BACK ON TRACK

TCA’s New Office and Lab Building to Provide A Strong Foundation for the Next Chapter of Service to Our Members

Start Date Late 2021, hopefully

TN CONCRETE ASSOCIATION HEADQUARTERS

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30 YEAR DRY BASEMENT GUARANTEE

CONTRACTOR INSTANT REBATES
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- Our Board of Directors

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Joseph McDaniel

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Advancing the Concrete Industry
Jon Huddleston, Associate Professor & CIM Director

**TECHNICAL DIRECTOR’S MESSAGE**

Important Updates: Please Read!
by John B. Pearson, P.E.
As I write this column, TCA members are preparing to travel to the beach for the Summer Meeting with our friends and colleagues from Alabama. We missed this great opportunity to spend time with industry members last year, but we are looking forward to renewing connections, learning from our peers about the business of concrete, and, of course, a little beach time thrown-in for good measure.

Associations have always provided a place to network within an industry and many would say this is one of the most important services they provide to their members. These gatherings provide an opportunity to learn from others who are facing the same challenges and who may have found a solution that you can bring home to your company. Receiving just one good idea from a peer or a speaker can make the whole event profitable, as well as fun. We are all busy so making the time to attend can be tough, but the payoff is well worth the time.

TCA will be looking toward the future during my tenure as president. We are back on track to complete design and permitting for TCA’s new office and lab building that will provide a strong foundation for TCA’s next chapter of service to our members. We hope to nail down a start date for construction in late 2021, so stay tuned for more exciting updates on our new office.

Your Board will also be working to refresh our overall strategic plan during 2021. Meetings with friends and colleagues is just one thing that TCA does on behalf of all us, and we want to continue to focus our joint efforts on areas that bring value to our industry and to each member company.

If you have thoughts about our joint concrete future, I would appreciate hearing from you—please don’t hesitate to reach out!
Come Join the Fun:

**TCA Foundation Golf Tournament**
Greystone Golf Course • October 26, 2021 • Dickson, Tennessee

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**Player Options**
- Single Player: $150
- Team of Four: $600

**Sponsorship Opportunities**
- **Foundation Beverage Cart Sponsor (2)** $400
  - Beverage Carts sponsored by: Durafiber™
  - Foundation Golf Hole Sponsor $200
  - Included in Presenting and Platinum sponsorship for 2021. You are encouraged, but not required, to present a giveaway or contest for the hole, and to have representatives meet all players.
  - **Foundation PAR-3 Sponsor** $300, plus Giveaway!
  - Hole prize must value a minimum of $100. Contest might include "Closest to the Pin," "Longest Putt" or whatever you choose. The Par-3 Sponsor may present their prize at the award ceremony.

**Questions? Call Donna at (615) 479-0996**
or email at donna@tnconcrete.org
It's now official! Tennessee set a new record for concrete production in 2020. The final numbers put our annual state production at 8.383 million cubic yards, surpassing the previous record levels of production set just before the onset of the Great Recession in 2006 and 2007. The year 2020 also marked the first time since the Great Recession that we surpassed the 8 million cubic yard mark, and our state’s production of ready mixed concrete jumped 17% from 2019 levels. Overall concrete production in the US was up 1.7% from 2019 to 2020, so Tennessee’s growth is far above average.

The dynamic economy that we enjoy in the great state of Tennessee appears poised to continue the long run of growth we have seen since 2010. Right now, our state is hitting on all cylinders from an economic point of view, and we continue to attract both investment and people to our state. This in-migration is fueling present growth and building jobs and opportunity that will support the next generation of Tennesseans. According to Market Graphics (our friend Edsel Charles), building permits for residential construction in the Tennessee markets he tracks are up over 27% in 2021 versus 2020 through the midpoint of the year (January - June). All of this is great news for the concrete industry as it points to strong and stable demand for our product in the foreseeable future.

All of this great news also brings with it some challenges. Those of us who have been around for a few business cycles have seen most of this before—rising materials prices, looming shortages of critical materials, likelihood of increasing regulatory burdens and a tight labor market. Some things are less familiar, foremost among them dealing with a pandemic in addition to everything else, and I believe we are living through a permanent shift in the relationship between employers and employees.

This last one is now commonly referred to as Workforce and everyone is talking about Workforce. We had the Great Recession a little over a decade ago, and, today, we have the Great Resignation with a sizable number of employees leaving their current employers to look for what they consider a better opportunity.

According to the most recent NRMCA Driver Survey (2020), our industry continues to have a very high “churn” rate with new hires (mixer operators) each year roughly equal to the number of mixer operators leaving. The biggest reasons operators are leaving are higher pay elsewhere and inconsistent work schedules as a mixer operator. This is likely to get worse with the Great Resignation taking place in the economy as a whole.

Also of note to me in the 2020 Driver Survey was the number of operators who are retiring and a dramatic drop in the number of companies providing any kind of mentoring to new hires. The average age of mixer operators is now 47 years old, about 4 years older than the average of similar positions in all industries—this indicates that retirements are going to accelerate in the next few years. We already know from prior surveys that finding experienced mixer operators is very difficult and now we are seeing a huge drop in mentoring new drivers. I am concerned that these two trends will lead to a drop in the competency of mixer operators hauling our product from our plants to our customers.

TCA is actively working on Workforce to help our members address what is certain to be our biggest challenge in the decade of the 2020s. I invite your participation as we seek out solutions.

Alan Sparkman
Executive Director
At Lafarge, our commitment goes far beyond the raw materials we produce. We bring together the best solutions and materials to build more durable, compact and connected cities. And when you build better cities you get buildings, roads and infrastructure that truly reflect the changing needs of today’s communities.

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To learn more about Lafarge solutions and products, including cement, concrete and aggregates, contact:

Tim Langelier, Middle TN
Tim.Langelier@LaFargeHolcim.com
www.LaFargeHolcim.com

Benoit Cotnoir
Area Sales Mgr. Southern Region

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INTRODUCTION AND LITERATURE REVIEW

Portland-limestone cement (PLC) has been used in the United States for several years, however, it is becoming more prevalent as of late (1). The first step in producing PLC is adding crushed, dried limestone to the grinding mill, along with portland cement clinker and gypsum. According to ASTM C150, ordinary portland cement (OPC) is limited to a maximum limestone content of 5% by mass. PLC, however, is defined by having a 5-15% limestone content by mass according to ASTM C595 (1, 2). This is an area of interest to lessen the environmental footprint that is becoming a concern for OPC production (1, 2).

Since the limestone is a softer material, it is generally more finely ground than the clinker that is produced. Limestone also requires less energy to grind due to its softness. PLC has a broader gradation, with a uniform distribution of the limestone particles, which results in better overall particle packing. The enhanced particle packing and uniform size distribution improves the PLC finish-ability and paste density (1, 3).

