

**COURSE NUMBER**

FHWA-NHI-134096

**COURSE TITLE****Basics of Cement Hydration**

This training is provided by the Transportation Curriculum Coordination Council (TCCC) in partnership with NHI to review integrated materials and construction practices for concrete pavement. The training was developed by the National Concrete Pavement Technology Center at Iowa State University. This training is recommended for the Transportation Curriculum Coordination Council levels III and IV. This course is primarily intended for inspectors and technicians.

This module covers how a concrete mixture changes from a plastic state to become a solid concrete slab in a relatively short period of time. Central to this transformation is a complex process called hydration, an irreversible series of chemical reactions between water and cement.

This module is part of a curriculum from the "Integrated Materials and Construction Practices for Concrete Pavement" manual developed through the National Concrete Pavement Technology Center at Iowa State University. The other Web-based training modules include:

- FHWA-NHI-134075 TCCC Hardened Concrete Properties - Durability
- FHWA-NHI-134084 TCCC Fundamentals of Materials Used for Concrete Pavements
- FHWA-NHI-134085 TCCC Incompatibility in Concrete Pavement Systems
- FHWA-NHI-134087 TCCC Mix Design Principles
- FHWA-NHI-134095 TCCC Early Age Cracking
- FHWA-NHI-134097 TCCC Fresh Concrete Properties
- FHWA-NHI-134098 TCCC Construction of Concrete Pavements
- FHWA-NHI-134100 TCCC QCQA for Concrete Pavements
- FHWA-NHI-134101 TCCC Design of Pavement
- FHWA-NHI-134102 TCCC Troubleshooting for Concrete Pavements

**OUTCOMES**

Upon completion of the course, participants will be able to:

- Knowledge of physical and chemical occurrences during cement hydration
- Identify various factors that can adversely affect these occurrences
- Recognize the different temperature changes during particular stages of hydration

**TARGET AUDIENCE**

This training is designed for FHWA, State, and local agencies and their industry counterparts involved in the process to assure that the mix design and proportioning of Portland cement concrete materials meet specification requirements and provide good, durable concrete. It is applicable to anyone desiring a better understanding of the mix design of Portland cement concrete.

**TRAINING LEVEL:** Intermediate

**FEE:** 2018: \$25 Per Person; 2019: \$25 Per Person

**LENGTH:** 1 HOURS (CEU: 0 UNITS)

**CLASS SIZE:** MINIMUM: 1; MAXIMUM: 1

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