

Winter 2016/17  
VOL. 30, NO. 3

# TENNESSEE CONCRETE MAGAZINE

## SITUATION CRITICAL: INFRASTRUCTURE

*For description see page 3*

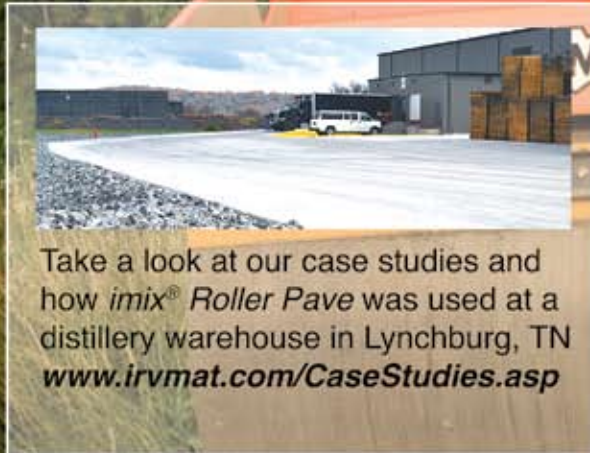




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**Bobby Crass**  
2016 TCA President

Thank you for the opportunity to serve.

Thank you to our Board of Directors and TCA Members.

# CONTINUE TO INVEST

**A**s we head into the Christmas season many of us pause to reflect on the past year. As I reflect on 2016 I am thankful for the opportunity to serve as your TCA President and I want to say thanks to our Board of Directors for their service on behalf of our industry throughout the year. I also want to thank our TCA members who have supported our organization with attendance and participation at our meetings and events throughout the year. I know that all of us have many demands on our time and I appreciate everyone who has invested some of that precious time on behalf of the concrete industry in the past year.

I would also ask that you continue to invest in your industry by scheduling your time to participate with TCA in the coming year. Your TCA Board will be investing their time in crafting a new strategic plan during 2017 to guide our association into the future. There will be opportunities for all TCA members to participate in this planning process and your input is vital. Please plan to attend our Annual Convention in February and join us at the beach for our Summer Meeting in June—the time you invest in attending will benefit you and your organization and you might even have some fun along the way.

Thank you for the opportunity to serve as your TCA President in 2016!

*—Bobby Crass*

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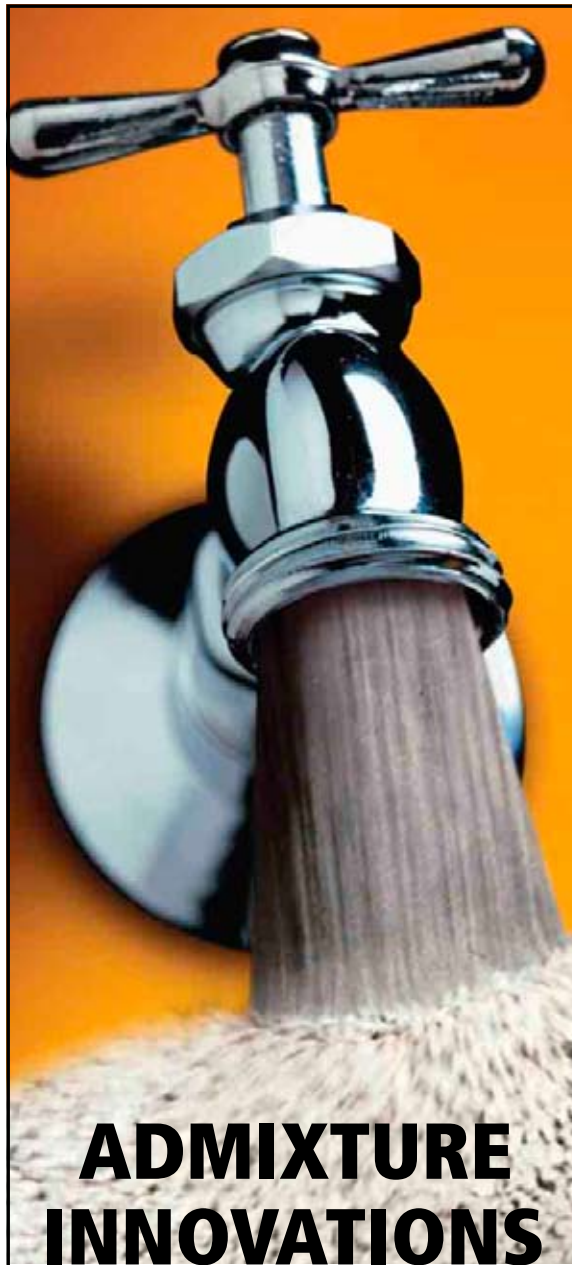
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**Alan Sparkman**  
Executive Director

It's important to understand where Tennessee ranks in comparison to other states and their fuel tax rates.

