Istanbul Aydın University

Disaster Training Application and Research Center

e - Newsletter

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Issue: 05

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We Held the Seminar on Social Responsibilities of Civil Engineers in Reducing Disaster Risks

Most of the injuries, loss of life and economic losses in disasters are caused by low-strength structures. In our country, a standard has been brought to this situation with the "Regulation on Buildings to be Constructed in Earthquake Zones" published in 2007.

The main principle of the regulation is to ensure that the structural and non-structural system elements of the buildings are not damaged in earthquakes with mild effects, the damage that may occur in structural and non-structural elements in earthquakes with moderate effects remains at a limited and repairable level, and in severe earthquakes, it is permanent in order to ensure life safety. It is defined as the limitation of the formation of structural damage".

As Istanbul Aydın University Disaster Training Application and Research Center, we held a seminar in order to inform the students of the Faculty of Construction, who continue their education at our university, both about the "Building Regulations to be Made in Earthquake Zones" and about the benefits they will provide in the buildings they will build after school, taking into account the disaster risks. .

In the seminar, the relationship between civil engineering and city planning within the framework of disaster-resilient urbanization was conveyed to the participants.

In this event, organized by the Engineering Faculty Building and Project Management Club, the club was introduced and the gains that the students would gain if they took an active part in such studies were conveyed.

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We Carried Out Disaster Preparedness Trainings for Our Disabled Students and Their Families

The results of the 2011 Population and Housing Survey indicate that 6.6% of our country's population has at least one disability. In another study carried out jointly by the Turkish Statistical Institute and the Prime Ministry Administration for the Disabled, this rate rises above 12% when people with chronic diseases are added to the disabled citizens.

Considering the disaster situation in Turkey in general, there is a need for studies on disaster preparedness of individuals who need the help of others for various reasons. Informing and awareness-raising activities for disasters, especially considering the families of individuals with chronic diseases and/or disabilities, who are among the more vulnerable groups in disasters and make up more than 12% of the total population, will provide very important social gains.

As Istanbul Aydın University Disaster Training Application and Research Center, we have developed a training program for hearing, mentally, physically and visually impaired individuals in order to contribute to such a social gain.

In the training program, in which the work to be done before, during and after the disaster of individuals with chronic diseases or various degrees of disability and their families is explained, it is explained step by step how family members can prevent the damages of a possible disaster.

Within the scope of the training program we prepared, we provided disaster preparedness trainings for our disabled students and their families, who continue their education in the organization of the Barrier-Free Life Practice and Research Center, which continues its activities within the body of our University.

In order for this training program we have prepared to reach wider audiences, our joint dissemination activities with the Research Center for Life Without Barriers will continue in the 2017 - 2018 academic term.

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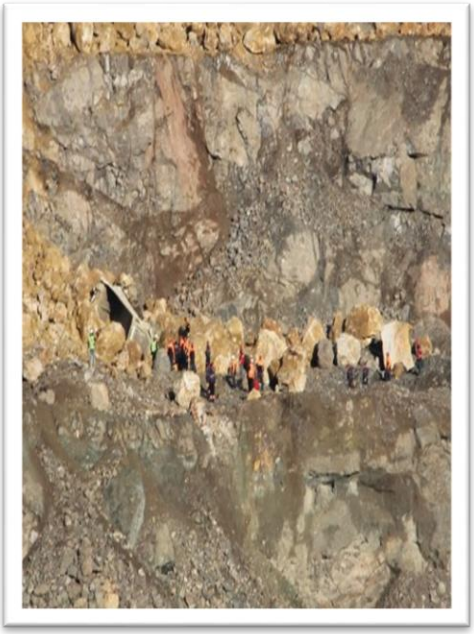
16 November 2016 Siirt Şirvan, Slope Slip
Photo: *Sputnik News*



