Route Plans / Signages / Exit Lamps/ Safe Assembly Points

The above equipments / systems form vital tools of evacuation. Personalised training and awareness of these tools makes a huge difference during evacuation. Hearing impaired people should make an effort to know the floor evacuation plans, Escape routes and related Signages.

The authority having jurisdiction (AHJ) should check the installation of above installation and its working condition. Periodic Reviews of the above equipments is a must as the following might change.

- a. Modification /change of internal layouts and hence change of escape route.
- b. Change of Emergency contact telephone numbers.
- c. Change of floor wardens or special aides - people would have left organization.

It is also advisable to check the emergency lighting system & its working condition. Normally when the state grid supply fails we have generator backups stops, when generator backup fails we have UPS backups. There are possibilities UPS Lighting may also fail as they are generally centralised, fire accidents or instrument failures can disrupt UPS lighting systems. Keeping the above reasoning in minds lots establishment do have independent standalone floor level emergency lamps. In addition good practice call for Escape Signages /fire exits, which are lamps with emergency backups. Good quality L.E.D lit emergency exit lamps are also readily available.

Periodic – Sequential checking of the lamping systems in the night hours by putting off the grid / generator supply is a must. Such simulated excises bring out lots of realities into the open.



IS ASSISTANCE REQUIRED?

No Special Requirements. Once notified, many people with hearing impairments can read and follow standard exit and directional signs and may use any standard means of egress from the building. However, some may need assistance in areas of low lighting or nil lighting, where their balance could be affected without visual references.

FLOOR WARDEN/SPECIAL AIDES TRAINING

The appointed/designated/authorized special aides/floor wardens should have a thorough understanding of the nature of hearing impairment of the concerned personnel.

A person, who is able to move on his own, may not really require any physical help. In such cases the special aide is only expected to escort him/her during evacuation.

Personal notifications







Hearing impaired people should be provided with customised written notifications. The notification should contain:

- a. Building Evacuation Procedures
- b. Emergency Escape Route plans / Safe Assembly Point.
- c. Details of Emergency contact numbers.
- d. Emergency Management Organisation.
- e. Their Special aides and their numbers.
- f. Availability of Rescue\ Evacuation Chair.

Personal alert notifications using Mobile (SMS), Pager, E-Mail can be explored.

Special Equipments

A good safety practice is to maintain the following equipment at the designated points. Floor wardens / Special aides should be well versed with the usage and location of these equipments

A	Emergency torches	
B	Megaphones	
C	L.E.D Batons	
D	Evacuation chairs	
E	Fire Man Axe	
F	Stretcher	

EVACUATION PLAN FOR PERSON WITH COGNITIVE IMPAIRMENT

Cognitive impairments prevent a person from using or accessing building features due to an inability to process or understand the information necessary to use the features. Cognitive impairments are caused by a wide range of conditions, but all result in some decreased level of ability to process or understand information or situations.

All standard building egress systems require the ability to process and understand information in order to safely evacuate.

Possible accommodations for people with cognitive impairments might include the following:

- Providing a picture book of drill procedures
- Color coding fire doors and exit ways
- Implementing a buddy system
- Using a job catch for training

OCCUPANT NOTIFICATION SYSTEMS

No Special Requirements However, the ability of a person with a cognitive impairment to find and use the exits should be verified. If the person is not able to recognize and use them without assistance, then plans for assistance need to be developed.

Simple floor plans of the building indicating the location of and routes to usable circulation paths should be available in alternative formats such as single-line, high contrast plans. These plans should be given to visitors when they enter the building so they can find the exits in an emergency. Signs in alternative formats should be posted at the building entrances stating the availability of the floor plans and where to pick them up. Building security personnel, include those staffing the entrances, should be trained in all accessible building evacuation systems and be able to direct anyone to the nearest usable circulation path.

WAY FINDING

Is Identification of the Path(s) to the Means of Egress Necessary?

No special Requirements. However, the ability of a person with a cognitive impairment to find and use the exits should be verified. If the person is not able to recognize and use the exits without assistance, then plans for assistance need to be developed.

Emergency Evacuation Route Plans / Signages / Exit Lamps/ Safe Assembly Points

The above equipments / systems form vital tools of evacuation. Personalised training and awareness of these tools make a huge difference during evacuation. Cognitive impaired people should make an effort to know the floor evacuation plans, Escape routes and related Signages.

