FHWA Workshop

Alkali-Aggregate Reaction

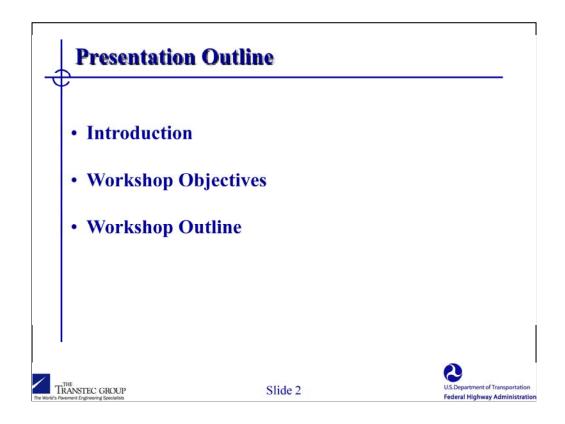
Session 01: Introduction and Workshop Objectives





Through the ASR Development and Deployment Program, the FHWA has been leading a national effort to further the development and deployment of techniques which can prevent and mitigate ASR.

This workshop is to effectively transfer the deliverables developed throughout the FHWA ASR Development and Deployment Program to engineers and practitioners.



There are no speaker notes for this presentation other than reviewing the bullets on each slide.

Is a general presentation for the speaker or a moderator to conduct introductions, present the workshop objectives, and go over the workshop outline.

Speaker and Participant Introductions

Speakers

Michael D.A. Thomas, University of New Brunswick Kevin J. Folliard, The University of Texas at Austin Benoit Fournier, Laval University

Introduction of Workshop Participants

Slide 3







Workshop Objectives

- Review the fundamentals of alkali-aggregate reaction.
- Summarize available methods of preventing or mitigating ASR-induced damage in newly-constructed and existing concrete structures.
- Discuss and recommend test methods and specifications related to ASR.
- Provide case studies of ASR-affected concrete structures, including rehabilitation strategies.

Slide 4





- Session 1 Introduction and Workshop Objectives
- Session 2 Fundamentals of Alkali-Aggregate Reaction

Slide 5

- ➤ Definitions: ASR & ACR
- > Background and history of ASR
- ➤ Mechanisms of ASR
- > Contributing factors of ASR





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- ➤ Session 3 Symptoms of ASR
 - > Symptoms and case studies of ASR-induced damage in concrete structures
 - > Methods of monitoring and evaluating existing structures
- ➤ Session 4 ASR Test Methods
 - Review of available ASR test methods, including tests for aggregates, supplementary cementing materials (SCM's), etc.
 - > Summary of recommended test methods





- ➤ Session 5 Prevention of ASR
 - > Use of non-reactive aggregates
 - ➤ Use of low-alkali cement
 - > Limiting alkali content of concrete
 - > Use of supplementary cementing materials

Slide 7

- > Use of suitable chemical admixtures
- ➤ Session 6 ASR Specifications
 - > Performance-based
 - > Prescriptive
 - > AASHTO PP 65-11





Federal Highway Administration

- ➤ Session 7 Diagnosis and Prognosis of ASR
 - > ASR signs and symptoms
 - > Laboratory and field evaluations
 - > Management of ASR-affected structures
- ➤ Session 8 ASR Mitigation Measures
 - > Silanes and similar products
 - ➤ Lithium compounds
 - > Confinement
 - > Others





