THE AGGREGATE

3rd Quarter 2013

International Concrete Repair Institute Baltimore Washington Chapter, Inc.
www.icribwchapter.org

REPAIR OF CONCRETE STRUCTURES UNDER CONSTRUCTION

By Bud Earley

Cementitious concrete repair mortar applications

One might think that concrete repair is limited to existing structures that have matured or aged prematurely with help from Mother Nature or other outside influences. If we take a closer look at newer construction, we will see that there are a considerable number of structures in need of concrete repair.

If concrete is the most durable and widely used construction material in the world today, why does it seem to go bad so quickly? Two probable reasons for this are 1) inflicted causes; and 2) environ mental causes.

1. Inflicted causes are problems created by human error. For example:

- Low concrete strength: If too much water is added at the batch plant or on site to improve workability, the strength of concrete will suffer;
- Inadequate concrete cover: Sometimes reinforcement steel may not be secured properly. It may move during placement of the concrete, or the forms may move, causing the steel to lean against the form with only a thin layer of cement paste covering it;

see Repair - page 4

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CHAPTER OFFICERS

THE AGGREGATE INSIDE

BALTIMORE WASHINGTON DC CHAPTER

ICRI MISSION STATEMENT

The mission of the International Concrete Repair Institute is to be a leading resource for education and information to improve the quality of repair, restoration, and protection of concrete and other structures in accordance with consensus criteria.

ICRI is an organization composed of Engineers, Consultants, Contractors, Manufacturers and other Material Suppliers, Property Managers and Owners all working together for the betterment of the industry and of all involved. Providing an open forum to speak about our work, new technologies and methods, exchange ideas.

Creating and following standards to produce the best results for all involved.

PRESIDENT'S MESSAGE

Dear ICRI-BW Chapter Members,

WOW! This year has gone by fast, I can't believe it's August already! The year is more than half over. Before you know it, Thanksgiving and Christmas will be around the corner again. Get your vacations in before you realize the year is gone. At least football season will be starting soon so get your fantasy teams ready.

Our May dinner meeting featured Patrick Morrissey who gave a lively presentation titled "Terra Cotta". The presentation gave those in attendance a better understanding of the origin, replacement vs. repair, anchoring systems and various materials which comprise terra cotta. The dinner meeting was well attended and enjoyed by all. Please be sure to mark your calendars for our upcoming September dinner meeting which will be held on Thursday, September 12th. The venue will be Snyder's Willow Grove in Linthicum, Maryland, with the social hour beginning promptly at 5:30 PM . The topic for the evening will be on a variety of sealants utilized in our industry, from urethanes to silicones and beyond, and addressing their strengths and limitations, appropriate applications, life expectancy and much more. Case studies will illustrate successful installations as well as ill-conceived installations resulting in failures. A copy of the meeting flyer with additional information is included with this edition of the Aggregate and can also be found on our website at http://www.icribwchapter.org/. Please feel free to invite others that you feel would benefit from the presentation. Potential new members are always welcome.

Our key programs continue to move forward. We will again this year perform volunteer work at the Garrett County Habitat for Humanity location and attempt to also assist the local Habitat for Humanity in either Washington, DC or Montgomery County, MD. This community service program has grown and prospered as a result of the many volunteers that donate their time and skills. I am extremely thankful to those ICRI members that have provided support over the years to this worthy cause.

Our scholarship program is moving forward and will be awarding funds to worthy students as well as ICRI members that are continuing their education.

Our Chapter will continue to be busy during the Fall. Upcoming events that you should put on your schedule include:

- The 22nd Annual Golf Outing which will be held on October 3rd at Glenn Dale Golf Club. Jay Whitton and Pat O'Malley will be organizing the event this year. Begin to organize your foursomes today. This will be a great opportunity to sharpen your golf game before you attend the Fall Convention.
- ICRI-BW Chapter Outstanding Project Awards - Many of you have completed interesting projects during the last year. This program provides you with an opportunity to share the challenges, successes and accomplishments of your project with your colleagues. Applications are due September 13th and the top three projects will be presented at the November dinner meeting. Please contact Oscar Valenzuela by phone at 301-881-1441 or e-mail at oscarv@skaengineers.com for information.
- ICRI National will be holding the Concrete Slab Moisture Testing Program on October 8th & 9th in Baltimore, MD. More information can be found at http://www.icri.org/Certification/CertificationInfo.asp
- The November dinner meeting will be held on Thursday, November 7th, at which time we will hold the 9th Annual Baltimore Washington Outstanding Project Awards Program.
- The ICRI National Fall Convention is scheduled for November 13th to 15th, 2013. The convention will be held at the Fairmont Chicago, the location of the original National ICRI Convention. The topic for the convention is "Looking Back". Pack up the golf clubs and get in a few rounds between technical sessions. Registration information can be found at www.icri.org.
- The Annual Fall Seminar will take place on December 5th, 2013. More information to follow.

