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Supplementary Notes		

The Mechanistic-Empirical Pavement Design Guide (M-EPDG) uses a hierarchical approach with three levels of material characterization for asphalt materials. The first level provides the highest design reliability and each succeeding level is a drop in design reliability. Dynamic modulus is one of the required material characteristics. The first or highest level of reliability entails measured dynamic modulus. The second and third levels of entail the use of predictive equations.

The objective of this research was to gather the data necessary to develop a procedure where ODOT could approach a high level of reliability for HMA dynamic modulus master curves without performing detailed dynamic modulus testing for each mix in a pavement system. ODOT HMA mixtures were evaluated to determine which material and mix characteristics affect dynamic modulus and the resulting master curve. Based on the results of the analysis, the need for typical master curves based on asphalt binder grade, aggregate type and/or nominal aggregate size were determined.

Twenty-one mixes were sampled for testing. Mixtures were sampled to represent the different mixes and aggregates used in Oklahoma. Each mix was prepared with PG 64-22, PG 70-28 and PG 76-28 at optimum asphalt content and tested for dynamic modulus in accordance with AASHTO TP 62-03.

The use of RAP and PG binder grade had a significant effect on measured dynamic modulus. ODOT mix designation (nominal aggregate size), aggregate type, and region placed did not have a significant effect on measured dynamic modulus. Recommendations of typical dynamic modulus values for Oklahoma HMA mixtures are made.

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