ALWAYS ADVANCING

ACI's Newest Products and Industry Updates

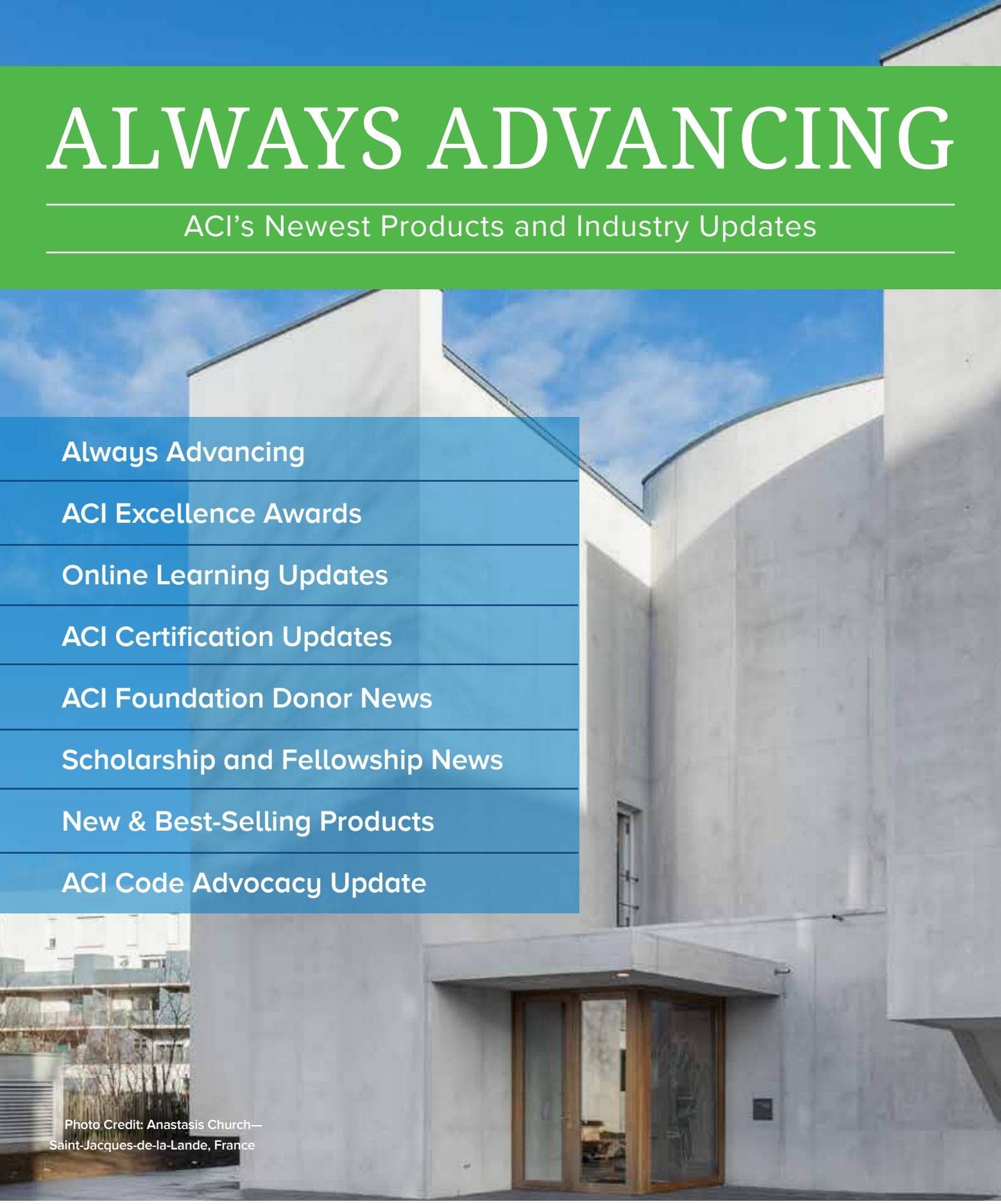
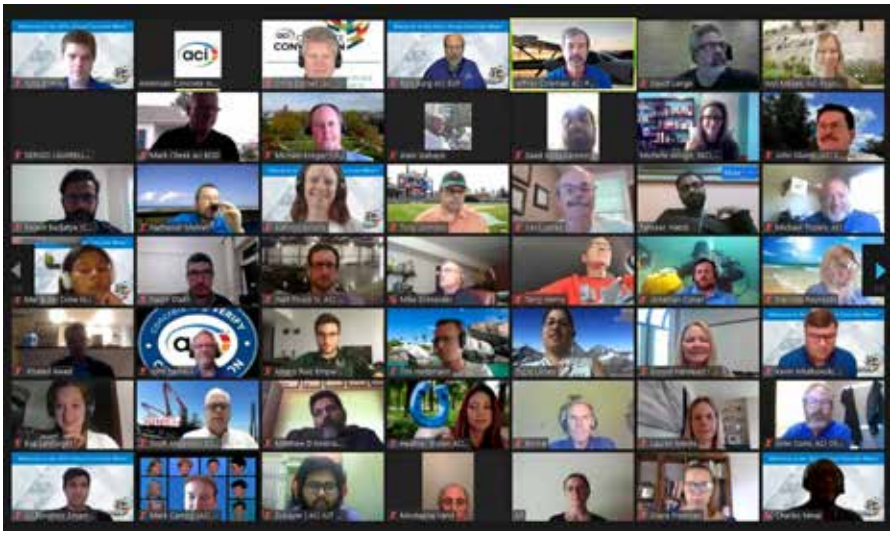


Photo Credit: Anastasis Church—Saint-Jacques-de-la-Lande, France

2020 Newsletter

American Concrete Institute
Always advancing

ALWAYS ADVANCING



ACI continues to move forward with its mission of advancing concrete knowledge. ACI thanks all its members and volunteers who support ACI's mission of "Always Advancing."

The ACI Concrete Convention has transitioned from an in-person event in Raleigh, NC, USA, this October, to a 100% virtual event. Attendees to the ACI Virtual Concrete Convention will collaborate on advancing concrete codes, specifications, and practices during hundreds of committee meetings. Technical and educational sessions will provide the latest concrete research, case studies, best practices, and the opportunity to earn Professional Development Hours (PDHs).

ACI also plans to include many of the other events and activities that make ACI's conventions stand out as the world's gathering place for advancing concrete.

The Opening Session will include remarks by ACI President Jeffrey W. Coleman, and a keynote speaker. 2020 Honorary Members will be recognized, along with 2020 Fellows. This broadcast will also be made available on demand during convention week.

GATHER TO CELEBRATE

The Virtual ACI Excellence in Concrete Construction Awards and Gala will take place on Monday, Oct. 26, 2020. The ACI Excellence in Concrete Construction Awards celebrate innovation and inspire excellence throughout the global concrete design and construction community.