Here are some important facts to consider regarding objections to increasing our investment in infrastructure funding.

# START THE CONVERSATION

*Our primary message to legislators has once again been the need for Tennessee to invest in itself by increasing our investment in infrastructure funding.*

find it hard to believe but Christmas is right around the corner and Thanksgiving has come and gone. Perhaps this sense of the rapid passing of time is related to that old saying: Time flies when you're having fun. For most of us in the construction industry, 2016 has been a more enjoyable year than many in the recent past because it has been busy. Of course, being busy is not always fun but both fun and busyness do seem to make time go faster. I trust that all of us will take time during the upcoming season to slow down and spend time with family and friends instead of letting busyness consume the holiday season.

We are just wrapping up our 2016 Legislative Breakfast series as I write this column. Our primary message to legislators has once again been the need for Tennessee to invest in itself by increasing our investment in infrastructure funding. The Governor has committed to introducing legislation to accomplish this in the 2017 session and our new President-elect continues to emphasize the critical need for our nation to increase its investment in infrastructure. Even so, there is much work to be done to make the case for increased investment in our state legislature.

There is a lot of information available to help make the case and we will be featuring a special section on the TCA website ([www.tnconcrete.org](http://www.tnconcrete.org)) to provide a summary of important facts as well as links to more detailed information. Here's a sampling of what you will find—and what you might want to discuss with your state representatives and senators to help them better understand the infrastructure situation here in Tennessee.

To start the conversation, it's important to understand where Tennessee ranks in comparison to other states and their fuel tax rates. In 2016, Tennessee ranked 39 in terms of gasoline tax rates (only 11 states have lower gasoline taxes than us) and even lower in terms of diesel tax rates. The average Tennessee driver spends \$243 annually due to driving on roads in need of repair—and this does not count the lost time sitting in traffic congestion. In Tennessee's major cities, the cost per

driver for maintenance costs, delays and crashes is about \$1,500 per driver per year. There is a large AND GROWING cost to doing nothing.

I often hear that TDOT just needs to be more efficient in their operations before we give them more money. Here are some important facts to consider in that regard:

- Tennessee spends less per capita (\$325.71) than any other state in the nation! The average per capita spending is \$620.59 (2010 data).
- Even so, Tennessee's roads are consistently ranked as some of the best in the nation.
- AND—Tennessee has accomplished this without going into debt for our roads.
- Tennessee's fuel taxes (gasoline and diesel) have not been raised in 25 years so we are fighting both inflation and the fact that today's vehicles get much better mileage than they did 25 years ago.

You may also hear this from your legislator: *I can't support a fuel tax increase because none of the money will be spent in my district.*

- Fact: .38 cents of every fuel tax dollar in Tennessee goes to local governments. On average, the state fuel taxes make up 48 percent of local road budgets and for rural counties the percentage is much higher.
- By not supporting the state fuel tax your legislator is increasing the burden on local communities and forcing them to either raise local taxes or just endure ever-worsening roads and bridges, AND increasing the already high loss of life on Tennessee's rural roadways.

Here's another common objection: *People in my district just can't afford any more taxes!* Consider this:

- "Fuel taxes" are actually user fees. They are only paid by people who use the highway system, and the more you use the system the more you pay. The user fee concept is strongly supported by most legislators but they often need to be reminded!

We have already established the cost of doing nothing (above) and we can estimate the cost to the “average” Tennessee driver with a few assumptions. Statistics show that the average driver travels about 11,000 miles annually. If we assume an average fuel efficiency of 22 mpg (pretty common for cars today) we can see the impact based on how much the per gallon “user fee” is raised:

- \$.01 raise = \$5.00 per year per driver
- \$.10 raise = \$50.00 per year per driver
- \$.214 raise = \$107 per year per driver (this would be double the current rate)

I will end with this observation. The current backlog of Tennessee projects that need to be built but for which funding is not available is estimated to be at least \$6 BILLION and that number is steadily climbing with our population increases. If we double the current tax rate—from 21.4 cents to 42.8 cents per gallon—it will still take about 15 years to work through the existing backlog of projects.

That means that the project you want to see start tomorrow—the one that impacts your daily commute the most—may still be decades away if your legislator continues to procrastinate on this vital issue. Might be worth a conversation to let them know you don’t want to wait that long!

*—Alan Sparkman*

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# Determining Concrete Chloride Permeability More Efficiently

## PART 2: ACCELERATED VS. NORMAL CURING—CHOOSING A CURING METHOD

### OVERVIEW

The Tennessee Department of Transportation (TDOT) is considering two new technologies to determine concrete chloride permeability more efficiently:

- A. Surface Resistivity AASHTO TP 95-11 [1]
- B. Accelerated Curing as per AASHTO TP 95-11 [1] and ASTM C 1202-12 [2]

This paper is the second in a three part series of technology transfer articles. We hope that you find the information presented helpful in mixture design and evaluation. In Part 2, the choice between normal and accelerated curing will be examined. The final article will provide recommendations for possible TDOT surface resistivity specifications and mixture design suggestions.

