

american  
shotcrete  
association

asa

# 2019 ASA SHOTCRETE CONVENTION & TECHNOLOGY CONFERENCE

February 24-26, 2019 | Omni Amelia Island Plantation Resort

## Welcome to the American Shotcrete Association's 2019 Convention!



Here we are again! At our first convention last year, celebrating our 20th anniversary as an Association, our attendees were enthusiastic about the quality of the event—the sessions, the exhibits, the activities, and the food. Moreover, our members really enjoyed the opportunity to network with others who are dedicated to advancing the shotcrete industry with higher quality and broader acceptance in a wide variety of concrete structures.

At Amelia Island this year, you'll have an opportunity to network with the members who have helped grow ASA over two decades and improve the standing of shotcrete placement in the concrete construction industry. You'll also get to meet many of our younger members, some the second generation of long-established shotcrete businesses, who may well be the future movers and shakers in the shotcrete world. Their enthusiasm and desire to continue the growth of the shotcrete industry is plainly evident. Our attendees find our technical sessions are a great way to learn more about shotcrete today and tomorrow.

Additionally, we are pleased to welcome many innovative resources exhibiting at our event. The informal and beautiful venue for our meals and exhibits were intended to enhance the opportunity for new and renewed connections to be made. We hope all attendees find this unique event a distinct value.

We all look forward to the wealth of knowledge shared in our technical sessions and committee meetings. We also look forward to the social opportunities, and breadth of outside activities available here at the beach-front Omni Amelia Island Plantation Resort. Thanks to all our sponsors for helping to make the Convention possible, and finally, thank you for your attendance and participation in this second annual convention for ASA.

—Charles Hanskat, ASA Executive Director

## Table of Contents

Resort Map.....	2
Schedule at a Glance .....	3
Shotcrete Technology Conference Sessions.....	4-5
Convention Sponsors.....	6-8

## ASA Committee Chairs

### Contractor Qualification Committee

Marcus von der Hofen, Coastal Gunitex Construction Company

### Education Committee

Oscar Duckworth, Valley Concrete Services

### Marketing Committee

Tait Pirkle, EASTCO Shotcrete, LLC

### Membership Committee

Cathy Burkert, American Concrete Restorations, Inc.

### Pool & Recreational Shotcrete Committee

Mason Guarino, South Shore Gunitex Pools & Spas, Inc.

### Safety Committee

Andrea Scott, Hydro-Arch

### Technical Committee

Lihe (John) Zhang, LZhang Consulting & Testing Ltd.

### Underground Committee

Axel Nitschke, WSP USA

[www.shotcrete.org/convention](http://www.shotcrete.org/convention)



## OMNI RESORTS amelia island plantation

### SHOPPING

- 5 Beach Shoppe <sup>B</sup>
- 33 Amelia Shoppe

### MEETING SPACE

- 9 Azalea Room
- 10 Hibiscus Room
- 12 Live Oak Room
- 14 Oceanview Room & Terrace <sup>B</sup>

### RECREATION & ACTIVITIES

- 3 Camp Amelia <sup>B</sup>
- 7 Towel & Activity Hut
- 11 Gamers
- 13 Hotel Fitness Center <sup>B</sup>

### DINING

- 2 Seaglass
- 6 Oceanside
- 8 Rum + Tequila Experience
- 15 Sunrise Café (Monday dinner)



