Abstract

Structural protection of buildings from ground vibration must be considered to reduce the number of levels of building damage during ground vibration. One of the things that can be done is the use of dynamic vibration absorber as a control that is placed between the foundation and building structure. Increase the flexibility of the building and absorb the excitation force is the working principle of dynamic absorbers to reduce the amplitude received by the building structure. Dynamic equilibrium method used in the calculation of the simulation process to determine the maximum amplitude of the response received by the buildings by using dynamic damper system. Simulation performed on single-storey building with 750 kN of weight using some combination of diameter and thickness dimensions of soft rubber bearings, normal rubber bearings, and high damping rubber bearings soft. Results of the simulation is known that the best damper used on the building is kind of high damping rubber bearing soft with 300 mm of diameter, 96 mm thickness, 0.29 kN / mm stiffness, and 27982.1 of damping coefficient which can reduce horizontal ground vibration from 12.6 m becomes 0.82 m and reaches a steady state during 0.11 m during 150 seconds.

Keyword: dynamic absorber, control vibration, ground motion