



## **Certification Policies for Shotcrete Inspector and Associate Shotcrete Inspector**

*Last revised by the Certification Programs Committee  
February 9, 2024  
(Editorial Update March 7, 2024)*

The statements contained herein are a consolidation of approved policies and procedures. This policy statement supersedes all previous action regarding Shotcrete Inspector certification.

The certification program policies are organized into seven sections as follows:

Section 1.0	Certification Criteria
Section 2.0	Examination Criteria
Section 3.0	Appeals Criteria
Section 4.0	Sponsoring Group Criteria
Section 5.0	Examiner/Proctor Criteria
Section 6.0	ACI Responsibilities
Section 7.0	Recertification Criteria

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**SECTION 1.0 CERTIFICATION CRITERIA**

1.1 The American Concrete Institute (ACI) shall recognize individuals certified as Shotcrete Inspector and Associate Shotcrete Inspector.

1.2 Certification as an Associate Shotcrete Inspector shall require:

A) Successful completion of the ACI Shotcrete Inspector written examination, and

B) Fulfillment of either of the following requirements in the field testing of concrete:

1. Be currently certified as an ACI Concrete Field Testing Technician—Grade I, ACI CSA-Standards Field Testing Technician, or CCIL Basic Concrete Field Type QF technician.

OR

2. Pass the written examination for any of the programs listed in Section B1, above, within one [1] year of passing the Shotcrete Inspector exam.

If either of the above field testing requirements (part B, above) is not held at the time of testing for Inspector (part A, above), it must be obtained within one [1] year; otherwise, all requirements (parts A and B) must be retaken in their entireties.

*Note: The certification program policies, which describe a program's content and operation, for ACI Concrete Field Testing Technician—Level I and ACI CSA-Standards Concrete Field Testing Technician can be found in Annexes 661.1-1 and 661.1-2, respectively. (Content and operation of the CCIL field testing programs are governed by the Canadian Council of Independent Laboratories.)*

1.3 Certification as a Shotcrete Inspector shall require:

A) Fulfillment of the requirements for ACI Associate Shotcrete Inspector, and

B) Demonstration of satisfactory education and/or work experience.

1.4 The education and work experience required for Shotcrete Inspector certification is as follows:

A) Three [3] years of satisfactory work experience.

1.5 Satisfactory work experience must include at least two of the following:

A) Testing, inspection, and quality control of shotcrete.

B) Supervision of shotcrete construction work.

C) Design of shotcrete structures.

- D) Placement of shotcrete as a certified ACI Shotcreter. ACI Shotcreter certification program content and operation are described in *ACI Certification Policies for Shotcreter and Shotcreter-in-Training*, Annex C661.1-3.
- 1.6 Shotcrete training/education may be applied towards up to two [2] years of experience to satisfy the requirements of 1.4. Recognized training/education programs are listed in *Recognized Training and Education Programs for ACI Shotcrete Inspector Certification*, Appendix 661.1-1.
- 1.7 ACI certification shall be valid for a period of five [5] years from the date of completion of all certification requirements.
- 1.8 An Associate Shotcrete Inspector may upgrade to Shotcrete Inspector at any time during the five [5] year certification period by demonstrating satisfactory education and/or work experience.
- 1.9 If an Associate Shotcrete Inspector upgrades to Shotcrete Inspector status, certification as a Shotcrete Inspector shall be valid for the remainder of the original Associate Shotcrete Inspector certification period.

## **SECTION 2.0 EXAMINATION CRITERIA**

- 2.1 The written examination shall consist of approximately eighty [80] multiple choice.
- 2.2 The written examination is derived from the information listed in *Job Task Analysis (JTA) for ACI Shotcrete Inspector Certification*, Annex 661.1-4.
- 2.3 The written examination is open-book. The technical materials allowed into the examination room are limited to the resource materials listed in Annex 661.1-4.
- 2.4 A maximum time of one hundred twenty [120] minutes shall be allowed to complete the written examination.
- 2.5 The examination shall be supervised by an ACI-approved Examiner, assisted, when necessary, by a proctor appointed by the Examiner.
- 2.6 The Examiner, proctors, and members of the Sponsoring Group have no jurisdiction over the content of questions on any specific examinations.
- 2.7 Verbal administration of the examination shall be permitted, contingent upon prior approval by the ACI Certification Department.
- 2.8 Successful completion of the written examination requires a minimum grade of 75%.

2.9 Examinations shall be graded by ACI.

### **SECTION 3.0 APPEALS CRITERIA**

3.1 An appeal procedure shall be available if the examinee feels some aspect of the examination process is unclear, incorrect, or unfair.

3.2 Appeals regarding the conduct of the examination should be referred initially to the Examiner. If the Examiner cannot satisfy the complaint, it should be referred to the Sponsoring Group.

3.3 Appeals referred to ACI are handled in order by the following people or groups:

1. Sponsoring Group
2. ACI Managing Director of Certification
3. The Certification Appeals Committee [consisting of the Managing Director of Certification; the Certification Programs Committee Chairman, and the Chairman of Committee C661]
4. Committee C661, Shotcrete Inspector Certification
5. Certification Programs Committee

### **SECTION 4.0 SPONSORING GROUP CRITERIA**

Groups desiring to conduct ACI Certification program(s) shall adhere to the current *Policy on Sponsoring Groups for Certification*, Annex 661.1-5.

### **SECTION 5.0 EXAMINER/PROCTOR CRITERIA**

5.1 The Examiner must be authorized by ACI to conduct sessions for this program. Examiner applications must be submitted by the Sponsoring Group and will be evaluated based on the applicant's experience and familiarity with this and/or other ACI Certification programs.

5.2 The Examiner shall be present and in full supervision during the examination session.

5.3 Proctors adjudged trustworthy and conscientious by the Examiner shall be permitted to assist the Examiner in conducting the written examination.

5.4 Examiners and proctors shall be unrelated professionally and personally to the examinees. Government organizations may petition ACI, in writing, and request a waiver of this requirement. Waivers shall be granted only if it can be shown that the intent of the policy will be maintained.

- 5.5 The Examiner shall:
1. Verify the identity of each examinee and ensure that the examinees are aware of the certification criteria.
  2. Confirm the suitability of the facilities selected by the Sponsoring Group.
  3. Maintain exam security and secrecy of the examination content.
  4. Not define terms or interpret examination questions while conducting the examination.

#### **SECTION 6.0 ACI RESPONSIBILITIES**

- 6.1 ACI shall:
1. Approve the Sponsoring Group.
  2. Approve the Examiner.
  3. Grade the examinations and notify the examinee of the final results in writing.
  4. Evaluate education and work experience and determine conformance with requirements of applicants as a Shotcrete Inspector.
  5. Authorize the Sponsoring Group to conduct examination sessions for Shotcrete Inspector.
  6. Issue certification credentials to successful examinees.
  7. Process appeals.

#### **SECTION 7.0 RECERTIFICATION CRITERIA**

Recertification criteria shall be the successful completion of the then-current requirements for certification. Reevaluation of work experience is not required for recertification.

**End of Policy Text**

**Recognized Training and Education Programs for ACI Shotcrete Inspector Certification**

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Reflected here are the educational offerings approved for credit toward meeting the work experience requirement (up to two years) for ACI Shotcrete Inspector Certification.

Education must be submitted using the **Education Verification Form** found at [www.acicertification.org](http://www.acicertification.org).

- ASA Shotcrete Nozzleman Education Session
- ASA Shotcrete Inspector Education Session
- ACI University: Shotcrete – Guide and Specification
- ACI University: Certificate Program: Fundamentals of Concrete and Materials
- ACI University: Concrete Construction Special Inspector Certification Training
- ACI University: Shotcrete Today – State-of-the-Art



## Certification Policies for Concrete Field Testing Technician - Grade I

*Last revised by the Certification Programs Committee  
January 12, 2018*

The statements contained herein are approved policies and procedures. This revised policy statement supersedes all previous action of the ACI Board of Direction with respect to Concrete Field Testing Technician certification.

The certification program policies are organized into seven sections as follows:

- |             |  |
|-------------|--|
| Section 1.0 | Certification Criteria   |
| Section 2.0 | Definitions  |
| Section 3.0 | ACI Responsibilities   |
| Section 4.0 | Examiner, Supplemental Examiner, and Proctor Criteria and Responsibilities |
| Section 5.0 | Examination Criteria   |
| Section 6.0 | Re-examination Criteria  |
| Section 7.0 | Appeals Procedures   |

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## SECTION 1.0 CERTIFICATION CRITERIA

- 1.01 The American Concrete Institute (ACI) certification program for Concrete Field Testing Technician - Grade I shall require successful completion of both a written examination and a performance examination.
- 1.02 No specific education or work experiences are required as prerequisites for Concrete Field Testing Technician - Grade I certification.
- 1.03 ACI certification for Concrete Field Testing Technician - Grade I shall be valid for a period of five [5] years from the date of completion of all certification requirements.
- 1.04 Recertification requires the successful completion of both a written and performance examination according to Section 5 of this policy.
- 1.05 Groups desiring to conduct ACI Certification program(s) shall adhere to the current *Policy on Sponsoring Groups for Certification* (Annex 610.1-1).

## SECTION 2.0 DEFINITIONS

- 2.01 Examinee - a person taking either the written or performance examination, or both.
- 2.02 Examiner - a person authorized by ACI to be in responsible charge of an examination session.
- 2.03 Performance Exam Checklist - a list of criteria used by the supplemental examiner to judge the compliance of the examinee with the provisions of the performance examination.
- 2.04 Proctor - a person authorized to assist the Examiner in conducting the written examination.
- 2.05 Supplemental Examiner - a person who assists the Examiner by administering the performance examination.

## SECTION 3.0 ACI RESPONSIBILITIES

- 3.01 ACI shall assemble, maintain and distribute all examination materials.
- 3.02 ACI shall approve the local sponsoring group.
- 3.03 ACI shall authorize the local sponsoring group to conduct examination sessions for Concrete Field Testing Technician - Grade I certification.



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- 3.04 ACI shall approve the examiner.
- 3.05 ACI shall grade the written examinations, review the performance examinations, and notify the examinee and the examiner of the final results in writing.
- 3.06 ACI shall certify examinees who meet the certification requirements.
- 3.07 ACI shall issue a certificate, wallet card, and hard hat decal to examinees who meet the certification requirements.

## SECTION 4.0 EXAMINER, SUPPLEMENTAL EXAMINER, AND PROCTOR CRITERIA AND RESPONSIBILITIES

- 4.01 To maintain access to ACI examination materials, the examiner shall maintain approval from ACI and authorization from the Local Sponsoring Group.
- 4.02 Applicants must be selected by an approved Sponsoring Group and shall submit a current ACI Examiner Application to ACI through that same Sponsoring Group.
- 4.03 In order to be considered for examiner status, the applicant shall have assisted in the administration of at least two (2) ACI examination sessions (any program including written and performance components where applicable), performing to the satisfaction of the examiner of record, and:
  - A) Satisfy the following criteria:
    - 1. Be a registered professional engineer, or hold equivalent international credentials; and
    - 2. Have been certified as a Concrete Field Testing Technician – Grade I; and
    - 3. Have had at least two (2) years of verifiable experience in concrete construction, inspection or testing.

OR

  - B) Satisfy the following alternate criteria:
    - 1. Be certified as an ACI Concrete Field Testing Technician – Grade I at the time of application; and
    - 2. Have had at least five (5) years of verifiable experience in ACI certification administration, concrete construction, inspection or testing; and
    - 3. Have participated in at least four (4) ACI examination sessions as a proctor and/or supplemental examiner for this program. This is in addition to the administration assistance, as stated above, but is permitted to be completed concurrently.
- 4.04 The examiner shall be present at, and supervise, the examination session.

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- 4.05 The examiner shall be directly responsible for the following activities:
- A) Select the supplemental examiners and proctors;
  - B) Verify the qualifications of the supplemental examiners and proctors according to the criteria outlined in Section 4.06 through 4.12 of this policy;
  - C) Order examinations;
  - D) Verify the identity of each examinee;
  - E) Assure that the examinees are aware of the certification criteria;
  - F) Verify that the examinees have signed the release statement on the performance examination prior to performing any test methods or procedures;
  - G) Verify the performance evaluations conducted by the supplemental examiners by co-signing the performance examination checklist report;
  - H) Enter the appropriate grade for the completed performance examination on the checklist report;
  - I) Assure that all examinees have an opportunity to perform each test method at least once and to take a second trial on any failed procedure of the performance examination;
  - J) Refrain from interpreting examination questions during the course of the written examination;
  - K) Assist, if requested, the examinee by providing definitions for general use words (i.e. “depict” = “shows”). Examiners shall not define terms specific to the ASTM Standards whose definitions are readily available through adequate study of the Standards.
- 4.06 Proctors may assist the examiner in conducting the written examination.
- 4.07 Proctors shall satisfy the following requirements:
- A) Be selected, and adjudged qualified by the examiner; and
  - B) Be considered trustworthy and conscientious.
- 4.08 Supplemental examiners shall assist the examiner by conducting the performance examination.
- 4.09 Supplemental examiners shall satisfy the following requirements:
- A) Have had experience in concrete testing;
  - B) Be selected and adjudged qualified by the examiner;
  - C) Be considered trustworthy and conscientious;
  - D) Be certified as an ACI Concrete Field Testing Technician - Grade I or be an ACI-approved examiner.
  - E) Be thoroughly familiar with current applicable ASTM Standards as appropriate
- 4.10 Examiners, supplemental examiners, examiners acting as supplemental examiners and proctors shall not conduct any portion of the examination for anyone with whom he/she is personally related.
- 4.11 Examiners, supplemental examiners, and examiners acting as supplemental examiners shall not examine anyone on the performance examination who is employed in the same organization. Governmental

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organizations may petition ACI, in writing, and request a waiver of this requirement. Waivers shall be granted only if it can be shown that the intent of the policy will be maintained.

- 4.12 Supplemental examiners and examiners acting as supplemental examiners monitoring the performance examination for ASTM C 231 shall be qualified for whichever type meter he/she is monitoring.