The strength of PLC concrete is affected by the amount of limestone substitution in the cement. It has been proven that the upper allowable limit of limestone substitution (15%), may potentially increase early-age strength resulting from the improved particle packing. The efficiency of supplementary cementitious materials (SCMs), such as fly ash and slag, can be increased with the use of PLC. The use of PLC with SCMs reduces the retardation effects of SCMs which in turn improves strength at all ages.

The fineness of the limestone plays a role in the workability of the concrete, but does not affect the water demand. Limestone generally contributes to the hydration reactions rather than being an inert filler (4). Therefore, PLCs can feasibly be used in the same situations as OPC (1).

About four percent of the world’s Carbon Dioxide (CO2) emissions are generated from producing portland cement (5). The average replacement of 10% limestone in PLC can result in around a 10% reduction in the CO2 production as well as energy. The limestone that is used must contain a minimum of 70% Calcium Carbonate (CaCO3) (3). CO2 emissions from cement plants are caused by two main sources. These sources include calcination of the limestone and the consumption of fossil fuels to heat the raw materials to the required temperature to form clinker. With the substitution of 5% to 15% limestone by mass in PLC, this reduces the use of clinker. This in turn consumes less energy and reduces the CO2 emissions and greenhouse gases. Overall, it has been proven that with the use of PLC, there can be a 12% improvement in environmental performance compared to OPC (6).

MATERIALS AND PROCEDURE

Table 1, column 1 shows the TDOT-approved materials for concrete that were used in this study, with the exception of the use of portland limestone cement (PLC) that was investigated. The proportions of the four mixtures used in this study (see Table 1) were determined through trial batching. After trialing, all four
mixtures met the indicated TDOT 604.03 (7) concrete plastic and hardened property requirements. Tables 2 and 3 show TDOT 604.03 (7) requirements for minimum cementing materials, w/cm ratio, fine aggregate percentage by total aggregate volume, and allowable SCM replacement percentages for TDOT Class D and A concrete, respectively. Six 0.85-cubic-foot batches of each mixture were made and tested as per Table 4 criteria.

### TABLE 2. COMPARISON OF PLC MIXTURES WITH TDOT CLASS D PCC REQUIREMENTS

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>TDOT 604.03 CLASS D PCC REQUIREMENTS</th>
<th>CONTROL CLASS D</th>
<th>PLC CLASS D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cement content (lbs/CY)</td>
<td>620 minimum</td>
<td>620</td>
<td>620</td>
</tr>
<tr>
<td>Water-cement ratio</td>
<td>0.40 max.</td>
<td>0.37</td>
<td>0.37</td>
</tr>
<tr>
<td>Percent Fine Aggregate by Total Aggregate Volume</td>
<td>44 maximum</td>
<td>38</td>
<td>38</td>
</tr>
<tr>
<td>Percent Class F Fly Ash Substitution (by weight) for PC</td>
<td>25 max.</td>
<td>25</td>
<td>25</td>
</tr>
</tbody>
</table>

### TABLE 3. COMPARISON OF PLC MIXTURES WITH TDOT CLASS A PCC REQUIREMENTS

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>TDOT 604.03 CLASS A PCC REQUIREMENTS</th>
<th>CONTROL CLASS A</th>
<th>PLC CLASS A</th>
</tr>
</thead>
<tbody>
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<td>Cement content (lbs/CY)</td>
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<tr>
<td>Water-cement ratio</td>
<td>0.45 maximum</td>
<td>0.43</td>
<td>0.436</td>
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<tr>
<td>Percent Fine Aggregate by Total Aggregate Volume</td>
<td>44 maximum</td>
<td>42.5</td>
<td>42.5</td>
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<tr>
<td>Percent Class F Fly Ash Substitution (by weight) for PC</td>
<td>25 maximum</td>
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<td>25</td>
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</tbody>
</table>

### TABLE 4. TESTING PROTOCOL FOR PLC EVALUATION MIXTURES

<table>
<thead>
<tr>
<th>TEST METHOD</th>
<th>FREQUENCY</th>
<th>SPECIMENS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressive Strength, AASHTO T22 (8)</td>
<td>3 @ 7, 14, 28 and 56 days</td>
<td>4 x 8 cylinders</td>
</tr>
<tr>
<td>Static Modulus of Elasticity ASTM C 469 (9)</td>
<td>1 of 3 @ 28 and 56 days</td>
<td>4 x 8 cylinders</td>
</tr>
<tr>
<td>Surface Resistivity, AASHTO T358 (10)</td>
<td>3 @ 7, 14, 28 and 56 days</td>
<td>56-day compressive strength 4 x 8 cylinders</td>
</tr>
<tr>
<td>Hardened Concrete Absorption, ASTM C642 (11)</td>
<td>3 @ 56 days</td>
<td>3 x 6 cylinders</td>
</tr>
</tbody>
</table>

### RESULTS AND DATA QUALITY

Tables 5 and 6 show compressive strength results, result ranges, and allowable result ranges for the TDOT Class D and A mixtures, respectively. Tables 7 and 8 show static modulus of elasticity results, result ranges, and allowable result ranges for the TDOT Class D and A mixtures, respectively. Tables 9 and 10 show surface resistivity results, result ranges, and allowable result ranges for the TDOT Class D and A mixtures, respectively. Table 11 shows absorption after boiling results, result ranges, and coefficients of variation.
A Preliminary Comparison of Portland Limestone Cement
With a Type I/II Portland Cement in Tennessee

The acceptable range of the hardened property results was determined by obtaining the standard deviation or coefficient of variation from the appropriate test method and multiplying by an ASTM C670 factor for the number of test results (12). The multi-laboratory precision was used for the 4x8-inch cylinder results. This was used since AASHTO T 358 states that the preparation of cylinders by different operators would increase the variation above multi-laboratory precision criteria (13). All hardened property test results met the acceptable precision criteria except the TDOT Class D and A PLC compressive strength at 7 days and the TDOT Class A control at 7, 14, and 28 days (indicated in red in Tables 5 and 6). Unfortunately, there is no precision criteria available for hardened concrete absorptions after boiling. However, the coefficient of variation’s (COV) were determined for each mixture, and these results were lower than 10%, which was deemed acceptable. The hardened property results obtained seemed to be of sufficient quality on which to base reasonable conclusions.

