

ABSTRACT

Vibration isolation technique on the basis of conventional methods are often used to reduce vibration transmission from the base structure to the main system. In the vibration isolation technique, the main systems are not directly connected rigidly to base but it connected to the base using flexible support. By using this technique, the vibration transmission from the base to the main system due to a disturbance in the base can be minimized.

Vibration isolation technique is effectively adequate to be used when the disturbance frequency are far enough from the natural frequencies of the system. If the disturbance frequency close to the natural frequency, the performance of vibration isolation techniques will be reduced. This condition will increase the vibration level at resonance condition. Systems with small damping such as building structures could be collapse in this situation. To solve this problem, it is needed to construct a mechanism that can increase the damping of the system by using a dynamic vibration absorber.

This reseach is aimed to the system response evaluate by using vibration isolation and a passive dynamic vibration on the multi-storey buildings structure due to earthquake loads. By using these two components of this vibration dampers, the reduction of vibration level could be improved. Furthermore by using this technique the vibration energy absorbed by the structure and the bending moment at base during the earthquake can be significantly reduced.

Keywords: *Vibration isolation, passive dynamic vibration, buildings*