

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.

Presentation Outline

- **Introduction**
- **Workshop Objectives**
- **Workshop Outline**

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

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**.

Workshop Outline

- Session 1 - Introduction and Workshop Objectives
- Session 2 - Fundamentals of Alkali-Aggregate Reaction
 - Definitions: ASR & ACR
 - Background and history of ASR
 - Mechanisms of ASR
 - Contributing factors of ASR

Workshop Outline

- 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

Workshop Outline

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

Workshop Outline

- 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