Analysis of Results

Statistical Comparison of Results

The tests of the hypotheses of equality of corresponding mean values of concrete properties across mixes are represented in Table 12 for the various mixtures at given curing times. A statistical t-test with the assumption of unequal variances was performed. The estimated t-value was observed to be less than the critical t-value at the corresponding degree of freedom with a five percent significance level. The compared mixes that were deemed to have statistically equal values were denoted as NSD (no significant difference) in Table 12. When the estimated t-value exceeded the critical t-value at the corresponding degree of freedom with five percent significance level, the compared mixes were deemed to have significantly different values. The green shaded cells in Table 12 indicate the PLC results are statistically significantly different and superior to the original portland cement (OPC) results.

Table 5. TDOT Class D Compressive Strength Results and Data Quality (PSI)

<table>
<thead>
<tr>
<th>MIXTURE</th>
<th>BATCH 1</th>
<th>BATCH 2</th>
<th>BATCH 3</th>
<th>BATCH 4</th>
<th>BATCH 5</th>
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<th>ALLOWABLE RANGE</th>
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<td>5280</td>
<td>5780</td>
<td>5530</td>
<td>5730</td>
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### TABLE 6. TDOT CLASS A COMPRESSIVE STRENGTH RESULTS AND DATA QUALITY (PSI)

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<tr>
<th>MIXTURE</th>
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### TABLE 7. TDOT CLASS D STATIC MODULUS OF ELASTICITY RESULTS AND DATA QUALITY (10^6-PSI)

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<thead>
<tr>
<th>MIXTURE</th>
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<th>BATCH 4</th>
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<th>BATCH 6</th>
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### TABLE 8. TDOT CLASS A STATIC MODULUS OF ELASTICITY RESULTS AND DATA QUALITY (10^6-PSI)

<table>
<thead>
<tr>
<th>MIXTURE</th>
<th>BATCH 1</th>
<th>BATCH 2</th>
<th>BATCH 3</th>
<th>BATCH 4</th>
<th>BATCH 5</th>
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<td>4.25</td>
<td>4.21</td>
<td>0.30</td>
<td>0.72</td>
</tr>
</tbody>
</table>
Table 12 shows that in all 22 cases, or 100% of the time, PLC was superior or equal to the OPC. This would seem to be strong evidence that the PLC is as good if not better than OPC.

**TDOT Specification Compliance**

The 28-day compressive strength requirement for TDOT Class D concrete is 4000-psi. All compressive strength results shown in Table 5 exceed this specification at all ages. Similarly, all compressive strength results at all ages shown in Table 6 exceed the TDOT Class A specification for 28-day requirement of 3000-psi. There are no TDOT specifications for SR, static modulus of elasticity, or absorption for Class A or D concrete mixtures.

**Material Cost**

In order to compare costs between OPC and PLC, one would have to consider a number of variables. While PLC can cost less to manufacture due to the additional limestone, variables such as shipping methods and distances must be accounted for. Due to these ever changing variables, it is difficult to accurately estimate the costs. Ultimately, there should not be a significant cost difference.

**NEED FOR FURTHER RESEARCH**

The current project only compared one source of PLC. The only source of PLC currently in the state of Tennessee is located in Memphis. It seems prudent to make further comparisons with other PLC samples, possibly in other states. However, if the other PLC sources meet the same requirements as the sample used in this project, it seems reasonable to expect similar performance.

**CONCLUSION**

Based on the testing and statistical analysis done in this project, it appears that the PLC that was evaluated is equal to or superior in performance as a cementing material compared to OPC.

**DISCLAIMER**

The opinions expressed herein are those of the authors and not necessarily the opinions of the Tennessee Concrete Association (TCA).

### TABLE 9. TDOT CLASS D SURFACE RESISTIVITY RESULTS AND DATA QUALITY (KILOHM-CM)

<table>
<thead>
<tr>
<th>MIXTURE</th>
<th>BATCH 1</th>
<th>BATCH 2</th>
<th>BATCH 3</th>
<th>BATCH 4</th>
<th>BATCH 5</th>
<th>BATCH 6</th>
<th>MEAN</th>
<th>RANGE</th>
<th>ALLOWABLE RANGE</th>
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### TABLE 10. TDOT CLASS A SURFACE RESISTIVITY RESULTS AND DATA QUALITY (KILOHM-CM)

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<th>BATCH 3</th>
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<th>ALLOWABLE RANGE</th>
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### TABLE 11. 56-DAY ABSORPTION AFTER BOILING RESULTS, RANGES AND COEFFICIENTS OF VARIATION

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### TABLE 12. STATISTICAL ANALYSIS COMPARING PLC VS. OPC

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<tr>
<th>COMPONENT</th>
<th>PLC CLASS D CONCRETE VS. OPC CLASS D CONCRETE</th>
<th>PLC CLASS A CONCRETE VS. OPC CLASS A CONCRETE</th>
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<td>Superior</td>
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<td>Surface Resistivity @ 28 days</td>
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<td>Superior</td>
</tr>
<tr>
<td>Surface Resistivity @ 56 days</td>
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<td>Superior</td>
</tr>
<tr>
<td>Compressive Strength @ 7 days</td>
<td>NSD</td>
<td>Superior</td>
</tr>
<tr>
<td>Compressive Strength @ 14 days</td>
<td>NSD</td>
<td>Superior</td>
</tr>
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<td>Compressive Strength @ 28 days</td>
<td>Superior</td>
<td>Superior</td>
</tr>
<tr>
<td>Compressive Strength @ 56 days</td>
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<td>Superior</td>
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<tr>
<td>Static Modulus of Elasticity @ 28 days</td>
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<td>Superior</td>
</tr>
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<td>Static Modulus of Elasticity @ 56 days</td>
<td>NSD</td>
<td>NSD</td>
</tr>
<tr>
<td>Absorption after Boiling</td>
<td>NSD</td>
<td>NSD</td>
</tr>
</tbody>
</table>
REFERENCES


7. Tennessee Department of Transportation, Standard Specifications for Road and Bridge Construction (Section 604.03), January 1, 2015.