### INTRODUCTION

AASHTO TP 95-11 [1] surface resistivity (SR) and ASTM C 1202-12 [2] rapid chloride permeability (RCP) test methods now mention, but do not mandate, accelerated moist curing. The accelerated moist curing consists of immersing the cylinders for 7 days at 73°F followed by 21 days at 100°F in lime-saturated water. AASHTO TP 95-11 [1] indicated that accelerated moist curing has been found useful in more rapidly determining the effects of slower reacting supplementary cementing materials (SCMs).

### TDOT RESEARCH MIXTURES AND TESTING PROTOCOL

Two mixtures were selected for the TDOT research, as shown in Table 1. The TDOT Class D mixture with 20% Class F fly ash substitution was selected because it is commonly used and therefore representative of many low SCM substitution mixtures. The 50/35/15 mixture, which was not a Class D mixture at the time of selection but is now an acceptable Class D mixture in the new January 1, 2015 TDOT specifications [3], was selected as a representative of high SCM substitution mixtures. Table 2 shows the comparison of the two mixtures to the TDOT specifications at the time of selection. Please note that other than the SCM substitution levels, the mixtures are very similar. Five validation batches (data not shown) indicated that both mixtures met TDOT plastic and hardened property requirements for Class D portland cement concrete (PCC). Table 3 shows the testing protocol for the SR-RCP batches.

### SR Data Quality

Table 4 shows SR mean results, minimum result, maximum result, range of results, and allowable range of results at each age tested for the TDOT Class D mixture. Table 5 shows the same information for the 50/35/15 mixture. The allowable range was determined by first multiplying the test method multi-laboratory coefficient of variation (COV) by a factor from ASTM C 670 [4] for the number of results (the factor for 10 results was used since the table contained no multiplier for 20 results). Finally, the product was multiplied by the mean result to obtain the allowable range. The multi-laboratory precision was used since AASHTO T 22 [5] states that the preparation of cylinders by different operators would probably increase the variation above multi-laboratory precision criteria. All SR test results for both mixtures met the acceptable range requirements.

### COMPARISON OF NORMAL AND ACCELERATED CURING METHODS

#### Comparison of Ability to Predict Later Age Values

Figure 1 shows correlations between 28-day normally cured SR results and later age SR results. Figure 2 shows correlations between 28-day accelerated curing SR results and later age normally cured SR results. The ability to successfully predict later SR results was judged based on the coefficient of determination values. Table 6 shows a comparison of coefficients of determination for SR prediction. This certainly was a close fight; both curing methods produced very strong correlations with later age SR values. The scorecard (Table 6) shows a slight edge for normal curing. However, as close as this aspect of the contest was, the winner should be determined based on some other criteria.

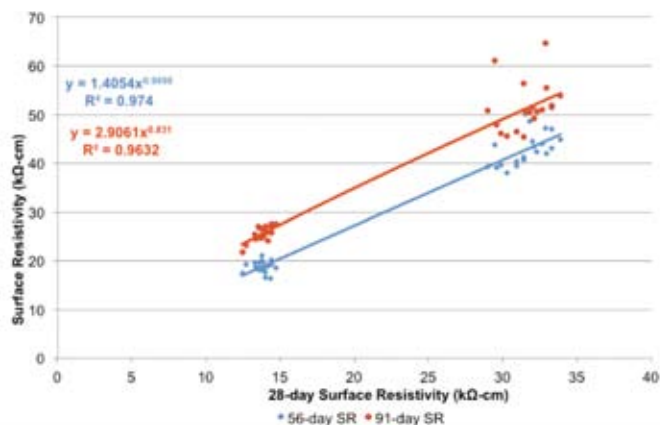


Figure 1: Correlations between 28-day SR and Later SR



**TABLE 1. MIXTURES SELECTED FOR THE TDOT SR RESEARCH**

Component	TDOT Class D	50/35/15
Type I Portland Cement	496-lbs/CY	310-lbs/CY
Class F Fly Ash	124-lbs/CY	93-lbs/CY
Grade 120 Slag	0-lbs/CY	217-lbs/CY
No. 57 Limestone (SSD)	1857-lbs/CY	1854-lbs/CY
River Sand (SSD)	1118-lbs/CY	1118-lbs/CY
Water	229.5-lbs/CY	229.5-lbs/CY
Design Percent Air	7 percent	7 percent
Air-entraining Admixture	0.5-oz/cwt (3.1-oz/CY)	1.55-oz/cwt (9.6-oz/CY)
Mid-range Water Reducer	0.1-oz/cwt (0.6-oz/CY)	1-oz/cwt (6.2-oz/CY)
High-range Water Reducer	3-oz/cwt (18.6-oz/CY)	2.1-oz/cwt (13.0-oz/CY)

