Take Step 1 For a Safe Life!

Istanbul Seismic Risk Mitigation and Emergency Preparedness Project
ISMEP

Survival Under Extraordinary Conditions

ISTANBUL AFAD
PROVINCIAL DISASTER AND EMERGENCY DIRECTORATE

"Disaster Preparedness Training Materials for Society" which are financed in the framework of 4784-TU numbered contract of loan from World Bank and conducted by Istanbul Special Provincial Administration , Istanbul Project and Coordination Unit (İPKB) within the A component of "Istanbul Seismic Risk Mitigation and Emergency Preparedness Project" (İSMEP) are prepared by Beyaz Gemi Training and Consultancy Centre.

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beyaz gemi

Dear residents of Istanbul,

Istanbul is a city, which is under the threat of earthquakes and many other disaster risks. In many parts of the world, precautions are taken and some preparation plans are carried out against these kinds of risks. In Turkey, there are studies, which aim at the protection of public buildings, particularly schools and hospitals, and historical monuments and there are retrofitting studies for the whole infrastructure system, especially for transportation and communication, with the participation of the professionals in our country by evaluating the studies made in developed countries.

Physical retrofitting studies have the aim of eliminating the physical threats by earthquakes. But the case of earthquake preparedness is not limited with these activities. What's more important is to change our way of life in such a way to be ready for earthquakes and to be more sensitive for our surrounding.

In order to be ready for earthquakes firstly at individual and then at the national level, we should know about earthquakes, we should develop ourselves by having safe life awareness at our home, in our offices and surrounding, we should get training and above all we should become conscious about what we can do before a possible earthquake strike.

Therefore, we have prepared these awareness raising and training materials to reach you by the means of ISMEP (Istanbul Seismic Risk Mitigation and Emergency Preparedness Project), which is conducted by Istanbul Governorship Provincial Disaster and Emergency Directorate and Istanbul Governorship Special Provincial Administration Istanbul Project Coordination Unit. The documents, which are prepared with the help of specialists from civil and private sectors, are given the last shape after the controls of experts and relevant departments.

Fifteen different training titles have been defined for our editions, which require the preparation of different documents with different themes and appropriate contents for them have been developed to reach all our citizens living in Istanbul and to ensure the institutional preparedness in every sense. We wholeheartedly believe that these training materials which are thought to be appreciated by each institution and individual would meet an important need. Before anything else, to know that our dear citizens would benefit from these activities that would help earthquake preparedness, gratifies us and enlivens our studies.

In Istanbul, where the future is strengthened by us, we share happiness of looking to the future with confidence.

Best regards,
Muammer Güler
Governor of Istanbul

Within the context of Enhancing Emergency Preparedness Capacity, which is the A component of Istanbul Seismic Risk Mitigation and Emergency Preparedness Project, multiple cooperation has a significant role in Community Disaster Preparedness Training Materialsí shaping within the framework of best practice and achieving objectives.

Within the framework of this project, which is a product of long and intensive study, and emerged in the light of profound knowledge and experiences of a good deal of people and institutions, we thank all public corporations and institutions who do not withhold their contributions from us;

Republic of Turkey Prime Ministry Disaster and Emergency Management Directorate
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Republic of Turkey Prime Ministry Social Services and Child Protection Agency General Directorate
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Search and Rescue Association (AKUT)
Istanbul Union of Chamber of Merchants and Craftsmen
Radio Amateurs Association
Confederation of Turkish Chamber of Merchants and Craftsmen Union
Confederation of Turkish Labor Unions
Social Service Employees Association
Turkish Psychological Association
The Psychiatric Association of Turkey
Turkish Federation for the Physically Disabled
Japan International Cooperation Agency Istanbul Office (JICA)

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Republic of Turkey Governorship of Istanbul
Provincial Disaster and Emergency Directorate

CONTENT

INTRODUCTION

Disasters are natural, technological or man-made conditions from which the affected communities cannot overcome and results originating from them which cause losses in physical, economical and social areas and affect communities by stopping or hindering their daily lives and activities. Even if it is possible to define the word 'disaster' in any different form, this definition has been accepted by the United Nations and it has been widely used.

In the recent years, disasters which affect communities, have been increasing in frequency. Disasters have destructive effects on social order. After disasters, even wounded individuals and survivors need some specific precautions. These specific precautions are primarily for providing vital needs in times of any disaster.

Disaster victims have to sustain their lives during extraordinary conditions as distinct from their normal lives. It is not predicted how much time these conditions will continue. At the same time, experiences show the necessity of victims self-sustaining their own lives as long as 72 hours during any large scale disaster even in the developed countries.

This training contains necessary information by means of providing basic needs of life under extraordinary conditions afterwards a disaster. In the consideration of this information, individuals can provide their needs in areas such as water, food, hygiene and sheltering with their own possibilities during any extraordinary condition.

EXTRAORDINARY CONDITIONS AND THEIR COMMON FEATURES

Extraordinary Condition

Extraordinary condition can be defined as any breakdown and cut in social order and daily life and being incapable of achieving its functions.

These conditions can cause loss of life and property and also these conditions cause individuals to have some difficulty in maintaining their basic needs. Any failure or damage in these needs might stop vital activities. Also the existing social order might not answer their needs; in this instance some precautions are needed in order to support social order. These precautions can change according to the existing situation, its effect and the location it occurs. In some cases, it is possible to eliminate extraordinary conditions; however it might sometimes cause a fall in social order. The main topic of this training is extraordinary conditions which cause a fall in social order; because during these conditions, all the parts of a community are obliged to use some alternative ways to maintain their needs.

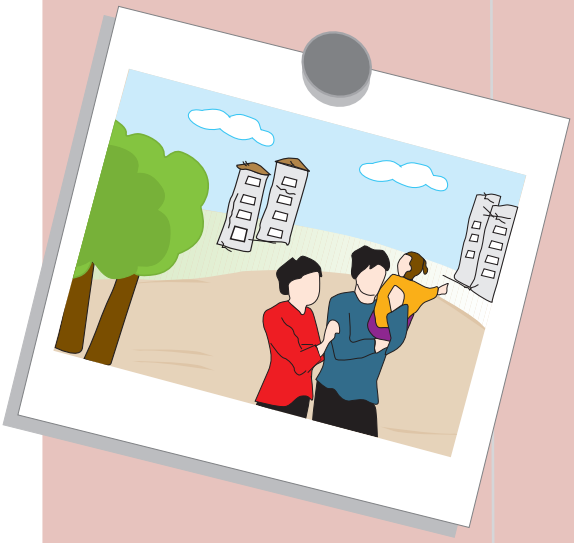


Figure 1. Extraordinary conditions hinder the flow of life.

Extraordinary Conditions and Their Common Features

Extraordinary conditions, in other words, disasters and emergencies can occur in very different ways; however they have some common features. These features can be listed as:

- It can damage life resources and infrastructure.
- When it occurs, it causes a shock effect.
- Whereas it is possible to predict when it will occur, a part of it cannot be predicted.
- Some of them occurs suddenly, some of them develops slowly.
- At the first moment, emergency action cannot take place.

Events Causing Extraordinary Conditions

An extraordinary condition actually occurs due to unusual and anticipated events. Stated in other words, events which are predicted to be able to create negative influence on social order, cause unusual results in daily life if not prepared.

These events which might cause any collapse in social order, can be categorized in two ways as disasters and emergencies.

Figure 2. A great many events except an earthquake might turn into a disaster and cause extraordinary conditions.

There are three kinds of disasters. These are natural disasters, man-made disasters and technology related disasters. Each one can be categorized in itself according to its types. Disaster and its types can be stated as:

- Natural disasters: earthquake, avalanche, tsunami, storm, flood, landslide, wave of cold and heat wave, etc. hot air.
- Man-made disasters: war, immigration, sabotage, terrorism, etc.
- Technology related disasters: accidents, environmental disasters, radioactive fallout, etc.

Humanitarian Needs and Extraordinary Conditions

It is necessary to provide some basic needs in order to survive during any extraordinary condition. Even if these are accepted as physiological needs, it is necessary to pay attention to psychological needs too. While struggling in order to survive during any extraordinary condition, people should not aim at getting over it in some way but should aim at minimizing physiological and psychological influences after an event. Stated in other words, not suffering from any permament or longtime psychological effect is as important as not being injured or becoming ill after an earthquake.

It might be easier to meet physiological needs; because these are easily observed. It is comparatively easy to meet and detect some needs such as food, water, sheltering, toilet and hygiene; however even if some needs such as security, self-respect, compassion are not observable, these have a vital importance. Every individual should be aware of encountering these needs after an extraordinary condition such as an earthquake. They should remember that they might not have possibilities after any disaster they have in their normal lives. Needs can be provided to the best of negative conditions caused by an earthquake until returning to their normal lives. To be aware of it is going to increase one's survival ability.

HOW TO ACT DURING AN EARTHQUAKE

An earthquake has a high potential to turn into a disaster around the places near to human settlements. If an earthquake causes a major disaster, it might be too difficult to survive after earthquakes. We should take some precautions since then the starting point of an earthquake which is an unusual condition, up to turning into normal life. The important point during the first hours after an earthquake, is precautions that should be taken by individuals rather than organizations.

The Appropriate Position During an Earthquake

Earthquakes are felt as shake. The size of shake can change according to earthquake magnitude and its duration. The shake that occurs on the earth are transmitted to the earth by earthquake waves. The effect of the shake on people and buildings indicates earthquake magnitude. If an earthquake causes a large-scale damage, the earthquake magnitude is accepted as big.

During an earthquake, the status of components that are called as 'nonstructural components', are extremely important. Nonstructural components are all the components which are not parts of structural support system. The furnishings in houses, glass of windows, central heating, installations are examples for these. Any tumbling, falling and breaking of these components can cause serious injuries and even deaths. We should take necessary precautions before earthquakes (q.v. Non-structural Risk Mitigation Against Earthquake Training Book). Apart from these, the deficiency and feebleness of structural components can cause a fall during an earthquake; we should make some structural strengthening activities to prevent these things.

During an earthquake, taking the right position and protecting oneself properly have a vital importance in the sense of preventing deaths and injuries." Taking right position during an earthquake" means to be in a position which is going to protect us from falling furnishings and flying objects or prevents deaths. Some very simple principles should be kept in mind for this.

During an earthquake, we should not become a target to the structural and nonstructural components that move freely. For this reason, an individual should stand away from the objects that move freely. It is generally a safe place beside an object that we are sure they will not fall or move. However, we should be careful about the objects near this one that might fall like a cupboard, a dresser, a television and a chandelier. In this position, we should stay low in order to protect our balance. It is safe to crouch in such a manner that our two knee caps touch ground. While clinging on an object near us with one hand, we should protect our head with our other hand. If available, a pillow can be used as a protection our head. This movement is called as drop-cover-hold position.

Figure 3. Drop - Cover and Hold Position.

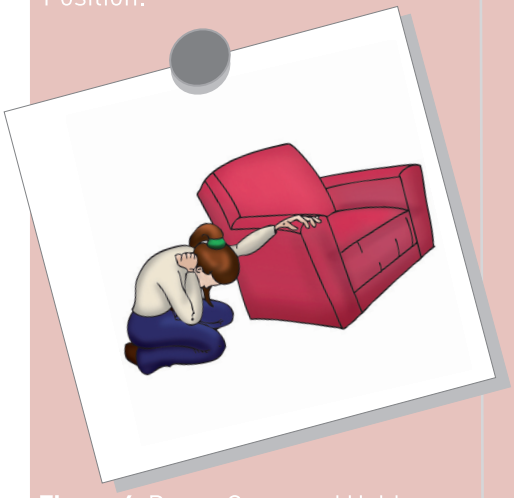


Figure 4. Drop - Cover and Hold Position Beside an Armchair.

Figure 5. Taking the position of drop, cover and hold under a safe furnishing such as a table makes easier to be protected from falling objects.

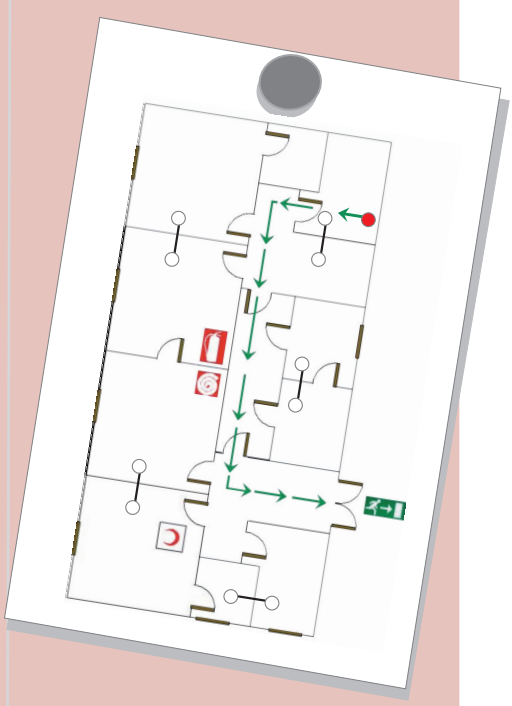


Figure 6. Evacuation is a matter that should be planned carefully.

