

# ACI Certification Programs Celebrate 40 Years of Certifying Concrete Professionals

by John W. Nehasil

**D**uring the past 40 years, certification of concrete construction personnel through ACI has become a standard for the industry. This year we celebrate what certification has done to improve the industry and the long road to bring the many certification programs to fruition. Today, many local, state, national, and even international building codes, specifications, and agencies require certified personnel to perform many construction responsibilities. Certification has become required in many areas to ensure quality benchmarks are met.

Contractors and project owners alike desire employees to earn certification because it shows that an individual has in-depth knowledge of the topic, understands proper methods and procedures, and is familiar with relevant concrete codes and standards. The increased use of certification programs is evidence that the industry has come a long way in 40 years.

ACI Certification programs are truly what ACI is all about—enhancing knowledge and improving concrete quality. Starting the first certification program was no small endeavor; literally hundreds of individuals donated time to make it a reality. Getting the first program up and running wasn't a smooth process either. In the mid-1970s, ACI was battling financial hardships, and obtaining approval for the first certification program was a challenge. Many felt it would be a money-losing proposition at a time when ACI could not afford it. The idea of technician certification was initially proposed as a response to unreliable testing of concrete, which was a significant problem within the industry. Ready mixed concrete companies wanted the certification because they were often targeted as responsible for producing poor concrete when, in reality, the problem was poor testing. Eventually, funding was approved to go forward with the Field Testing Technician program recognizing that ACI was the industry organization best positioned to conduct the program.

As soon as the first certification program began, ACI realized that other areas of the industry could benefit from additional programs. Some of these areas included concrete construction inspection, flatwork finishing, shotcrete application, and concrete laboratory testing (two programs to address both fresh and hardened concrete). Even with the Field Testing Technician program reaching financial viability



**ACI Resource Centers have expanded the options to deliver ACI Certification training and testing**



**ACI Sponsoring Groups administer the majority of ACI Certification exams**

by 1985, developing and launching new programs was still viewed as financially risky. But despite the challenge and risks, ACI still believed in certification and that it furthered the missions of the Institute. When technician certification became required in ASTM C94, “Standard Specification for Ready Mixed Concrete,” certification became a revenue producer for ACI. So, despite a tenuous beginning, certification finally gained a solid footing in the industry and became a business success for ACI.

By December of 1986, ACI had administered a total of 5000 exams. These numbers steadily grew through the years and, with new programs being added, climbed to a total exceeding 700,000 in 2020. Annually, the biggest year for certification was 38,000 exams in 2019. Following a COVID-related downturn, exams began to rebound in 2021. This year, ACI is processing around 1000 exams a week and is expected to exceed more than 40,000 exams by the end of the year.

## Updating Certification

As the initial certification programs were developed, ACI realized that one-time certification was not sufficient—so

recertification is required for all ACI Certification programs every 5 years. The purpose is to ensure a built-in mechanism to transfer new technology and updated procedures. Even though concrete may have existed since the Roman Era, technology changes. In particular, with the quest for lower carbon emissions from concrete and cement, industry personnel will encounter different materials, technologies, and associated protocols on jobsites. ACI Certification programs will be modified to address these changes and ensure they are understood by those who need to.

## Notable Events

So much has happened over the years while ACI Certification has advanced. A brief glance back through history highlights a few of these events. In 1984, there were more than 50 sponsoring groups in the United States and one in Saudi Arabia. That year, 2000 Field Testing Technicians were certified, with 500 more candidates pending. In 1993, ACI expanded certification to bring the CSA-based Concrete Field Testing Technician program to Canada. As Spanish language needs increased, ACI then began offering Spanish

## How Certification Programs Begin

The topic for a certification program can come from many sources: requests from the industry, internally from ACI, or the development of a new technology that would benefit from certification. There is no single path for the initial idea. Ideas are brought to ACI Committee C601, New Certification Programs, which reviews them against initial acceptance criteria:

- Is this something that really needs a formal certification program?
- Are enough people in the marketplace actually doing this to support a certification?
- Should the initial action be development of an educational program?

Strategies can be determined based on the answers to these and other questions. As one example, for high-performance concrete, it was determined that education was initially more essential and could be brought to the market more quickly. This doesn't preclude the development of a certification program in the future, but a certificate program can both increase the level of knowledge needed in the field quickly and prepare that market for eventual certification if needed.

Requests are initially submitted in the form of a one-page description of the perceived need for the program, what technology is not being served properly by the current state of education and qualification, how that affects the performance of that material or technology, what dangers may exist, and how a program could be effectively conducted. If ACI Committee C601 believes it has merit, it will go to the Certification Programs

Committee (CPC) for approval to proceed with developing a full proposal. The full proposal is a multi-page document that includes information such as market survey results, a financial impact statement, and other details. A C601 Subcommittee is formed to help pull together the formal proposal. CPC then reviews the full proposal, and if they decide to proceed with it, the proposal is then presented to the ACI Board of Direction and Financial Advisory Committee. If a program is not likely to be self-supporting after 5 years, ACI might still proceed with development for other reasons. That was the case with the Adhesive Anchor Installer program; ACI was simply the organization best-equipped and positioned to offer the program, positively impact the adhesive anchor installation's quality, and preserve its inclusion in the ACI 318 Code.

