



# LEARNING ABOUT EARTHQUAKES AND PROTECTION MEASURES

Guidelines for People with Disabilities



MINISTRY OF INFRASTRUCTURE, TRANSPORT AND NETWORKS  
**EARTHQUAKE PLANNING AND PROTECTION ORGANISATION**

# **LEARNING ABOUT EARTHQUAKES AND PROTECTION MEASURES**

**GUIDELINES FOR PEOPLE WITH DISABILITIES**

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## ***A few words** about this booklet ...*

This booklet is addressed to **People with Disabilities**, and more specifically to People with Cognitive Impairments, Blindness, Deafness and Mobility Impairments. It is divided into **two sections**: the first one is entitled “**Learning about Earthquakes**” and the second “**Protection Measures (Before, During and After the Earthquake)**”.

**The first section** includes general information about earthquakes and presents the basic characteristics of this natural phenomenon, along with the manner in which the environment around us changes after a destructive earthquake.

**The second section** refers to Protection Measures, which are classified into measures taken **before, during** and **after** an earthquake. Even though self-protection guidelines are in general lines common for all, there are certain diversities mentioned for People with Disabilities. Whenever a guideline is differentiated, it is pointed out separately along with an indication of the disability it refers to.

This booklet will be posted on familiar websites on the Internet, one of which is the site of the Earthquake Planning and Protection Organization **(E.P.P.O.)** – **[www.oasp.gr](http://www.oasp.gr)**, in a format that is identifiable by screen readers.

Both sections are enriched by pictures from the E.P.P.O. photo gallery showing earthquake drills, in which People with Disabilities have taken part, in order for the text to be understood faster and more easily.

In the framework of its activities for the training – information of the population on issues regarding earthquakes and protection, the E.P.P.O. is addressed to this specific population group for the first time, in an effort to focus on its diversities.

This innovative action of the E.P.P.O. was supported by the Operational Programme “POLITEIA” of the Ministry of Interior Decentralization from which it was funded as well.

Earthquake Protection Measures for People with Disabilities, as formulated, have resulted from a variety of actions. The scientific personnel of the E.P.P.O. collaborated with specialized scientists (Psychologists, Social Workers, etc.) on every type of disability,



thus requesting their knowledge and substantial distribution. The personnel was informed by the international community on Earthquake Protection Measures for People with Disabilities that generally apply, it processed and adapted these measures to the conditions applying in our country and finally carried out pilot preparedness drills in special schools and institutions of Greece.

Therefore, this booklet constitutes the beginning of an attempt made by the E.P.P.O. to approach People with Disabilities and has a lot of space for improvement in the future.

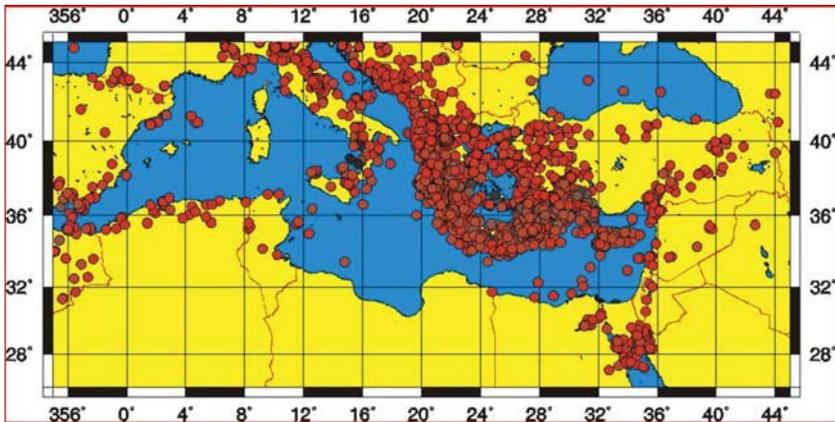
At this point we would like to thank competent bodies for each disability ("Theotokos Foundation" – Training Center for People with Cognitive Impairments, ESEEPa – Special Vocational Training Center, Lighthouse for the Blind of Greece, Social Work Foundation "Hadjipatereion" R.C.C.C.P., Special School for the Deaf at the National Foundation for the Deaf) and specifically people with disability themselves, which have helped us with their opinions and their participation in preparedness drills for the completion of this booklet.



# A. Learning about Earthquakes

Greece being the first most seismically active country in the Mediterranean and the sixth in the world has been constantly struck by earthquakes from ancient times until nowadays. Certain earthquakes have been considerably destructive and marked its history.

Earthquakes are a natural phenomenon that can nevertheless become a destructive phenomenon, if there are vulnerable buildings and infrastructure. They cannot be avoided since they are connected to powers from the interior of the Earth. However, we can deal with them, if we know what we should do.



