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Upcoming Events

MIX Group Orientation

May 19-21, 2022 Phoenix, AZ <u>RSVP</u>

Concrete Executive Leadership Forum

July 14-17, 2022 The American Club Kohler, WI <u>Brochure & Registration</u>

Annual Conference

September 29 - October 2, 2022 Hilton Cleveland Downtown Cleveland, OH

Safety Summit

November 10-11, 2022 Albuquerque, NM

Welcome New Members

- 3 Promise Labor Services, Waterford, OH
- Berkeley Cement, Berkeley, CA
- CPC Concrete, Tampa, FL
- Industrial Floor Systems, Barrie, ON, Canada
- McCabe's Landscape Construction, Murrieta, CA
- TEAM Construction Management, Las Vegas, NV
- Unicon Group, The, North Hollywood, CA

Welcome back K&E Flatwork, Northmoor, MO.

New Safety Bulletins - Click to Download



Message from the Executive Committee

Improving Constructability Cary S. Kopczynski

The Second Law of Thermodynamics holds that there is a tendency for any isolated natural system to degenerate into increasing disorder, or entropy. This physical law is thought to apply throughout the universe and is not subject to human intervention. A similar phenomenon seems to occur with human life in general. It tends toward complexity unless we continually confront it. Have you ever postponed something, thinking that "next year things will be simpler, and I'll have more free time"? When next year comes, your to-do list has grown, and your life has become more complicated. Instead of having more free time, you have less! The good news is that if we DO continually confront complexity, we can do battle with entropy and bring more order to our lives and organizations.

This principle holds true in the concrete industry. Buildings and other structures are growing steadily more elaborate and more complicated. For some structures, this complexity is unavoidable: it's due to the inherent nature of the architectural design, or to site constraints or other factors. For other structures, however, the added complication is unnecessary. Many things play a role in causing it-the growth in codes and standards, insufficient coordination among team members, and steadily increasing analytical power that allows unnecessary complication to creep in, to name a few. Nevertheless, it's important that designers, builders, and other stakeholders in the design and construction process recognize and confront this trend. It is at least partly responsible for the stagnated construction productivity our industry has experienced over the last several decades.

I've written about the construction productivity challenge in my past President's Memos. I've also discussed how ACI is embarking on a new initiative to confront it. A task group I chaired in 2020 developed many recommendations regarding how ACI could leverage its resources to improve construction productivity, with a focus on concrete construction. And the first place we're targeting our effort is on improving the constructability of structural design.

Simply put, constructability involves incorporating construction knowledge into the design process to improve construction productivity. When architects and engineers acquire a working knowledge

of construction and then collaborate with the contractor and subcontractors during design, magic happens. Construction schedules shorten and costs drop, with no compromise in quality. In fact, quality arguably increases when designs are simplified and made more constructable. Complicated and intricate designs are more difficult to build and hence increase the likelihood of construction errors. Conversely, designs that are simplified and made more constructable, by coordinating their systems, layout, and detailing with the contractor, are less likely to result in construction mistakes. Simplicity is golden.

To assist structural designers in learning the ins and outs of constructability, ACI now has on its agenda the goal of offering a certificate training program on this very topic. This new program will include training modules that will provide designers with a working knowledge of formwork, reinforcing bar detailing, specifying concrete, differences in the way designs should be approached as a function of project delivery type, and many more subjects. Guiding the content in the preparation of each of these new educational sessions will be the objective of improving the constructability of structural design and, in the process, the collaboration between designers and builders. This will automatically result in improved construction productivity and bring us closer to our long-term objective of realizing the full productivity potential of modern construction systems on as many projects as possible.

It's too soon to say exactly when this new certificate program will be rolled out. It's in development now with very good people working on it and will become available later this year. When it does, I encourage you to consider it if you're involved in structural design in any way. You'll emerge from the training with a working knowledge of construction and a better understanding of contractors' needs. It will improve your daily design decisions and, in the process, move construction productivity in a positive direction.