ACKNOWLEDGEMENTS

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Overview of TCA Services and Staff......14
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Past Presidents ....................................15
Ready Mixed Concrete Producers ........16
Associate Members .............................20
Affiliate Members ...............................22
Engineers/Testing Labs .....................24
Concrete Contractors .......................26

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Online Education Coordinator
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Jackson

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B.T. Redi-Mix

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Bobby Gress
Continental Concrete Products

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Pigeon Forge, TN 37863
Phone: (865) 453-4433

SHEPPARD CONCRETE CO., INC.
PO Box 3022
Cleveland, TN 37320
Primary Contact: Charlie Lay
Phone: (877) 541-4542
clay@lambcon.us
www.lambcon.us

C & C CONCRETE PRODUCTS, INC.
193 Towe String Rd.
Jacksboro, TN 37757
Primary Contact: Bobby Crass
Phone: (423) 562-7425
bobbycrass@aol.com
www.c-cconcrete.com
Products/Services: Ready Mix Concrete, Building Materials, Concrete Block Manufacturer, Brick & Lumber

C & C REDI-MIX INC.
5710 Harriman Hwy
Oliver Springs, TN 37840
Primary Contact: Tony Crass
Phone: (865) 435-1445

CHANDLER CONCRETE CO., INC.
PO Box 131
Burlington, NC 27216
Primary Contact: Ted Chandler
Phone: (336) 226-1181
ted.chandler@chandlerconcrete.com
www.chandlerconcrete.com
Products/Services: Ready Mix Concrete Services

CHANDLER CONCRETE PRODUCTS
50 Scott Ave.
 Cookeville, TN 38501
Primary Contact: Clark Simpson
Phone: (931) 526-9704
clark@bscblock.com
www-bscblock.com
Products/Services: Ready Mix Concrete, Building Materials, Concrete Block Manufacturer, Brick & Lumber

CUMBERLAND SUPPLY CO., INC.
PO Box 216
Carthage, TN 37030
Primary Contact: Phillip Hudson, Jr.
Phone: (615) 735-1786
philiphudsonjr@yahoo.com
www.cumberlandsupplytn.com
Products/Services: Ready Mix Concrete, TDOT Certified, Brick, Block, Lumber, Hardware, Masonry & Millwork

DELTA INDUSTRIES, INC.
1995 Nonconnah Blvd
Memphis, TN 38132
Primary Contact: Josh Evans
Phone: (901) 396-8900
jevans@delta-ind.com
www.delta-ind.com
Products/Services: Ready Mix Concrete Producer, Ready Mix Concrete Supplier
Additional Information: Cordova
1323 Rebel Rd.
Cordova, TN
Phone: (901) 396-8900

DIXIE READY-MIX CONCRETE CO., INC.
1414 Old Jacksboro Hwy
La Follette, TN 37766
Primary Contact: Ray Henson
Phone: (423) 562-2277
Products/Services: Ready-Mix Concrete, Wire Mesh-Rebar, Septic Tanks, Wall Blocks, Masonry Sand

HARRISON CONSTRUCTION CO.
4817 Rutledge Pike
Knoxville, TN 37914
Primary Contact: Stephen Lowrey
Phone: (865) 637-1770
dbrown@harrisoncon.com
www.harrisoncon.com
Products/Services: Ready Mix Services and Aggregate Sales

IRVING MATERIALS INC
2001 Antioch Pike
Nashville, TN 37013
Primary Contact: Tonya Alexander
Phone: (615) 884-4935
cris.mabbitt@irvmat.com
www.irvmat.com
Products/Services: Ready Mixed Concrete, Related Products, Aggregate, Sand & Pervious Concrete
Additional Information: Contacts in TN: Cris Mabbitt, Mike Baldoni, Phillip Hacket, Amanda Schweighardt

LEROY CONCRETE CO.
261 Needmore Rd
Cleveland, TN 37320
Primary Contact: Charlie Lay
Phone: (877) 541-4542
clay@lambcon.us
www.lambcon.us

PARKER CONCRETE CO.
311 Lavon Rd.
Nashville, TN 37207
Primary Contact: Sam Morgan
Phone: (615) 530-5263
smorgan@parkerconcrete.com
www.parkerconcrete.com
Products/Services: Ready Mix Concrete Services

RAYMOS CONCRETE INC.
4801 Murfreesboro Rd.
Nashville, TN 37207
Primary Contact: Amanda Morgan
Phone: (615) 530-5263
smorgan@parkerconcrete.com
www.parkerconcrete.com
Products/Services: Ready Mix Concrete Services

SIMPSON COUNTY CONCRETE
305 Cemetery Rd.
Clarksville, TN 37040
Primary Contact: Amanda Schweighardt
Phone: (931) 562-7425

THOMPSON CONCRETE CO.
1173 Old Nashville Pike
Columbia, TN 38404
Primary Contact: Amanda Schweighardt
Phone: (931) 562-7425

TURLEY CONCRETE INC.
2300 Old Nashville Pike
Columbia, TN 38404
Primary Contact: Amanda Schweighardt
Phone: (931) 562-7425

UNITED CONCRETE INC.
4817 Rutledge Pike
Knoxville, TN 37914
Primary Contact: Stephen Lowrey
Phone: (865) 637-1770
dbrown@harrisoncon.com
www.harrisoncon.com
Products/Services: Ready Mix Services and Aggregate Sales

2021 TCA Membership Directory
Ready Mixed Concrete Producer Members

2021 • Tennessee CONCRETE • Directory 2021
Additional Information:

**Knoxville**
5651 S. National Dr.
Knoxville, TN 37914
Phone: (865) 724-3882

**Madison**
41 Fant Industrial Dr.
Madison, TN 37115
Phone: (615) 663-9011

**POTTER SOUTH EAST, LLC**
511 E. Monticello Pike
Huntsville, TN 37756
Primary Contact: Dwayne Potter
Phone: (423) 663-8222
pottersoutheastllc@gmail.com
Products/Services: Ready Mix
Concrete, Pre-cast, Trucking
Additional Information:
TDOT Projects in TDOT
Bridge Construction serving
Centralized Efforts in Road &
Highway Construction Co. with
Products/Services:
pottersoutheastllc@gmail.com
...(continued)

**READY MIX USA EAST TN**
PO Box 2389
Knoxville, TN 37901
Primary Contact: Joe Fowler
Phone: (865) 573-4501
josephc.fowleriii@musac.comex.com
www.cemex.com
Products/Services: Ready Mixed
Concrete Sales: Shelley Parham
Tri-Cities (423)744-0212, Javier
Melendez-Chattanooga (423)595-0954, Derek Moore-Knoxville
(865)210-0598, Mark Doty-Knoxville
(423)327-1395
Additional Information:
Contact for Chattanooga market
Lee Smith (404) 423-8724
501 Janie Hammitt Dr.
Bristol, VA 24201
Phone: (276) 669-3107