ACI will also be holding a Virtual Concrete Mixer, where attendees can have casual conversations. Speakers for the International, Student, and Architects Lunch and Learn will present virtually. The President's Reception will include remarks from ACI President, and the presentation of ACI Personal Awards.

JOIN THE ACI COMMUNITY

If you are not an **ACI member**, now is an excellent time to join our community of 30,000+ members. Convention registration fees are $299, but substantially reduced to $49 for all ACI members and free to all ACI student members.

Learn more at **concrete.org/news** ■

THE ACI EXCELLENCE AWARDS

This fall, the American Concrete Institute will be virtually hosting its sixth-annual ACI Excellence in Concrete Construction Awards program to recognize outstanding concrete projects. The event is scheduled for Monday, October 26, 2020 from 6 p.m. to 8 p.m. (EDT) during the ACI Virtual Concrete Convention. After the awards program, attendees are welcome to network and speak with the award winners.

The ACI Excellence in Concrete Construction Awards celebrate innovation and inspire excellence throughout the global concrete design and construction community. The awards program provides a platform to recognize concrete projects that are at the forefront of innovation and technology and showcases these projects to inspire excellence in the concrete industry.

"It is a great honor to sponsor the ACI Excellence in Concrete Construction Awards program," said Kimberly Kayler, President, Advancing Organizational Excellence. "These projects represent the ingenuity, innovation and marvel of constructing with concrete. AOE is excited to be part of this celebration."

All registered ACI Virtual Concrete Convention attendees are invited to join the virtual event, celebrating the most prestigious and innovative concrete construction projects from around the world. The awards presentation will highlight project details through several short videos that will accompany the presentation of each award. The event will conclude with the presentation of the most prestigious award in the concrete design and construction community, the "Overall Excellence" award. Experience the best concrete projects the world has to offer by registering for the ACI Virtual Concrete Convention at **ACIConvention.org**. ■

INCREASED DEMAND FOR ONLINE LEARNING

The American Concrete Institute has answered the need for more on-demand virtual learning by offering two new high-demand courses. The courses presented by ACI University and titled "ACI 318-19: Changes to the Concrete Design Standard" and "Low Compressive Strength Test Results? What They Mean and Next Steps" allow concrete professionals to learn the most up-to-date information on both topics while earning PDH/CEU credits.

"**ACI 318-19: Changes to the Concrete Design Standard**" covers the major changes in the 2019 edition of ACI 318-19. All major changes in this edition of the Code are presented and discussed. This includes major changes centered around the topics of higher reinforcing steel yield strengths for many applications and the associated design provision changes; the addition of shotcrete provisions; deep foundation provisions; seismic requirements for deep foundations and other applications; vertical seismic motions; nonlinear analysis for seismic design; modification to development length equations; and updated shear design provisions and equations.

"**Low Compressive Strength Test Results? What They Mean and Next Steps**" covers compressive strength tests used for concrete acceptance based on criteria defined in ACI 318 and ACI 301. This presentation covers the topic of low strengths in detail and provides answers to questions such as: what is considered a strength test and what is not, what the minimum frequency of testing is, what the acceptance criteria for strength tests are, and how to investigate strength tests not mee ting the acceptance requirements. In addition, steps needed by a concrete supplier, in case acceptance criteria are not met, are presented. To better understand discussed concepts, the presentation uses statistical concepts and numerical examples.

As always, ACI members receive special discounts on ACI on-demand courses and seminars, and access to this course is free to all **ACI University All-Access Digital Subscribers**. For more information, visit **concrete.org**. ■

ACI CERTIFICATION UPDATES

The American Concrete Institute has certified more than 400,000 concrete finishers, technicians, supervisors, inspectors, managers, and more over a span of nearly 40 years. With more than 30 certification programs currently available, and more in development, the mark of **ACI Certification** can be seen in quality concrete construction projects spanning the globe.

ACI RESOURCE CENTER

To assist ACI chapters and sponsoring groups in meeting the growing demand for ACI Certification, the inaugural American Concrete Institute Resource Center was recently opened in Southern California. The ACI Resource Center will coordinate with ACI chapters and sponsoring groups to offer direct, on-demand access for all ACI Certification programs, in addition to hands-on training and educational offerings for inspectors, contractors, designers and engineers. To help launch and grow this endeavor, the Institute hired William "Rusty" Owings, III, AIA, as Resource Center Manager.

NEW PROGRAMS

ACI Certification has also launched several new programs in its lineup of concrete inspection certification programs. The Post-Installed Concrete Anchor Installation Inspector certification program builds upon the ACI Adhesive Anchor Installation Inspector certification program, and was developed to certify individuals who have demonstrated the knowledge required to properly inspect the installation of post-installed adhesive and mechanical anchors in concrete. The Nondestructive Testing Specialist – Concrete Strength certification program includes six test methods used in evaluating the in-place strength of hardened concrete, and certifies individuals who successfully pass the ACI examinations by demonstrating the knowledge and ability to properly perform the specified nondestructive tests. The Shotcrete Inspector certification program certifies individuals who demonstrate the knowledge and experience required to properly inspect the placement of shotcrete, and requires successful passage of the written examination, an active or previous certification as an ACI Concrete Field Testing Technician – Grade I, and satisfactory work experience in various concrete testing, inspection, or shotcrete construction roles.

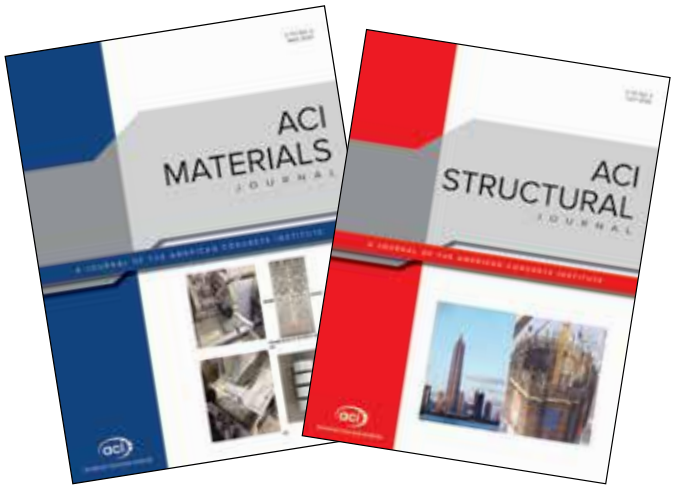
ACI CERTIFICATION VERIFY APP

The all-new ACI Certification Verify App was launched as a tool to use on the jobsite to verify the status of people working on a project. Available on **iOS** and **Android** platforms, the verify app allows users to quickly and easily verify the status of ACI-certified individuals through three search options: (1) verify an individual's certification ID number, (2) search by an individual's name, and (3) find the total number of ACI-certified individuals in an area. The verification process becomes much more seamless with the ACI Certification Verify App and ensures projects can keep moving forward.

