SPRING | 2018

IRMCA

NEWS

ILLINOIS READY MIXED CONCRETE ASSOCIATION

PROMOTION SUCCESS

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IRMCA NEWS

County road project in Oconee township. Concrete supplied by MBI Construction of Effingham.

Ricky Rockets Gas Station project in Midlothian. Concrete supplied by Welsch Ready Mix of Oak Forrest and placed by Abbey Paving.

Concrete overlay project at Altamont Company in Rantoul. Concrete supplied by Blager Concrete Company of Urbana and placed by I C Contracting.

Concrete overlay project at Glenn Westlake Middle School in Lombard. Concrete supplied by Elmhurst Chicago Stone.

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FROM THE EXECUTIVE DIRECTOR

It was the last week of August 2015 when the phone rang and Scott Maberry, then president of IRMCA, asked if I was interested in the executive director position. Taking a step in a new direction, the IRMCA board of directors hired me and Assistant Executive Director Theron Tobolski and challenged us to bring in new members and provide new services. From that moment Theron, JoAnn and I have been energetically and passionately expanding on IRMCA's legacy of leading our concrete industry to work together to promote, create value, produce quality and teach excellence. Our current board of directors, led by Ryan Cialdella, continues to ensure the growth of the association and the promotion of new initiatives. Together we have:

- Worked to expand our methods and services to meet the growing demands of regulations and specifications.
- Applied extreme planning to our short course and transformed it into the very successful Xtreme Concrete Conference.
- Created four regional groups that help us provide greater promotion and services (e.g., environmental, safety, training and education) throughout Illinois.
- Welcomed more than 50 new members.
- Collaborated with American Concrete Institute (ACI)-Illinois to strengthen and expand our relationship and mutual services.
- Joined the Transportation for Illinois Coalition to help promote and pass the safe roads amendment, and we will be working with our legislators to define the amendment's resources and expenditures into the new lockbox for road funds.
- Worked to oppose tax increases on businesses, anticipate workman's compensation reform, support the appeal of the Commercial Distribution Fee (CDF), and fight for other rules and regulations that impact our industry.
- Developed the IRMCA COMPASS PORTAL, which provides certain American Society for Testing and Materials (ASTM) International and American Association of State Highway and Transportation Officials (AASHTO) standards for our members to gain Illinois Department of Transportation (IDOT) compliance for their testing labs.
- Developed a template for the Illinois Environmental Protection Agency (ILEPA) Storm Water Pollution Prevention Plan (SWPPP) permit that is available to IRMCA members at irmca.org.
- Began providing the ACI flatwork finishers certification course.
- Strengthened our relationships with IDOT, the Illinois Tollway Authority and IDOT Aeronautics.

IRMCA's vision is to be the voice for the concrete industry, to be innovative, and to research and develop future improvements. Together, the IRMCA board of directors, staff and members are making IRMCA stronger than ever.

Jim Randolph
Executive Director

IRMCA NEWS

Our mission is to be the voice for the ready mix industry in Illinois; to promote the use of quality ready mixed concrete through innovative educational programs; and to accomplish common goals as an organization that cannot be done individually.

IRMCA.ORG

FROM THE PRESIDENT

As your IRMCA president, I am both excited and encouraged by what the future will bring to the ready mix industry, not only in the state of Illinois but across the country. There is a renewed energy in the construction sector and a heightened optimism throughout the concrete industry specifically. Although we face market share challenges from other building materials, we must work together to reinforce what many have known for years—that concrete is a superior building material. It's important to look at these challenges as the catalyst that drives the innovation and advancements in technology necessary to keep concrete at the forefront of the construction industry.

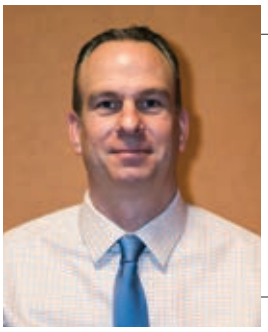
My past few years as an IRMCA board member have allowed me the opportunity to learn and develop both professionally and personally. I am honored to be your president through 2018 and am emboldened by the direction that IRMCA is taking. We are gaining momentum and working diligently to provide value and resources to all members. With IRMCA's new organizational structure, we are poised to double down on our marketing and promotion efforts, and we are also actively developing new educational tools for our members as well as our members' contractors. Re-focusing our efforts to better serve our members strengthens our foundation for future growth, and this growth will help achieve IRMCA's mission to be a trusted voice in the ready mix industry.

Ryan Cialdella

Ryan Cialdella
President

Blager Concrete supplies concrete to new IRMCA member I C Contracting. The concrete overlay parking lot was constructed for Altamont in Rantoul, Illinois.

A YEAR IN PROMOTION



by Theron Tobolski, Asst. Executive Director | 2017 was a great year for visiting members and promoting concrete. I followed members' ready mix trucks to residential homes, hog confinements, parking lots and new concrete roads projects. Everything concrete was discussed, including new IRMCA promotion programs.

CONCRETE OVERLAYS

A concrete overlay promotion was launched though our four regional promotion groups. We worked on 13 concrete overlay projects, 2 of which were completed in 2017. IRCMA member Elmhurst Chicago Stone supplied the concrete for the Glenn Westlake Middle School concrete overlay project in Lombard, IL. The school hired IRMCA member MSL Testing Laboratories to test the concrete on this project to make sure it met the specification. This concrete overlay cost $73, 000 less than asphalt replacement and is expected to save the school an estimated $100,000 in repairs over the first 12 years. The school district is already engineering a second concrete overlay for another school. Altamont Company in Rantoul, IL, also used a concrete overlay on top of an asphalt parking lot that was falling apart. IRMCA member Blager Concrete Company delivered the concrete and member IC Contracting LLC placed it. Ken Enright, the owner of Altamont Company, is working on using a concrete overlay for a second project.

MULTIPLE THICKNESS CONCRETE PAVEMENT PROGRAM

IRMCA, with the help of the American Concrete Pavement Association (ACPA) - IL Chapter and the National Ready Mixed Concrete Association (NRMCA), created the multiple thickness concrete pavement program. It is a tool to help contractors and engineers design parking lots with sections of varying concrete thicknesses based on traffic loads. We designed multiple thickness concrete pavement example documents for hospitals, car dealerships, strip malls, fire stations, industrial/warehouse buildings, gas station/truck fuel centers, fast food restaurants, and schools, and they can be found at irmca.org.