# SCHEDULE AT A GLANCE

SUNDAY, FEBRUARY 24, 2019		LOCATION
8:00 am – 5:00 pm	<b>Contractor Education Seminar</b> (w/ boxed lunch)	Cumberland C (w/ out exam ends 3:30 pm)
8:15 am – 1:45 pm	<b>Deep Sea Fishing</b> (w/ boxed lunch)	Meet outside lobby—Porte Cochere
10:00 am – 3:00 pm	<b>Oak Marsh Golf Outing</b>	Meet outside lobby to catch Omni shuttle
3:00 pm – 4:00 pm	<b>CM</b> – ACI C660 Special Meeting: Shotcrete Nozzleman Certification	Talbot
3:00 pm – 5:00 pm	Exhibitor Registration and Setup	Cumberland A/B
4:00 pm – 5:00 pm	<b>CM</b> – ACI 506-H Pool Subcommittee	Talbot
6:00 pm – 8:00 pm	Convention Registration	Cumberland A/B
7:00 pm – 9:00 pm	<b>Dessert Reception</b> and Exhibit Hall open	Cumberland A/B
MONDAY, FEBRUARY 25, 2019		LOCATION
6:30 am – 7:30 am	Registration	Cumberland A/B
6:30 am – 8:00 am	Breakfast and Exhibit Hall open	Cumberland A/B
8:00 am – 9:00 am	<b>CM</b> – Education   Underground	Cumberland C   Talbot
9:00 am – 10:00 am	<b>CM</b> – Membership   Pool & Rec	Cumberland C   Talbot
10:00 am – 10:30 am	AM Break	Cumberland A/B
10:00 am – 12:00 pm	<b>Group Tennis Clinic</b>	Meet outside lobby to catch Omni shuttle
10:30 am – 11:30 am	<b>CM</b> – Marketing   Safety	Cumberland C   Talbot
11:45 am – 12:45 pm	<b>TC</b> – Track 1 ( A   B   C )	Cumberland C   Talbot   Ossabaw
11:45 am – 1:45 pm	Lunch	Cumberland A/B
1:45 pm – 2:45 pm	<b>TC</b> – Track 2 ( A   B   C )	Cumberland C   Talbot   Ossabaw
3:00 pm – 4:00 pm	<b>TC</b> – Track 3 ( A   B   C )	Cumberland C   Talbot   Ossabaw
4:30 pm	Exhibit Hall closed for the evening	Cumberland A/B
5:30 pm – 6:30 pm	Reception	Sunrise Café
6:30 pm – 8:30 pm	<b>Buffet Dinner</b>	Sunrise Café
TUESDAY, FEBRUARY 26, 2019		LOCATION
6:30 am – 7:30 am	Registration	Cumberland A/B
6:30 am – 8:00 am	Breakfast and Exhibit Hall open	Cumberland A/B
8:00 am – 9:00 am	<b>TC</b> – Track 4 ( A   B   C )	Cumberland C   Talbot   Ossabaw
9:15 am – 10:15 am	<b>TC</b> – Track 5 ( A   B   C )	Cumberland C   Talbot   Ossabaw
10:15 am – 10:45 am	AM Break	Cumberland A/B
10:45 am – 11:45 am	<b>TC</b> – Track 6 ( A   B   C )	Cumberland C   Talbot   Ossabaw
12:00 pm – 1:00 pm	<b>TC</b> – Track 7 (encore presentations*)	Cumberland C   Ossabaw
12:00 pm – 1:00 pm	<b>CM</b> – Contractor Qualification	Talbot
12:00 pm – 2:00 pm	Lunch	Cumberland A/B
2:00 pm – 4:00 pm	<b>CM</b> – Board of Directors	Talbot
3:00 pm – 4:30 pm	Exhibit Hall closed   Exhibitor Move-Out	Cumberland A/B
5:45 pm – 6:00 pm	<b>Bus departure to Walker's Landing</b>	Meet outside lobby to catch Omni shuttle
6:00 pm – 10:00 pm	<b>Reception and Awards Banquet</b>	Walker's Landing

**CM** = Committee Meetings

**TC** = Technology Conference presentations

**Bold/italic** = optional events (not included with registration)

\*Top two attendee-selected presentations repeated based on attendee request



## 1A THE SHOTCRETE POOL BUSINESS

**Speaker:** Mason Guarino, Vice President, South Shore Gunite Pools & Spas, Inc.

The shotcrete pool business brings together many different construction aspects including excavation, forming, reinforcement, piping, placement, finishing, tolerances, curing, and protection. Successful construction of shotcrete pools requires close attention to many details, whether a small residential pool or a large commercial pool. One of the most challenging aspects is providing the proper shotcrete crews, equipment, and concrete material at the right place and time. This presentation will provide an overview of the shotcrete pool business from a successful pool contractor with decades of experience.

## 1B THE SHOTCRETE PLACEMENT METHOD: THE PAST, THE PRESENT, AND THE FUTURE

**Speakers:** Pierre Siccardi, PhD Student, Laval University; Marc Jolin, PhD, FACI, Professor, Department of Civil and Water Engineering, Laval University; and Antoine Gagnon, PhD Student, Laval University

From the early days of the cement gun to the widespread development of automation, the last 100 years have witnessed tremendous evolution in the shotcrete technology. Following the review of historical milestones, the presenters explore the knowledge available in other research areas along with the challenges that need to be explored to fully understand and further develop the shotcrete process. The approach undertaken at the Laval University Shotcrete Laboratory to further shotcrete R&D will be exposed, including some of the latest research efforts. The presenters will share their vision on the future of shotcrete with an emphasis on the challenges to face.