- After a destructive earthquake your surroundings can
- differ much more than what you were used to. If you
- get prepared, however, you will be in a position to deal
- with a destructive earthquake and to mitigate any of its
- consequences.



## Earthquakes as a Natural Phenomenon

In order for all of us to deal with a destructive earthquake better and to get prepared, it would be wise to be familiarized with some of its characteristics first:

**1** An earthquake is a natural phenomenon that does not usually give any warning signs, as other natural phenomena (storms, floods, etc). It happens out of the blue.

**2** Another characteristic is that it does not last long. The duration of an earthquake in Greece, is around 15 seconds in average. This means that the time we have to protect ourselves is very little.

**3** Every area in Greece has gone through an earthquake at some point. In other words, there is a small or big possibility for an earthquake to occur at every point in Greece. Greece is a seismically active country and earthquakes have been and will always be one of the most common natural threats.

**4** The energy released during a severe earthquake is huge. This energy causes minor or major destructions in buildings and constructions.

**5** An earthquake does not occur by itself. Other earthquakes come in sequence. Some of them can be noticeable, yet some are recorded by seismographs only. However, the first earthquake we have felt as well as the next ones are just earthquakes for all those experiencing them and protection guidelines should always be applied.

**6** Nevertheless, an earthquake is usually followed by other phenomena, which can cause additional damages and have an impact on our environment. This can be: landslides, rockfalls, tsunamis, floods, fires, etc.





## Impacts of Earthquakes

### Indoors

Hanging objects (pictures, mirrors, etc.) can fall and panes of glass can break. Books and other objects that are placed relatively high, from bookcases or other furniture can move from their position. Bulky furniture, such as china cabinets, sofas, tables etc., can overturn or move, possibly blocking hallways or escape exits from a specified area.



In the office, computers and files that are not well secured can fall. In the kitchen, cupboards can open and glasses, plates, etc., can fall on the floor.

Also, in the super markets, objects from higher shelves can fall on the corridors, thus obstructing people from moving right after an earthquake.

### Outdoors

The earthquake can cause big cracks on the ground, rockfalls and/or landslides and consequently roads might be inappropriate for use, even for several days.

This can force you to stay alone at home and your escorts or helpers might not be able to approach the point where you are. Emergency vehicles, such as police cars, fire-engines, ambulances, etc., might be difficult to approach you.

An earthquake can cause damages or power, water and gas supply cuts, along with problems in landlines and mobile phones.



## B. Protection Measures

Earthquake Protection Measures are classified into three sections:

-  Protection measures before earthquakes  
(What you should do at this point onwards)
-  Protection measures during an earthquake  
(What you should do during the few seconds that an earthquake lasts)
-  Protection measures after an earthquake  
(Which steps you should follow right after the earthquake finishes)



- Please be aware of the steps you should follow in case of
- an earthquake; it is your responsibility for the sake of your
- protection.



## Protection Measures before Earthquakes

As we are already all aware, an earthquake as a natural phenomenon occurs every day and every minute in our planet. But, what will happen if this earthquake, which takes place without a warning, "strikes" a town or maybe our town?

In this case, we have to be prepared to correspond in the most suitable manner, in order to mitigate the impacts it will have on us and our surroundings.

An earthquake can occur any time of the day and therefore can catch you, or other people taking care of you, out of the house, at work, at school or anywhere else. How are you going to meet? Or, how would you know that they are in a safe place? Do you know what to do if basic services – water, power or telephones are out of order?

If the earthquake is destructive, all rescue mechanisms will be activated, but rescue groups will be particularly busy during the first hours or maybe the first days after the earthquake.

By following the guidelines of this booklet, you will be prepared for the confrontation of a destructive earthquake. Besides, you are the most suitable person to organize your safety, since you are aware more than anyone else of any issues related to your diversities and possible needs during and after an earthquake.



## What you should do in order to be prepared

- 1 Organize a Personal Support Network.
- 2 Complete a personal assessment.
- 3 Collect first aid supplies.
- 4 Draw an emergency plan.
- 5 Identify and try to remove any hazards from your space
- 6 Take part in preparedness - earthquake drills.



### B1.1. Organize a Personal Support Network

In order for you to be prepared for a severe earthquake, the creation of **a Personal Support Network** is proposed. The Personal Support Network is a group of people that will help you organize yourselves **before and right after an earthquake**.

In the **Before the Earthquake** stage you can discuss with them and choose appropriate emergency supplies, you can identify and remove any hazards from your space with their assistance, as well as organize preparedness drills with them.