The authority having jurisdiction (AHJ) should check the installation of the above and whether it is in working condition. Periodic Reviews of the above equipments is a must as the following changes might occur:

- a. Modification /change of internal layouts and hence change in escape route.
- b. Change in Emergency contact telephone numbers.
- c. Change of floor wardens or special aides - people could have left organization or transferred to another department.

It is also advisable to check the emergency lighting system & its working condition. Normally when the state grid supply fails we have generator backups stops, when generator backup fails we have UPS backups. There are possibilities that the UPS Lighting may also fail as they are generally centralized. Moreover Fire accidents or instrument failures can disrupt the UPS lighting systems. Keeping the above reasoning in mind, many establishments have independent stand alone floor level emergency



lamps. In addition good safety practices call for provision for Escape Signages /fire exits, which are lamps with emergency backups. Good quality L.E.D lit emergency exit lamps are also readily available.

Periodic – Sequential checking of the lamp systems at night, by putting off the grid / generator supply is a must. Such simulated excercises bring out a lot of realities into the open.

FLOORWARDEN/ERT/SPECIAL AIDE TRAINING:

Once notified, many people with cognitive impairment may not be able to read and follow standard exit and directional signs and use any standard means of egress from the building. Therefore, floor wardens/ERT/ special aids can help them in notifying and also guiding them to the area of refuge/ safe assembly point.

Personal Notifications







People with cognitive impairments should be provided with some form of written directions, a brochure or a map showing all directional signs to all usable circulation paths. For new employees and other regular users of the facility it may be practical to physically show them the usable circulation paths as well as provide them with written information. In addition, simple floor plans of the building that show the locations of and routes to usable circulation paths should be available and given to visitors with cognitive impairments when they enter the building. A large sign could be posted at each building entrance stating the availability of written directions or other materials and where to pick them up. Building security personnel, including those staffing entrance locations, should be trained in all the building evacuation systems for people with cognitive disabilities and be able to direct anyone to the nearest usable circulation path. Personal notification should contain

- a. Building Evacuation Procedures
- b. Emergency Escape Route plans / Safe Assembly Point.
- c. Details of Emergency contact numbers.
- d. Emergency Management Organisation.
- e. Their Special aides and their numbers.
- f. Availability of Rescue\ Evacuation Chair.

Personal alert notifications using Mobile (SMS), Pager, E-Mail can be explored.

Special Equipments

A good safety practice is to maintain the following equipment at the designated points. Floor wardens / Special aides should be well versed with the usage and location of these equipments

A	Emergency torches	
B	Megaphones	
C	L.E.D Batons	
D	Evacuation chairs	
E	Fire Man Axe	
F	Stretcher	

CHECK LIST – DIFFERENTLY ABLED PERSONS

	YES	NO	N/A	Comments
Are there emergency notification devices (alarms, etc.) appropriate for this person?				
Does this person know the location of each emergency notification device/system and understand its meaning/function?				
Does this person know how to sound the alert for emergencies (manual pull box alarms, public address systems, radio, telephones)?				
If telephones are used to report emergencies, are emergency numbers posted near telephones, on employee notice boards, or in other conspicuous locations?				
Is there a way for a person with a hearing or speech impairment to report an emergency?				
If the communication system also serves as an alarm system, do all emergency messages have priority over all non emergency messages?				
Is there a unique signal (sound, light, header) to indicate an emergency message				
Is there a usable way out?				
Where is it?				
Where is the established outside meeting place?				

Is the usable circulation path clearly marked to show the route to leave the building or to relocate to some other space within the building in an emergency?				
If a person exiting a doorway or turning a corner could inadvertently be directed into the path of a moving vehicle, is a safeguarding device with a warning sign in place?				
If the stairs in the circulation path lead anywhere but out of the building, are doors, partitions, or other effective means used to show the correct route out of the building?				
Do doors used to connect any room to a circulation path have proper maneuvering clearances?				
Can the doors be easily unlatched?				
Do exterior circulation paths (balcony, porch, gallery, and roof) meet the preceding four requirements?				
Does the exterior circulation path have guardrails to protect open sides of walking surfaces?				
Is the exterior circulation path smooth, solid, and a substantially level travel surface?				
Does the exterior circulation path <i>not</i> branch off and head away from the public way?				
Is each exit marked with a clearly visible sign reading "EXIT" in all forms (visual, Tactile, Braille)?				

