

The Behavior of Adobe Buildings During Earthquakes In Turkey And Bala Earthquakes As An Example

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ABSTRACT

Adobe houses are a vernacular type of construction and they were very popular in rural areas and small towns of Turkey especially in the period of 1950-1970. The adobe and adobe house makers follow the traditional technics of their ancestors. Adobe is a material requiring only soil suitable for adobe and plenty of simple workmanship. In spite of adobe construction is very common in the country and Turkey exists on a seismically active region, few researchers of Research Development departments and academicians studied on the earthquake behaviour of adobe buildings in Turkey. One of these Research Development departments is Earthquake Research Department of General Directorate of Disaster Affairs (GDDA). Test of adobe building was performed on impulse table and the damage types of adobe buildings were investigated in disaster areas after experienced earthquakes by the researchers of GDDA. The reason of these works is to determine the earthquake behaviour of adobe buildings which are located in Turkey. Latest earthquakes which were effective on adobe buildings occurred on December 20 and 27 in Bala / Ankara. Richter scale of these two earthquakes are 5.6 and 5.4 respectively. Rural areas of Bala were affected and in the disaster area many of existing houses, stables and depots were constructed as masonry buildings by using adobe, stone and brick. They all constructed by inhabitants without following any design codes or design principles and according to the damage assessment results of GDDA 1127 dwellings were heavily / moderately damaged during the earthquakes. 746 dwellings of them were the units of adobe buildings. GDDA researchers made investigations about the damage types of adobe buildings in the disaster area. This paper aims to give brief information about research activities on adobe buildings which were performed by GDDA, earthquake behavior of adobe buildings and make some comments about the observed damages of adobe buildings after Bala earthquakes.

KEY WORDS :

Adobe buildings, earthquake behavior, impulse table, bala earthquake