## 1C GUIDELINES AND RESOURCES FOR UNDERGROUND SHOTCRETE DESIGN AND SPECIFICATION

**Speaker:** Axel Nitschke, PE, PhD, Vice President, WSP USA, and Tunnel Practice Leader, NATM

The design and specification of underground shotcrete touches a wide range of topics and can be overwhelming for practitioners in the office and the field that do not work frequently with or are new to shotcrete. However, guidelines and resources are available, for example, from ACI Committee 506, Shotcreting, or the American Shotcrete Association. The presentation will provide an overview of existing guidelines and resources that are readily available and can be used. Also, the structure and interaction of the different documents will be discussed and can be used as a roadmap. Finally, links and contact information will be provided to further open the door into the field of underground shotcrete.

## 2A POOL SHOTCRETE—HIGH QUALITY DOES NOT MEAN LOW PRODUCTIVITY

**Speaker:** Ryan Oakes, Managing Partner, Revolution Gunite

Contractors often feel high production is the most important aspect of their shotcrete work. Though production is important, ultimately, quality should be the primary goal for creating high-quality, durable pools. However, high production and high quality are not mutually exclusive. A knowledgeable shotcrete contractor who invests in the proper equipment, staging resources, scheduling, and crew can consistently produce high-quality shotcrete at a high production rate for their work. This presentation will explore the factors that shotcrete contractors should consider to make their operation as efficient and effective as possible with careful attention to in-place quality and productivity.

## 2B CONCRETE MIXTURE DESIGN FOR SHOTCRETE

**Speaker:** Oscar Duckworth, Owner, Valley Concrete Services

Are you accepting mixture designs with less than ideal placement behavior? Why do some mixture designs stack, flow around reinforcements, and finish better than others? Occasionally, not so subtle clues are hidden in plain sight within the mixture design. Can you “read” a mixture design and predict its behavior? If not, some hard lessons may be in your future! Major points of this discussion will include: explaining plastic properties; the dark ages of shotcrete mixtures and how to avoid repeating history; understanding the role of paste and the aggregate skeleton; avoiding common mixture design mistakes; how a good mixture design can increase productivity; and why less-expensive mixtures may perform better during placement.

## 2C RECENT INNOVATIONS IN ROBOTIC SHOTCRETE TECHNOLOGY

**Speaker:** Patrick Bridger, General Manager, King Shotcrete Equipment Inc.

Handheld nozzles have been accepted practice in the shotcrete industry for more than 100 years. Over the last few decades, shotcrete equipment manufacturers have developed many equipment options that take the shotcrete nozzle from the hands of the nozzleman and replace it with much safer and much more effective options. One particular shotcrete equipment manufacturer has developed some innovative new equipment options that offer a cost-effective alternative to the traditional robotic shotcrete systems that are seen on excavation projects around the world. This presentation will introduce two of these new equipment innovations and provide examples of their use on several European and North American projects.

## 3A HOW NOT TO SHOOT A SHOTCRETE POOL

**Speakers:** Mason Guarino, Vice President, South Shore Gunite Pools & Spas, Inc.; and Ryan Oakes, Managing Partner, Revolution Gunite

The pool industry has a wide variety of contractors with varying experience and application techniques. Unfortunately, there are shotcrete contractors who don't know the proper application techniques, or simply cut corners in the construction process. This presentation will point out some of the things “not to do” while shooting a pool. The intent of this presentation is that if we know what not to do, we can avoid these problems in the field and ultimately build better-quality, more durable shotcrete pools.

## 3B SHOTCRETE PROJECTS CONVERTED FROM FORM-AND-POUR

**Speakers:** Dennis Bittner, National Sales Manager, Infrastructure, The Quikrete Companies; and Eric Bertrand, Project Engineer, Mosites Construction

The presenters will discuss three projects where repairs were performed using the shotcrete method in lieu of the form-and-pour method. The discussion will include the advantages of the shotcrete method over the form-and-pour method overall. Additionally, the process of changing the scope of work on each project will be discussed. The repairs completed on these projects will be explored in detail, correlating the overall advantages of the shotcrete method to specific examples on each project.

## 3C BEHAVIOR OF BI-COMPONENT POLYMER FIBERS UNDER CREEP AND IN AGGRESSIVE ENVIRONMENTS REGARDING DURABILITY PERFORMANCE

**Speaker:** Mario Manser, Contec Fiber AG, Switzerland

In underground applications, spraying of concrete is a well-established and economical alternative to conventional casting techniques. Further time and cost savings are achieved when fiber-reinforced concrete is applied. Steel fibers are mainly used at this time. Corrosion risk, damage of water impermeable films by the stiff steel fibers, and a relatively high fiber rebound are some of the drawbacks of steel fibers. A suitable alternative may be found in polymer-based fibers. Such fibers were thought to create other problems regarding the long-term application. Especially their performance under permanent load (creeping effect), but also their behavior in aggressive environments, has been questioned. A recently developed polyolefin-based bi-component fiber was investigated regarding its long-term behavior. Pre-cracked fiber-reinforced square panels were exposed to permanent load and different aqueous solutions (sodium chloride, sodium sulphate, sulphuric acid). Long-term deformation and residual load capacity were determined. In these laboratory tests, made by EMPA (Swiss federal laboratories for materials testing and research), it could be demonstrated that for this type of structured synthetic fiber, neither creep nor the exposure to aggressive underground environments seems to be a limiting factor anymore.