Mid-Illinois Concrete provides concrete for a hog confinement project. The concrete was dispatched from their plant in Effingham, Illinois.

As we reviewed several civil plans for projects in Illinois we noticed:

1) Many of the civil plans did not design concrete in the parking lot.

2) In most cases the asphalt pavement sections were under designed, which lowered the cost to use asphalt.

3) When concrete was designed in a parking lot, the concrete pavement was over designed so it increased the cost of using concrete.

4) There is a large savings for an owner when you take into account the excavation savings when using the multiple thickness concrete program. Some projects saved $80,000 to $120,000.

The multiple thickness concrete pavement program addresses all of these issues and provides engineers with the minimum thickness of concrete pavement that can be used along with equivalent asphalt information so the owner can compare apples to apples. This program also provides four options for joint layout and load transfer.

We implemented this program in August of 2017, and it has been a huge success. In the first four months we worked with 14 IRMCA concrete producers who worked with 26 contractors or design build firms to produce 67,000 cubic yards of concrete alternate bids. Of these bids, 22,000 cubic yards were awarded for 2017 and another 10,000 cubic yards will be awarded in 2018. In the first 3 months of 2018, quotes for 32,400 cubic yards of multiple thickness concrete alternates resulted in converting 31,000 cubic yards of asphalt pavement to concrete. Working with contractors we found that some projects netted $80,000 to $100,000 in excavation, purchase, and placement of stone savings. This was a big factor in flipping those projects to concrete, as was collaboration between IRMCA, members, and customers. Working with IRMCA and actively promoting concrete is a great way to increase business. Otherwise, an engineer might design asphalt pavements for every project, and then asphalt companies will thrive and concrete companies might struggle to grow or survive. Let's work together to promote concrete to contractors, engineers, decision makers, influencers, and owners. Call the IRMCA office to schedule a meeting.

REGIONAL PROMOTION GROUPS

IRMCA created four regional promotion groups. Each group is currently focusing on three promotion programs. Group 1 (Illinois Department of Transportation (IDOT) districts 1, 2, 3) programs are concrete overlays, pre and

Sport Redi-Mix in Champaign, Illinois, delivers concrete in their Chicago Cubs mixer. This highway project was completed for IDOT.

Randy Riley of IL-ACPA presents at a Concrete 101 program held in Elmhurst, Illinois. Topics included concrete basics, trouble shooting, pervious concrete, roller compacted concrete, and concrete overlays.

post design parking lot flips, and fiber promotion strategy. Group 2 (IDOT districts 4, 5) programs are concrete 101, fiber promotion strategy, and concrete overlays. Group 3 (IDOT districts 6, 7) and group 4 (IDOT districts 8, 9) programs are concrete overlays, pre and post design parking lot flips, and concrete 101.

In 2018 IRMCA will host meetings for all four regional promotion groups. Support this effort by attending your regional group meeting. Topics will include 2017 successes, new promotion ideas specific to each region, and how to increase member involvement in regional promotion. Meeting details will be emailed when available.

CONCRETE 101

In 2017 IRMCA hosted a Concrete 101 program at the American Concrete Institute (ACI) training facility in Elmhurst, Ill. Randy Riley, IL-ACPA, Brian Lutey, Ozinga, and I were presenters. Elmhurst Chicago Stone provided a demonstration of several concrete testing methods. We had a great turnout of 72 people and look forward to hosting more of these programs throughout the state. Call the IRMCA office and let us know if you would like a Concrete 101 program in your area.

FULL DEPTH RECLAMATION SOIL STABILIZATION

IRMCA is working on a new promotion: the use of a cement slurry delivered in a concrete truck for full depth reclamation (FDR) soil stabilization. Currently in Illinois, FDR soil stabilization is very common. Typically lime or cement powder is used to stabilize the pulverized sub base or soils. Some states such as Indiana have developed a method for delivering a 22 bad grout mix (cement slurry) in a ready mix truck for FDR soil stabilization projects.

IRMCA and IDOT formed a committee to write a specification for the use a cement slurry for FDR soil stabilization. Jerry Larson, executive director of the Indiana Ready Mixed Concrete Association, shared cement slurry project successes in Indiana, and Jacob Phelps of Byrne and Jones discusses the economics and associated construction methods of FDR. Committee members include FDR contractors and engineers, IRMCA members, and IDOT representatives, including James Krstulovich. We are extremely grateful and excited about IDOT's commitment to work with our association and industry to move these new technologies forward so they can be used on IDOT projects.

Visiting all of IRMCA's members, seeing their businesses, understanding their markets, and helping them promote concrete has been a goal of mine from the day I was hired. I still have many members to visit in person, but I look forward to achieving this goal in 2018.

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ACI and IRMCA:
Our Shared Future

By Greg Rohlf, ACI-Illinois Past President

The goal of any good professional organization should be to gather, educate and inform the members of its industry. Some organizations are able to lobby on behalf of their membership, especially when the group has a common interest to promote a particular technology, product, or service.

One of the chief goals of the American Concrete Institute (ACI) has been to educate its members and the industry at large, whether it is through ACI certification programs, conventions and seminars, or topical presentations at local dinner meetings. Often these topics involve innovations in concrete technology such as new products, specifications, or construction methods.

Illinois Ready Mixed Concrete Association (IRMCA) is willing and able to take this promotion a step further by bringing various people, groups, and agencies from our industry to the table to promote new technologies, share ideas, and lobby on behalf of the concrete industry.

In 2016, ACI-Illinois became the first local chapter in the United States to have a brick-and-mortar facility, located in Elmhurst, IL. We look forward to utilizing this facility for future classes and seminars from both ACI and the IRMCA.

I believe we are in a golden age of innovation in concrete technology. There is a lot of information and research out there. ACI and the IRMCA together have a duty to educate and promote new concrete technologies that will keep us competitive well into the 21st century. As we head into the future, those efforts will be as important as ever. I look forward to what these two great organizations can accomplish together for the concrete industry.

R W Dunteman placed pervious concrete for an alley project in Westmont, Illinois.

