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More than 25 years ago, great gray slabs of concrete greeted motorists traveling on roadways throughout metropolitan Baltimore — the highest-quality slabs, no doubt, but less than aesthetically pleasing. Very little thought was given to improving the visual appearance of such public works projects. As long as it performed up to standards, and ready mixed concrete certainly did that, state officials were content with the results.

Fast forward to early 2006 and the northern Baltimore suburb of Owings Mills, MD. Here you’ll find a thriving home-grown business called Hunt Valley Contractors. No, they don’t make or pour it, but they do use significant quantities of ready mixed concrete for a growing number of federal and commercial customers looking for the latest stamped and colored concrete patterns along such roads as Interstate 70 in Maryland and the Baltimore-Washington Parkway.

Hunt Valley’s principals, Tom and Linda Sparks, started the business in 1979 from their suburban Baltimore home, with Tom constantly having to explain the merits and properties of stamped concrete applications. Now he and his wife preside over a thriving business that recently moved into a state-of-the-art headquarters building featuring, of course, a stamped concrete exterior and the latest in polished and stained concrete floors inside. Oh, and that lone sliver of asphalt in the parking lot that surrounds the building isn’t long for this world either, Sparks quickly notes.

Sparks’ initial forays into the stamped and colored marketplace weren’t encouraging. “We couldn’t get anyone interested in it,” he said. But as the years rolled by from the late 1980s through the 1990s, Maryland officials became increasingly receptive to trying something new, namely spending more up-front money through the form-liner technique to beautify public works projects.

“It’s been a process, some failures,” Sparks said of working with state DOT officials. “We got highway design and construction people in a meeting. They need a standard specification.”

Much of the Sparks’ time is spent on educating the marketplace, he said. As Hunt Valley’s business has grown to include much of the
Middle Atlantic region and specialized jobs in the Carolinas, as far south as Florida and west to Tennessee, he said an increasing amount of his time is spent dispensing information, "and I can't bill for that." But Sparks said he knows that educating his potential customers on the attributes of his specialty leads to more business.

"If I educate them, it's a heck of a lot easier in selling them," Sparks said. Toward that end, each year Hunt Valley sponsors a seminar where the latest techniques in colored and stamped concrete are introduced to an audience that includes DOT officials, engineers, contractors, ready mix producers and landscape architects. "It's really 'Architectural Concrete 101,' an educational presentation, not sales," he said.

This annual conference is part of Hunt Valley's overall goal of working more closely with the entire concrete industry, from producers to contractors and every aspect in between. Sparks has high praise for Tom Evans of the Maryland Ready Mix Concrete Association, stating Evans does an excellent job in gathering the varied key players in promotional activities, but Sparks also expressed the longtime industry frustration of not believing everyone was pulling in the same direction.

The typically blunt Sparks delivers a message to ready mix producers and the industry at large, stating that "everybody needs to be on the same page if we want to sell premium concrete product. As an industry we've done a lousy job (in marketing our products). We need to make the pie bigger, it's not about stealing market share."

Looking ahead, Sparks said he and his wife have no plans to retire. A business that began with both of them working from their home and jumping into a pickup truck with a handful of employees has expanded into a multi-state endeavor that employs their three adult children plus another 25 or so concrete specialists. Linda Sparks, who's the vice president and chief financial officer of Hunt Valley Contractors, expresses a tinge of hope that she and her husband will begin to slow down. If that occurs, it will be an extremely gradual occurrence, Tom Sparks said.

"My attitude is this, 'This industry has given Linda and me a good living and we try to give something back,'" Sparks said. "And that's what we try to do every time."
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The cream of the crop, the best of the best, the professional’s professional…this is the common description of those nominated for the National Ready Mixed Concrete Association’s 10th Annual Truck Mixer Driver of the Year. The results are in and NRMCA has named Curtis Rodriguez of Transit Mix Concrete & Materials Company, Waco, Texas, as the NRMCA Mixer Truck Driver of the Year for 2005. A panel of judges from the ready mixed concrete industry selected Rodriguez as the top driver from a large group of outstanding applicants from all across the United States.

Rodriguez was honored for his career achievements, safety record, professionalism, driving competency and customer service skills. He has driven a truck mixer for more than 45 years. “Mr. Rodriguez has the ability to rise to any occasion and demonstrates professionalism in everything he does,” writes Transit Mix Concrete’s Safety Director Danny Snyder. “He started driving in 1960 with a 3-yard mixer truck…backing under the Waco batch plant, and then running upstairs to help manually load the truck. He’s the best driver I have ever seen.”

The award acknowledges the significant contribution of ready mixed concrete truck drivers to the growth and success of individual companies and the concrete industry. As a salute to the key members of the concrete production team, the award highlights drivers’ career achievements, safety, professionalism, competence and customer service skills.

Along with the winner, three finalists also were selected by the judges. They are, in alphabetical order, Frank Gibbons, Lafarge NA, Augusta, GA; Charles Hodge, Ready Mix Concrete Company, Knoxville, TN and Gene Roberts, Southern Concrete Materials, Asheville, NC.

As the winner of the 2005 award, Rodriguez will receive a $5,000 check from the Truck Mixer Manufacturers Bureau. Each finalist will receive $500. The Driver of the Year and other finalists for the award will be honored at the NRMCA Annual Convention, Monday, April 3, in San Antonio, TX. The Chicago-based trade magazine Concrete Products is a co-sponsor of the Driver of the Year program.
During the last few editions of Concrete in Focus, we have written about the numerous advantages of concrete from a sustainable development standpoint. Concrete truly is a green building material. What can be more sustainable than to build the Pantheon in Rome around 200 A.D. and never have to replace it? That aspect of sustainable construction doesn’t carry the flash to get most people’s attention. But more and more sustainable building advocates are beginning to recognize concrete’s inherent “green” advantages.

One of the most often overlooked attributes of concrete being used to improve our environment is decorative concrete. Decorative concrete continues to experience double-digit growth year after year. The onset of computer controlled integral color systems has accelerated acceptance in the specification community for greater usage of color in both interior and exterior applications. Many also are realizing the significant cost advantage provided by integrally colored floors over competing materials. On a first cost basis, colored concrete floors generally are cheaper than the in-place cost of tile, vinyl, carpet, stone or wood flooring. Though less costly, designers using concrete still can evoke any style, color scheme or surface characteristic they can imagine, providing infinite variety. We could talk about design options throughout the entire article, but our real purpose is to express that you not only can design creatively and save money with concrete, but most importantly, have a positive impact on the environment.

Carpet and vinyl tile are two of the leading floor covering choices used in the United States. In most cases, they are made from petrochemical-based compounds and...
concrete floors reduce or can completely eliminate this issue from floor coverings. Since floor coverings are such a large percentage of the surface area in a building, this is no small matter.

We have focused on the air quality issues — what about dust, dust mites and other indoor particulate matter that exists later in the structure? With carpet, these types of matter can accumulate in the carpet itself and exist until the carpet is replaced. I heard a speaker once say, weigh your carpet at installation and weigh it again when you remove it for replacement and you will see how much matter is in the carpet. Speaking of replacing carpet, how long does carpet last? I guess that is a quality and wear-dependent issue. I would note it is fair to say it is more often measured in years, not decades. Concrete has lasted millennia in a number of applications. That means a concrete floor eliminates how much carpet or tile that has to be placed in landfills? Think about how much carpet you would have to replace to last 1000 years and how big a landfill it would take to hold it. I think it is a pretty solemn image. That is truly thinking in a sustainable manner.

Another area to discuss is carpet that has to be replaced due to mildew. Whether it is in a basement in the Midwest or the mountain of carpet being disposed of due to hurricanes Katrina and Rita, carpet doesn’t like to get wet for long. It would make sense that in basements or low-lying areas, let’s say areas where flood insurance is required, that decorative concrete floors would provide an alternative that would make it easier and faster for homeowners to return to their homes. It could also have a positive effect on insurance rates if it was enacted on a wholesale basis.

The beauty of colored concrete continues to be mistaken for much more expensive building materials by many who do not realize what they are actually looking at. Colors; textures like stone, brick, pavers and the like; as well as finely polished diamond-grounded finishes all produce outstanding aesthetic value at bargain-basement prices. Maybe that’s why businesses like Wal-Mart, Chili’s, Kroger and a large number of national chains continue to specify more colored concrete every year.

For more information on NRMCA’s promotion program, contact Pool at 281/702-4557 or via email at vpool@nrmca.org.
Information Technology Trends in the RMC Industry
— Based on the 2005 IT Survey

By Mike Forster, CPA, Vice President of Finance and Administration, NRMCA

Background

The Business Administration Committee - Information Technology Task Group of the National Ready Mixed Concrete Association bi-annually administers the Information Technology Survey as a means to disseminate meaningful feedback to the industry about trends and applications that are being utilized in everyday business operations. Some of these innovations and technology advancements achieve new ways to integrate applications with the express objective of increasing the information base of the ready mixed concrete industry. Others create opportunities to capture enhanced data that provide value-added performance measurements for the ready mixed concrete industry. This survey is designed to capture the data needed to meet these objectives, and is confidential with individual company details restricted.

Initially in 1998, survey-type data was collected from NRMCA members. The data collected was basic and offered insights on e-mail and internet usage, but was not part of a full structured survey. The first detailed Information Technology Survey was compiled via member inputs in 2001, and the IT Committee (with support from the industry), decided that every two years the survey would be repeated. In the summer of 2003, NRMCA conducted the second detailed Information Technology Survey.

2005 IT Survey Demographics

In 2005, the third detailed Information Technology Survey was administered, and while it included significantly lower volume of participating companies than past survey efforts (32 companies participated in the 2005 survey versus 141 in 2003), the demographic spread of participation provides meaningful data for trending purposes. A smaller pool of survey respondents is often-times referred to in statistical circles as a spot survey, particularly when data inputs are deemed to hold statistical validity. These results are then used expressly to evaluate performance in known or existing trends. The 2005 Information Technology Survey meets this profile.