## 4A ADVANCEMENTS IN WET-MIX NOZZLE DESIGN

**Speaker:** Oscar Duckworth, Owner, Valley Concrete Services

Could the nozzle be shotcrete's most overlooked component? The wet-mix nozzle is the business end of a constantly evolving shotcrete industry. But this ubiquitous tool's common design has not changed dramatically since its original patent. Can recent new developments in nozzle design force all current designs into obsolescence? Take a comprehensive look into current and future nozzle design concepts and learn: the spray pattern—shotcrete's most important element; how to identify an efficient design or an obsolete nozzle by its shape; avoid the three most common mistakes when choosing or using a wet-mix nozzle; visual and audible indicators of proper nozzle function; nozzles that should never be used for structural shotcrete; and can nozzles be designed to be safer?

## 4B DEVELOPMENT AND TESTING FOR A LOW TEMPERATURE SHOTCRETE MIXTURE USING HIGH-VOLUME SLAG

**Speakers:** Dudley R. (Rusty) Morgan, PhD, PEng, FACI, Consultant; and Wafiq Thaha, Technical Services Manager, CBM Ready Mix

Shotcrete mixtures are developed to achieve suitable performance characteristics for pumpability and stackability in the plastic state. This is traditionally done by limiting the size of the maximum coarse aggregate to 10 mm (3/8 in.) or less and by using a high proportion of an ASTM Type I cement or a CSA Type GU. Such shotcretes mixtures can, however, develop high temperatures in thick wall sections. This presentation will describe development of a low heat of hydration shotcrete mixture using a high volume of supplementary cementitious material replacement (slag) to 70% of the total cementitious content for use in thick wall sections. Candidate mixtures were developed in a three-phase program where laboratory trials assessed the rheological properties of various modifications to proportion and materials selection, and field shooting trials measured the pumpability and stacking ability of the selected mixtures and the ability to shoot in highly congested thick reinforced shotcrete wall sections. The results of the testing demonstrated a very good quality of shotcrete with low thermal heat properties and good pumping, shooting, and stackability characteristics.

## 4C FIBER-REINFORCED SHOTCRETE 101

**Speaker:** William "Bill" Geers, PE, Business Development and Technical Manager USA/Canada, Bekaert-Maccaferri Underground Solutions

The presentation will provide an overview of the different types of fibers, such as steel, macro-synthetic, micro-synthetic, and natural fibers; including a review of the basics of material properties and typical applications where the fibers are currently used in sprayed concrete. The presentation will provide a discussion on the uses of fibers in ground support applications. A review of design principals along with testing methods will be presented. Project examples where the various fibers have been employed will be presented as well.

## 5A RECENT DEVELOPMENTS IN THE SCIENCE OF SHOTCRETE MATERIALS AND MIXTURE DESIGN

**Speaker:** Will Clements, MASC, PEng, Engineering Services Manager, King Shotcrete Solutions

For many years, shotcrete contractors, tunneling contractors, and mining companies have had to evaluate the benefits of dry-mix shotcrete and those of wet-mix shotcrete and choose the system that best suits their particular application. A hybrid version of both shotcrete processes can offer the benefits of both dry- and wet-mix shotcrete. Although this is not a new concept, recent technological developments have simplified the dry- to wet-mix shotcrete concept and resulted in improved mixture quality and consistency. This presentation will explain some of the more recent developments and demonstrate how those developments have improved the dry- to wet-mix shotcrete concept in various above-ground and underground applications. Concrete repair using the shotcrete method has always been an efficient and versatile practice, but the risk of shrinkage cracking, inherent to all cement-based materials, remains a concern. Recent advancements in the development of shotcrete materials with very low cracking potential will be explored, along with the theory behind why using more compatible shotcrete repair materials is important to the concrete repair industry.

## 5B WETSUIT—NEXT-GENERATION WATERPROOFING SOLUTIONS FOR SHOTCRETE

**Speaker:** Brandon Kelly, Technical Director, Neptune Coatings  
Waterproofing has been a fundamental component of many foundation and underground shotcrete applications. This presentation will discuss the challenges of using a fluid-applied system and investigate the variety of systems available in the current construction market.

