

AIA COURSE OUTLINE

Benefits of Impermeable Concrete Utilizing Crystalline Technology

AIA CES Approved Course

Course Number: AIACRYSTECH2

Course Value – 1 LU/HSW

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.

HSW Justification

“Water penetration is directly or indirectly the cause of the majority of disintegrations in concrete and the degree to which water penetration is permitted by the texture of any concrete is a direct measure of its strength and endurance.” (Concrete Engineer’s Handbook, 1918)

With regards to concrete cracking and waterproofing, failing to adequately address in design does not only lead to costly change orders and project delays, but it can also lead to indoor environmental quality issues.

Additionally, the lifespan of the building is reduced. Water intrusion, cracking, corrosion, freeze-thaw damage, chemical reaction, and chemical attack can be eliminated/drastically reduced with proper specification focus.

Learning Objectives

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

1. Analyze the make-up of concrete and causes of deterioration.
2. Describe how crystalline waterproofing technology works.
3. Demonstrate the benefits of using crystalline waterproofing technology in concrete.
4. Assess different waterproofing techniques and explore different applications to increase concrete durability and lifespan.