Finally, the success of our programs is dependent upon participation from our membership. Elections for new Board members will take place this fall. The Board is always looking for new members to serve on the Board. This is your chance to volunteer and make help to improve our Chapter. Pat O'Malley, our 2012 Past President, is the chair of the Nominating Committee and is taking nominations for candidates. Please contact Pat by phone at 410-298-2669 or e-mail at pomalley@c-p-rinc.com if you want to be considered.

As you can see, we have a full agenda between now and the end of the year. Let's make sure we continue to have fun!

If you have any questions, comments or suggestions, please feel free to contact me by phone at 240-876-8716 or e-mail at oscarv@skaengineers.com .

Thank you and I hope to see everyone at our next dinner meeting.

Oscar A. Valenzuela, Jr.

2013 ICRI-BWC PRESIDENT
Smislova, Kehnemui & Associates

THE BALTIMORE WASHINGTON CHAPTER OF ICRI

Thursday, September 12, 2013

Snyder's Willow Grove Restaurant
841 Hammonds Ferry Road
Linthicum, MD 21090
410-789-1149
Exit 8, I-695

Members by 09-04-13:	$50
Non-Members & Members After 09-04-13:	$60

4:00	Board Meeting
5:30	Social Hour
6:30	Dinner & Presentation

"SEALANTS"

OUR FEATURED SPEAKER

Brian J. Iske
Willseal LLC

Brian Iske is the President of Willseal, LLC He has a Bachelor's degree in Business, and is a graduate of Iowa State University.

He has been involved in the construction and rehabilitation industry since 1979.

He was hired as De Neef's first United States sales representatives in 1982. He worked as Sales Manager, developing a national sales network and eventually became co-owner of De Neef in 1995. He purchased the balance of the company in July 2002 and moved into the role of President and Vice Chairman. Brian departed De Neef at the end of December 2012.

Brian acquired Willseal, LLC in January 2013 in order to grow the Willseal brand of pre-compressed sealants in the North American market. Brian first worked with Willseal USA in the late 1980's and 1990's prior to his purchase of De Neef.

Brian maintains a strong commitment to quality, service, and customers. With more than 30 years of experience Brian is an aggressive entrepreneur with the vision and drive to build a successful construction sealants company and brand.

OUR FEATURED PRESENTATION

This presentation focuses on

SEALANTS:

- ***The variety, from urethanes to silicones and beyond;***
- ***Their strengths and limitations;***
- ***Appropriate applications;***
- ***Life expectancy and much more.***

Case studies will illustrate successful installations as well as ill conceived installations resulting in failures.

REGISTRATION DEADLINE IS **September 4, 2013** NO-SHOWS WILL BE BILLED

Please email (cindyg@skaengineers.com) or print this page and fax to Cindy Garman, Secretary, at 301-881-8066 no later than September 4, 2013. Checks made out to ICRI BWC may be turned in at the meeting or mailed with your form to:

Cindy Garman, Secretary
ICRI BW Chapter
C/O Smislova, Kehnemui & Associates
12505 Park Potomac Avenue, Suite 200
Potomac, MD 20854

You may also register and pay online at

www.ICRIBWChapter.org

Name: _____

Company: _____

Telephone: _____

Email: _____

Number of Guests: _____ Payment: ☐ Enclosed ☐ Online
(Please include receipt)

Guest Names: _____

_____

Guest's Company: _____

REPAIR

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- Poor construction techniques: Education in industry best practice is vital to successful projects. Often, the people being trained are not the ones completing the task. Sometimes some thing as simple as where to place the welded wire mesh (WWM) in a slab-on-ground can be overlooked; and
- Specifications: Unclear specifications can lead to mistakes in the field. Sometimes old habits are hard to break; and if a change is not clearly defined, misinterpretations can lead to costly mistakes.