**Chattanooga**
604 Hudson Road
Chattanooga, TN 37405
Phone: (423) 892-6444

**Chattanooga**
2 Pelican Dr. (River Plant)
Chattanooga, TN 37416
Phone: (423) 892-6444

**Dalton**
419 N. Selvidge St.
Dalton, GA 30720
Phone: (706) 278-6404

**Gray**
102 Watertank Rd.
Gray, TN 37615
Phone: (423) 246-7701

**Knoxville**
2200 Neyland Dr.
Knoxville, TN 37916
Phone: (865) 544-0320

**Knoxville**
10509 Lexington Dr.
Knoxville, TN 37932
Phone: (865) 573-4501

**Lafayette**
22920 Hwy 193
Lafayette, GA 30728
Phone: (706) 278-6044

**Maynardville**
762 Maynardville Hwy.
Maynardville, TN 37807
Phone: (423) 587-2050

**Morristown**
663 South Sugar Hollow Rd.
Morristown, TN 37813
Phone: (423) 587-2050

**New Tazewell**
PO Box 1050
New Tazewell, TN 37824
Phone: (865) 573-4501

**Rockford**
547 National Dr.
Rockford, TN 37853
Phone: (865) 573-4501

**RIVER CITY CONCRETE, INC.**
9160 Hwy 128 South
Savannah, TN 38372
Primary Contact: Wade
Williams
Phone: (731) 925-0271
wadew@rivercity-concrete.com
www.rivercity-concrete.com
Products/Services: Ready Mix
Concrete, Concrete Blocks,
Forming Supplies, Concrete
Reinforcing Products, Dump
Truck Services, Stone Placement
Additional Information:

**Selmer**
850 Mulberry Ave.
Selmer, TN 38375
Phone: (731) 645-7903

**Waynesboro**
1041 Lawrenceburg Hwy
Waynesboro, TN 38485
Phone: (931) 722-3816

**SCREAMING EAGLE READY MIX**
490 Barge Point Rd
Clarksville, TN 37042
Primary Contact: Duane E. King
Phone: (931) 553-4101
dking.screamingeagle@yahoo.
com
www.screamingeaglereadymix.com
Products/Services: Concrete,
Decorative Sealers & Acid
Stains, Powder Realease &
Concrete Tools
Additional Information:

**Clarksville**
1040 International Blvd.
Clarksville, TN 37040
Phone: (931) 553-4101

**SOUTHERN CONCRETE PRODUCTS, INC.**
PO Box 1256
Jackson, TN 38302
Primary Contact: Rick Odle
Phone: (731) 422-3358
scpodle@yahoo.com
www.southernconcrete.com
Products/Services: Ready Mix
Concrete, TDOT & KYTC
Certified, Concrete Pumping,
Septic Tanks, Aggregate, Precast
Products, Concrete Supplies
Additional Information:

**Dayton**
220 Hurst Ln.
Dayton,TN 37321
Phone: (423) 570-0687

**Decatur**
1768 TN-68
Decatur, TN 37322
Phone: (423) 332-6002

**Harriman**
348 Poland Hollow Rd.
Harriman, TN
Phone: (865) 234-7114

**Hennessy**
745 US Hwy 45 S.
Hennessy, TN 38340
Phone: (731) 422-3358

**Jackson**
86 Westover Rd
Jackson, TN 38301
Phone: (731) 422-3358

**Lebanon**
266 E. Church St.
Lexington, TN 38351
Phone: (731) 968-2537

**Milan**
2500 Graball St.
Milan, TN 38358
Phone: (731) 422-3358

**Paris**
535 Russell St.
Paris, TN 38242
Phone: (731) 642-6672

**Union City**
106 Barham Rd.
Union City, TN 38261
Phone: (731) 885-7060

**TWIN ENTERPRISES, LLC**
16906 Alberta St.
Oneida, TN 37841
Primary Contact: Kelley Krahm
Phone: (423) 569-6341
kelley@twinkenterprises.net
Products/Services: Ready Mix
Concrete, TDOT & KYTC
Certified, Concrete Pumping,
Septic Tanks, Aggregate, Precast
Products, Concrete Supplies
Additional Information:
VAHHOSECO READY MIX
244 Blair Bend Dr.
Loudon, TN 37774
Primary Contact: Jeff VanHoose
Phone: (865) 458-3998
jvanhoose@vanhooseco.com
www.vanhooseco.com
Products/Services: Concrete, Paving, Paver & Track, Paver & Track Products,
Precast Wall Systems, Structural Precast Concrete, On Site Certified Lab, Underground Storm Water Management Systems

VOLUNTEER CONCRETE
PO Box 682423
Franklin, TN 37068
Phone: (931) 364-5900
Primary Contact:
www.warriorprecast.com
Stacey Harvey
Lewisburg, TN
770 Hwy 99
Phone: (931) 364-5900

WARIOR PRECAST
PO Box 168
Rock Island, TN 38581
Primary Contact: Stacey Harvey
Phone: (931) 686-3240
stacey.harvey@superiorwallstn.com
www.warriorprecast.com
Products/Services: Ready Mix, Concrete Pumping, Aggregates, Paving & Plant, NRMCA Certified
Additional Information:

CARBONCURE TECHNOLOGIES, INC.
1148 Strabrough Ln
Fort Collins, CO 80525
Primary Contact: Ted Jones
Phone: (303) 905-6946
tjones@carboncure.com
www.carboncure.com
Products/Services: CarbonCure manufactures a technology that introduces carbon dioxide(CO2) into concrete during mixing, enabling concrete producers to create high performing, more sustainable concrete with a reduced carbon footprint.
Additional Information:
Shannon Seipel Tec Serv Mgr
(816) 598-6899 sseipel@carboncure.com
Rhett Dunlap Tech Service Eng.(865) 300-9596 rdunlap@carboncure.com

CHRYSO, INC.
3958 Ruger Drive
Royse City, TX 75189
Primary Contact: Drew Carmichael
Phone: (615) 631-5323
drew.carmichael@chrysoinc.com
www.chrysoinc.com
Products/Services: Full line Admix & Fiber for the Concrete & Precast Industry.
Additional Information: drew.carmichael@chrysoinc.com

DON CONSTRUCTION PRODUCTS, INC.
2826 Lineberger Industrial Dr.
Lancaster, SC 29720

EDENCRETE
8041 Rocky Hollow Cove
Germantown, TN 38138
Primary Contact: Brent Sanders
Phone: (470) 316-8114
bsanders@edennovations.com
www.edencrete.com
Products/Services: Edencrete’s Acti-Gel 208, allows concrete producers to replace natural sand with manufactured sand while maintaining pumpability, workability, and finishability.
Additional Information:

EUCLID CHEMICAL COMPANY
19215 Redwood Road
Cleveland, OH 44110
Primary Contact: Adam Heckler
Phone: (216) 531-9222
aheckler@euclidchemical.com
www.euclidchemical.com
Products/Services: Concrete Admixtures, Huff-Strand Fibers, Integral Colors, Sealers & Construction Products
Additional Information: Ron Shirley(901) 355-8306
Kirby Fiveash (404)307-2411
Ron Foster (239) 633-0437

