

Performance Based Asphalt Mixtures: Balanced Mix Design Approach - Linking Theory to Practice

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Friday, June 14, 2024 04:00 pm - 05:00 pm (IST)

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ABOUT THE TALK :

The Balanced Mix Design (BMD) approach integrates performance testing into asphalt mix design to improve pavement durability. While the Superpave system addresses rutting with stiffer mixes, it often leads to cracking issues, especially with increased recycled material use. Warm mix additives and recycling agents aid compactability but lack evaluation tools. The Vermont Agency of Transportation (VTrans) has progressed BMD implementation by evaluating the Hamburg wheel-tracking test (HWTT), Illinois flexibility index test (I-FIT), and indirect tensile cracking test (IDEAL-CT). These tests, conducted on plant-produced mixtures, highlighted significant effects of mixture properties like NMA, binder grade, binder content, and recycled content on rutting and cracking resistance. The findings help VTrans transition from volumetric-only design to performance-based acceptance, setting a precedent for other agencies.

ABOUT THE SPEAKER :

Dr. Ram Kumar Veeraragavan is currently working as a Project Engineer at the Federal Highway Administration - Mobile Asphalt Technology Center (MATC) since 2019. He has been associated with U.S. State Departments of Transportation (DoT) in performance testing, evaluation, refinement, and implementation of Superpave performance prediction tests on hot mix asphalt at the national level. He has rich experience working with State DoT agency personnel and contractors on onsite field testing, asphalt plant operation, and safety. He has participated in conferences for knowledge dissemination to DoT personnel, helped fine-tune test protocols and quality assurance procedures through specification reviews, and provided technical support to national research initiatives on testing and use of new materials for improved performance of road infrastructure.