

IMPLEMENTATION OF SEISMIC REHABILITATION OF BUILDINGS

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SUMMARY

1. Objectives

Many buildings, especially buildings designed according to the former Building Standard Law, were damaged severely by the Hyogoken-Nanbu Earthquake, January 17th 1995. There are more than 2.4 million buildings designed by the former Building Standard Law in Japan, and more than 1.7 million buildings of which are expected to suffer severe damage in the event of big earthquakes. For this reason, the Japanese Government established a promotion law and several kinds of financial support system for seismic rehabilitation of existing buildings. Under this circumstance, seismic rehabilitation was implemented on existing buildings, especially on school buildings, municipal office buildings.

This paper describes 1) implementation of seismic evaluation of existing buildings, and 2) implementation of seismic rehabilitation in Japan.

2. Methods

1. Implementation of seismic evaluation

There are several methods of seismic evaluation of existing buildings in Japan. The seismic evaluation method established by the Japan Building Disaster Prevention Association is mainly used in Japan. Comparison among the evaluation methods and the results of evaluation are discussed.

2. Implementation of seismic rehabilitation

Current state of implementation of seismic rehabilitation in Japan is discussed. Typical rehabilitation methods applied to apartment buildings, school buildings and office buildings are described, and also, seismic performance of rehabilitated buildings is discussed.

3. Conclusions

Current seismic evaluation methods and ordinary seismic rehabilitation methods are effectively applied to existing buildings in Japan. But these methods have some problem in applying to relatively higher buildings because of limitation of application. It is required to develop a new evaluation method considering response deformation, and new seismic rehabilitation methods using new technology.

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