Across all industries, assessment and certification credentials demonstrate competence and skill. Whether an individual, employer, or specifier, ACI Certification brings quality and confidence to construction projects. Becoming ACI-certified opens career paths to more opportunities; hiring ACI-certified personnel means contractors can have confidence in their team's knowledge and skills; and specifying ACI Certification in project requirements brings quality that will last. ■

ACI Periodicals

The American Concrete Institute has a variety of concrete-based periodicals for every professional in the concrete industry. ACI periodicals include a monthly magazine for the concrete community and two peer-reviewed journals. For more information on these periodicals and the subscription options, visit **concrete.org/publications**.



Topics Include: structural design; analysis of concrete elements and structures; research related to concrete elements and structures; papers addressing design and analysis theory; properties of materials used in concrete; research on materials and concrete; properties, use, and handling of concrete.

American Concrete Institute
Always advancing

Concrete international

SUBSCRIBING WITH ACI

The American Concrete Institute produces hundreds of products dedicated to improving the design, construction, maintenance, and repair of concrete and masonry structures. With the increase in concrete-related products, ACI has begun to offer digital and on-demand access to popular bundles of the Institute's leading technical and educational content.

ACI currently offers four annual subscriptions. Each subscription is unique in what it offers for every concrete professional.

ACI COLLECTION ONLINE

The ACI Collection of Concrete Codes, Specifications, and Practices is the most comprehensive and largest single source of information on concrete design, construction, and materials. The online subscription to the ACI Collection includes near 50 codes and specifications plus 200+ practices (including all guides and reports). This subscription is continuously updated with the latest versions of ACI documents and includes all historical codes and specifications.

ACI UNIVERSITY SUBSCRIPTION

ACI University offers an All-Access Digital Subscription that includes webinars and on-demand courses. This 12-month subscription includes all ACI monthly webinars and all ACI's 250 on-demand courses.

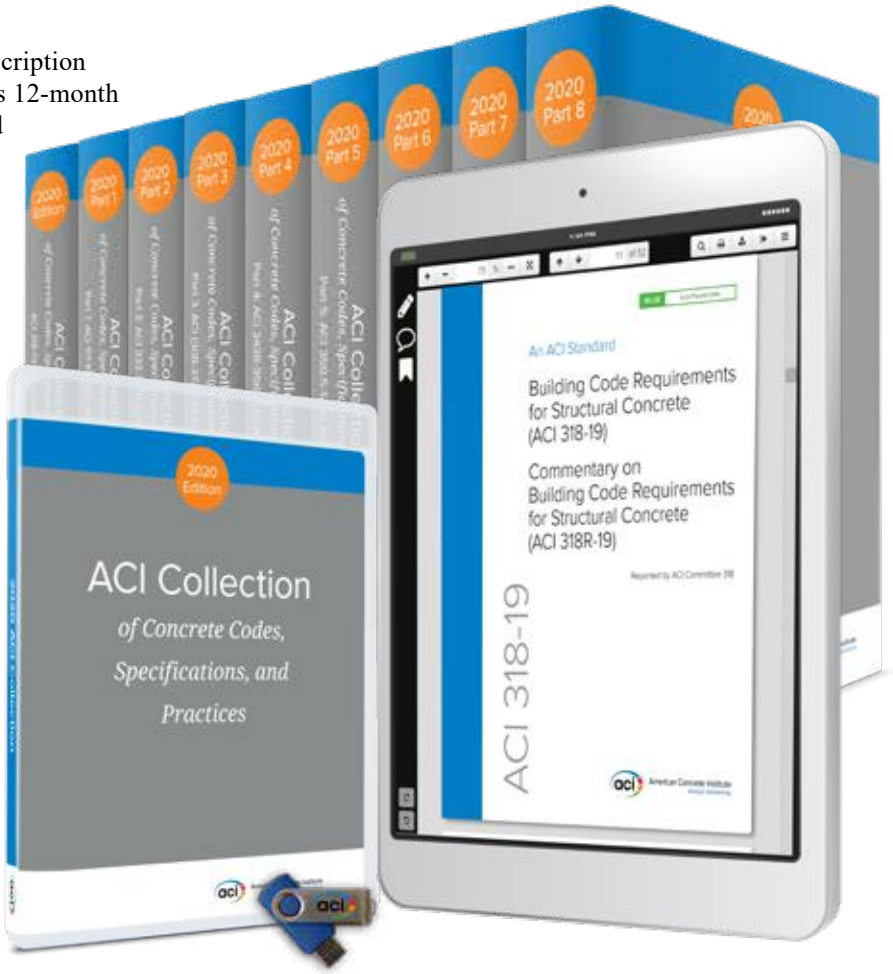
ACI CONCRETE REPAIR SUBSCRIPTION

The ACI Concrete Repair Subscription provides access to ACI's new and existing concrete repair-specific content, including 65+ codes, specifications, guides, and reports; 16+ educational publications and documents; 33+ on-demand courses through ACI University; and 25+ symposium volumes.

ACI SYMPOSIUM PAPERS SUBSCRIPTION

The Symposium Papers Subscription provides access to over 6000 papers published since 1962 – including new papers that are published and archived symposium papers from all Symposium Publications.

For more information and to subscribe to an ACI subscription, visit the **concrete.org/tools/concreteresourcesubscriptions** ■



WHY JOIN ACI?

American Concrete Institute is a leading authority for the development, distribution, and adoption of consensus-based standards, technical resources, educational programs, and proven expertise for those committed to pursuing the best use of concrete.

We are *always advancing*!

NETWORKING

Networking with our powerful community of over 30,000 concrete professionals

INFLUENCE

Shape concrete knowledge through ACI committee participation

MEMBER aci BENEFITS

EXPERTISE

Receive free access to ACI's 200+ guides and reports

LEARNING

Gain a competitive edge with access to our continuing education resources including ACIU

aci UNIVERSITY

JOIN ACI

ACI FOUNDATION DONOR NEWS

The ACI Foundation relies on funding from the American Concrete Institute, from ACI members, partners, and friends. Recently, the ACI Foundation received donations from the estate of William Maloney, and funding for the Roger S. Johnston Memorial Scholarship.

A retired building inspector and concrete construction company owner, Maloney passed away in 2019, leaving a generous gift of $25,000 to the ACI Foundation.

"We are honored and very grateful to receive such exemplary support," said Michael Paul, PE, AIA, LEED-AP, FACI, ACI Foundation Trustee, and Director, ACI Board of Direction. "This gift will be put to good use in advancing the concrete industry through top-notch research and innovation, and by nurturing the next generation of our leaders."

The ACI Foundation worked with Roger Johnston's widow, Jane, and Johnston's former employer, Crimson Engineering Associates, Inc., of Golden, CO, both of whom knew the devotion of Roger to ACI and the concrete industry. The scholarship is funded by Crimson Engineering Associates, Inc., and was coordinated by Adam Brown of Crimson. Personal donors include the family and friends of Roger: Darwin and Karen Blue, Carl and Jeniene Meyerhoff.