## 5C PERSPECTIVE ON FIBER-REINFORCED SHOTCRETE—CURRENT PRACTICE AND FUTURE INNOVATIONS

**Speakers:** Antoine Gagnon, PhD Student, Laval University; Marc Jolin, PhD, FACI, Professor, Department of Civil and Water Engineering, Laval University; and Pierre Siccardi, PhD Student, Laval University

Fiber-reinforced shotcrete (FRS) has proved a very versatile tool that contributes to the success of many types of projects. However, as a truly composite material, an incomplete understanding of the mechanics of FRS can lead to inadequate materials selection or mixture design, and thus unexpected results. In this presentation, the presenters will review some of the key mechanisms in play to provide examples of common challenges, especially in relation with the various test methods available. The presentation will also discuss the design of FRS mixtures, underground support challenges, structural design, FRS culture in the world, and new high-toughness mixtures.

## 6A SHOTCRETE FINISHING—DOS AND DON'TS

**Speakers:** Mark Bradford, COO, Spohn Ranch Inc.; and Dominic Petrella, Shotcrete Artisan and Owner, Petrella Concrete

Shotcrete affords the ability to provide a wide variety of creative finishes—carved rock, specialized architectural surfaces, and amazingly smooth hard-troweled shotcrete finishes are some of the most difficult to produce. This presentation will discuss methods for creating high-quality finishes and how to avoid common finishing mistakes that waste time and may lead to a poor quality in-place product. Tools will also be discussed and why timing of placement is a key factor for success.

## 6B TIBER CREEK SEWER REHABILITATION—COMBINING INITIAL SUPPORT WITH FINAL SUPPORT AND LINING

**Speaker:** Marcus von der Hofen, Vice President, Coastal Gunite Construction Company

As part of the DC Clean Rivers Project – Division 1 Main Pumping Station Diversions on behalf of the District of Columbia Water and Sewer Authority, the Tiber Creek trunk sewer was designated to receive a new structural liner in a 122 ft portion in southeast Washington, DC. The rehabilitation involved creating new supporting arch structures using the shotcrete placement method in between previously installed steel bents. Once the shotcrete arches reach the required strength, the steel bents were removed, a new mat of reinforcing steel installed, and the entire length of the repair was fitted with a new continuous shotcrete liner.

## 6C TESTING WET-SPRAYED SHOTCRETE ON LABORATORY SCALE

**Speaker:** Dr. sc. nat. Benedikt Lindlar, Corporate Product Engineer, Sika Services AG and Sika Technology AG

Currently used laboratory methods for testing fresh shotcrete—for example, needle penetration tests and testing bars—are adapted from ordinary application fields of cementitious materials such as mortar or concrete. These methods have proved suitable for their original use; however, when transferred to the field of shotcrete, they do not take into consideration the very specific conditions of sprayed applications. Typical laboratory results from needle penetration methods hardly represent the performance of a real shotcrete system. To date, the only suitable way of testing the combination of cement chemistry and admixtures, especially accelerators, are therefore full-scale field tests. During this presentation, a new laboratory testing system which is valid and reliable for fresh shotcrete testing will be discussed. The system includes hardware and software for specimen preparation, data acquisition, and data evaluation.



## GOLD LEVEL, EXHIBITING

### BASF

BASF, through its Master Builders Solutions brand, is a leading supplier of underground construction products that enable civil, tunneling, and mining customers to be more successful. BASF creates chemical solutions for new construction, maintenance, and repair of underground structures, especially in challenging ground conditions. We have a wide range of shotcrete products including accelerators, hydration control admixtures, plasticizers, and fibers. Visit [www.master-builders-solutions.basf.us](http://www.master-builders-solutions.basf.us).

### GARY CARLSON EQUIPMENT

Gary Carlson Equipment stocks for rental and sales a very large fleet of new and like-new shotcrete guns, pumps, and grouting equipment for customers across North America. We also offer crew training.

### INTERNATIONAL CONCRETE REPAIR INSTITUTE (ICRI)

ICRI, the only association in the concrete industry devoted solely to repair and restoration, publishes a bimonthly magazine and technical guidelines for concrete repair. Local chapters provide regional networking opportunities. Worldwide membership includes contractors, manufacturers, engineers, distributors, owners, and other professionals with a common goal: prolonging the useful life of concrete through quality repair, restoration, and protection.

### KING SHOTCRETE EQUIPMENT INC.

In North American and international markets, the strength of King Shotcrete Equipment Inc. lies in its ability to provide high-quality equipment, as well as a high level of technical support from the supply of wear parts to equipment servicing and training. Visit [www.kingshotcrete-equip.com](http://www.kingshotcrete-equip.com).