## SECTION 5.0 EXAMINATION CRITERIA

- 5.01 The content of the written and performance examinations shall be derived directly from the *Job Task Analysis for ACI Concrete Field Testing Technician – Grade I Certification* (Annex 610.1-2).
- 5.02 Questions regarding general concrete technology shall not be included on either examination.
- 5.03 The examinations shall be conducted by the examiner, proctors, and supplemental examiners as applicable. [See Section 4.]
- 5.04 The examiners, proctors, supplemental examiners, and sponsoring groups have no jurisdiction over the content of either examination, or over the grading of the written examination.
- 5.05 Both the written and performance examinations are closed book. Notes or other technical material related to the subject matter shall not be permitted in the examination area. Non-programmable calculators shall be permitted.

### WRITTEN EXAMINATION

- 5.06 The written examination shall consist of approximately fifty-five [55] multiple choice questions, with five to ten [5-10] questions on each ASTM Standard.
- 5.07 One hour shall be permitted for completion of the written examination, after which the exam answer sheets must be collected. Additional time, up to one-half hour, with access to the exam question booklet will be allotted to the examinee to facilitate exam question challenges.
- 5.08 If an examinee is incapable of understanding the written examination, it may be administered orally upon approval of the Examiner.
- 5.09 Successful completion of the written examination shall require the examinee:
- A) Score sixty percent [60%] or higher on each individual ASTM Standard (i.e. five [5] correct out of eight [8] questions); AND

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- B) Score a minimum of seventy percent [70%] for the overall examination (i.e., thirty-nine [39] correct out of a possible fifty-five [55]).

## **PERFORMANCE EXAMINATION**

- 5.10 Successful completion of the performance examination shall require the examinee to satisfactorily perform each of the following ASTM Standard Test Methods: C172, C143, C138, C231, C173, C1064, and C31.
- 5.11 It shall be the sponsoring group's responsibility to provide equipment which conforms to the applicable ASTM Standards and that is in good working order. The examinee shall not be penalized as a result of faulty or incorrect equipment.
- 5.12 The examinee shall conduct the performance examination in the direct presence of the supplemental examiner or the examiner when acting as a supplemental examiner.
- 5.13 Supplemental examiners and examiners acting as supplemental examiners shall observe only one examinee conducting tests at a time while conducting the performance examination.
- 5.14 The procedures of ASTM C172 may be described verbally or performed at the local sponsoring group's discretion.
- 5.15 The examinee shall have the option of using either a Type A or Type B meter when performing method C 231 if a supplemental examiner qualified in the operation of a Type A meter is available (see Section 4.12).
- 5.16 For ASTM C31, the examinee shall fabricate a compression test specimen.
- 5.17 At the conclusion of performing each test method the examinee must record the results of the test.
- 5.18 The examinee's performance shall be evaluated based on the criteria of the performance examination checklist.
- 5.19 The supplemental examiner shall indicate pass or fail for each step on the checklist.
- 5.20 Grading for the performance examination shall be on a pass/fail basis only.
- 5.21 An examinee shall be permitted to suspend one trial and begin the procedure over again. A voluntary suspension of a trial shall not be counted as a failure of that trial.
- 5.22 The supplemental examiner shall not stop a trial at any point which an error is made.
- 5.23 Incorrect performance, or omission, of one or more of the steps of the performance checklist shall constitute failure of that trial.
- 5.24 An examinee shall be allowed a second trial for each standard test method if the first trial was not successfully completed.

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- 5.25 The second trial of a particular test shall not be conducted immediately following the first trial.
- 5.26 The second trial shall be administered by a different supplemental examiner than the first trial if more than one supplemental examiner is available.
- 5.27 A second trial, or voluntary repeat of a trial, shall require performance of the entire test method from the beginning, not from the point the error was made.
- 5.28 Immediately following completion of each trial, the supplemental examiner shall inform the examinee of the results, either pass or fail.
- 5.29 When a failure of a trial has occurred the supplemental examiner shall inform the examinee of the particular step(s) performed incorrectly.
- 5.30 The examinee shall be permitted to leave the examining area between trials to consult notes or books.
- 5.31 Failure on any of the prescribed ASTM Standards after two [2] trials will constitute failure of that part of the performance examination.

## SECTION 6.0 RE-EXAMINATION CRITERIA

- 6.01 Failure of the written examination by either of the criteria cited under Section 5.09 shall require a reexamination on the entire written examination.
- 6.02 Invalidation of the performance examination (for example non-conformance with Section 4.11) or **failure on one [1] or more** of the seven [7] required ASTM Standards shall require reexamination on the entire performance examination.
- 6.03 Reexamination on the written or the performance examination must be taken within one [1] year of the initial examination. Otherwise, both the written and the performance examinations must be retaken in their entireties.

## SECTION 7.0 APPEALS CRITERIA

- 7.01 Appeals regarding the conduct of the exam should be made during the exam session and shall be directed to the examiner.
- 7.02 In the event that the examinee is not satisfied with the decision of the examiner regarding an appeal, the examinee may pursue an appeal with ACI according to the following order:
1. Sponsoring Group
  2. ACI Director of Certification
  3. The Certification Appeals Committee [consisting of the Director of Certification; the Certification Programs Committee Chairman, and the Chairman of Committee C 610.]
  4. Committee C 610, Field Testing Technician Certification
  5. Certification Programs Committee

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- 7.03 Appeals submitted directly to ACI for consideration after the exam session must be received, in writing, within sixty [60] days of the receipt of the examination at ACI Headquarters.

## End of Policy Text





## Certification

### Certification Policies for ACI CSA Standards Concrete Field Testing Technician

The statements contained herein are approved policies and procedures. This revised policy statement supersedes all previous action of the ACI Board of Direction with respect to ACI CSA Standards Concrete Field Testing Technician certification. ®

The certification program policies are organized into seven sections as follows:

- |             |  |
|-------------|--|
| Section 1.0 | Certification Criteria   |
| Section 2.0 | Definitions  |
| Section 3.0 | ACI Responsibilities   |
| Section 4.0 | Examiner, Supplemental Examiner, and Proctor Criteria and Responsibilities |
| Section 5.0 | Examination Criteria   |
| Section 6.0 | Re-examination Criteria  |
| Section 7.0 | Appeals Procedures   |

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## SECTION 1.0 CERTIFICATION CRITERIA

- 1.01 The American Concrete Institute (ACI) certification program for ACI CSA Standards Concrete Field Testing Technician shall require successful completion of both a written examination and a performance examination.
- 1.02 No specific education or work experiences are required as prerequisites for ACI CSA Standards Concrete Field Testing Technician certification.
- 1.03 ACI certification for ACI CSA Standards Concrete Field Testing Technician shall be valid for a period of five [5] years from the date of completion of all certification requirements.
- 1.04 Recertification requires the successful completion of both a written and performance examination according to Section 5 of this policy.
- 1.05 Groups desiring to conduct ACI Certification program(s) shall adhere to the current *Policy on Sponsoring Groups for Certification* (Annex 611.1-1).

## SECTION 2.0 DEFINITIONS

- 2.01 Examinee - a person taking either the written or performance examination, or both.
- 2.02 Examiner - a person authorized by ACI to be in responsible charge of an examination session.
- 2.03 Performance Exam Checklist - a list of criteria used by the supplemental examiner to judge the compliance of the examinee with the provisions of the performance examination.
- 2.04 Proctor - a person authorized to assist the Examiner in conducting the written examination.
- 2.05 Supplemental Examiner - a person who assists the Examiner by administering the performance examination.

## SECTION 3.0 ACI RESPONSIBILITIES

- 3.01 ACI shall assemble, maintain and distribute all examination materials.
- 3.02 ACI shall approve the local sponsoring group.
- 3.03 ACI shall authorize the local sponsoring group to conduct examination sessions for ACI CSA Standards Concrete Field Testing Technician certification.



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- 3.04 ACI shall approve the examiner.
- 3.05 ACI shall grade the written examinations, review the performance examinations, and notify the examinee and the examiner of the final results in writing.
- 3.06 ACI shall certify examinees who meet the certification requirements.
- 3.07 ACI shall issue a certificate, wallet card, and hard hat decal to examinees who meet the certification requirements.

## SECTION 4.0 EXAMINER, SUPPLEMENTAL EXAMINER, AND PROCTOR CRITERIA AND RESPONSIBILITIES

- 4.01 To maintain access to ACI examination materials, the examiner shall maintain approval from ACI and authorization from the Local Sponsoring Group.
- 4.02 Applicants must be selected by an approved Sponsoring Group and shall submit a current ACI Examiner Application to ACI through that same Sponsoring Group.
- 4.03 In order to be considered for examiner status, the applicant shall have assisted in the administration of at least two (2) ACI examination sessions (any program including written and performance components where applicable), performing to the satisfaction of the examiner of record, and:
  - A) Satisfy the following criteria:
    - 1. Be a registered professional engineer, or hold equivalent international credentials; and
    - 2. Have been certified as an ACI CSA Standards Concrete Field Testing Technician or CSA-based Concrete Field Testing Technician; and
    - 3. Have had at least two (2) years of verifiable experience in concrete construction, inspection or testing.

OR

- B) Satisfy the following alternate criteria:
  - 1. Be certified as an ACI CSA Standards Concrete Field Testing Technician or CSA-Based Concrete Field Testing Technician – Grade I at the time of application; and
  - 2. Have had at least five (5) years of verifiable experience in ACI certification administration, concrete construction, inspection or testing; and
  - 3. Have participated in at least four (4) ACI examination sessions as a proctor and/or supplemental examiner for this program. This is in addition to the administration assistance, as stated above, but is permitted to be completed concurrently.


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- 4.04 The examiner shall be present at, and supervise, the examination session.
- 4.05 The examiner shall be directly responsible for the following activities:
- A) Select the supplemental examiners and proctors;
  - B) Verify the qualifications of the supplemental examiners and proctors according to the criteria outlined in Section 4.06 through 4.12 of this policy;
  - C) Order examinations;
  - D) Verify the identity of each examinee;
  - E) Assure that the examinees are aware of the certification criteria;
  - F) Verify that the examinees have signed the release statement on the performance examination prior to performing any test methods or procedures;
  - G) Verify the performance evaluations conducted by the supplemental examiners by co-signing the performance examination checklist report;
  - H) Enter the appropriate grade for the completed performance examination on the checklist report;
  - I) Assure that all examinees have an opportunity to perform each test method at least once and to take a second trial on any failed procedure of the performance examination;
  - J) Refrain from interpreting examination questions during the course of the written examination;
  - K) Assist, if requested, the examinee by providing definitions for general use words (i.e. “depict” = “shows”). Examiners shall not define terms specific to the CSA Standards whose definitions are readily available through adequate study of the Standards.
- 4.06 Proctors may assist the examiner in conducting the written examination.
- 4.07 Proctors shall satisfy the following requirements:
- A) Be selected, and adjudged qualified by the examiner; and
  - B) Be considered trustworthy and conscientious.
- 4.08 Supplemental examiners shall assist the examiner by conducting the performance examination.
- 4.09 Supplemental examiners shall satisfy the following requirements:
- A) Have had experience in concrete testing;
  - B) Be selected and adjudged qualified by the examiner;
  - C) Be considered trustworthy and conscientious;
  - D) Be certified as an ACI CSA Standards Concrete Field Testing Technician or CSA-Based Concrete Field Testing Technician - Grade I or equivalent certification under CSA A283 or be an ACI-approved examiner.
  - E) Be thoroughly familiar with current applicable CSA Standards as appropriate

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- 4.10 Examiners, supplemental examiners, examiners acting as supplemental examiners and proctors shall not conduct any portion of the examination for anyone with whom he/she is personally related.
- 4.11 Examiners, supplemental examiners, and examiners acting as supplemental examiners shall not examine anyone on the performance examination who is employed in the same organization. Governmental organizations may petition ACI, in writing, and request a waiver of this requirement. Waivers shall be granted only if it can be shown that the intent of the policy will be maintained.

## SECTION 5.0 EXAMINATION CRITERIA

- 5.01 The content of the written and performance examinations shall be derived directly from the *Job Task Analysis for ACI CSA Standards Concrete Field Testing Technician Certification (Annex 611.1-2)*.
- 5.02 Questions regarding general concrete technology shall not be included on either examination. 
- 5.03 The examinations shall be conducted by the examiner, proctors, and supplemental examiners as applicable. [See Section 4.]
- 5.04 The examiners, proctors, supplemental examiners, and sponsoring groups have no jurisdiction over the content of either examination, or over the grading of the written examination.
- 5.05 Both the written and performance examinations are closed book. Notes or other technical material related to the subject matter shall not be permitted in the examination area. Non-programmable calculators shall be permitted.

## WRITTEN EXAMINATION

- 5.06 The written examination shall consist of approximately fifty-six (56) multiple choice questions, with five to ten [5-10] questions on each CSA Standard.
- 5.07 One hour (60 minutes) shall be permitted for completion of the written examination, after which the exam answer sheets must be collected. Additional time, up to one-half hour, with access to the exam question booklet will be allotted to the examinee to facilitate exam question challenges.
- 5.08 If an examinee is incapable of understanding the written examination, it may be administered orally upon approval of the Examiner at least 14 days in advance of the exam date.
- 5.09 Successful completion of the written examination shall require the examinee:

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- A) Score sixty percent [60%] or higher on each individual CSA Standard (i.e. five [5] correct out of eight [8] questions); AND
- B) Score a minimum of seventy percent [70%] for the overall examination (i.e., forty (40) correct out of a possible fifty-six [56]).

## **PERFORMANCE EXAMINATION**

- 5.10 Successful completion of the performance examination shall require the examinee to satisfactorily perform each of the following CSA Standard Test Methods: A23.2-1C, A23.2-3C, A23.2-4C, A23.2-5C, A23.2-6C, A23.2-17C and A23.2-19C
- 5.11 It shall be the sponsoring group's responsibility to provide equipment which conforms to the applicable CSA Standards and that is in good working order. The examinee shall not be penalized as a result of faulty or incorrect equipment.
- 5.12 The examinee shall conduct the performance examination in the direct presence of the supplemental examiner or the examiner when acting as a supplemental examiner.
- 5.13 Supplemental examiners and examiners acting as supplemental examiners shall observe only one examinee conducting tests at a time while conducting the performance examination.
- 5.14 The procedures of CSA A23.2-1C may be described verbally or performed at the local sponsoring group's discretion.
- 5.15 For CSA A23.2-19C, the examinee shall perform the slump flow test only.
- 5.16 For CSA A23.2-3C, the examinee shall fabricate a compression test specimen.
- 5.17 At the conclusion of performing each test method the examinee must record the results of the test.
- 5.18 The examinee's performance shall be evaluated based on the criteria of the performance examination checklist.
- 5.19 The supplemental examiner shall indicate pass or fail for each step on the checklist.
- 5.20 Grading for the performance examination shall be on a pass/fail basis only.
- 5.21 An examinee shall be permitted to suspend one trial and begin the procedure over again. A voluntary suspension of a trial shall not be counted as a failure of that trial.

