RESPONS DINAMIK PELAT SEMI RIGID DI ATAS PONDASI PASTERNAK AKIBAT BEBAN IN-LPANE DAN BEBAN TRANSVERSAL DINAMIK

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Plate is one of structural element that has very important function. In the building construction, plate transfer load from upper vertical element structures to lower vertical element structures, and increase the rigidity of the building. This thesis analyzed the dynamic response of semi rigid orthotropic plate resting on the soil that modeled using Pasternak's model. The Pasternak's model assumed the soil below the plate are divided into two layers, there were shear layer and spring constant layer. This model able to accommodate shear interactions between the spring elements. This thesis is using compression in-plane load and transverse load. The transverse load used in this study is the load from the moving vehicle with constant velocity. Modified Bolotin Method (MBM) with two transcendental equations is used to solve dynamic problem of the plate. The dynamic responses of the plate are obtained on the basis of orthogonality properties of eigen functions that can be expressed into integral form, so that it can be easily solved using Duhamel Method. The transverse load is idealized as a point load that moving with constant velocity in x direction that can be solved using the special characteristic of Dirac-delta.

Keywords : MBM (Modified Bolotin Method), Dirac-delta, orthotropic, plate, semi rigid, compression in-plane load, transverse load, Pasternak.