It's easy to make things difficult. It's difficult to make them easy. But the effort is worth it because simplicity is golden. consistent with meeting other design objectives.

President's Memo ACI Concrete International, January 2022 Reprinted with permission from the American Concrete Institute

Thanks to ACI immediate past president Cary S. Kopczynski and ACI for allowing us to reprint this column.

Executive Director's Message

Use ASCC Membership to Promote Your Company Bev Garnant

Are you using your membership in ASCC/DCC/CPC/SRMC as a tool to help set yourself apart from competitors? If not, you're missing a simple opportunity to elevate your company by affiliation with a national organization. Here are a few suggestions:

- Display the appropriate logos on your website, company literature, letterhead, and business cards.
- Enter ASCC awards competitions and share your winning results with customers, potential clients, visitors to your office (display in lobby and meeting rooms) and employees. Post on your website.
- If you use the ASCC Position Statements, make sure to share them with appropriate employees; post them on your website (read only please); and send to your network of designers, gcs and owners.
- Use the Pre-Construction Checklists (general concrete, polished concrete & safety) to instigate pre-job meetings with necessary parties.
- Tell vendors, designers, owners, and others the benefits of ASCC that you as a contractor bring to the table (hotlines, safety resources, webinars, email forum, etc.) to enhance your value to them.
- · List ASCC committee/board involvement on your resume and on your website.
- Include copies of ACI and CPC certifications in proposals and business development materials and showcase the logos on apparel for tradesmen and project management personnel.

You'll think of other ways to let people know of your connection to ASCC. Do the same with the other organizations you belong to as well. Business people understand the value of association membership and participation, and will respect you for your involvement.

Concrete Construction Specialist

Guidance for Concrete Contractors ... #6 in a Series Jim Klinger

Full disclosure: A wise man once offered the following bit of advice on how best to navigate the uncertain waters of concrete construction. "It's easy," he said, "you just have to position yourself to get lucky". So consider if you will, the following Hotline call fielded by the ASCC Technical Division last November that showcased the long-standing need for industry guidance for F-number testing of broom and swirl-type textured finishes. As recounted below, what started out as a routine call grew into a three-part test program sponsored by the ASCC Foundation. As you'll see it provides immediate value to ASCC members, and will help bring improvements to our industry. (**N.B**. Due to VOICE space limitations, there really is no good way to do this the justice it deserves. This writer has romanced certain passages below, but only for purely technical reasons).

Hotline question:

"We recently completed concrete placement at level three of a 10-story, post-tensioned (PT) parking garage. The building geometry is based around a single-threaded helix. The typical floor plans show no level spots, meaning the structural frame is really one continuous ramp that slopes from the foundation mat to the roof. Approximate building footprint is 21,000 SF. The Division 3 specifications call for a "non-slip, non-skid, swirl-float" finish at all vehicle traffic and parking areas. Feedback noted in owner/design team site visit reports indicates satisfaction with all work placed to date. The ramp slabs are boldly exposed to rainfall during construction and no ponding of water has been reported, even after the elevated PT slabs have been stressed and the supporting formwork cycled.

Due to misunderstandings at bid time, no one on the project team included ASTM E1155 Flatness and Levelness Testing in their scope. As a result, the top surfaces of the first three floors were never tested for flatness (due to the "all ramp" slope condition, levelness testing does not apply). Since the Owner and Architect visit the jobsite weekly and are happy with the work in place, the lack of flatness testing went unnoticed until someone in the GC food chain scrutinized Section 03 35 00 CONCRETE FINISHING, which arguably assigns ownership of said testing to the concrete contractor. This is a public works project, which did not allow qualifications to be listed on the bid form. We have enjoyed a successful working relationship with the key project stakeholders for many years and have agreed to pick up the flatness testing scope for floors four through the roof; confident that an equitable commercial arrangement will eventually be crafted that will make us whole. That being said...we have examined the project specifications, and are not sure what flatness test criteria we should provide to our newly-hired test agency, especially for slabs featuring such a rough-textured finish.