Quad-County Ready Mix supplies 3,200 cubic yards of roller compacted concrete for a road in St. Claire County, Illinois. They delivered it in dump trucks to speed up the paving process.

Aupperle Construction is placing pervious concrete for a parking lot in Morton, Illinois. VCNA Prairie's Central Illinois Division supplied the concrete.

Lincolnland Concrete supplied concrete with fibers to Altofer Cat for a parking lot in Springfield, Illinois.

VCNA Prairie supplies over 20,000 cubic yards of roller compacted concrete for a parking lot in Joliet, Illinois.

Ozinga Ready Mix Concrete held an open house with the American Concrete Public Works Association at the pervious concrete street project in Westmont, Illinois.

MBI in Effingham, Illinois, supplied concrete for an overlay project on a Shelby County road.

Acura Inc is placing pervious concrete for an alley project in Lyons, Illinois. The concrete was supplied by Ozinga Ready Mix.

J. Nardulli Concrete is placing pervious concrete for an alley project in Lyons, Illinois. The concrete was supplied by VCNA Prairie Material.

Murphy Paving and Sealcoating paved a roller compacted concrete parking lot with concrete supplied by VCNA Prairie.

Stark Excavating places and finishes a Type K cement concrete bridge deck in Peoria, Illinois, over Boyd's Hollow Creek on Route 29. Concrete was supplied by VCNA Prairie.

Type K Mitigates Cracking, Increases Durability

On June 3, 2015, VCNA Prairie supplied Type K cement concrete for a new bridge deck in Peoria, Illinois, over Boyd's Hollow Creek on State Route 29. This concrete is part of a long-term study by the Illinois Center for Transportation (ICT) in an effort to mitigate cracking and increase durability on its bridge decks (ict.illinois.edu).

Stark Excavating placed the concrete and coordinated with the research team from the University of Oklahoma Fears Laboratory, who placed 31 strain gauges within the concrete. The gauges were placed on rebar and structural steel beams and were designed to take readings every minute for the first seven days and every hour for up to one year. The data generated provided valuable in situ information on the behavior of Type K cement concrete on complex bridge deck structures and validated the finite element models that were developed by the research team for this study.

Type K cement concrete was developed in the 1960s and is commonly used in bridge decks, containment structures, industrial floor slabs, parking structures and other post-tensioned concrete designs. Six Type K bridge decks were constructed in the early 1990s in central and southern Illinois. After 20 years in service, these Type K cement bridge decks have proven their exceptional durability and crack mitigation performance. One of these bridges was completed in 1992 near Eureka on State Route 24 and is still in excellent condition.

The Ohio Turnpike Authority has been using Type K cement concrete on their bridge decks since the 1980s with great success. An article published in the 1993 issue of Concrete International illustrates the elimination of cracking on their decks by using Type K cement concrete. Figure 1 summarizes their bridge deck replacement program from 1983 to 1990.

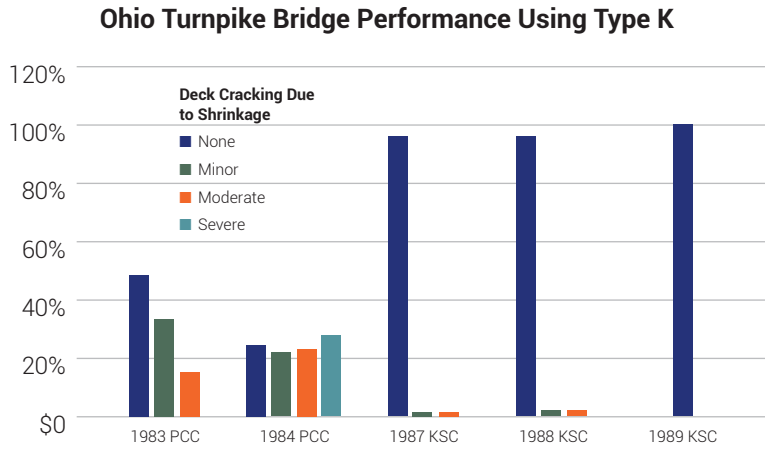
Figure 1.

Achieve an "Ideal Bridge Deck"

How does (Type K) effect maintenance costs?

"The answer is quite simple, it is very low cost to maintain the Shrinkage-Compensating Concrete decks – no deck delaminations, spalls or steel corrosion."

OHIO TURNPIKE AUTHORITY



Of the 303 bridge decks in the ICT study that were constructed with Type K cement, 11 decks showed some degree of cracking related to construction influencers. Five of the 11 decks were ramp structures placed while subjected to live load vibrations. Of the 71 bridge bridges constructed using type I/II concrete, 53 decks showed signs of cracking. Three of these decks were subjected to live load vibrations during construction.

Excluding decks influenced by live load conditions during construction, only two percent of the Type K bridge decks exhibited minor cracking while 73.5 percent of the Type I/II bridge decks exhibited cracking and resulting deterioration.

The Boyd's Hollow Creek project utilized CTS Cement Manufacturing's Komponent™ expansive cement additive to create Type K cement that meets American Society for Testing and Materials (ASTM) standard C845 for expansive hydraulic cement. Komponent replaced approximately 15 to 18 percent of the cementitious content of the mix. Dosage was determined by the characteristics of the local portland, aggregates, and other additives used in the mix design. It was added using a ChemGrout slurry machine to ensure proper mixing of the material prior to discharge into a ready mix truck.

HOW DOES TYPE K CEMENT CONCRETE WORK?

Type K cement is designed to compensate for the drying shrinkage that occurs in portland cement concrete. It is engineered to create controlled expansive forces that keep concrete in compression throughout its service life. The controlled expansion occurs as a result of ettringite formation during the hydration of this special cement additive. The controlled expansion occurs during the initial 7 day wet-cure, which puts the concrete into compression and the steel in tension early. In a bridge deck scenario, the minor controlled expansion (typically 1/32 to 1/4 inch based on design requirements and mix design) builds up tensile forces in the reinforcing steel that are relaxed when the portland cement begins its normal drying shrinkage. Portland cement's shrinkage results in net zero stresses within the concrete and prevents drying shrinkage cracking. By preventing drying shrinkage cracking, Type K cement concrete effectively produces a more dimensionally stable, durable concrete solution with lower lifecycle costs.