The Triangle of Life and The Experiences of Search and Rescue Teams

It is useful to mention about the positions of the survivors who are saved from wreckages while talking about appropriate positions during an earthquake. Generally disaster victims are saved from spaces in wreckages alive by rescue teams. These spaces that are enough for survival is called as 'the triangle of life' too. Generally they are formed as a result of being supported of the collapsing structural elements by a resistant object. And therefore, the environment of such objects are safe places. A protecting position can be taken in such places by crouching and covering. It is not possible to guess the collapse shape of the structures beforehand and it is difficult to guess how the triangle of life will occur. Additionally, if the possibility of collapse is thought, it will be an appropriate precaution to move in a safe building as soon as possible.

It is important for individuals to assess the environment by acting discreetly. So then we should approach ground and protect our head preferably in a place we can form the triangle of life, in other words, taking the position of drop-cover-hold on will protect us against injuries and deaths.

Evacuation

'Evacuation' is transportation of individuals who have been affected or have possibility to be affected from danger in a safer place in case of turning a risk into a danger arising from nature, people or technology. Evacuation should be carefully planned and carried out because the individuals who have been evacuated, can be at risk within that period.

Evacuation operations are in protective quality. Evacuation can be done before or after an event occured according to condition. If danger is detected and there is an early warning system, evacuation can be started before an event occurs. So we might prevent some unnecessary risks; however if it is not possible to know beforehand, this process is done after an event. In this case, evacuation will be carried out under difficult conditions after a disaster and the groups that have been evacuated, will be at more risk.

General Information

Evacuations should be planned. In institutions, evacuation plans should be done within the plans of disaster emergency services. All the employees in the institutions (adviser company personnel, temporary workers and including part time employees) should be trained in this way. The training for evacuation should be done in order to check the success of plans.

The same things are valid for individuals. Every individual should make an evacuation plan for their own houses and learn the developed plans of places such as working places and schools where they spend the most of their time. They should follow emergency signals by acting according to these plans and follow the directives of evacuation officers.

While preparing an evacuation plan, primarily we should be careful about these matters:

- Appointing an authority that is going to decide evacuation.
- Appointing an evacuation team.
- Setting a warning and alarm system.
- Appointing and marking an evacuation road.
- Appointing a meeting place.

The condition should be assessed before an evacuation decision. In disaster emergency plans, it should be clearly stated in which conditions will be applied to an evacuation. Apart from that an assessment should be done for unforeseen conditions and acted discreetly. We should not get into panic during unplanned cases. We should be sure whether the place where we are, is dangerous or not. At the same time, the place we will go, should be safer than this place and walk through does not have any danger.

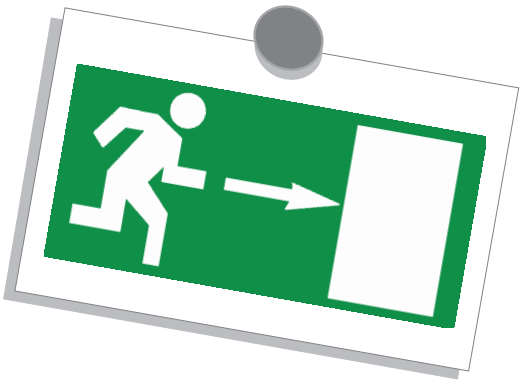
Evacuation can be done both the outside and inside of a building. Furthermore it can be carried out as horizantal (in the same storey) and vertical (among storeys) in a building. In other words, the aim of an evacuation is to leave a risky area. Unnecassarily evacuating affects other operations in a negative way and becomes risky for individuals. This process is divided into 2 groups according to evacuees as 'partial' and 'group' one. The partial evacuation is the evacuation of individuals at risk directly. The aim is to prevent losses by quickly transporting people away at risk. For example, the individuals who are in the storey that fire breaks out and the above it, are evacuated during fires in high-rise buildings. The individuals who are in the other storeys and not at risk, are not evacuated. So the individuals who are exposed to actual danger, are saved and the operation passes more easily as a result of this. During group evacuation, everybody in evacuation area goes to already appointed meeting area through appointed ways. An example for this is the evacuation of individuals from a burning building.

Figure 7. During an evacuation, people should not panic.

Figure 8. Exit doors should not be blocked with any objects.

Evacuated areas are categorized in two groups too. Evacuated area appoints the procedures that are going to be applied during an evacuation. The evacuation of a building and the evacuation of an area are very different from each other. These two conditions should be planned in different ways.

Building Evacuation



Buildings are built in order to protect people from external conditions and provide a safe sheltering and working areas. In modern cities, individuals spend the most their time in buildings; so these places have an importance as being both a life space and working area and also socialization area.

During some disasters, some buildings lose the feature of being a safe sheltering and a working area; on the contrary they create danger against human life. For instance, it is very dangerous to be in buildings during phenomena such as an earthquake or a fire; because these phenomena can damage a building structurally and the conditions in buildings will be unconvenient hence it will be a necessity to evacuate these buildings quickly.

During some disasters, buildings enable high protection. Some disasters affect outer spaces much more. If area is not abandoned especially in such cases as non- heavy weather conditions, small-scale chemical leakages, civil events, the inside of a building can be safer than its outside. During these cases, we should prefer 'inward evacuation'; in other words, people should be transported away from outside areas and the outside of buildings (for example; Windows, balconies, terraces, etc.).

Outward Evacuation

Outward evacuation is applied in such cases as people in a building at risk. Purpose is to exit a safe area by leaving a dangerous one. The interior and structural design of a building are very important during an outward evacuation. Evacuation roads should be planned before the construction of a building and its interior design should not limit this. Emergency escape roads should be marked in a way that can be seen easily. And also evacuation teams should be appointed. These teams should be sure whether all the individuals are evacuated and they follow correct evacuation road during an evacuation. Generally, a building can be evacuated during below mentioned cases:

- At the moment of a fire
- After an earthquake
- After an explosion
- At the moment and after flood
- Chemicals accidents
- Terror and bomb threat
- Landslide threat

We should obey these principles during the evacuation of a building. The evacuation procedures consist of these below mentioned steps:

- The necessary things that should be done after we hear alarm and warning.
- The responsibility of officers and evacuees (company system, special need owners, etc.).
- Precautions to save time (leaving our belongings, etc.).
- Calling fire department.
- Meeting place.
- Specific precautions.

If these procedures exist and are applied, we should follow them cold-bloodedly. If required to evacuate an unknown building, we should follow the announcements and directions of evacuation officers if available. If there are not any announcements, we should follow emergency exit signals. We should make an evacuation plan for our own house and family too. It is not necessary for this plan to be as complicated and detailed as the plan of a firm or an institution. But deciding beforehand what to do during an evacuation makes things easier during an evacuation.

These things should be done during an evacuation:

- Wear protective clothing and a sturdy pair of shoes.
- Take an emergency kit with you.
- Appoint a meeting area.
- Appoint a road to evacuate.

If it is possible, these things should be done:

- Turn off electric, water and natural gas valves.
- Tell your acquintances where you go.
- Help your solitary, old and disabled neighbours.
- Take precautions for your domestic animals.
- Until the assessment of 'danger is over' is announced, never return to building whatever the reason is.

The efficiency of control mechanism is based on making the first response at the time and matching among close units/individuals for spare taskings. Counterpart units check each other both during inside and outside evacuation. Matchings should be schematically shown on evacuation plans in the base of units.

Inside Evacuation

As it is stated before, the inside of a building can be safer than its outside. Snowstorm, rainstorm, floods and civil events are

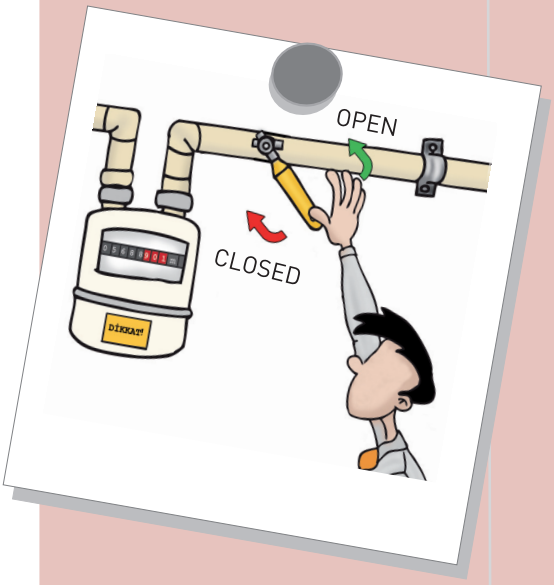


Figure 9. Turning off installations.

cases that inside of a building is safer than its outside. In such cases, we should not go out and if we are outside, we should come in.

Inward evacuation should be planned at least as carefully as outward evacuation. While inward evacuation is applied, the meeting area of people should be decided beforehand. The aim of inward evacuation is to stand away from the effects of negative conditions in outside area. This case gains importance in such cases that have chemical and radioactives effects. Therefore 'shelter-in-place' application should be known about outward evacuation at the same time.

Shelter-in place

The application shelter-in place aims to protect us against a dangerous condition occuring outside. It has fundementally some precautions to isolate the inside of a building.

Shelter-in place steps are as these:

- Swiftly enter indoor.
- Swiftly close windows and doors.
- Close air conditioning systems and chimney intakes.
- Close all the windows and doors, air intake places by using tapes. You can use such materials as stretch film and nylon bag; but be sure whether the material you use, is air proof or not.
- Close the door of a room that is decided before and away from outer effects (according to house plan near to the middle part of a house).
- Keep a radio and a telephone with you.

If being in a house is risky, the method of shelter-in-place should not be applied.

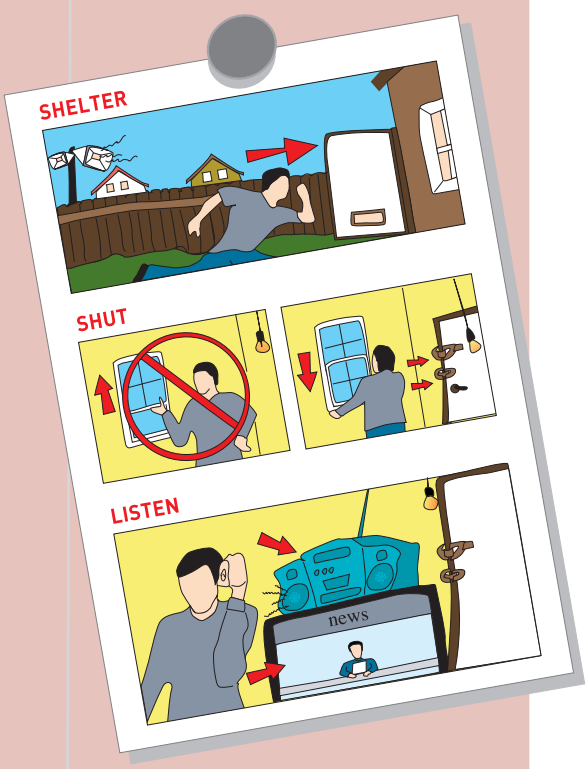


Figure 10. The steps of Shelter- in-place

Meeting and Communication

After an earthquake, everybody's own safety is important before everything. Individuals should control their own conditions and if they can do, they should stand away from dangerous areas. If they cannot stand away from dangerous areas by themselves, they will call other individuals for help. Initially everybody should ensure their own safety and then they should start to think others.

After a disaster, the individuals who try to reach their relatives and acquintances, cause an overloading on damaged communication and transportation systems. This case makes the

activities of emergency response teams more difficult. Consequently, individuals should make their communication plans with their relatives and acquintances beforehand. An individual wants to be sure of his/her own health and then he/she will want to reach his/her own family and want to be informed about their conditions. Thereafter turn will come according to degree of kinships.

We should think two possibilities in this case. If an earthquake occurs as all of a family is together, it is easier and there is not any necessity to meet for the members of a family. The need of getting news about other acquaintances and friends will arise. The other possibility is that the members of a family are not together. It is not enough to get news from the members of a family in this case but they will want to be together too.

Two different ways can be followed in order to communicate after a disaster. The first one of these ways is to appoint a contact individual from out of region. We should not forget that telephones that are connected to cable lines, will not work after a disaster for a long time. Mobile phones will probably work if base stations are not broken down. But everybody starts to call simultaneously their relatives and acquaintances with their mobile phones. So capacity will be exceeded and network congestion will occur as a result of this. At these times it will be easier to reach the out of a region affected from a disaster through SMS.

A relative or a friend who dwells preferably out of present city can be appointed as a contact individual. Right after a disaster, related information can be transferred to this individual through SMS. All the members of a family should contact with the same individual. Other relatives and acquaintances should call this individual to get information.