A fellow of the American Concrete Institute, and a mentor to many engineers, Johnston brought a wealth of field experience as well as technical knowledge to ACI and ACI Committee 347, Formwork for Concrete.

William Maloney

Roger S. Johnston

The ACI Foundation promotes progress, innovation, and collaboration in the concrete industry through strategic investments in research, scholarship, and ideas. The ACI Foundation awards more than $200,000 in fellowships and scholarships annually in the name of individuals, organizations, corporations, and ACI.

"We are grateful for the generous support from so many in the concrete industry," said Ann Masek, Executive Director of the ACI Foundation. "The donations from the estate of Bill Maloney, and funding for the Roger Johnston Memorial Scholarship are deeply appreciated."

Learn more at acifoundation.org. ■

aci Foundation

Knowledge to Practice

SCHOLARSHIPS AND FELLOWSHIPS

Siham Al Shanti, 2020 Middle East & North Africa Fellowship recipient.

The ACI Foundation's student fellowship and scholarship program identifies, attracts, and develops outstanding professionals for future careers in the concrete industry. For the 2020-2021 academic year, the ACI Foundation distributed more than $200,000 to twenty deserving students through the support of ACI, ACI chapters, generous donors, and industry partners.

Several new scholarships and fellowships are available this year, including the expanded and renamed Middle East & North Africa Fellowship. Now open to graduate students currently attending an institution in Algeria, Egypt, Iraq, Jordon, Lebanon, Morocco, Tunisia, in addition to previously eligible students studying in Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates. The winning student receives $10,000 USD in educational support, full funding to attend three upcoming ACI Conventions, and more.

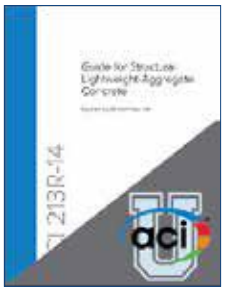
First offered in 2019, the ACI Fellowship was awarded in 2019 to Nancy Kachouh, a PhD student and research assistant in the Civil Engineering Department at the United Arab Emirates University. The Fellowship was awarded in 2020 to Siham Al Shanti, a graduate student in the Civil Engineering Department at the United Arab Emirates University.

The ACI Foundation believes attracting students to the concrete industry provides both excellent career opportunities for students and helps to secure a bright future for the concrete industry. These fellowships and scholarships showcase the ACI Foundation's goals of investing in people and the future of the industry.

Applications and more information about all fellowships and scholarships are available at acifoundation.org. The deadline for applications is November 2, 2020 at 11:59 p.m. EST. ■

NEW AND BEST-SELLING PRODUCTS

AGGREGATES



On-Demand Course: Guide to ACI 213R-14 Structural Lightweight-Aggregate Concrete (3-part series)

This three-part webinar series will review the Guide for Structural Lightweight-Aggregate Concrete.

On-Demand Course: Specifications and ACI 211 Proportioning Concrete Mixtures (Part 1)

This course will provide information on how to use ACI 211 mixture proportioning guidelines to meet project specifications.

On-Demand Course: Specifications and ACI 211 Proportioning Concrete Mixtures (Part 2)

This course provides an overview on characteristics of aggregates used in concrete mixtures, including estimating modulus of elasticity of the concrete with different types of aggregates.

ANCHORS

355.2-19: Qualification of Post-Installed Mechanical Anchors in Concrete (ACI 355.2) and Commentary

ACI 355.2 prescribes testing programs and evaluation requirements for post-installed mechanical anchors intended for use in concrete under the design provisions of ACI 318.

355.4-19: Qualification of Post-Installed Adhesive Anchors in Concrete and Commentary

This standard prescribes testing programs and evaluation requirements for post-installed adhesive anchors intended for use in concrete under the design provisions of ACI 318.

AUTOCLAVED AERATED CONCRETE

526R-19: Guide for Design and Construction with Autoclaved Aerated Concrete Panels

This guide is intended for use by architects, engineers, contractors, building officials, and manufacturers. Its purpose is to present, in a single source, information that can help those individuals design, specify, and construct with factory-reinforced panels of autoclaved aerated concrete (AAC).

CEMENTITIOUS MATERIALS

225R-19: Guide to the Selection and Use of Hydraulic Cements

This guide covers the influence of cement on the properties of concrete, summarizing the composition and availability of commercial hydraulic cements and the factors affecting their performance in concrete.

On-Demand Course: An Introduction to Low-Density Cellular Concrete and Advanced Engineered Foam Technology: Not Just a Product—A Solution

This presentation is an introduction to Low-Density Cellular Concrete and advanced engineered foam technology.

On-Demand Course: Troubleshooting with Fresh Concrete

This webinar, the first of a three-part series, will focus on common issues that can occur with fresh concrete.

On-Demand Course: Troubleshooting Defects in Concrete Slabs

This webinar, the second of a three-part series, will focus on common defects that can occur in concrete slabs.

On-Demand Course: Evaluating Test Results and Troubleshooting Low Compressive Strength

This webinar, the third of a three-part series, will focus on common compressive strength issues.

CERTIFICATION

CP-10: Craftsman Workbook for ACI Certification of Concrete Flatwork Finishing 3rd Edition

This study guide orients the candidates to the certification program and contains directions on how to prepare for the written examination and performance evaluation.

COATINGS

515.3R-20: Guide for Assessment and Surface Preparation for Application of Protection Systems for Concrete

This document provides general guidance for determining appropriate acceptance criteria for a prepared surface to receive a protection system.

CODES

COLUSB20: 2020 USB ACI Collection of Concrete Codes, Specifications, and Practices

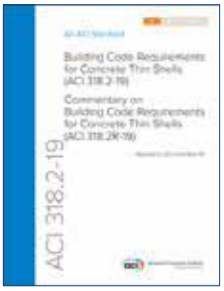
The ACI Collection of Concrete Codes, Specifications, and Practices contains all of the widely used ACI concrete and masonry code requirements, specifications, guides, and reports.

COL20PACK: 2020 ACI Collection of Concrete Codes, Specifications, and Practices 8-Volume Set

The *ACI Collection of Concrete Codes, Specifications, and Practices* contains all of the widely used ACI concrete and masonry code requirements, specifications, guides, and reports.

318-19: Building Code Requirements for Structural Concrete and Commentary

The “Building Code Requirements for Structural Concrete” (“Code”) provides minimum requirements for the materials, design, and detailing of structural concrete buildings and, where applicable, nonbuilding structures.

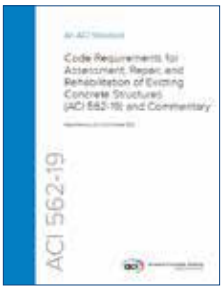


318.2-19: Building Code Requirements for Concrete Thin Shells (ACI 318.2-19) and Commentary

This document governs the design of thin shell concrete structures. Where required for design of thin shell concrete structures, provisions of ACI 318 are to be used to complement the provisions of this Code. (Free Download)

563-18: Specifications for Repair of Concrete in Buildings (Metric Version)

This is a Reference Specification that the Architect/Engineer can apply to any construction repair and rehabilitation project involving structural concrete by citing it in the Project Specifications.