Ironically, the stratification of the pool of respondents based on production yards provides clean proportioning amongst the categories, with the largest representation occurring in the medium-sized group (50%), flanked by equal sample sizes on both sides for the large and small groups (25% each). Clearly, this provides a well-balanced sample for evaluating the survey findings.

Key Trends

Consistent with anticipations, respondents having Internet access grew to 100%, up from 96% in 2003. It is rare in today’s business world to find organizations that do not have some form of Internet access within their operations. Increasingly, business is transacted utilizing the Internet and this form of connectivity is prevalent as a standard architecture requirement in IT infrastructure design.

Additionally, the trend in companies having a formal website continued to grow, with 91% (up from 71% in 2003) responding that they now have an active website for their company. Many businesses view having a website as a critical requirement because modern business psychology indicates many customers and potential customers see this as the first glimpse inside a company. People use websites more frequently now as the initial market research tool to gain insight on the products and services offered by a company. And when you add that increasingly business-to-business and business-to-consumer transactions are likely to occur via the Internet, having a website and introducing e-commerce via the company website is a smart initiative to ensure that businesses do not experience any erosion of sales and service.

Survey respondents also showed growth in the depth of architectures utilized in business operations in 2005. Companies utilizing local area networking (LAN) and wide area networking (WAN) architectures grew significantly. LANs were up 25% from 72% in 2003 to 97% in 2005. WANs increased from 47% to 72% over the same period, also for a gain of 25%. This trend in networking is consistent with a trend witnessed in the Industry Data Survey indicating that the average size of ready mixed concrete companies grew from 2002 to 2005. In terms of sales, the Industry Data Survey trend shows that the average size of survey respondents grew from $22 million to $51 million in sales over the three-year period from 2002 to 2004 (this occurring with a larger sample size of survey participants: average of 158 companies).
Effectively, the correlation here is that larger companies have greater technology requirements, which supports the need to increase the span of the architecture. This means that companies growing their sales (average 130%) also need to grow their network in terms of the number of nodes and users.

Another key finding, as the increase in WAN architectures grew, is that the introduction of new wireless remote technologies also increased. Survey respondents, consistent with the business community at large, are introducing enhanced Internet connectivity and multi-media convergence. Respondents identified using “new” technologies as follows: 6% have WiFi; 9% VOIP; and 6% use BlackBerry Technologies. These technologies are used to support wireless communications and enhanced voice and data communications. When deployed, they extend the range of connectivity allowing a company’s workforce to maintain up-to-date intelligence and status of ongoing business operations, projects and transactions, even when off site at remote locations.

Finally, one of the most important trends to the ready mixed concrete industry is the percentage of producers that utilize some form of GPS technology to track their trucks in operation. Tremendous growth in this area has occurred since 2001 when 13% of respondents reported using such technologies. In 2005, 84% reported having some form of GPS tracking for their trucks. Of these companies, 6% use CDMA1X; 25% use Nextel; 31% use Radio; 6% use CDPD; and 16% use GPRS to cover their fleet.

As part of “new” data collected in the 2005 survey, 69% reported having “On-Board Computing Systems.” These on-board systems are being used for various remote status communications. The short list stacked up as follows: GPS Location — 59%; Auto Status — 50%; Water Monitoring — 16%; Safe Driving — 13%.

Summary

The National Ready Mixed Concrete Association administers many critical surveys such as the Information Technology Survey. These surveys are intended and designed to provide meaningful feedback for the industry to help measure progress, identify key performance measures and facilitate industry feedback for individual companies to benchmark their performance. They also support NRMCA efforts to prioritize key initiatives working through the organization’s various committees. Increased participation and broader representation in each survey increases the validity of the trends and information represented. The association’s Business Administration Committee thanks those who continue taking the time to participate in these critical industry tools, and encourages support and participation from those companies that have not participated in past survey efforts.

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Take one landmark business with significant parking area needs. Mix in a relocation, a deadline for opening, skeptical owners, contractor’s scheduling challenges and, last but not least, competition from those asphalt folks, and what do you have? In the case of Furlong Funeral Home of Galena, Ill., it was a textbook concrete parking area success story.

The funeral home had been a longtime fixture in the downtown section of this mid-sized city in the northwestern part of Illinois, dating to the 1950s. But the opportunity to open a new, expanded facility in a newer section of the city meant the owners, Tom and Jim Furlong, would need not only a larger building, but a larger parking area. The owners were fully prepared to create with asphalt because they were faced with a November 1 opening and therefore had little time to explore other options.

Enter Paul Flynn, a vice president with The Flynn Group, a Dubuque, Iowa-based ready mixed producer and NRMCA member with a satellite office in Galena. When he learned of the Furlongs’ decision to go with asphalt, he quickly considered the opportunity to change their minds — and marshaled the tools he needed to do it.

“I had NRMCA’s ‘Concrete Toolbox,’ the parking lot promotional information from years past, but felt I needed more specific data to help sway their decision,” Flynn said. (NRMCA’s Concrete Toolbox is a software tool for the ready mixed industry that covers basic calculations involved in concrete production, testing and construction. It includes aggregate testing, basic mixture proportioning procedure, ACI 318 strength data for submittals and acceptance on the job.)

In his efforts to get up to speed on concrete’s attributes versus competing construction materials, Flynn first contacted the Illinois Ready Mix Association and then NRMCA’s Midwest field promoter Brad Burke, an expert on concrete versus asphalt life cycle cost analysis. Once Burke walked
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him through NRMCA's Concrete Pavement Analyst (CPA) software, which he helped develop. Flynn approached the Furlongs with his contention, backed by hard data, that the long-term benefits of concrete far outweigh the last obstacle of higher upfront costs.

Flynn said the parking lot, for its intended use, would have been adequate at a 4-inch thickness, but the contractor, Mike Oberfoell of Cornerstone Curb from Epworth, Iowa, did not feel comfortable with that specification so 5 inches was agreed upon along with a 4000 psi mix. Cornerstone then used a vibrating screed that allowed a maximum placement of 4.5-inch slump for the entire project. The Furlongs also were concerned about time of completion, telling Flynn that the asphalt guys would have it ready in two weeks. But Cornerstone was able to shift some of its other projects around and continue working at the funeral home site with no disruptions and easily made the two-week deadline, Flynn said. The job was finished in early October. Flynn estimated that start to finish the job was done in 6-8 weeks, with Flynn mixer trucks on the site for about three of those weeks. He said Oberfoell of Cornerstone Curb had the area striped and ready before the November 1 Furlong opening. Flynn said the entire project used 747 cubic yards of concrete.

Ultimately, one of the biggest factors for the owners was the reflective qualities of concrete. "I took one of the owners past two local banks at night — one had a concrete lot and the other asphalt," Flynn related. "The concrete lot had fewer light standards, yet was brighter with better curb appeal."

Another factor was that the old funeral home had an asphalt lot and the Furlongs had hard data on maintenance costs and believed that the NRMCA's CPA software accurately reflected their history of maintenance costs.

"The end result is a happy customer, contractor, ready mixed supplier and an outstanding new addition to the community," Flynn said. "Sometimes all we have to do is ask, 'Have you thought about concrete'? It was textbook all the way around."

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Keeping Devastation to a Minimum:
Concrete Industry Spearheads Forensic Study in the Mississippi Gulf Coast Region with Funding Assistance from the RMC Research Foundation

By Jennifer LeFevre, Program Director, RMC Research Foundation.

The devastation caused by Hurricane Katrina and other natural disasters are well documented. However, it remains unclear what may be done to keep structural devastation to a minimum in the wake of a catastrophic storm. In an effort to learn what role building materials and building codes play in preventing or contributing to structural damage from weather-related incidents, the Mississippi Concrete Industries Association (MCIA), with funding from RMC Research Foundation and general support from the National Ready Mixed Concrete Association (NRMCA), is working together with the Mississippi State University (MSU) Civil Engineering Department to perform a forensic evaluation of building materials and building codes. This will assist with the development of recommendations for the rebuilding of the United States Gulf Coast region affected by hurricane damage last year.

While it is well known that concrete structures provide greater protection from high wind and projectile damage than most other building materials, building codes in regions prone to weather incidents such as hurricanes have not been updated to ensure that both commercial and residential buildings are adequately equipped to protect public safety during a catastrophic weather event. This analysis is intended to assess how structures performed under hurricane conditions under the current building codes and is similar to the evaluation that southern Florida building codes underwent after Hurricane Andrew struck in 1992.

Robert Varner, executive director of the MCIA, is working closely with the team from MSU on this project and, at press time, was working hard to have legislation introduced in the Mississippi State Legislature to implement the International Building Code throughout the state. Although this study will not be completed in time to assist in their current campaign, the preliminary results will be helpful in their efforts. Varner also noted that there is very wide membership in the construction industry coalition that is working on this project and that one of the important functions it has been filling is to educate many in Mississippi, including the state’s governor and lieutenant governor, on what building codes are and the purposes they serve. Varner surveyed the destruction along the Mississippi Gulf Coast himself and believes this study could have long-term impact for the industry.

“This study will be helpful to the industry in a variety of ways,” he said. “The data will provide important information on concrete’s performance, something few studies of building materials have included.”

Christopher Crouch, 2006 chairman of the RMC Research Foundation said, “It is a life safety issue, and this study will provide data that will improve our building systems and protect those who live and work in weather-vulnerable regions of our country.”

One aspect of this project included a building code workshop, which was organized and hosted by MCIA. The workshop was highly successful and included more than 150 participants. Notably, along with the construction industry, the insurance industry has been very active on this issue and the variety of groups in favor of statewide building code changes will certainly play a significant role in moving Mississippi and other states in the Gulf region forward in adopting new, statewide building codes.

Although there is no way to escape Mother Nature’s wrath, there are ways to keep the devastation to a minimum. The Forensic Evaluation of the Impact of Hurricanes and Flooding on Building Systems in the Gulf Coast Region will help identify areas where building code changes can mean the difference between making some repairs to your home after a severe weather incident and losing everything, including, in some cases, a life.