Type K is based on a high performance calcium sulfoaluminate chemistry. It is manufactured in much the same way as portland, with similar raw materials; however, the process and proprietary modifications produce a specialty cement chemistry that achieves

CTS Cement Manufacturing's Komponent expansive cement additive is added using a ChemGrout slurry machine.

distinctly higher performance characteristics. In addition, the manufacturing process uses a lower temperature during the "burn", which consumes less energy and emits 32 percent fewer carbon dioxide (CO2) emissions. It also results in a cement clinker that is much easier to grind, which also uses less energy. Lower energy consumption, lower CO2 emissions, improved durability and lower lifecycle costs result in the most sustainable cement available.

Refer to American Concrete Institute (ACI) 223, "Guide to Shrinkage-Compensating Concrete", for more information.

Workers are using a bullfloat to apply a smooth finish to the Type K cement concrete pavement.

This section of Interstate 72 east of Springfield is the first structural fiber reinforced unbonded concrete overlay in Illinois. Approximately 27,000 cubic yards of concrete were placed.

I-72 Unbonded Overlay Project Wins Silver Award

By Randell Riley, P.E., Executive Director, Illinois Chapter, Inc. – American Concrete Pavement Association

The Interstate-72 unbonded overlay project received a silver medal in American Concrete Pavement Association's (ACPA) Excellence in Concrete Paving awards ceremony in Austin, Texas.

The 3.2-mile section of I-72 just east of Springfield, IL, is part of an east-west corridor connecting the city to Decatur, Champaign, and I-74. It has a moderate amount of semi-truck traffic carrying local cargo loads. The average daily traffic as noted on the plans is 14 thousand vehicles per day with truck traffic constituting approximately 21 percent of the volume.

To say this project is innovative for Illinois is understating the case! It is the first structural fiber reinforced unbonded concrete overlay built by Illinois Department of Transportation (IDOT) in Illinois, and it paves the way for many possible future projects. The incorporation of big block designs built using a 6-inch thick pavement section with 6-foot by 6-foot joint spacing serves to control development of curling, warping and load induced stresses. The concrete shoulders were paved monolithically with the overlay and incorporated the same technology, joint spacing, etc.

The project incorporates structural macro-fiber (GCP Applied Technologies – Strux 90/40) loading of four pounds per cubic yard and represents the first known use of this technology on any interstate in the country. Fibers are incorporated to serve two functions: to provide some load transfer across the transverse and longitudinal sawed joints, and to enhance fatigue and impact resistance, thereby extending the life of the section.

As an overlay, the existing 30 or 40-year-old deteriorated 8-inch Continuously Reinforced Concrete Pavement

(CRCP) section was used as the platform, so some separation was required to prevent reflection of underlying distresses. On the eastbound section a 1-3/8 inch Hot Mix Asphalt (HMA) separator layer was used. On the westbound section a Propex Geotex 1341NH geotextile was used and was affixed to the surface primarily using an emulsified asphalt tack coat that served as a glue. This ensured the fabric was bonded to the underlying CRCP surface which had been milled and cleaned of old asphalt resurfacing material prior to placement.

A light roller was run over the fabric to further ensure attachment. No sections came loose despite several thunderstorms and heavy rain during the project. On areas of overlap of the geotextile, Hilti concrete fasteners were used with a retaining washer system designed to hold the fabric in place.

The reasons for comparing the sections serves a couple of functions. Bituminous bond-breakers have a long history of use in Illinois and across the country in these types of overlays. However, the use of geotextile separators in these types of applications is relatively new. The first experimentation in Illinois was on a thin (four inch) unbonded overlay project in Oak Park in 2001, and it remains in service. European countries have been using geotextiles for some time, albeit in a slightly different situation separating new concrete pavement from a Cement Treated Base (CTB) course.

There are many potential advantages to the use of geotextiles for the concrete industry. Fabrics can be faster to place than bituminous interlayers. As demonstrated in this unique project, fabrics offer the possibility of substantial savings compared to bituminous separators.

The mixture was a standard IDOT Class PV mixture allowing a maximum water/cement ratio of 0.42 and a maximum placement temperature of 90 degrees Fahrenheit. It included 4 pounds/cubic yard of synthetic structural macro-fiber, the dosage mandated from test results for this fiber to deliver the required performance. A test placement at the plant site was utilized to dial in the mix to give it the needed workability prior to placement of the actual pavement.

“ There are many potential advantages to the use of geotextiles for the concrete industry. ”

Given that the fibers were being introduced in 4-pound water-soluble bags that dissolved on contact with the central mix operation, there were some concerns about fiber dispersion. This was overcome by the laborer loading the fibers on the aggregate belt using a simple single swipe at the bags longitudinally with a utility knife. This enabled quicker dispersion of the fibers immediately upon introduction into the mixer. The bags dissolved with no evidence on the paving site of their existence. There was also a minor adjustment to the mixture time in the Central-Mix plant to accommodate the rapid mixing action and ensure dispersion. Though an occasional clump did occur, particularly at startup, they were limited to just a few a day after the procedures were implemented; thereafter the mixer fiber charging procedures were refined.

The pavement incorporated a standard IDOT randomized skewed tining operation. Though there were initial concerns over how the texturing might be accomplished with concrete containing this volume of fibers, no significant problems were encountered.

The project used lane and shoulder monolithic placement at the time of construction. To accommodate traffic, the inside shoulders were first rebuilt to be used as a base, allowing traffic to use the inside shoulder while the driving lane and outside shoulder were built. Following that operation, the inside lane and previously trafficked shoulder were paved to complete the roadway. This permitted pavement repairs where needed in the main driving lane and the outside shoulder. The pavement edges were checked periodically for thickness to ensure minimums were being met.

Tight working confines next to active traffic lanes makes all work a little more difficult. Fortunately, Illinois Valley has extensive experience

working in this mode on other types of overlay work, so getting positive results was a manageable task.

Regarding conventional reinforcement, there were no dowels in the pavement as the section was enhanced with structural fiber to provide load transfer in the overlay section at the joints and to enhance section toughness. Butt-faced longitudinal joints were tied conventionally with deformed No. 4 bars on 36-inch centers to create an ideal pattern that will prevent lane separation while optimizing steel placement in the section.