16 Kasım 2016 Siirt Şirvan, Slope Slip
Photo: *Karar Newspaper*

Turkey Crash / Mining Accidents Surveys in 2016 Completed

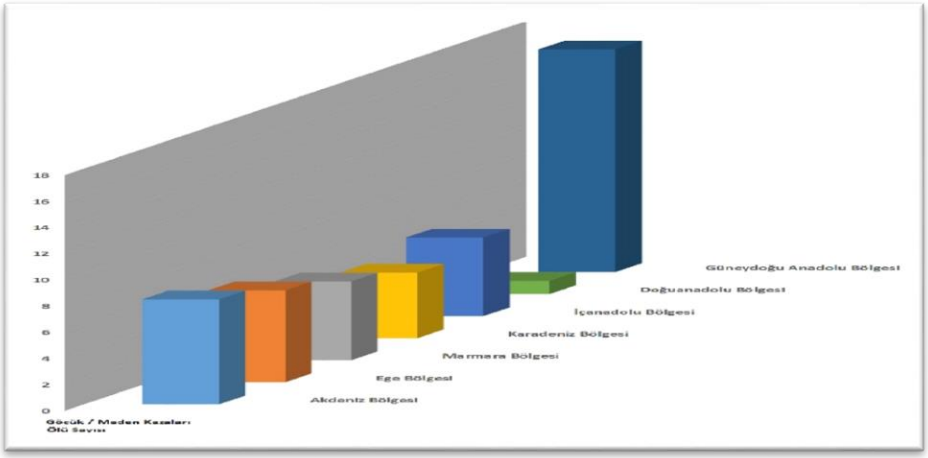
In our country, which has rich resources in terms of mineral diversity with its geological and tectonic structure, mines constitute 2.7% of total exports with an export of 3.9 billion dollars as of 2015.

While 90 mineral types are produced in the world, 60 different types of mines are produced in our country. According to MTA data, our country, which ranks 28th among 132 countries in the world in terms of total mineral production value, ranks 10th in terms of mineral diversity.

Along with its economic importance, tens of our citizens lose their lives every year due to occupational accidents in the mining sector in our country. As Istanbul Aydın University Disaster Training Application and Research Center, we follow the mining accidents that occur in our country.

50 of our citizens lost their lives in 2016 due to reasons such as dents, slope shifts and work accidents in the mining sector in our country.

In 2016, 16 people lost their lives as a result of the slope slip that occurred in the copper mine in Siirt Şirvan, in the Southeastern Anatolia Region, in the mining sector, and it was recorded as the mining accident that caused the most deaths in 2016.



Regional Distribution of Mortal Identification and Mining Accidents in Turkey in 2016
Source: *IAU, Disaster Training Application and Research Center*

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Iran Earthquake

As Istanbul Aydın University Disaster Training Application and Research Center, we evaluated the earthquake that took place on the Iraq-Iran border on 12 November 2017 and the epicenter was Süleymaniye.

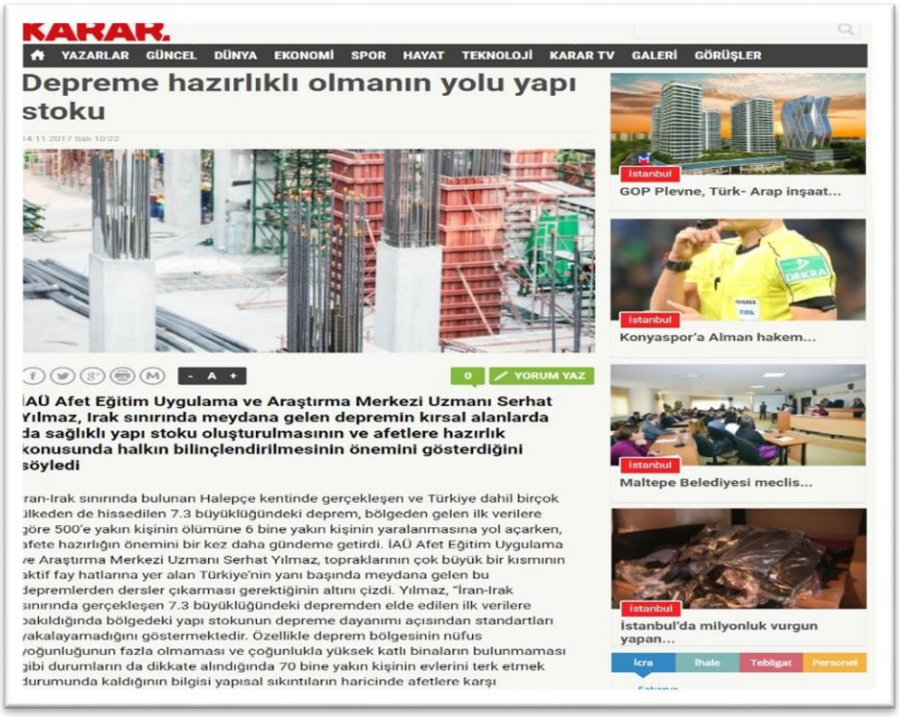
In our evaluations published by many media at the national level, what kind of lessons we should take as Turkey in the earthquake that took place on the Iraq-Iran Border was conveyed.

In the article, in which it was explained how a possible earthquake that may occur in rural areas with low population density will affect the structures in these regions, suggestions were made regarding the precautions that can be taken to prevent possible losses and the benefits of rapid data collection after a possible disaster in rural areas.

The full text of the news can be accessed from the links under the news images.