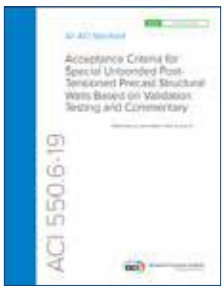


562-19: Code Requirements for Evaluation, Repair, and Rehabilitation of Concrete Structures and Commentary

ACI 562-19 was developed to provide design professionals a code for the assessment of the damage and deterioration, and the design of appropriate repair and rehabilitation strategies.

550.7-19: Requirements for Design of a Special Unbonded Post-Tensioned Precast Shear Wall Satisfying ACI 550.6 and Commentary

This standard describes the procedures that the designer may use to demonstrate, through analysis, that one type of unbonded post-tensioned precast wall has strength and toughness at least equal to that of comparable special reinforced concrete monolithic walls.



550.6-19: Acceptance Criteria for Special Unbonded Post-Tensioned Precast Structural Walls Based on Validation Testing and Commentary

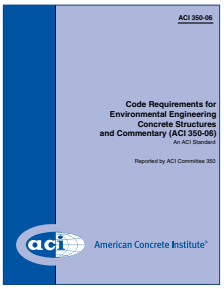
This document applies to structures in regions of high seismic risk or to structures assigned to high seismic performance or design categories.

530/530.1-13: Building Code Requirements and Specification for Masonry Structures and Companion Commentaries

The Code covers the design and construction of masonry structures while the Specification is concerned with minimum construction requirements for masonry in structures.

SP-17(14): The Reinforced Concrete Design Handbook Volumes 1 & 2 Package

The Reinforced Concrete Design Handbook provides assistance to professionals engaged in the design of reinforced concrete buildings and related structures.



350-06: Code Requirements for Environmental Engineering Concrete Structures

This code presents new material as well as modified portions of the ACI 318-02 Building Code that are applicable to environmental engineering concrete structures.

On-Demand Course: Ethics and Safety in the Concrete Industry

We will discuss the definition of ethics, the responsibilities of ethics of the concrete professional, and start with some easy discussions of ethics. Then we will discuss ethical dilemmas in the concrete industry.

On-Demand Course: Ethics in Engineering & Project Management

This course will help you identify the aspects of professional ethics as applied to engineering and project management. Describe the values, skills, and concepts of Values-Based Leadership (VBL).

COLD WEATHER

SP-338: Ward R. Malisch Concrete Construction Symposium (ACI Concrete Convention, October 15-19, 2017, Anaheim, California, USA)

Ward R. Malisch spent most of his 50-year career addressing issues related to concrete construction. For his dedication to the concrete construction industry, this Special Publication is a tribute to his work and is sponsored by the ACI Construction Liaison Committee.

306R-16: Guide to Cold Weather Concreting

This document guides specifiers, contractors, and concrete producers through the selection processes that identify methods for cold weather concreting.

CONCRETE FUNDAMENTALS

CCS-0(16): Concrete Fundamentals

This book is intended for anyone who wants an introduction to concrete and concrete construction. Craftsmen in the concrete field may find it particularly useful as a guide for good practice.

CONCRETE TECHNOLOGY

On-Demand Course: Innovation in Concrete Construction: Innovation in Precast Concrete Segmental Tunnel Lining

This course will help identify ACI design guidance documents available for precast concrete segmental tunnel lining.

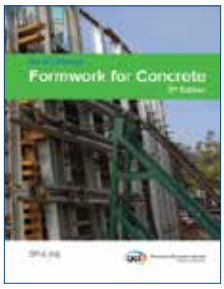
On-Demand Course: How To Handle Concrete Placements Exposed To Rain

This presentation will discuss how different stages of placing and finishing are affected by a rain event and what options are available to contractors at each stage. Preventative actions and the development of a wet weather plan will be discussed.

CONSTRUCTION PRACTICES

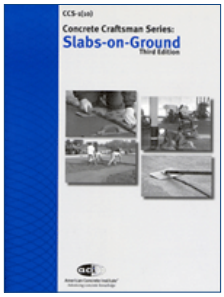
MNL-5(19): Contractor's Guide to Quality Concrete Construction, 4th Edition

This document is intended for the use of individuals who are competent to evaluate the significance and limitations of its content and recommendations and who will accept responsibility for the application of the material it contains.



SP-4: (8TH) Formwork for Concrete

The design of formwork has been divided into two chapters, one focusing on bending, shear, and deflection of wall, slab, and column formwork members, and a second focusing on shoring and bracing members.



CCS-1(10): Slabs on Ground

This manual from the ACI Concrete Craftsman Series presents information on concrete that should be useful to concrete craftsmen and deals mainly with construction practices relating to slabs-on-ground.

On-Demand Course: Reshoring and Early-Age Building Behavior

This course will provide progressive learning for shoring/reshoring designers, contractors, and base building engineers in several key areas of shoring and reshoring design and early-age building performance of multi-story concrete structures.

On-Demand Course: Constructability - The Key to a Successful Project – Collaboration between the Engineer and the Contractor

This presentation will discuss a number of items that can affect budget, schedule, quality, and the safety performance of a project.

On-Demand Course: Innovation in Concrete Construction: Considering Embodied Carbon

This course will discuss the Embodied Carbon in Construction Calculator (EC3) tool and how it can be used by owners, designers, and contractors trying to make smart carbon product choices.

On-Demand Course: Troubleshooting Concrete (3-part series)

This webinar, the first of a three-part series, will focus on common issues that can occur with fresh concrete. The second of a three-part series will focus on common defects that can occur in concrete slabs. The third of a three-part series will focus on common compressive strength issues.

On-Demand Course: Innovation in Concrete Construction: Performance-Based Testing of Fresh Concrete

This webinar will explore innovative alternative test methods to evaluate mixture designs, concrete workability, and concrete durability and what it takes to achieve market acceptance.

CORROSION

On-Demand Course: Understanding Corrosion of Steel in Concrete

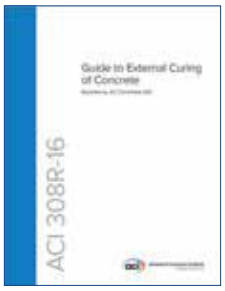
This course will describe the corrosion process and explain what is happening at the surface of the steel. In addition, this course will help you recognize where certain corrosion mitigation approaches may be effective.

CRACKING

SP-336: Cracking and Durability in Sustainable Concretes

ACI Committees 130 and 224 sponsored and moderated two sessions. The objective of the sessions was to review the use of innovative mixture designs and the effect these sustainable technologies have on the cracking performance and durability of these concretes.