Tie bars installation was a two-step process using a synthetic nylon insert to provide the hole necessary for later placement of the tie bar in the longitudinal construction joints. This ensured placement at the proper depth. The tie bars were later epoxied into place prior to paving the adjacent lane and shoulder.

Concrete overlay projects are among the most sustainable processes that we can apply in the concrete paving industry. We make use of the existing concrete pavement as the platform. This saves material and fuel that would otherwise be used in rebuilding the subgrade and subbase. Minimizing new materials being hauled, old materials being removed and disruption to the motoring public all contribute to the sustainable nature of this type of project.

The location of the project gives IDOT a front row seat to see exactly how this section will perform long-term and to compare another feature as part of the evaluation. Ultimately this project, built by ACPA contractor member, Illinois Valley Paving (A Division of UCM), will help guide IDOT in selecting the best future technologies for using concrete overlays as a means for repairing and rehabilitating its existing interstate and primary highway system.

> “Concrete overlay projects are among the most sustainable processes that we can apply in the concrete paving industry.”

Some Project Statistics

Project Cost
$8,789,249.16

Concrete Paving Cost
$4,077,264.80

Project Length
3.2 mi

Total Square Yards of Paving
152,080

Approximate Cubic Yards of Concrete
27,000

Approximate Number of Pounds of Fiber
108,000

Approximate Tons of Cement
5700

Approximate savings per mile geotextile compared to asphalt
$52,000

2017 HENRY CROWN AWARD RECIPIENT

RANDELL RILEY

By Rich Shadle

Randell Riley is the 2017 Henry Crown Award winner. Randy is a long-time contributor to the concrete industry. His accomplishments in advancing concrete pavements and technology are well respected by contractors, material and equipment suppliers, and agency engineers.

Randy started his career with the Iowa Department of Transportation as the assistant cement and concrete engineer. He moved to Illinois in 1981 and served as the director of engineering and technical service for the National American Concrete Pavement Association until 1989. He worked for the Illinois Concrete Council and the Great Lakes Cement Shippers from 1989 until 2006, when he became the executive director of the Illinois Chapter of the American Concrete Pavement Association.

Randy graduated with a Bachelor of Science in civil engineering from Iowa State University and earned his Master of Business Administration from the University of Illinois Springfield.

Randy has established a record of professional excellence. He has worked extensively with the Illinois Department of Transportation and the Tollway and has been instrumental in the development of white topping and concrete parking lots in Illinois.

As a Henry Crown Award winner, Randy received $1000 to donate to the organization of his choice, the Central Illinois Food Bank. Randy was honored at the American Concrete Institute (ACI) Illinois Chapter's Annual Dinner on May 6 in the Walnut Room at Macy's in Chicago.

ACI Illinois established the Henry Crown Award more than 30 years ago. Each year it is presented to a distinguished recipient who has made an outstanding contribution to the cement and concrete industry.

Pictured from left are Rich Shadle of ACI Illinois, 2017 Henry Crown Award recipient Randy Riley and his wife Cathleen.

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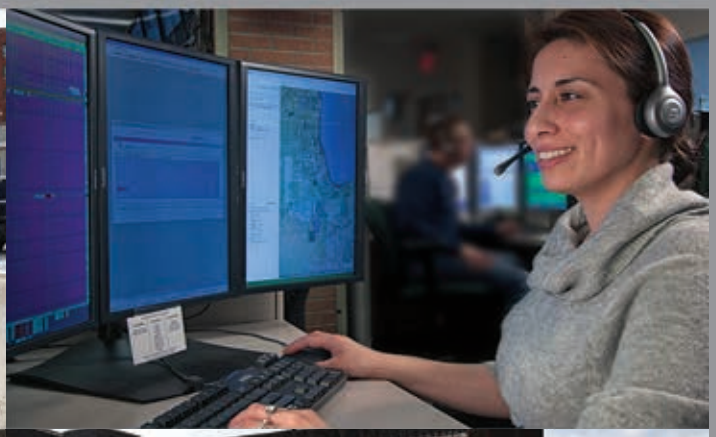

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IRMCA member Galesburg Builders Supply unloads concrete into the pump. For this project 93 cubic yards were placed.

Lightweight Fines Provide Internal Curing in Superstructure Concrete

By Theron Tobolski

On Sept. 13, 2017, Illinois Department of Transportation (IDOT) district four had its first pour incorporating lightweight (LTWT) fines in superstructure ready mix concrete. 93 cubic yards were placed were IL 97 crosses Little Haw Creek four miles north of Maquon in Knox County. Concrete was supplied by IRMCA member Galesburg Builders Supply (GBS). This LTWT fines project was let as ITEM 35 on the April 22, 2016, IDOT Letting. IDOT district one was also awarded a LTWT fines bridge deck project, and at least three other IDOT districts are currently considering designing bridge deck projects with LTWT fines.

Internal curing is the purpose of LTWT fines in superstructure concrete. James Krstulovich, P.E. and concrete research engineer for IDOT's Central Bureau of Materials, said, "By including pre-wetted lightweight fine aggregate in our concrete, we are introducing an additional way to help the concrete hydrate more effectively: internal curing. The operative word being additional. Conventional wet curing methods (e.g., wetted cotton mats) are still necessary; internal curing does not serve as a substitute for such curing. Internal curing complements external curing (which can only provide moisture to near-surface concrete) by providing moisture throughout the entire cross-section."

When asked why IDOT considered using LTWT fines for bridge superstructures, Krstulovich answered, "At least since the FHWA championed the concept of high performance concrete (HPC) in the late '90s, the Bureau of Materials has been interested in trying to reduce the extent and severity of cracking in its bridge decks. Bridge deck

cracking is a function, to varying degrees, of every facet of the bridge deck itself— its design, its composition, how it is built and maintained, and the environmental conditions it is subjected to. To alleviate some of the potential for cracking from a materials perspective, the bureau has focused on reduce shrinkage. In addition, it can improve durability in other ways, particularly with respect to permeability. For example, based on permeability alone, Iowa DOT recently reported a predicted service life increase of approximately 20 years more than their conventional bridge decks."

the hydration reaction which results in reduced fluid transport. Weiss also noted that internal curing can reduce damage associated with alkali-silica reaction (ASR) due to dilution, providing space to accommodate ASR gel and altering pore solution composition while providing

> "Internal curing complements external curing by providing moisture throughout the entire cross-section."

compensating for, or reducing, concrete's inherent tendency to shrink during the initial phases of hydration. Research led by Dr. Peter Taylor reports that substituting 30 percent by volume of conventional fine aggregate with pre-wetted lightweight fine aggregate will

Krstulovich also referenced Dr. Jason Weiss, who in the Dec. 2015 Moving Advancements into Practice said that internal curing will reduce autogenous shrinkage and cracking in concrete, reduce plastic shrinkage cracking, and increase the extent of

similar strength and freeze-thaw performance.