**TABLE 2. COMPARISON OF SELECTED MIXTURE ATTRIBUTES TO TDOT SPECIFICATIONS**

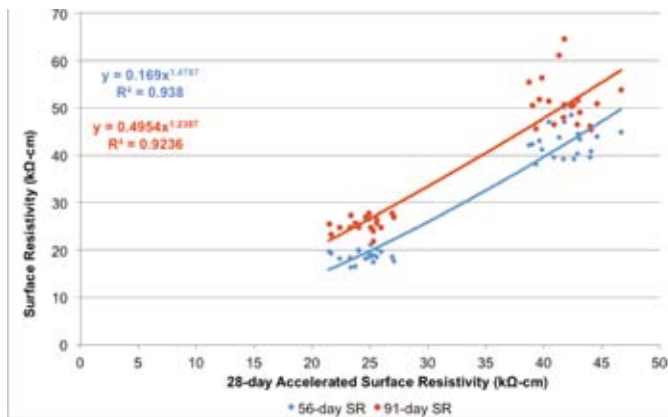
Quantity/Ratio/Percentage	TDOT 604.03 Class D PCC Requirement (2006)	TDOT Class D	50/35/15
Cementing Materials Content	620-lbs/CY minimum	620-lbs/CY	620-lbs/CY
Water-to-Cementing-Materials-Ratio	0.40 maximum	0.370	0.370
(%) Fine Aggregate by Total Aggregate Volume	44 maximum	38	38
(%) Fly Ash Substitution (by weight) for Portland Cement	20 maximum (Class F)	20	15
(%) Slag Substitution (by weight) for Portland Cement	35 maximum	0	35

**TABLE 3. TESTING PROTOCOL FOR RCP AND SR BATCHES**

Parameter or Test Method	Quantity
Number of Batches per Mixture	20
Size of each batch (ft <sup>3</sup> )	1.35
Rapid Chloride Permeability (AASHTO T 277-07)	<ul style="list-style-type: none"> <li>• 3 samples cut from separate 4x8 cylinders per batch @ 28 days of accelerated curing</li> <li>• 3 samples cut from separate 4x8 cylinders per batch @ 56 days of normal curing</li> <li>• 3 samples cut from separate 4x8 cylinders per batch @ 91 days of normal curing</li> </ul>
Surface Resistivity (AASHTO TP 95-11)	<ul style="list-style-type: none"> <li>• 3 4x8 cylinders per batch @ 28 days of accelerated curing</li> <li>• 3 4x8 cylinders per batch @ 28 days of normal curing</li> <li>• 3 4x8 cylinders per batch @ 56 days of normal curing</li> <li>• 3 4x8 cylinders per batch @ 91 days of normal curing</li> </ul>
Compressive Strength (AASHTO T 22-10)	Surface resistivity cylinders were tested in compression following surface resistivity testing

# Determining Concrete Chloride Permeability More Efficiently

## PART 2: ACCELERATED VS. NORMAL CURING—CHOOSING A CURING METHOD



**Figure 2: Correlations between 28-day Accelerated SR and Later Normally Cured SR**

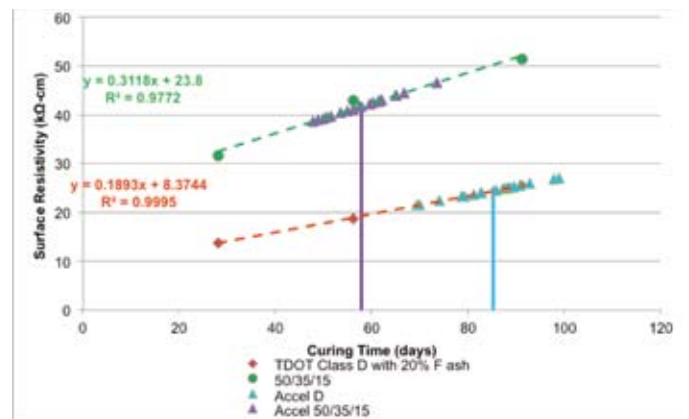
### Prediction Time Ambiguity

Technical literature is somewhat ambiguous about what “time” or “equivalent age” accelerated curing is associated with:

1. Ozyildirim of the Virginia Transportation Research Council (who developed the method) states that accelerated curing produces results equivalent to 6 months of standard curing in TRR 1610 [6];
2. HPC Bridge Views Issue 67 May/June 2011 [7] states that accelerated curing provides results equivalent to 90 days of standard curing;
3. Several states, in a recent unpublished survey from TDOT research, use accelerated curing in lieu of a 56-day normal curing for RCP.