Their role **After the Earthquake** is equally important, because the people of the Personal Support Network will be the ones to get interested in you during the first hours after the earthquake and to support you on the following days.

The people of your Personal Support Network should be selected from all the places you are everyday, such as your house, work, school, etc.. They can be relatives, roommates, neighbors, friends, colleagues. You should trust them completely; they should be aware of your diversities and able to help you promptly. It would be advisable to include at least two people from every place (house, work, school and else) in your network. Consider, for example, that someone at your work might be absent or work on different shifts or may not be available during the first hours after a severe earthquake.

**So, from now on:**

✦ **Complete a personal assessment with the people of your Personal Support Network**, in order to analyze your needs. Discuss your needs and possible diversities in the case of a destructive earthquake with them.

✦ **Draw an emergency plan with them** and give a copy to every member of the Personal Support Network.

✦ Ask for their help **in the collection of emergency supplies**.

✦ **Agree about the manner of communication** with them. Do not count on communication via telephone. **Define a possible meeting point**, depending on the time the earthquake occurs and the place where you spend most of your time.

- ✦ **Show them how special equipment work**, in case you use any, and ask from them to practice on their operation.
- ✦ Ask for their help, in order **to identify and remove any hazards** in your place.



- ✦ **Take part in preparedness drills** regularly, according to your plan and try to improve it. Modify your plan if something changes, either to you or your surroundings. Inform all the members of your network regarding these modifications.

### **B1.2. Complete a Personal Assessment**

Start by thinking about what you are able to do by yourselves and what kind of help you might possible need before, during and after an earthquake. This is directly related to **the surroundings** you are going to be, when the earthquake occurs and where you are going to find shelter afterwards, from **your abilities**, and **your limitations** as well.

#### **What does a personal evaluation mean?**

It is a list that describes your personal needs and might come up after a discussion with the members of

your Network. The personal evaluation helps you be better prepared for an emergency situation in case of an earthquake. Try to answer to questions, such as the following, always recording **your abilities** and **the possible help** you might need.

Please try to remember that your performance level will be at the lowest, in the case of a severe, or maybe a destructive earthquake.

### Regarding your everyday life:

#### *Personal care*

Do you need every-day assistance for your personal care, such as for example in the bathroom? Do you use any assistive devices for dressing?

Do you use any assistive equipment, such as a bath seat?

Do you use any particular utensil that helps you prepare food or eat it?

### Regarding your requirements - needs:

How are you going to move around your house and also when exiting it, after an earthquake, when pieces of broken glasses, objects, plasters, etc. are all around? Or if the guide-dog visually impaired people use has been injured? (Any potential damages in your space should be reduced as much as possible and a Personal Support Network should be developed)

How are you going to escape from your office, if you use an elevator in the building you work every day? (There should be an emergency evacuation chair, either a lift chair, or the Personal Support Network must be activated)

Do you know where shut-off valves for water, electric power and gas are and how to access them? If there is a leak can you stop it? (You must practice on it).

### B1.3. Stockpile First Aid Supplies

Collect some first aid supplies now. In each case, these supplies can be the following:

✘ **Water and non perishable food for at least 48 hours.** Many times, there are damages in the water supply network and inability to seek for food during the first hours after the earthquake.

✘ **Medicines** you might possibly need. After a destructive earthquake the drugstore might remain closed for several days or your medication might not be available.

✘ **A battery-powered radio**, in order to stay informed regarding the extent of the disaster and seismicity from competent authorities.

✘ **A rescue card, on which your impairment is indicated.** It would be wise to carry it with you all the time, in your wallet for example. In case you are trapped, this card should be immediately shown to rescuers.



For example, if you are deaf you can write: "Please give me directions in written form, I am deaf".