We have been building concrete parking structures for many years and have never seen flatness tested on swirl finish jobs. Acceptance criteria was usually based on symmetry of the swirl pattern and sometimes water testing to detect ponding or birdbaths. If slab thickness was in question, that could easily be spot-checked at blockouts, sleeves, edgeforms and so on. Please advise how we should proceed with direction to the test agency."

Specification requirements:

A review of the Division 3 specifications turned up the following:

"Comply with ACI 117 for local flatness/levelness tolerance measured in accordance with ASTM E1155. Specified Overall Value (SOV) of F/F=30 and Minimum Local Value (MLV) of F/F=25 ".

"Suspended concrete slabs: F/F: SOV=35 MLV=25 "

Resolution:

Based on recommendations made by the ASCC Technical Division, the concrete contractor submitted an RFI requesting that the flatness testing be waived. The rationale for this request is that there has always been confusion in the industry regarding the inherent variability in the surface quality of textured, non-skid applications such as swirl and broom finishes. In addition, no guidance for such testing appears in ACI 117-10 Specification for Tolerances for Concrete Construction and Materials. The design team was advised that based on experience and available ACI and other industry documents, the specified flatness criteria were likely to be unachievable.

A conference call with the designers was held. The design team would not waive the flatness testing but did acknowledge the "ramping slabs as non-critical" and reduced the specified flatness SOV to F/F=20 and MLV to F/F=15. The designers again expressed satisfaction with the work in place and agreed it was fit for purpose based on appearance and lack of ponding. The concrete contractor directed the test agency to start ASTM E1155 Flatness testing using the adjusted SOV=20 and MLV=15 criteria.

After testing two successive placements, the reported F/F combined scores were 17.90 and 15.84, just under the SOV required value of F/F=20. After reviewing this test data, the design team reconsidered the RFI request for waiver and agreed to cancel further testing.

The Rest of the Story (condensed version):

Within a few days of the Hotline call, we learned that the ASCC contractor member was planning to replace a concrete access road in their maintenance yard. Several thousand square feet (SF) of 6-inch thick slab was on the books for replacement. We requested permission to carve out a 20 ft. by 80 ft. section of the area for testing. The test slab was reinforced with #4 bars at 14-inch centers, placed over tightly compacted aggregate base. No vapor barrier was used. Prior to placement of reinforcing steel, the subgrade elevation was recorded with a laser scanner. The test panel was subdivided into four equal sections: bull float finish, machine float finish, broom finish and swirl finish. During concrete placement, the four test areas were separated by tooled, contraction joints. After placement, the top of each test panel slab section was tested for flatness by the test agency using a dipstick. At the same time a companion laser scan was performed by the concrete contractor.

Once the laser scan of the top surface was complete, we were able to use the test slab not only to test flatness of textured finishes, but to collect test data on slab thicknesses using laser scanning, impact echo, ground penetrating radar (GPR), and drilled core measurement methods as described below.

The top surface elevations were subtracted from the bottom base surface elevations to obtain concrete thickness at 1-ft. grid intervals. This resulted in about 1700 thickness values for the test panel. But how good was this data? We could find nothing in the literature comparing laser scan thickness data to any other methods. The contractor owned a ground penetrating radar device which was then used to scan the slab for thickness. About the same time, the ASCC Foundation funded the purchase of an impact echo device to allow members to collect slab thickness data. That device was loaned to the contractor who took impact echo thickness measurements from the test panel.

Finally, with all this data, we felt this investigation would benefit from the "gold standard" in slab thickness measurements—cores. We requested, and the ASCC Foundation funded, the drilling and measuring of 30 cores in accordance with ASTM C174 "Standard Test Method for Measuring Thickness of Concrete Elements Using Drilled Concrete Cores." But what about measuring cores by ASTM C1542 "Standard Test Method for Measuring Length of Concrete Cores?" Once again, the Foundation funded the measurement of the same 30 cores by both the jaw caliper and ruler procedures in ASTM C1542.