Are signs posted and arranged along circulation paths to adequately show how to get the nearest exit?				
Is every doorway or passage that might be misstated for an exit marked "NOT AN EXIT" or with an indication of its actual use in all forms (visual, tactile, Braille)?				
Are signs posted and arranged along circulation paths to adequately show how to get to the nearest exit?				
Do the signs clearly indicate the direction of travel in all forms (visual, tactile, Braille)?				
Do brightly lit signs, displays, or objects in or near the line of vision <i>not</i> obstruct or distract attention from exit signs, particularly for people with low vision?				
Are circulation paths always free of obstructions, including furniture and equipment, so everyone can safely exit the building during an emergency?				
Are people not required to travel through a room than can be locked, such as a restroom?				
Do all interiors doors, other than fire doors, readily open from the inside without keys, tools, or special knowledge and require less than 5 pounds of force to unlatch and set the door in motion?				
Are exit signs not obstructed or concealed in any way, particularly for people with vision impairments who need to find and feel the sign?				
Are exit doors kept free of items that obscure the visibility of exit signs or that may hide visual, tactile, or Braille signage?				

Is the emergency escape path clear of obstacles caused by construction or repair?				
Does the circulation path maintain a clear height of 6 feet 8 inches at all points?				
Do objects that stick out into the circulation path, such as ceiling fans and wall cabinets, not reduce the minimum height and width of the circulation path?				
Are usable circulation path at least 32 inches wide for any segment less than 24 inches in length and 36 inches for all segments 24 inches or longer?				
Is each usable circulation path a permanent part of the facility?				
If the circulation path is not substantially level, are occupants provided with appropriate stairs or a ramp?				
Do building circulation path; lead to a public way that is: Directly outside or to a street or walkway?				
To an area of refuge and from there to a public way?				
To an open space with access to the outside?				
To streets, walkways, or open spaces large enough to accommodate all building occupants likely to use the exit?				

TYPE OF ASSISTANCE NEEDED

	YES	NO	N/A	Comments
Can the person evacuate himself or herself with a device or aid?				
What is the specific device or aid?				
Where is the device or aid located?				
Does the person need assistance to evacuate?				
What does the assistant(s) need to do?				
Does the assistant(s) need any training?				
Has the training been completed?				
Where will the assistant meet the person requiring assistance (s)?				
When will the person requiring assistance contact the assistant(s)				

Number of Assistants Needed

How many assistants are needed?

How will the assistant(s) be contacted in an emergency?

Name	phone	cell phone	E-mail
Assistant 1			
Assistant 2			
Assistant 3			
Assistant 4			
Assistant 5			
Assistant 6			

SERVICE ANIMAL

	YES	NO	COMMENTS
Has the person discussed with emergency management personnel his or her preferences with regard to evacuation and handling of the service animal			
Has the person thought about under what circumstances a decision may have to be made about leaving the service animal behind?			
What is the best way to assist the service animal if it becomes hesitant or disoriented?			
Do first responders have a copy of the detailed information for the service animal?			
Where are extra food and supplies kept for the service animal?			