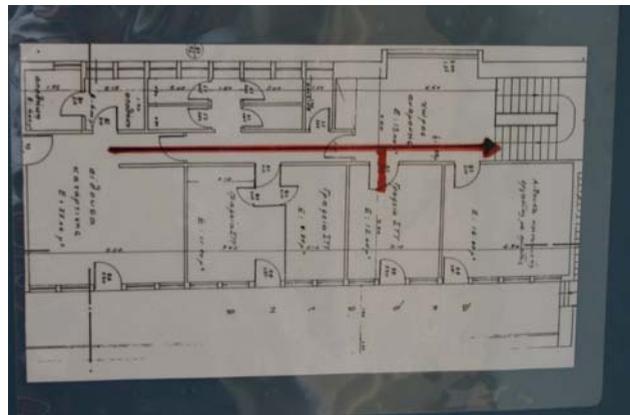
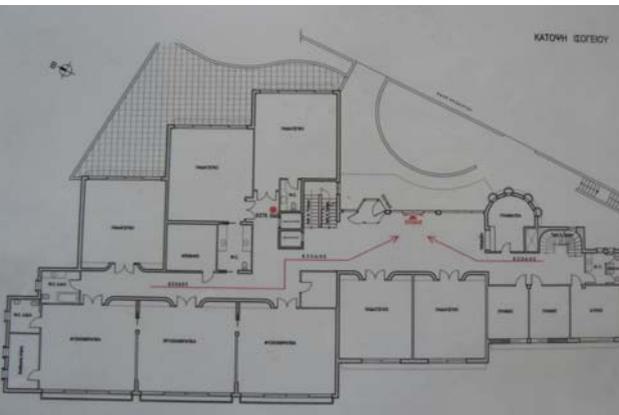
- ✘ **A whistle**, in order for rescue teams to trace you.
  - ✘ **Batteries for the special equipment** you might be using.
  - ✘ **A mobile phone**, in order to call 112 for immediate help.
  - ✘ **A voice message for your mobile phone** saying that you need help.
- 
- ✘ **An additional walking-stick** for the visually impaired, if they already use one.



#### B1.4. Draw an Emergency Plan

Along with the assistance of the people of your Personal Support Network:

- ✘ Find or draw by yourselves a plan of the place you live in or the place where you spend most of your time.
- ✘ **Point out hazards in your place, possible safe spots during an earthquake**, such as a sturdy wooden piece of furniture and escape exits.



- ✘ Decide **where you will resort to after an earthquake** by locating a safe, open, free space that is relatively close to your house and is easily accessible. Contact relevant municipal authorities to find out information about meeting areas and shelters.

- ✘ Note down **112**, the European emergency number that operates in Greece and make a list of phone numbers of the people of your Personal Support Network.

- ✘ **Check** regularly **if your plan fulfils existing needs and your diversities** and if it maps the existing situation correctly. Renew consumable emergency supplies, e.g., batteries, water, medication, non perishable food.

### **B1.5. Identify and Try to Remove any Hazards from your Surroundings**

In collaboration with the members of your Personal Support Network **discuss any potential hazards in your surroundings** and ask for their help in order to remove these hazards.

- ✘ Move **heavy objects on lower shelves** in order to protect yourself in case they fall – or in spots that are far from entrance – exit doors so as not to block your exit from the place.



- ✘ **Provide proper support for television or computer screens, heavy cupboards, pictures, closets, cabinets and other bulky furniture**, for your protection in case they topple, probably injuring you or blocking emergency exits.

✦ **Put transparent safety film on big panes of glass** (especially on entrances – exits or working places) in order to avoid injuries from flying glass. Blinds or even curtains can offer additional protection from shards of glass.

### **B1.6. Conduct Preparedness Drills**

It is important to conduct preparedness drills regularly, in order to react automatically during a real earthquake. The drills should take place at all the places where you spend time during the day, at home, at school, at work or elsewhere.

Ask from your Personal Support Network members to be present at the drill or better to take part in it.

Earthquake drills should be done after a warning.

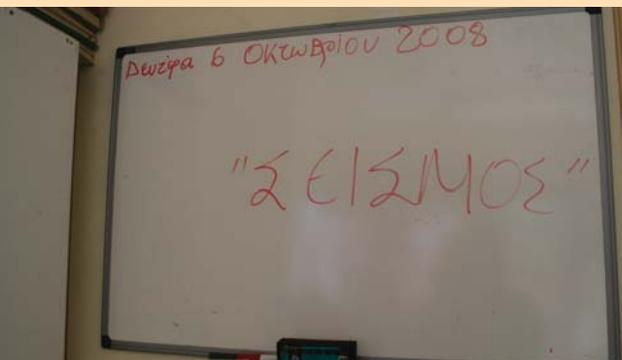




## How are you going to conduct an earthquake drill?

Decide that an earthquake will occur on a specific day and time. You should follow the protection guidelines of this booklet about what to do during an earthquake; you should be familiar with them from this point onwards. Namely:

Stay where you are and cover your body under sturdy, wooden furniture (table, desk etc.). Despite the fact that an earthquake lasts for a few seconds (around 15), you might provide more time in the drills (up to 1 minute), in order to protect yourself as better as you can.



If there is no such furniture near you, crouch near the ground as much as you can and cover your head with your head or anything else near you (e.g. book, folder, etc.).

When the earthquake is over, assuming that it is severe and has caused damages in your building, take first aid supplies with you and follow the emergency plan in order **to evacuate the building**.