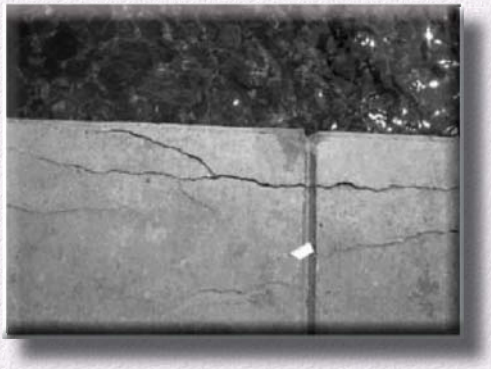
1. Environmental causes are problems created by the environment:
   - Cold weather: freezing and thawing and the limiting effects of cold conditions;
   - Hot weather: early-drying shrinkage and the limiting effects of hot conditions;
   - Chemical attack: material degradation as a result of chemical agents such as bases, salts, and moisture; and
   - Carbonation: the conversion of calcium ions in hardened cementitious materials to calcium carbonate by reaction with atmospheric carbon dioxide.

These causes can lead to problems such as cracking, curling, honeycombs, or voids.

Concrete Cracking

Concrete contracts and expands with changes in moisture content and temperature, and it deflects depending on load and support conditions. There are many different forms of cracking to deal with on a daily basis. Some of the more common types of cracks are plastic shrinkage (which appear on the surface of freshly placed concrete during finishing or soon after), drying shrinkage (shrinkage tendency is increased by drying and/or a drop in temperature and can lead to random cracking), and settlement (nonuniform support of footings or occasionally from expansive soils).

Poor cover over reinforcement leads to carbonation and chloride attack. When ignored, this too can lead to more serious problems with corrosion.



Cracks not addressed ...

...eventually lead to severe damage and extensive repairs

Cracking can also result from others causes:

- Improper joint spacing;
- Poorly prepared sub grade;
- Structural overload;
- Disruption from expansive aggregate; and
- Disruption from corrosion of reinforcement.

Poor Construction Techniques

Lack of supervision on any given day can lead to something small being overlooked or something major not being noticed until it's too late. As mentioned previously, untrained and/or unsupervised personnel can create a major headache when you least expect it.

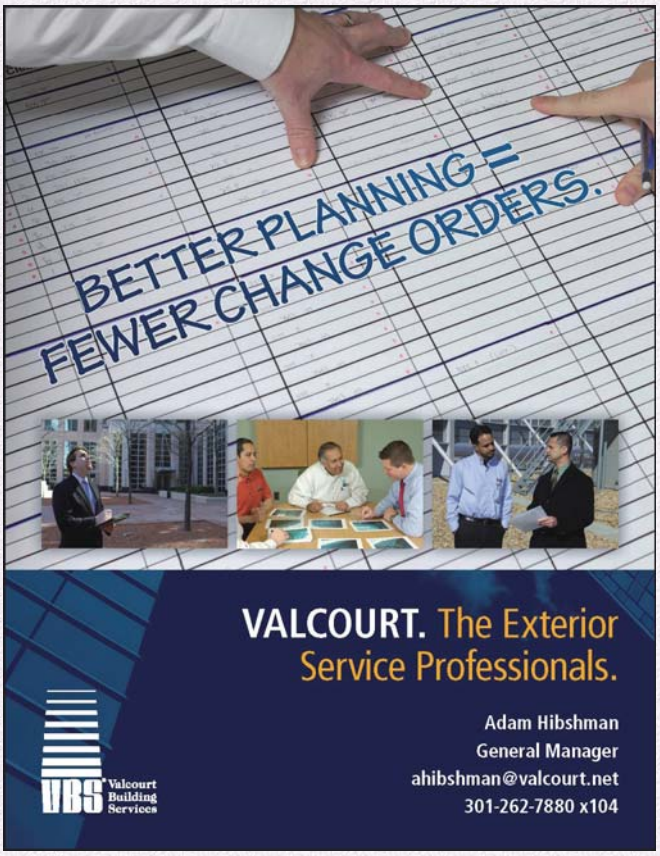
Welded wire mesh is basically used in a slab to help cracking. *If the mesh is placed under the vapor barrier as seen here,* it serves no purpose and the slab-on-ground will most surely crack

Vapor barriers immediately under the concrete may aggravate plastic and drying-shrinkage cracking and slab curling because the bottom of the slab loses little or no moisture while the top dries and shrinks at a faster rate.