### KING SHOTCRETE SOLUTIONS

King Shotcrete Solutions include prepackaged shotcrete material, as well as mixing and placement equipment, intended for mining, tunneling, refractory, concrete construction, and concrete rehabilitation projects. King Shotcrete Solutions supports your complete shotcrete operation. Visit [www.kingshotcrete.com](http://www.kingshotcrete.com).

### MAPEI UTT

Underground and mining projects have unique and challenging characteristics due to their complexity during design and construction. MAPEI's UTT (Underground Technology Team) understands these challenges and focuses on providing a broad range of products and technologies along with expertise and know-how for the underground construction and mining industries. These solutions include chemicals for shotcrete, mechanized tunneling, injection, and waterproofing technologies. These products are manufactured by MAPEI with the goal in mind of completely satisfying every technical requirement of our customers, from applicator to the contractor to the client. Contact [hq.utt@utt.mapei.com](mailto:hq.utt@utt.mapei.com) for more information.

### PUTZMEISTER

Putzmeister develops, produces, sells, and serves its customers worldwide with technically high-quality and service-oriented machines in the following areas: truck-mounted concrete pumps, stationary concrete pumps, stationary placing booms and accessories, concrete mixing, industrial technology, pipe delivery of industrial solids, concrete placement and removal of excavated material in tunnels and underground, mortar machines, plastering machines, screed conveying, injection, and special applications. Our market fields lie in the construction industry, in mining and tunnel construction, with major industrial projects in the precast industry, power stations, sewage treatment plants, and waste incinerators.

### THE QUIKRETE COMPANIES

The QUIKRETE Companies are the largest manufacturer of packaged concrete and cement mixtures in the United States and Canada, and an innovative leader in the commercial construction and home improvement industries.

### REED SHOTCRETE EQUIPMENT

REED concrete pumps, shotcrete equipment, pan mixers, and gunite machines are used to work on projects worldwide. REED has been manufacturing concrete placing equipment since 1957. REED is an independent member of the privately held Shea family of companies, an American building and construction organization established in 1881.

## GOLD LEVEL, ADDITIONAL

### AMERICAN CONCRETE RESTORATIONS, INC. (ACR)

We are a full-service concrete repair company available as self-performing contractors or subcontractors. Our client-focused solutions allow us to ensure high-quality results while maintaining an adaptive and cost-effective service for any size project. Our workforce has over 30 years of experience specializing in shotcrete, mobile-mixed concrete, fiber-reinforced composite systems, epoxy injection, and spray-applied waterproofing (polyurea). As a leader in the shotcrete industry and a three-time American Shotcrete Association award winner, ACR is distinguished by the highly skilled people behind our operation. With ACI Certified Nozzlemen and experienced management, ACR has had the opportunity to serve in both the public and private sectors with a diverse history of clients.

### DEES-HENNESSEY, INC.

Dees-Hennessey, Inc., provides structural engineering solutions to commercial properties in the Northern California area. We have been in business since 1985, offering expert construction work including structural shotcrete, gunite, shoring, underpinning, and pier drilling.

### DRAKELEY INDUSTRIES

Drakeley Industries, a nationwide consulting firm, specializes in shotcrete applications and techniques that offers review, training, and expert witness services for shotcrete-oriented projects. Drakeley Industries has notably provided consultation and training for the NYC Metropolitan Transit Authority East Side Access subway tunnels projects.

### GENESIS®

The Society of Watershape Designers® is the only professional association in the world that requires third-party-accredited education, testing, certification, continuing education, and quality control vetting in the design and construction of pools, spas, fountains, and water features—"watershapes"—of all types. Together, SWD® Registered members and SWD Masters form a tight-knit community of accomplished and certified specialists dedicated to creating the most beautifully designed and expertly built watershapes in the world.

### PRELOAD LLC

Preload has a heritage of leadership in prestressed concrete tanks for liquid storage. Beyond our original designs that created the prestressed concrete category, Preload continues to be recognized as the innovator in our industry. Today, we are known as the go-to single-source provider for all phases of a tank's design and construction, which allows us to maintain the highest levels of quality control throughout the project. As pioneers of prestressed concrete tank design, we currently have more than 1000 years of combined experience serving our clients throughout most of the 50 states, with offices in Kentucky, New York, Texas, and Massachusetts.

### SUPERIOR GUNITE

Founded in 1956, Superior Gunite began its business specializing in swimming pool construction. Now, whether we are building the structural concrete basement walls for a mixed-use project in the heart of Boston's historic Fenway district; completing an emergency tunnel repair with a 24/7 operation; successfully proving the effectiveness of a shotcrete wall application that had never been used before in Clark County, NV; or constructing a vital yet uncelebrated retaining wall, our dedicated teams lead the way in innovation and technologies that save time and money.