For more information on projects funded by the RMC Research Foundation, please visit www.rmc-foundation.org. For more information on the Mississippi State study, contact MCIA’s Robert Varner at rvarner@mississippi-concrete.com. For more information on the concrete industry’s comprehensive approach to the Gulf Coast rebuilding effort, contact NRMCA’s Lionel Lemay at llenay@nrmca.org.
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In response to Hurricane Katrina’s devastation, NRMCA’s government affairs team began chanting the building codes mantra in the Gulf Coast states. This past fall, NRMCA activated its grassroots network and engaged in an aggressive constituent letter campaign to ensure that the other Gulf Coast states take heed of the Florida lesson. Louisiana was the first to hear the call. In November, during an extraordinary

Natural disasters such as floods, hurricanes, tornados and earthquakes can cause billions of dollars in damages when they happen. Of course, these damages never account for the immeasurable losses associated with deaths, injuries, human suffering and loss of employment. The full cost of Hurricane Katrina is still being tabulated but the final figure will surely dwarf the more than $27 billion in destruction caused by Hurricane Andrew in 1992. Yet, time and again, federal, state and local governments have failed to properly prepare for the inevitability of natural disasters, and the costs keep rising.

Perhaps the most effective natural disaster mitigation tool is the modern building code. A building code is simply a minimum acceptable standard used to regulate the design, construction and maintenance of buildings for the purpose of protecting the health, safety and general welfare of the building’s users. Building codes are the most cost-effective means to preserve residential and commercial structures and thereby preserve our homes, schools, places of worship and employment. A 2002 study performed by Applied Insurance Research Inc., in collaboration with the Institute for Business and Home Safety, showed that if all buildings in South Florida had complied with the Florida Building Codes adopted after Andrew, another comparable hurricane would cause only about half the damages to residences and 40% less damage to commercial property. The combined loss reduction would have amounted to almost $10.5 billion, according to the study. Indeed, building codes ensure more than just than loss prevention, they also reduce the need for disaster relief, promote economies of scale for construction suppliers and create a minimum standard upon which consumers can rely.
session called by Governor Blanco, the Louisiana legislature passed Act 12, which establishes a new statewide minimum construction code. Act 12 is similar to the Florida Building Code in that it uses both the International Building Code and the International Residential Code as minimum standards. Local jurisdictions can adopt more stringent amendments necessary to meet requirements relating to climate, geology and population size.

NRMCA is continuing to work closely with our state affiliates in Mississippi and Alabama to coax their elected officials to follow the examples set by Florida and Louisiana. NRMCA is also exploring opportunities on Capitol Hill to require that all federally subsidized rebuilding and new construction performed in areas declared a disaster area by the President be performed subject to International Building Code and International Residential Code minimum standards. NRMCA’s message to state and federal legislators is a simple one: “Building Codes: An ounce of prevention is worth a pound of cure.”

CONCRETEPAC Wishes to Thank Rinker Materials and Degussa Admixtures, Inc. for their Liberty Sponsorship at the 2005 Advocacy Education Program and Board Meeting in Ponte Vedra, Fla.

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Frequently one hears the sentiment that it is hard to implement performance specifications. Two reasons commonly given are: code and specifications do not allow it; there is a lack of test methods to measure performance. Let us look at these reasons a little more closely.

**Code and Specifications Do Not Allow It**

Chapter 4 (durability requirements) of the ACI 318 Building Code has prescriptive requirements such as w/cm, cement type (only for sulfate resistance), and limitations of dosages of supplementary cementitious materials (only for deicer salt scaling). These requirements are given in Tables 4.2.2, 4.2.3 and 4.3.1 of the Code. However, the Building Code does not have any prescriptive requirement for minimum cementitious content.

ACI 301 specification has minimum cementitious content requirements (Table 4.2.2.1) for floors, to assure finishability of hard troweled surfaces. **Industry standards like ACI 318 and ACI 301 do not establish dosage levels for supplementary cementitious materials (SCMs).** Yet we constantly come across concrete specifications that require specific dosages of SCMs. We also frequently see specifications that require minimum cementitious contents. The intended performance related to these prescriptive limitations is not clear. Imagine how good it would be not to have these prescriptive requirements. So, why have them then?

Design professionals often indicate that they specify those additional prescriptive requirements for a reason. The reason could be:

1. Minimum cementitious content used as a means to ensure that the w/cm is below a certain specified level. This point can be addressed by asking the engineer to specify the compressive strength commensurate with the desired maximum w/cm that can be documented in the submittal. This is a better way of enforcing that the w/cm is at the desired level rather than requiring a minimum cementitious content. A minimum cementitious content often results in a high paste content, which can lead to adverse concrete performance such as higher shrinkage, higher temperature, creep, cracking and curling.

2. SCM dosage requirements for durability enhancement such as ASR, sulfate attack and chloride permeability. Durability characteristics can be addressed by requiring performance tests in lieu of the prescriptive SCM requirements. The subject of test methods leads to our next reason.

**Lack of Test Methods to Measure Performance**

At the outset one should realize that test methods will continually evolve and we will never be at the point where we may be able to test for everything that we would like to at the appropriate precision. Given that it is almost futile to wait to achieve that ideal state for performance specifications, it is possible to use the existing test methods to replace some of the prescriptive requirements. The following test methods are recommended to replace the prescriptive requirements.

The performance limits for each of the test methods and the way that these test methods should be used was discussed in an earlier article*. Thus it can be seen that existing performance test methods can be used in lieu of prescriptive limitations such as SCM dosages.

**Summary**

Certain prescriptive requirements are required by the Building Code and have to be followed. For the most part these apply to structural concrete. Efforts will continue to modify the Building Code to remove such prescriptive requirements and also address the submittal requirements and establishing appropriate responsibilities.

But it is wrong to say that we cannot make any progress toward performance specifications because the codes and specifications do not allow it. It is entirely possible to stay within the codes and specifications and still remove the additional prescriptive requirements that are very

<table>
<thead>
<tr>
<th>Property</th>
<th>Common Surrogate Prescriptive Requirement</th>
<th>Performance Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkali Silica Reaction</td>
<td>SCM dosages, cement types, w/cm, strength</td>
<td>ASTM C 1567, modified ASTM C 1293</td>
</tr>
<tr>
<td>Sulfate Attack</td>
<td>SCM dosages, w/cm, strength</td>
<td>ASTM C 1012</td>
</tr>
<tr>
<td>Chloride Penetration Resistance</td>
<td>SCM dosages, w/cm, strength</td>
<td>ASTM C 1202, AASHTO TP 64, ASTM C 1556</td>
</tr>
<tr>
<td>Shrinkage Cracking</td>
<td>Continuous aggregate grading, w/cm</td>
<td>ASTM C 157, restrained shrinkage cracking test</td>
</tr>
</tbody>
</table>
common in construction specifications. Some of the most commonly used prescriptive requirements are minimum cementitious contents and SCM dosage limitations. Both these requirements severely limit the producer's ability to design concrete mixtures that are economical and meet both the owner's and contractor's needs. Existing test methods can be judiciously used to replace these prescriptive requirements.

So, the approach toward a full performance specification is not to wait until the Building Code is changed but to start now by working to reduce the prescriptive requirements in the existing specifications. Consultative discussions by industry personnel with the design professionals are strongly encouraged to change the way we specify concrete mixtures for concrete construction.

Reference

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The American Society of Civil Engineers (ASCE) and the National Ready Mixed Concrete Association (NRMCA) have teamed together to offer a new seminar, Designing Durable Concrete Structures. The two-day course will be offered twice in 2006:

- May 4-5, Denver
- September 28-29, Philadelphia.

The seminar, an ASCE Continuing Education Course, provides attendees with 1.4 Continuing Education Units (CEUs).

**Background**

In recent years, there has been a renewed emphasis on improving durability and increasing service life of structures. It is becoming increasingly apparent that the financial impact of rehabilitating structures that have failed prematurely due to improper design and construction methods is enormous. Owners and the general public are demanding that bridges, roadways, parking structures, marine structures and other buildings be designed to last in excess of 100 years to reduce the time and frequency of repairs throughout the life of a structure.

One way to increase service life is to design, specify and build structures using high-performance concrete, which incorporates advanced materials, including supplementary cementitious materials, chemical admixtures, design details and construction techniques to improve the durability and long-term performance of structures. This course will help design engineers, contractors and concrete producers understand how to design and build high-performance concrete structures. Recommendations will be provided for designing and specifying concrete that can resist failure mechanisms such as corrosion, alkali-silica reactivity, sulfate attack, and freezing and thawing.

**Who Should Attend?**

This course is intended for engineers who design concrete structures exposed to harsh environments such as bridges, roadways, plazas, parking structures, marine structures or any building with exposed concrete. Contractors, concrete producers and product suppliers will also benefit from this seminar.

**Topics Covered**

- **Concrete in Extreme Conditions**
  Concrete is often the material of choice for structures subjected to severe conditions. This seminar will review potential failure mechanisms such as freezing and thawing, chemical attack and corrosion.
- **Concrete Details**
  Details of reinforcement, joints and embedded items are key to durable concrete structures. Recommended details will be presented for various extreme conditions.
• Quality Concrete Construction
A review of quality concrete construction including the materials used, batching and delivery methods and construction methods will be provided. In addition, this review will cover the basics of quality control and quality assurance programs for concrete construction.

• Performance-based Specifications
Methods for specifying concrete in terms of performance-based criteria to assure durability in all climates will be presented. The role of the engineer, contractor and concrete supplier in building durable concrete structures will be discussed.

• Advanced Construction Methods
Advanced construction methods will be presented including concrete placement techniques and curing methods.

• Concrete Testing
A review of concrete tests used for quality control and quality assurance will be presented in addition to other tests used for durability. Background information will be provided on the significance and variability of the tests.

• Solving Potential Problems
Potential problems with concrete both in the plastic and hardened state will be discussed and recommendations for solving and reducing these problems will be provided.