Getting approval is only the beginning. Now the task of developing the program begins. Many items need to be created, such as: a job task analysis (JTA) based on industry documents; program policy governing program requirements; exam questions based on the JTA; an exam question blueprint to describe the length, organization, coverage, and scoring criteria; and a performance exam (if needed), including administrative instructions. Throughout development, the committee needs to continually evaluate the efficacy of the assessment method(s) chosen and adjust them if necessary. When all elements are ready, a pilot is conducted with the target audience. The program can be launched if the questions and candidates perform as expected.

workbooks and exams for Field Testing Technicians in late 2002. Then in 2014, the Board approved proactive translation of ACI Certification references into Spanish and, in 2016, endorsed development of a program to support customization of ACI Certification programs for use internationally. Certification programs were developed for the United Kingdom and Argentina in 2019, with further exploration into developing custom programs for India and Mexico occurring concurrently. That same year the ACI Board of Direction approved establishing three ACI-staffed regional Resource Centers in the United States.

### Certification Availability Expands

Throughout 40 years, the options for certification locations have greatly expanded. A notable move was the ACI Flatwork Finisher Seminar and Certification Exam, first offered at WOC '93. This brought certification to a location where thousands of contractors and their employees gather annually. Certification continues to be offered through a variety of sources, including ACI Sponsoring Groups (both ACI chapter and non-chapter industry organizations), Prometric (for select written exams), and most recently the ACI Resource Centers.

In 2020, the SoCal Resource Center opened (San Bernardino, CA, USA), followed by the Chicago/Midwest Resource Center (Elk Grove, IL, USA) in 2022, and the Mid-Atlantic Resource Center (Columbia, MD, USA) is targeted for 2023. The ACI Resource Centers were carefully chosen to be easily reached within a day's travel by anyone in the United States, either by car or air. Not only do the Resource Centers offer certification, but they also offer "train the administrator" sessions, so Sponsoring Groups can send individuals to be trained on how to conduct programs.

A great deal has changed in 40 years. Initially, there were concerns that Certification would fail and ACI would lose money at a time it could not afford to. Today, ACI has 32 certification programs serving key industry areas. Collectively, these programs have a positive impact on ACI's financial health. With the number of programs and conduits for testing increasing, the success of ACI's Certification programs could not have been imagined in the early days.

Sponsoring Groups have also been a key component of the success of ACI Certification and will continue to be so as programs grow and evolve. Sponsoring Groups are fortunate to have the support of industry organizations, companies, and individual volunteers. Without securing and organizing administrative personnel, equipment, and materials; establishing requirements; donating the use of facilities; and donating time, expertise, and energy, ACI Certification would not be where it is today. Much like ACI, Sponsoring Groups also benefit from the positive financial impact of the programs they offer.

To view ACI's Certification programs, go to [www.concrete.org](http://www.concrete.org).

Selected for reader interest by the editors.

### A Look Back at Board Approvals for Certification Programs

- September 1983—Concrete Laboratory Testing Technician – Levels 1 and 2
- November 1984—ACI Concrete Flatwork Finisher
- March 1985—ACI Concrete Construction Special Inspector
- February 1989—Concrete Construction Inspector-in-Training
- March 1990—Concrete Flatwork Technician
- November 1993—Concrete Transportation Construction Inspector
- March 1995—Shotcrete Nozzleman
- March 1996—Concrete Strength Testing Technician
- April 1997—Tilt-Up Field Superintendent
- October 1998—Specialty Commercial/Industrial Concrete Floor Finisher, and programs for Aggregate Field Testing Technician and Aggregate Laboratory Testing Technician
- April 2007—Decorative Concrete Finisher; program for Aggregate Base Testing Technician resulting from Aggregate Testing Technician reorganization
- January 2010—Adhesive Anchor Installer and Concrete Quality Technical Manager
- October 2011—Masonry Testing Technician
- October 2013—Nondestructive Testing Specialist; transfer of the Concrete Foundation Technician from the Concrete Foundations Association (CFA) to ACI
- November 2015—Cement Physical Tester
- April 2016—Concrete Construction Sustainability and Resilience Assessor
- March 2017—Shotcrete Inspector
- July 2017—Self-Consolidating Concrete Testing Technician
- September 2018—ACI-ICT EN Standards Concrete Field Testing Technician launched
- April 2021—ACI 318 Design Professional
- August 2022—IRAM Standards Concrete Field Testing Technician launched



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