Link:http://www.flashaberler.net/haber/1705/depreme-hazirlikli-olmani-yolu-yapi-stoku.html

Link: http://www.milliyet.com.tr/depreme-hazirlikli-olmanin-yolu-yapi-istanbul-yerelhaber-2401080/



Link: http://www.karar.com/istanbul/depreme-hazirlikli-olmanin-yolu-yapi-stoku-658328

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Main Problems in Disaster Management Approaches in Turkey Series of Articles National and Local Media Reflections

The "Basic Problems in Disaster Management Approaches in Turkey" section, in which we, as Istanbul Aydın University Disaster Training Application and Research Center (AFAM), closely follow the studies carried out in the field of disaster management in our country and offer suggestions in our monthly e-bulletins so that these studies can create more impact, many national and local media is closely followed.

The third part of the series of articles we published in the September 2017 e-bulletin was published in many local and national media, as in the previous sections. As AFAM, we see this work as a responsibility that we must fulfill in minimizing the negative effects of disasters on our national development.

The full text of the article can be accessed from the links under the news images.

Link: *http://www.yenimarmaragazetesi.com/deprem-uzmani-yilmaz---esit-bir-deprem-sigortasi--sistemi-guclendirir--181385.html*

Link:*http://beyazgazete.com/haber/2017/11/9/deprem-uzmani-yilmaz-aciklamasi-esit-bir-deprem-sigortasi-sistemi-guclendirir-4169022.html*

Link:*http://www.medyatakip.com/medya_sistem/yb_kupurgoster.php?gnosif=H9jJGgmkA1ddD5p7Ih6DcQ..&mnosif=NNQDEGc6tPc.&st=2*

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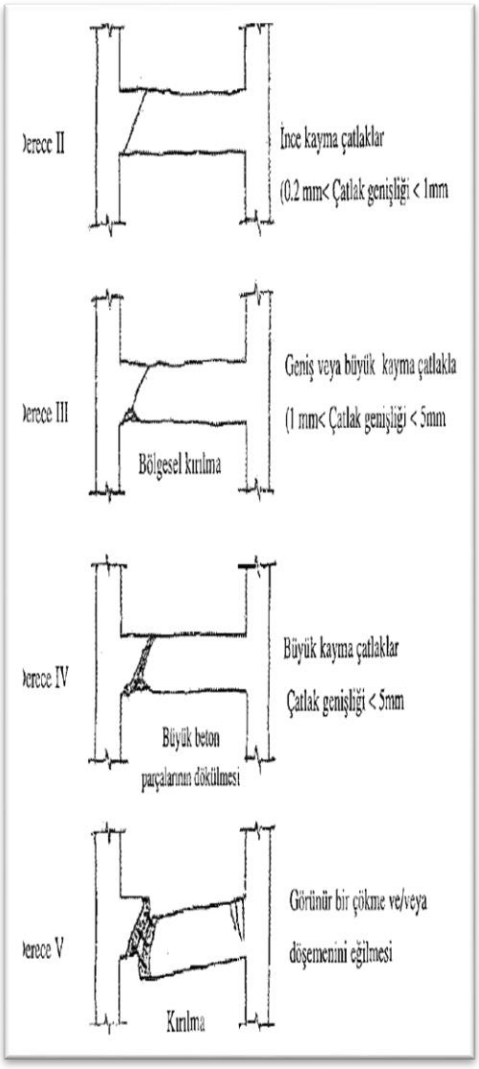
İSTANBUL AYDIN ÜNİVERSİTESİ AFAM AFET EĞİTİM, UYGULAMA ve ARAŞTIRMA MERKEZİ



Source: Sorguç, D. (2000). *İnşaatçıların Deprem Hasarlarından Doğan Sorumlulukları İle Hasarlı Binaları Onarma ve Güçlendirme Yolları. İstanbul: İstanbul Ticaret Odası, Publication No: 2000-45*

Main Problems in Disaster Management Approaches in Turkey

As Istanbul Aydın University Disaster Training Application and Research Center (AFAM), we implement many studies simultaneously to improve our social capacity against events that may cause disasters and emergencies in our country. During these studies, we have the opportunity to observe the problems that form the basis of our vulnerability to disasters as a society.

We have created the "Basic Problems in Disaster Management Approaches in Turkey" section in our e-bulletin, which we will publish regularly in order to benefit from the experiences gained in the field by all our stakeholders working in this field for the solution of these problems we encounter. In this section, where a different problem and solution proposal will be evaluated in each issue, we will also open the solution proposals of all our stakeholders working in the field of disaster preparedness, if they share them.

In this part of the article series we published under the title of "Basic Problems in Disaster Management Approaches in Turkey", AFAM Director Prof. Dr. Mehmet Fatih Altan will make evaluations for building reinforcement works as an earthquake protection method in our country.