Concrete Curling

Curling is the distortion of a slab into a curved shape by upward or downward bending of the edges. Distortion can lift edges of the slab from the base leaving an unsuspended

see REPAIR page 6



2013 JOINT VA. ICRI & APT-DC FALL SYMPOSIUM

FALL SYMPOSIUM / FALL GOLF OUTING
HISTORIC PRESERVATION & RESTORATION

When: Thursday, September 19th , 2013
Where Colonial Heritage Golf
6500 Arthur Hills Drive,
Williamsburg, VA 23188

Virginia Chapter ICRI

APT-DC The Association for Preservation Technology

Mail registration and payment to:

Hank Savedge
Ram Tool & Supply Co.
1901 Roseneath Road
Richmond Va. 23230
work 804-358-3331
work hank.savedge@ram-tool.com
Fax: 804-358-3326

REPAIR

edge or corner that can crack when heavy loads are applied.

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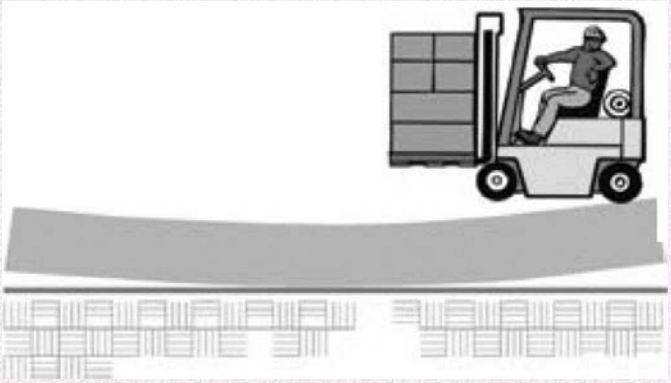
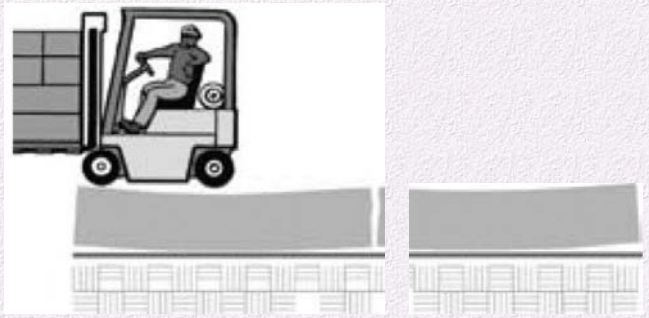




Slab curling

Honeycombs/Voids

Honeycombs and voids in concrete are created when the mortar does not fill all of the spaces between the coarse aggregate particles. This is occurring more frequently because of the changes in structural design and the need to change the concrete mixture design to suit the requirements of the specifications.

Honeycombs/voids

Repairing Cracks in Concrete

Before you begin to repair cracks in concrete, you should answer the question: "What is the purpose of this crack repair?" For example, do you want to achieve structural integrity, focus on aesthetics, seal against intrusion of foreign materials, protect against carbonation, protect against chloride and water ingress; and/or seal in preparation for additional topping material?

Table 1: Tolerable crack widths (ACI 224 [4.4J Table 4.1)

Exposure condition	Tolerable crack width	
	in.	mm
Dry air or protective membrane	0.016	0.41
Humidity, moist air, soil	0.012	0.30
Deicing chemicals	0.007	0.18
Seawater and seawater spray: wetting and drying	0.006	0.15
Water-retaining structures, excluding nonpressure pipes	0.004	0.10

Hairline cracks are often ignored because they are thought of as nonstructural and, therefore, not a threat to the integrity of the structure. As stated previously, if left untreated, hairline cracks will eventually become larger and lead to more costly repairs.

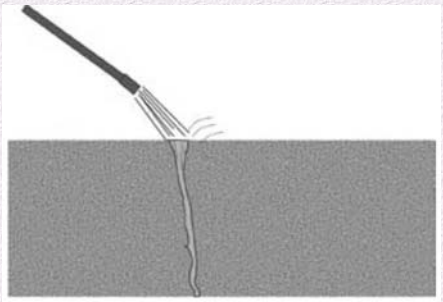
As with all concrete repairs, it is important to identify the cause of the crack. The most common causes of cracking in concrete are settlement, shrinkage, dynamic load, inadequate joint design or spacing, and corrosion.