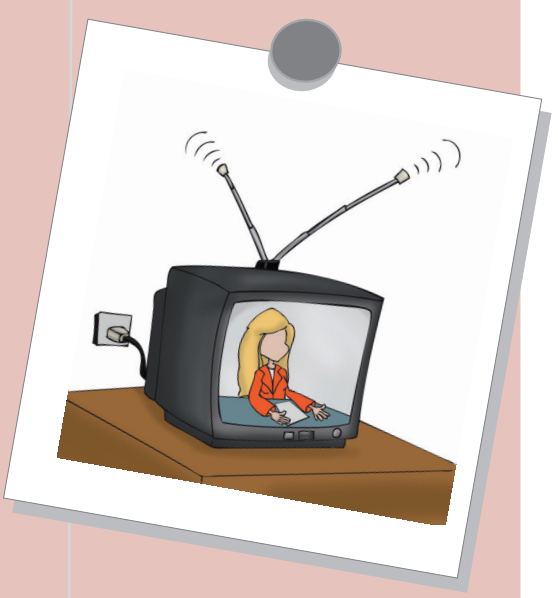
The second way for the relatives who dwell in near places, is to appoint a meeting place known by everybody. This place can be a park or an another safe place. Thus everybody can meet at the same place and the need for communication through mobile phones disappears. This way can be very useful in order to meet after a disaster if the members of a family are not together during a disaster. If a disaster occurs in a place that is impossible to reach a meeting place, we should contact with a contact individual and transfer necessary information to this individual through SMS.

We should think beforehand which information will be given to this contact individual and SMS should be written according to this. Messages are not be sent again and again.

Figure 11. Meeting area should be decided beforehand.

Figure 12. A contact individual should be appointed from out of region.

Figure 13. After a disaster, telephones may not work.



If your child goes to a school, you can ask school management and learn where and how students will be protected and how you can communicate with them after a disaster. If your child is as big as he/she can go to a meeting place or get into any transportation vehicle, you should want your child to follow the directions of authorities.

Regional Evacuation

The directions of local administrators through media organs should be followed after a disaster. If an area is completely at risk, local evacuation might be applied.

Regional evacuation can be carried out in two ways:

- Official authorities give an evacuation order.
- Individuals evacuate this region by themselves.

If an evacuation order is given by official authorities, we should follow this order. This evacuation order shows the existence of a risk threatening human life in this region in a serious way. And consequently, dangerous region should be evacuated swiftly but in a orderly way.

The orders given by official authorities will be broadcast on televisions and radios. At the same time, emergency response teams will give support to evacuation. During a regional evacuation, emergency response teams, law-enforcement officers, military units are supposed to be in this region in order to enable order. Orders should be exactly applied and individuals should take their emergency kits and personal documents too.

Regional evacuation is generally completed by evacuees being reached a shelter or a sheltering center. Some documents can be demanded by evacuees (identity card, marriage license, etc.); for this reason, taking related documents with us is very useful. Because domestic animals should not be accepted in these sheltering places, we should make a different plan about this matter.

The evacuation of a region might not be officially asked but still we should decide whether building is safe against such dangers as fire, flood, etc. Although the order of an evacuation is not given, evacuating this area according to our own decisions or acting individually can cause negative results. At the first hours of an earthquake, there is no idea about the conditions of roads. At the same time, going out by cars causes an unnecessary traffic load and makes emergency response

vehicles pass difficult. For this reason, if staying in this area does not threat our life (tsunami, chemical fallout, etc.), regional evacuation should not be done.

We should be careful about these things during an evacuation:

- If you have a car, keep a half tank of gas.
- Follow adviced evacuation roads. Do not take risk by trying short roads.
- Do not drive in a way that puts other vehicles at risk.
- Give information to contact person from which road and where you go to.
- Post a note informing when you have left, from which road and where you go to.
- Control your neighbours to accompany.
- Take your emergency kit with you.
- If you go on foot, wear long sleeved clothes and a pair of sturdy shoes. Be careful about overhead dangers and if you have, use a protective helmet.
- Lock the door of your house.

SURVIVAL

Survival Under Debris

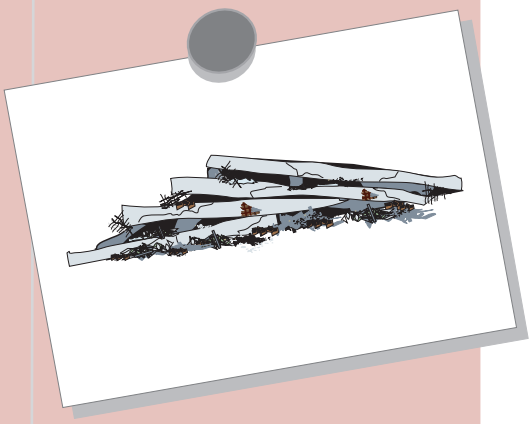


Figure 14. Disaster victims might be trapped under completely collapsed structures.

Figure 15. You should make a sound in order to give a sign out under debris.

The most worst condition that might occur during an earthquake, is being trapped under debris and the collapse of a building. But even in such a case it is possible to survive. It is important to be calm and assess our situation. Morale is the biggest power that disaster victims should have. Keeping our morale high always gives a positive result. A powerful psychology increases resistance and hope. We should not forget that even after days, people are saved alive under debris.

Acts under debris generally consist of these steps:

- Evaluation of situation

Try to understand whether you are injured or not. Control your body; if there is a light source and it is enough, you have a chance to see your injuries. Try to not to move your body. You can understand from where you get injured by moving your arms, feet and legs with small movements. In the first minutes after an earthquake, you might not feel aches or wound pains on your body. If you are injured and especially there is any break, try not to move and wait.

If you are trapped under debris, you might wait until you are saved or perhaps for days. Do not waste your energy. Avoid panic. Please do not forget that panic and fear will bring stress and this will cause hopelessness and desperateness. Furthermore, stress, fear and panic hinder your respiratory system. Fast and superficial respiratory causes the insufficient airing of lungs and falling of oxygen rate in blood.

If you are under debris, you can apply these following steps:

- Be calm and do not move.
- Try to feel aches or pains.
- If you do not feel ache or pain, try to move slightly your limbs starting from your toes.
- If it is possible, do not move the parts that you feel ache or pain.
- Define your position.
- Check how much you are trapped.

- Evaluation of Environment

The evaluation of environment is next phase after the evaluation of situation. The first thing that should be done here, is to define dangers that might be risky for you. Some of the risks that can be under debris, are these:

Dust: Dust clouds and particles occuring in course of breaking down, collapsing, falling down during an earthquake hinder respiration. Covering our mouth-nose with a thin cloth will reduce these risks.

Utilities: Some of the utilities might continue to work after breaking down of buildings. Natural gas leakage, water and power distruption are several of the dangers that can be under debris.

- Natural gas: Natural gas is lighter than air. The existence of it can be noticed because of its smell. The most dangerous side of it is to cause fire risk in case of electric contact or bare fire to catch fire. If it increases in environment, it makes breathing difficult by reducing oxygen in air.
- Plumbing: Plumbing is a big danger. The water supply network of a city will not probably pump water after breaking down of buildings. Even water in tanks and pipes accumulating in small spaces, causes the danger of drowning. Another matter is that body temparature is not protected in case of being ground wet. Disaster victims have a risk of being catched hypothermia on wet ground.
- Electrical installations: If electric current is not cut after breaking down of buildings, it can cause a serious risk. And so we should not touch on conductors and electric installations under debris. Besides, electric contact causes fire risk too.

Unstable Blocks: Most of the structural components in collapsed buildings lose their stability. Structures that have turned into debris, can be more stable in comparison with seriously damaged buildings; however there can be loose parts among the components under debris forming spaces. Blocks can fall and this increases vital risk in case of moving these part in an uncontrolled way for a variety of reasons.

Broken Glass: Scattering and falling of broken glass cause danger during an earthquake. Primarily you should protect your face during a scattering. You can use an object as a shield or cover your face with a bag, a pillow or a piece of clothing. You should keep a pair of slipper for scattering of

Figure 16. Damaged houses have a lot of danger.

glasses. If you are barefeet during an earthquake and there is nothing to wear, you should protect your feet by wrapping tightly your feet with some clothing until finding something to wear.

Pests: After a building turns into a debris, pests near surrounding area or in buildings might come to debris. It is possible to be caught disease from these pests.

There can be different dangers like this in collapsed structures. If a disaster victim is as healty as he/she can move and save himself/herself, he/she should check whether there is a space or a corridor that enables him/her to go out.

Safeguarded area: If you have enough power or you are not trapped, it will be useful to take some precautions to protect yourself against the above mentioned risks. If you can move, you can move into a safer place. You can make space larger safely. After an earthquake, a damaged structure can move as a result of aftershocks and especially pieces of debris and some nonstructural components can cause risk. You can use objects around as a shield or a protection in order to minimize the damage of these objects. A pillow, a cushion, a carpet, a rug and a quilt can be used in this function. If it is not possible to come out under debris, you should make your present area safer. You should support or change the places of objects that can fall down or slide. Try to pull a carpet or a rug under your body. Another individual can be under debris too. For this reason, you should try to listen to your surrounding area. You should try to understand and hear sounds. If there is somebody, speak with him/her.

Communication with outside: The most important thing a disaster victim should do under debris, is to inform individuals outside about his/her existence. It will be useful to put himsel/herself into the place of a emergency response teams in this case. One of the important thing for a disaster victim is to be aware of when they make a search for him/her. If there is an activity of drilling or breaking above debris, the sound and vibration of these activities can be felt. It is not meaningful to shout and try to make his/her voice heard in this phase and it causes loss of energy. The working of construction machines shows that the activity of search or listening is not done. In this case, we should try to contact after stopping of construction machines working; because silence means that they listen to.

While making a search, search and rescue teams call disaster victims under debris. If a disaster victim hears calling, he/she should give a response. If he/she thinks that he/she cannot reach his/her voice to teams or cannot make a sound, it will be wise to hit sound conducting objects. These objects can be central heating pipes, big blocks and metal parts. The object that we hit, should be a sound conducting material. The teams use a search dog or high technological cameras and sound locators. Electronic sound locators are made of very sensitive sensors. They can detect even very low sounds. Search dogs are trained in a way that they go to the nearest place where they detect the smell of disaster victims and dig up and bark. If it is possible, dogs come up to near to disaster victims. We should not get into panic in this case.

Since then contacting with search teams, a disaster victim should try to give information about his position and present place. Disaster victims make a big contribution with the informations they give in the process of their being saved.

Survival After a Disaster

- Buildings might not collapse, but nonstructural objects, materials inside buildings and in surrounding area can cause a damage on you. If you are hurt or injured, primarily secure yourself.
- If there is not any serious injury and you can walk, start to evacuate your present place by checking people around you and supporting.
- Check everywhere before and during evacuation. Look quiet cornes, especially children choose these kind of places.
- While leaving buildings, you can need a lighting; but be sure whether there is any probable gas leakage before using igniter items such as a match and a lighter or an electrical appliance.
- While evacuating buildings, turn valves and power switch off.
- If prepared before, take your emergency kit with you.
- You might not meet swiftly because everybody tries to save his/her acquaintances after an earthquake. So if there is any injured one in your own building and side building, help them.
- Give support to voluntary, professional, trained and organised teams.
- If there is not any injured one in sight, search whether there is anyone under debris or not.
- If you hear a sound, speak with this individual under debris and try to keep his/her morale high.
- Until search and rescue teams come, do not leave debris that you detect someone alive.
- After teams come, withdraw and help if they want your help.
- Meet people who come out of buildings and walk in a safe place appointed before, otherwise come together by finding such a place.

In Open Areas

In open areas, we should primarily go away from buildings, towers, water tanks, transformers and stand away from them. You should go to appointed meeting place; if there is not, you should find a safe open area. Try to get involved in search and rescue organizations or try to give support to them.

Returning to Living Place

After leaving the area that we live, aftershocks lose their strength and main shock passes and as a result of these you feel safe and you may want to return to your building. If you do not see necessary conditions to stay again there, you should start a work in order to find alternative living areas. If you want to enter into your building, be careful about the below mentioned things:

- Check your building again.
- Define dangers and take precautions.
- If there is any injured one and you know how to perform first aid, perform first aid treatment and try to evacuate the building safely.
- Transfer injured ones if available by ambulance if not by other vehicles. If they are not transferred in any way, make them wait in a safe place.
- If you and your relatives and acquaintances are safe, try to help others; but it is natural to aim primarily the health and safety of yourself and your relatives and acquaintances.

Notification of Insurance Claim

If you have a compulsory earthquake insurance policy of DASK (The Turkish Catastrophe Insurance Pool-TCIP) do not forget that you are responsible for fulfilling some necessary documents for a damage file together with these points above mentioned in case of any damage in your building after an earthquake. These documents are if possible the photocopy of your insurance policy and the photocopy of certificate of your ownership.