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- 5.22 The supplemental examiner shall not stop a trial at any point which an error is made.
- 5.23 Incorrect performance, or omission, of one or more of the steps of the performance checklist shall constitute failure of that trial.
- 5.24 An examinee shall be allowed a second trial for each standard test method if the first trial was not successfully completed.
- 5.25 The second trial of a particular test shall not be conducted immediately following the first trial.
- 5.26 The second trial shall be administered by a different supplemental examiner than the first trial if more than one supplemental examiner is available.
- 5.27 A second trial, or voluntary repeat of a trial, shall require performance of the entire test method from the beginning, not from the point the error was made.
- 5.28 Immediately following completion of each trial, the supplemental examiner shall inform the examinee of the results, either pass or fail.
- 5.29 When a failure of a trial has occurred the supplemental examiner shall inform the examinee of the particular step(s) performed incorrectly.
- 5.30 The examinee shall be permitted to leave the examining area between trials to consult notes or books.
- 5.31 Failure on any of the prescribed CSA Standards after two [2] trials will constitute failure of that part of the performance examination.

## SECTION 6.0 RE-EXAMINATION CRITERIA

- 6.01 Failure of the written examination by either of the criteria cited under Section 5.09 shall require a re-examination on the entire written examination.
- 6.02 Invalidation of the performance examination (for example non-conformance with Section 4.11) or **failure on one [1] or more** of the seven [7] required CSA Standards shall require re-examination on the entire performance examination.
- 6.03 Re-examination on the written or the performance examination must be taken within one [1] year of the initial examination. Otherwise, both the written and the performance examinations must be retaken in their entireties.

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## SECTION 7.0 APPEALS CRITERIA

- 7.01 Appeals regarding the conduct of the exam should be made during the exam session and shall be directed to the examiner.
- 7.02 In the event that the examinee is not satisfied with the decision of the examiner regarding an appeal, the examinee may pursue an appeal with ACI according to the following order:
1. Sponsoring Group
  2. ACI Director of Certification
  3. The Certification Appeals Committee [consisting of the Director of Certification; the Certification Programs Committee Chairman, and the Chairman of Committee C 611.]
  4. Committee C 611, Canadian Standards-based Certification
  5. Certification Programs Committee
- 7.03 Appeals submitted directly to ACI for consideration after the exam session must be received, in writing, within sixty [60] days of the receipt of the examination at ACI Headquarters.

**End of Policy Text**



## Certification

### Certification Policies for Shotcreter and Shotcreter-In-Training

*Last revised by the Certification Programs Committee  
March 5, 2024*

The statements contained herein are a consolidation of approved policies and procedures. This policy statement supersedes all previous action of the ACI Board of Direction with respect to Shotcreter certification.

The certification program policies are organized into seven sections as follows:

- |             |   |
|-------------|---|
| Section 1.0 | Certification Criteria                  |
| Section 2.0 | Examination Criteria                    |
| Section 3.0 | Re-examination Criteria                 |
| Section 4.0 | Appeals                                 |
| Section 5.0 | Sponsoring Group Criteria               |
| Section 6.0 | Examiner/Supplemental Examiner Criteria |
| Section 7.0 | ACI Responsibilities                    |
| Section 8.0 | Recertification Criteria                |

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## SECTION 1.0 CERTIFICATION CRITERIA

- 1.01 The American Concrete Institute (ACI) certification program for Shotcreter and Shotcreter-In-Training each require successful completion of both a written examination and a two-part performance examination, all to be completed within a one-year period.
- 1.02 No specific education is required as a prerequisite for Shotcreter certification.
- 1.03 For ACI Shotcreter certification, 500 hours of verified work experience as a shotcreter, with at least 100 hours in the process and the orientation of that process for which certification is sought is a prerequisite. Additionally, at least 200 hours of the work experience shall be with the shotcreter providing direct hands-on manipulation of the shotcrete nozzle during shotcrete placement (hand nozzling). Required work experience must be documented on an ACI Work Experience Form and submitted to the Sponsoring Group conducting the certification session prior to the scheduled testing date. The required 500 hours of work experience must be reviewed and verified by the Sponsoring Group and the scheduled examiner prior to certification session.
- 1.04 ACI Shotcreter -In-Training (SIT) certification is available to applicants who do not possess 500 hours of work experience, but do possess a minimum of 25 hours of hand nozzling work experience in the process being sought (vertical orientation only). The examiner of record may require an ACI-certified shotcreter to be present during the performance exam, however the ACI certified shotcreter's interaction with the examinee is strictly limited to the safety of the shooting operation.

*Note: A Shotcreter-in-Training must accumulate additional work experience hours (time directly operating the nozzle) to reach the full certification requirements. It is the intent of ACI Committee 506 - Shotcreting as expressed in ACI 506R, Guide to Shotcrete that a Shotcreter-in-Training is qualified to accumulate hours on projects requiring ACI-certified shotcreters by shooting under the direct supervision of a currently ACI-certified shotcreter whose certification(s) reflect the process and orientation being shot. The certified shotcreter directly supervising the SIT must be in a physical position to visually monitor all aspects of the shotcrete placement when the SIT is operating the nozzle, and the certified shotcreter supervising is fully responsible for the quality of shotcrete placement when an SIT is operating the nozzle.*

- 1.05 Upon successful completion of both the written and performance exams, applicants shall be certified as either ACI Shotcreter or ACI Shotcreter-In-Training for a period of 5 years.
- 1.06 SITs may upgrade to ACI Shotcreter by completing work experience as described in Section 1.03 and submitting for verification documented evidence of the work experience in a detailed log. The log shall contain all of the following information in a legible format:
- A) For each project the SIT has shot on provide general project information including:
1. Project name
  2. Project location
  3. Type of work (repair, new structure, thicknesses of sections shot)



4. Process used (wet-mix or dry-mix)
5. Description of equipment (type of wet-mix pump or dry-mix gun, material hose diameter, type of nozzle, capacity of air compressor)
6. Name of project supervisor
7. Employer (with contact name and phone)

B) Details of the time shooting for each project to include:

1. Dates shooting
2. Hours on the nozzle
3. Orientation of shooting
4. Area (ft<sup>2</sup>) or volume (yd<sup>3</sup>) placed

Each entry for the details of time shooting in the log shall represent no more than one week's work. Upon completion of the minimum of 500 hours of shooting work experience, a printed copy of the log shall be reviewed and signed by the SIT's current employer, along with the signature of the SIT. The signed log shall be submitted to the LSG, who will send to the ACI examiner of record. Upon satisfactory review by the ACI examiner of record, the SIT shall become an ACI Shotcreter in the process(es) and orientation(s) reflected in the verified work experience for the remainder of the original SIT certification term (less than 5 years).

- 1.07 Certification as an ACI Shotcreter may be renewed by satisfying the recertification requirements.

## SECTION 2.0 EXAMINATION CRITERIA

- 2.01 The content of the written and performance examinations shall be derived directly from the *Job Task Analysis for ACI Shotcreter Certification* (Annex 660.1-1).
- 2.02 All written and performance examinations are closed book. Notes or other technical materials shall not be permitted in the examination area.
- 2.03 The examinations shall be conducted by the examiner, proctors, and/or supplemental examiners as applicable (See Section 6).
- 2.04 The examiners, proctors, supplemental examiners, and/or sponsoring groups do not have any jurisdiction over the content of any examination, or over the grading of the written examination.

### WRITTEN EXAMINATION

- 2.05 The examinee will be required to pass a written examination for each type of process in which he/she wishes to be certified (wet-mix and/or dry-mix).
- 2.06 The entire written examination for either wet-mix or dry-mix will consist of 60 to 90 questions. The questions may be either true-false or multiple choice.

# ANNEX 661.1-3

- 2.07 A maximum of 90 minutes shall be permitted for completion of either the wet-mix or the dry-mix examination. The examiner may allow additional time for a verbal examination.
- 2.08 Verbal administration of the written exam shall be permitted in special cases when conducted in accordance with ACI guidelines.
- 2.09 A score of 75% or higher constitutes a passing grade on each written exam.

## **PERFORMANCE EXAMINATION**

- 2.10 The performance examination shall require the examinee to demonstrate all the essential steps involved in proper shotcrete technique from initial preparation through placing and curing.
- 2.11 All examinees are required to certify with a test panel in the vertical position. The examinee may choose to also certify in the overhead position. Each shooting position in each process requires a separate performance demonstration test panel. Certification in an overhead orientation is an add-on to their current vertical certification in that process and will be effective for the same time period as their current vertical certification.
- 2.12 The test panel to be shot shall be of the minimum dimensions and edge configuration shown in drawing sketch A, Appendix I. The vertical test panel shall be positioned within ten (10) degrees of vertical and the overhead panel shall be positioned horizontally at approximately 2.5 meters (8 feet) from grade.
- 2.13 Reinforcement shall be incorporated in the test panel per drawing in Appendix I. The steel reinforcing bars identified in Appendix I can be replaced by similar size fiber reinforced polymer bars designed for use in reinforced concrete having diameters similar to those of steel reinforcing bars. Wood dowels or smooth FRP bars are not allowed as reinforcement in the test panel.
- 2.14 The shotcrete mixture design used shall be a mixture in common use in the geographic area of the test site. The mixture for the wet mix process may be a locally supplied ready mix or dry materials wet-mixed at the test site.  
  
Dry mix may be pre-packaged materials or bulk materials dry-batched at the test site.  
  
Mixtures may contain accelerators. The Host shall make information available to the applicant regarding mixture design/methods and type of equipment to be used at least one week before conducting the performance examination.
- 2.15 The shotcreter is expected to verify the adequacy of the test panel form, reinforcing placement, panel support/bracing, etc., as part of the performance examination.
- 2.16 The shotcreter shall be supported by an adequate crew consisting of an experienced gunman or pump operator, and an optional nozzle helper/airlance-blowpipe operator.

- 2.17 All work shall be done in the direct presence of the examiner or supplemental examiner(s) as applicable in Section 6.07.

## **PERFORMANCE EVALUATION**

- 2.18 The examinee's performance will be evaluated based on a two-part performance examination: Part I, demonstrating to the examiner or supplemental examiner the examinee's knowledge of all the items covered on the Performance Checklist; and Part II, five (5) cores will be cut from the performance demonstration test panel to evaluate soundness of shotcrete.
- 2.19 Grading of the Part I performance workmanship will be based on a point system as set forth on the performance checklist, with points deducted for failure to perform, or incorrect performance of various required elements.
- 2.20 The minimum passing grade for the Part I performance evaluation shall be 75%.
- 2.21 For Part II, grading of the cores is based on visually examining, measuring defects and grading each of five (5) cores located as shown on sketch A, Appendix I; grading considers various defects, such as (but not limited to) sand lenses, porosity pockets, random voids, and especially voids around reinforcing bars (*ref.*: Appendix II).
- 2.22 A test panel with any single core grade exceeding grade 3, or with more than two (2) of the five (5) cores having a core grade 3 will be declared a failure. Core grades shall not be averaged.

## **SECTION 3.0 RE-EXAMINATION CRITERIA**

- 3.01 Failure of the written examination by the criteria cited in Section 2.09 shall require reexamination on the written examination for the process that was failed.
- 3.02 Failure of either Part I or Part II of the performance examination shall require reexamination on the entire performance examination.
- 3.03 Reexamination of a performance examination on the same day as original examination will only be permitted at the examiner's option and on a time-and-materials-available basis, subject to processing all other scheduled examinees.

In the event of equipment malfunction during shooting of a test panel, the examinee is permitted to wash out said panel and start over.

- 3.04 The performance exam for the vertical test panel must be passed for certification to be issued (see Section 2.11). If an examinee pursues certification in the overhead position as well and fails the performance exam for the vertical test panel, the entire performance exam must be retaken including (if still desired) the performance exam for the overhead panel.

- 3.05 Reexamination on the written or the performance examination must be taken within one year of the initial examination. Otherwise, both the written and the performance examinations must be retaken in their entirety.

## SECTION 4.0 APPEALS CRITERIA

- 4.01 All appeals shall be directed initially to the examiner.
- 4.02 In the event that the examinee is not satisfied with the decision of the examiner regarding an appeal, the examinee may pursue an appeal with ACI according to the following order:
1. Sponsoring Group
  2. ACI Director of Certification
  3. The Certification Appeals Committee (consisting of the Director of Certification, the Chairman of the Certification Programs Committee, and the Chairman of Committee C660)
  4. Committee C660, Shotcreter Certification
  5. Certification Programs Committee
- 4.03 Appeals submitted to ACI for consideration must be received, in writing, within sixty (60) days of the receipt of the examination at ACI Headquarters

## SECTION 5.0 SPONSORING GROUP CRITERIA

Groups desiring to conduct ACI Certification program(s) shall adhere to the current *Policy on Sponsoring Groups for Certification* (Annex 660.1-2).

Because of specialized venue and equipment requirements, Shotcreter certification examination sessions are typically conducted as “in-house” sessions. The business, organization, or individual providing the venue (and equipment) for the session is known as the “host” for the purposes of this Policy.

*Note: The “ACI Shotcreter Certification Policy for Hosts and Participants” is considered part of the present policies (Appendix IV).*

For the Shotcreter Certification program (both wet & dry processes), Sponsoring Groups shall also be responsible for the following:

- 5.01 Ensure that the ACI Host Relationship Disclosure form is signed and completed by the scheduled examiner, and that the relationship between the host and examiner does not constitute a conflict of interest.
- 5.02 Ensure that the required work experience for each applicant is documented on an ACI work experience form, that the examiner has verified the experience, and that all required signatures are present on the form prior to conducting a certification session.

