

Abstract

Abstract: A dynamic test is applied on existing portal structure to obtain its dynamic characteristics which are time period and structure mode shape. Dynamic horizontal load trigger is used by hitting the hammer by human for 2 horizontal directions. The test results are compared with the results of 2 types modelling. The first model uses a horizontal spring constant that represents the lateral soil resistance while the second model is assumed using fix support at the soil surface. The comparison shows quite good accuracy to the second model for weak axis direction of structure. Meanwhile for the strong axis direction of structure, the accuracy obtained is not as good as the weak axis direction structure due to given horizontal load trigger is not strong enough to mobilize vibration of strong axis direction of structure.

Keyword: Dynamic characteristic, natural frequency, mode shape, frequency response function (FRF), frame structure, forced vibration