For the Little Haw Creek structure, the concrete mix contained 190 pounds of Haydite LTWT fines per yard, supplied by Hydraulic Press Brick Company, one of the

CTS Cement Manufacturing's Komponent expansive cement additive is added using a ChemGrout slurry machine.

Contractor Brandt Construction pumps concrete onto the deck and levels it off. IDOT then tested the concrete to make sure it met the specifications.

IDOT-approved sources for LTWT fines aggregate suppliers.

A.J. Bimrose, Portland Cement Concrete (PCC) quality control manager for United Contractors Midwest, oversees the quality control and mix designs for Galesburg Builders Supply. He says the main difference between LTWT fines aggregate used for internal curing versus the lightweight aggregate typically used in lightweight concrete is that the LTWT fines aggregate tends to hang up in the plant a little more than conventional LTWT aggregate, which is normally a larger size aggregate used to reduce the unit weight of concrete for structural design purposes like elevated floors and buildings. Galesburg Builders Supply was required by contract to run a trial batch for mix design approval. The contract required 4,000 psi at 14 Days and five to eight percent air entrainment. Due to the relatively small amount of LTWT fines in the mix (30 percent replacement of conventional fines by volume), a standard Type B air meter was acceptable to use instead of a roller meter to determine the amount of entrained air.

When using LTWT fines, there are additional plant considerations as well. For example, the loader operator must not scrape the bottom of the LTWT pile so the LTWT fines are not contaminated with the aggregate the stock pile sits on. This also prevents incorporating LTWT fines material at the very bottom of the stock pile which will have excessive moisture from drain down. For this project the LTWT fines had to be saturated for three days to allow for a minimum of 48 hours wetting and 12 to 15 hours drain down prior to the pour. Krstulovich noted that the required wetting and drain down times have since been revised to 72 hours and 20 to 24 hours, respectively. Other than some basic plant preparation, Bimrose observed there was no difference between an LTWT and conventional concrete pour. The LTWT did not affect the air, slump, or temperature of the concrete. GBS cylinder break results were consistent with IDOT results (Fig. 1).

Figure 1:
CYLINDER BREAK DATA

Pounds per square inch

	GBS	IDOT
Day 3	3125	
Day 5	3526	
Day 7	4002	
Day 14	5013	4986

Thanks to A.J. Bimrose, PCC quality control manager for United Contractors Midwest, James Krstulovich, P.E. and concrete research engineer for IDOT's Central Bureau of Materials, and Steve Worsfold, IDOT district four mixtures control engineer, for contributing to this article.

RETOOLING THE IRMCA OES COMMITTEE

By Mitch Mariotti

The IRMCA Operations, Environmental, and Safety (OES) Committee has been in hiatus for some time now and we are looking to retool the committee in the coming months. Thanks to Jim Randolph, we believe we've come up with a winning idea.

In 2018, we're hoping to have a short OES committee presentation and Q & A at the regional promotion group meetings. This will improve OES visibility as well as allow interaction with a greater portion of IRMCA membership. Participation at regional meetings will minimize the need for larger OES group meetings, which will be held perhaps only once or twice a year.

In Illinois there are many OES issues for our industry to discuss. Front and center is the new Illinois EPA storm water permit, though most of the compliance dates are now in the rear view mirror. By now you realize that this permit is significantly different from the previous storm water permit and requires ready mix producers to do a number of things not previously required in order to comply. Do you know how and where to take a storm water sample? Do you know where to send it after it is taken? Does your plant discharge storm water to an impaired water body? Do you know if your plant discharges storm water to an impaired water body or is subject to a Total Maximum Daily Load (TMDL)? These are just a few of the many questions ready mix producers in the state now have to answer in order to comply with the new permit. And then there is the new Occupational Safety and Health Administration (OSHA) Silica Standard. There are compliance dates looming in the near future. Do you know how this new standard is going to impact your business? Is it time to update the IRMCA Safety Manual?

Come join us at a regional meeting near you as we discuss the new storm water permit and the changing regulatory climate under the new Trump administration.

NEW MEMBERS
2016 TO PRESENT

Staley Concrete Company Inc.
Elmhurst-Chicago Stone Company
CTLGroup
Penetron USA
Coach House, Inc.
Mid-America Sand & Gravel, Mid-America Recycling
GHD Services, Inc.
ARCO/Murray
Bleigh Ready Mix
FCL Builders, LLC
Central IL Conveying & Pumping
Bridge Development Partners, LLC
Aupperle Construction
Millennia Professional Services
S.T.A.T.E. Testing LLC
Fibermesh by Propex
Continental Mixer Company
Vanguard Energy Services LLC
Acura, Inc.
G.M. Sipes Construction, Inc.
Walz Scale
C&G Concrete Construction
J. Nardulli Concrete
Skyway Cement Company
West Side Tractor Sales
Interra Inc.
FiberForce by ABC Polymer
Cavanaugh and Associates
Truck Center, Inc.
The Murkin Group, LLC
Al Warren Oil Co., Inc.
Markaty Inc. d/b/a Cement Transport Company
R.W. Dunteman Co.
Cummins Sales & Service
Belt Tech Industrial
Material Solutions Laboratory
CSI 3000 Inc.
Pike County Concrete
Altorfer CAT
Point Ready Mix
Sumit Construction Co., Inc.
CEI Enterprises BCB
Feutz Contractors, Inc.
Fischer Bros. Fresh Concrete
IC Contracting LLC
JustCore, Inc.
SGS Galson
WSCE LLC dba West Suburban Concrete
Abbey Paving Co., Inc.
Renew Pavement Solutions, LLC
Power Kiosk
Roland Machinery
Martin Equipment
MPAQ Automation, Inc.
CCI Redi Mix
Surma Equipment Sales

IRMCA COMPASS PORTAL

The IRMCA COMPASS PORTAL is a highly valuable tool developed to offer IRMCA members easy access to specifications at a discount when certifying their ready mix plant quality control testing labs to meet Illinois Department of Transportation (IDOT) requirements. It provides certain American Society for Testing and Materials (ASTM) and American Association of State Highway and Transportation Officials (AASHTO) standards as well as the IDOT Manual for Test Procedures required for test lab compliance. The IRMCA COMPASS PORTAL order form can be found at irmca.org.