ACI-ASCC 117 Tolerances is updating its tolerance specification and has appointed a new subcommittee on measurement protocols. The slab thickness data was presented to the main 117 committee at the Orlando convention in March 2022. While 117 provides for only core and impact echo thickness measurements, other methods are being used to investigate slab thickness. This presents a most interesting and difficult question—how should nondestructive test methods used to determine slab thickness be compared to a thickness tolerance originally established by core measurements?

Results of the testing and an in-depth discussion titled "F-numbers and Textured Concrete Surface Finishes" will appear in the May 2022 issue of *Concrete International* as part 1 of a 3 part series. Parts 2 and 3 are being drafted and are slated to be published later this year.

Thanks to ACI Honorary Member Bev Garnant and the ASCC Foundation for supporting the test program, arranging funding on short notice, and helping to position us to get lucky.

Concrete Polishing Council

It's Time to Look at How You're Paying Your Employees Scott Metzger, council director

After hearing so many stories from contractors at the World of Concrete about the difficulties of obtaining and retaining employees and managing project costs, I set out to call some CPC member contractors to discuss strategies they've employed to keep projects rolling. My first call was to Chad Gill, president of Concreate, and a former CPC council director. I recalled that some years ago Chad developed job costing software that he shared with other polishing contractors, and thought he would be the ideal person to speak with. After a wide-ranging conversation lasting several hours, Chad suggested that maybe he write the column as a guest – essentially allowing me to subcontract the writing. I thought the idea brilliant, and I suspect our readers could probably use a break from my typical Rocky reference-filled drivel \bigcirc . So please enjoy the following and many thanks to Chad for sharing his time and talents!

Scott Metzger Council Director

A Case for Subcontracting and Project-Based Pay to Improve Job Costs Chad Gill, Concreate

Since the pandemic, job motivation might be hard to manage at your company. In what is called the "Great Resignation," motivation is a commodity many of us are struggling to keep in stock, and there are no clear signs of when that will improve. While motivation has been a long-churning problem, getting people to go back to work (and work efficiently) is an uphill battle, post-pandemic. It's especially difficult with the millennial generation (and the upcoming Gen Z).

Ownership is a good way to improve motivation, especially with the mentioned generations. They want to achieve something, to feel valued and essential in their roles, and have the sense of power that encourages that. The way workers are paid ties directly into providing a sense of ownership.

What's the best way to pay workers?

Before we jump into the value of project-based pay and subcontractors, let's talk about job costs. It'll make sense in a minute.

Polished concrete is a tricky thing to price. With something like steel or tile, you have actual, quantifiable units that can be priced by the square foot, and much more control. There's no easy measurement to go by to price as accurately with polished concrete. The solution is out-of-the-box thinking about your payment structure. At Concreate we improved our job costs by pricing (and paying) by the project.

When budgeting for and pricing a job, we look at each process needed to complete the project. Assuming we're starting with a 70-grit metal cut and going to an 800 resin with guard and densifier, we ask a simple question: how long do we feel it will take? How many people and days? Each project and company will have different rates of production, so this is your unique setting. To figure out a price for our clients, we add our costs together. In addition to labor we add materials, travel, overhead, and profit to the equation. The sum of these cots is the price we present to the customer. While this is just a summary based on our work needs, it's a good overview of how to determine your price: labor cost + materials + travel expenses + overhead + profit = price to client.

Things change from here depending on three potential avenues for completing the work: 1.Timebased Labor 2. Subcontracting 3. Project-based pay. **Time-based labor** is the standard approach to using in-house employees to get work done. Employees clock in and out, performing the work in the field. Travel time (waiting in line at WaWa for coffee) and breaks, are paid along with benefits and other associated costs. This solution is a straightforward and common method of labor payment that we all know and ... well ... I won't say love. So what are the other options?

Subcontracting is the same as a general contractor subbing a portion of the project to you, and you employing a separate entity to complete the work. There are distinct advantages such as fixed labor costs, reduced insurance and liability, and increased capacity. The downsides are lack of control and monitoring quality. Additionally, the sub could become your competitor or may already work for your competitor. Often the subs are smaller and may have an owner/operator running the crew directly, which can keep their costs much lower.

