

FORMULATION OF A THICKNESS DESIGN EQUATION FOR ASPHALT OVERLAY USING MEPDG PROGRAM

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ABSTRACT

This study developed an overlay design equation for flexible pavement in Seoul using the Mechanistic Empirical Pavement Design Guide (MEPDG) program. The total asphalt layer thickness was considered to be a function of the ratio of existing and new material's dynamic modulus, ratio of overlay and existing remaining Hot Mix Asphalt (HMA) thickness, and equivalent 80-kN (18kip) single-axle loads (ESAL). Multiple regression analysis was conducted using the synthetic database generated by the MEPDG program. The validation study showed that the asphalt overlay design equation is within reasonable range compared to the 1993 AASHTO Guide and BISAR 3.0 program. The overlay design equation was reduced into another equation that can predict new pavement thickness design. This new pavement thickness design equation also validates the accuracy and reliability of the overlay design equation.