The research team was curious and attempted to solve the mystery. Mean values of normally cured SR for each mixture at all three ages (from Tables 4 and 5) were plotted in Figure 3. The linear regression equations were obtained using Microsoft Excel. Using the regression equations and the individual 28-day accelerated curing SR results, a time along the regression line (for normal curing) was calculated. The calculated “times” are also shown in Figure 3. The calculated “times” were then averaged to produce a mean age for each mixture. For the TDOT Class D mixture the mean age was 85.2 days. For the 50/35/15 mixture the mean age was 57.9 days. Unfortunately, the analysis seems to indicate that the mean age depends on the mixture (more particularly the PC-SCM matrix composition) being tested. The mean age may also depend on other factors. However, the extreme similarities (see Tables 1 and 2) of the two mixtures precludes the research

team from investigating other factors with the currently available data.



**Figure 3: Mean Normally Cured SR Results versus Time with Calculated Equivalent Ages of Accelerated Curing SR Results**

### Logistical Comparison

Figure 4 shows the accelerated and normal curing tanks for the project. Figure 5 shows insulation (top, bottom, and sides) used on the accelerated curing tank. The insulation reduces the size of the water heater needed while also providing more time prior to temperature reduction outside of the specified range if the water heater power is lost. Figure 6 shows the larger water heater required for accelerated curing. The smaller in-tank water heater required for normal curing can be seen in Figure 4. Figure 7 shows the more elaborate plumbing required for accelerated curing. The small circulation pump for normal curing can be seen in Figure 4. Figure 8 shows the data acquisition package, thermocouple wires and computer required for temperature monitoring of both tanks. The computer battery back-up system (also shown in Figure 8) is not sufficient for the water heater for accelerated curing; a much higher wattage back-up system would be required. Table 7 shows a logistical comparison of normal and accelerated curing. The scorecard (Table 7) indicates a knockout victory for normal curing.

**TABLE 4. SR MEAN RESULTS AND RANGES FOR THE TDOT CLASS D MIXTURE (kΩ-cm)**

Category	Mean Value of Results	Minimum Value of Results	Maximum Value of Results	Allowable Range	Meets Allowable Range?
28-day SR	13.8	12.4	14.7	7.7	Yes
28-day Accelerated SR	24.5	21.5	27.1	13.7	Yes
56-day SR	18.8	16.5	21.2	10.5	Yes
91-day SR	25.5	21.9	27.7	5.8	Yes

**TABLE 5. SR MEAN RESULTS AND RANGES OF RESULTS FOR THE 50/35/15 MIXTURE (kΩ-cm)**

Category	Mean Value of Results	Minimum Value of Results	Maximum Value of Results	Allowable Range	Meets Allowable Range?
28-day SR	31.6	29.0	33.3	17.7	Yes
28-day Accelerated SR	41.9	38.7	46.7	23.5	Yes
56-day SR	43.0	38.1	50.2	24.1	Yes
91-day SR	51.4	45.4	64.7	28.9	Yes

**TABLE 6. COMPARISON OF COEFFICIENTS OF DETERMINATION FOR LATER AGE SR PREDICTION**

Predictor	Attempting to Predict	Correlation Coefficient
28-day Accelerated Curing	56-day	0.9380
28-day Normal Curing	56-day	0.9740
28-day Accelerated Curing	91-day	0.9236
28-day Normal Curing	91-day	0.9632

**TABLE 7. COMPARISON OF LOGISTICAL FACTORS**

Parameter	Accelerated	Normal	Advantage
Water Heater	Larger and more expensive	Smaller and less expensive	Normal
Water Circulation	Pump, PVC pipe and hoses	Pump and hoses	Slight Edge Normal
Insulation	Required	Not needed or minimal	Normal
Battery Backup	Higher capacity more expensive	Lower capacity less expensive	Normal
Response Time (before falling out of temp range)	2 to 3 hours	Much longer (close to lab temp)	Normal
Monitoring Equipment	Computer, data acquisition package and thermocouples	Computer, data acquisition package and thermocouples	None
Power Consumption	Higher	Lower	Normal

# Determining Concrete Chloride Permeability More Efficiently

## PART 2: ACCELERATED VS. NORMAL CURING—CHOOSING A CURING METHOD



Figure 4: Accelerated (left) and Normal (right) Curing Tanks for the Project

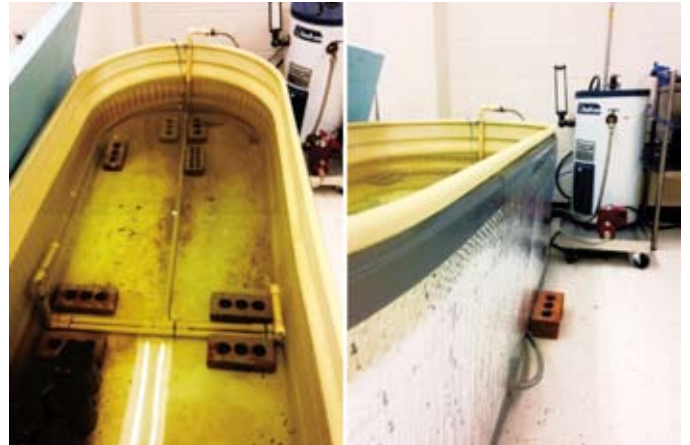


Figure 7: Plumbing for Accelerated Curing: Internal (left); External (right)