Project-based pay (or piece pay) is newer to our field but by no means new to the construction industry. This payment structure is a blend of the first two, whereby you have the benefits of limiting your labor cost exposure with your own in-house employees. Project-based pay needs a payable unit, and you still have to track time on the job. Companies utilizing this method pay a base rate that must meet or exceed the state and local minimum wage. This base rate should be the least the employee can make working in your company. Each project or phase has a payout associated with it. There is a little more to the calculations to account for overtime and labor laws, but essentially you divide the payout by the number of hours it takes to finish the work. The sum is the employees' new hourly rate for the time on that job. The longer a job takes to complete, the lower their hourly rate until they hit the base rate.

Project-based pay exposes employees to the owners' mentality while shielding them from all the issues of starting their own companies. Efficiency and quality improve performance, allowing them to make more money by increasing production. Teams can do three jobs in a week rather than two, yielding a larger check. Implementing this type of system puts the onus on the employee to find faster and better ways to accomplish the work. Not all companies can make a project pay system work. You must have a defined estimating process that accounts for lost time, travel, and change order management. You also have to make sure your teams know how their work is graded (KPIs) and that payment is dependent on meeting a set grade.

At the end of the day, you must decide what is right for your company based on your relationship with workers, overall business structure, and your goals. Take a deeper look at ways to pay that may be outside the box, but solve your company's unique issues.

Decorative Concrete Council

Jump Forward Jeff Eiswerth, council director

Spring has sprung. The signs are all around. Here in Northeast Ohio birds are out in full force, squirrels are active, the weather is coming around, and when it does snow, it's gone quickly. Hopefully many of you were able to spend time with family or friends during a spring break. But spring is more than just a season. It also means to jump forward.

Unfortunately, with inflation running rampant, the cost of projects are significantly higher than in previous months. It might seem difficult to "jump ahead" in these conditions. I recently read an article about dealing with inflation. One of the simplest pieces of advice was to focus on needs rather than wants. I think this is a good take-away. Maybe some of the want-based projects will decrease, but there should still be plenty of demand from people protecting their large investments, home and/or business, brick and mortar.

Helping customers come up with creative solutions could be a ticket for additional business. Customers may need to cut back on their wish lists, but if you can help with a creative solution for their need-based projects, this may help sustain business through these turbulent times.

Construction Safety Week is Approaching! Joe Whiteman, director of safety services

Originally started in 2014 when a group of construction firms from the Construction Industry Safety Initiative (CISI), and the Incident and Injury Free Forum (IIF) got together to create an opportunity to influence and celebrate safety. As the years passed, recognition and participation have grown, and "Safety Week" has become an opportunity to help companies strengthen their safety cultures and reaffirm safety commitment.

Each Safety Week has a theme to help raise awareness of a particular message. The theme for May 2-6, 2022, is "Connected-Supported-Safe", encouraging the industry to focus on cultivating a supportive work environment where we are better aware of the health and wellbeing of those around us.

Resources for Safety Week 2022 are available at <u>constructionsafetyweek.com</u>. They include daily toolbox talks, videos, a mental wellness field guide, signs and banners which are also available in Spanish. All you need to do is commit to setting aside a few minutes a day to have a discussion with crews, utilizing those tools. This is a great opportunity for you to hear what is affecting your crews, and recommendations on how to help them work more safely.

Safety Week also includes a video highlighting how helmets have dramatically reduced the frequency and severity of traumatic brain injuries and fatalities on construction sites. The video is approximately five minutes and provides compelling testimony from contractors on the advantages of this type of head protection. Lastly, I want to encourage you not only to participate in Safety Week, but to please share your experiences with us. We would like to post images of your standdowns, etc. on ASCC social media. If you have questions or need help getting started, please feel free to reach out to me at jwhiteman@ascconline.org.