*Note: The prerequisite 500 hours work experience documentation is not required if proof of participation in a previous ACI Shotcreter Certification session is demonstrated.*

- 5.03 Ensure that a copy of all applicants' work experience forms and the ACI Host Relationship Disclosure form is provided to ACI.
- 5.04 Ensure that no financial or barter transactions involving ACI certification services take place between the examiner and the individuals pursuing certification or their employers. All payments for certification exam services are required to be made directly to the Sponsoring Group. All compensatory payments for certification examination services to the examiner shall be made directly by, and only from, the Sponsoring Group.
- 5.05 Exceptions to the requirements of Sections 5.01 through 5.04 may be granted on a case-by-case basis, and only with the expressed written approval of the ACI Director of Certification.

## SECTION 6.0 EXAMINER/SUPPLEMENTAL EXAMINER CRITERIA

- 6.01 The examiner shall be approved by ACI with the assistance of a Task Group under Committee C660 for dry-mix and/or wet-mix shotcrete. Qualifications shall be submitted on Form D3 for each process.
- 6.02 The examiner shall be authorized by ACI to conduct Shotcreter Certification examinations for only the shotcrete process for which the examiner is approved.
- 6.03 In order to be considered for approval as an examiner the applicant shall meet the following requirements:
- A) Be knowledgeable about shotcrete and thoroughly familiar with the current applicable reference documents.
  - B) Have a total of at least 5 years documented experience in at least two of the following four categories:
    - 1) Testing, inspection, and quality control of shotcrete
    - 2) Supervision of shotcrete construction work
    - 3) Design or evaluation of shotcrete structures
    - 4) Shotcrete nozzling
  - C) Have sufficient experience to evaluate and judge the qualifications of shotcreter applicants and conduct written and performance examinations. For each process, this experience must be, but is not limited to:
    - Knowledge of both vertical and overhead spraying
    - Knowledge and experience on more than one type of equipment (gun, pump, nozzle)
  - D) Have, to the satisfaction of the examiners of record, participated in all phases of at least two (2) ACI-sanctioned Shotcreter Certification programs for each process for which approval is sought, with different examiners of record for each session. For the first session, the applicant must serve as proctor and supplemental examiner. For the second session, the applicant shall serve as a proctor and supplemental examiner and personally conduct all phases of the session including written

examination, performance examination, and core grading, under direct supervision of the examiner of record for both vertical and overhead.

E) Have attained a passing grade on the written exam for each process sought.

6.04 In order to maintain examiner status, an examiner shall meet the following requirements:

A) Have conducted or assisted in at least (3) ACI-sanctioned Shotcreter Certification programs in five (5) years,

B) Stay current on the Policies by visiting the ACI website, reading and responding to the examiner newsletter, or attending an examiner round table or virtual meeting with sponsoring group at least once a year.

6.05 Examiners, Supplemental Examiners, and Proctors must recuse themselves from any conflict-of-interest situation while acting as agents of ACI in conducting exam sessions. This includes but is not limited to meeting the following conditions:

A) Examiners, supplemental examiners, and proctors shall not be professionally or personally related to the Host, its parent or subsidiaries, or examinees at the time of the exam session.

B) Examiners and supplemental examiners shall not be employed by the same organization (including parent or subsidiaries) as any of the examinees at the time of the exam session.

C) Examiners, supplemental examiners, and their employers shall not be in a business relationship with the Host, its parent or any subsidiaries at the time of the exam session.

D) Examiners, supplemental examiners, and their employers shall not be in a business relationship on any project that the Host, its parent, or any subsidiaries have a business relationship at the time of, and six (6) months prior to, the exam session.

*Note: ACI policies are intended to aid in the identification and remediation of any aspect of the examination process that could result in invalidation of an exam session and sanction of an Examiner. It is not possible to enumerate even identify all conflict-of-interest situations for listing in this policy, therefore, ACI urges Examiners and Sponsoring Groups to communicate with ACI during the session planning stages and obtain guidance from ACI leaving enough time for adjustments prior to the exam session if needed to assure policy compliance.*

6.06 Supplemental examiners shall have experience in shotcrete work per paragraph 6.03B and shall be approved by and perform at the direction of the examiner.

6.07 Supplemental examiners shall be permitted to assist in conducting Part I and Part II of the performance examination.

6.08 Proctors shall be permitted to assist the examiner in conducting the written examination.

6.09 Proctors shall satisfy the following requirements:

A) Be selected by the examiner

# ANNEX 661.1-3

- B) Be considered trustworthy and conscientious by the examiner.

6.10 The examiner shall be directly responsible to:

- A) Complete and submit to the Sponsoring Group prior to the session a signed and completed ACI Host Relationship Disclosure form.
- B) Review and verify each applicant's work experience. Verification requires the completion of two steps:

1. Review each applicant's work experience submitted on an ACI form for completeness and feasibility (i.e., it is possible for the applicant to have accumulated the required experience within the timeframe reflected on the Work Experience Form).
2. Contact and speak directly with the applicant prior to approving / signing the applicant's Work Experience Form; this may be by phone if the applicant's identity can be verified, or in person. The complete content and length of the Examiner's interview with the applicant is left to the Examiner's judgment and discretion in deciding if, in their opinion, the applicant possesses the required minimum amount of work experience. Every applicant interview must include the following:
  - Verification of the applicant's identity.
  - Discussion of any items on the applicant's Work Experience Form that seems incomplete, questionable, or require clarification.
  - Discussion of the applicant's shotcreter experience including how long they have been a shotcreter, the type of work they have been involved in (vertical vs overhead, dry- vs wet-mix, etc.), and the type of equipment they have used.

Once assured of the accuracy of the information on the applicant's Work Experience submission and that a minimum of hours (as per Section 1.03) as a shotcreter has been demonstrated, the Examiner must sign and date the applicant's ACI approved work experience form and return a signed copy to the Sponsoring Group.

- C) Select the supplemental examiners and proctors.
- D) Verify the qualifications of the supplemental examiners and proctors according to the criteria outlined in Section 6.07 through 6.10.
- E) Communicate examination needs to the Sponsoring Group.
- F) Verify the identity of each examinee at the session (photo ID) and ensure that the examinees are aware of the certification criteria. In addition, a photo must be secured of each participant (face shot) at the session.
- G) Verify that the examinees have signed the release statement on the written and performance examinations at the session prior to testing.

# ANNEX 661.1-3

- H) Verify that materials, mix designs, and equipment are suitable for the program.
- I) Verify that the test panel conforms to Appendix I, Sketch A, and verify the reinforcing bar location (to ensure accurate locations for later coring).
- J) Verify that test panels are secured to minimize vibration and prevent tipping or collapse.

*Note: Appendix III of this Policy contains approximate weight and force parameters and an example of a configuration that has been used successfully. Overhead applications deserve particular attention due to the weights involved and the potential for “dropouts” (in-place shotcrete falling out during or immediately after shooting). All ACI shotcreter certification sessions shall comply with all applicable Federal, Regional, and Local safety regulations.*

- K) Be present and in full supervision during the examination sessions (written and performance).

*Note: Historical administrative experience indicates that maximum of 14 panels in one day is advised to facilitate Examiner control of sessions. Examiner(s) exceed this number of panels only in special cases if the program policies are maintained throughout the duration of the examination session, and the order, fairness, objectivity and thoroughness of the process intended by the policies are preserved.*

- L) Ensure that neither they nor their examiner candidates and/or supplemental examiners individually observe more than one examinee conducting tests at any one time during the performance examination.
- M) Verify that the performance evaluations were conducted by examiners or by approved supplemental examiners, review and co-sign the performance checklists where appropriate.
- N) Arrange for removal and positive identification of cores from test panels.

*Note: All panels are to be cored, even if the examinee fails other parts of the performance exam. In the particular situation where encapsulation of reinforcement is so inadequate that it may prove unsafe to core or it proves impossible to extract a complete specimen, detailed photographs of the back panel are required along with a detailed description of the defects justifying the canceling of coring; such description should be presented in the examinee’s performance exam document.*

- O) Perform or direct the layout of core locations.
- P) Be present and in full supervision of panel stripping and coring. Photograph the back of the stripped panel prior to coring.
- Q) Visually examine and grade cores. Photograph all extracted cores that reflect the performance of the examinee and take individual photos of cores with failing core grades.
- R) Collect and summarize all test data (complete and sign the Performance Checklist - Part II, Grading Summary, and Checklist Report for each examinee) and collate with written examinations.
- S) Forward all test data to the Sponsoring Group for preparation and shipment to ACI Headquarters, Certification Department.



- T) Conduct detailed interviews of examiner applicants assisting in administering sessions, evaluating their abilities in administering examinations, and forwarding the results of their evaluation to ACI Headquarters with the session materials.

## SECTION 7.0 ACI DUTIES AND RESPONSIBILITIES

- 7.01 ACI shall approve the sponsoring group.
- 7.02 ACI shall approve the examiner. Examiner re-approval is required every five (5) years.
- 7.03 Examiner approval may be suspended or revoked by ACI at any time. The following are examples of behavior that could lead to suspension or revocation:
  - A) Falsifying documents
  - B) Failure to adhere to Section 6.04, 6.05 and 6.10 of this Policy
  - C) Conveying or implementing any shotcrete related task or information during an examination session that are not supported and/or contradictory to current ACI guidelines and technical writings <sup>®</sup>
- 7.04 ACI shall authorize the sponsoring group to conduct examination sessions for Shotcreter Certification.
- 7.05 ACI shall grade the written examinations, review the results of the performance examination/evaluations, and notify the examinee and examiner of the final results in writing.
- 7.06 ACI shall certify the examinees who have satisfied the certification requirements.
- 7.07 ACI shall issue a certificate, wallet card, and hard-hat decal to successful examinees.

## SECTION 8.0 RECERTIFICATION

Shotcreters may recertify for an additional five (5) year period by successful completion of all the certification requirements outlined in Sections 1.0, 2.0, and 3.0 of this policy or, if eligible, by participating in the alternative recertification process as follows:

# ANNEX 661.1-3

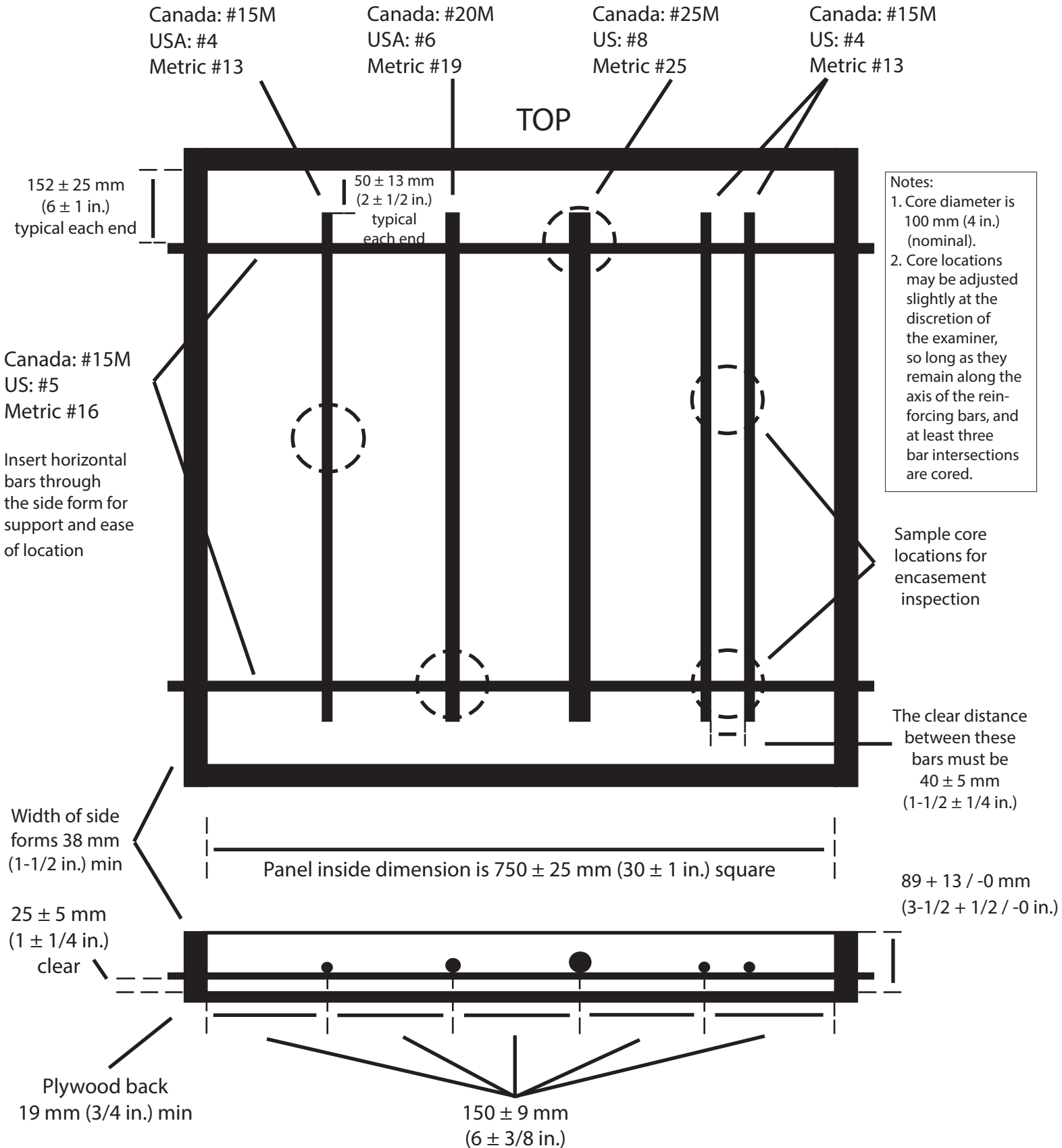
- 8.01 The recertification process described in Section 8.02-8.03 is available only to candidates who meet the following criteria:
- A) Shotcreters previously certified by ACI who are seeking recertification in the same process (wet-mix or dry-mix) as their previous ACI-issued certification; *and*
  - B) Shotcreters participating in recertification within 6 years of their previously -issued ACI certification; *and*
  - C) Shotcreters possessing at least 500 hours of work experience as a shotcreter (wet-mix or dry-mix) with at least 100 hours in each process and orientation for which recertification is sought and are within the two (2) years immediately prior to seeking recertification.