GCP APPLIED TECHNOLOGIES
2325 Lakeview Pkwy
Alpharetta, GA 30009
Primary Contact: Jeff Slaughter
Phone: (341) 303-4880
jeff.slaughter@gcpat.com
www.gcpat.com
Products/Services: We are inspired to influence how the world is built. We are dedicated to the development of high performance products, the continued pursuit of advancement in construction technologies, simplifying the complexities of construction worldwide, and delivering value to our customers.
Additional Information: Zack Swanson - Technical Sales (410) 794-6973 zack.swanson@gcpat.com
Jeff Slaughter St. Louis, MO (314)303-4880
Dan Meine - Director of Sales daniel.j.meine@gcpat.com

M'AEST BUILDERS
23700 Chagrin Blvd
Cleveland, OH 44122
Primary Contact: Jason Ford
Phone: (423) 609-0235
jason.ford@mbcc-group.com
www.mbcc-group.com
Products/Services: MasterPozzolith Series, MasterPolyheed Series, MasterGlenium Series, MasterSet Series, MasterFibers, Master X-Seed Series, MasterLife 300C & 300D Waterproofing, Green Sense Concrete, SRA/CRA, MB Slab
Additional Information: Denny Lind (615) 390-4899
Drag Yarbro (901) 484-9190
Nicholas Shortridge (931) 247-6189
Jaclyn Streeter (865) 454-2301

SIKA CORP
1930 Sarasota Business Pkwy NE
Conyers, GA 30013
Primary Contact: Jason Zelinski
Phone: (864)909-0869
zelinski.jason@us.sika.com
www.sikausa.com
Products/Services: Concrete Admixtures, Color, Fibers & Waterproofing Admixtures
Additional Information: Denny Streevel Sr. Sales Rep.(615)828-7332
streevel.bryan@us.sika.com
Andy Smith(336) 689-1105
smith.andrew@us.sika.com
Paul Ramsburg (864) 344-4109
ramsburg.paul@us.sika.com
2021 TCA Membership Directory

Associate Members

AGGREGATES

E. DILLON & CO.
2522 Swords Creek Rd
Swords Creek, VA 24649
Primary Contact: Mike Miller
Phone: (276) 971-4630
mmiller@edillon.com
www.edillon.com
Products/Services: E.Dillon is a long-time, top provider of aggregates, finely ground & sand size dolomite products throughout the SE, NE & Middle US. We produce high-chemistry dolomites for plate glass manufacturing, fiberglass, brick coatings & specialty fillers in concrete. Produce EverLoc® a Segmental Retaining Wall System.
Additional Information: Steve St.Clair (276)701-0015, Donny Dye (276)971-0965

PINE BLUFF MATERIALS CO.
1030 Visco Drive
Nashville, TN 37210
Primary Contact: Mike Bohleber
Phone: (615) 254-1956
mike.bohleber@pbmat.com
www.pbmat.com
Products/Services: Specification Sand, Gravel & Stone
Additional Information: Specification Sand, Gravel & Stone

ROGERS GROUP INC.
421 Great Circle Rd
Nashville, TN 37202
Primary Contact: Granville Grant
Phone: (615) 613-1115
granville.grant@rogersgroupinc.com
www.rogersgroupinc.com
Products/Services: Crushes Stone and Natural Sand, & Construction Services

VULCAN MATERIALS CO.
115 East Park Dr. Suite 100
Brentwood, TN 37027
Primary Contact: Jon Badgett
Phone: (615) 361-8551
badgettj@vmcmail.com
www.vulcanmaterials.com
Products/Services: Crushed Stone & Sand

CEMENT

CEMEX
PO Box 100813
Birmingham, AL 35210
Primary Contact: Scott Showerman
Phone: (334) 512-3552
cody.eaton@cemex.com
www.cemexusa.com
Products/Services: Portland Cement
Additional Information: Stevend George - Sales Mgr. Knoxville Plant
(205) 777-2858 stevend.george@cemex.com
Cody Eaton - Sales Mgr. Nashville Terminal (615) 478-7594
cody.eaton@cemex.com

CONTINENTAL CEMENT CO.
16401 Swingley Ridge Rd
Chesterfield, MO 63017
Primary Contact: Stewart Parker
Phone: (636) 532-7440
stewart.parker@continentalcement.com
www.continentalcement.com
Products/Services: Cement Manufacturer
Additional Information: David Loomes, VP Sales & Supply Chain (800)625-1133 2549
Channel Ave. Memphis, TN 38106

HOLCIM
4037 Rural Plains Circle
Suite 225
Franklin, TN 37064
Primary Contact: Benoit Cotnoir
Phone: (615) 771-1220
benoit.cotnoir@ Lafargeholcim.com
www.lafargeholcim.com
Products/Services: Portland Cement, Slag, Masonry & Oilwell Cement
Additional Information: Joey Deroe (870) 215-3420 Heath Rogers (901) 833-3647

LEHIGH CEMENT CO.
400 Riverhills Business Park Suite 437
Birmingham, AL 35242
Primary Contact: Phil Detwiler
Phone: (205) 968-5803
phil.detwiler@lehighhanson.com
www.leighhanson.com
Products/Services: Cement sales
Additional Information: Tray Breitharth (770)605-0854
Middle & East TN, Grady Gunn (205) 901-6105 West TN

NATIONAL CEMENT CO. OF ALABAMA
2000 Southbridge Pkwy Suite 600
Birmingham, AL 35209
Primary Contact: Stephen Snipes
Phone: (205) 423-2600
ssnipes@natcem.com
www.nationalcement.com
Products/Services: Portland Cement Type I, Ib, III, Portland & Masonry Cement Bags
Additional Information: Scott East Territory Mgr (404) 647-9643 seast@natcem.com

FIBERS

DURAFIBER, INC.
714 West Main St. Suite 205
Murfreesboro, TN 37129
Primary Contact: Mike Deaton
Phone: (615) 333-9883
durafiber@aol.com
www.durafiber.com
Products/Services: Furnish Concrete Fiber Reinforcement, which includes Ultrafiber 500, Polypolypropylene Fiber, Steel Fiber, & Fritz Pak Products

FLYASH

BORAL RESOURCES
10701 S. River Front Pkwy
Suite 300
South Jordan, UT 84095
Primary Contact: Clark Gates
Phone: (615) 308-0219
clark.gates@boral.com
www.flyash.com
Charah is a leading provider of Class C&F fly ash to Ready Mix Producers throughout the country via its MultiSource network.
Additional Information: Randy Compton-VP Sales (865) 414-1518
Christian Lentz-Sales Mgr (502) 552-6538

THE SEFA GROUP
217 Cedar Rd.
Lexington, SC 29073
Primary Contact: Bert Nunn
Phone: (803) 622-9290
bnunn@sefagroup.com
www.sefagroup.com
Products/Services: Fly Ash Sales, Technical Service, Transportation Service, Pig Rentals, Fly Ash Sources in TN, NC, & SC.
Additional Information: Mark Casey Technical Sales & Service (865)806-6950marcasey@ sefagroup.com Bert Nunn Vice President Sales (803) 622-9290
bnunn@sefagroup.com