- Reporting to the TCIP or to an insurance company that contracts for and on behalf of TCIP beginning from learning the date of the damage occurence at the latest in 15 weekdays.
- Letting the attempts of the TCIP officers and authorized persons in order to minimize damage and enter into damaged buildings with reasonable aims and in an appropriate way.
- Giving necessary information and documents without any delay that are useful for collecting evidence about damage rate, using right of recourse. This is possible for insurance taker to provide.
- Giving a written notification informing about the estimation of damage to TCIP or authorized persons in a reasonable and suitable time.
- Informing TCIP if there is any insurance contract except compulsory earthquake insurance on insured building/dwell.

- Informing the notification of damage in case of any damage (if it is possible) from this number to TCIP call center 444 0 336 and the internet site of TCIP (www.dask.gov.tr) or to insurance company making compulsory earthquake insurance.

Information and documents that should be sent to TCIP in case of any danger are these:

- Information of notification of damage
- Photocopy of insurance policy (if possible)
- Photocopy of ownership certificate (if possible)
- Address of the damaged place for insurance appraiser in order to find damaged place and do damage assessment.
- Fixed phone or mobile phone number in order to get in touch with insurer.

Insurance company pays the amount above the part of excess limit in case of occurence of a damage excessing limit.

EVALUATION OF SITUATION

Figure 17. Individuals should assess the situation of themselves, their relatives, acquaintances and surrounding area after a disaster.

It is very important for individuals to make an evaluation about themselves. The aim of this is to evaluate situation. While evaluating the situation, needs, resources and risks should be defined.

If the assessment of a situation is not done carefully, it becomes complicated. For this reason, it should be proceeded step by step as a part of one method. It is also useful to plan this method beforehand. Making disaster plan before the occurence of any disaster and thinking probable disaster scenarios as making this plan are very useful during the evaluation of a situation.

While making this assessment, another important matter is to be calm. Panic hinders to assess events correctly and causes to skip some important details. Being in a hurry causes deceptive results. We should evaluate the situation without exaggerating or underestimating.

The evaluation of a situation for disaster victims is different from the technical assessment that public officers make. After an earthquake, individuals should try to make an assessment based on calmness and common sense in order to understand their own situation. In the meantime, a deep observation and a careful interpretation are very important.

We should follow these steps to assess after an earthquake and evacuation:

Assessment

Health: An assessment about health is the first thing that should be done after a disaster. The aim of this assessment is to define whether vital danger continues or not and there are any injuries or not. It will be very useful to have knowledge about first aid as making an assessment about health. And therefore every individual should get first aid training. We should bear in mind those below during an assessment:

Individual: An individual should check whether there is a death risk or not. If there is a danger, he/she should evacuate immediately. If there is not any death risk, he/she should check whether he/she is injured or not. Injuries might not be noticed because of the excitement after an event. And so an individual should pay attention to his/her body and should check the places of aches and pains. If there is any bleeding,

we should dress injury. If we do not have any knowledge about first aid, we should ask for help to someone with first aid training.

Family/Relatives: After checking ourselves, individuals should check the members of their families and relatives. In this way, we can understand if someone has a health problem or not.

Surrounding area: After checking our friends and relatives, it is time to check the people around us. We should check whether the individuals living alone and having any knowledge about first aid, are injured or not. At the same time, the individuals who have contagious or chronic diseases around should be assessed too. It should be looked whether these people have a vital risk or not. Primarily, general assessment gives an idea about the earthquake magnitude. If there are too many injuries, we should bear in mind that health officers can be very busy.

Structures: The most observable effect of earthquakes are seen on structures. Structures can be collapsed or damaged during an earthquake; consequently in this phase of an assessment we should primarily look whether the structure is broken down or not. It is very easy to make this assessment; but the assessment of damage rate needs expertise. While assessing structures, we should give priority those below:

Individual: Primarily individuals should assess their own residences. While assessing their own houses, individuals have two advantages. The first of them is that they know the probable weaknesses of their houses. The structural risks of a house should be assessed as preparing Family Disaster Plan before an earthquake. The second of them is to be out of this house after an earthquake. It will be useful to see the condition of a house in order to assess it before an evacuation. But there is a disadvantageous matter. Individuals act too emotional and exaggerate or underestimate the condition while assessing their own houses.

Family/Relatives: Individuals have an idea about the structural problems of their friends and relatives due to affinity and friendship. This information will make their assessment easier. While individuals assess the houses of their acquaintaces, it is probable that they can act too emotional and exaggerate or underestimate the condition.

Surrounding area: While assessing the structures around them, individuals can be more objective. During this assessment, we decide according to outside observation. The main important side of assessing the structures around is to give an idea about disaster rate. If the number of damaged and collapsed structures are too much, it is understood that earthquake magnitude is too much.

Infrastructure: It is very important to have some knowledge about infrastructure. Any damage on infrastructure gives a sign of the effects of disaster that will continue until this system is repaired. The assessments about this matter gives us a clue about disaster magnitude and when help will arrive in this area.

Electric-Water-Natural Gas Lines: Damages on electric installations cause the increase of fire risk. Breaks in natural gas lines also can cause a fire risk because of gas leakages too.

The most important risk caused by water supply network, is about public health. Spreading of dirty water in water network is a serious problem. Installations should be turned off before evacuation. The apparatuses connected to these installations should be turned off too. It is easy to detect installation breaks in buildings; but the failures in main distribution lines are only detected by expert teams. These services might be cut from the main distribution stations after an earthquake; but before any cut off, water and natural gas pumped into network can leak from broken pipes.

Communication Lines: Communication lines might be damaged too after an earthquake and phones might not work. The breakdown of this system is a significant problem. It becomes difficult to call for a help in an area that is cut off communication. Any cut or lock in communication lines is possible after an earthquake. In these cases, phones should not be certainly used. If you need help, you should ask for help directly by going to the nearest related emergency response organization.

Transportation Lines: Transportation lines include such elements as road, bridge, dock, railway and railway station, airport and heliports. It is important to assess the amount of damage at these points in order to estimate when and how help will come at earliest. It plays a determinative role about the evacuation of an area. It is easy to assess transportation lines due to their generally observable features. If a bridge is collapsed or a dock sinks, this will affect transportation in this area in a negative way. Highways have a high probability to be damaged. Destruction of roads, breaking down of bridges and tunnels are big problems as well as blocking of roads as a result of collapsing of structures.

Secondary Hazards: After an earthquake, it should be checked whether secondary risks occur or not. These can emerge in a various ways and can increase disaster magnitude. While assessing infrastructure, we should keep these risks in mind.

Fire: Fire is perhaps the most important and common one among the secondary hazards that can occur after an earthquake. Fires after earthquakes cause a great number of deaths in many places around the world. It has been seen that even in some places, fires cause more losses than an earthquake can cause. Fires after earthquakes occur generally as a result of leakages from gas installations, electric installation leakages, short circuits and falling over of open fire sources. Fires can occur simultaneously in many places. Fire brigades might not treat all the fires. Fires that are not treated, cause more loss of life and property by expanding. These fires should be immediately extinguished at the beginning. Everybody should learn how to use a fire extinguisher tube before an earthquake and should have a fire extinguisher in their houses. Whether fire starts after an earthquake or not, is one of the matters that should be observed during the evaluation of a situation.

Figure 18. Fire is an important secondary risk that can occur after an earthquake.

Hazardous Chemicals: Leakage of hazardous chemicals is one of the probable secondary dangers that can occur after an earthquake and is very dangerous. It can occur in various scales such as spreading around of hazardous chemicals from factories, mixing of spirit of salt and bleacher used in houses. If you are suspected of a hazardous chemical leakage, this place should be left immediately.

Flood: Floods occuring as a result of damages at water installations is life threatening. Furthermore it can threat public health by mixing with waste and carcasses and increase the risk of epidemic.

Insects: Insects and mice might increase after a disaster. If there is a place that can be a housing for them, it should be defined during the assessment of situation.

Open Areas: Open areas are places where people gather in order to stand away from structures after an earthquake. These places have a high potential as a temporary sheltering. For this reason, they should be assessed as a resource. But, primarily they should be assessed whether they are safe after an earthquake or not. Even they are not directly influenced from an earthquake, structures around them or installations passing near there make these places unsafe. It should not be forgotten that open places at sea shores are open to tsunami danger.

Need and Resource Assessment

Need assessment should be done after the evaluation of situation. Need assessment is important in terms of individuals predicting their own needs. Individuals should assess by comparing present obstacles and probabilites while identifying needs. Individuals should take these below mentioned factors into consideration during a need assessment.

Weather Conditions: Weather conditions should be taken into consideration during a disaster. The case that can be a main problem is not the weather condition during a disaster but after it. Seasonal circumstances have a determinative role nearly in every matter after a disaster. Such needs as sheltering, clothing, food and water especially change according to seasons.

Before Disasters: All the negative conditions existing before a disaster might increase after it, its effect may expand. Some cases thought to be stemmed from disasters, can continue actually beginning from before disasters. While appointing needs, we should think conditions before disasters and act according to it. A need list that is very different from the condition before a disaster should not be done.

Needs: After a disaster, some very basic needs emerge. The assessment of these needs are necassary for a healty assessment of situation. It will be explained in details how to fulfill these needs later on.

Sheltering: If it is not possible to enter into houses after a disaster, an alternative sheltering place should be certainly appointed. A sheltering enables a protection from weather conditions. At the same time, it meets our safety and privacy needs.

Nourishment: Nourishment is a need that is directly proportional with spent energy. Undernourishment decreases the struggle power of an individual, at the same time it causes to be more vulnerable against diseases.

Clothing: Seasonably clothes are necassary to be protected against diseases and other effects. We should enable clothes to be clean too. This constitutes a problem all by itself.

Hygiene: We should be careful about precautions of health and hygiene in order to protect our health in emergency management circle. Even it is very difficult to apply hygiene rules after a disaster, we should certainly care this matter. Especially handwash, toilet and body cleaning have importance.

Resources: Individuals have some resources to meet their own needs despite the fact that case is too bad. For example, a family disaster bag prepared beforehand can be a very useful resource.

Economic Resources: It is an important advantage to have an amount of cash, because banks might not work for a time after a disaster. Monetary aid might not be swiftly reached disaster victims. Money can lose its value soon after disasters whose effects lasting long. Shopping centers and places like these should work in order to spend money; but after a big disaster commerce fails. At the same time, the only economic resourse is not money. Everyhing can be assessed as economic resource if its value is expressed as financial. Useable equipments in every kind are one each resources.

Social Resources: The ability of supporting each other is important resource after a disaster. All the individuals should be in solidarity with each other in a way affecting the circumstance in a positive way.

Personal Resources: Personal resource is the staying power of an individual. Creativeness, survival skill and hopefulness that an individual has, is very important in terms of survival after a disaster.

MEETING VITAL NEEDS

Individuals should make an evaluation of situation after identifying above mentioned factors. This assessment means to have an idea about themselves by making a comparison between negatives and probabilities. Individuals knowing their conditions, resources and needs make more exact decisions after a disaster. At the same time, the probability of being affected from risks emerging after disasters minimizes too.

An individual performs a risk assessment together with evaluation of situation in consideration of new conditions caused by a disaster. So the first phase of risk management ends. After that, we should look for ways in order to fulfill needs according to probabilities we have.

A reliable evaluation of situation brings out which matters can be managed by individuals, in which matters they need how much help. While assessing, they should identify personal resources and should not call help unnecessarily. Accordingly after meeting their needs, individuals should adjust how much and how they can help other individuals.

Urgent Needs After a Disaster

Disasters or emergencies cause serious failures in communal living. These failures can sometimes last for days and weeks and the fulfilling daily needs of people might become impossible. We need a plan to meet our needs during extraordinary conditions. As long as difficulties and problems are anticipated, preparations for survival will be successful in this extent. During extraordinary conditions, basic needs can be stated as:

- Food
- Water
- Sheltering
- Clothing
- Hygiene

These needs can be thought to be fulfilled by help organizations. But in a large scale disaster, we should not anticipate for help in a disaster area during the first 72 hours. For this reason, disaster victims should fulfill these above mentioned needs with their own means even very simple and practical exercises. While meeting these needs, we should balance between our own resources and acceptable standards.

Emergency Kit:

It is very adventageous to prepare beforehand an emergency kit including basic materials that are very useful right after a disaster. The contents, place and form of an emergency kit change according to our needs. The place where it is, should be a place away from negative effects of an emergency; we should reach this place during a disaster. This kit can both include all the emergency needs that are kept in a storage and also it can be a light bag that includes very personal basic needs. The thing that is important here is need assessment and this should be done before disasters. Only organizations can provide such a safe storage and places like these that are in such a size including all the emergency needs. The place, contents and useage of these storages should be stated in the emergency plans of relevant organizations.

