

ABSTRACT

In designing a floor plate, strength is not the only parameter that need to be considered, serviceability of plate can also be the key factor. Vibration of machines on floor plate will produce a dynamic force that can cause a large vibration on the structure. This vibration may cause nuisance to the user of the building. In order to improve the level of comfort of floor plate, the plate thickness can be increased or to strengthen with additional secondary beam. This study will determine which method is more efficient and economical. Code of vibration need to be reviewed and studied to get criteria of acceptance for vibration for human perception, and analysis needs to be done to obtain maximum deflection of plate and frequency. From the results of this study, it is found that the addition of secondary beams compared with the addition of plate thickness is more efficient and economical in term of improving the comfort/serviceability of the plate.

Keywords : Vibration, vibration of machines, criteria of acceptance for vibration, maximum deflection of plate, frequency.