Shotcreters-In-Training who do not collect enough work experience to upgrade to full Shotcreter certification within the five-year certification period as described in Section 1.06 may renew SIT certification only through the process described in Sections 1.04-1.05.

- 8.02 Information described in Sections 8.01A through 8.01C required for determination of candidate eligibility for recertification shall be gathered, evaluated, and verified by the examiner prior to administration of any recertification examination as described in Sections 8.03A and 8.03B.
- 8.03 Candidates who meet the criteria listed in Section 8.01 as determined by the Examiner may renew their certification (recertify) by successfully completing:
- A) A structured interview with the Examiner. The interview is in lieu of the written exam requirement imposed for initial certification and is designed to substantiate that the candidate has retained his knowledge of the safe and competent application of shotcrete and is made aware of any new developments in this area of concrete construction; and
  - B) A performance examination per the policies described in Sections 2.01 through 2.04, Sections 2.10 through 2.22, and Sections 3.02 through 3.04.
- 8.04 The verbal interview must be conducted within the time frame described in Section 8.01B. If the interview is not conducted within this time frame, the candidate seeking recertification shall be required to take the written examination per the policies described in Sections 2.05 through 2.09, and Sections 3.01 and 3.05.

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## APPENDIX 660.1-1



Reinforced test panel layout with core sampling locations -- Includes proposed construction method.

## APPENDIX 660.1-2

# SHOTCRETE CORE GRADES

*ONLY FOR USE IN THE EVALUATION OF CORES DURING  
ACI SHOTCRETER CERTIFICATION*

*October 2012*

*Core grading is not an exact science; evaluation & grading of cores require judgment from the Examiner.*

*This grading process should employ the use of both photos and written description to provide guidance and, when needed, other aspects linked to the placement of shotcrete such as the inspection of the back of the panel for rebound or overspray entrapment or other visible defects not necessarily found on the surface of the cores.*

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### Core Grade 1

Dry-mix shotcrete, two #4 bars, perfect encapsulation



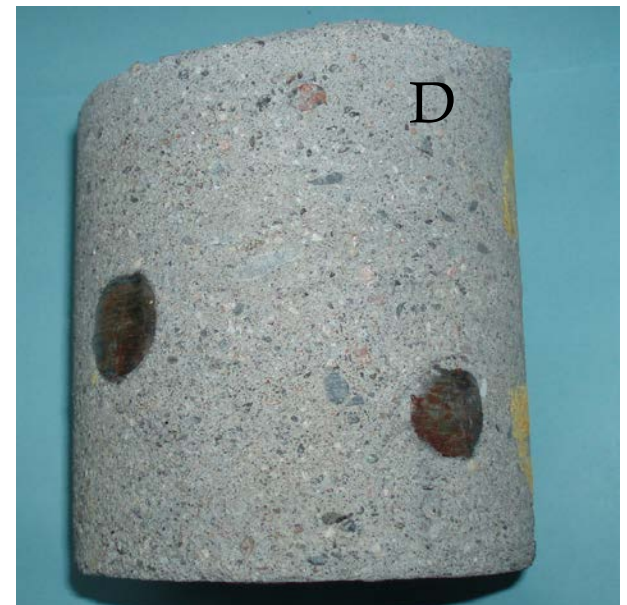
### Core Grade 1

Dry-mix shotcrete, two #4 bars, small sandy area less than 1/4 in depth



### Core Grade 1

Dry-mix shotcrete, two #4 bars, small void less than 1/4 in long and depth present under bar on left

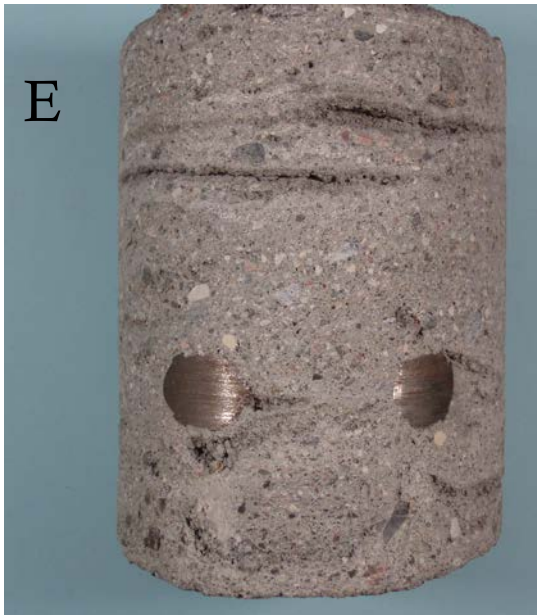


### Core Grade 1

Dry-mix shotcrete, intersection between #4 and #4 bars, perfect encapsulation

**Core Grade 1:** Shotcrete specimens are solid; there are no laminations, sandy areas or voids. Small air voids with a maximum diameter of 1/8 in. and maximum length of 1/4 in. are normal and acceptable. Sand pockets, or voids behind continuous reinforcing steel are unacceptable. The surface against the form or bond plane shall be sound, without a sandy texture or voids.

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E

## Core Grade 2

Dry-mix shotcrete, #4 bar,  
sand lenses



F

## Core Grade 2

Dry-mix shotcrete, #6 bar, small-  
unconnected voids behind  
reinforcement



G

## Core Grade 2

Dry-mix shotcrete, intersection #4  
bars, small size void.



H

## Core Grade 2

Dry-mix shotcrete, #4 bar, small void.

**Core Grade 2:** Shotcrete specimens shall have no more than two laminations or sandy areas with dimensions not to exceed 1/8 in. thick by 1 in. long. The height, width and depth of voids shall not exceed 3/8 in. Porous areas behind reinforcing steel shall not exceed 1/2 in. in any direction except along the length of the reinforcing steel. The surface against the form or bond plane shall be sound, without a sandy texture or voids. .

## ANNEX 661.1-3



### Core Grade 3

Dry-mix shotcrete, #4 bar,  
sand lenses



### Core Grade 3

Dry-mix shotcrete, #8 bar, one  
important void directly behind rebar,  
smaller than  $\frac{1}{4}$  dept and  $\frac{3}{4}$  in long



### Core Grade 3

Dry-mix shotcrete, intersection #4  
bars, mid size void too large to be a  
CG2.



### Core Grade 3

Dry-mix shotcrete, intersection #4  
bars, linear defect from bar extending  
to back of panel. No interconnection  
detected or void against panel.

**Core Grade 3:** Shotcrete specimens shall have no more than two laminations or sandy areas with dimensions exceeding  $\frac{3}{16}$  in. thick by  $1\frac{1}{4}$  in. long, or one major void, sand pocket, or lamination containing loosely bonded sand not to exceed  $\frac{5}{8}$  in. thick and  $1\frac{1}{4}$  in. in width. The surface against the form or bond plane may be sandy with voids containing overspray to a depth of  $\frac{1}{16}$  in.

## ANNEX 661.1-3



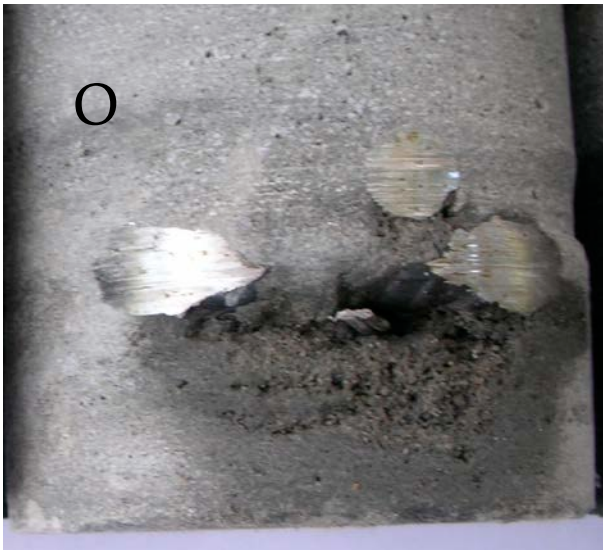
### Core Grade 4

Wet-mix shotcrete, #6 bar, single void,  $\frac{1}{2}$ " on the surface,  $\frac{3}{4}$ " deep.



### Core Grade 4

Dry-mix shotcrete, #8 bar, one important void directly behind rebar,  $\frac{1}{2}$ " on surface and  $\frac{3}{4}$ " deep



### Core Grade 4

Dry-mix shotcrete, intersection #4 bars, mixture of entrapped rebound and void. Flaw is 1" in size on surface.



### Core Grade 4

Dry-mix shotcrete, #6 bar, entrapped rebound visible on both size of core; no visible trace at back of panel

**Core Grade 4:** Grade 4 core: The core shall meet in general the requirements of Grade 3 cores, but may have two major flaws such as described for Grade 3 or may have one flaw with a maximum dimension of 1 in. (25 mm) perpendicular to the face of the core with a maximum width of  $1\frac{1}{2}$  in. The end of the core that was shot against the form may be sandy and with voids containing overspray to a depth of  $\frac{1}{8}$  in.

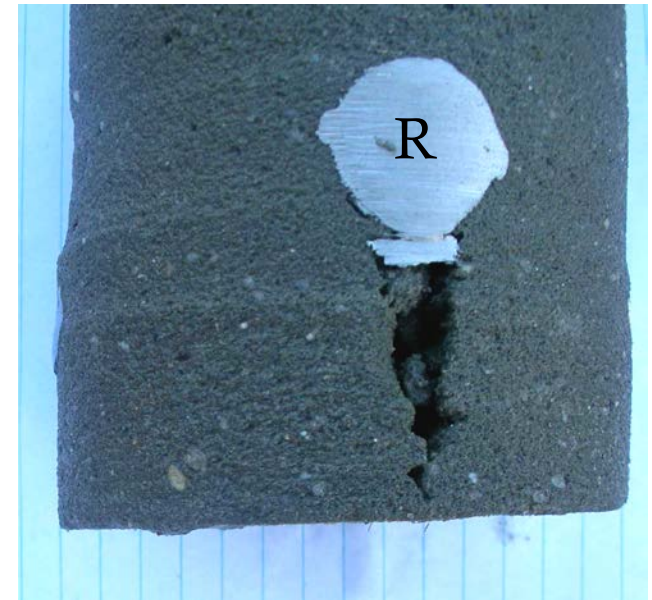


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## Core Grade 5

Dry-mix shotcrete, #8 bar, large void behind each bar



## Core Grade 5

Wet-mix shotcrete, #8 bar, one important void directly behind rebar, over 1" long on core surface, trace at the back of the core



## Core Grade 5

Dry-mix shotcrete, intersection #4 bars, large sand lenses.



## Core Grade 5

Dry-mix shotcrete, intersection #4 and #6 bars, 1/2" void behind bar on both sides with sandy reflection on the back of the panel.

**Core Grade 5:** Grade 5 core: A core that does not meet the criteria of core grades 1 through 4, by being of poorer quality, shall be classified as Grade 5.

# ANNEX 661.1-3

## APPENDIX I I €€€H SECURING TEST PANELS

- I. Vertical panels:
  - A. Vertical panels are to be positioned within 0 to 10 degrees of vertical at or near grade.
  - B. Backing or bracing and foundation support must be rigid enough to preclude excessive vibrations and guard against panel tipping either forward or backward.
  - C. Dynamic forces against the panel vary with equipment used, but should resist a horizontal force of at least 100 lb minimum.
  
- II. Overhead panels:
  - A. Overhead panels are to be positioned horizontally at an elevation approximately 2.5 meters (8 ft) from grade.
  - B. On average, the total weight of a full shotcreted test panel will weigh 350 to 425 lb. In addition, a weight of 50 to 100 lb is often added on top of the empty panel before shooting to minimize vibration. (See drawing of a typical overhead setup at the end of this *Appendix*).

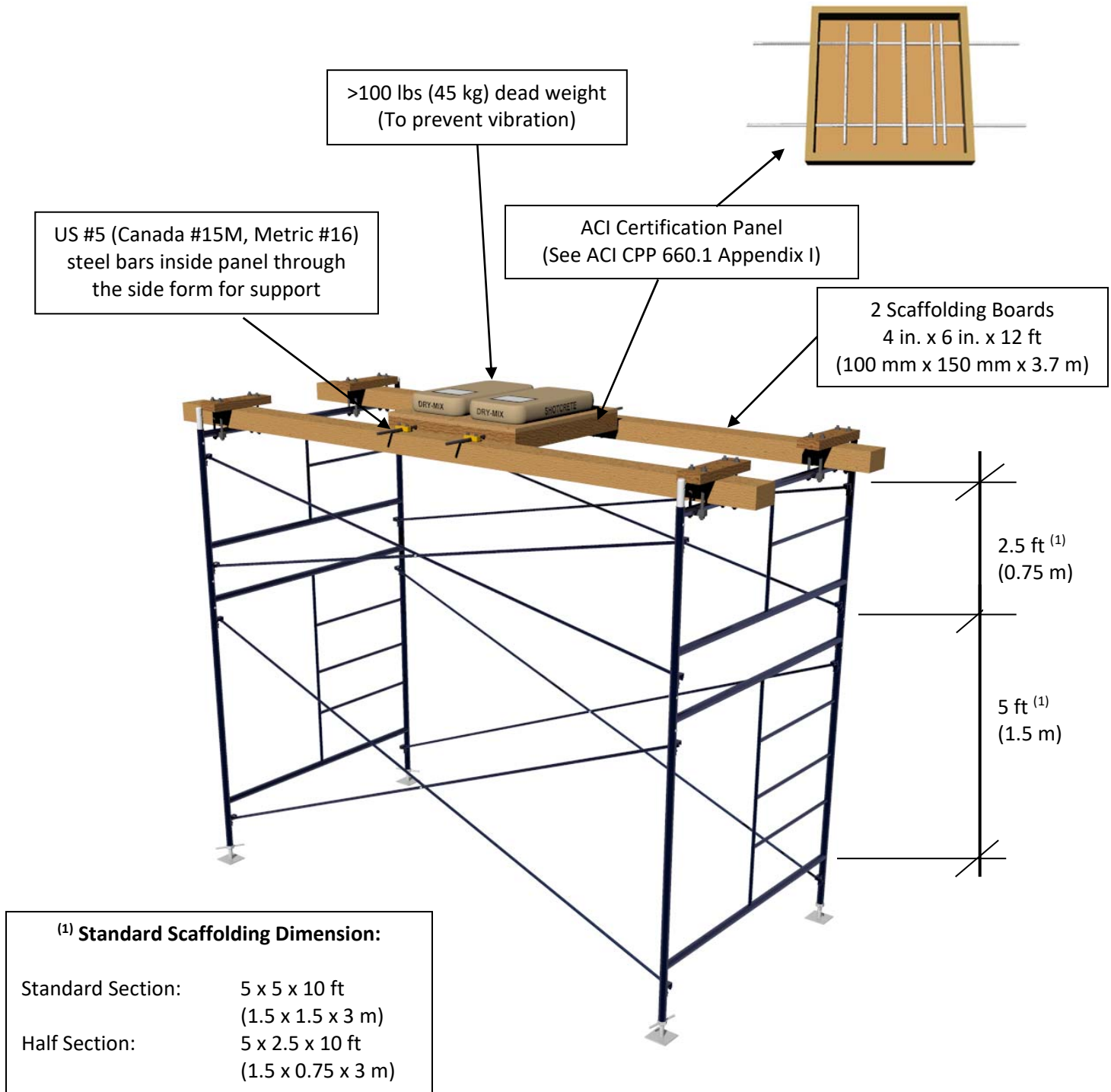
The number of panels and their spacing will then dictate the size and load-carrying capacity of the support framework. When multiple panels are to be shot in the same session, it is important to either allow adequate space between panels, or provide some means of protecting adjacent panels from over-spray.
  - C. Metal scaffolding or shoring systems are the most common support methods used. These will usually come with recommended load capacity data. A safety factor of at least 3 times expected loads (or more, if OSHA or local safety authorities require) is recommended.
  - D. For wood systems, 4 x 4 in. wood posts, along with horizontal beams sized (by calculation) for proposed spans, have been used.
  - E. For any of the above noted systems, lateral/sway bracing is also extremely important. This needs to be taken into account when designing the systems so as to allow ready access under the panels for the shotcreter.
  - F. The loads involved are substantial, therefore if there is any doubt or uncertainty about the load carrying capacity of a system, it should either be proof-loaded or designed by a P.E.