Flexible sealants and crack fillers are used to seal against intrusion of foreign materials directly into the crack but can often become unsightly.

Flexible sealants and crack fillers are used to detail cracks prior to the application of an elastomeric membrane. This process hides the crack repair, providing a more uniform and aesthetically pleasing finish.

All cracks will have a small percentage of movement due to temperature change. Because cementitious mortars cannot bridge moving cracks successfully, they should not be used as a crack repair.

Until the development and acceptance of epoxy resin injection, most crack repair methods were considered temporary. Epoxies can be used on horizontal, vertical, and overhead applications. Horizontal cracks can be easily filled using the gravity feed method. After proper cleansing of the crack, the epoxy resin is simply allowed to puddle over the crack and soak in until filled.



Blowout crack with oil-free compressed air

see REPAIR page 8

THE 2013 ICRI BALTIMORE WASHINGTON 22ND ANNUAL CHAPTER GOLF TOURNAMENT

Join us **Thursday, October 3, 2013** at **Glenn Dale Golf Club,** 11501 Old Prospect Hill Rd, Glenn Dale, MD 20769. **Registration opens at 7:45am** and our Scramble Format **Tournament begins at 8:45am** with a Shotgun Start. Plan to stay afterward for our **Lunch and Awards Program at 1:30pm**.

Benefiting The ICRI-BW Chapter Scholarship Fund

$500 per foursome or $140 per single golfer registered before September 20, 2013.
$140 for all golfers after September 20, 2013.
Space is limited and the final deadline for registration is September 27, 2013.

PLEASE COPY THIS FORM AS NEEDED
RETURN ENTIRE FORM

Player Name	Company/Firm	Shirt Size/Gender
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Telephone: _____ **Email:** _____

Please make checks payable to ICRI-BW Chapter and mail with entry form to:
Concrete Proctection & Restoration, Inc. • c/o Patrick O'Malley • 6737 Dogwood Rd. • Baltimore, MD • 21207
For more info contact Patrick O'Malley: 410-298-2669 or pomalley@c-p-rinc.com

SPONSORSHIP OPPORTUNITIES

CHECK THE LEVEL IN WHICH YOU'RE INTERESTED
Sponsorships to be committed & **PAID BY** September 20, 2013

_____ **$1,700 Luncheon Sponsor**
Your sponsorship includes one complimentary foursome, your company name on hole signage, an appreciation gift and recognition in the Aggregate Newsletter and at our Awards Luncheon.

_____ **$1,200 Beverage Sponsor**
Your sponsorship includes one complimentary twosome, a sign on the beverage cart and recognition in the Aggregate Newsletter and at our Awards Luncheon.

_____ **$300 Breakfast Sponsor**
Your sponsorship includes a sign in the buffet area and recognition in the Aggregate Newsletter and at our Awards Luncheon

_____ **$300 Range Ball Sponsor**
Your sponsorship includes a sign in the range ball area and recognition in the Aggregate Newsletter and at our Awards Luncheon.

_____ **$250 Competition Sponsor**
Your sponsorship includes Prize for winners & recognition ...

_____ **Longest Drive** - Men / Women (CIRCLE MEN OR WOMEN)
_____ **Closest to Pin** - Men / Women (CIRCLE MEN OR WOMEN)
_____**Straightest Drive**

_____ **$125 Hole Sponsor (enclose business card)**
Your sponsorship includes recognition in the Aggregate Newsletter and at our Awards Luncheon.

Please indicate your sponsorship choices above and fill out the information below.

Company: _____
Telephone: _____ **Fax:** _____
Email: _____
Payment: _____ **Enclosed** _____ **Online** **(include copy of receipt)**

REPAIR

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The preparation of cracks is still a topic of debate. Care needs to be taken in the method of surface prep with cracks. Crack chasing and saw cutting cracks are popular but could pack fines into the crack and block the flow of resin. It is recommended to blowout cracks with oil-free compressed air. This has proven to be the most successful method of crack repair preparation.

For vertical and overhead applications, injection of epoxy resins in concrete has proven to be one of the more permanent methods of repair.