Seminar Instructors
Two of the following qualified instructors will be on-hand to teach:
• Ken Hover, Ph.D., P.E., professor, School of Civil & Environmental Engineering at Cornell University.
• Peter Taylor, Ph.D., P.E., senior engineer with CTL Group, Inc.
• Michael Caldarone, P.E., principal engineer with CTL Group, Inc.
• Colin Lobo, Ph.D., P.E., vice president of engineering for NRMCA.
• Karthik Obla, Ph.D., P.E., director of research and materials engineering for NRMCA.
• Lionel Lemay, P.E., S.E., vice president of technical resources for NRMCA.

Benefits
This seminar will introduce attendees to state-of-the-art technologies and methodologies for designing and specifying concrete subjected to extreme conditions. At the end of this seminar attendees will be able to:
• Understand the basics of quality concrete construction;
• Provide design details to minimize concrete deterioration;
• Develop project specifications to improve concrete durability;
• Fully utilize the latest technology in concrete materials and construction methods;
• Reduce potential conflicts in specifications;
• Understand quality assurance methods for concrete;
• Recognize and solve potential problems with concrete construction.

To register, visit www.asce.org/conted/seminars or www.nrmca.org/seminars. Alternatively, contact Tamara Waugh of NRMCA at twaugh@nrmca.org or 240/485-1166 to have a registration form mailed to you.
Pending Safety and Health Legislation on Capitol Hill

By Thomas Harman, Director of Safety Compliance, NRMCA

On November 18, 2005, Sen. Mike Enzi, Republican chairman of the Senate Committee on Health, Education, Labor and Pensions, introduced three bills to amend the Occupational Safety and Health Act of 1970, the “Act.” The three bills are: “The Occupational Safety Partnership Act;” “The Occupational Safety Fairness Act;” and “The Hazcom Simplification and Modernization Act.” Taken together, the reforms have the potential to change the manner in which the Occupational Safety and Health Administration (OSHA) communicates with employers and the regulated community in general.

S. 2065 - The Occupational Safety Partnership Act — The purpose of this reform is to encourage employers to bring professional safety and health consultants into the workplace to conduct audits and provide “individualized solutions to workplace safety and health concerns.” Additional sections in the bill include alcohol and substance abuse testing, voluntary protection programs, continuing education and professional certification requirements for certain OSHA personnel, and an OSHA-industry exchange demonstration program.

S. 2066 - The Occupational Safety Fairness Act — The bill gives OSHA inspectors flexibility in issuing citations for an employer who violates a mandatory safety or health standard. For example, under certain circumstances, an OSHA compliance safety and health officer may issue a warning in lieu of a citation. The bill also includes four provisions introduced by Rep. Charles Norwood of Georgia aimed at helping small business and streamlining OSHA administrative procedures. In addition, the bill prohibits the secretary of labor from incorporating by reference any standard, limit, rule or guideline that has not been reached through substantial agreement by interested or affected persons. Finally, the reform requires employees to accept personal responsibility by allowing OSHA inspectors to cite individual employees when they fail to wear employer-provided personal protective equipment.

S. 2067 - The HazCom Simplification and Modernization Act — The bill is meant to assist chemical manufacturers and importers in preparing material safety data sheets (MSDS) and directs OSHA to issue a model MSDS format so that communicating hazards associated with chemicals are easier to understand. In addition, the bill establishes a “Commission” to implement United Nations’ recommendations to develop a global hazard communication format.

The reform bills are supported by the OSHA Fairness Coalition of which NRMCA is a member. To review and learn more about these bills, go to www.thomas.loc.gov.
Since the inception of the Health Savings Account (HSA) on January 1, 2004 and the IRS ruling concerning the Health Reimbursement Arrangement (HRA) in June 2002, many small, midsize and large groups are enjoying improved benefits while controlling costs.

However, understanding the exact details of the HSA and HRA is only half the battle. You must understand the practical use in order to install them correctly. Installing a high deductible ($1200) and then leaving the employee to cover the deductible is not Consumer Driven Health Care (CDHC) — it is cost shifting.

CDHC is not about shifting cost to the employees. It is instead about reallocating money from employers to employees to empower them to make great health care decisions for themselves and their families.

CDHC is on a roll because it works on so many levels. It runs much deeper than just simple math and cost savings. We cannot continue to treat Americans like hapless children who are unable to make health care decisions. Ask yourself who would make a better decision for you — the government, your employer or yourself? No one cares more about you, than you! So if you retain the power and control to pay for those decisions, at the end of the day the system is likely to work better for you than if you pass that responsibility to your employer and/or government.

Health insurance may seem confusing and complex, but business owners have a simple choice to make. Stop reducing the benefits ever so slightly as a means to offset the double-digit increase. This only slows the bleeding and frustrates the employees.

Consider the following example: the insurance increase is 15% for the second year in a row. The first year the employers absorbed the increase and the employees had no idea about the rate increase. The second year the employer increase is no longer palatable so they change the $10 co-pay to $20 and put a $150 deductible on the RX, lowering the 15% increase to 10%. Well, this strategy is simply a band-aid approach and any agent that recommends this without looking strongly at either the HSA or HRA is not doing their job. The results from this are the employer will pay 10% more for benefits than last year while receiving less coverage! What a deal. No wonder agents have a hard time getting employees to come to enrollment meetings. Pay more for less each year. What happened to benefits being, well, benefits?

The other issue that is being created from the example above is that many employees feel the financial burden of covering the additional cost of dependents. In response, they may secure more affordable plans in the individual market. If they can get past underwriting, they will find the individual market extremely budget friendly. This should be a concern for groups that continue the band-aid approach. You do not want all your “young and healthy” employees dropping from the plan. This will leave only the older population as well as the employees who fail to pass individual underwriting based on medical conditions. What happens now? Your group rates will soar and you may long for the days of the 15% increase. Your group will also be in danger of failing to meet participation requirements. This will make it very difficult for your agent to move you to another insurance carrier. Your band-aid approach over the years will put you in a very tough predicament.

Instead, attack the issue head on. Roll up your sleeves and give this the attention it deserves. All that is required is more attention to detail and time from decision makers as well as employees to decide what plan is best for them at open enrollment.

This may seem like a time-consuming project when you have a business to run but the time is well spent and the results that we have seen thus far are outstanding. Careful thought is needed as to whether an HSA or HRA is the best fit for your bottom line as well as your employees. There are a multitude of questions and scenarios you must consider. The most important one being, what is my current cost share philosophy? This is critical in designing the plans. The math may be reallocated in order to make the program work for the employer and the employee.
Below are two examples of small groups that made the decision to move into CDHC. The first one is an HRA and the second one is an HSA. These examples are small groups that decided to do something about their health care cost. As you can see they are well rewarded for their time and effort. The employees of these groups are of mixed income with varying health needs, proving the point that these plans can work for all who are involved.

### What is an HRA?

A Health Reimbursement Arrangement, or HRA, is an extension of a qualified medical reimbursement plan in which the employer agrees to provide reimbursement for certain medical expenses. The level of reimbursement is set by the employer — the employer designs the plan.

The benefits of an HRA plan can vary from plan design to plan design. Generally, an HRA is established to save the employer money without reducing the benefits to the employees. An HRA is most often combined with a high deductible, which reduces the premium considerably. With the savings the employer can reimburse the deductible on an as needed basis. Often the numbers show that the employer can provide benefits comparable to the current benefit structure at an overall reduced cost.

<table>
<thead>
<tr>
<th>Current Monthly Premium</th>
<th>Proposed Monthly Premium</th>
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<tbody>
<tr>
<td><strong>Annual Premium</strong></td>
<td><strong>Annual Premium</strong></td>
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<tr>
<td>$36,571.00</td>
<td>$30,208.00</td>
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<td>x 12</td>
<td>x 12</td>
</tr>
<tr>
<td><strong>$438,852.00</strong></td>
<td><strong>$362,496.00</strong></td>
</tr>
</tbody>
</table>

**Deductible Contribution**: $8,000.00

**Total Commitment**: $362,496.00

**Compare the difference**: $438,852.00

This next example shows that the premium reduction was much more severe because there are no front-end benefits to this plan. No doctor co-pays or RX co-pays. The employee must meet the deductible before coverage kicks in. Once the deductible is met, then the insurance company pays 100% for in-network procedures, including medications. The savings for this group totals $39,556.28. How did it affect the employees? The old plan had doctor co-pays of $15 and RX coverage for $15/25/35. The new plan has a high deductible of $1700 for singles and $3400 for families. At first glance this cannot be good for the employees. However, with the savings the group received from the reduction in premium they are able to fully fund the HSAs for their employees. Any money left in the account is rolled over to the next year, allowing the account to build. The employees now have a health plan that pays for everything at 100% for in-network procedures. The chronically ill get 100% coverage and the young and healthy stay on your group plan because of the rollover feature.

### Results: Long Term Financial Gain for All

The critics will tell you Consumer Driven Health Care has not been around long enough to have credible results. Well, I think the old saying applies here, “If you keep doing what you are doing, you are going to keep getting what you are getting.” The time for change has come and the results, albeit only a couple of years’ worth, have been outstanding. We have demanded more and more from our health insurance over the past 35 years that we, as consumers, have contributed to the demise of the managed care system. Why don’t we demand our auto insurance to cover oil changes, flat tires, wiper blades, brakes and so on? Can you imagine the rate increase? The government would issue mandates that all insurance companies must cover oil changes. The competition would dwindle in each market and the rates would quickly rise. Why is it that as consumers, we are satisfied with auto insurance covering the big fixes while assuming responsibility for minor maintenance, but when it comes to our health care, we want it all covered?

A few years ago a paradigm shift began to take place. People wanted to pay for the ‘little things’ such as doctor visits while having the insurance company kick in for more expensive items such as surgery. With the implementation of the HRA and HSA, we are now able to accomplish this and receive a tax break for doing so.