PERSONNEL NOTIFICATION FOR PERSON WITH MOBILITY IMPAIRMENT

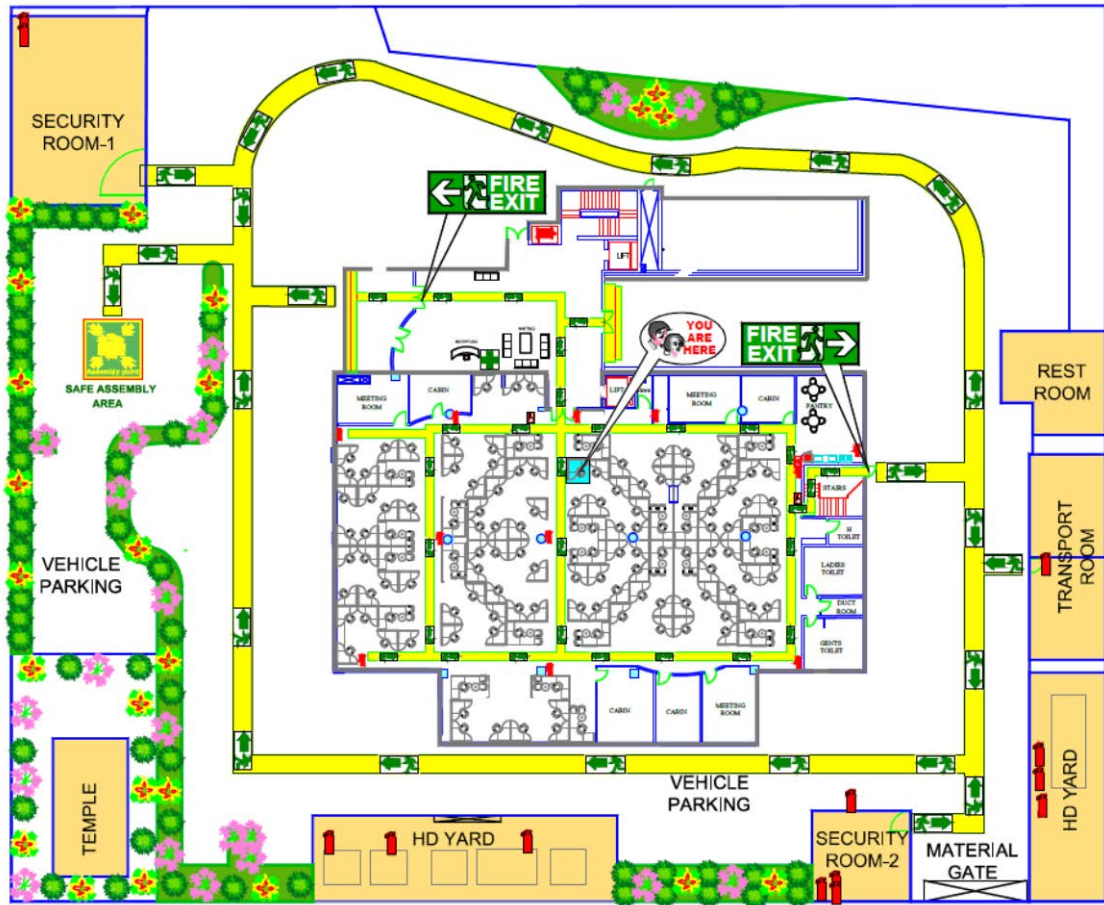
A. Building evacuation procedure:

Incase if you hear an alarm then:

- Stop all your Job
- Do not panic, stay calm
- If you are unable to move, wait for assistance from your buddies or contact the
 1. I.E.C (Internal Emergency Contact) Number
[your I.E.C is _____]
 2. Your Special Aides Name----- Contact
No. _____
 3. Your Special Aides Name----- Contact
No. _____
- If you are able to move on a plain surface then go to the area of rescue assistance.
- If you can move and take the stairs, then go to the nearest exit and take staircase come down to ground floor.
- Do not use the lift
- From ground floor proceed towards the safe assembly area & be near the designated spot in the safe assembly area.
- Offer yourself for the head count taken by the ERT members.
- Do not re-entry the building unless an all-clear signal is given by the authorities.

Note:- If evacuated through special aides, or through evacuation/ Rescue chair never forget to carry the mobility tools such as crutch support, special chairs etc.