The preparation of personal emergency kits is more important in order to survive during extraordinary conditions. Even it seems as an easy task, it needs a careful planning. It is enough to prepare a personal emergency kit for the ones living alone. But this is different for families. Responsibilities about preparing an emergency kit should be divided among the membes of a family. There are 3 different choices there:

- All the members of a family can prepare a private personal emergency kit and this is the ideal one. But the needs regarding all the family will be in whose kit should be assessed beforehand. The documents about our houses can be an example for this. At the same time, if it is possible, some important needs should be put in more than one kit.

- Some needs of family members can be in the kits of others. It is especially important for family members who cannot prepare their own kits. Small children, elders, disableds or patients cannot carry them by preparing their own kits after disasters. The needs of these people should be in the personal kits of other family members. And this matter should be stated in Family Disaster Plan.

A personal emergency kit should be carried easily. A backpack around 30-35 lt. is ideal. The kit should be in an accessible place. If it is possible, we should prefer a place near to exit door and on evacuation road.

While preparing an emergency kit, we should plan well the things that we put in it. It is not possible to put everything that meet our all the needs after a disaster. First of all, we

should put vital materials in personal emergency kits. It can be difficult to decide which material has a vital importance, because these things change from one person to another. Yet we can make a need list.

Personal Emergency Kit

- Necessary Materials: Some useful materials should be in an emergency kit during an emergency. We should prefer useful materials to meet our needs during an extraordinary condition. Briefly, we should choose multipurpose materials. For example, a radio makes easier getting news all around the world, a multipurpose pocketknife can be very useful in cases that we do not have a kit.

- Multipurpose pocketknife
- Match/lighter
- Whistle
- Cash
- Pen, paper
- Blankets or sleeping bags
- Scissors
- Packing tapes
- Plastic/nylon cloth
- Can liner
- Battery operated radio
- Flashlight
- Headlight
- Extra batteries
- Extra phone charge
- Extra key of car
- Extra key of house/if there is, other houses too
- Protective gloves

- Health Materials: Health materials are one of the materials that we need after a disaster. The content of a first aid kit is directly proportional with our first aid knowledge. Individuals who do not have first aid training approved by the Ministry of Health should not apply first aid. At the same time, it is useful to have materials needed for dressing of minor injuries in a first aid kit.

We should have latex gloves to prevent any contact with the blood of an injured one. We can use latex gloves with different purposes because of their durability during emergencies.

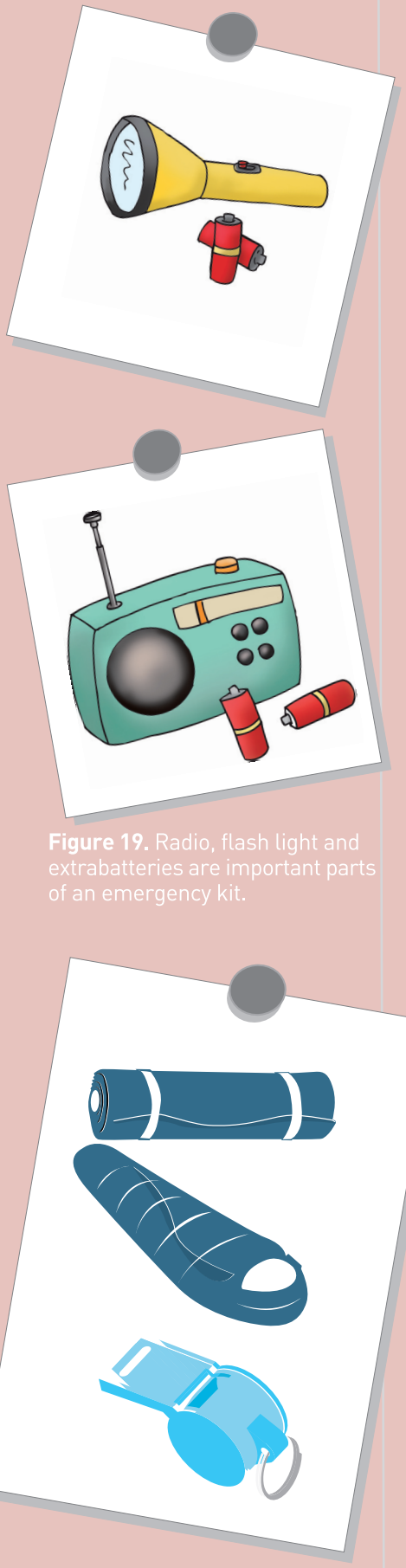


Figure 19. Radio, flash light and extrabatteries are important parts of an emergency kit.

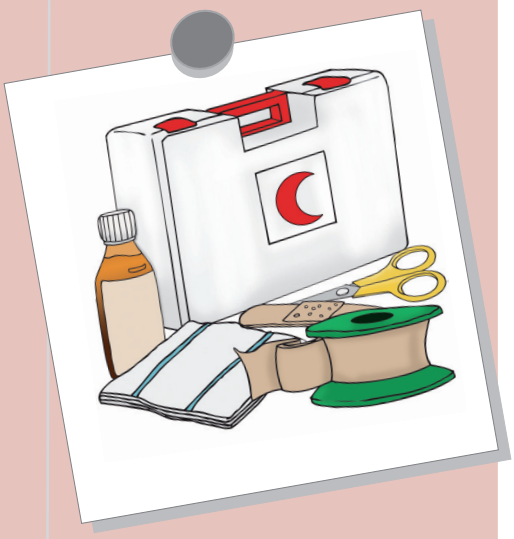


Figure 20. A first aid kit.

Some health materials can be listed as:

- Constantly used medicines and prescriptions
- First aid material
- Latex gloves
- Prosthesis(contact lens, glasses, earing device, etc.)

- Clothing: There might not be a place for clothes in a first aid kit because of their taking a big place. But we should still put such materials as underclothing, socks, raincoat in our kit; because these things take a small place but they are useful. If an extra dress and a pair of shoes are put, they should be durable and seasonal. Clothings in a kit can be exemplified like this:

- Seasonal clothings
- Clean underwear
- Socks
- Shoes
- Raincoat

- Sheltering: After a disaster it can be necessary to stay outside during night so we need a sleeping place. We can use some portable materials that are useful during camping and lodging in nature during these cases. The main ones are these:

- Tent
- Sleeping bag/blanket
- Mat

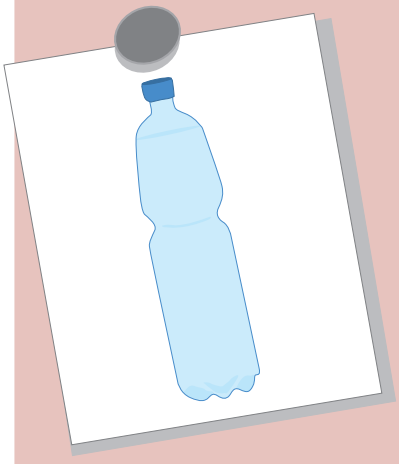
- Important Documents or Their Copies: After a disaster, we need some important documents. As helps start to come, some documents should be ready in order to prevent legal problems. Original documents or their copies can be kept in emergency kits. Thus we should not lose any time to find these documents after a disaster and this makes official acts easier. The main ones of these documents are these:

- Identity card
- Driving license
- Marriage license
- Certificate of ownership
- Vehicle license
- Passport
- Pass book
- Insurance policies
- Health card
- Private documents (War Veterans' card, Disabled card, etc.)

Figure 21. Important documents.

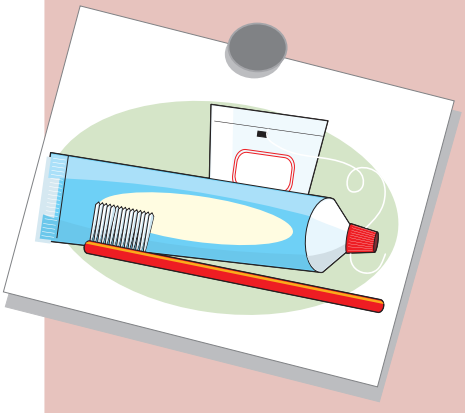
- Food and drink: It is difficult to keep food and drinks in an emergency kit. So we should prefer nonperishable foods and should change them before their date of expiry. Necessary materials for cooking should be in this kit too. Compact cooker and cookware developed for camping are suitable for this. These kind of materials that should be in a kit can be like these:

- Nonperishable food
- Plastic water bottles
- Thermos
- Portable cooker
- Cooker fuel
- Portable saucepan
- Pot



- Hygiene materials: Hygiene is the most important problem during disasters. Enabling a hygienic area is a precaution against diseases. Some very basic cleaning materials should be in an emergency kit. The main materials that are necessary for hygiene, are like these:

- A bar of soap
- Disinfectant gel
- A toothbrush and a toothpaste
- Wet napkin
- Toilet paper
- Tissue
- Sanitary pad



While preparing a personal emergency aid kit, we should think individuals with special needs too. If there is a disabled, a small child or a baby or an elderly and someone having a chronic disease, we should take the special needs of these individuals into consideration. The materials for these individuals in an emergency aid kit are these:

- For disableds;
  - Documents proving disability
  - If available, disabled card
  - Extra prothesis

- For small children and babies;
  - Baby food
  - Feeding bottle
  - Baby pacifier
  - Diaper
  - Toy

- For elders;
  - Medical documents
  - Extra prothesis
  - Medicines and prescriptions
  - Information for doctor contact

Food

We should prepare beforehand in order to meet our food need right after a disaster. An amount of food should be in emergency sets. The qualities of the foods that will be used during emergencies, are these:

- Easily prepared
- Giving energy and mixing with blood swiftly
- High calorie
- Being rich in vitamin and carbonhydrate
- Preventing dehydration
- Nonperishable

Figure 22. We should store our food beforehand for emergencies.

Daily energy need of an adult is 2.100 calories. While supplying food during extraordiary conditions, we should remember this rate. Canned foods, dried nuts (especially dried fig, mulberry, dried apricot, raisin, hazelnut, peanut, etc.), ready soups, tarhana soup (sundried food made of curd, tomato and flour), macaroni and cracked wheat meet our food need swiftly and practically. At first, we should consume more perishable foods. Nonperishable ones should be consumed in the forthcoming days. Daily nutrition should include adequate water and calorie and it should be balanced in terms of vitamin and minerals within the bounds of possibility. If there is not adequate water and food, we should take a rest by keeping away from unnecassary activities.

The conditions of individuals with special needs should be taken into consideration too. The food need of babies, elders and patients can be very different. Elderlies taking a rest, need less food. But nursing women, children and patients need more food.

Cooking and stoves

Some foods should be cooked before being consumed. It is necessary for both consumption of food and preventing health problems. Sometimes hot food consumption can be all right not only to meet necessary calorie but also to fulfill our physical need and to raise our morale.

It can be difficult to cook during extraordinary conditions. A stove and a source of fire is needed in this case. A portable stove in emergency kits is helpful to make a fire and to make use of it safely. But this stove needs adequate and appropriate fuel; otherwise it will be useless. Some materials can be used in order to make a fire in cases of not having a stove.

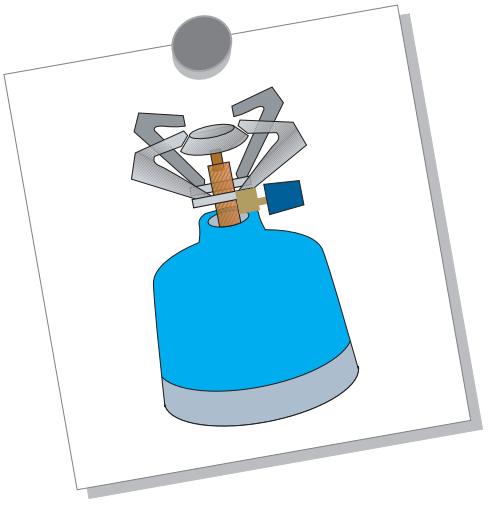


Figure 23. An example for campstoves : A gas stove.

While cooking, we should completely boil water. If fuel is limited, we should prefer easily cooked foods or foods consumed without being cooked; because boiling water is a long process. Another matter that we should be careful about is the date of expiry. We should change these foods before the date of expiry.

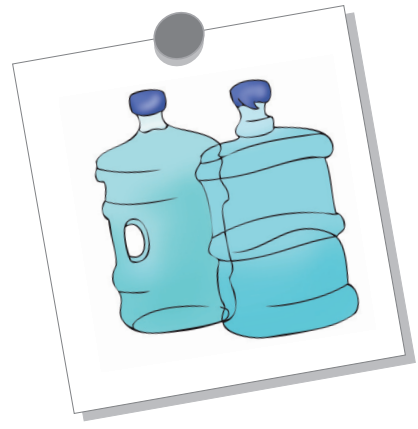
Water

Water has a big importance for survival, health and cleaning. Adequate water might not be found in order to meet our basic needs during extraordinary conditions and disasters. Water is as necessary for drinking as personal and environmental cleaning. Many health problems are seen to be resulted from inadequate and bad water useage because of bad hygiene and inadequate water consumption.