The Importance of Increasing the Capacity of Local Administrations in Disaster Preparedness

Today, more than 70% of our country's population now lives in cities. Especially after the industrial revolution, people trying to benefit from life opportunities such as education, health and job opportunities in cities started an intense migration flow from rural areas to cities.

As a result of these migrations, disaster risks such as earthquakes, ground and topographical features, unfortunately, were not taken into account sufficiently in the selection of new settlement areas in naturally fast growing cities.

When examined in this context, the risk pools in cities, which are perhaps one of the most important factors that are at the root of the worldwide disasters affecting more people and causing more economic losses, can be observed more clearly.

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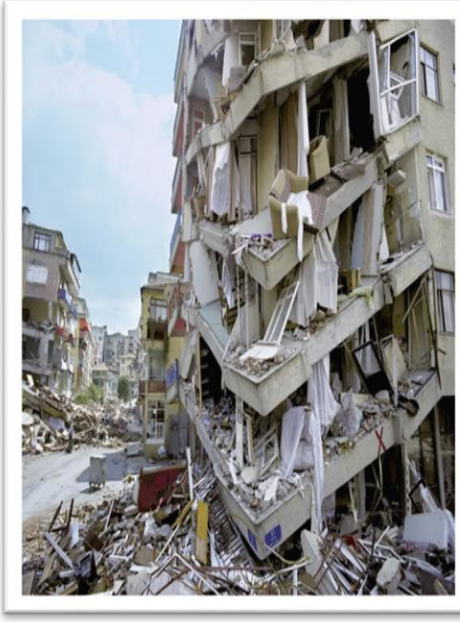
23 October 2011 Van Earthquake
Photo: *Sozcu Newspaper*



19 August 1999 Gölcük Earthquake
Photo: *CNN-Türk*

As in many countries in the world, we see that this situation is effective in urbanization in our country. Indeed, the 1999 Marmara Earthquakes clearly showed us this. When disasters, the frequency of which is increasing compared to the previous years, are added to this whole picture, the need to take quick and effective measures to solve the losses and environmental problems that may occur in a possible disaster arises.

As a result of this need, increasing the resilience of the structures, which have the largest share in the losses in disasters, against disasters constitutes one of the priority targets. For this reason, increasing the disaster resistance of the structures we use against earthquakes, which is one of the leading risks that may cause disasters in our country, is of vital importance in order not to repeat what we experienced in the Erzincan, Düzce, Adapazarı and Van Earthquakes.

When we look at the earthquakes listed above, which left important traces in our recent history, we see that the appropriate construction technique and use of construction materials and the deficiencies of engineering services determine the degree of damage to the structures. In fact, it is a situation that we frequently encounter that the standards determined in the regulation are not implemented in the field, although there are building regulations that are put into effect in certain periods in our country before and even after these earthquakes. However, the degree of damage remained at low levels, as expected, in buildings complying with the standards set in the regulations. Today, one of the methods we use to overcome the problems caused by unqualified building (low earthquake resistance) stocks in Turkey is structural reinforcement works. Reinforcement works, which are defined as the improvement works carried out in the whole or in some parts of the structure in order for a building to provide the expected performance against earthquakes and similar forces, offer very important gains in terms of time and cost. Especially for cities such as Istanbul, where a major earthquake is expected in a short period of time, strengthening works will offer significant gains.

The basic principle in strengthening works is to reach the standards determined by the Regulation on Buildings to be Constructed in Earthquake Zones published in 2007.

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Building Reinforcement – Curtain Wall Application
***Photo:** İPKB, İSMEP Project*

Building Reinforcement – Column Reinforcement and Curtain Wall Application
***Photo:** İPKB, İSMEP Project*

In summary, the regulation requires that the people in the region have the qualifications to prevent damage, even if the structures in the region are damaged in a large-scale earthquake that may occur in a region with earthquake risk. When the building is rebuilt or strengthened, it must have the strength to serve this requirement.

However, from some of the examples we have examined, it is seen that the current perception and practices of empowerment are not at this level. When the strengthening works are not done with the right techniques and methods, instead of increasing the earthquake resistance of the structure, it can reduce the existing resistance even more.

In order to reach the standards determined by the regulations in a reinforcement work to be applied, a full calculation of the current safety level, geometry, reinforcement details of the building, analysis of the soil properties and the earthquake risk of the region and the selection of the materials and methods to be used accordingly, and a modeling with the data collected after all these analyzes and calculations are created. Static and dynamic analyzes should be done.

In short, the building reinforcement process requires serious experience and expertise with its preparation and application processes. It should not be forgotten that a retrofit work devoid of all these calculations and engineering services will threaten the life safety of its users rather than wasting time and resources.

Serhat Yılmaz
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