ABSTRACT

Blast loading is among the phenomena that may cause destruction to a building. As a dynamic load, blast load needs to be further studied. On this research, the author attempted to study the effect of blast loading to the dynamic responses of ground floor slabs. The blast load is modelled as a Friedlander localized load, with the negative phase taken into account. This is based on the results of previous researches that the abandonment of the negative phase is not a conservative approach. The load is modelled according to the Cubic Negative Phase equation. A variety of blast load positions, slab thickness, and damping ratio is made to observe the dynamic responses of ground floor slabs due to the load. The ground floor slabs are modelled as an orthotropic slab supported on semi rigid restraints on a Pasternak elastic foundation model. Dynamic responses of a slab depends on some factors, such as Pasternak foundation shear modulus, ground stiffness modulus, and slab thickness. As the output, the dynamic response of the slabs under some variety of load positions, slab thickness, and damping ratio, are obtained, including absolute maximum deflection and bending moment diagram.

***Keywords** : Blast load, dynamic response of a slab, orthotropic, semi rigid, Pasternak foundation model, maximum absolute deflection, moment.*