## SILVER LEVEL, EXHIBITING

### AIRPLACO EQUIPMENT COMPANY

Airplaco Equipment Company was formed in 1946 and specializes in quality-built concrete construction machinery, including grout and shotcrete pumps, gunite machines, and pressure vessels, as well as parts and accessories.

### FOOTHILLS DRILLING EQUIPMENT INC.

Foothills Drilling Equipment Inc. is the East Coast Distributor of TEI Rock Drills. We also provide sales of DTH Hammers and tooling, manufacturing of metal plates, as well as sales of construction and mining materials, consumables, and equipment. Our services also include maintenance on DTH hammers as well as TEI Rock Drills.

### KRYTON INTERNATIONAL INC.

Founded in 1973, Kryton International Inc. provides crystalline concrete waterproofing solutions. We develop and manufacture products that waterproof, repair, and protect concrete. Kryton exports its products to more than 50 countries globally.

### RELIABLE CONCRETE ACCESSORIES

For over 4 years, Reliable Concrete Accessories had been the licensed manufacturer of the UltraCure™ concrete wet curing blankets. Our latest products, ReliableCureSOG® and Reliable-CureVAB®, represent the next generation of high-performance concrete curing technology that outperforms anything that has come before.

### SHOTCRETE HELMET

Shotcrete Helmet is the nozzleman's choice for respiratory, head, and vision protection while working with shotcrete. Shotcrete Helmet is comfortable and easy to wear and use.

### WESTERN SHOTCRETE EQUIPMENT

Western Shotcrete Equipment has been in the shotcrete industry for over 30 years. We have excelled in building optimal quality shotcrete equipment, including our industry-changing Warrior Pumps, because we know shotcrete. Our shop is tailored to equip you with everything you need to stay ahead of the competition in the field, day in, day out.

### WICKTEK INC.

WICKTEK Inc. formulates, manufactures, and sells technologically advanced products that are used to enhance and improve a wide range of building materials. Its revolutionary DensiCrete product increases the strength and durability of concrete and other cementitious materials.

### XYPEX CHEMICAL CORPORATION

For more than 40 years, the ground-breaking crystalline technology of Xypex Chemical Corporation has been serving concrete users around the world. In more than 80 countries, the proprietary crystalline waterproofing products of Xypex Chemical Corporation are stocked, sold, and supported by a worldwide network of distributors and licensees. The crystalline technology that makes Xypex so effective in waterproofing, protecting, and enhancing concrete, was developed in Vancouver in 1969. Since then, in both hemispheres, in every climatic challenge, and in widely varying construction situations, our technology has been tested and proven.

## SILVER LEVEL, ADDITIONAL

### BEKAERT MACCAFERRI UNDERGROUND SOLUTIONS

Bekaert Maccaferri Underground Solutions is your global partner for smart fiber reinforcement offering a high-quality and value-adding service with our fiber products. We specialize in fibers for shotcrete in temporary and permanent ground support in tunneling and mining applications.

### BLASTCRETE EQUIPMENT COMPANY

Blastcrete Equipment Company is a family-owned manufacturer of safe, reliable, and user-friendly solutions for the refractory and shotcrete industries. With more than 60 years of experience, we offer a complete product line of concrete mixers, pumps, and related products customized for a variety of markets.

### COASTAL GUNITE CONSTRUCTION COMPANY

Coastal Gunite Construction Company has provided structural shotcrete services in the commercial, industrial, energy, and public markets for more than 30 years. Since 1983, Coastal Gunite Construction Company has held an unwavering commitment to providing owners and engineers with technically capable and competent commercial shotcrete construction services.

### EASTCO SHOTCRETE, LLC

EASTCO Shotcrete, LLC, is a New Jersey-based company that specializes in concrete rehabilitation using the shotcrete process. Our projects range in varying sizes, from small concrete repair projects to large, high-production jobs in both wet and dry processes. Accommodating the owner's specific needs is always a priority.

### NORMET AMERICAS, INC.

At Normet, we help our mining and tunneling partners to continuously improve their processes, increase the safety and productivity of their underground activities, and improve the sustainability of their operations. Normet has a broad underground offering: equipment for concrete spraying and transport, explosives charging, scaling, lifting, installation works, and logistics; construction chemicals for sprayed concrete, admixtures, injection systems for rock improvement, reinforcement systems for high-deformation conditions, spray applied waterproofing systems, and needed chemicals for tunnel boring machine technology; high-quality and innovative rock reinforcement products; and services for underground mining and tunneling.