Supplying water after a disaster is an important problem. Earthquakes might have destructive effects on water supply network. Pumbs of water sources, water transfer lines, treatment stations, main distribution networks and installations in houses might be damaged. This case causes trouble in rural areas too but in cities, the damage of water supply network causes more serious outcomes. While in rural areas it is easier to reach alternative water resources, alternative water resources might not be in urban areas.

In this case, some temporary precautions should be taken in order to supply water and damaged places should be repaired. It is difficult to be reached help for disaster victims during the first

72 hours after large scale disasters, so it is useful to talk about some practical precautions in the earlier stages after a disaster.



Water shortage after a disaster should be certainly thought and if it is possible, as much as water the members of a family need, should be included in formerly prepared emergency set. By the time water shortage appears, initially we should have adequate water. After that water quality should be made suitable.

Figure 24. Stocking water before a disaster is useful in the first days after a disaster.

Water demand can be connected to three main conditions:

- Demand: Generally, the amount of water that is used for domestic needs by an individual, should be thought at least 20 lt. We should make our preparations according to this need before a disaster.
- Quality: During emergencies, a large amount of relatively safe water in terms of public health is preferred to a little amount of very pure water.
- Check: Water should certainly be safe, for this it should be constantly checked. Experts define chemical and bacteriological qualities of water; but disaster victims can have an idea about its physical qualities.

Water resources

The choice of a water resource is a delicate subject. The resource should be carefully chosen and used. Urban areas have much less water resources than rural areas. The reason of this is that city dwellers are dependent on a water supply network suppling water to their houses from water resources. Rural areas benefit from water supply network too. But reaching alternative resources might be easier in case of being damaged of water supply networks.

Water can be supplied from different resources. While using these resources, we should be careful about some basic things. Primarily, a water resource should be as clean as possible. Using water from a polluted resource is dangerous for human health. At the same time, resource should be kept clean and should not be polluted and also it should be in a safe area and enough distance from settlements. It should not be in solitude and far areas causing danger for the ones who cannot protect themselves.

Surface Water: Surface resources such as a creek, stream, lake, pond, dam lake are named as surface waters. These resources are not accepted as safe. They might be exposed to various pollutant effects because of being on surface. So, some water treatment precautions should be taken before using.

Rainwater: Rainwater is relatively accepted as pure one. We can collect rainwater into empty containers. These containers should be clean. At the same time, disaster victims should have clean resources to stock rainwater.

Spring Water: Springs are the places where creeks and streams appear. They occur where water flows onto the surface of the earth from the below surface and they are quite safe. Generally they are pure. They can be safely used as long as the spring is not polluted. But spring water is not generally found in urban areas; so disaster victims can use it, if it is reached them.

Sea Water: Sea water is not preferred to be drunk. If there is not any resource, it can be used after water treatment processes; but it is difficult to treat this water.

Mains Water: It is not possible to use mains water after a disaster. Structural damages occuring after a disaster, hinder us from using this water. At the same time, it is risky to use this water coming from damaged networks. We should be sure about whether it is polluted or not.

Water quality

If matter is drinking water, water quality gains importance. People can consume water seeming clean; but some microbiological organisms and chemicals might be in even this water. Identifying them is a specialistic task. So, water that is tested by experts and identified as being inappropriate for useage, should be certainly treated. Water consumption from unsafe resources can include pathogen elements such as virus, bacteria and maggot. This case especially occurs when excrement mixs into water.

Primary thing that should be done in order to preserve water quality is to not to pollute water resources. So, waste materials, toilets and other waste sites should be in places that do not affect water resources.

Water treatment

Water treatment is a work that needs technical knowledge and speciality, but it is possible to make drinkable water with some very simple methods. Until help organizations provide safe water, some suitable techniques should be certainly applied to water from unsafe resources.

These techniques can be used in the short term and can be applied until developing long term solutions. It puts physical and microbiological pollution away. If chemicals have mixed, we should not use this water until it is treated by experts. Some simple methods are explained below for water treatment:

Water Filtering

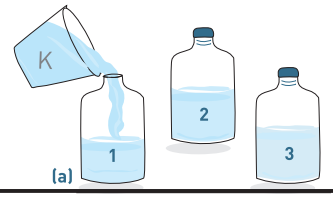
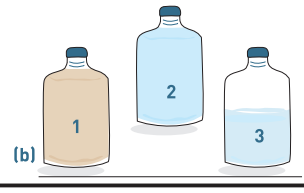
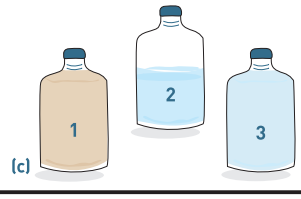
We can use a clean cotton cloth for filtering. This cotton cloth is put over a container in which water is filled. Water fills into the container passing through this cloth. The cloth filters water better if it is tightly woven. Filtering enables water to be separated from organisms that have intestinal worms. The cloth should be certainly clean used for filtering; we can clean it by washing with clean water and soap. At the same time, the same surface of this cloth should not be used all the time, otherwise filtering process is not healthy.

Water Conditioning (cleaning by aerating): Cleaning by water conditioning becomes by increasing oxygen component in water. As a result of this, water gains below mentioned features:

- Volatile matters that affect the smell and taste of water disappear.
- Carbondioxyde rate reduces in water.
- Dissolved minerals such as iron and manganese oxidise. In this way sediment occurs and then it can be treated by the methods of filtering or precipatating.

The thing that is necessary for water conditioning is to contact water with air. The simplest method of this is to put water in a container; but we should not fill it completely. Then shake it swiftly as long as five minutes. After thirty minutes resting, suspended particles settle.

Table1: Water treatment with relaxation method: Water treatment with three containers

	Water from spring is filled into the first container (K container).
	It is waited one day in the first container and then it is transferred into the second container.
	It is waited one day in the second container and it is transferred into the third one.

Water in the third container that is waited 48 hours, is used as a drinking water. While transferring one container into the other, we should do it slowly and settled matters should not be transferred into other one. The upper part of the water from the third container should be used.

Stocking and Keeping

As long as it is kept under healthy conditions, 50% of bacterias in water die. At the same time, suspended matters and some pathogen elements settle at the bottom of container. The container that is used for this should have a cover and we should do its periodical cleaning.

The upper parts of a container is always cleaner; so we should use water in this place. If water is waited as long as 48 hours, some organisms causing diseases will be treated.

The system of three containers is an ideal for stocking and keeping. In this system, water that is waited in one container in the first day, is transferred into another container in the second day. In the third day, we can consume it. Thus, water waits at least 48 hours before useage.

Disinfection

Drinking water should not include hazardous organisms. Water treatment methods might eliminate some microorganisms in water; but eliminating all of them is never ensured. Water should be certainly disinfected. Disinfection is applied to water that has other water treatment methods. Otherwise some solid and organic matters in water limit the effect of this method. Disaster victims can use disinfection methods as follows:

Boiling: Boiling is a very affective disinfection method. It can eliminate many pathogens. Boling five minutes can be adequate, but it is suggested to be boiled until twenty minutes. High fuel consumption is a disadvantage of this method.

Chlorination: Chlorine is one of the chemicals that has been frequently used for disinfection. Its useage is easy and effective. It has low cost. It can kill many virus and bacterias except indestructible ones.

Disaster victims can use chlorine in two ways. They can buy chlorine tablets before a disaster. We should read how it is used and should not use them out of producer advices.

Bleachers that we use in our houses, have chlorine. Water disinfection is enabled by mixing bleacher with water and waiting thirty minutes. The amount of bleacher is important in this process. Determinative thing is chlorine within bleacher. We should not use nonchlorine bleachers for water treatment. Mixing rates of bleachers with various amount of chlorines are stated in below table.

Table 2: Chlorine rate

Chlorine rate in a liter	
For 1% chlorine rate	1 drop in 1 liter water
For 4-6% chlorine rate	2 drops in 1 liter water
For 7-10% chlorine rate	1 drop in 1 liter water

Table 3: Daily water requirement after a disaster

Basic water requirement		
Fluid intake	2.5-3 lt	a day It can change according topsychology and season.
Basic hygiene practices	2-6 lt	a day It can change according to social and cultural norms.
Basic cooking	3-6 lt a day	Food type can change according to social and cultural norms.
Total basic water requirement	7.5-15 lt a day	

Sheltering Need

Earthquakes have destructive effects on structures. Deaths and injuries occur during earthquakes that cause many structures to collapse. People leave homeless. Even structures do not collapse, they have serious damages that make impossible to live in them. Even damage free ones cannot be used right after an earthquake because of aftershock risk. At the same time, people refrain from entering into buildings because of psychological reasons and they want to stay outside areas.

These conditions bring out the sheltering need during extraordinary conditions. Sheltering help may not be provided during the first phases of a disaster and it can be necessary for disaster victims to build shelters with their own means.

People build small living areas and jerry built housings near to dwellings, streets, pavements according to season in order to enable security, rest, waiting, lodging for their injured acquaintances or for their valuable belongings. First of all, the areas coming to mind are parks and vehicles in summers and tents and prefabricated structures in mid seasons and winters. If their buildings and acquaintances do not get any harm and they do not have any place to stay in, people can spend their days with the same methods near buildings too.

Housing

People are in search of a place that is near to their dwellings right after a disaster. Small housings and shanties can be built with their own means for this need.

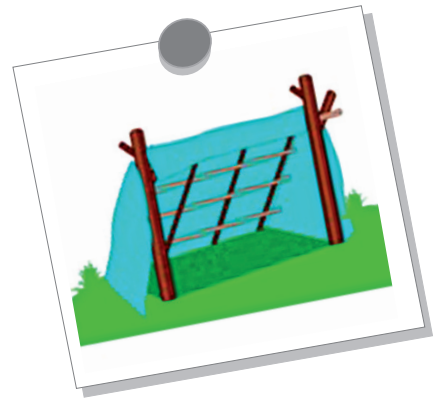


Figure 25. A simple housing that can be used in a short time.

Trees from coppice forest, garden or on roadside can be suitable to be used as load bearing material while we build housings. Also structural lumbers, plywoods, wallboard pieces, domestic waste, linoleum, greenhouse nylons and canvas can be used as a cloth.

These kind of housings are temporary and practical solutions. Especially, they can be meaningful to be protected from adverse weather conditions. It should be assessed whether we really need such a housing or not.

Tent

Tent is one of the widely used materials for temporary sheltering. There are very wide tents that are named also as sahara tent and there are also very small tents even to shelter two people. Tents sheltering a great number of people, are generally supplied by help organizations. Individuals can use smaller ones.

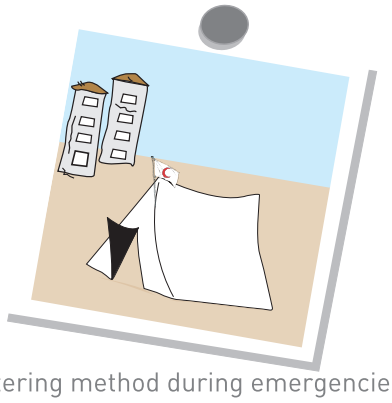


Figure 26. Tents are a practical sheltering method during emergencies.

Tents create a closed area that can protect us against environmental effects in some extent. They enable privacy for an individual or individuals. They enable a living space at least for a time during disaster conditions.

At the same time, tents are difficult places to live in for the ones who are not used to. Tent life is not comfortable. People who are used to live in apartment buildings and houses, might have difficulty.

Individuals can buy them for disaster preparedness. Help organizations can supply them too. Tents have very different types. If a tent is bought before a disaster, we should keep some features in mind. Tents consist of particular materials and they can change according to their brands and models. An individual who has experiences about pitching a tent, can build one combining some materials.

- Canopy tent: Canopy is a cloth made of materials such as nylon, cloth that are stretched upon a place to shade. The canopy of a tent protects materials inside a tent against outside effects. While one layer canopy can be in some tents, some has double layer. Double layer tents should be preferred for a good heat insulation and air conditioning. There are two different types of canopy as inner and outer canopy.

o Inner canopy: Inner canopy makes up the place that we live in. Its ground is waterproof. Other parts of it is thin and easy to take breath. It can easily get wet and be torn. It should not be used without covering with outer canopy.

o Outer canopy: Outer canopy acts as a durable canvas. It protects a tent against outside effects such as wind and rain. Outer canopy should be stretched for a good air conditioning.

- Tent poles: Tent poles are the elements that support a tent. The canopy of a tent stands over this backbone made up these poles. So they should not be bent down and broken. Tent poles are generally made of aluminium alloy. It is flexible but it still should be used carefully. Tents can be made of more different materials.

- Stakes: Stakes are the materials that enable tents to be fastened to ground. They can be made of various materials. These materials change according to the weight of a tent and possibilities. We should protect them carefully.

