

11. Aged Deterioration of Natural Rubber Bearing Installed in the Base-isolated Building

Hidetaka Funaki, Kenji Yasui, Satoshi Yamagami, Yoshiki Koyama

It is only about thirty years since laminated rubber bearings began to be used for seismic isolation of buildings. In order to evaluate the degree of aging of laminated rubber bearings, it is necessary to conduct a long-term tracking survey. Because of changes occurring over a period of several decades such as changes in testing equipment performance, however, it is difficult to conduct tests under identical conditions. In this study, static loading tests and free vibration tests were conducted at a seismically isolated building, where the influence of testing apparatus, etc. is minimal, to investigate how laminated rubber bearings actually aged. This paper reports on these tests and their results. The tests showed that the aging of the laminated rubber bearing of the thirty-year-old seismically isolated building was within the range expected in design.

Key words: base-isolated building, natural rubber bearing, aged deterioration, free vibration test, static loading test