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**American Concrete Institute
Pittsburgh Area Chapter**

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Chapter News

“Progress Through Knowledge”

Concrete In the Steel City



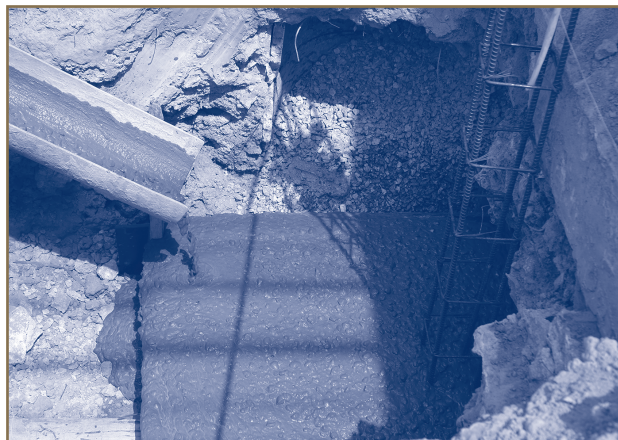
Chapter News

Specifications for Concrete Construction

Colin Lobo, Ph.D., P.E., Senior Vice President, Engineering,
National Ready Mixed Concrete Association

A specification is *an explicit set of requirements to be satisfied by a material, product, system or service* (ASTM). Material specifications establish compositional and performance requirements for materials and products used in construction, such as for cement, ready mixed concrete, and reinforcing steel. Construction specifications state owner-established requirements to be satisfied on a project. Construction specifications are developed by the design professional (architect/engineer) and is part of the contract between the owner and contractor and applicable stakeholders on the project. Specifications are accompanied by drawings and details related to the project. As part of the final coordination of contract documents, the A/E should ensure that the information stated in specifications and drawings are consistent without conflicting requirements. The A/E should include requirements of the Building Code, when applicable, in the construction specification. The Building Code establishes minimum provisions to protect public safety. Requirements in project specifications should therefore meet or exceed those in the Building Code.

Another important aspect of specifications is whether it states prescriptive or performance requirements. A prescriptive specification includes compositional details of materials or means and methods of construction. The intended performance related to the prescriptive requirement may or may not be defined. A performance specification, on the other hand, defines the needed outcome tied to acceptance criteria without details of how it should be achieved. An important principle here is the synergy between responsibility and authority. A performance spec provides the appropriate authority with assigned responsibility to the contractor to achieve the desired outcome. A prescriptive specification, with a stated or undefined performance outcome, does not. Specifications that combine inconsistent prescriptive and performance requirements for the same item are generally more problematic. An examples would be a maximum water-to-cementitious materials ratio (w/cm) and/or a minimum cement content that is not consistent with the specified compressive strength.



In the evolution of ACI standards for concrete, ACI Committee 318 established clear durability provisions for concrete in 2008 and published a reorganized *Building Code Requirements for Structural Concrete* in 2014. ACI 318-14 includes a new Chapter 26 that addresses the Code-related requirements that need to be addressed by the engineer in the specification. ACI Committee 301 develops its specification through a consensus-based process by addressing the opinion of various entities that would be involved in a concrete project. ACI 301 incorporated the ACI 318 durability requirements in 2010 and recently published ACI 301-16, *Specifications for Structural Concrete*, with additional improvements that are specific to the application. The Committee is

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Intel International Science & Engineering Fair May 13~18 2018



Intel ISEF Pittsburgh Seeking Judges and Volunteers

The Intel International Science and Engineering Fair (ISEF), the world's largest pre-college science competition, is returning to Pittsburgh in 2018 at the David L. Lawrence Convention Center. This competition brings together 1700 students in grades 9-12 from 75 countries, regions and territories. These are the best and brightest in the world, having won at local, regional, state and national fairs to get here. Twenty percent of competitors hold patents or published papers.

We need your help! Approximately 1000 judges in 22 categories, covering the whole of science and engineering. Judges are required to have a B.A., B.S. or a master's degree with a minimum of six years related professional experience OR a Ph.D., M.D., or equivalent. Senior level graduate students may also qualify. If in doubt apply, and credentials will be reviewed. Judges are expected to be available from Tuesday afternoon (register no later than 5:00 PM) May 15 through Wednesday evening May 16, 2018 to complete their judging assignments. Judge training is available. Parking and all meals are provided free.

Judging at Intel ISEF is wonderful. The students consistently rank talking with the judges as the high point of their experience. The opportunity to meet these students is a tremendous experience for you. The positive energy in the exhibit hall with the students is inspiring!

Judging is also a great opportunity to network with fellow judges - over 1000 professionals from around the region and around the world. The students are our future leaders and workers for industry, universities and research facilities – it's an

opportunity to meet your future students, colleagues and employees. You will also advance STEM education, and promote good will.

Intel ISEF was held in Pittsburgh in 2012 and 2015, and was a huge success. Join us to help make the 2018 fair even better. Become a judge. It's easy. Go to <https://student.societyforscience.org/grand-award-judges> - click Apply to be a Grand Awards Judge at Intel ISEF 2018 in Pittsburgh!

Don't want to judge? Volunteer to help. There are all kinds of jobs to do, including being an interpreter in any of 20 languages. To learn more go to: <https://student.societyforscience.org/volunteers>.