• Guy ropes: It is important to stretch a tent in terms of completing setup. Guy ropes enable tents to be stretched from certain points. They should be fast. But we should be careful about not stumbling over while going around a tent.

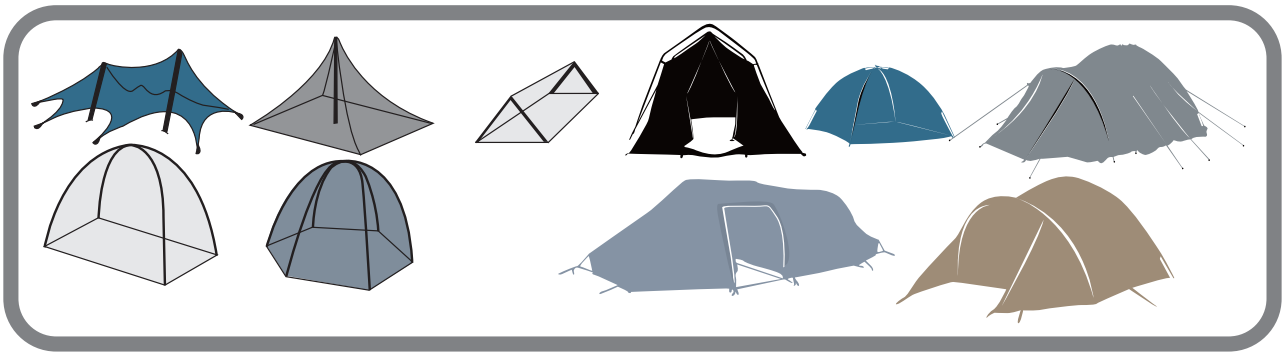


Figure 27. Different tent types.

There are different tent types produced for different purposes. Some cannot meet our needs even though they are of good quality. Tents that are used during disasters, should have some features. Because we might use them more than one day.

Water proof: Tents that are used after a disaster, should be water proof. Especially, if an earthquake has occured in a rainy season, this feature has a vital importance. While buying a tent, we should have some necessary knowledge about this.

Durability: Tents should be especially durable against high wind. Tents, their design made especially durable against wind, should be preferred. At the same time, we should be careful that the cloth of a tent should be durable against any cut or tear.

Capacity: A tent never supplies the comfort of a house; nevertheless it should have enough space for individuals that will stay there.

Air conditioning: The air conditioning of a tent is important for relief of people inside it. Another problem about air conditioning is its perspiration. Becoming dense of breaths in a tent causes its inside moistening, namely perspiration. A double canopy tent prevents perspiration due to supplying air conditioning between outer and inner canopy.

Pitching a tent

Pitching a tent is a simple task but it is necessary to be careful. It can seem difficult and complicated for the ones who has never done before; even the ones who knows, have difficulty in pitching tents produced in different styles. So we should consult about this to the place where we have bought it. Tents should have setup manual and it should be completely read. At the same time, even though setup can change according to design, the logic of pitching tent is the same.

Choosing tent place: Choosing tent place is an important matter. We should not forget that wherever we pitch our tent, we will live there during this time. The place of a tent should be assessed in terms of two ways. The first one of them is safety and the second one is comfort.

Safety: The place of a tent should be sheltered against the secondary risks that can occur after an earthquake. Such elements as high structures, electric lines, natural gas panels creating danger should not be around. At the same time, places near creeks in cities might not be healty too. If a tent is pitched on a place that is higher than its around, this makes our tent to be protected against rain and flood; drainage becomes easier. We should not prefer a place that is exposed to effect of wind. High winds cause tents falling down and poles being broken. Tents should not be pitched near debris after disasters. Staying always near debris can affect the psychology of people staying in tents.

Comfort: Primarily, we should accept that a tent is an uncomfortable and restless place. But we should try to build it in a place that enables all the comforts within the bounds of possibility. If we find a place that supplies our safety, comfort should be looked for as a second one. Tent should be pitched on a level area instead of a slope. At the same time, it should be a place that we can have a soil ground to pitch stakes or we can have materials to fasten our tent with stretching ropes.

Flatting ground: Before pitching a tent, we should remove roughness and stones. If we do not do these, it will be difficult to sit and lie in the tent.

Building framework of tent: After flatting ground, canopy or ground cloth according to tent types (if it is double canopy tent, only inner canopy) is laid on the place where our tent is pitched. Tent poles are pitched according to setup manual. While pitching a tent, we should be careful about the exit of our tent. It should not look wind direction.

Setup of canopy: After building the framework of a tent, ground cloth or canopy (if tent is double layer, only inner canopy) should be connected to each other as it is stated in setup manual. In double layer canopy, outer canopy is covered over the framework of our tent as it is stated in setup manual. After our tent is fastened to ground with stakes in a stretched way, canopy is completely set up. Stakes should be pitched angularly not upright.

Stretching tent: After fastening a tent in a stretched way to ground, canopy should be stretched as stated in setup manual. It is necessary to do this to enable heat insulation, air conditioning and to increase resistance against wind.

Useage of tent

It is useful to state some remarkable matters for individuals who are not used to stay in tents.

Ground cloth: We should lay a heat insulation material on the ground of our tent. Other activities should be carried out on this material too. Campers use a material that is named as mat for isolation. Mats have varieties as polyethylene, inflatable and aluminium fiber. If we do not have such materials, we can use materials such as a blanket for heat insulation.

Bed: The place that we lay, should be prepared after laying ground cloth. It causes serious health problems to sleep there without laying ground cloth and enabling heat insulation of ground. Sleeping place should be above ground. Sleeping bag is the most suitable material to sleep in. But some layer blanket can be used too. Materials such as a blanket, a quilt used for sleeping should be certainly dry. We should not sleep in wet and damp beds.

Sleeping bags: They do not produce heat. It keeps heat by confining body temparature of an individual inside it. It owes its feature of keeping warm to heat insulating filling material. Fiber and goose feathers are generally used as filling materials. Goose feathers supply more heat insulation considering fiber. If a sleeping bag gets wet, it loses its feature of heat insulation. So it should be kept dry. Fibre gets dry easier than goose feathers and heat insulation is better as it is wet.

Figure 28. A sleeping bag.

We should not enter into it with thick clothes how much weather is cold or not. It will take time to warm up a sleeping bag in this case. Also fasteners should be completely closed. If there is too much space inside a sleeping bag, these spaces should be filled either with a dry clothing or should be folded as it will be under our body.

Air conditioning: Tent should be air conditioned every day. This is important in terms of air purity in tents. There are additional features as a window and ventilaton pipe in a tent. If there are not, doors should be opened. Mosquito net should be used in order to prevent insects and flies or other animals to enter inside. Some tents have mosquito nets. If there is not, a tulle stretched to door serves the same purpose.

Privacy: It is not easy to enable privacy conditions in a tent. We should not forget that our voice goes outside directly while speaking. We should be sure that a tent has a door closed safely while buying it. If doors are not completely closed, a paravane should be done in front of them.

Figure 29. We should take additional precautions to enable privacy.

Tents are the places that are narrow and limit our movement area. So we should move carefully. Sudden and careless movements cause negative results. Some cases that should be paid attention, are stated below:

Fire: Warming up inside a tent is a problem. If the inside of a tent is wide and people staying are few, heating problems occur. So we should make a fire; but it is very dangerous. Tents are made of easily flammable materials. So such processes as cooking should be done outside. A fire that breaks out inside a tent, spreads swiftly and does not set time aside to escape.

Cutting-piercing devices: We should not leave cutting-piercing devices unattended. Pocketknives should be kept closed. While we have a cutting device in our hand, we

should not do sudden and unbalanced movements. Knifepoint can cut and tear our tent canopy. A teared tent loses both features of heat insulation and durability. We should repair our tent in such a case.

Water: Even it is not as dangerous as above mentioned conditions, materials' getting wet inside a tent is an undesirable case. It takes too much time to dry inside a tent again after it gets wet. The covers of water containers should be closed and stand on a tough ground in order to prevent this.

Advantages of a tent

- Practicality: Tents are easily stocked and transferred. Also, they can be pitched swiftly.
- Maintenance: The maintenance and repair of a tent can be made practically.
- Earthquake safety: Tents are not collapsed during aftershocks and they cannot cause loss of life.
- Privacy: Tents enables the visual privacy of individuals inside them.
- Weather conditions: Tents protect us against rainy and cold weather, if they are made of watertight materials and pitched on a right place.

Disadvantages of a tent

- Setup: Tents can protect individuals in some extent during adverse weather conditions. But setting up them during adverse weather conditions can be difficult.
- Variety: Tents have very different types. We should know how to set up our tent and its features. Especially, tents that are supplied by help organizations, can be different.
- The place of a tent: Tents are desiged to be used in field conditions and so we can have difficulty to find a place in urban environment to pitch a tent.

Sheltering in cold weathers

Sheltering is very difficult in places prevailing cold, windy and rainy weathers after a disaster. While shelterings are built lighter in warm weathers, they should be built more durable during adverse weather conditions. People want to be in a house during cold weathers. Elders with special needs, children and patients need to be in warm places too.

Adverse weather conditions force shelterings. We should prefer durable funneled shelterings against the effects of wind and snow and it is possible to use heaters in them. Heat loss should be prevented during adverse weather conditions. So we should protect our body temperature with clothes such as a blanket, a sleeping bag, a clothing, a pair of socks and a beret. If possible, we should consume high-calorie foods.

The wider sheltering is, the much more heat insulation becomes. Windows and doors should be designed in order to enable isolation. Also a sheltering should be made in a way that it will be possible to light a small stove. We should fasten this stove to its place and place it on a safe place.

Mass-temporary sheltering

The individuals that are evacuated after a disaster, meet in an open area. They can be placed in public sport halls, stadiums, stores, storehouses, mosques and schools according to disaster magnitude and season conditions with competent authority decision. Experts should assess these places before using them as a temporary settlement. So individuals should use these structures as a temporary settlement as long as being guided by competent authority. Nobody can try to shelter in such kind of structures by themselves.

Figure 30. Sheltering problem after a disaser can turn into a mass problem from a personal one.

Mass sheltering buildings do not have adequate equipments and infrastructure because of not having housing purpose. Hence, a healty housing area should be needed. Materials such as a mat should be used on the ground of these buildings with the aim of isolation for sleeping, resting and waiting. If we cannot supply adequate isolation, health problems can increase. Area for any person can be narrow in these areas. Another important matter is privacy. It is difficult to enable the privacy of an individual and a family in such places.

These kind of sheltering centres are not practical and also have serious health and hygiene problems. So we should not use these places as long as it is not necessary. The individuals who are obliged to stay in such a temporary sheltering places, should be careful about their own personal hygiene and certainly follow the advices and directions of competent authority.

Temporary premises and camps

Temporary premises or camps can be built with the sheltering purpose of disaster victims after major disasters. The management of these places is considerably complicated and these places provide services for many families. Even these places supply sheltering as long as not being managed in a planned way and well, they cause problems more than benefits. So these are the last places to be applied as a temporary sheltering. Nevertheless it has been observed that these kind of temporary premises are frequently built and active in along time during major disasters and emergencies.

Temporary premises and camps can be built in the places planned beforehand by official and semiofficial institutions, military units, international organizations or nongovernmental organizations. Official organizations coordinate the task of management and setting up. At the same time, organizations suppling this help can maintain their administrative and technical support in camps that they establish.

Figure 31. Tent cities are the most common kind of temporary mass premises.

Temporary premises and camps have two aims. The first one of them is to make easier to be benefited from basic services aimed at meeting the basic needs of disaster victims. We can exemplify these basic services as medical services, dining halls, markets, schools, playgrounds, houses of workship, toilets, water resources, fountains and stores. The second aim is to reach help to more people with less cost by enabling these services to a large number of people in a mass area. One of the most important benefits of temporary premises and camps is to provide the security of disaster victims. At the same time, camps provide conviences in terms of contacting directly authorized officers with disaster victims. These places also make community participation possible in restructuring processes.

Disaster victims should follow camp rules as long as they dwell in temporary premises and camps. Because any risk affects almost all the individuals. We should act according to rules that are appointed by camp management in such cases as throwing waste out and using toilets properly and fire safety.

We can analyse temporary premises and camps in two groups:

• Tent cities: Tent cities are set up by enabling infrastructure services and placing a large number of tents in a camp systematically. Tent cities are set up with the aim of help in disaster areas by a corporation or an organization. So it is planned. Moreover some rules can be established in common use areas because of the difficulty of its management and a large number of individuals live there. Disaster victims are supposed to obey these rules. Generally, tent cities are established not right after a disaster but a little later.

Figure 32. Disaster victims should obey the order in tent cities.

• Prefabricated premises: Prefabricated structures are used in these premises. A difference from tent cities is that such needs as a bathroom, toilet, electric and water should be included in life spaces. Also, these are more healty and safe structures with their isolation, durability and ground qualities. At the same time, prefabricated structures have some problems. Price per unit is high. It takes time to supply and its setup needs expertise. They are not transferred as easily as a tent. The difficulty of cooling can be especially during warm weathers.