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ARCHITECTS

HEDSTROM DESIGN LANDSCAPE ARCHITECTURE
110 W. Magnolia Ave.
Knoxville, TN 37917
Primary Contact: Sara Pinnell
Phone: (865) 329-0012
sara@hedstromdesign.com
Products/Services: Landscape Architecture Services

BATCH PLANTS & EQUIPMENT

COMMAND ALKON
1800 International Park Dr. Ste 400
Birmingham, AL 35243
Primary Contact: Lori Allen
Phone: (800) 624-1872
llallen@commandalkon.com
www.commandalkon.com
Products/Services: Batching Controls, Dispatching and Accounting Software, Production/Quality Control Software and Performance Management Software

SOUTHERN CONCRETE MACHINERY, LLC
PO Box 11098
Murfreesboro, TN 37129
Primary Contact: Chris Davenport
Phone: (615) 957-4600
chris@southernconcrete machinery.com
www.southernconcrete machinery.com
Products/Services: Con-E-Co Batch Plants, Pearson Hot Water & Chiller Systems, Ph Systems, BFK Reclaimers & Plant Parts for All Plant Manufacturers.

STEPHENS MFG CO. INC.
PO Box 488
Tompkinsville, KY 42167
Primary Contact: Greg High
Phone: (270) 487-6774
ghigh@stephensmfg.com
www.stephensmfg.com
Products/Services: Concrete Plants, Dust Collectors, Reclaimers, Material Handling Systems, & Mixers

SYSTEMS & CONTROLS
1850 Old Hwy 95
Lenoir City, TN 37771
Primary Contact: Mark McHenry
Phone: (865) 988-8583
mmchenry@syscontn.com
www.systemsandcontrols.com
Products/Services: Stephens Concrete Plants & Parts, Batch Computers & Dispatch Systems, Badger Water Meters, Hydronix Moisture Probes, Plant Scale Certifications & Service

CONCRETE PUMPING

CONCRETE PUMP PARTNERS
3950 Dickerson Pike
Nashville, TN 37207
Primary Contact: Jon Kemp
Phone: (615) 299-8989
melissagay@pumppartners.com
www.pumppartners.com
Products/Services: Concrete Pumping Services

REYNOLDS CONCRETE PUMPING
720 Beech St.
Bowling Green, KY 42101
Primary Contact: Johnny Phillips
Phone: (615) 213-2600
jphillips@reynoldscorporation.com
www.reynoldscorporation.com
Products/Services: Concrete Pumping Services: Boom Pumps, Line Pumps, Placing Booms, Rock Slingers

CONSTRUCTION EQUIPMENT

MULTIVIBE, INC.
3125 N. Friendship Rd.
Paducah, KY 42001
Primary Contact: Carl Ellis
Phone: (270) 554-2615
carle@multivibe.com
www.multivibe.com
Products/Services: Vibratory Screeds (Gas & Electric), Wall Vibrators, Roller Screeds

POWER RENTAL & SALES
3653A Trousdale Dr.
Nashville, TN 37204
Primary Contact: Brent Cornelius
Phone: (615) 837-1450
bc.powerrental@yahoo.com
Products/Services: Vertical forms, Masonry Supplies, Power Tools & Grinders

INSULATED CONCRETE FORMS

A.G. HEINS CO. INC.
116 Heins St.
Knoxville, TN 37921
Primary Contact: A. Gordon Heins III
Phone: (865) 525-5363
gordonh@agheins.com
www.agheins.com
Products/Services: Concrete & Masonry Accessories, Insulated Concrete Forms, Waterproofing & Sealants

FORM-A-DRAIN
2801 Post Oak Blvd Ste 600
Houston, TX 77056
Primary Contact: Johnny Zamora
Phone:(713) 293-2504
jzamora@westlake.com
www.formadrainsolutions.com
Products & Services: Form-A-Drain installed before basement construction begins as the foundation footing forms. Form-A-Drain stays in place permanently & forms a complete sub-slab perimeter loop around foundation. No need to strip, clean & transport forms to next job site. Products: Form-A-Drain Plus, Platon Waterproofing Membrane, Certa-Form UltraFlex Forms for curves or straightways.

NUDURA/TREMCO CPG
596 Summit Point Canton, GA 30114
Primary Contact: John Ritch
Phone: (866) 468-6299
jritch@tremcoinc.com
www.nudura.com
Products/Services: NUDURA is a leading innovator of permanent concrete forming systems & accessories

PARKS ICF, LLC
PO Box 10081
Knoxville, TN 37939
Primary Contact: Charles Parks
Phone: (865) 868-2366
charles@parksicf.com
www.parksicf.com
Products/Services: Insulated Concrete Forms

MATERIAL SUPPLIERS

CLEMONS CONCRETE COATINGS
505 Cave Rd.
Nashville, TN 37210
Primary Contact: Rich Sanders
Phone: (615) 872-9099
info@ccc-usa.com
www.ccc-usa.com
Products/Services: Sealers, Retarders, Curing Compounds, Stains, and Form Release

PERK PRODUCTS&CHEMICAL CO., INC.
PO Box 100585
Nashville, TN 37224
Primary Contact: Scott Perkerson
Phone: (615) 242-6157
scott@perk-products.com
www.perk-products.com
Products/Services: Manufacturer of Concrete Coatings to Include Sealers, Water-Proofers, Stains, Releases, and Surface Retarders. Distributor of Bagged & Liquid Calcium Chloride.

SCOTWOOD INDUSTRIES
12980 Metcalf Ave. Ste.240
Overland Park, KS 66213
Primary Contact: Doug Pratt
Phone: (314) 566-4153
dpratt@scotwoodindustries.com
www.scotwoodindustries.com
Products/Services: Full Service Distributor of Magnesium Chloride & Calcium Chloride for Ice Control, Anti-Icing, Dust Control, & Road Stabilization.