As time went on, agents began to install many HRAs and HSAs, and the feedback they are receiving is amazing. Here are some of my stories:

One woman of 52 years of age from Canada was an employee of a group of mine. She was very concerned about the move from her comfortable HMO plan to a high-deductible HSA plan with a $1700 deductible. The year started with her realizing how much her blood pressure medications really cost. “What a shock,” she said. “I will be out of money by mid-year at this rate.” She worked with her doctor and found a medication at a much lower price. By the close of the year, she had about $600 left in her account. Knowing the account would be

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**HRA**

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<tr>
<td><strong>Annual Premium</strong></td>
<td><strong>Annual Premium</strong></td>
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<td>x 12</td>
<td>x 12</td>
</tr>
<tr>
<td><strong>$159,732.00</strong></td>
<td><strong>$65,775.72</strong></td>
</tr>
</tbody>
</table>

**Deductible Contribution**: $13,600.00

**Total Commitment**: $65,775.72

**Compare the difference**: $159,732.00

In the above example, the current annual premium is $438,382. By changing the plan that includes a $1000 deductible for single and $2000 deductible for family, the annual cost drops to $363,496. The doctor visit and RX benefits remains the same and the deductible is reimbursed 100% on an as-needed basis. The employees have absolutely no reduction in benefits passed on to them. The employer can afford to reimburse the deductible at 100% with the savings in premium. Even if all the employees meet the entire deductible, which is very unlikely, the company will still save $18,356. This can be accomplished with your current carrier in most cases.

Wow! All that savings and no underwriting or changing doctors.

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**HSA**

<table>
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<th>Current Monthly Premium</th>
<th>Proposed Monthly Premium</th>
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<tr>
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<td>x 12</td>
</tr>
<tr>
<td><strong>$159,732.00</strong></td>
<td><strong>$65,775.72</strong></td>
</tr>
</tbody>
</table>

**Deductible Contribution**: $40,800.00

**Total Commitment**: $65,775.72

**Compare the difference**: $159,732.00

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**Financial Gain for All**

The time for change has come and the results, albeit only a couple of years’ worth, have been outstanding. We have demanded more and more from our health insurance over the past 35 years that we, as consumers, have contributed to the demise of the managed care system. Why don’t we demand our auto insurance to cover oil changes, flat tires, wiper blades, brakes and so on? Can you imagine the rate increase? The government would issue mandates that all insurance companies must cover oil changes. The competition would dwindle in each market and the rates would quickly rise. Why is it that as consumers, we are satisfied with auto insurance covering the big fixes while assuming responsibility for minor maintenance, but when it comes to our health care, we want it all covered?

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The results from the McKinsey & Company study provide the best evidence yet that consumers enrolled in a CDH program are significantly more engaged in their health care. Specifically, the McKinsey study found that employees enrolled in a CDH plan are more value conscious, more health conscious and more likely to adopt behavior that results in cost-effective medical treatment. A few of the report's key findings are highlighted below.

CDHP participants are more value-conscious consumers:
* 50 percent more likely to ask providers about costs;
* 33 percent more likely to identify treatment alternatives;
* 300 percent more likely to choose less extensive/expensive medical treatment.

CDHP participants are more health-conscious consumers:
* 25 percent more likely to engage in healthy behaviors;
* 20 percent more likely to participate in wellness initiatives;
* 30 percent more likely to get an annual health checkup from their primary care doctor.

CDHP participants are open to more cost control and are:
* 20 percent more likely to follow their treatment plan for chronic conditions;
* 200 percent more likely to shop for lower drug costs.

Additional 2005 studies by the major CDHC vendors showed increasing evidence that these plans are working to help control costs without limiting necessary health care services. Other findings from Aetna, Humana and Lumenos studies include:

**Lower Trend Rate:**
* First year CDHP cost trends were 5-6% compared to 12-14% for PPOs;
* Second year cost trends were 1-4% less;
* Full replacement CDHP experienced a 0-15% cost decrease compared to the prior plan;
* Greater penetration of CDHP creates lower medical cost trends across all health plans offered by the employer. Employers with 70+% participation had an average 13.4% decrease in health costs.

**No Under-Utilization:**
* Employees with chronic health conditions did not reduce treatment;
* Usage of preventive care nearly doubled.

### Comparison

<table>
<thead>
<tr>
<th>Question</th>
<th>HRA</th>
<th>FSA</th>
<th>HSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do the funds belong to the employee?</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Can the money be invested and the employees earn interest?</td>
<td>NO</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>Can the employees use the funds for things other than medical expenses?</td>
<td>NO</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>Can the employee take the money with them if they switch employers?</td>
<td>NO</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>Do the funds rollover year-to-year?</td>
<td>Generally, NO</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>Who can contribute to the account?</td>
<td>Employers</td>
<td>Employee Possibly,</td>
<td>Employers</td>
</tr>
<tr>
<td></td>
<td>and/or Individuals</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
funded again in the new year, she decided to purchase some new glasses (not covered by the insurance, but allowed under the IRS guidelines 213 d). Her reaction, “I was able to buy any pair I wanted from any rack in the store. It was my money, and for the first time, I was buying eyewear and I was not restricted to the discount rack.” What a great comment from someone in her first year of the HSA.

At an enrollment meeting in December 2004, one of the employees came up to me after the meeting and said that she had a surgery scheduled in January. “What plan is best for me?” she asked. She had three PPO choices (including the HSA) and one HMO.

After showing the math to her, the HSA was the best option because it covered everything in-network at 100% after the deductible, including her many prescriptions.

The lesson for her was that the savings in premium covered the deductible. Math never lies. This goes against the myth that the HSA is only for the “young and healthy.”

This last example is from a more personal nature. My wife had a hard time understanding the HSA at first. My HSA, with a $5000 deductible family coverage, was only $236 per month ($2832 per year) compared with $675 per month ($8100 per year) from my old co-pay plan. The $8100 per year was killing me, so I moved to the HSA with a $5000 deductible. How could I afford $5000 if the family got sick? Well, the premium for the HSA was only $236 per month ($2832 per year) so I was saving $5268 per year from the move. Instead of sending my money to the insurance company, I simply paid myself the savings in the HSA deposit. When my wife needs to access health care, the money is in the account. The math is simple, right? Well, my wife did not fully understand the plan until my oldest daughter had a seizure while we were on vacation. Sitting by her hospital bed, my wife exclaimed, “I get it now!” We pay first and the insurance company pays second. No confusing coinsurance to worry about...just good insurance at time of need.

Coming Up With a Strategy

The specific strategies that employers may use will depend on the employers’ cost share philosophy. HRA or HSA? Fully fund or partially fund? The success of the program will require multiple enrollment meetings (invite the spouses) as well as a commitment to communication, education and follow up.

There never has been a silver bullet to contain health care cost. Perhaps, the silver bullet is us, the consumer.

Jay Booth is co-founder and managing partner of Capital Group Benefits. Booth is an employee benefit specialist, a certified CE instructor on HASs/HRA's and has provided HAS training for Colonial Supplemental Life, Aflac, and Anthem BCBS and provides ongoing training and support for many CPA firms recommending HASs to their client base. He is president of the Northern Virginia Association of Health Underwriters. For more information, contact Booth at 703/257-6400 or via email at jbooth@capitalgroupbenefits.com.

The views and opinions expressed in this article are those of the author and do not necessarily reflect the views and opinions of the National Ready Mixed Concrete Association.
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Session Topics: Session topics will cover state-of-the-art developments, new construction techniques and product formulations that optimize performance of pervious concrete including:

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- Structural and Site Design
- Specifications, Mix Design and Test Methods
- Construction Techniques
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The National Ready Mixed Concrete Association has selected speakers for the 2006 Concrete Technology Forum: Focus on Pervious Concrete, scheduled for May 24-25 at the Renaissance Nashville Hotel. Andrew Reese, a nationally recognized stormwater expert and vice president of Earth and Environmental for AMEC, an international consulting firm, will provide the keynote address. His presentation will focus on nationwide changes in stormwater paradigms from the 1950s to present. He will also describe how pervious concrete systems can be an integral part of stormwater management strategies. Austin Cheney, director of the Concrete Industry Management program at Middle Tennessee State University in Murfreesboro, will host the proceedings, including the opening and closing general sessions, which respectively focus on the history and future of pervious concrete.

A total of 12 technical sessions are scheduled for the two-day symposium, featuring 30 presentations from nationally renowned researchers and practitioners. The technical sessions present state-of-the-art developments, new construction techniques and product formulations that optimize performance of pervious concrete. Session topics include:

- Hydrological and Environmental Design
- Structural and Site Design
- Specifications, Mix Design and Test Methods
- Construction Techniques
- Durability and Maintenance
- Applications and Case Studies

The symposium will culminate with a pervious concrete site tour of projects in the Nashville area. A product expo featuring companies that offer products and services for pervious concrete and other concrete applications will be open during the conference.

The forum is bringing researchers and practitioners together to discuss the latest advances, technical knowledge, continuing research, tools and solutions for pervious concrete. Researchers, civil engineers, environmental engineers, landscape architects, architects, contractors, concrete producers, public works officials, material suppliers, concrete industry professionals, and property developers and owners are invited to attend.

Sponsors for the 2006 Concrete Technology Forum include NRMCA, Concrete Construction magazine, Concrete Producer magazine, Degussa Admixtures, Inc., The Euclid Chemical Company, Public Works magazine, Schwing America, SI Concrete Systems and Sika Corporation. Organizational partners include the American Concrete Institute, American Concrete Pavement Association, American Society of Concrete Contractors, Construction Institute of the American Society of Civil Engineers, Middle Tennessee State University, Portland Cement Association, Southeast Cement Association and Tennessee Concrete Association.

Additional details for the 2006 Concrete Technology Forum, including schedule, session topics and registration are available at www.ConcreteTechnologyForum.org.