CURING



308R-16: Guide to External Curing of Concrete

This guide reviews and describes practices, procedures, materials, and monitoring methods for the external curing of concrete and provides guidance for specifying curing procedures.

DECORATIVE CONCRETE

310R-19: Guide to Decorative Concrete

This guide describes techniques for imparting aesthetic finishes to concrete flatwork, of which many can be combined for unique effects. The owner and architect/engineer will acquire detailed, practical guidance for achieving aesthetic effects using proven techniques.

CCS-5(16): Placing and Finishing Decorative Concrete Flatwork

This document supplements existing resources by providing knowledge of the materials, equipment, and techniques required to successfully install decorative concrete flatwork. Knowledge of traditional concrete flatwork techniques is recommended for full understanding of this document.

On-Demand Course: As-Cast Concrete Finishes: Specifications, Defects, and Repairs—What Is a Surface Defect?

This presentation addresses common specified requirements for as-cast, architectural, smooth-rubbed, and grout-cleaned rubbed finishes; as well as as-cast surface defects and anomalies, including honeycomb, air voids or bug holes, sand streaking, and offsets.

DESIGN

SP-333: Advances in Concrete Bridges: Design, Construction, Evaluation, and Rehabilitation

The objective of the SP is to present technical contributions aimed to understand the state of the art of concrete bridges, identify and discuss challenges, and suggest effective solutions for both practitioners and government engineers.

SP-337: Offshore and Marine Concrete Structures: Past, Present, and Future

A two-part session, highlighted accomplishments of the past, current state-of-the-practice, and a path for the future.

SP-339: Performance-Based Seismic Design of Concrete Buildings: State of the Practice (ACI Concrete Convention, October 15-19, 2017, Anaheim, California, USA)

The sessions presented the state of practice for the PBSD of reinforced concrete buildings. These presentations brought together the implementation of PBSD through state-of-the-art project examples, analysis observations, design guidelines, and research that supports PBSD.

304.4R-20: Placing Concrete with Belt Conveyors

This report includes a short history on the early development of conveyor belts. In relation to the properties of the plastic concrete, the delivery rate, and the job specifications; as well as belt widths, speeds, and angles of inclination as they apply to specific site requirements.

533.1R-20: Guide for Design and Construction Responsibilities for Architectural Precast Concrete

This document outlines the responsibilities for various parties of the design/construction team for architectural precast concrete projects and does not necessarily apply to concrete or precast concrete in general.

SP-340: Dennis Mertz Symposium on Design and Evaluation of Concrete Bridges

Professor Dennis Mertz spent a large portion of his professional career working on advancing of the state-of-the-art of bridge engineering. ACI Committees 342 and 348, sponsored four sessions to honor his contributions and achievements in concrete bridge design and evaluation.

549.4R-20: Guide to Design and Construction of Externally Bonded Fabric-Reinforced and Steel-Reinforced Grout Systems for Repair and Strengthening of Concrete Structures

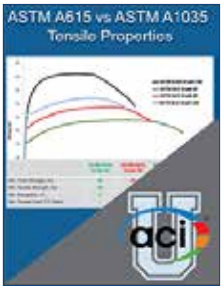
This guide addresses the history and use of FRCM and SRG systems rehabilitation and strengthening, their unique material properties, and recommendations on their design, construction, and inspection.

533.5R-20: Guide for Precast Concrete Tunnel Segments

This document provides guidelines for precast concrete tunnel segments, including the most recent developments and practical experience, in addition to information on all aspects of design and construction.

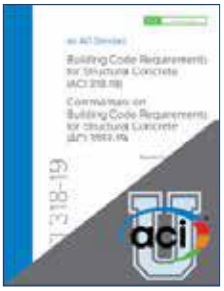
314R-16: Guide to Simplified Design for Reinforced Concrete Buildings

This guide presents simplified methods and design techniques that facilitate and speed the engineering of low-rise buildings within certain limitations. Material is presented in an order that follows typical design process with procedures introduced as the designer will need them in the course of a building design.



On-Demand Course: Use of ASTM A1035/A1035M Grade 100 (690) Steel Bars for Structural Concrete According to ACI 439.6R-19 and ACI 318-19

This course will explain the mechanical properties of ASTM A1035/A1035M and review the procedure for determining the development length of ASTM A1035 Grade 100 bars, as well as describe flexural design procedures according to ACI 439.6R-19 and ACI 318 using ASTM A1035 Grade 100.



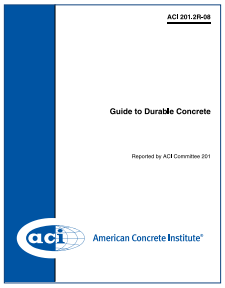
On-Demand Course: ACI 318-19 Changes to the Concrete Design Standard

This on-demand e-learning course covers the major changes in the 2019 edition of ACI 318. This edition is the first edition of ACI 318 in 5 years and the first update since the reorganization of the code in the 2014 edition.

DURABILITY

201.2R-16: Guide to Durable Concrete

This guide describes specific types of concrete deterioration. Each chapter contains a discussion of the mechanisms involved and the recommended requirements for individual components of concrete, quality considerations for concrete mixtures, construction procedures, and influences of the exposure environment, which are all important considerations to ensure concrete durability.



201.1R-08: Guide for Conducting a Visual Inspection of Concrete in Service

This guide provides terminology to perform and report on the visual condition of concrete in service. It includes a checklist of the many details that may be considered in making a report and descriptions for various concrete conditions associated with the durability of concrete.

On-Demand Course: Reducing Joint Damage Caused by Deicing Salts

This course will explain the mechanisms that link deicers to damage in joints in concrete pavements and flatwork. Summarize AASHTO T 358 Standard Method of Test for Surface Resistivity Indication of Concrete's Ability to Resist Chloride Penetration and how it can be used to minimize the potential for damage.

FORMWORK

347R-14: Guide to Formwork for Concrete

Objectives of safety, quality, and economy are given priority in these guidelines for formwork. The remainder of the guide advises the formwork engineer/contractor on the best ways to meet the specification requirements safely and economically.

FOUNDATIONS

351.2R-10(20): Report on Foundations for Static Equipment (Reapproved 2020)

This document addresses static equipment foundation engineering and construction. It presents various design criteria, methods and procedures of analysis, design, and construction applied to static equipment foundations by industry practitioners.

On-Demand Course: Foundations for Dynamic Equipment (Chapters 3 and 7)

This module is based on Chapters 3 and 7, excerpted from ACI 351.3R-18, "Report on Foundations for Dynamic Equipment." It addresses design considerations and concepts of support systems for dynamic equipment.

On-Demand Course: Advanced Analysis and Testing Methods for Concrete Bridge Evaluation and Design

The course objective is to present state-of-the-art and emerging technologies for the strength evaluation and design of concrete bridges using advanced computational analysis and load testing methods.