B. EMERGENCY ESCAPE ROUTE PLANS:



C. Details of Emergency contact numbers

1. Your Special Aides Name----- Contact No.-----

2. Your Special Aides Name----- Contact No.-----

1. Your internal emergency contact _____
Number is _____

2. Fire Safety Director
Name: _____

Contact No: _____

3. Your nearby Fire Wardens

a. Name : _____
Contact No : _____

b. Name : _____
Contact No : _____

c. Name : _____
Contact No : _____

d. Name : _____
Contact No : _____

4. Building Evacuation Supervisor/ HR

Name : _____

Contact No : _____

5. Fire control Room: 101

Nearest Fire Station: _____

6. Ambulance : 108 or 102 or 1062

Nearest Hospital 1. Name: _____

Contact No: _____

2. Name: _____

Contact No: _____

3. Name: _____

Contact No: _____

7. Police Control Room: 100

Nearest Police Station: Name: _____

Contact No: _____

8. Traffic Control Room: 103

9. Head Office Contact No.

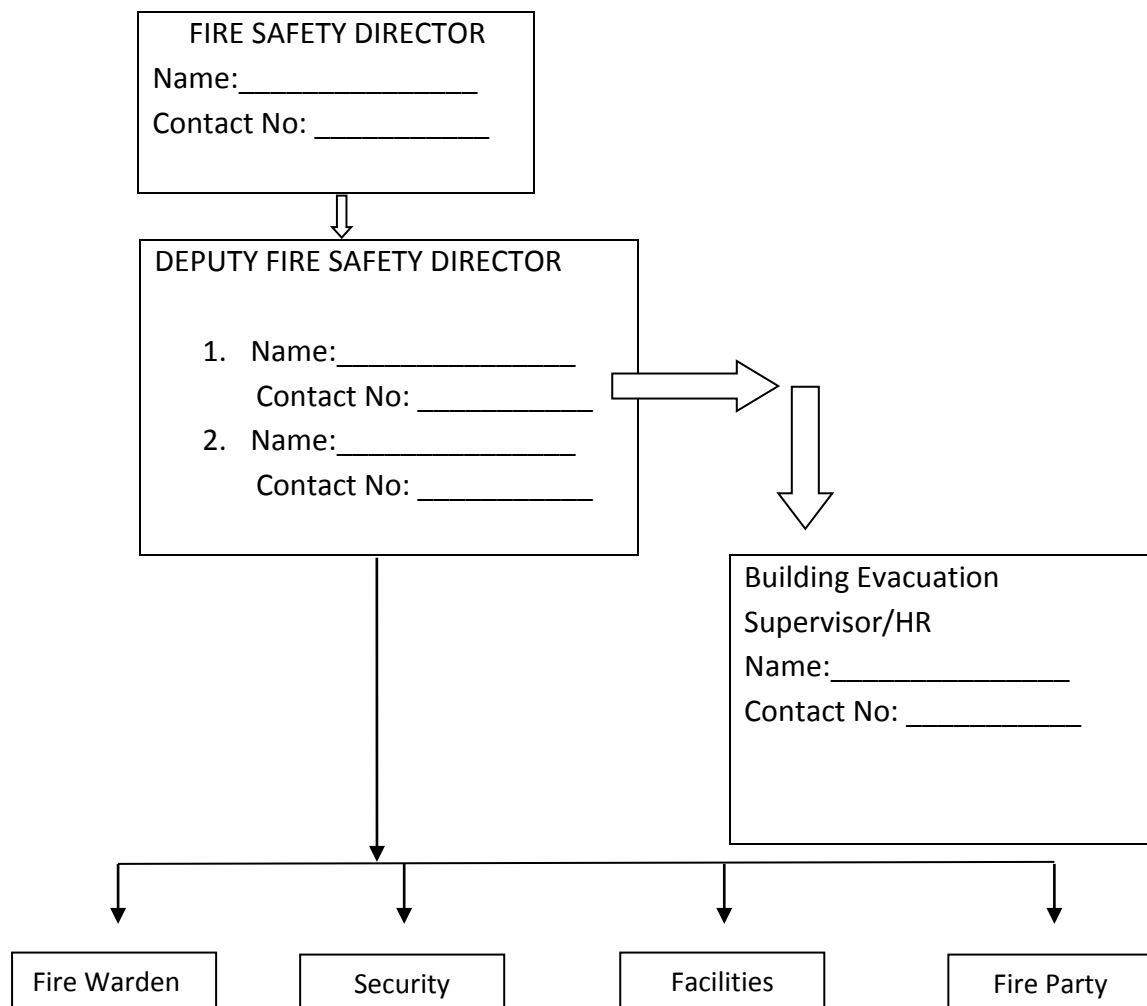
Line 1: _____

Line 2: _____

Line 3: _____

D. Emergency Management Organization:

The Emergency Management Organization is as follows, the senior most person of the organization is called the 'Fire Safety Director', followed by the 'Deputy Fire Safety Director'. The Building Evacuation Supervisor is the next in the line. There are three teams working hand in hand to tackle any emergency situation viz., Fire Wardens, Security Team & the Facilities.



(Fire party is a trained team among the security whose job is to directly attack the fire until the Fire Brigade can take over. Mayor may not be present)

E. Special Aides

The following aids are available in the facility

1. Wheel Chair No.1
Location: _____
Contact : _____
2. Wheel Chair No.2
Location: _____
Contact : _____
3. Stretcher
Location: _____
Contact : _____
4. Crutch
Location: _____
Contact : _____
5. Evacuation Chair (To be used only by Trained Person)
Location: _____
Contact : _____
6. Self Contained Breathing Apparatus
Location: _____
Contact : _____
7. Emergency Management Kit
Location: _____
Contact : _____
8. First Aid Kit
Location: _____
Contact : _____
9. Oxygen Pac
Location: _____
Contact : _____