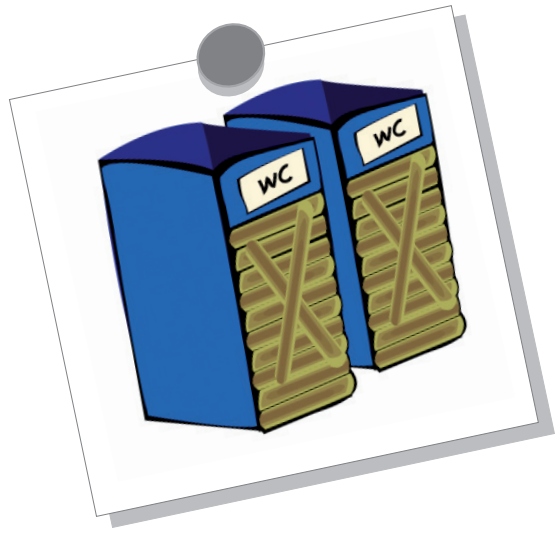
Hygiene

Hygiene applications have a vital importance during the conditions after a disaster. Epidemic risk is much more in unhygienic environments. Common belief is that deads cause epidemic. However the waste and contamination of all the creatures cause an actual suitable environment for the increasing of germs. So we should be careful about enabling hygiene during extraordinary conditions however bad conditions are or not.

Toilet

Toilet need is a delicate matter. Absolutely, meeting this need is going to be more difficult during extraordinary conditions. But we should take some basic needs into consideration while building temporary toilets during these conditions.

Toilets should meet the needs of every individual in a community and individuals with special needs such as children, disableds, elders and pregnant women should be thought. The place of toilets should meet the privacy need of an individual. We should not prefer an isolated place, because these places can cause safety problems. Water should be in toilets. Every kind of toilet should meet some criteria during disaster conditions. These criteria are elimination, isolation and wipe out. A simple toilet should eliminate excrement from life spaces and should enable to be isolated it in its present place and then to decay. If toilets are built especially for a mass and a family, it should be kept cleaner. At the same time, disaster victims should try to keep clean public toilets built at the initial moments after a disaster. Individuals should apply all the cleaning rules.



Very simple and early steps in order to get rid of human excrement is more productive than high technological but late steps. After help comes, some services such as a public toilet starts. Until these services are enabled, families can build simple toilets.

People need urgent solutions about toilet need right after a disaster and these places should be near to dwellings that people do not enter into. Disaster victims have already used some suitable places for meeting their toilet needs. But this matter has an important place in terms of health and it should be planned carefully. It is very difficult to correct an early mistake afterwards during disaster conditions.

Site selection: We should appoint its site before building a practical toilet. The site of it should not be away from our shelter site. Toilets should not be certainly built near places that might mix into water resources and it should be at least 30 m away from water resources. It should not be built on slopes that have water resources on its foot.

Practical toilet: A hole around 0.8 m x 0.5 m width and 1 m depth is dug on a site that is suitable to above mentioned criteria for a family use. 2 pieces of wood can be put as a legroom both sides of this hole. It will be completed by surrounding it from 4 sides for privacy. The cleaning of these kind of toilets is done by covering excrement with soil that is dug from hole. A thin layer of soil should be put over excrement every day. Also water should be in toilets for cleaning. An individual should need around 1-2 lt water for this/her own need. If it is used at night, we should certainly have a lighting.

This hole should be closed as being filled till 30 cm to its opening. Its upper surface should be filled with firm soil and marked with lime in the meantime.

We should take these following points into consideration about toilets:

- Flies and smell: Excrement causes to become bug-infested and stink. Especially it causes flies to increase. So cleaning of them should be done well.
- Drainage and durability: Toilets should be durable against flood, overflow and weather conditions. They should not collapse and overflow.
- The expected life of them: The full ones should not be used and these sites should be certainly marked.
- Cleaning and privacy: We should keep them clean. Also it should enable privacy for individuals.

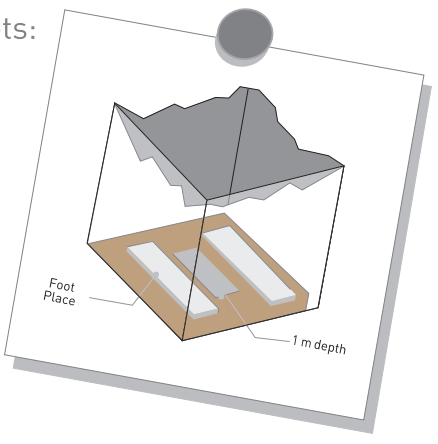


Figure 33. A practical toilet.

Waste

Dumping areas should be at least 100 m away from human settlements and they should not be in sites that might mix into water. A hole around 1,5 m width and 2 m depth should be dug based on 100 individuals and a week for dumping sites right after a disaster. Every hole in 1 m lenght can include a week' waste of 200 disaster victims. Another dimension for dumping sites is a 3 m hole for 50 individuals per month. Dumping holes should be covered 20-30 cm soil every day. This hole should be filled with soil to 40 cm being full. Soil and lime should frequently be covered over waste like toilets. If plastic, organic and paper waste are decomposed, waste piling can be decreased. We can burn paper materials. Organics can be turnt into fertiliser. We should bury animal carcasses around and lime as soon as possible.

Handwash

Hands should be frequently washed after and before emergency actions during the first aid and rescue operations of disaster victims after disasters. It is necessary to wash hands after an operation with gloves too. We can use normal soaps, detergent or disinfectant soaps for handwash. Generally, liquid soaps are suggested. If we prefer solid soaps, the useage of personal soaps, a small bar of soaps and perforated soap dishes are suggested.

It is enough to wash around 15-20 seconds by rubbing upper part of our hands and between fingers and rinse. Handwash can continue until 3 minutes in doubtful cases. Hard water minimizes soap effect. Detergents are not affected from this case. If we do not enable adequate foaming, we can use detergents during such conditions. Short and filed nails hinder microorganisms from settling. Rings, bracelets, watchbands and other jewelleries like these make cleaning difficult. We should be careful about our hands and clothes not to touch to washbasin. Hands should be certainly dried after handwash. It is useful to use a personal towel or a paper towel.

FREQUENTLY ASKED QUESTIONS

Is it our fate that an earthquake ends up as a disaster? Is there a way to hinder these conditions mentioned in this training to occur?

Of course, these negative conditions mentioned in this training do not occur after every earthquake. They can be prevented as long as individuals take necessary precautions for risk mitigation. The most important risk mitigation precaution is to minimize the nonstructural dangers of our own house and to be sure whether our house is earthquake resistant or not.

Why do relevant authorities try to teach us how to survive after our houses have collapsed instead of performing some actions to prevent our settlements being damaged as in a scale mentioned in this training?

Governorship and other relevant organizations take all the precautions in order to prevent any harm caused by an earthquake and do necessary planning and engineering studies. This training has been prepared in order to make individuals ready against the worst conditions and to teach what they can do during such a condition.

Why cannot relevant organizations come to assistance during the first 72 hours after a disaster? Is this not their duty?

Disaster is a condition that established resources remain incapable to struggle against itself. We should not forget that individuals working in these organizations are human beings just like all of us and have been affected from disasters too. They might be injured or deceased or lose their acquaintances. Technical equipments have become unuseable. So it seems difficult for local resources to be taken an action in full capacity during the first 72 hours.

What is the difference between an emergency set and a disaster kit?

Emergency kit is a kit having very basic vital materials inside it that can be taken as leaving a house, an office or a school. But it is not possible to fit into all the emergency needs in bags that can be used practically. Emergency sets consist of being kept and stored of emergency needs systematically. For example, if we have constantly a blanket or a little water and food in our car trunk as light things are in emergency kit, disaster kit and materials in this car are going to be our emergency set.

GLOSSARY

Aftershock: the earthquakes which happen after the main shock and have less magnitude than the main one.

Disaster: the situations which the local facilities are not enough in coping with the bad effects of a hazard on life, property, environment, economy and cultural values. Natural events like earthquakes, floods, thunderbolts which require nationwide or international support and cause great loss of life and property are named as natural disasters.

Earthquake: the trembling and shakings that happen on earth with the movements of the earth's crust.

Earthquake aftershock : an aftershock is an earthquake that occurs after the main shock and is smaller magnitude strenght than a main shock.

Earthquake hazard: it includes everything about an earthquake that might be dangerous for human life.

Fault: the the breaks and moves that happen where the plates/weakness that form the crust.

Intensity: it is the size of effect of an earthquake that occurs in any depth and felt on the earth. It depends on effects on physical structures and people. It based on observational data and standard scale prepared beforehand.

Emergency: the bad effects of a small hazard, which can be handled with local facilities, on life, property and environment. For instance, a house fire which can be extinguished by local fire department would be described as an "emergency".

Evacuation: especially leaving and getting out away from area under threat.

Concrete reinforced: a construction material which is made up of concrete and steel reinforcement materials together.

Flame: The visible part of burning

Liquefaction: due to effect of an earthquake, complete loss off the bearing capacity as a result of increasing space water pressure and acting as a liquid of water logged, fine grained sand and silty layers.

Magnitude: the amount of the energy that comes off during an earthquake. It is determined out from the records of the devices which record the earthquakes. Each earthquake has only one magnitude and it does not change according to the distance or other properties as in intensity.

Magnitude: the amount of the energy that comes off during an earthquake. It is determined out from the records of the devices which record the earthquakes. Each earthquake has only one magnitude and it does not change according to the distance or other properties as in intensity.

Natural disaster: the disasters which are caused by some natural events like earthquakes, floods, avalanches and landslides, etc.

Nonstructural components: every kind of element and thing that are not included in the supporting system of a structure.

Observation: measuring the physical activities like earthquakes, temperature, pressure or winds which happen on or above the surface of the Earth.

Risk: negative results caused by hazard. These results affect directly or indirectly life, houses, working places and their activities. Risks cannot be eliminated totally, but it can be reduced. It is expressed as Risk = hazard x vulnerability.

S-wave: second wave that comes after P wave during an earthquake. It is a seismic wave that shake earth surface up and down as vertical to direction movement.

Seismic gap: one part of fault that has caused an earthquake in the past but seismically inactive now.

Seismograph: it is a device that detects and records seismic waves. An inactive stable mass is detected as the other part moves during an earthquake in most of seismographs. Some seismographs detect vertical movements as some detect horizontal ones. Marks of waves are drawn on a mobile paper band with a vibratory pen. Arrival time is calculated between P and S waves. Time on a "seismograph" gives the distance between station and epicentre.

Seismicity: the distribution of the sequences and the magnitudes of earthquakes in a certain area.

Bearing component: a vertical or horizontal component that carries the vertical and horizontal forces that are effective on a construction.

Bearing system: the system as a combination of supporting components with the aim of carrying the external loads safely in a construction.

Triage: a coding and selection process of prioritizing patients and injured based on the severity of their condition in a phenomenon zone by healthcare organizations.

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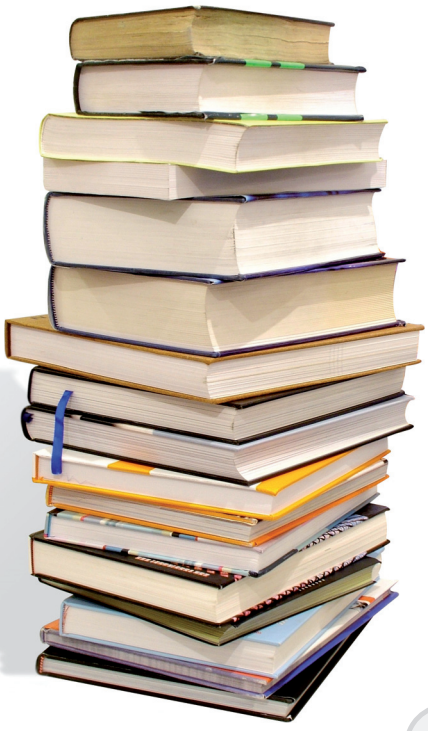

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TOPLUMUN AFETE HAZIRLIĞI EĞİTİM PROGRAMLARI

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- Depreme Karşı Yapısal Güçlendirme
- Depreme Karşı Yapısal Risklerin Azaltılması
- Eğitim Kurumları İçin Afet Acil Yardım Planlama Rehberi
- Sağlık Kuruluşları İçin Afet Acil Yardım Planlama Rehberi
- Birey ve Aile İçin Depremde İlk 72 Saat
- Sanayi ve İşyerleri İçin Afet Acil Yardım Planlama Rehberi
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- Zorunlu Deprem Sigortası Bilinci
- Afet Zararlarını Azaltmaya Yönelik Şehir Planlama ve Yapılaşma
  - Yerel Yöneticiler İçin
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Notes


Notes

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