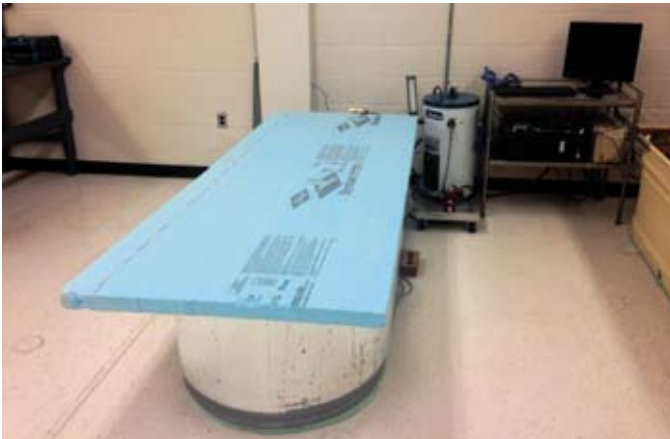


Figure 5: Close Up of Accelerated Curing Tank

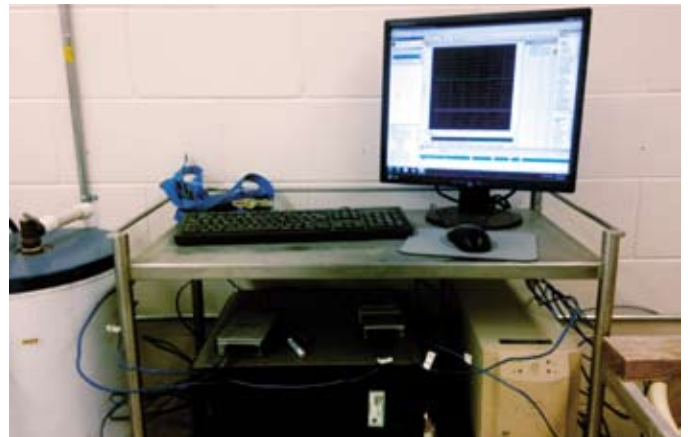


Figure 8: Temperature Data Acquisition Package, Computer, and Battery Back Up



Figure 6: Close Up of Water Heater for Accelerated Curing Tank

### SUMMARY

Table 8 shows a summary comparison of normal and accelerated curing. Normal curing of SR specimens is strongly preferred over accelerated curing.

### DISCLAIMER

The opinions expressed herein are those of the authors and not necessarily the opinions of the Federal Highway Administration (FHWA), TDOT, or the Tennessee Concrete Association (TCA).

**TABLE 8. SUMMARY COMPARISON OF NORMAL AND ACCELERATED CURING**

Parameter	Accelerated
Certainty (equivalent age)	Normal Curing
Predicting Later Values (Correlations)	Slight Edge to Normal Curing
Cost	Normal Curing
Time	Same
Ease of Operation	Normal Curing
Fail Safety (Response Time)	Normal Curing
Overall	Normal Curing

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# Recycling Polyvinyl Chloride as a Sand Replacement in Concrete

This article is taken from a research paper authored by Troy Oliver during his undergraduate work in the Concrete Industry Management program. Troy also interned for TCA and has used the recycled records described in this paper for several unique decorative applications (including coasters made for TCA's 2015 Annual Convention and for the launch of the new School of Concrete and Construction at MTSU).

The work presented in this research study was performed to help broaden sustainable applications in the concrete industry. Such sustainable applications include the use of recycled materials in concrete to reduce the use of virgin sand in a mix. In this case vinyl records are crushed and used as a 23 percent sand replacement. Vinyl records used in this research project are a by-product from United Record Pressing in Nashville, Tennessee. This facility is known for "pressing the first Beatles 7" in America, prior to Capitol signing them.<sup>1</sup>

The study involved the use of crushed vinyl records in a portion of 23 percent replacement by mass of sand to observe its physical and mechanical effects on concrete. The tests performed examined heat of hydration, compressive strength, and drying shrinkage. ASTM tests for spread, air content, unit weight, temperature, and heat of hydration were performed on both the control and test mix. The results for the replacement mix show an increase in the spread (unit weight for the replacement mix is one pound lighter), temperature rise of two degrees, and air content lower by a half percent. The compressive strengths were lower at early ages but comparable at later ages. These results suggest that vinyl records as a 23 percent sand replacement can allow for the same strength gains.

