Abstract

Review on the current asphalt concrete (AC) overlay design methods, such as AASHTO, TAI, and OPAC2000 have been done in the project. It shows that most of the current design methods belong to the category of empirical design method that is basically empirical or experience-based. With the application of AASHTO Design Guide 2002 software, influence of six AC overlays thickness and five types of asphalt binders on the overlay pavement performance has been studied. It shows that AC thickness has a great impact on longitudinal and transverse cracking in terms of overlays performance, but very little effect on permanent deformation, or rut, and pavement roughness international roughness index (IRI). Based on the studies on the pavement performance and new technologies like Superpave, long term pavement program (LTTP) and life cycle cost analysis (LCCA), a procedure of a state-of-the art design method of AC overlays is put forward in the project with the utilization of the principle of balance between cost and performance.