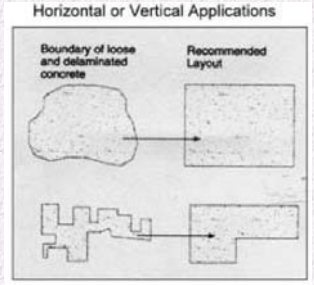
Repairs to Curled Slabs

Curling is where greater shrinkage has occurred on the top of the slab than on the bottom of the slab resulting in the edges of the slab curling upward. This can also cause voids to occur under the slab. Whether this occurs at joints, cracks, or at the slab edges, it is usually necessary to grind the curled edge high points to ensure a level floor surface. The joints and cracks then need to be prepared and filled with the proper materials selected on the basis of the slab usage and location.

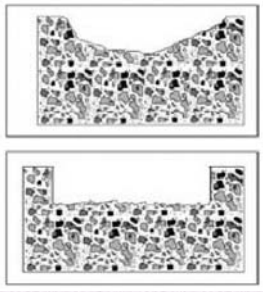
If there is significant curling, it may be necessary to core holes at approximately 30 in. (76 cm) on center, alternating each side of the joint or crack to fill the void under the slab.

Repairing Honeycombs/Voids

Although ICRI Technical Guideline No. 03730 is designed with horizontal repairs in mind, it is also suitable for voids in a vertical application dealing with honeycombs or voids. Voids often occur because aggregate is too large to pass through a condensed area of reinforcement. When forms are removed, large areas without concrete need to be filled.



eRI Technical Guideline No. 03730



Partial depth repair

Product features for filling voids usually include:

- Pourable and/or pumpable;
- Pre-extended with aggregate for deep repairs (up to 6 in. [15 cm]); and
- Capable of flowing to all areas within the form with little to no vibration required.

Avoiding Problems in the Future

One of the best practices in avoiding many mistakes with concrete in new construction is to start with a good concrete specification. Concrete quality requirements include but may not be limited to:

- Water-cementitious ratio: the critical factor in many concretes for watertightness and durability;
- Combined aggregate gradation;
- Air content: mandatory in certain concretes and a significant negative in others;
- Slump: the use of water-reducing admixtures can provide the optimum concrete for most projects;
- Steel and/or synthetic fibers: beneficial in reducing cracking and extending joint spacing; and
- Adherence to industry best practice guidelines, that is, ACI 302.1R-04: understand the key points of joint design and spacing.

Reduce slab curling by equalizing moisture content and temperature between the top and bottom of the slab. Be sure to use concrete with low shrinkage characteristics. Use a permeable (porous) base. Cure the slab well, particularly during the early stages after placement. Understand the parameters by which a vapor barrier is used. Be aware of moisture sensitive flooring products that will be placed over the slab when the structure in put in use.

New construction honeycomb-congested reinforcement. Why didn't a standard mixture work here?

Become familiar with new technology admixtures that are available. When there are congested areas of reinforcement or a substantial distance for the concrete to be pumped or travel within the forms, use a self-consolidating concrete mixture.

A fast-growing technology is the use of macro fibers for replacement of WWM for slab-on-ground construction. They eliminate having the mesh simply rest on the bottom of the slab, tripping hazards over the mesh (safety), *see REPAIR page 10*

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structural

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KENSEAL CONSTRUCTION PRODUCTS

GOLD

CONCRETE PROTECTION & RESTORATION "SAVING THE LIFE OF CONCRETE"

VBS Valcourt Building Services

ETC

Upcoming Chapter Events

Sept. 12, 2013 **ICRI-BWC 3rd Quarter Dinner Meeting**
Location Snyder's Willow Grove, Baltimore, MD

Oct. 3, 2013 **22nd Annual Golf Tournament**
Location Glen Dale Golf Club, Glen Dale, MD

Nov. 7, 2013 **2013 Awards Banquet**
Location The Villa, Beltsville, MD

Dec. 5, 2013 **2013 Fall Technical Seminars**
Location TBD

Upcoming National Events

Oct. 8-9, 2013 **ICRI CERTIFICATION CLASS**
Concrete Slab Moisture Testing
October 8/9, 2013
Baltimore, MD

Nov. 13-15, 2013 **ICRI 2013 FALL CONVENTION**
ICRI Celebrates its 25th Anniversary—"Looking Back"
Fairmont Chicago
Chicago, IL

Mar. 19-21, 2014 **ICRI 2014 SPRING CONVENTION**
Theme TBD
Peppermill Resort Spa & Casino
Reno, NV

REPAIR

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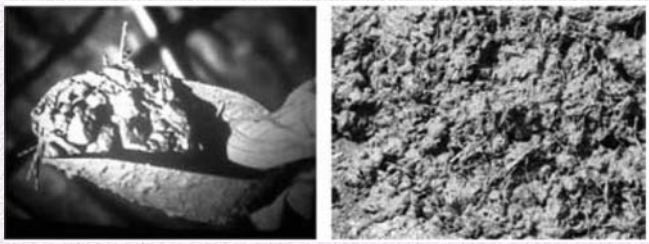
the mistake of placing it in the wrong location (cost of replacement), and fibers are a cost-effective substitute for WWM.