HOT WEATHER

305.1-14(20): Specification for Hot Weather Concreting (Reapproved 2020)

This reference specification provides requirements for hot weather concreting that the architect/engineer can apply to any construction project involving hot weather concreting by citing it in the project specification.

INSPECTION

MNL-2(19): Manual of Concrete Inspection, 11th Edition

This manual is intended to guide, assist, and instruct concrete inspectors and others engaged in concrete construction and testing, including field engineers, construction superintendents, supervisors, laboratory and field technicians, and workers.

On-Demand Course: Concrete Construction Special Inspector Certification Training

This course will guide you through the chapters of ACI's Manual of Concrete Inspection (MNL-2) and help prepare you for the ACI Concrete Construction Special Inspector Certification Exam. The course includes five modules that contain recorded presentations, practice quizzes, and a final quiz.

MATERIALS

SP-335: Nanotechnology for Improved Concrete Performance

Many of the papers presented in this volume were included in the two-part session Nanotechnology for Improved Concrete Performance, sponsored by ACI Committee 241, Nanotechnology of Concrete, at the ACI Convention in Philadelphia, PA, on October 26, 2016.

MIXTURE PROPORTIONING

304.6R-09(19): Guide for Use of Volumetric-Measuring and Continuous-Mixing Concrete Equipment (Reapproved 2019)

This guide includes a short history of and information on the basic design and operation of equipment, frequently called mobile mixers, used to produce concrete by volumetric measurement and continuous mixing (VMCM).

POLYMER CONCRETE

548.8-19: Construction Specification for Type EM (Epoxy Multi-Layer) Polymer Overlay for Bridge and Parking Garage Decks

This Specification covers epoxy multi-layer (EM) polymer overlay for bridge and parking garage decks. Type EM polymer overlay incorporates a low-modulus epoxy binder and selected aggregate to produce a flexible, skid-resistant, and low-permeability overlay.

PRECAST CONCRETE

533.5R-20: Guide for Precast Concrete Tunnel Segments

This document provides guidelines for precast concrete tunnel segments, including the most recent developments and practical experience, in addition to information on all aspects of design and construction.

QUALITY ASSURANCE

546.4R-20: Guide for Jobsite Quality Control and Quality Assurance of Cementitious Packaged Materials

This guide provides recommended practices for jobsite quality control and quality assurance for use of cementitious packaged materials.

REPAIR

SP-332: Responsibility in Repair Construction

The responsibilities for parties involved in a repair project may be significantly different than those traditionally encountered in new concrete construction. This document identifies requirements for the Licensed Design Professional and the contractor's Specialty Engineer during repair programs.

On-Demand Course: ACI 562-19 – The ACI Concrete Repair Code

This course will review the ACI 562-19 Standard, illustrate significant changes in the ACI 562-19 edition, summarize critical concepts contained in Chapters 1 and 4, and summarize critical sections of Chapters 6, 7, and 8. This course will also recognize the need for use and adoption of ACI 562.

SHEAR

421.1R-20: Guide for Shear Reinforcement for Slabs

Tests have established that punching shear in slabs can be effectively resisted by reinforcement consisting of vertical rods mechanically anchored at top and bottom of slabs. This guide reviews available types and makes recommendations for their design.

SHOTCRETE

506.4R-19: Guide for the Evaluation of Shotcrete

This document provides information on the evaluation of both dry-mix and wet-mix shotcrete. It is assumed throughout the document that shotcrete is a method of placing concrete.

506.2-13: Specification for Shotcrete (Reapproved 2018)

This specification contains the construction requirements for the application of shotcrete. Both wet- and dry-mixture shotcrete are addressed, as well as fiber-reinforced shotcrete. The minimum standard for materials, properties, testing, and application are covered.

SLABS

360R-10: Guide to Design of Slabs-on-Ground

This guide presents information on the design of slabs-on-ground, primarily industrial floors. It addresses the planning, design, and detailing of slabs.

302.1R-15: Guide to Concrete Floor and Slab Construction

This guide contains recommendations for controlling random cracking and edge curling caused by the concrete's normal volume change.

On-Demand Course: Fiber-Reinforced Concrete—From Fresh Properties to Structural Design: New Tools, Guides, and Reports

This course includes presentations that address document contents, how the specific topics of documents interact with each other, as well ways to implement and incorporate the knowledge in these documents in the design and specification.

On-Demand Course: Controlling and Preventing Cracks in Concrete Flatwork

This presentation will review the most prevalent influences on cracking including those related to design, materials, environmental conditions, site preparation, and construction methods and sequences.

SPECIFICATIONS

301-16: Specifications for Structural Concrete

This is a Reference Specification that the Architect/Engineer can apply to any construction project involving structural concrete by citing it in the Project Specifications.

SUSTAINABILITY

SP-334: Sustainable Concrete with Beneficial Byproducts

This Special Publication of ACI Committee 555 is a contribution towards improving the sustainability of concrete via using recycled materials, such as scrap tire rubber and tire steel wire fiber, GFRP waste, fluff, reclaimed asphalt pavements, recycled latex paint, and recycled concrete aggregate.

On-Demand Course: Improve Concrete Performance with Slag Cement

Attendees will leave the presentation with a clearer understanding of how slag cement and other SCMs enhance concrete, making it more durable, stronger, less permeable, and more sustainable.

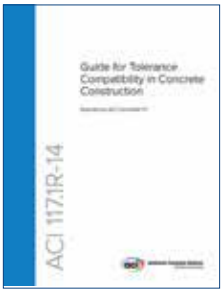
TMS 402/602: Building Code Requirements and Specifications for Masonry Structures, 2016 (Formerly ACI 530)

The Standards are written as legal documents so that they may be adopted by reference in building codes. The Code (TMS 402) covers the design and construction of masonry structures while the Specification (TMS 602) is concerned with minimum construction requirements for masonry in structures.

MNL-15(16): Field Reference Manual (Formerly SP-15)

The Field Reference Manual is a compilation of ACI 301-16 and documents on measuring, mixing, transporting, and placing concrete; concrete pumping methods; hot- and cold-weather concreting; consolidation; and concrete formwork.

TOLERANCES



117.1R-14: Guide for Tolerance Compatibility in Concrete Construction

This guide lists industry-standard tolerances and presents recommendations for mitigating tolerance conflicts related to embedded items, elevator cores and hoist ways, openings in slabs and walls, manufactured couplers and splicing systems for reinforcing bars, stairs, cladding systems, infill wall systems, surface accessibility components, finish floor coverings, and expansion joints.

ACI CODE ADVOCACY UPDATES

The American Concrete Institute dedicates resources and effort to advance the adoption of its consensus-based knowledge. Position statements provide a framework for advocacy and ACI Advocacy Collaboration Groups have been established as forums for those interested in advocacy. Code advocacy continues to be integrated throughout ACI programs and services with emphasis on marketing, chapter activities, certifications, and international activities.