NEW RESOURCES AT IRMCA.ORG

Concrete Overlays is designed as a tool for you to hand out to potential customers to increase their knowledge about concrete overlays. This flyer was used to generate interest from 13 projects in 2017, two of which used a concrete overlay pavement. Each owner has agreed to an additional overlay project in 2018.

Hydration Controlling Admixtures provides you with easy to understand product knowledge for how you can use hydration controlling admixtures in your concrete.

Slag provides you with product knowledge for understanding the benefits of using slag in your concrete.

Industry Best Practices was created so that concrete producers and contractors can provide engineers with a document that explains why you should not hard trowel finish a concrete slab with air-entrained concrete (AIR) in it.

CONDOLENCES

Our condolences to the family and friends of past IRMCA Executive Director Jerry Woods, who passed away in 2016.

CONGRATULATIONS

- A great industry friend and technical consultant, John Albinger, has retired. We are grateful for his encyclopedic technical knowledge of concrete and for his work developing lasting industry partnerships with IDOT, the Illinois Tollway Authority, ASTM and ACI. Holy Kaplookers, there is only one John Albinger, and we will miss him!
- Congratulations to John Albinger for being the first recipient of IRMCA's Lifetime Achievement Award.

Left to right; John Albinger, Jeanie Albinger, and Scott Maberry, 2016 president

- Congratulations to Randy Riley for receiving the American Concrete Institute's Henry Crown Award and the American Concrete Pavement Association's Gold and Excellence in Concrete Paving awards.

THANK YOU TO OUR OUTGOING 2017 BOARD MEMBERS!

- Herb Moeckel, Boral Resources
- Brent Pommerening, VCNA Prairie
- Dennis Probst, Mid-Illinois Concrete

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Dennis Probst
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Brandon Thetard
River Redi-Mix

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2016 XTREME CONFERENCE

Welcoming guests at the registration table are Carol Hustedde, Jim Randolph, JoAnn McKeown, Scott Maberry and Cathy Sukley.

IRMCA board of directors meets prior to the 2016 Xtreme Concrete Conference held in East Peoria, Illinois, in January.

Dayton Kilgus and Til Johnson of Compass Insurance Partners (formerly Metz-Stoller Insurance) were among the 192 attendees.

2016 GOLF OUTING

Also hitting the links until the storm sent everyone inside were Ken Kalafut, VCNA Prairie; Jordan Smith, Sika Corp.; Doug Anderson, Boral Resources; and Matt Maciejewski, St. Marys Cement.

Lee Newton, Cummings, McGowan & West; Vince Maniscalco, Sika Corp.; Brandon Thetard, River Redi-Mix; and Jeremy Lane, Sika Corp. attend the 2016 fall golf outing at Senica's Deer Park Golf Club in Ogelsby, Illinois.

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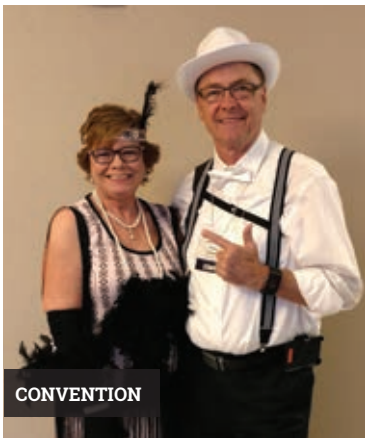
IRMCA/WRMCA CONVENTION
(FT. LAUDERDALE, FL)

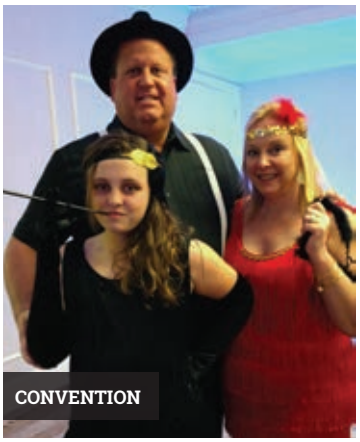
XXTREME CONCRETE CONFERENCE
(EAST PEORIA, IL)

Kelli, Jack, Sadie, Camden & Grace Kessler



Mara and Jim Randolph

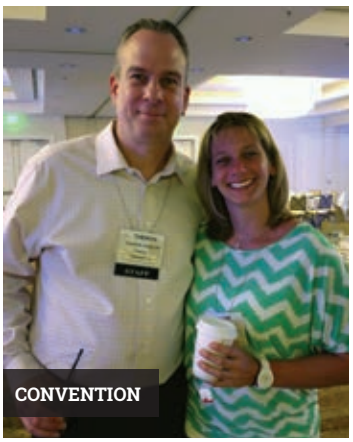
Nancy and Mitch Mariotti



Scott and Amy Maberry and their daughter Ella

Kayte and Jim Posadny

Carol and Herb Hustedde



Theron Tobolski and wife Lori Tobolski.

Panelists Scott Maberry, Kienstra-Illinois; A.J. Bimrose, Galesburg Builders-UCM; Victoria Jennings, CTLGroup; John Fox, BASF Admixtures; and Laura Powers, Wiss, Janney, Elstner, Inc., lead a discussion and Q & A. Topics included concrete balling, testing agencies, dispatcher responsibilities and jobsite visits.

Dave Anderson, Con-Tech Manufacturing, and Kelly Nelson, Dave Syverson Truck Center, exhibit a ready mix truck. This was the first year trucks were part of the exhibition.

Rod Pyle of Altorfer Cat displays an endloader. Altorfer Cat was one of 26 exhibitors.

Kimble Mixer took advantage of IRMCA's new offering for large equipment exhibit space displaying a brand new ready mix truck.