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The Benefit of Environmental Performance

By Rebecca Morris and Tom Pittman
Aggregate Industries, Mid-Atlantic Region

In today’s business environment, the challenges of sustainability can be burdensome on the company’s bottom line. This article demonstrates how one of Aggregate Industries’ ready mixed concrete plants has tackled two major sustainability issues head-on and is now increasing the bottom line through environmental performance. Specifically, staff worked to reduce water consumption and excess accumulation of recycle materials using both improved management controls and new technology to the best measurable effect. These actions demonstrate how there can be win-win approaches that benefit both the bottom line and the environment.

Prior to installing a water recycling system, the Fort Totten Ready-Mix Facility discharged an average of 1 million gallons of treated process water per month, which ultimately found its way to the Anacostia River. Fort Totten has a National Pollutant Discharge Elimination System (NPDES) Permit, which permits the release of process water that meets designated pH and Total Suspended Solids (TSS) parameters. The NPDES permit requires weekly sampling, monthly and annual reporting. To reduce regulatory requirements and minimize the risk associated with discharging water from the site, Aggregate Industries installed a process water recycling system to reuse the process water. The reclaimer, in conjunction with best management practices, staffing and training, allowed the facility to recycle water for use for the concrete production, truck wash out and dust control. The purpose of a reclaimer is to separate the large aggregate, sand and water from the plastic (unhardened) concrete. The water is diverted to a holding tank where cement solids are kept in suspension with impellers until the water is ready for recycling back into new concrete or other uses.

Staff faced implementation issues during start up but these matters were not major and were immediately addressed. Aggregate Industries started the process without treating the recycle water to reduce the pH level. Worker safety and health concerns prompted managers to take action and use CO₂ injection to lower the pH levels of the recycle waters prior to reuse. In response to management concerns, Aggregate Industries staff monitors all the components of the recycling process and maintains the equipment to assure mitigation of long-term affects of the recycled process water.

Aggregate Industries realized several benefits from the implementation of the water recycling system. Operation of the Fort Totten plant requires approximately 90,000 gallons per day of water for concrete production, truck washing and other uses. Aggregate Industries reduced the amount of city water by 50%, replacing it with recycled process water. Consequently, the company realized lower water costs that helped to increase the bottom line.

Although an NPDES permit is still required by law, recycling water rather than discharging has eliminated the need to collect samples. This benefit has reduced the Fort Totten facility’s exposure to environmental risks and regulation. Additionally, this arrangement reduces costs for water analyses and other environmental costs. Furthermore, utilizing recycled water has lessened Fort Totten’s dependence on the District of Columbia’s city water supply, and has allowed the plant to become more sustainable in its water management.
Like those at most ready mixed concrete facilities, the staff at the Fort Totten plant faces the challenge of dealing with returned concrete. Because of the production volume, there is a tremendous amount of leftover concrete returned to the plant yard. Many contractors order excess concrete to assure that they can complete a job without having to split a pour. Aggregate Industries installed a Schwing RA-20 reclaimer to manage the excess concrete. The reclaimer is equipped with a dual hopper that can accommodate the 55 ready mix trucks that operate daily at the plant. A unique technology feature of the Schwing RA-20 is a sensor that senses when the reclaimer is overloaded and automatically shuts down the reclaimer until a safe load size is achieved.

Plant personnel encountered initial implementation and operational challenges with the reclaimer. The most difficult challenge encountered was how to deal with cement slurry generated from the recycling process. The volume of slurry product generated was much greater than initially anticipated. Aggregate Industries managers elected to divert the slurry to the plant’s settling basin to allow for clarification of the water. Driven by the need for innovation, the managers developed a process that feeds the dried-out fines through the material crushing equipment to produce a recycled aggregate. Aggregate Industries is conducting research to find unique and beneficial uses for this material. The company’s endeavor is to create highly sustainable products consisting primarily of recycled materials from this research. Also noteworthy is the fact that Aggregate Industries realized an economic benefit from the recovery of aggregate and sand. These materials can be used in the manufacture of new concrete. Aggregate Industries is aware of sustainability issues that businesses encounter and wishes to demonstrate its commitment to sustainability in all business and operational practices.

Some people in the industry claim that operating reclaimers is an expensive and onerous proposition. Aggregate Industries found that selecting the Schwing RA-20 reclaimer with fewer moving parts than other reclaimers greatly reduced the maintenance burden. To manage the intake of waste concrete, Fort Totten has assigned and trained specific employees who can operate the reclaimer. Other benefits of the reclaimer included the reduction of waste and the creation of additional yard space. Previously, the returned concrete occupied a large portion of the yard. Aggregate Industries realized monetary benefits from the resale of the aggregates and sand. Approximately 2,000 tons of aggregate and stone have been recycled from the reclaimer. These measured improvements also play an integral part in the ISO 14001 certification for the plant.

Through examining and reducing both these significant operational costs, the Fort Totten plant has added to its margins and subsequently improved its economic performance. These double-edged benefits serve as a driver for the construction industry as it makes major inroads to improving self sustainability and at the same time not harming its competitiveness in an increasingly aggressive market place.
One morning at the airport, I overheard an employee talking about her new boss. “He's a nice guy,” she said. “He makes me feel good about working here.”

Like many employees, this young woman is more influenced by her boss’ “soft” skills than his technical skills. His interpersonal skills were what mattered most, including his ability to communicate, motivate and showing genuine concern. These interpersonal traits influence people to decide to quit or stay. When a manager lacks these skills, or actively cultivates their hard-edged opposite, workers who have choices will jump ship or lower their productivity.

I experienced this myself when I went into the military service right after college. My boss was a special person — a great boss. An experienced veteran and a former Special Forces medic, he was the type of person who always put the needs of others before his own.

One night I pulled duty that required me to stay up all night on New Year’s Eve. It was a night that seemed would never end. I was tired and miserable. Saturday morning, when I still had several more hours to go, the phone rang. It was Joe, my boss. He asked if I had plans for lunch and that his wife had made something and wanted to bring it over to me. While I don’t remember what food they brought, it was a meal I never forgot.

That one small act of kindness showed me he cared. It taught me more about leadership than all the degrees and diplomas hanging on my wall. It confirmed the truth of the old military saying, “If you take care of your troops, your troops will take care of you.” It’s still true today, no matter what kind of business you are in.
Soon after my boss treated me to that special meal, he gave me the worst chewing out I’d ever had. I had done something to deserve it. It hurt more — and made a deeper impression on me — because of the respect I had for him. When you respect someone, you always value what he or she has to say.

Businesses that do a good job selecting, training and developing managers will enjoy higher productivity and lower turnover. While it’s hard to measure the impact soft skills have on productivity, I strongly believe an employee who feels good about working for a company or a boss will want to contribute much more than the minimum acceptable level.

In the years I led people, I never met an “average” worker — only people I saw the potential to become much better. I think it was General Omar Bradley who said, “There is no such thing as bad soldiers, only bad leaders.” Sure, the workplace has its share of problematic and difficult-to-manage individuals. There are many bad managers. But what I notice is that good managers are able to transform difficult people into better people. Exceptional workers have exceptional managers as their leaders. The only difference between the two groups is the quality of the leader.

I imagine my first boss saw me as an “average” individual with a short attention span, high maintenance, inexperienced and scattered brained. Fortunately for me, he took the time to train and develop me, even though it often frustrated him. He was a true leader. He understood that leadership of people is a transformation process, and with the right tools and a willing attitude, he could make the transformation happen.

Greg Smith helps organizations accelerate workplace performance. He is a nationally recognized speaker and author. He has written five books, including his latest, Here Today, Here Tomorrow: Transforming Your Workforce from High Turnover to High Retention. Greg has been featured on Bloomberg News, PBS television and in publications including Business Week, USA Today, Kiplinger’s, President and CEO and the Christian Science Monitor. He is the president of a management-consulting firm, Chart Your Course International, in Atlanta, Georgia. Phone him at 770/860-9464. More articles available at www.chartcourse.com.
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The Solution: A Business Dashboard

If your car (and mixers) have dashboards warning you of problems before they disable the vehicle, then your business should have a business dashboard. A business dashboard is a centralized reporting mechanism that provides real-time performance feedback about activities that are critically important to helping a company achieve specific goals. Real-time feedback gives decision makers the opportunity to react to issues before they become problems.

Many businesses currently measure business success by relying on a simple formula:

\[ \text{Revenues} - \text{Expense} = \text{Profit} \]

While profit is critically important to the success of a business, it is also a lagging indicator. By the time you have this information, it has already happened and it is too late to react.

If you want to impact success, you need to shift your focus to a different and equally simple formula:

\[ \text{People} \times \text{Process} = \text{Profit} \]

Your people and your processes are the drivers of business success. Measuring people and process provides a window into future outcomes and are therefore leading indicators. Think of people and process as the cause and revenue and expenses as the effect. If you want to change the effect, you have to change and manage the cause.

Building Your Dashboard

Even before you construct a dashboard, you need to have a sense of where you are going. In five years, you’ll arrive. The question is where. Perhaps you hope to double your number of plants and triple your revenue. Perhaps you want to sell the company and retire. Having this vision impacts the kind of dashboard you need to build.

Once your vision is complete, there are four steps to building a business dashboard that will give you relevant and timely information to manage your business:
Step 1 — Collect Data

Ready mix operations produce a tremendous amount of data every day. For example, the dispatch ticket usually captures the following data:

- Date
- Customer name
- Job name
- Driver name
- Truck number
- Mix
- Admixtures
- Surcharge
- Yards

Batch computers also capture data:

- Batch number
- Targeted tons of cement
- Actual tons of cement
- Targeted tons of gravel
- Actual tons of gravel
- Targeted tons of sand
- Actual tons of sand
- Targeted gallons of water
- Actual gallons of water

Other systems collect data every day:

- Accounting
- Payroll
- Maintenance
- Customer Management

Once you have a clear vision and a plan to achieve your vision, you need a filter to help you sort through the enormous amount of data your operations generate on a daily basis. Doing this allows you to focus on the data that is most critical to your company.

Without a filter, it is easy to become overwhelmed with the volume of data you generate each day.