National Safety Stand Down to Prevent Falls in Safety Week Jason T.K. Anglin, Christman Constructors, SRMC board director

Falls continue to be the leading cause for construction fatalities. Based on the Bureau of Labor Statistics (BLS) for 2020, 351 out of the 1,008 fatalities reported in construction were caused by falls. These deaths could have been avoided if the correct training, planning and resources had been in place and put into practice.

On May 2-6, 2022 OSHA is sponsoring a National Safety Stand Down Week to Prevent Falls in Construction. This is an annual event and that began in 2012 when OSHA and the National Occupational Research Agenda (NORA) partnered to help raise awareness of fall prevention on construction sites. This event, along with Safe and Sound Week (August 15-21) is an OSHA outreach to help workers and management raise awareness of construction safety.

During the week of May 2-6, OSHA and its state-run counterparts are asking us to work together to help raise awareness of fall hazards in the workplace and the need for training to address them. OSHA has dedicated a portion of their website to assist with stand-down activities. Go to <u>https://www.osha.gov/stop-falls-stand-down/events</u>. Some ways you can do this include:

- · Conducting additional tool box talks using topics provided by OSHA
- Sponsoring an OSHA or state run program representative to speak at project sites
- Working with safety equipment vendors to speak about fall protection and demonstrate equipment
- · Have company management speak at events to show commitment to worker safety
- · Contact organizations such as the ASCC to help plan and promote your event

Each organization that conducts a stand-down can receive a Certificate of Participation from OSHA on the website shown above, by using the tab "Certificate of Participation" and providing information about the stand-down.

These types of events offer an unique opportunity for general contractors, specialty contractors, company ownership and workers to collaborate for the improvement of safety. By continuing to bring attention to the dangers of falls we each help prevent needless loss and tragedy.

Members Receive ACI Awards at Spring Conference

Bryan M. Birdwell, FACI, with ASCC member Structural Services, Inc., Waxahachie, TX, received The ACI Certification Award "for outstanding service on ACI Certification committees, and dedication in developing, promoting, supporting and delivering ACI Certification programs."

Jeffrey W. Coleman, FACI, with ASCC member Coleman & Erickson, Eden Prairie, MN, received The Building The Future Award "for his countless, noteworthy volunteerism contributions that go above and beyond in supporting the future of the concrete industry."

Congratulations to Bryan and Jeff!

Members Win Tilt-Up Awards

The following ASCC members were recent recipients of project and other awards from the Tilt-Up Concrete Association (TCA).

Citadel Contractors, Inc., Apex, NC – Mt. Pleasant Town Hall Gym, Mt. Pleasant, SC; Perimeter Park, Morrisville, NC; Virtus Academy K5, Florence, SC

Concrete Strategies, St. Louis, MO - Edge @ BRDG, St. Louis, MO

Encore Concrete Construction, Spring, TX – Hines Empower Phase II, Houston TX

Lithko Contracting LLC, Westchester, OH – Donnelly College Academic Bldg., Kansas City, KS; Veronica Avenue, Somerset, NJ

Osburn Contractors, Inc., Garland, TX – The Trade Group Corp. Headquarters, Grapevine, TX

Suntec Concrete, Phoenix, AZ – Axis Raintree, Scottsdale, AZ; Bioscience 3 at Fitzsimmons Innovation Community, Aurora, CO; Northrop Grumman Satellite Division Production Facility Expansion, Gilbert, AZ; Project Bronco, Nampa, ID

Encore also received a Safety Award and Citadel was recognized as TCA Contractor of the Year.



Edge @ BRDG, Concrete Strategies, St. Louis, MO



HOTLINE QUESTIONS CONCRETE CONSTRUCTION POLISHED CONCRETE DECORATIVE CONCRETE SAFETY & INSURANCE Jim Klinger Chris Sullivan Joe Whiteman Chris Sullivan ascchotline@ascconline.org csullivan@ascconline.org jwhiteman@ascconline.org csullivan@ascconline.org 800 - 331 - 0688 844 - 923 - 4678 833 - 281 - 9602 888 - 483 - 5288 ASCC members have access to these toll -free numbers for assistance.

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