Attendees listen during a panel discussion at the 2017 Xtreme Concrete Conference in East Peoria, Illinois. More than 200 people attended the event.

Rich Shadle of Wille Brothers speaks about the American Concrete Institute and upcoming certifications.

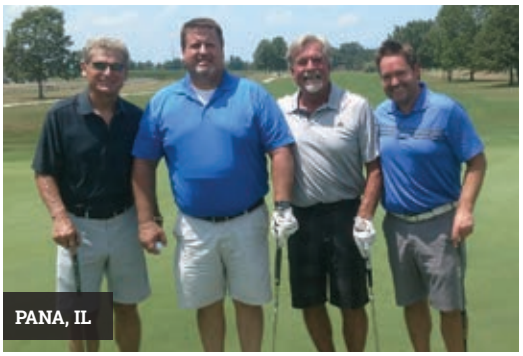
George Mobarak of Rock River Ready Mix asks a question of the panel.

Chris Wurtz, Rich Bulicek and Matt Peterson from McNeilus exhibit one of their ready mix trucks. IRMCA expanded conference space to 15,000 square feet at the new location.

2017 GOLF OUTINGS

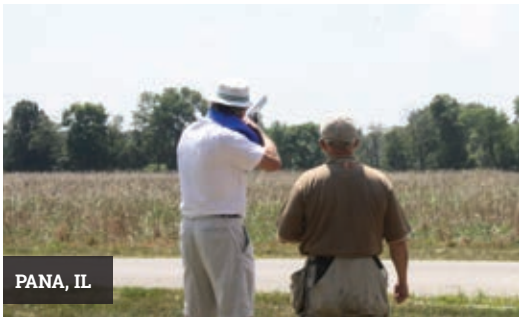
Herb Moeckel, Boral Resources; Joe Kimlinger, guest; Doug Anderson, Boral Resources; and Bob Blacet, guest, do their best to stay cool in 100 degree weather. Herb Moeckel served as chairman for this event.

Pictured are Mike Laughlin, Ed Bartholomew, Jim Sergent, and Eric Brown, all of Hanson Material Service. A portion of the proceeds from this event went to IRMCA's Political Action Committee (PAC) fund.



Dan Murphey, guest; Scott Maberry, Kienstra-Illinois and past IRMCA president; and Dale Keller and Adam Keller, guests, were among the 27 golfers at the event.

Brent Windell, guest; Matt Morrison, Cemex; and Herb Hustedde and Kent Hustedde, Quad-County Ready Mix, are part of IRMCA's 2017 summer golf outing at Oak Terrace Resort in Pana, Illinois. It was the first year for this event.



Bob Blacet, guest, takes his turn shooting clay pigeons. Ray McVeigh, GLCPA, handled the ammunition, guns and shooting instruction. This was another first for the association.

Participants at the 2017 fall golf outing enjoy a few minutes between their round and dinner at Senica's Deer Park Golf Course in Oglesby, Illinois.

The temperature reached 87 degrees on this late September day. Pictured are: Mike DeJong, Jody Foster, Brian Eggert, and Ryan Baas, all of Welsch Ready Mix.

Outstanding comradery among golfers Dan Larson, Lafarge Aggregates; Jack Keeler, Lafarge Aggregates; Steve Dearth, Grundy County Redi-Mix Co.; and Cathy Sukley, Lafarge Aggregates.

UPCOMING EVENTS
CALENDAR

Xtreme Concrete Conference 2019
January 31 - February 1, 2019
Embassy Suites by Hilton East Peoria Riverfront Hotel & Conference Center, East Peoria, IL

IRMCA / WRMCA Joint Winter Biannual Meeting 2019
February 17 - 21, 2019 |
Hotel del Coronado, Coronado, CA

Technical Committee Meetings
June 14, 2018 | Springfield, IL
October 11, 2018 | Bloomington, IL

IRMCA Summer Golf Outing
July 2018 | Central Illinois

IRMCA Fall Golf Outing
September, 2018 | Deer Park Golf Club, Oglesby, IL

Also look for NEW EVENTS *in progress this year...*

Environmental Safety/Workshop
(including speakers from OSHA & EPA)
2018 | Central Illinois Area

IRMCA Trap Shoot – "All State" Event
2018 | Central Illinois Area

Tell It Like It Is

By John Albinger, IRMCA Technical Consultant, Retired

As of December 31, 2016, I am no longer retained by the Illinois Ready Mixed Concrete Association. A decision I made. I don't intend to retire. It's just time to move on, and yes, I have plans. After all, at 73 years of age it's too early to throw in the towel.

So I thought about this, my last "Tell It Like It Is" column, and what I want to say. I thought about writing about my life, how lucky I've been, how many friends I've made, and most importantly, how grateful I am for the support my wife and family have given me. All of which I thank God for every day. But above all I didn't want this to be a self-expressed eulogy. And who cares anyway?

I have to tell you, however, that one of the best parts of my professional life is the friends I've made, and friend is a word I use very guardedly. (Actually, I think it's a word used too loosely. The word associate is most often more applicable.) The friends I've made will always be my friends.

On the other hand I've formed many good relationships, and relationships are just a step below friendships. Relationships, like friendship, should be cherished because they are, or should be, based on honesty and respect. If so, they are always mutually beneficial.

We, the more mature, are frequently heard saying, "It's not like it used to be" or "Relationships don't matter anymore". No it's not like it used to be, but relationships based on honesty, respect and mutual benefit will always matter. Maybe from a corporate standpoint they don't matter as much, but personally they matter a great deal. I believe our success depends on those relationships. You can't go anywhere in your professional life without those relationships. If your ego says otherwise, I guarantee you won't have many friends.

Where you are in your life, where you want to go, and where you end up will be because of your relationships. I totally understand that not so good things, painful things, happen to us that are beyond our control and absolutely will affect us. But very often we become stronger, more understanding, and even more faithful. At those times, having family, friends and relationships will matter.

What I want to do is wish all of you well. For those of us who have good health I hope you understand and appreciate how lucky we are. For those of you who are not so lucky, I admire your strength and your faith in God. So, I'll get off my soap box, say it's been a pleasure and thank you, all of you. And if you and I are friends or have a relationship – see you later.

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