SICALCO, LTD.
522 Chestnut St. Suite GB
Hinsdale, IL 60521
Primary Contact: Kevin Casto
Phone: (312) 404-9207
kcasto@sicalco.net
www.sicalco.net
Products/Services: Marketers of Liquidow(tm) Calcium Chloride

SOLOMON COLORS INC.
4050 Color Plant Rd
Springfield, IL 62702
Primary Contact: Matt Park
Phone: (615) 686-0880
mpark@solomoncolors.com
www.solomoncolors.com
<table>
<thead>
<tr>
<th>Company Name</th>
<th>Address</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holton Concrete Products, LLC</td>
<td>6726 Manchester Hwy</td>
<td>(615) 893-9216</td>
</tr>
<tr>
<td>Jarett Concrete Products Inc.</td>
<td>2012 Hwy 12 S Ashland City, TN 37015</td>
<td>(615) 417-6311</td>
</tr>
<tr>
<td>Mid-South Prestress</td>
<td>2949 Joe Dowlen Rd Pleasant View, TN 37146</td>
<td>(615) 746-6606</td>
</tr>
<tr>
<td>Terex Advance Mixer</td>
<td>7727 Freedom Way Fort Wayne, IN 46898</td>
<td>(330) 204-1079</td>
</tr>
<tr>
<td>Knoxx Concrete Consultants, LLC</td>
<td>915 Doyle Rd Ste 303 Deltona, FL 32725</td>
<td>(813) 546-6323</td>
</tr>
<tr>
<td>McNeilus Truck</td>
<td>PO Box 367 Villa Rica, GA 30180</td>
<td>(770) 459-5151</td>
</tr>
<tr>
<td>Terex Advance Mixer</td>
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<td>Advantage Const. Services</td>
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<td>(615) 740-8777</td>
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<td>(507) 206-8998</td>
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<td>(706) 987-0214</td>
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<td>BHS Concrete LLC</td>
<td>860 Vaughn Rd Memphis, TN 38122</td>
<td>(901) 603-9997</td>
</tr>
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  ctoliver@kalestruckheavyequipment.com  
  www.kalestruckheavyequipment.com
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  www.advantageconst.com
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  www.contactbcs.com
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www.lithko.com  
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kelvin.campbell@woodplc.com
Products/Services: Engineering Services

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**TCA SCHOLARSHIP RECIPIENT SENDS NOTE OF GRATITUDE**

Recently, we received a very thoughtful letter from a scholarship recipient, Joseph McDaniel, thanking TCA’s members for choosing him as a recipient. To say our hearts were warmed would be an understatement. We thought it might do the same for you! Clearly, Mr. McDaniel is well on his way to a successful career in the concrete industry.

Each year our TCA Foundation Golf Tournament provides the primary source of funding for the Concrete Industry Management scholarship program. TCA was one of the first organizations to offer student scholarships to the CIM program and since its inception we have provided scholarships to over 40 different students with the majority of this funding coming from our annual golf event.

Please help to continue this great tradition of scholarships by registering today to play in the TCA Foundation Golf Tournament this Oct. 26th at Greystone Golf Course in Dickson, TN. Scholarship recipients like Mr. McDaniel will appreciate your participation more than you know!
CIM SPRING FUNDRAISING
The CIM Jim Speakman Golf Tournament is back to full capacity and held on May 5 with both morning and afternoon flights. Fifty-two teams and 208 golfers helped CIM Patrons raise $103,500.

CIM 3050 BENEFITS SPECIAL NEEDS CHILD
Professor Huddleston’s CIM 3050 was approached by the MTSU Day Care to pour sidewalk access so a special needs child could access the playground instead of rolling their wheelchair through the mud. The class also served the MTSU community by pouring a handicap accessible sidewalk for the Chris Young Café.

STUDENT COMPETITIONS
Due to Covid cancellations and shutdowns, many student competitions for the past year have been cancelled or postponed. However, no CIM students want to sit idle, so the four schools competed amongst themselves by making concrete tensegrity tables that will be judged by independent industry professionals.

SCHOOL OF CONCRETE AND CONSTRUCTION MANAGEMENT BUILDING UPDATE
The School of Concrete and Construction Management hosted a groundbreaking for the new $40 million 54,000 square foot building on April 6. The building is currently under construction on a 15 month timeline and expected to open August of 2022.

RESEARCH
Dr. Brown and Jessie Boone with Southeast Portland Cement Association continued their full depth reclamation study through TDOT to assist them in updating their state specifications as well as create a quality control manual for future projects. They are focusing on cement stabilization in the field and investigating asphalt emulsion in the lab.

Dr. Zhifu Yang is in the middle of a $220k TDOT research grant looking at recycled concrete aggregate for specification by the DOT and Nashville Davidson County Public Works.
It is hard to believe that 2020 is over and 2021 is already halfway behind us. While we have all had our noses to the grindstone several important documents have been written or updated that could have a significant impact on ready mix producers and others in the concrete industry. Please keep reading!

IMPORTANT ASR FINDINGS

In late 2020 an article was published by researchers at the University of Tennessee (and others) that documents the presence of alkali silica reactive aggregates in each of the four TDOT regions. It is critical that producers know whether their aggregates are potentially reactive, and how to mitigate (prevent/reduce) detrimental ASR related expansion and cracking. Please read the article titled *Important Update Concerning Alkali-Silica-Reactivity (ASR) and Tennessee Limestones* included in this issue of the Tennessee Concrete Magazine for more information.

ASTM C94 STANDARD SPECIFICATION FOR READY-MIXED CONCRETE

ASTM C94 is referenced in most construction specifications. Since 1935 there has been a requirement in ASTM C94 that requires concrete discharge to be completed within 90 minutes after the introduction of the mixing water to the cement and aggregates or the introduction of the cement to the aggregates. In 2021 the 90-minute requirement was removed, although the requirement for a time limit was not removed. The new version requires the purchaser to specify in the purchase order the time required for discharge to be completed. If a time is not specified then the producer is required to specify the time limit, and in either case the purchaser is required to state the discharge time limit on the delivery ticket. The new version of C94 does not prevent 90 minutes or another time limit from being specified in the project specification. Although it may be some time before the new version of C94 is referenced in project specifications, producers and others in the industry need to prepare for this change.

ACI 301 SPECIFICATIONS FOR CONCRETE CONSTRUCTION

In 2020 ACI 301 changed its name from *Specifications for Structural Concrete* to *Specifications for Concrete Construction*. The revision brings the specification more in line with the current version of the ACI 318 building code as well as adds shotcrete, internal curing, mineral filler and recycled concrete aggregates to the scope while also making it clear that the 301 specification is not limited to structural concrete.

ACI 332 CODE REQUIREMENTS FOR RESIDENTIAL CONCRETE AND COMMENTARY

In 2020 ACI 332 was revised. The most notable changes were made to the exposure categories and classes for concrete mixtures. The changes make the document more consistent with the exposure classes and categories of the current ACI 318 building code. Most notably, the current requirements now specify maximum water cement ratios instead of slump, and the minimum required strength for the most severe freeze-thaw exposure class changed from 4,000 psi to 4,500 psi for unreinforced concrete and 5,000 psi for reinforced concrete.

Please continue to visit our website and read our member updates to keep up on important industry changes.
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