

Certification – Proper Use of an Important Tool

Tools make our work more efficient and effective...when used correctly. When used incorrectly, a tool may not only be ineffective, but can become counterproductive and even dangerous.

The ACI Nozzleman Certification is no exception. When used in the right manner with the proper complement of other tools and resources, certification plays an important role in the effective and safe use of shotcrete. When used incorrectly, certification could give a specifier and/or owner a false sense of security and result in subpar in-place concrete and could even pose placement safety issues.

To properly use a tool safely and to its fullest benefit, the user's manual or instructions should be reviewed prior to use. In light of this, let's consider the following as the user's manual for ACI Nozzleman Certification.

ACI Nozzleman Certification User's Manual

Tool Purpose:

The ACI Nozzleman Certification program is designed to work with a combination of tools and resources to help provide the industry, and specifiers in particular, with a means of ensuring a basic knowledge and competence in the placement of shotcrete on a project.

Warning: Use of the ACI Nozzleman Certification program alone, without the other required tools and resources (see the "Proper Use" section), can lead to unwanted results including poor performance or failure of in-place concrete, placement safety issues, project delays and many other problems resulting from the lack of experience and/or skill of the Nozzleman and/or contractor.

Intended Users:

Owners, public officials, and project specifiers including engineers and architects.

Secondary Users:

Construction managers and inspectors.

Proper Use:

Cite ACI Nozzleman Certification in the project specification and bid request: Proper use of ACI Nozzleman Certification begins early in the creation of the project specification and bid document. Determine the following: will the project's shotcrete placement require a nozzleman skill level equivalent to or greater than that reflected in the ACI Nozzleman Certification program? (See Figure 1 for an example of the certification test panel) Examples might include structural shotcrete placed around rebar and other objects, or placed in a challenging position such as overhead. If the answer to the question is

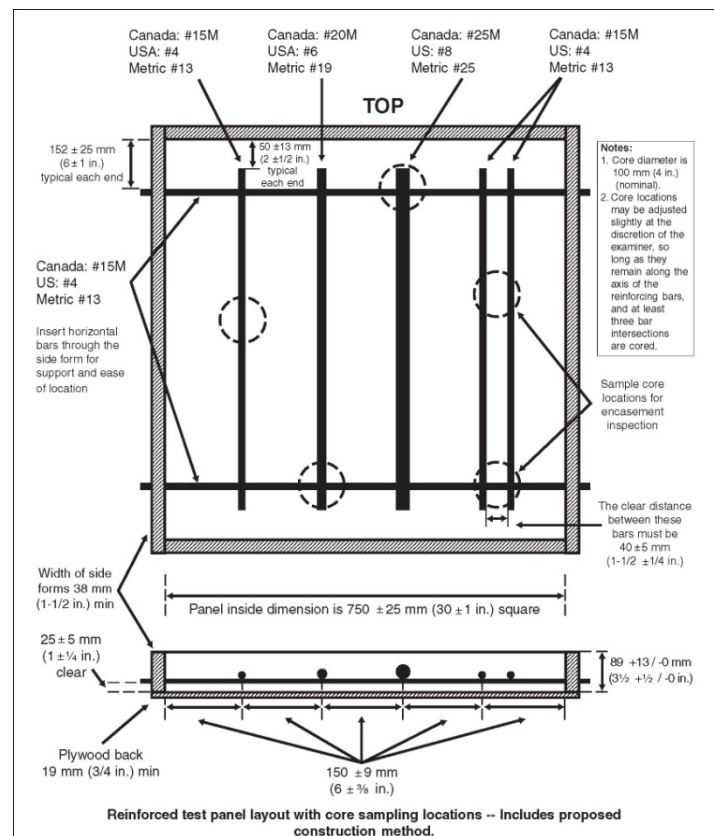


Figure 1

yes, then make sure to include a requirement in the project specification and bid request the requirement that all nozzlemen on the project possess a current ACI Shotcrete Nozzleman Certification.

Check the shotcrete contractor's references and project work history: As important as the Nozzleman is in placing shotcrete, he is but one member of a large team and organization. First-off, make sure the contractor has a strong business history and reputation. Most importantly, make sure he has had successful experience with similar type projects. Depending on the difficulty and uniqueness of the project, successful experience in the amount of 5, 10 or more years should be sought.

Check the project work history of the contractor's key personnel: Again, depending on the difficulty and uniqueness of the project, look for a sufficient amount of experience on similar type projects from the contractor's key personnel, such as the project supervisor.

Project nozzlemen resumes: Obtain resumes of the nozzlemen that will place shotcrete on the project to help ensure that their experience and skill match or exceed the requirements of the project.

Verify current certification: Once the list of project nozzlemen has been determined, verify that all are currently certified in the required method (wet and/or dry mix) and position (vertical and/or overhead). There are a number of ways to verify a Nozzleman's certification and those options are listed in the "Tool Components" section.

Verify On-site Nozzlemen are certified: Once the project begins, ensure that the nozzlemen placing shotcrete are on the original list submitted by the contractor and are still currently certified. This is an item that could be added to the inspector's tasks in a pre-construction meeting.

Pre-project test panels: While a large part of the ACI Nozzleman Certification assesses the nozzleman's ability to properly encapsulate reinforcing bar, if the amount of rebar congestion increases beyond that in the performance exam test panel (see figure 1), test panels that simulate project conditions should be shot by all project nozzlemen. These panels should then be cored to assess the Nozzleman's ability to satisfactorily encapsulate the rebar. *Please note; these pre-project test panels and cores to evaluate a nozzleman's ability to encapsulate rebar are not to be confused with cores taken from test panels shot during the project for strength testing.*

Tool Components:

The following components of the ACI Nozzleman Certification program are available to assist users in confirming an individual's current/active certification as well as the approved method (wet or dry) and position(s) (vertical or overhead). All ACI Certified individuals are listed online and receive the following credentials:

- ACI Certification online directory of certified individuals: www.ACICertification.org/Verify;
- ACI Certification wallet card: Displays certified individual's full name, certification expiration date, method (wet or dry mix) and position (vertical and/or overhead); and
- 8x11 Certificate: Displays certified individual's full name, certification expiration date, method (wet or dry mix) and position (vertical and/or overhead).

The most current source of certification status information is the ACI online directory of Certified Personnel. It is also much less vulnerable to credential falsification or forgeries.

Other Useful Tools and Resources:

- ASA Buyers Guide – www.Shotcrete.org/BuyersGuide: The ASA online buyers guide will put you in contact with quality contractors and consultants possessing experience in the project type.
- ACI Nozzleman Certification Program Policies – www.ACICertification.org: This site will provide more details on the Nozzleman Certification Program and its requirements.
- ASA Staff – 248\848-3780 or Info@Shotcrete.org.
- ACI Certification Department – 248\848-3790 or John.Nehasil@Concrete.org.

Conclusion

Hiring a shotcrete contractor solely because he employs a certified nozzleman is short-sighted and irresponsible. Make sure the contractor and his team is well qualified and experienced with your type of project. Due diligence and proper use of the certification tool, as outlined here, could be the difference between the failure and success of a project. The extra work upfront will pay off exponentially as the speed, quality, versatility and economic advantages of shotcrete are fully realized.