*Drawing of a typical overhead setup follows on the next page.*

# ANNEX 661.1-3

## APPENDIX 660.1-3

### ACI SHOTCRETER CERTIFICATION TYPICAL OVERHEAD SET-UP



# ANNEX 661.1-3

## APPENDIX 660.1-4

### ACI Shotcreter Certification Procedures for Sponsoring Groups, Hosts, and Candidates

#### 1 - Introduction

This document describes the responsibilities of and relationship between ACI, its Shotcreter Certification Sponsoring Groups, the “Hosts” of Exam Sessions, and Certification Candidates.

Shotcreter Certification sessions are typically organized through the participation of “Hosts.” Hosts may make the certification session available to the public, but typically keep them private (“in-house”) for their own employees. The Host shall have no relationship with the session Examiner that is prohibited by the ACI Policy for ACI Certification of Shotcreter (excerpted to Section 2.7 *Conflict-of-Interest* of this document).

#### 2 - Definitions

**2.1 Sponsoring Group:** The entity identified by ACI as their agent in administering the ACI Shotcreter Certification program according to established ACI policy.

**2.2 Host:** The Host is the organization, group or individual in charge of planning and coordinating the facility for the certification session. The Host could be a consultant, contractor, association, union, etc...

**2.3 Organizer:** The single person identified by the Host as the coordinating contact for ACI, the Sponsoring Group and the Examiner.

**2.4 Examiner:** Individuals approved by ACI as Examiners, appointed by the Sponsoring Group to its roster of Examiners to fulfill all Examiner duties of a session.

**2.5 Candidates:** Individuals pursuing certification; Candidates become Participants when their Work Experience is verified by the Examiner.

**2.6 Participants:** Individuals pursuing certification who have been cleared to participate in the performance exam by Examiner verification of their work experience.

**2.7 Conflict of Interest:** Examiners, Supplemental Examiners, and Proctors must recuse themselves from any conflict-of-interest situation while acting as agents of ACI in conducting exam sessions. This includes but is not limited to the following conditions:

- A) Examiners, supplemental examiners, and proctors shall not be professionally or personally related to the Host, its parent or subsidiaries, or examinees at the time of the exam session.
- B) Examiners and supplemental examiners shall not be employed by the same organization (including parent or subsidiaries) as any of the examinees at the time of the exam session.
- C) Examiners, supplemental examiners, and their employers shall not be in a business relationship with the Host, its parent or any subsidiaries at the time of the exam session.
- D) Examiners, supplemental examiners, and their employers shall not be in a business relationship on any project that the Host, its parent, or any subsidiaries have a business relationship at the time of, and six (6) months prior to, the exam session.

ACI reserves the right to determine if a conflict of interest exists.

**2.8 ACI Shotcreter Certification Program Policies:** The ACI Shotcreter program policies were created

# ANNEX 661.1-3

## APPENDIX 660.1-4

and are maintained by ACI Committee C 660 – *Shotcreter Certification*. The program policies are the ultimate authority in conduct and operation of the ACI Shotcreter Certification program.

**2.9 ACI Examiner/Host Relationship Disclosure Form (Form A):** A form that documents the relationship between the Examiner and the Host. Completion and signing of the form, and review and approval by the Sponsoring Group (i.e., the Sponsoring Group determines that no conflict-of-interest relationship exists between the Examiner and Host), is required before an order for exam materials is placed with ACI.

### 3 - Responsibilities

**3.1 Host Responsibilities:** The Host is in charge of naming an Organizer who will serve as the Host's agent/representative throughout the certification process. The Host is responsible for all safety aspects related to the certification process. The Host is responsible for payment of the fees and expenses related to the Certification session. All fees and expenses will be billed through the Sponsoring Group at the established standard rates. The Host must provide completed certification Work Experience forms, materials, and equipment for certification as well as a safe working area for the examinations. The Host is also responsible for the extraction of the required cores (under Examiner supervision) from each Participant's test panels. A complete listing of Host responsibilities can be found on the *Host Responsibilities Checklist and Acknowledgement (Form B)*.

**3.1.1** The Host must provide a current certificate of insurance to Sponsoring Group staff prior to the certification session. The Host's insurance must include general liability insurance with a minimum of one (1) million dollars coverage per occurrence.

**3.1.2** The Host must provide to Sponsoring Group staff prior to the session, a certificate of Workman's Compensation Insurance for all participants in the session.

**3.1.3** The Host must complete and submit the *Host Responsibilities Checklist and Acknowledgment (Form B)*.

**3.2 Organizer Responsibilities:** The Organizer coordinates with the Examiner to properly execute all Host responsibilities, including ensuring that the Host's exam venue is properly prepared for the exam session (e.g., materials, equipment, and presence of the Participants).

**3.3 Candidate Responsibilities:** The Candidate is responsible for completing and signing their prerequisite 500 hours of shotcreter experience on an ACI Work Experience form. Candidates are also required to participate in a brief conversation with the Examiner as part of the ACI Work Experience evaluation. The completed form(s) must be submitted to the Host's Organizer for final review, signature, and submission to the Sponsoring Group. Intentional falsification of work experience documentation may result in invalidation of the session examinations, forfeiture of fees, and legal action.

**3.4 Participant Responsibilities:** Attend the ACI Certification exams.

**3.5 Sponsoring Group responsibilities:** The Sponsoring Group is responsible for all fees for exam processing, reporting, and issuance of credentials charged by ACI, and for billing Hosts for all Sponsoring Group costs incurred related to the execution of the examination sessions. The Sponsoring Group will coordinate all session details between the Host's Organizer, the session Examiner, and ACI. The Sponsoring Group is solely responsible for assigning the Examiner for the examination session.

# ANNEX 661.1-3

## APPENDIX 660.1-4

The Sponsoring Group will handle all financial transactions related to the examination session, including payment to the Examiner for services rendered. The Sponsoring Group fields the initial request from the potential Host, gathers the session information, and coordinates distribution and processing of all paperwork to ensure all requirements (e.g., conflict of interest met prior to the exam session). An overview of the process for administering an ACI Shotcreter examination session is reflected in Form D.

### 3.6 Examiner Responsibilities

**3.6.1 ACI Examiner/Host Relationship Disclosure Form:** The Examiner is required to complete, sign, and submit to the Sponsoring Group for review the *ACI Examiner/Host Relationship Disclosure Form*. The Examiner is responsible for notifying the Sponsoring Group if at any point they realize that their relationship with the Host and/or Candidates is a conflict-of-interest relationship as defined in Section 2.7.

**3.6.2 ACI Shotcreter Certification Program Policies:** The Examiner's responsibilities are described in the *ACI Certification Policies for Shotcreters*, which was created and is maintained by ACI C 660 and approved by the ACI Certification Programs Committee: these include marking the performance exam, grading the cores and supervising the written exam.

**3.6.3 Verification of Participant's Work Experience:** The Examiner will receive copies of each Candidate's Work Experience Form(s) from Sponsoring Group. An Examiner's evaluation of a Candidate's Work Experience consists of two separate steps:

Step #1: The Examiner must review the information submitted on the Candidate's Work Experience Form for completeness and feasibility.

Step #2: The Examiner must speak directly with the Participant prior to approving and signing the Candidate's Work Experience Form. The complete content and length of the Examiner's interview with the Candidate is left to the Examiner's judgment and discretion in deciding if, in their opinion, the Candidate possesses the required minimum amount of work experience. Every Candidate interview must however include the following:

- The identity of the Candidate.
- Discussion of any items on the Candidate's Work Experience Form that seem incomplete, unclear, or not feasible.
- Discussion on the Candidate's shotcrete experience, including how long they have been a shotcreter, the type of projects in which they have been involved, and the type of equipment they have used.

Once the Examiner is satisfied with the accuracy of the information on each Candidate's Work Experience Form(s) and that a minimum of 500 hours as a shotcreter has been verified, the Examiner must sign and date the Candidate's Work Experience Form(s) and return the signed forms to the Sponsoring Group.

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## APPENDIX 660.1-4

Regardless of a Candidate meeting the Work Experience prerequisite, if at any point during the performance examination the Examiner witnesses Candidate's actions that are unsafe, the Examiner must discontinue the performance examination of that Candidate, mark the performance exam at the step at which the action was witnessed, and direct the Candidate to leave the examination area.

**3.6.4 Examiner Arrival at the Examination Session:** Examiners must confirm that all required exam venues, equipment and materials are available and conform to *ACI Certification Policies for Shotcreters* prior to beginning the exam session. If any items are missing, incomplete, or not functioning properly, the Examiner must suspend beginning the session and notify the Organizer/Host immediately.

The Examiner must also check photo Identification of each Candidate and confirm that each has been properly admitted to the examination session (i.e., are identified as having been interviewed and their work experience verified).

**3.6.5 Required documentation of Performance Exams:** The Examiner must take photos of each Candidate (face shot), the back of each test panel after stripping, and the Candidate's cores. The mix design should also be documented and submitted to ACI.

**3.6.6 Return of Session Materials:** The Examiner must ship all session materials to the Sponsoring Group for final review and organization via a traceable method of shipping. The Sponsoring Group will then forward the completed examination documents to ACI for processing.

**3.6.7 Examiner Compensation:** The session Examiner must ensure that he will accept compensation for time and expenses related to the certification session only from the Sponsoring Group. The Examiner will under no circumstances directly invoice the Host nor accept payment of any kind, including non-monetary, from the Organizer/Host.

**3.6.8 Examiner Personal Conduct Guidelines:** The Examiner must refrain from promoting their employer or any organization with which they are affiliated (except for ACI), or those entities products or services during the ACI examination process.

A summary document: *Procedures for Planning, Preparation, and Execution of an ACI Shotcreter Certification Exam Session* can be found in **Form D**.

**4 - Review of sessions:** ACI may review any ACI examination session to ensure conformance to ACI certification policies and a proper testing environment has been provided. Selection for review of sessions is at the discretion of ACI.

Reviews are conducted according to the Review Checklist assembled by ACI Committee C 660.

**ANNEX 661.1-3**  
**APPENDIX 660.1-4**

**Form A**

**ACI Examiner/Host Relationship Disclosure Form**

**Session Information**

Scheduled Begin Date: \_\_\_\_\_ Scheduled End Date: \_\_\_\_\_

Host: \_\_\_\_\_

Session Location: \_\_\_\_\_

Wet or Dry Mix: \_\_\_\_\_

**The following is a declaration of the Examiner's relationship with the Host and must be completed by the Examiner, submitted to the Sponsoring Group and forwarded to ACI with the exam session materials.**

*Note: Not all relationships constitute a Conflict or Interest. ACI reserves the ultimate determination in assessing if a conflict of interest exists.*

Are you personally related to the Host or any of the Certification Candidates? *(If Yes, please explain)*

\_\_\_\_\_

Are you currently or have you ever been employed by the Host organization or any of its parent or subsidiary organizations? *(If Yes, please explain)*

\_\_\_\_\_

Are you currently in a business relationship with the Host or any of its parent or subsidiary organizations? *(If Yes, please explain)*

\_\_\_\_\_

Are you currently, or in the 6 months prior to the scheduled exam date, in a business relationship on the same project as the Host, its parent, or any subsidiaries? *(If Yes, please explain)*

\_\_\_\_\_

*By completing and submitting this form, I am providing the Sponsoring Group with information to determine if a conflict-of-interest relationship exists between me, the Host or the Candidates that would preclude my ability to administer ACI Certification exams in compliance with ACI Policies. I assure that the answers provided on this form are complete and accurate to the best of my knowledge.*

Examiner Signature: \_\_\_\_\_

Date: \_\_\_\_\_ Examiner Name: \_\_\_\_\_

\_\_\_\_\_

Please return this completed form to the Sponsoring Group Staff



# ANNEX 661.1-3 APPENDIX 660.1-4

## Form B Host Responsibilities Checklist and Acknowledgement

### General

- Communicate Certification session needs\parameters to ACI Sponsoring Group (SG) Staff, including:
  - Number of candidates
  - Method sought (wet- or dry-mix)
  - Language(s) of Candidates and any need for translators
  - Roster/ID Numbers of Candidates Recertifying
  - Requests for oral examination on the written exam
  - Requests for special accommodation under the Americans with Disabilities Act (ADA)
- Communicate to SG staff if you are willing to open the session to the public (the Host retains final approval of all Candidates' participation in the session)

### Work Experience

- Initiate completion of each Candidate's *Work Experience Form(s)*, verify their accuracy, sign each form and return all completed forms directly to SG Staff.
- Ensure that each Candidate is available to speak directly with the session Examiner as part of the verification of their work experience. If an interpreter is required, it is the responsibility of the Host to arrange for such services.

