

# Increasing the Success of Concrete Repairs through Education and Certification Courses

by Dave Fuller, International Concrete Repair Institute

Repairing and restoring concrete structures are important and challenging responsibilities. Unfortunately, many concrete repairs fall well short of their anticipated service lives. Before a repair is initiated, a study must be undertaken to determine the root cause of the concrete damage and possible implications to the structure. Repairing concrete structures involves many complex factors, including choosing the most appropriate material and application method for the project, staging, creating safe workspaces, properly preparing the repair substrate and surface, and accounting for site variables such as weather conditions and access. These factors can all influence the outcome of a concrete repair project. Having properly educated, skilled field personnel on site to install, supervise, and provide quality control for concrete repair installations has a positive effect on the success of the project and how long the repair will last.

Industry organizations like the International Concrete Repair Institute (ICRI)—the only professional association dedicated to concrete repair, restoration, and protection—offer means to educate stakeholders in the concrete repair industry to properly specify and install

repair materials. A leading program in the industry is ICRI's Concrete Surface Repair Technician (CSRT) program (Fig. 1).

Participants in the CSRT program learn about concrete repair inspection and material tests, types of concrete deterioration, and types of repair materials and methods, as well as the requirements for a quality concrete surface repair. The program has two components: the Education Course and the Certification Course. For a specifier, the courses provide a better understanding of the concrete repair process. With topics ranging from selecting the right materials and installation methods for a specific project to performing material testing in the field, these courses provide valuable education for anyone involved in concrete repair.

### Education Course

The Education Course is an online program for those who wish to gain fundamental knowledge and learn best practices in concrete surface repair. It provides participants with practical knowledge in both the science and craftsmanship of concrete

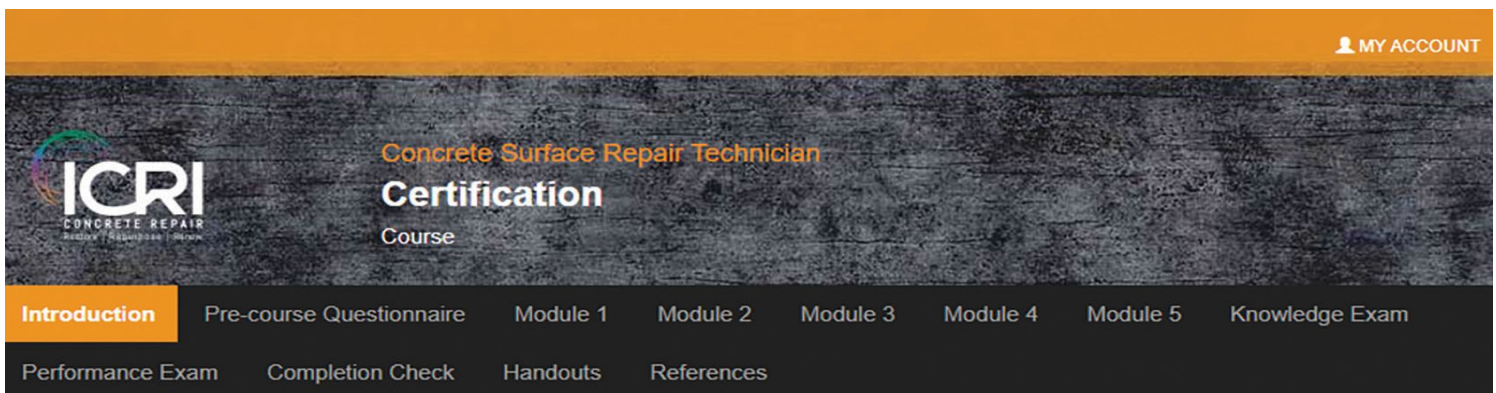
repair. Consisting of five self-directed modules, the Education Course can be accessed and completed on any device. To successfully complete the course, one must finish all five online training modules and pass a graded exam for each module.

The first module provides students with an understanding of concrete and the factors that contribute to concrete deterioration, including corrosion of reinforcing steel, which is one of the leading causes.

### International Concrete Repair Institute

The International Concrete Repair Institute (ICRI) was formed in 1988, when the organizing members established its purpose: "to improve the quality of concrete restoration, repair, and protection through education of, and communication among, the members and those who use its services." Today, ICRI—a member of the National Concrete Bridge Council—offers education, certification, networking, and useful publications for individuals involved in concrete repair.

Figure 1. Concrete Surface Repair Technician online program. All Figures: International Concrete Repair Institute.



Many concrete repairs fail because the deteriorated concrete was not completely removed and the existing substrate was not properly prepared before applying a repair material.

Module 2 covers how to identify and remove areas of concrete deterioration (Fig. 2), best practices for repairing and replacing reinforcement, and proper preparation of the concrete substrate.

In the third module, students learn about the various methods of repair and the important physical properties of repair materials that must be evaluated during the material selection process.

The last two modules cover preplacement and postplacement project inspection. Students are shown how to use preplacement and postplacement checklists for quality control on a concrete repair project.

### Certification Course

The second component of the program, the CSRT Certification Course, is for individuals who want to become qualified inspectors of concrete repair projects. To achieve certification,



Figure 2. Identifying delaminated concrete using a sounding technique.

candidates must complete the CSRT Education Course and pass an in-person or virtual performance exam to demonstrate the proper use of ASTM testing procedures (Fig. 3).

### Summary

ICRI's CSRT program enables anyone in the concrete repair industry to increase their knowledge and skills in concrete repair. Whether you are new to the industry or want to build on your existing knowledge, completing this

program can help you gain the expertise needed to raise the rate of success on concrete repair projects. [A](#)

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Figure 3. To successfully complete the Concrete Surface Repair Technician Certification Course, candidates must pass a performance exam. This exam may be taken in person (left photo) or virtually with a video submission (right photo).

