

**RESEARCH PROBLEM STATEMENT**

<b>DATE:</b> 09/24/2020	<b>PROJECT AREA:</b> Pavements
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**TITLE:** Implementation of IDEAL-CT and CT Index for QC/QA of Asphalt Mixtures in Arkansas

**PROBLEM STATEMENT:**

Arkansas' initial implementation plan of performance-based asphalt mixture design (PBD) requires volumetric design with performance verification to produce the mixtures that effectively achieve the anticipated performance. In this system, it is necessary for agencies to check the performance-related properties or index of the final mixture for acceptance. TRC1802 recommended that the IDEAL-CT and the CT Index be used to assess cracking resistance during the asphalt mixture design phase. However, it is imperative that the recommended preliminary acceptance criteria be further validated and refined through comprehensive laboratory and field performance evaluations that will lead the establishment of appropriate specification requirements for use in routine mix design and screening mixtures for acceptance. Also, the existing QC/QA specifications and practices need to be updated accordingly to ensure that the mixtures are produced as designed and perform as expected in the field. This study will include the development of specifications for implementation of the IDEAL-CT and CT Index during the QC/QA phases in asphalt mixture design, production and construction.

**OBJECTIVES:**

The primary objectives of this study are summarized as follows:

- (1) Further validate and refine the preliminary acceptance criteria recommended.
- (2) Evaluate the difference in the results of IDEAL-CT and CT Index between mix design, production and construction phases (i.e., at different stages of aging).
- (3) Develop the appropriate specification requirements for the implementation of the IDEAL-CT and CT Index for QC/QA phases in asphalt mixture design, production and construction.

**FORM OF RESEARCH IMPLEMENTATION AND RETURN ON INVESTMENT:**

The form of research output will include the development of implementable specifications for application of the IDEAL-CT and CT Index for QC/QA practices in mix design, production, and construction. The successful implementation of project findings will help ensure consistently enhanced cracking performance of asphalt mixtures placed in the field that will provide significant cost savings for ARDOT.

**Estimated Project Duration:** 24 Months  
**PREPARED BY:** Sanghyun Chun  
**AGENCY:** Arkansas Department of Transportation - Research  
**PHONE:** (501) 569-2933 **REVIEWER:** Sanghyun Chun

Standing Subcommittee  
Ranking

1/4

Advisory Council  
Ranking

14

Statement Combined with  
Statement Number(s)