

QUICK INSPECTION OF DAMAGED REINFORCED CONCRETE BUILDINGS DUE TO EARTHQUAKES

FORWARD

An earthquake of a magnitude of 7.4 (Ms, USGS) occurred at 3:01 local time on August 17, 1999, with an epicenter near the City of Izmit in the western part of Turkey (Kocaeli Earthquake). The epicenter was approximately 100 km east from Istanbul, and catastrophic damage was caused in several cities of the western Turkey including cities of Izmit, Adapazari, Istanbul etc. and immense damage of 40,000 fatalities and missings, 45,000 injured and 200,000 damaged buildings was reported.

Immediately following the earthquake, the Japanese Government dispatched an expert team on disaster relief. They surveyed the hardest-hit areas and recognized that damage inspection of buildings, especially of reinforced concrete residential buildings, was most urgently needed to prevent secondary disaster due to aftershocks and to estimate the number of temporary houses needed for displaced people. They also reported the conclusions above to the Turkish Government, and the Government decided to request technical cooperation to perform quick inspection of damaged buildings.

Following a request from the Turkish Government, the Japanese Government dispatched a second expert team to contribute to the prompt recovery from aftermath in the affected areas, focusing on the development of quick inspection procedure under the cooperation with Istanbul Technical University. Principally based on experiences in Japan, a quick inspection procedure applicable to buildings in Turkey was developed mainly by the following members through field surveys, several discussions and exchange of mutual knowledge.

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This report describes the basic concept, inspection sheet and application guidelines including damage definitions and their examples which may facilitate to perform quick inspections in the field.

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