Avoiding poor construction techniques. Where's the mesh?

Unlike conventional reinforcement, fibers are evenly distributed throughout the concrete element.



Fiber-reinforced concrete promotes better control of crack formation and propagation

High-quality, high-performance concrete is being placed daily. All owners want a uniform dense troweled surface with minimal cracking, curling, and no voids! An awareness of building code requirements for reinforced concrete is critical to a successful concrete placement on new construction. Understanding the key requirements of ACI 302.1R-04 and the various advances in concrete technology, that is, self-consolidating concrete and structural macrofibers are just a few things we can do to reduce the number of "Repairs of Concrete Structures under Construction."

This Article is a reprint from the 2008 January/February Concrete Repair Bullettin

***Bud Earley**, FICRI, CSI, CDr, is the Technical Director for Aquafin, Inc. He has over 30 years of experience in concrete restoration, repair, and protection. He is the current President of ICRI National and serves on ICRI's Board of Directors and the Technical Activities Committee (TAC), and is Co-Chair of the Education Committee. Earley is a member of the Construction Specifications Institute (CSI) and is certified as a Construction Documents Technologist (CDT). He can be reached at 410-392-2300 or emailed at bearley@aquafin.net.*

CLYDE'S 35TH 10K RUN

August 6, 2013

Clyde's of Columbia is a restaurant located in downtown Columbia, Maryland. This restaurant in conjunction with Howard County Striders held their 35th Annual 10K run. The event was a full day of fun with music, food, prizes and drinks. The event was attended by thousands of people with approximately 1,800 runners.

ICRI-BW Chapter attended and competed in the festivities with two runners; Past President, Pat O'Malley (Time 55:54.72) and Current President, Oscar Valenzuela (Time 59:22.73). Though Pat out ran me to the finish line, I personally think he cheated, next year I'll make sure to be a little more competitive.

We hope to have more ICRI-BWC members join us next year.

Oscar A. Valenzuela, Jr.
2013 ICRI-BWC PRESIDENT
Smislova, Kehnemui & Associates

ICRI DISTINGUISHED SERVICE AWARD

Acknowledging and recognizing significant contributions which have helped advance the overall mission of the Institute is one of the mandated responsibilities of The Fellows Committee. Each year the committee is tasked with soliciting nominations from our membership to recognize Individuals, Committees or "Ad Hoc" groups who have contributed to the Institute in a "Service above Self" manner.

Nominations for the DSA are open to meaningful and significant actions or activities which, at the local chapter level or the national level, have generated a positive influence to the health and mission of the Institute. An example might be the rejuvenation or a fledgling chapter through the multiple and on-going outreach activities by a single individual to resurrect their chapter. It might also include the impact a local or national committee has on the Institute by championing a certain initiative, such as publications being bi-lingual or generating a certification program benefiting local and national membership.

The nomination submission will be prepared and signed either by a Chapter President or Committee Chair, and submitted to the Chair of the Fellows Committee for review and vote. A copy of the submission will also be provided to CAM (the Institute's management company).The robust and significant contributions of the Individual and/ or Committee will be recognized annually at the Institutes Spring Convention, when they are presented the Distinguished Service Award at the Awards Luncheon.

The criteria for nominations shall be based on the following:

1. The relation of the contribution as it compares to ICRI Goals and Mission statement.
2. The result and significance of the contribution.
3. The time and effort required to achieve the end result of the initiative.
4. The consensus among the Committee members or Chapter BOD on the selection.

The Distinguished Service Award nomination forms can be downloaded from the ICRI website and it is suggested that all Chapters and National Committee Chairs obtain the nomination form, review it and consider a nomination for submission to the Fellows Committee.

Should you have any questions regarding the DSA, please contact Fellows Vice Chair Tom Ouska, at touska@manganaro.com.