### Session Initiation and Payment

The session will be initiated once all required documentation and payment are received by SG staff:

- Signed *Host Responsibilities Checklist and Acknowledgement*
- Signed Contract for Services and any required deposit/fees.
- Completed *Work Experience Form(s)* for each Candidate
- Copy of photo ID for each Candidate
- Insurance documentation – See 3.1.1 & 3.1.2 of this procedures document

### Written Exam

- If the written exam will be administered (e.g. first-time examinations and written exam retests) a suitable classroom area must be secured.
- If any Candidate has requested and been granted oral testing on the written exam, including assistance from an interpreter, they should be tested apart from the main group to eliminate any disruption this could cause to the main group.

### Performance Exam

- Coordinate and secure a safe working area
- Secure and make available all equipment and ensure it is properly working: gun/pump, compressor, hose, nozzle, blow pipe, etc.
- Determine mix and have sufficient shotcrete material available.
- Fabricate Performance Test Panels and scaffolding according to ACI program policies. Fiberglass rebar may be used in place of steel (this is easier on the core bits).
- Erect scaffolding for the overhead test panels and secure the test panels
- Provide forklift or any other type of adequate lifting equipment for the overhead panels
- Provide weather protection for the test panels
- Ensure water set up with recommend minimum pressure for the dry process
- Provide hot water for either process in cold weather
- Provide burlap or plastic for curing of the test panels
- Provide personal protection equipment for each applicant
- Arrange for site clean-up and equipment clean-up

**This *Host Responsibilities Checklist and Acknowledgement* must be submitted to ACI as an original, completed and signed two-sided form**

# ANNEX 661.1-3 APPENDIX 660.1-4

## Form B - *continued* Host Responsibilities Checklist and Acknowledgement

### Coring

- Arrange for/coordinate the coring as required in the *ACI Program Policies for Certification of Shotcreters*.
- Provide coring equipment with 4 in. core bits (each panel takes 20-30 min to core)
- Provide manpower to move and core the test panels

### Cancellation Policy

Make sure you understand the cancellation Policy at the time you sign the contract and return it to the SSG.

**By signing this form, I understand that I am initiating an ACI Certification Examination session. I understand the requirements as stated on this form and preceding procedures, and I agree to accept responsibility for all items. I accept responsibility and costs for any delay related to unfulfilled or insufficiently completed requirement.**

**I recognize and accept the Examiner's authority and judgment on all items and issues related to the examination session.**

**I accept responsibility for all costs and delays resulting from "acts of God" that are outside the control of the Host, Organizer, Sponsoring Group, Examiner, or ACI's control. This includes those that result in delay or cancellation of the Examiner attendance.**

---

Host\Organization Name:

---

Session Date & Location:

---

Host Organizer\Contact Name:

---

Signature

---

Date

# ANNEX 661.1-3 APPENDIX 660.1-4

## Form C ACI Examiner Personal Conduct Guidelines

As an ACI approved Examiner, it is critical that you conduct yourself in a manner that is solely representative of ACI and not another company, organization or employer.

This includes the following:

- Refrain from promoting the services or products provided by any company or organization other than ACI while representing ACI during examination sessions. Examples of this type of promotion may include:
  - o citing specific examples of your companies' work
  - o distributing company- or organization-specific materials
  - o offering special pricing for your company's, or your organization's products or services
  - o promoting your company's, or your organization's products or services to personnel who participate in or sponsor a session
  
- It is not acceptable to wear clothing bearing your employer or organization's name/logo while serving as an ACI Examiner. *An exception to this rule is permitted for protective clothing and safety items used during shotcreting operations.*
  
- It is acceptable to mention your employer if asked.

In summary, when you act as an Examiner for ACI, you are an agent of ACI and must remain neutral in regards to promoting specific products, brands, and services.

# ANNEX 661.1-3 APPENDIX 660.1-4

## Form D

### Procedures for Planning, Preparation, and Execution of an ACI Shotcreter Certification Exam Session

1. **Sponsoring Group (SG)** receives initial Request for Session.
2. **SG** collects session information:
  - a. Host
  - b. Organizer (Host Representative)
  - c. Date
  - d. Location
  - e. Wet- or Dry-mix process
  - f. Overhead
  - g. Number of candidates
  - h. Language(s) of Candidates and any need for translators
  - i. Roster including ID Numbers of Candidates Recertifying
  - j. Requests for oral examination on the written exam
  - k. Requests for special accommodation under the Americans with Disabilities Act (ADA)
  - l. Education needs (the level of Education offered by the Sponsoring Group, if any, is at the discretion of the Group)
3. **SG** sends the *ACI Examiner/Host Relationship Disclosure Form* to the Examiner for completion and return.
4. **Examiner** completes and returns *ACI Examiner/Host Relationship Disclosure Form*
5. **SG** receives and reviews the *ACI Examiner/Host Relationship Disclosure Form* and determines if a conflict-of-interest relationship (COI) exists.
  - a. If a COI exists, SG may seek another Examiner and repeat the process or forward the Request for Session to ACI.
  - b. If no COI exists, the SG sends to the Host the following:
    - i. *Host Responsibilities Checklist and Acknowledgement*
    - ii. *Work Experience Form(s)*
    - iii. *ACI Certification Policies for Shotcreters*
    - iv. Contract for Services (it is strongly suggested that the SG collect payment for all services prior to the exam session)
6. **Organizer** receives *Host Responsibilities Checklist and Acknowledgement* and *Work Experience Form(s)* and distributes *Work Experience Form(s)* to Candidates, advising each they must participate in the Examiner interview if contacted.
7. **Candidates** complete the *Work Experience Form(s)* and return them to the Organizer.
8. **Organizer** receives the *Work Experience Form(s)* has them reviewed for accuracy, verified, and signed by the Candidates' Employer(s), and returns them to the Sponsoring Group.
9. **SG** receives the *Work Experience Form(s)*, reviews them for completeness, and forwards them to the Examiner.
10. **Examiner** receive copies of each Candidate's *Work Experience Form(s)* from Sponsoring Group, and performs the following verification procedure:
  - a. Review the information submitted on the Candidate's *Work Experience Form* for completeness and feasibility.
  - b. Interview the participant prior to approving and signing the Candidate's *Work Experience Form(s)*. The complete content and length of the Examiner's interview with the Candidate is left to the Examiner's judgment and discretion in deciding if, in their opinion, the Candidate indeed possesses the required minimum amount of work experience. Every Candidate interview must however include the following:
    - The identity of the Candidate
    - Discussion of any items on the Candidate's *Work Experience Form* that seem incomplete, unclear, or not feasible

# ANNEX 661.1-3 APPENDIX 660.1-4

## Form D - *continued* Procedures for Planning, Preparation, and Execution of an ACI Shotcreter Certification Exam Session

- Discussion on the Candidate's shotcreter experience, including how long they have been a shotcreter, the type of projects in which they have been involved, and the type of equipment they have used.

Once the Examiner is satisfied with the accuracy of the information on each Candidate's *Work Experience Form(s)* and that a minimum of 500 hours as a shotcreter has been verified, the Examiner signs and dates the Candidate's *Work Experience Form(s)* and returns the forms to the Sponsoring Group.

11. **SG** confirms the exam date with the Organizer and orders exam materials from ACI based on the information collected in #2, and the number of eligible Candidates Participants). SG creates a session roster of Participants for the Examiner.
12. **SG** receives the exam materials, verifies the contents are correct (per the exam order) and provides the materials and the session roster to the Examiner.
13. **Examiner** receives the exam materials and contacts the Organizer to discuss the venue, materials, and equipment requirements stated in the Written Exam, Performance Exam, and Coring sections of the *Host Responsibilities Checklist and Acknowledgement*
14. **Organizer** prepares for the exam session by following the requirements stated in the Written Exam, Performance Exam, and Coring sections of the *Host Responsibilities Checklist and Acknowledgement*, and arranging the attendance of Participants.
15. **Examiner** verifies all required facilities, equipment and materials are available and conform to ACI Shotcreter Certification Program Policies prior to beginning the exam session. If any items are missing, incomplete, or not functioning properly, the Examiner must suspend beginning the session and notify the Organizer/Host immediately. Once the Examiner is satisfied everything is in order, he conducts the exam session including the following:
  - a. Except for ACI or the Sponsoring Group, refrain from promoting current employer or any organization with which the Examiner is affiliated, or those entities products or services during the ACI examination process. Examiner.
  - b. Check photo Identification of each Participant and confirm that each has been properly admitted to the examination session (i.e., are identified as having been interviewed and their work experience verified).
  - c. Administer the written exam employing any resources for oral examination or translation as arranged by prior negotiation with the Sponsoring Group.
  - d. Administer the performance exam, employing any Examiner applicants as arranged by ACI or the Sponsoring Group. Record the performance of the Examiner candidate on the appropriate form and return to ACI for processing and inclusion in their Examiner record.
  - e. Direct the stripping and coring of the test panels, organize and grade the cores, and complete and sign the performance exam checklists and summary reports.
  - f. Take photos of each Participant (face shot), the back of each test panel after stripping, and the Participant's cores. Document and submit the mix design to ACI (include in the exam materials).
  - g. Refrain from soliciting or accepting any form of compensation for time and expenses related to the certification session from the Organizer/Host.
  - h. Ship all session materials to the Sponsoring Group for final review and organization via a traceable method of shipping. This includes either hard copy or electronic copies of all photos.
16. **SG** receives the exam materials from the Examiner, organizes the materials, verifies the completeness of the package (including all *Work Experience Forms*, both verified and denied), and returns to ACI via traceable method of shipping.
17. **SG** remits payment to the Examiner, ACI and any other vendors for services rendered in the planning and execution of the exam session and processing and issuance of credentials.

## End of Policy Text

# ANNEX 661.1-4

## Job Task Analysis (JTA) for ACI Shotcrete Inspector Certification

### HOW TO USE THIS JTA:

For each of the following assessment methods, the Candidate must:

#### On the written examination:

- **Understand** the following general concepts, which may not have specified values, procedures, or measurements; *and*
- **Know** the following specific procedures or values; performance of these items may also be assessed on the performance examination.

### RESOURCES:

ACI 305R	Guide to Hot Weather Concreting
ACI 305.1	Specification for Hot Weather Concreting
ACI 306R	Guide to Cold Weather Concreting
ACI 306.1	Standard Specification for Cold Weather Concreting
ACI 506R	Guide to Shotcrete
ACI 506.1R	Guide to Fiber-Reinforced Shotcrete
ACI 506.2	Specification for Shotcrete
ACI 506.4R	Guide for the Evaluation of Shotcrete
ACI 506.6T	Visual Shotcrete Core Quality Evaluation
ACI CCS-4	Shotcrete for the Craftsman
ASTM C1140	Standard Practice for Preparing and Testing Specimens from Shotcrete Test Panels
ASTM C1604	Standard Test Method for Obtaining and Testing Drilled Cores of Shotcrete
ASA	Safety Guidelines for Shotcrete

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### ACI 506R Part 1

- Understand the scope and limitations of the guide
- Understand what is structural shotcrete
- Understand what are the characteristics of the processes
- Understand the different types of shotcrete (refractory, fiber-reinforced, etc)
- Understand the information needed to satisfy submittals required by project documents (PD)
- Understand the purpose of preconstruction testing as required by the PD
- Understand who conducts QA
- Understand who conducts QC
- Understand the QA and QC requirements as required by the PD
- Understand the different type shotcrete panels and their purpose
- Understand what size material panel is required by the PD
- Understand the reason for different size panels
- Understand the terminology related to shotcrete
- Understand standards related to shotcrete testing

### ACI 506R Part 2

- Knows the difference between cement and supplementary cementitious materials
- Knows the cement/supplementary cement requirements per PD
- Knows where to find the aggregate grading limits and applicable ASTM documents

# ANNEX 661.1-4

## Job Task Analysis (JTA) for ACI Shotcrete Inspector Certification

- Knows what is acceptable water for shotcrete and what tests are needed if the water source is questionable
- Can list and describe purpose of admixtures
- Knows the minimum amount of air entraining required by PD and when/where the test is taken
- Knows the potential challenges presented by reinforcement and steps to be taken to reduce interference
- Knows why epoxy coated steel should be tested prior to being incorporated into project
- Knows and describe the different type and size fibers
- Knows the potential limitations of adding fibers
- Knows the range of compressive strength that can be expected from shotcrete
- Knows the compressive strength of shotcrete as required by the PD
- Knows the expected air content of the in-place shotcrete
- Knows the maximum water soluble chloride ion concentration
- Knows the purpose and limitations of boiled water absorption (BWA) test
- Knows the purpose of flexural testing
- Knows the purpose and can describe bond test
- Knows the typically expected bond test results of shotcrete to properly prepared concrete surface
- Knows what factors contribute to early-age plastic & long-term drying shrinkage
- Knows how to measure slump and what is the typical range for encasing steel
- Knows the proportions of a typical shotcrete mixture for both wet and dry mix shotcrete
- Knows the range of w/cm ratio for typical shotcrete
- Knows the methods used to mix and batch shotcrete
- Knows the visual indicators of an appropriate mixture
- Knows the common time limits for wet-mix and dry-mix shotcrete
- Knows the advantages of pre-dampening pre-packaged dry materials
- Knows the use of curing compounds for shotcrete
- Understands the use of bonding compounds for shotcrete
- Knows the factors that affect strength of a shotcrete mixture