The results of this experimental study of recycled crushed vinyl records demonstrate properties similar to that of sand. This information also proves that the recycled crushed vinyl records can successfully be implemented into concrete as a sand replacement and as a decorative inlay aggregate.



**TABLE 1.**

Mix Design	Control	23% Vinyl Replacement
Sand	23.37 lbs.	17.91 lbs.
Cement	13.76 lbs.	13.76 lbs.
PVC	0	5.46 lbs.
Water	3.58 lbs.	3.58 lbs.
GL700	48 ml.	48 ml.

**TABLE 2. FRESH MORTAR TEST RESULTS**

Fresh Mortar Testing	Control	23% Vinyl Replacement
Temperature (*F)	65	68
Unit Weight (lb/ft <sup>3</sup> )	139.37	138.53
Air Content (%)	3.5	3
Spread (in)	9.5	10.0

**TABLE 3. AVERAGE COMPRESSIVE STRENGTH RESULTS (PSI)**

Averages	7-day	14-day	21-day	28-day
Control	9,176.42	9,810.58	9,987.83	10,099.17
Vinyl Records	7,368.92	9,745.00	9,779.17	9,954.67

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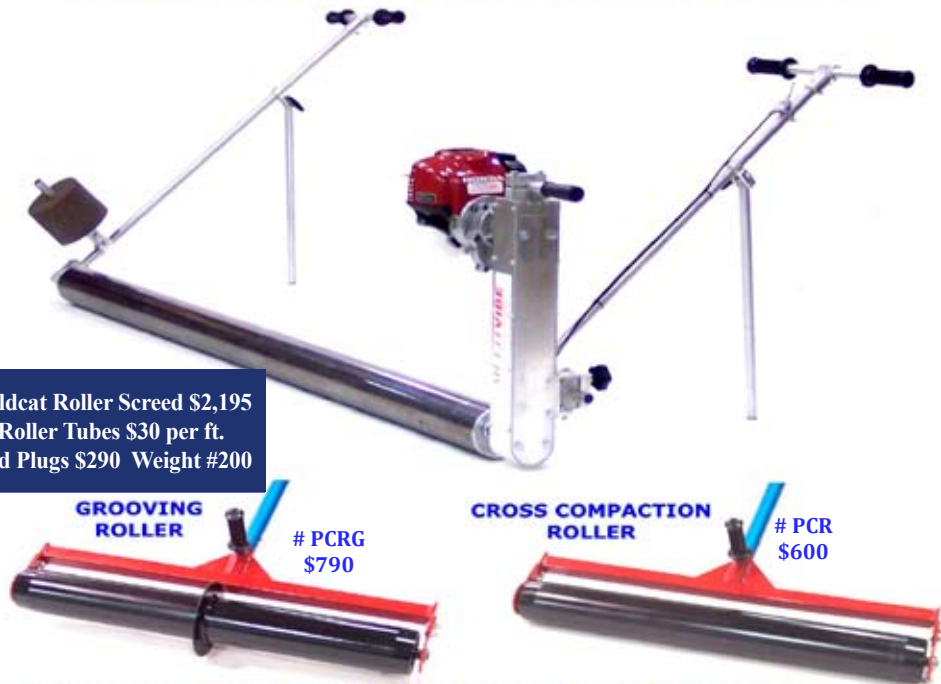


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## FEATURED SPEAKERS



**EDSEL CHARLES**, founder and Chairman of the Board for MarketGraphics Research Group, Inc., in Franklin, Tenn., will give a "Market Research Update and Residential Building Forecast."

Mr. Charles will update us on the latest market research, and provide us with a residential building forecast. Don't miss this chance to hear what's in store for our region!



**ANNE ELLIS**, Managing Principal of Anne Ellis and former ACI President will speak on "Disruptive forces, industry opportunities: An overview of the disruptive forces that will shape the future of organizations in the Architecture, Engineering and Construction industry and the opportunities for those ready to capitalize."

Anne will kickoff TCA'S 2017 strategic planning and positioning activities.

**Registration forms can be found at**  
**[www.tnconcrete.org](http://www.tnconcrete.org) under the Concrete Pro tab!**

## CONVENTION SCHEDULE

### Wednesday, Feb. 8

5:30 PM Eats & Drinks

### Thursday, Feb. 9

7:30 AM Registration Opens  
8:00 AM Annual Membership Meeting  
8:30 AM Market Research Update and Residential Forecast by Edsel Charles, founder and Chairman of the Board, MarketGraphics Research  
9:45 AM CIM Program Update by Dr. Heather Brown, CIM Department Chair, MTSU  
10:15 AM Disruptive Forces, Industry Opportunities by Anne Ellis, Managing Principal, Anne Ellis, LLC  
11:35-1:15 PM Concrete Excellence Awards Luncheon  
1:30-4:30 PM NRMCA Building With Strength Afternoon Sessions

### Friday, February 10

8:00 AM Board Meeting & Breakfast

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& NRMCA's Build With Strength

February 8-10, 2017 Marriott Franklin Cool Springs

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List the contact person's email in the box above for confirmation of registration .