2ND QUARTER MEETING WRITE-UP

ICRI – BW CHAPTER

2013 2ND QUARTER DINNER MEETING

MAY 9, 2013

ICRI–BW Chapter hosted its 2nd 2013 Membership Dinner Meeting where 83 participants enjoyed a great topical discussion on Terra Cotta presented by a foremost authority Patrick (Pat) Morrissey, ConSpec Assoc. Inc. Pat's background in restoration began over 35 years ago and includes associations with Cathedral Stone/Jahn Mortars, KEIM Mineral Systems, and ConSpec Assoc., among others. He has served ICRI in many ways including serving on Technical Committees, as a founding member of 3 Northeast chapters and recently honored as a ICRI Fellow for his service.

Pat presented the History of Terra Cotta. Its functional longevity as a building material and the current market place for restoration. Terra Cotta as a manufactured material is NOT an off the shelf product but rather requires extensive time and analysis to create a replacement product that may be incorporated into the repair design, often 6 months to a year ahead of installation. He presented case histories of projects where the original design intent was "removal" of the terra cotta to simplify the repair of a structure but subsequent investigations showed significant price reduction to properly "repair & restore". Preservation is a main element to his way of thinking and the Greening of restoration as a whole. He also discussed the uses of and specifications for anchoring terra cotta that begged the question of WHO, as it pertained to Owner's, Arch./Eng., Manufacturer's or Contractors determines what system is be used during a repair with an understanding that the 1927 Technical Specification for Terra Cotta is still the most commonly referenced source of used in the industry. Interested parties may contact Pat @ pjm@ conspec-rep.com to receive a pdf version for yourself.

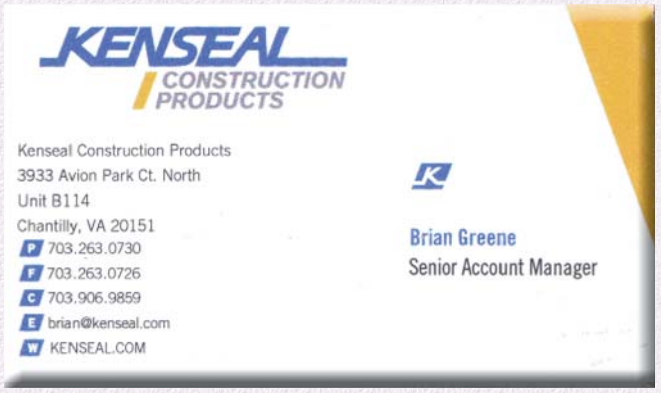
Pat Morrissey

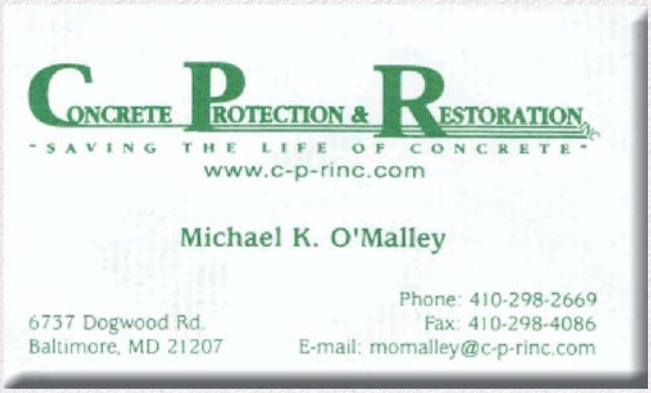
General Assembly

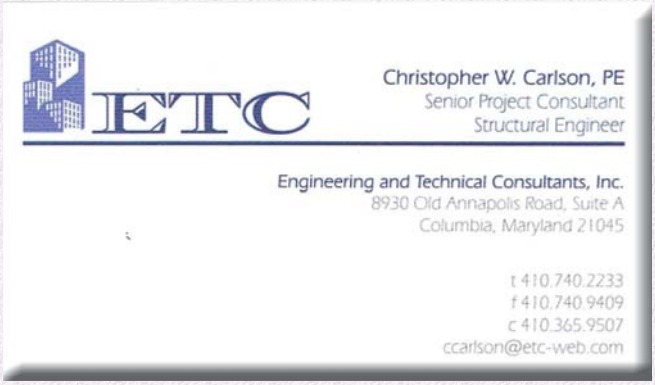
Thank You Pat!

General Assembly

BUSINESS CARD SERVICE DIRECTORY







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