### ACI 506R Part 3

- Knows the purpose of surface preparation as require by the PD
- Knows what is SSD and how it is achieved
- Knows the results of insufficient surface preparation
- Knows the visual indications of excessive bruising or surface moisture
- Knows the advantages of non-contact laps and spacing
- Knows that shotcrete & reinforcement can be installed in single or multiple layers
- Knows lap requirements for mesh reinforcement
- Knows why anchor spacing is important
- Knows what characteristics are required for formwork
- Knows whether form release agent can be used
- Knows tolerance for inflated forms, if specified
- Knows and can describe different types of joints
- Knows what is permitted alignment control
- Knows and describe different ways vertical shotcrete walls can be shot
- Knows what limits height of bench shooting
- Knows limitations of layering shotcrete

# ANNEX 661.1-4

## Job Task Analysis (JTA) for ACI Shotcrete Inspector Certification

- Knows what areas need protection from overspray and rebound
- Knows the importance of maintaining a safe distance from electrified power lines
- Knows the importance of ventilation, visibility and access
- Knows appearance of consistent mixture
- Knows proper angle to receiving surface
- Knows importance of proper impact velocity
- Knows when to shoot corners
- Can describe rebound and how to control
- Can describe overspray and how to control
- Knows when blow pipe is beneficial
- Identify laitance and how to address when present
- Knows procedures to prepare surfaces for application of multiple layers of shotcrete
- Knows what factors control and what to look for to ensure proper encasement of reinforcement
- Knows what weather conditions control placement of shotcrete
- Knows factors that affect finishing
- Knows the finishing requirements of PD
- Knows why curing is important and purpose of curing
- Knows acceptable methods of curing and required curing time
- Knows ways to protect shotcrete and under what conditions
- Knows when adjacent surfaces are to be protected
- Knows tolerances as required by PD
- Knows why shotcrete is suitable for repair
- Knows what are the acceptance criteria for shotcrete
- Knows methods to help reduce early age plastic shrinkage cracking
- Understand steel surface conditions
- Understand methods to maintain consistency
- Know time limits for shotcrete placement
- Understand the acronym SSD

### ACI 506R Part 4

- Can describe different types of dry-mix and wet-mix equipment
- Knows the difference between delivery line pressure in dry-mix and wet-mix
- Knows what is the recommended amount (in cfm) of air needed for dry-mix and wet-mix operations
- Describe different type batching operations
- Knows what minimum water pressure is needed for dry-mix
- Knows the effect of the nozzle wear condition on the placement of shotcrete
- Can describe auxiliary equipment
- Knows what is the main factor controlling equipment layout for dry-mix and wet-mix operations
- Knows why communication is vital between operator and nozzleman
- Knows who is in charge of the shotcrete crew

### ACI 506.2

- Understand required submittals
- Understand and describe the requirements of preconstruction testing



# ANNEX 661.1-4

## Job Task Analysis (JTA) for ACI Shotcrete Inspector Certification

- Understand the types of tests and inspection that may be required by contract documents during construction
- Understand and describe types of surface preparation
- Know and describe types of joint requirements and methods
- Understand tolerance requirements and alignment control methods
- Know and understand that type, location and frequency of inspection will differ with different types of shotcrete projects
- Understand the curing requirements
- Understand that each project has distinct and specific requirements that will be required from the Specification Checklist
- Know the acceptance criteria
- Know form requirements
- Know when to use a compressed air blow pipe

### ACI 306R, ACI 306.1

- Understand the significance of use of practice
- Know what is considered cold weather concreting (Temps, Ambient Air Changes etc)
- Know parameters and constituents of concrete mix designs needed for cold weather concrete
- Know substrate preparation for cold weather concrete
- Know concrete protection methods needed in cold weather concrete
- Know forming techniques in and around protection devices
- Know any special placement equipment necessary for cold weather concreting
- Identify temperature testing mechanisms for in-place, protected concrete
- Know curing procedures with regard to protection mechanisms and ambient temperature fluctuations above and below freezing
- Identify differences in strength gain based on temperature (maturity concept)
- Know impact on concrete from large steel members at temperatures below freezing
- Know the objectives of cold weather concreting practices
- Understand cold-weather factors that affect strength development

### ACI 305R, ACI 305.1

- Know the properties of concrete / wet - dry process shotcrete
- Understand the relationship between slump and concrete temperature
- Know the max temperature allowed for placing concrete
- Understand hydration
- Understand how wind, humidity and ambient temperature can affect concrete
- Understand methods for cooling concrete
- Understand the importance of advance planning for hot weather placement
- Understand how to prepare the substrate in hot weather conditions
- Understand how reinforcing and embeds can affect concrete in hot weather
- Understand the importance and methods of curing concrete
- Understand what is needed to cool the aggregates before batching in hot weather

### ACI 506.4R

- Understand the objectives of a specific test program for a particular project
- Understand the concept of testing shotcrete vs form and poured concrete

# ANNEX 661.1-4

## Job Task Analysis (JTA) for ACI Shotcrete Inspector Certification

- Understand the different tests for fresh properties of dry vs wet mix shotcrete
- Understand the relationship between equipment, material, nozzleman skills and shotcrete quality
- Know how shotcrete test specimens are obtained
- Understand the difference between pre-construction, and during construction, testing
- Understand tests to detect lack of bond and voids
- Understand variations in homogeneity of shotcrete
- Understand in-place density of shotcrete

### ACI 506.1R

- Know the difference between Micro and Macro Fibers
- Know the difference between metallic and synthetic fibers
- Understand the effects of fibers on shotcrete placement
- Understand the general purpose of fiber reinforcement
- Understand hardened properties of fiber-reinforced shotcrete
- Understand proportioning fiber-reinforced shotcrete mixtures

### ACI CCS-4

- Understand the basic properties of concrete
- Know composition of concrete (main ingredients, proportions & how mixed)
- Understand concrete proportioning
- Know the definition of shotcrete
- Know the difference between wet-mix and dry-mix shotcrete processes
- Understand the requirements for proper encapsulation of reinforcement
- Understand the w/cm and how water content affects concrete
- Know what equipment is required for both shotcrete processes
- Understand the effect of equipment layout
- Understand the importance of substrate surface preparation
- Understand how curing affects concrete strength and durability
- Understand how compaction and proper encasement of rebar affect the quality of shotcrete
- Understand hot and cold weather shotcrete placement
- Understand the finishing process

### ASTM C1140

- Understand the scope and significance of use of practice
- Know the allowable geometry and materials for test panel forms
- Know the appropriate test mixtures for the tests
- Know the appropriate number of panels, equipment, personnel and application of shotcrete for test panels
- Know curing requirements for test panels
- Know proper procedures for obtaining, conditioning and testing specimens from test panels
- Know the reporting requirements for the test procedure

### ASTM C1604

- Understand the scope and significance of use of practice
- Know the apparatus required for the test
- Know the requirements for proper sampling and handling of cores from hardened concrete

# ANNEX 661.1-4

## Job Task Analysis (JTA) for ACI Shotcrete Inspector Certification

- Know the geometric constraints on core samples
- Know the test requirements for moisture conditioning
- Know the sawing or capping requirements of compressive strength core samples
- Know the measurement, testing, calculation and reporting requirements for compression strength core tests
- Know the bearing surface requirements for splitting tensile strength cores
- Know the measurement, testing, calculation and reporting requirements for splitting tensile strength core tests
- Know when correction factors are applied and why

### ASA Safety Guidelines

- Know and Understand the hazards of the shotcrete process
- Know PPE
- Know project specific personal safety requirements

### ACI 506.6T

- Understand the scope and significance of the TechNote
- Know and describe process for visual examination of cores
- Know and describe what imperfections visual evaluation can provide
- Know and describe the categories of core quality
- Know and describe the two criteria used for assigning categories
- Know and describe when the licensed design professional may modify visual evaluation criteria
- Know and describe how Figure 1 is used to graphically enumerate the evaluation criteria

# ANNEX 661.1-5

## AMERICAN CONCRETE INSTITUTE

### Policy on Sponsoring Groups for Certification

Approved by the ACI Board of Direction  
March 21, 1991

Last revised by the ACI Certification Programs Committee  
October 18, 2011

In developing certification exams for the concrete construction industry, the American Concrete Institute (ACI) has set forth minimum criteria by which an individual's proficiency is to be judged. Typically, ACI is not in a position to deliver certification exams directly to participants; therefore, it is necessary for ACI to have the ability to delegate this authority. However, if the need arises, ACI reserves the right to conduct exam sessions itself according to each program Policy.

In order to allow others to deliver its certification exams, ACI has adopted the "Sponsoring Group" concept. Sponsoring Groups act as agents of ACI in the delivery of ACI certification exams. Therefore, prior to being selected as an ACI Sponsoring Group, and for the duration of the period in which the group is authorized to act as a Sponsoring Group, such groups are subject to the following policies:

1. Sponsoring Groups shall be approved, in writing, by ACI's Certification Department (hereafter referred to as ACI) before they will be permitted to conduct an ACI<sup>1</sup> certification exam session. In all cases, approval of Sponsoring Groups shall be at the sole discretion of ACI.
2. In reviewing applications, ACI will consider, among other factors, the following:
  - A) The ability and willingness of the applicant to include in their constituency segments of the concrete construction industry impacted by the exams which they have applied to conduct. This includes individuals involved in the specification, production, design, construction, testing and inspection of concrete and concrete products. The applicant must establish a governance structure with representation appropriate to all of the exams for which the applicant has applied.

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<sup>1</sup> For the purposes of this policy, references to "ACI certification" and "ACI certification program(s)" include only those administered solely by ACI (ACI programs). Programs with cosponsors are not directly addressed by this Policy.

# ANNEX 661.1-5

## Policy on Sponsoring Groups for Certification

- B) The interest, experience and technical expertise necessary to conduct exam sessions exhibited by the applicant and/or their certification governance structure.
  - C) The legitimate need for the applicant to conduct a specific ACI certification exam within their approved operational jurisdiction.
  - D) The primary objective of the applicant in applying for sponsorship, which must coincide with ACI's overall mission of improving the quality of concrete construction within the political, social, and cultural dynamics of the intended operational jurisdiction.
3. Sponsoring Groups are required to maintain a governance structure to oversee the delivery of ACI exams. The governance structure shall consist of a committee of at least three (3) individuals, each working for a different employer and each producing a different product or service related to the concrete construction industry. At all times, at least one (1) member of the committee shall be a member of ACI. Further, ACI shall be furnished with a complete and accurate listing of contact information for all committee members including names, employers, type of businesses, physical addresses, email addresses, and both office telephone and cell phone numbers as available.
  4. The certification committee shall obtain the services of ACI-approved examiners. The examiners shall operate under the direct supervision of the certification committee to conduct ACI certification exam sessions. Examiners are permitted to conduct ACI certification exam sessions only under the auspices of ACI or ACI-approved Sponsoring Groups; and they must comply with all ACI certification policies and procedures.
  5. At the time of approval, ACI shall assign Sponsoring Groups specific geographical areas within which they will have authority to conduct ACI certification exam sessions. This area is the approved operational jurisdiction for the Sponsoring Group.
  6. ACI shall approve each Sponsoring Group on a calendar year basis for a period not to exceed two (2) years. Prior to the conclusion of this period, all groups shall reapply to ACI for approval to continue to act as an ACI Sponsoring Group.
  7. In the U.S., in areas where no Sponsoring Group is actively administering a specific ACI examination, the local ACI chapter (not a student chapter) shall have first rights to administer that specific exam. International sponsorship for any ACI examination will be assessed on a case-by-case basis.

# ANNEX 661.1-5

## Policy on Sponsoring Groups for Certification

8. If an existing Sponsoring Group or ACI Chapter is solicited to administer an examination and participation is declined, or if a sponsor does not request an examination upon initial availability from ACI, or if a requested examination is not administered within two years following approval, administration of said examination may become available to other potential sponsors.
9. If more than one applicant wishes to sponsor an ACI certification exam in the same operational jurisdiction and there is documented need for more than one group to conduct the examination in that jurisdiction or portion thereof, a system of coordination between those groups shall be established. A description of this system shall be considered along with any new Sponsoring Group application and must be included in the governance system for any existing Sponsoring Group. In all cases, ACI reserves the right, in its sole discretion, to select a delivery system that in its judgment is best able to serve the interests of ACI.
10. Applicants wishing to sponsor ACI certification examinations on a "national" or "regional" basis will, in appropriate circumstances, be approved to conduct exams under specific conditions at the discretion of ACI.
11. Approved Sponsoring Groups are responsible for:
  - A) Maintaining control over the administration of ACI Certification exams offered within their operational jurisdiction. This includes, but is not limited to, maintaining control over the ethical and professional integrity of every sponsored examination session and providing ongoing oversight of exam session coordinators, examiners, and other exam delivery personnel.
  - B) Conducting a sufficient number of exam sessions and providing equitable access to those exam sessions for all individuals seeking ACI Certification within the group's operational jurisdiction.
  - C) Conducting all ACI exams in a manner which complies with the intent of ACI's policies and procedures governing certification.
  - D) Formulating, publishing, and enforcing consistent and equitable pricing for ACI Certification exams offered by the Sponsoring Group within their operational jurisdiction.
  - E) Developing and implementing participant registration processes that satisfy the policy requirements of each exam offered by the Sponsoring Group and verifying that each participant has met the eligibility requirements of the program before being allowed to complete an ACI exam.

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## Policy on Sponsoring Groups for Certification

- F) Collecting exam fees from participants, paying materials invoices to ACI within 30 days of receipt, and distributing compensation to examiners and other program delivery personnel as warranted.
  - G) Developing a program delivery process that establishes separation between the education/training and testing divisions of the Sponsoring Group.
12. ACI has the right to revoke a Sponsoring Group's authority to conduct an ACI certification exam at any time, with or without cause, and with or without notice.
  13. Appeals resulting from the denial or revocation of Sponsoring Group status will be reviewed by ACI Staff for determination of appropriate action on a case-by-case basis.
  14. This policy shall become effective sixty (60) days after its approval by the ACI Certification Programs Committee, and shall render all previous Policy versions null and void. Sponsoring Groups shall be notified of this new policy in writing within thirty (30) days after it is approved by the ACI Certification Programs Committee.
  15. The Certification Programs Committee shall review, revise as necessary, and reapprove this Policy at intervals not exceeding two years in length.