Carefully, move outside.

Check the route from your area to the open, free space you have predetermined. Ask from a member of your Personal Support Network to indicate any hazards during the route. On real conditions, you will re-unite with the rest of the members of your Personal Support Network, and other people as well, in this open meeting place.

It is important to make some observations after each earthquake drill regarding your and your plan's weaknesses.





## Protection Measures During Earthquakes

In order to react correctly during an earthquake, for a start **remain calm**. You now know what you have to do and you are very well prepared.

### B2.1. Protection Measures for Indoor Places:

It is hard and dangerous as well to move around during an earthquake (when the earth is moving). Therefore, remain where you are and **cover your body under sturdy, wooden furniture, holding its leg with your hands**.

The energy released during an earthquake is great, meaning that certain objects might fall in your space, probably injuring you. Even the furniture you have selected to protect yourself might move during the earthquake. What is more, earth movement causes great instability to us, even if we are low on the ground. For these reasons, it would be wise to hold the leg of the furniture firmly.



If there is no sturdy, wooden furniture available relatively close to you at the time of the earthquake, move towards the centre of the area where you are, or close to a bulky and steady furniture (sofa, bed, etc.), crouch on the ground and cover your head and neck with your hands or any other object that might possibly be next to you, such as a book.

Stay at this position until the earthquake stops.



### B2.2. Protection Measures for Outdoor Places:

If you happen to be outdoors when a severe earthquake occurs, **remain outside**. The guideline is to crouch on the ground, covering your head and neck with your hands or any sturdy object you have at that point with you. Wait in this position until the earthquake stops.





Stay away from hazards (fallen utility wires, traffic lights, columns, statues, etc.). Aftershocks will certainly follow. During a possible aftershock crouch on the ground again and cover your head.



You cannot possibly know if your building is safe, so do not go inside. Special engineers will check your building directly (depending on the extent of the impacts).



If you have sight problems and you are in an unfamiliar place, do not move, crouch on the ground and cover your head. Stay there until the earthquake finishes.

In case of mobility impairments, avoid seeking protection under sturdy, wooden furniture, if you are not certain that you can come out of it after the end of the earthquake. Stay where you are and as far away from hazards as possible. If there is control of your upper limbs, cover your head and neck with your hands or any other strong objects (book, etc.).



**If you use a wheelchair**, when you sense an earthquake, first **lock the break** on the wheels of your wheelchair and then **cover your head and neck with your hands** or any other object, crouching towards your knees as much as possible.





## Protection Measures After an Earthquake

- An earthquake lasts very little, just a few seconds. So,
- when an earthquake is over you might notice changes
- in your surroundings. Aftershocks follow after an
- earthquake, which can be strong and noticeable and might
- cause additional damages.



Exit from the building and **go to the open, free space you have predetermined, after having taken your first aid supplies with you.** You should remain there with other people that have probably resorted to the same place as you until you get guidelines by competent authorities.

If you are outdoors, when the earthquake is over, try to approach a free and open meeting point that is close to you, by asking for help from other people.

✦ Move **carefully** at the hallways, pavements and roads you have planned to use.



✦ **Avoid using elevators**, because there is often an electric power cut after a severe earthquake.

✦ **Do not touch any fallen utility wires** on the street. There is a danger of electric shock.

✦ In case of emergency, you should not hesitate to state your impairment.

✦ Get information from competent authorities and **do not believe in rumors**.

✦ If trapped or seriously injured, use a whistle to ask for help from other people or rescue crews. If you have a card in

which your impairment is indicated, show it immediately.

✦ As you head towards an open, free space and when you have reached it, try to communicate and unite with some member of your Personal Support Network, if they are not with you, or else ask for help from other people in the same place with you.



If you use a wheelchair and work above ground floor level, the possibility of using an emergency evacuation chair or a stair lift should be provided for. In case previous alternatives cannot be provided, the members of your Personal Support Network should help you.



- You have already been aware of what you should do before, during and after an earthquake. You have already conducted
- preparedness drills in the places you visit every day, in order
- to act physically in case of earthquakes. Prepare, protect,
- become a role-model and help inform fellow people as well.

## Sources:

- **E.P.P.O. website:**  
[www.oasp.gr](http://www.oasp.gr)
- **E.P.P.O.'s photo gallery**
- **Ministry of Environment, Energy and Climate Change:**  
Data concerning hindered people and people with special needs – “Universal Design”  
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- **Athens Urban Transport Organization**  
Accessibility guidelines to public transport means for hindered people.  
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“Preparing for Disaster for People with Disabilities and other Special Needs”  
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<http://www.disabled-world.com/disability/emergency/>



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