Looking at all of this data without a filter would lead to overload. Instead, focus on a specific goal and see which data is relevant. For example, if your goal is to improve cash flow, you would look at these indicators:

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of Capital</td>
<td>(Cost of Acquisition - Mgmt Mix) / Revenue</td>
</tr>
<tr>
<td>Net Profit</td>
<td>(Sales - Cost of Acq) / Average Sale</td>
</tr>
<tr>
<td>Gross Margin</td>
<td>(Sales - Cost of Acq - Mgmt Mix) / Average Sale</td>
</tr>
<tr>
<td>Margin</td>
<td>(Net Profit / Sales) x 100</td>
</tr>
<tr>
<td>Average Sale</td>
<td>(Sales / Number of Units)</td>
</tr>
<tr>
<td>Net Profit New product development</td>
<td>(New product development - Sales) / Avenue Sale</td>
</tr>
<tr>
<td>Customer Frequency</td>
<td>(Customer Frequency / Average Sale)</td>
</tr>
<tr>
<td>Cycle Time</td>
<td>(Cycle Time / Average Sale)</td>
</tr>
<tr>
<td>Credit Memos</td>
<td>(Credit Memos / Average Sale)</td>
</tr>
<tr>
<td>Quality Control</td>
<td>(Quality Control / Average Sale)</td>
</tr>
<tr>
<td>On time arrivals</td>
<td>(On time arrivals / Average Sale)</td>
</tr>
<tr>
<td>R and D</td>
<td>(R and D / Average Sale)</td>
</tr>
</tbody>
</table>

If the goal is to increase market share, a different set of data would be examined:

While going through this process, there are several things to keep in mind:

1. Start with a baseline. Without a baseline in place, you can’t easily set reasonable targets. For example, NRMCA’s annual Industry Data Survey is a good starting point. The survey summarizes both financial and operational data reported confidentially by producers throughout the United States.
2. Standardize performance data. Performance needs to be standardized for the data to be consistent. For example, if you have five dispatchers issuing tickets and they all do it differently, how will you ever determine what your best practices are?

...you need to have a sense of where you are going. In five years, you’ll arrive. The question is where.
A ready mix producer might have the following touches for one order:
• Customer phones in order
• Dispatcher takes order
• Dispatcher enters order
• Dispatcher assigns load to driver
• Driver delivers load
• Driver obtains signed delivery ticket
• Billing prices out tickets
• Billing invoices customer
• Customer pays invoice

How well the company performs each of these steps in the sales cycle has a significant impact on operations.

ii. Process mapping. This is similar to the cycle of customer interaction. Process mapping is linear and is designed to develop a detailed map of a particular process, especially if it has been determined to be critically important or problematic. For example, a producer may determine that it is having too many rejected loads. Identifying each step in a linear map may help identify areas for improvement.

iii. Construct a hierarchical view. Examine your business to identify your performance areas. Most producers typically have four major performance areas:
• Finance — all activities relating to the financial aspects of the business, including accounts receivable, accounts payable, payroll, financial reporting and banking.
• Operations — all activities relating to the development, production and delivery of concrete, including manufacturing processes, inventory management, quality control, order processing and delivery.
• Customers — all activities relating to the acquisition and retention of customers, including marketing, sales and customer service.
• People — all activities relating to hiring, training, managing, growing and developing people.

The producer then needs to identify the critical success factors relating to each of these areas. Key performance indicators are linked to the critical success factors, then identify the activities that have an impact on the key performance indicators.

For example, a critical success factor for finance could be cash flow. One of the key performance indicators for cash flow could be days’ sales in accounts receivable. The producer could set a goal of reducing days outstanding from 65 days to 47 days.
Activity measures that could be tracked would include the time it takes to get billings out and the accuracy of billing statements. Visually, this could look like the following:

### Finance Example:

![Finance Diagram]

**Critical Success Factor:** Cash Flow

**Key Performance Indicators:**
- Receivable Days (Goal: Reduce A/R from 65 to 47 days)

**Activity Measures:**
- Time it takes to get billing out (Goal: 24 hrs.)
- Errors in billing statements (Goal: 98% accuracy)

By using these different tools, you can start pinpointing the data that will you need to construct your dashboard.

**Step 2 — Organize Information**

Once you have figured out which data is most relevant to your goals and your pressing needs, the next step is to construct your business dashboard so you can access the information you need to manage your business more effectively.

There are numerous ways to create a dashboard. For example, you might construct a dashboard to track your daily yardage by plant, along with other key information such as top jobs, trucks used and yards per hour.

To build the report, you have to know where to find the data. In this case, most if not all of the data can be found in your concrete operations database. Driver hours might be in the same database, or might be in a database from your timekeeping system. As long as your database is ODBC compliant (for Open Database Connectivity), you can access your data and manipulate it. You could construct a database in Microsoft Access that queries the raw data and then perform needed calculations. For example, to calculate average load, you need to first have the database determine the total yards and the total number of loads. From there, it is simply a division calculation. Fortunately, the major software vendors, including Systech, GivenHansco and Command Alkon, use databases that are ODBC compliant.

Once you have your data in place, you then need a way to display it. By using these different tools, you can start pinpointing the data that will you need to construct your dashboard.
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This report was done at an overall level on a specific plant basis. You may also wish to get more detailed. Yards per hour is a key productivity measure in the concrete industry and can be calculated on a per driver basis. You can also use a Crystal Reports feature called Conditional Formatting to make values below a desired benchmark stand out. In this report, drivers with yards per hour less than 3.00 appear in red. Having this information available allows you to both let the employees who can control these results know what is expected and measure their progress against the standard.

Regardless of the nature of the dashboard, you will get the benefit of a centralized view of your information as opposed to a more fragmented view.
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Once you have successfully built your dashboard, improved your processes and set new standards, it is time to repeat the process.

Step 3 — Knowledge Through Analysis

Now that you have a dashboard, you can determine if you are on target to achieve your goals. If not, the dashboard should highlight the areas that are underperforming. You then can ask a key question:

Is it a People or Process Issue?

To do this, you need to keep asking questions. For example, say that yards per hour is below the desired benchmark. Questions you could ask include:

• How is yards per hour now as compared to the recent past?
• If there has been a change in performance, what recent people or process changes have occurred?
• Does it happen systematically? In other words, is yards per hour falling short of desired levels regardless of the people involved?
• Can the problem be tied to a specific trend? Does this occur only on days when there is a specific job type?

For example, you may find that yards per hour is down on days when there is a greater percentage of drivers with minimal experience. The response could then be to improve your training process. The possibilities are endless.

Step 4 — Applied Wisdom

Now that you have been collecting, organizing and analyzing data, it is time to act. You have identified the factors that are hurting yards per hour. Now apply wisdom to test new strategies to improve the weakness. Once you have identified the better strategy, that strategy then becomes your new performance standard.

The Next Step

Once you have successfully built your dashboard, improved your processes and set new standards, it is time to repeat the process. Continually review your processes to see if there is yet another better way to do something. Only then can you answer the question “how high is high?”

Ungar is a frequent speaker at NRMCA’s Business Administration Conference and an instructor of NRMCA’s Financial Management Course. For more information, Ungar can be contacted at 248/341-1263 or via email at jmungar@maddoxungar.com.
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Assessing the Quality of New Hires: It’s Too Expensive to Not Crunch the Numbers

By Eileen Dickson, Director of Education, NRMCA

Studies show that to replace a person is a minimum of 150 percent of the employee’s annual compensation figure. And for managerial and sales positions, that can run 200-250 percent of annual compensation. So once a producer brings a new employee on board, many wonder how they can measure if recent hiring efforts are successful; that is, are the people hired succeeding on the job? Many companies are not sure how to go about the analysis, and when it is not ascertained, they open themselves to post-hiring employee litigation issues. There are basic guidelines companies can follow.

One of the few things that human resource specialists, hiring managers and recruiters agree on is that “quality of hire” is an essential recruiting metric. However, when asked what it means, answers vary; yet when those metrics are agreed upon, they should be clearly laid out in a job description document. The document should be given to those interviewing for the job in a job description format, and when hired, recovered in detail by the employee’s new boss, including expectations by both parties within specific timeframes.

The key points that should be covered are as follows:

• **Goal Completion.** Too often, employers don’t establish with their new hires what they expect them to accomplish during the first 30-90 days on the job. This is particularly true for white-collar workers. Based on the job description used in the hiring process, the supervisor with his/her new hire should arrive at mutually agreed upon goals. The goal can involve measures of quantity, quality or a combination of the two. For example, a ready mix salesman might be required to make one cold call a week, whereas the producer’s IT administrator must execute specific routine security checks daily. The more specific and measurable standards are, the fewer disagreements and arguments.

• **Capacity.** A producer might expect an experienced dispatcher (who is not batching) to handle 15 trucks — take orders, schedule and track the trucks, capturing all truck status times. That translates to an estimated 120 phone calls a day/60 loads/30 orders. A producer should analyze what a typical new dispatcher can handle during the first month or 90 days and communicate the requirements to new hires, which would be different than someone with experience.

• **Motivation.** Management should note if...
the person is interested in his work. Does she come to work on time and appear motivated and energetic? Though subjective, it is possible to provide managers a framework for measuring motivation by creating a list of specific criteria that describe such abstract words as motivation. If an employee, for example, asks to take on more responsibility or wants to know more about a subject or about the company, that might indicate a high level of motivation.

- **Knowledge and Skills.** Study after study reports that it is rare for a company to hire someone then fire them for a lack of skills. What does happen is that people are hired who exaggerated their skills to be greater than they are. Therefore, it’s wise to use objective measures such as a skills test both pre-hire and post-hire. The one drawback? Some resent taking these tests, especially after they have been hired.

- **General Performance.** It is important to know whether a new hire is performing on a par with others in the same job. Although it’s next to impossible to eliminate subjectivity, metrics and measurement standards certainly help. For white-collar workers, peer review and 360-degree performance reviews can help an organization achieve more objectivity. For example, in a QC lab, the manager might ask all 10 people in the department to rate the new technician after 30 or 60 days and look at the resulting profile, which can eliminate the bias a single person might have.