List all registrants names exactly as you would like them to appear on the name badges.

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<b>Emergency Contact Name:</b>	<b>Phone:</b>
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<b>Wed. Eats &amp; Drinks:</b>	<b>Thur. Luncheon:</b>
	<b>Fri. Board Brkfst&amp; Lunch:</b>

## REGISTRATION FEES:

Regular Fees apply until January 15, 2017. \$50 late fee after January 15th.

Attendee Registration includes Eats & Drinks on Wednesday evening and ALL DAY Thursday including Awards Luncheon.

Additional Concrete Excellence Awards Luncheon tickets may be purchased for anyone wishing to attend.

**Exhibitor/After Party Sponsor:** Exhibit during convention and receive 2 full complimentary registrations which include the Eats & Drinks on Wednesday evening and ALL DAY Thursday including the Concrete Excellence Awards Luncheon.

<u>Registration Category:</u>	<u>Reg. Fee</u>	<u>Late Fee</u>	<u>#Attending</u>	<u>TOTAL DUE</u>	Membership Meeting: The annual membership meeting will take place on Thursday, February 9, 2017 at 8:00am at the Marriott Franklin Cool Springs.
Attendee Registration:	\$495	\$550		\$	
Award Winner Lunch Ticket:	\$150	\$175		\$	
Exhibitor:	\$1250	\$1300		\$	
<b>GRAND TOTAL</b>				\$	

## Schedule of Events:

**Wednesday, February 8 @ 5:30pm - Eats & Drinks**

**Thursday, February 9**

7:30 am - Registration Opens

8:00 am - Annual Membership Meeting

8:30 am-11:30 am - Seminars

11:35-1:15 pm - Concrete Excellence Awards Luncheon

1:30-4:30 pm Afternoon Sessions

**Friday, February 10 @ 8:00am - Board Meeting &**

Breakfast

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## CANCELLATIONS:

To cancel your registration, please notify TCA by Jan. 15. Cancellations and no shows after this date are nonrefundable due to fees already incurred by the association.

## HOTEL RESERVATIONS:

Hotel reservations can be made by contacting the Marriott Franklin Cool Springs at 1-888-403-6772 and ask to be included in the Tennessee Concrete Association room block, code TNC. The room rate is \$189/night plus applicable taxes and fees.

Rates are guaranteed until January 17, 2017 or until the room block is full. **Please call early to make your reservation.**

**REMIT PAYMENT TO: TCA 705 Fort Negley Court, Nashville, TN 37203 or register online at [www.tnconcrete.org](http://www.tnconcrete.org)**

**Complete & Return to TCA via fax: (615-360-6670) or email [dsparkman@tnconcrete.org](mailto:dsparkman@tnconcrete.org)**

**Questions: Call Tennessee Concrete Association office (615) 360-7393.**

# CIM

## New Staff

# Spotlight

by Dr. Heather J. Brown



Kevin Overall

**K**evin Overall is the new lab manager for the MTSU School of Concrete and Construction Management. Kevin has lived in Murfreesboro since 1986, and graduated from the Concrete Industry Management program at MTSU in 2005. He brings over ten years of Quality Control experience with a strong background in the field testing of concrete, soils, masonry, structural steel, and performing special inspections of reinforcing steel and post tensioning for concrete structures. Kevin holds certifications with the American Concrete Institute as a Field Testing Technician and a Special Inspector. He is also certified by the American Welding Society as a Certified Welding Inspector. In his free time, Kevin enjoys hiking, camping, and participating in Crossfit at a local gym. Kevin is looking forward to working with the MTSU students and participating in research projects with the CCM staff.



Brittany Shelton

**B**rittany Shelton is the new Event Coordinator for the MTSU School of Concrete and Construction Management. She is a Murfreesboro native earning her B.S. in Organizational Communication from MTSU in 2010. Brittany began her career in event coordinating for a local wedding planner and in 2012 became the Event Coordinator Secretary for MTSU. She has assisted with numerous university sponsored events and has four years of experience planning and executing events on campus. She will be responsible for all the logistics for the many on and off campus events the Department hosts as well as assist the College of Basic and Applied Sciences with their major events. Brittany enjoys her family time, serving at her church and attending live music events. Her son, Asa, is 7 years old and loves basketball and four wheeling. They are avid MT Basketball fans and attend many games together.



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