### OCEANSIDE CONSTRUCTION

Oceanside Construction has been in the shotcrete industry for over 12 years. We specialize in all areas of vertical and overhead shotcrete applications, including seismic retrofits, shoring walls, pools, wine caves, and much more. Oceanside Construction is based in Salt Lake City, UT, and can be seen in many of the surrounding states.

### REVOLUTION GUNITE

Revolution Gunite provides award-winning dry-mix shotcrete (gunite) services primarily for swimming pools as well as retaining walls, soil stabilization, and architectural features. We serve all of North Carolina as well as parts of South Carolina, Virginia, Tennessee, and West Virginia.

### SHOTCRETE TECHNOLOGIES, INC.

Shotcrete Technologies, Inc., has been supplying mining, tunneling, and infrastructure projects with quality shotcrete products and services for over 35 years, including shotcrete products, shotcrete accelerators, and shotcrete services—STI's team of professionals understand, support, and add value to every aspect of your shotcrete application.

### SOUTH SHORE GUNITE POOLS & SPAS, INC. (SSG)

South Shore Gunite is the largest full-service swimming pool company in the Northeast. SSG self performs all of their own work including wet- and dry-mix shotcrete for their own pools and has a growing shotcrete construction division performing bridge repair, dam repair, shear wall installations, and various other types of shotcrete work in the Northeast.

### TORRENT SHOTCRETE STRUCTURES LTD.

As Canada's premiere structural shotcrete provider, Torrent Shotcrete Structures has been a pivotal partner in the construction of many of Canada's most advanced and prestigious facilities since 2006. Our extensive portfolio of projects ranges from extensive below-grade parkades, large-scale civil engineering projects to small residential structures.



# THANK YOU, CONVENTION SPONSORS!

**AIRPLACO®**

 Airplaco Equipment Company

**AMERICAN  
CONCRETE  
RESTORATIONS, INC.**  
www.AmericanConcreteRestorations.com

American Concrete Restorations, Inc.

**BASF**  
We create chemistry

 BASF

**BEKAERT  
MACCAFERRI**  
UNDERGROUND SOLUTIONS  
**3D4D**

Bekaert Maccaferri Underground Solutions

**blastcrete**

Blastcrete Equipment Company

**COASTAL**

Coastal Guniting Construction Company

**GENERAL  
ENGINEERING  
CONTRACTORS**

Dees-Hennessey, Inc.

Dees-Hennessey, Inc.

**DRAKELEY  
INDUSTRIES**  
Knowledge and planning, before the shoot.

Drakeley Industries

**EASTCO Shotcrete, LLC**

EASTCO Shotcrete, LLC

**Foothills  
Drilling Equipment Inc.**

 Foothills Drilling Equipment Inc.


**GARY  
CARLSON**

 Gary Carlson Equipment Co.

**GENESIS®**

GENESIS®

**ICRI**  
CONCRETE REPAIR  
Restore | Reproduce | Renew

 International Concrete Repair Institute

**KING  
SHOTCRETE**  
EQUIPMENT

 King Shotcrete Equipment

**KING  
SHOTCRETE**  
SOLUTIONS

 King Shotcrete Solutions

**KRYTON**  
SMART CONCRETE®

 Kryton International Inc.

**utt**  
**MAPEI**

 MAPEI UTT

**normet**  
FOR TOUGH JOBS

Normet Americas Inc.


**CEANSIDE  
CONSTRUCTION**  
SHOTCRETE SPECIALISTS

Oceanside Construction

**PRELOAD**

Preload LLC


**Putzmeister**

 Putzmeister


**QUIKRETE**  
CEMENT & CONCRETE PRODUCTS™

 The QUIKRETE Companies

**REED**  
SHOTCRETE EQUIPMENT

 REED Shotcrete Equipment

**RELIABLE**  
CONCRETE ACCESSORIES

 Reliable Concrete Accessories

**★ REVOLUTION  
GUNIT**

Revolution Guniting

**SHOTCRETE**  
HELMET.COM

 Shotcrete Helmet

**SHOTCRETE**  
TECHNOLOGIES, INC.

Shotcrete Technologies, Inc.

**SSG** South Shore Guniting Pools & Spas, Inc.  
Quality Pools And Spas Since 1975

South Shore Guniting Pools & Spas, Inc.

**GUNIT**

Superior Guniting


**TORRENT**

Torrent Shotcrete Structures Ltd.

**WESTERN**  
SHOTCRETE EQUIPMENT

 Western Shotcrete Equipment

**DensiCrete®**  
Since 1992

 Wicktek Inc.—DensiCrete®

**XYPEX**

 Xypex Chemical Corporation

 = Exhibitor