Questions? Email: Judging@societyforscience.org



Carnegie Science Center
One Allegheny Avenue, Pittsburgh, PA 15212
Phone: 412.237.1534



ACI and CRSI Present a NEW Certification Program for Adhesive Anchor Installers



In response to recommendations in the **National Transportation Safety Board (NTSB)** 2006 report [NTSB/HAR - 07/02] primarily related to installation of adhesive concrete anchors in the Boston Central Artery/Tunnel Project ("Big Dig"), the **American Concrete Institute (ACI)** in partnership with the **Concrete Reinforcing Steel Institute (CRSI)** has developed a program to certify the installers of adhesive anchors used in concrete.



This type of concrete anchor is recognized as an important structural connection in many applications, and the design, use, and installation procedures are intertwined to ensure proper performance. It's important to note that adhesive anchor installer certification will be required when the 2011 ACI

318 Building Code for Reinforced Concrete is adopted into local building codes. Thus, ACI and CRSI worked collectively with industry representatives to complete and launch this important program. The program is referred to as the **Adhesive Anchor Installer (AAI) Certification**.

This certification program includes both written and practical examinations that the installer must take and pass for certification. The practical part of the program requires proper demonstration of vertical down and overhead installation procedures. The overhead portion requires knowledge related to "piston-plug" and "retaining-cap" systems. The program can be presented in two ways;



1. A two day workshop in which the first day will consist of a review session in a classroom setting followed by a "hands-on" practice session. The written and practical exams would follow on day two.
2. A test only day.



In developing this program a majority of those participants that attend the "Pilot Tests" recommended that a review/training component be included with the certification program. ACI-CRSI certification for Adhesive Anchor Installer is valid for a period of five [5] years from the date of completion of all certification requirements.

ACI is working with your local Pittsburgh Area Chapter ACI to help with the start-up of this important new certification program. We plan on offering this program sometime in the next 3 to 6 months.

Please contact the Pittsburgh Chapter ACI if you are interested in becoming ACI AAI Certified.

Watch our chapter website (www.acipgh.com) for more information or please contact Andrew Lawrence or Beth Rader at 724-452-1468 if you are interested in this program.





3rd Annual Excellence in Concrete Project Award

REMINDER:

The deadline for project entries is February 28, 2018.

Details along with the application form are available at
www.acipgh.com.



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Chapter News is published by the American Concrete Institute, Pittsburgh Area Chapter for the purpose of informing members and others about issues of concern to the concrete industry. If you have information to include in this publication or any comments, contact ACI Pittsburgh Chapter at 724-452-1468

2018 PITTSBURGH AREA CHAPTER UPCOMING MEETINGS & EVENTS

MEMBER MEETING

Wed. - March 14, 2018

North Park Lounge – Cranberry
20810 Route 19
Cranberry Township, PA 16066

AWARDS BANQUET

April 2018

Visit our website for a list of upcoming events at
www.acipgh.com/calendar.shtml.

ACI GOLF OUTING

Mon. - July 30, 2018

Quicksilver Golf Club

Be sure to check the website, as our meeting minutes are posted there for review. In addition, members are welcome to observe board meetings, to obtain a better understanding of Chapter activities.



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Specifications for Concrete Construction

working on ensuring that provisions of Chapter 26 of ACI 318 are incorporated in ACI 301. While ACI 301 includes some prescriptive provisions, the document is evolving to a performance-based specification. It however avoids prescriptive and performance inconsistencies for the same item within the specification. Prescriptive requirements exist until such time performance alternatives can be developed. ACI Committee 329 has published a report of performance-based requirements for concrete materials and is working to develop a guide to writing a performance specification.

While most specifications reference ACI 301 as a general statement, design offices use the AIA MasterSpec as the starting point for their office master specifications. The current licensed version of Section 033000 of MasterSpec for cast-in-place concrete does not include durability requirements of ACI 318-08 and is not current relative to ACI 318 and ACI 301. The details covered in ACI 301 are thereby not reflected in these specifications that are used on projects. It is important for design engineers responsible for specifications to review the current version of the ACI standards and update their specifications to be current with industry standards. NRMCA has posted some guide specifications with detailed notes to the A/E to support these changes.



Visit www.nrmca.org/p2p.

The goal of a specification is to ensure that requirements are achievable, without conflicts, and are clearly stated; such that any requirement is interpreted the same way by anyone reading the specification. The task is challenging but necessary to improve the reliability and growth of concrete construction.

TINK BRYAN AWARD TRIBUTE TO: THOMAS “TINK” BRYAN

The Tink Bryan Award was created in honor of an outstanding individual who dedicated himself to his family, business and the concrete industry. For several years now the Chapter has honored various individuals with this award. The Pittsburgh Chapter Board of Directors is requesting nominations for a 2018 recipient. If a candidate is selected, they will be announced at the Awards Banquet in April. The candidate should demonstrate an exceptional commitment and achievement of service to the concrete industry.

Please forward a letter with your candidate(s) name and reasons for nomination to:

ACI, Pittsburgh Area Chapter | PO Box 86, Zelienople, PA 16063 | or email to: bethaci@verizon.net

To be accepted for board review, nominations should be received by March 15th.