

ABSTRACT

Malaysia has been using bridge rubber bearing in their practices to isolate vertical vibration from the movement of traffics. The bearings placed between the bridge decks and the upper side of columns are constructed to make sure the loading couldn't affect the overall structure of bridge and other structures. In structural earthquake engineering, natural rubber and steel are used mainly in base isolator that is one of the energy dissipation systems to reduce earthquake effect on structures. With laminated natural rubber and steel, the bearing can provide very high vertical stiffness and very flexible in horizontal direction to make sure the mounts can support the loading from the structure and prevent excessive sideways from any horizontal loading especially when earthquake occur. Most bridges in Malaysia are multi-span simply supported where due to impact at the joints. In the design guidelines clearly state that, in Malaysia, no seismic consideration in bridges designing especially for JKR bridges. This study try to analyse the common JKR Bridge fewer than two types of Earthquake ground motion (San Fernando and El Centro Earthquake) and also Truck load. The overall objective of this study was to evaluate the linear response spectrum analysis of actual bridge:

- i. Evaluate the combined effect of longitudinal and transverse earthquake excitation on the response of actual JKR bridge using 2-D and 3-D models,
- ii. Determine the capacity/ demand ratios for various bridge components using JKR guidelines, and
- iii. Recommended possible modifications to the design of new bridges and response possible retrofit procedures for existing bridges.