Research Need for Pavement Design, Management & Materials Technical Advisory Group

Effective/Updated: August 14, 2015

ISSUE: Using the SCB (Semi-Circular Bend) prototype machine to set testing limits

SUMMARY OF PROBLEM: The R27-128 research project currently underway has developed an SCB (Semi-Circular Bend) prototype testing device. The SCB will estimate the Fracture Energy (FE) and Flexibility Index (FI) of a hot mix asphalt (HMA) mixture. It is envisioned that these indices can be used to determine the ability of an HMA mixture to resist thermal cracking. IDOT would like to investigate possibilities for additional SCB test uses. Suggestions include, but are not limited to: determining acceptable FI ranges for poor, marginal, and good HMA mixtures; using FE and FI to set asphalt binder replacement limits; using FE and FI to analyze the impact of HMA additives on the aging process, etc.

EXPECTED IMPLEMENTABLE OUTCOME: Development of guidelines, testing protocol, departmental policies, and/or specifications that will enable IDOT to utilize the SCB test to analyze HMA mixtures and additives to provide long-lasting, good-performing pavements.

To submit a research idea for consideration at the spring 2016 Executive Committee meeting, prepare and submit a Proposed Research Idea form to IDOT (DOT.BMPR.RESEARCH@illinois.gov) no later than October 1, 2015.