

AIA COURSE OUTLINE

PROTECTING CONCRETE STRUCTURES UTILIZING CRYSTALLINE TECHNOLOGY

AIA CES Approved Course

Course Number: AIACRYSTECH1

Course Value – 1 LU Hour

Course Description

This presentation explains how the addition of crystalline technology interacts with concrete to produce a structure with a significant increase in durability and service life. It discusses how a deeply embedded network of insoluble crystals makes permeable concrete virtually impervious to water and all harmful water-soluble materials, such as chlorides and sulfates.

It demonstrates how a durable waterproof structure can be designed and built without negatively affecting the placement or performance characteristics of the concrete. The prevention of damage due to corrosion, freeze-thaw, ASR and chemical attack will be analyzed. The ability of the crystalline technology to streamline project costs and fast track construction schedules will be highlighted.

Real world applications through examination of projects in various industries will provide the necessary references required.

Learning Objectives

At the end of this course, participants will be able to:

1. Describe how Crystalline Technology can be incorporated in the design of concrete structures to:
 - a. Improve Durability
 - b. Increase Lifespan
 - c. Significantly reduce water intrusion and permeability
2. Identify materials and methods that will save costs by reducing the concrete structure's maintenance.
3. Explore the different application forms of the crystalline technology for both new and existing concrete structures.
4. Analyze projects and identify where crystalline technology should be applied.

Crystalline Technology – Presentation Outline

1. Concrete composition with relating problems.
2. 4 Main Concrete Deterioration Factors
 - Corrosion
 - Freeze-Thaw Cycles
 - Chemical Reactions of Aggregate (ASR/AAR)
 - Chemical Attack
3. How deterioration affects the service life of concrete structures.