- **Problem-Solving Skills.** Every job at a ready mixed concrete facility requires some ability to analyze and solve problems. A supervisor should note if a new employee can solve basic problems without much input after initial training. For example, if after being shown a number of times how to do a pre-trip inspection, a new driver continually asks the same procedural questions, then he or she may lack the required problem-solving skills.

- **Experiential Contributions.** Some people are unable to apply what they’ve done at previous jobs to a new position. The ability to bring knowledge to the job based on learning from past jobs is a key factor in measuring a new employee’s value. For example, a former police dispatcher should be able to adapt to a ready mixed producer’s environment. Again, there’s a certain amount of subjectivity involved in such assessments, though it’s possible to rate workers on the basis of key criteria or through a peer-review process.

- **Customer Compatibility.** In some sectors, such as sales, dispatch and drivers, it’s essential to track the number of complaints from customers about a new employee and the seriousness of the complaints. A simple customer survey can go a long way toward understanding performance issues. If serious problems arise, a follow-up call to the customer can provide useful information.

- **Work-Group Compatibility.** In recent years, getting along with others has become a key factor to function effectively within a work group. Handling an appropriate workload and meshing with the group’s culture is critical. If a person can’t amalgamate with the work team, huge problems can ensue. In some cases, a person’s skills and knowledge make them an excellent employee yet they do not fit a particular work group. It’s important to match the person to the right group since good employees sometimes get fired because the organization assigns them to the wrong work group and isn’t willing to make the necessary adjustments.

- **Organizational Compatibility.** The most important compatibility issue is centered on the individual’s fit with the producer’s culture. Sometimes if a person does not fit, he or she would be transferred to another plant. However, if an individual doesn’t fit into the producer’s overall culture, he or she might not be the right match no matter what plant they work from. Experts recommend attitudinal surveys administered during the hiring process to reduce friction down the line because they increase the odds of a new employee succeeding.

- **Change/Learning Attitude.** Employees who can adapt — and make a concerted effort to constantly learn new skills and upgrade their knowledge — are more valuable and more likely to succeed. This is critical in today’s concrete world of fast-paced mergers and acquisitions. Since the capacity to change isn’t easy, many companies try to measure that capability in the interviewing process. Another method to determine if an employee is malleable is to conduct an attitudinal survey after the employee’s first 30 to 90 days.


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*Concrete InFocus* | 55
Drum Chipping, No Entry Allowed! New Technology Looks Promising

By Gary Mullings, NRMCA Senior Director of Operations and Compliance

A recent news release went something like this: ... ready mixed concrete producer assessed nearly $500,000 in fines, in part related to drum chipping procedures. OSHA notes that the producer has willfully failed to provide audiometric testing for employees exposed to excessive noise; provide medical evaluation, fit testing and training to employees required to use respirators; and ensure that employees using respirators are clean shaven... The concrete producer has expressed interest in working with OSHA staff to improve protection measures for workers assigned to mixer drum cleaning and chipping, plus other plant procedures that led to the citations.

There are more and more pressures being placed on ready mixed concrete producers when it comes to drum chipping. The list of issues include crystalline silica exposure, drum ventilation, respirator programs, personal protective equipment, lock out tag out, heat stress, confined space permit, entry declassification and the list goes on and on.

New technology to the rescue?

Last October in San Antonio, a “standing room only crowd” at NRMCA’s OES Forum & Expo listened intently as Scott Boos, president of Blasters Inc., talked about a developing technology that could clean hardened concrete from inside a ready mixed concrete truck drum without the need for worker entry. The new technology uses an automated process that employs high pressure water to cut through the hardened concrete without damaging the steel drum. The equipment is controlled remotely by an operator using a hand-held wireless device. An articulating high pressure water nozzle, which is attached to a boom, is directed inside the drum. With the mixer in the charging mode, the boom is slowly extracted with all water used (about 600 gallons) being contained in the drum. The cleaning process takes about 30-45 minutes. The trick is to get the water pressure and volume just right. A prototype machine was displayed in Tampa at the Florida Ready Mixed Truck Driver Safety & Skills Competition last November. According to Boos, the system not only will lower the extreme liabilities a producer incurs using traditional chipping methods but will also have an added advantage of lower collateral damage to the drum and blades compared to typical cleaning with a pneumatic chipping hammer.

And now to get the technology to the marketplace, Boos says the machine will begin its “national tour” with drum cleaning demos coming to a city near you in 2006. For more information, contact Boos at 800/327-6799 or on the web at www.blasters.net.

Q

All my employees are informed of our company’s safety and health policies and are trained in the proper use of safety equipment. However, I have noticed certain employees ignoring the policies and have had to continually remind them. They are good employees otherwise, but I am concerned about their safety and about the company’s liability. How should I handle this? Does OSHA fine the individual employees in these cases?

If you are inspected and fined by the Occupational Safety and Health Administration (OSHA), you, as the employer and company owner, will be fined, not the individual employee. As the employer, it is your responsibility to ensure that your employees follow safety and health procedures and emphasize that following safety procedures is part of the job. In developing company policy on safety and health procedures, stress that employees will be held accountable if they do not properly follow such procedures and include potential consequences for failing to do so. Illustrating examples such as pictures or descriptions of what could happen to them if they do not follow proper procedure may be motivating. Stringent penalties for repeated offenders should be implemented in company policy and followed through in a consistent manner.

Please note: The column contained here should in no way be considered a substitute for competent legal counsel. It is only meant as a guide to help employers know when it is necessary to consult an attorney on issues pertaining to labor-management relations and other workplace issues.
Best Sellers from the NRMCA Bookstore

1. 2PCIP100 — Concrete In Practice Package — Concrete in Practice Sheets are short 1-page discussions on various concrete topics and are written in a “What? Why? And How” scheme and are intended to provide information in a non-technical format. The CIP topics are researched and written by members of NRMCA's Research Engineering and Standards Committee. These are a great resource to give to your contractors and customers. English CIP Full Set 2PCIP100 - contains 20 sets of each CIP topics 1-38. Spanish CIP Full Set 2PCIPS100 - contains 20 sets of each CIP topics 1-36. ($200 members, $750 non-members); English Single Set 2PCIPS - includes 12 ASTM Standards for Concrete (2PCIPS). ($25 members, $100 non-members.)

2. 2P170 — ASTM Standards for Concrete Technician Certification — Includes 12 ASTM practices and test methods related to testing fresh and hardened concrete, including those required for ACI grade 1 field-testing and strength testing technician certification. Sampling concrete - ASTM C 172 * Strength testing standards - ASTM C 31, C 39, C 78, C 617 and C 1231 * Air content tests - ASTM C 173, C 231 * Slump - ASTM C 143 * Density - ASTM C 138 * Temperature - ASTM C 1064 * Specification of Ready Mixed Concrete - ASTM C 94 . This compilation was reprinted by ASTM in January 2006. ($25 members, $100 non-members.)

3. 2PRV029 — Road Call (for RM Trucks); 2PRV029T — Road Call (for Dump Trucks) — This video lesson demonstrates the proper, safe and legal procedures to participate in the event of a mixer truck being disabled along a roadway. 13:45 min. ($70 members, $90 non-members.)

4. 2P159 — Concrete Plant Operator's Manual — Jointly prepared by the Concrete Plant Manufacturers Bureau and NRMCA, this manual is a comprehensive guide for the batch plant operator. It includes valuable information on materials, batch tolerance and aggregate moisture, calculations, plant maintenance, safety and more. ($23 members, $92 non-members.)

5. 2PLEED — LEED Reference Guide — Much new public construction, and more and more private sector construction is now required to be LEED* Certified. This guide will help you educate specifiers about the energy saving and pro-environmental benefits of concrete and how it may fit into projects that are to be LEED Certified. It also supports your profitability with information to help you improve your business and concrete's environmental performance. *LEED, the Leadership in Energy and Environmental Design® program is designed to promote the construction of high-performance, sustainable buildings. (1-5 copies $48 each; 6-25 copies $30 each; 26-50 copies $20; 51 or more copies $10 each; members and non-members.)

6. 2PRV032 — Back the Truck Up (for RM Trucks); 2PRV032T — Back the Truck Up (for Dump Trucks) — is designed to help stem the rising tide of backing accidents. The video begins with the demonstration of an effective jobsite survey focused on securing each of the seven zones identified within a truck’s “Sphere of Safety.” From there, the lesson moves on to providing your learners with a series of step-by-step procedures designed specifically to help our concrete delivery professionals safely do what they spend so much time doing — backing their trucks up. 18 min. ($70 members, $90 non-members.)

7. 2PR188 — Truck Mixer Driver's Manual — This manual educates truck mixer drivers about concrete and customer relations. It also highlights driver duties, safety precautions, equipment inspection and maintenance procedures, and what the driver should do in case of an accident. This 64-page manual is easy to understand and contains common sense information every driver should know. ($12 members, $48 non-members); (20 or more copies $10 members, $40 non-members.)

8. 2PRV035 — Get In Touch with Your Truck (for RM Trucks); 2PRV035T — Get In Touch with Your Truck (for Dump Trucks) — The most frequent and costly accidents plaguing our industry are slips, trips and falls from ready mix trucks. This lesson identifies the four areas on trucks where these types of accidents are most likely to occur, followed by techniques and unique devices that help reduce risk. The lesson also outlines the insurance, downtime and other financial costs of injuries. It’s a "must have" for your training library. 12 min. ($70 members, $90 non-members.)


10. 2PPB50 — Pervious Concrete: When It Rains, It Drains (Pkg. of 50) — As customers and influencers in every part of the country are under increasing pressure to move toward increased sustainability, the many “green” and economic advantages of pervious concrete are attracting more and more attention. This promotion brochure, developed through the NRMCA-sponsored Concrete Collateral Working Group and targeted to owners and architects, clearly makes the case for pervious. As interest in pervious continues to grow, these brochures should be left behind on every promotion and sales call. ($57 members, $57 non-members.)
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