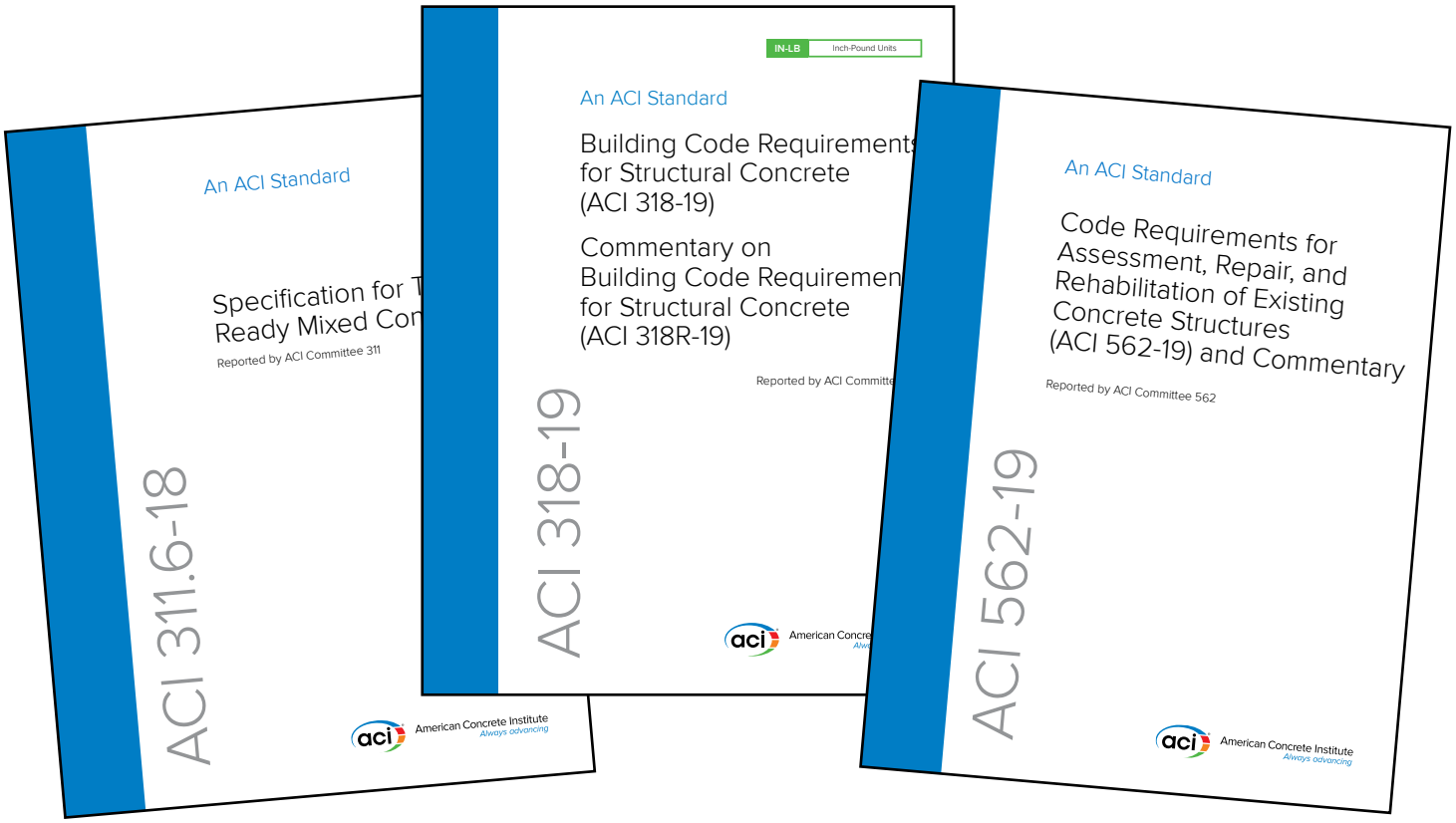
While the preferred approach is to influence and modify model codes, efforts at the state level are being pursued for proposals meeting strong opposition in the model code processes. Current state initiatives include reference to ACI 562, "Code Requirements for Assessment, Repair and Rehabilitation of Existing Concrete Structures," and clarifying personnel qualifications by citing certification programs. ACI 562-19 is to be referenced in the "2020 Florida Building Code" and advocacy efforts have been initiated in North Carolina, Pennsylvania, South Carolina, and Virginia.

Interest and support from ACI chapters and certification sponsoring groups is a key consideration when targeting states. A Chapter Talk on code advocacy is now available to educate members on advocacy.

For the 2021 National Fire Protection Association "Building Construction and Safety Code" (NFPA 5000) the most current edition of ACI 318 is being referenced and new references added for ACI 311.6-18, "Specification for Testing Ready-Mixed Concrete," ACI 311.7-18, "Specification for Inspection of Concrete Construction," ACI 332-14, "Residential Code Requirements for Structural Concrete," and ACI 562-19.

ACI references in the International Code Council 2021 family of codes will be updated to ACI 318-19, "Building Code Requirements for Structural Concrete," and ACI 332-20. ACI 117, "Standard Specifications for Tolerances for Concrete Construction and Materials," and ITG-7, "Specification for Tolerances for Precast Concrete," are being referenced in the "International Building Code."

For more information and updates on ACI advocacy efforts, visit **concrete.org/advocacy**. ■



UPCOMING EVENTS

September 19, 2020
Concrete Strength Testing Technician Certification – Sponsored By: Tennessee Concrete Association

September 27, 2020
PTI 2020 Convention & Expo – Sponsored By: Post-Tensioning Institute

October 4, 2020
2020 ICRI Fall Convention – Sponsored By: International Concrete Repair Institute

October 6, 2020
Webinar on Self-Consolidating Concrete – Sponsored By: American Concrete Institute

October 8, 2020
ACI 562 Repair Code Specifications Presentation – Sponsored By: Houston Chapter – ACI

October 13, 2020
45th Annual Conference on Deep Foundations – Sponsored By: Deep Foundation Institute (DFI)

October 17, 2020
Post-Installed Concrete Anchor Installation Inspector Certification – Sponsored By: Las Vegas Chapter – ACI

October 25-29, 2020
ACI Virtual Concrete Convention – Sponsored By: American Concrete Institute

November 3, 2020
Webinar on Cold Weather – Sponsored By: American Concrete Institute

November 3, 2020
2020 Structural Engineering Summit – Sponsored By: NCSEA

November 4, 2020
Greenbuild 2020 – Sponsored By: U.S. Green Building Council (USGBC)

November 30, 2020
ASEA-SEC-05 Conference – Sponsored By: ISEC Society

December 1, 2020
Webinar on Corrosion Mitigation – Sponsored By: American Concrete Institute

December 9, 2020
World of Concrete Asia – Sponsored By: Informa Markets

December 9-11, 2020
BEI-UHPC – Sponsored By: Bridge Engineering Institute

December 10-11, 2020
4th R N Raikar Memorial Conference – Sponsored By: India Chapter of ACI

View All Events