ABSTRACT

Rigid pavement structure is found in many industrial buildings, especially on road structure. Most of the time, road is bypassed by heavy vehicles such as trucks with heavy loads. So, engineer have to design precisely so that structure could meet both the strength and serviceability (deflection) requirements. The rigid pavement dynamic analysis in this thesis is modeled as a concrete plate with boundary conditions of all edges of the plate having semi rigid support and supported by Pasternak foundation model with elastic vertical spring support and continuous shear layer underneath. Transversal loads that cross the plate surface are dynamic load with initial speed and stable acceleration. The load is modeled as a single centered axis load equivalent to the variation of trucks such as Colt Diesel Double (CDD) Los Bak, Colt Diesel Double (CDD) Long Box, dan Colt Diesel Double (CDD) Bak. In this study will also be analyzed various types of parameters such as the value of vehicle coefficient, damping ratio value, and various supporting soil conditions are soft soil, medium soil, and hard soil. Solving the problem of dynamic plate with semi rigid conditions using *Modified Bolotin Method* (MBM) with two transendental equations. In solving these dynamic functions load we are using special characters of Dirac-delta function. The analysis is performed when the load is above the plate ($0 \leq t \leq t_0$), and the final result obtained is the response spectrum or critical speed of the vehicles and forces including moment and shear forces.

Keywords : MBM (*Modified Bolotin Method*), semi rigid, dynamic respons, transversal load, acceleration, Pastenak, Dirac-delta, rigid pavement.