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SPONSORS

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CAUSES AND SOLUTIONS FOR KEEPING CONCRETE RESIDUE OFF GLASS

by Ed McGettigan, Degussa

White deposits on glass can be a problem with concrete buildings, especially if there are flush mounted windows (see figure 1). The problem normally occurs after several years and is characterized by "white water spots" or white powder on the windows. The residue is very difficult to remove requiring proprietary cleaners and excessive "elbow grease". The glass can be damaged either by the deposits or even by the cleaning process. The amount of deposits on the windows is sometimes exasperated after concrete restoration. Leaving the contractor unfairly blamed for the damaged glass.



Figure 1

The residue is normally mistaken for efflorescence. Efflorescence is defined in ACI 116 as "a deposit of salts, usually white, formed on a surface, the substance having emerged in solution from within either concrete or masonry and subsequently been precipitated by reaction, such as carbonation, or evaporation."(1) The logic is that water is absorbed into the concrete, dissolves salts or alkalis, and carries them to the surface. The salts re-crystallize as the water evaporates and the alkalis react with carbon dioxide to form carbonates. The resulting deposits appear similar, but carbonate deposits are more difficult to remove because they are water insoluble.

As a building owner investigates the reason for the white deposits, attention is directed toward the concrete, and efflorescence. Since water is a contributing factor, the first reaction is "Let's seal the concrete". At this point a clear water repellent is applied, normally a silicone, acrylic, siloxane or silane. The owner also uses this opportunity to clean all the windows. This procedure is normally effective for 1 to 2 years. The owner assumes that the water repellent is not working or the contractor misapplied the product. The actual answer is the problem was misdiagnosed.

The white residue on the glass is silicate anions from the surface of the concrete. The distinction between silicates and the above discussion on efflorescence is important. Classic efflorescence does not chemically bond to the glass. It may be difficult to remove, especially carbonates, but it is relatively easy to remove with the proper cleaner. On the other hand, silicate anions will chemically bond to the glass making them extremely difficult to remove.

See Glass Page 3

THE AGGREGATE INSIDE

Removing Glass Residue

The causes and solutions for keeping concrete residue off of glass on buildings.

Continued on Page 3

Safety Column

Learn how to develop a concise and effective safety development manual.

See Page 17

Check Out Our Upcoming Events

Local & National Events

See Page 3

Legal Column

Pay-if-Paid Clause: Contract Mechanism for Shifting Non-Payment Risks

See Page 20

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



Hello everyone! Summertime is in full swing and the scorching heat may be possibly letting up a bit for us. As I look ahead to cooler weather (and football!), I also find myself projecting how to finish out 2016 and starting to plan for 2017. In that spirit,

two of our goals of the chapter this year are to increase membership and also to take back the chapter of the year award. At the beginning of August, the BW Chapter had 186 members (including recently expired members). I would like to officially challenge the membership to sign up any new members prior to the end of the year so that our official membership can grow to above 200. This would be a tremendous success, but will not happen without everyone continually recruiting. Increasing membership is a critical category in the chapter of the year judging, so I think with this increase we will be able to take back the title.

Looking at the events coming up through the end of the year, please see the upcoming events section at the bottom of Page 3. Most notable locally is the awards and election of officers' dinner on November 3rd at The Hotel at Arundel Preserve. Please take note that the submission deadline for projects is approaching quickly. The due date is Friday, September 16th! We are also looking for new faces to join the board of directors. Please let me or another board member know if you are interested in joining the board.

On the national level, the Fall Convention

is coming up on November 9th-11th in Cleveland. The board is looking for a first time attendee to be the BW Chapter delegate. The delegate is eligible for a significant reimbursement on the cost of travel, lodging and registration. Please let me or your favorite board member know if you are going to be attending the convention for the first time and if you would be interested in the reimbursement.

We have some great information in store for you in this issue of the Aggregate. I particularly like the article on keeping residues off glass. That is a bit near and dear to my heart, with Valcourt's window cleaning roots. Also, the Pay-if-Paid article by Jennifer Mahar provides some great info for subcontractors and general contractors, and the safety article by Chuck Brienza on designing and writing a safety program has some great info and sources for guidelines and resources.

As you are sweating away on jobsites (and planning your WR heavy fantasy football team this year), please remember to stay safe and please ask a friend to join ICRI!

Sincerely,

Adam Hibshman

2016 ICRI BW Chapter President
Valcourt Exterior Building Services

CAUSES AND SOLUTIONS FOR KEEPING CONCRETE RESIDUE OFF GLASS

Glass continued from Page 1

Silicate anions are made up of silica, alkali and water. The specific composition and reactivity of the silicate species depends primarily on the ratio of silica, alkali and water. The reactivity of silicate anions can change simply by the way they hydrate and dehydrate. During wet-dry cycles the orientation of the anions is altered and bonding to other silicates surfaces (glass!) can occur. Compounding the situation is that contaminants associated with the concrete or atmosphere such as aluminum and calcium will also make the silicate deposits insoluble.(2)



Removal of silicate deposits is difficult. This is especially true if the cleaning proceeds on the assumption that the residue is "just" efflorescence. Cleaning recommendations and procedures are not in the scope of this article. Recommendations are difficult due to the many glass products found on commercial buildings. It is suggested that you contact the glass manufacturer for cleaning methods.

Once the glass is clean, or as a preemptive measure on new construction, stopping silicate deposits is not easy. It is difficult to completely stop silicate staining on windows. Three methods that can be successful are:

1. Redirect water runoff away from glass surfaces: primarily by installing drip edges on windows.
2. Cleaning windows frequently and using a glass protector treatment.
3. Painting or sealing the concrete.

Drip edges have mixed effectiveness especially during wind driven rain. Other architectural details such as reveals or splays help, but have limitations. Increasing the intensity and frequency of window cleaning is the standard "solution". This adds significantly to maintenance costs.

See Glass Page 5

UPCOMING CHAPTER EVENTS

- | | |
|---------------|---|
| Sept 8, 2016 | ICRI BWC 3rd Quarter Meeting
Topic: Decorative Concrete
Location: Maggiano's Little Italy,
Tysons Corner, VA |
| Sept 29, 2016 | 25th Annual ICRI BWC Golf Tournament
Location: Piney Branch Golf Club,
Upperco, MD |
| Nov 3, 2016 | ICRI BWC Awards Dinner & Board Election
12th Annual Outstanding Repair
Projects Award Program
Location: Hotel at Arundel Preserve,
Hanover, MD |
| Dec 1, 2016 | ICRI BWC Fall Technical Seminar
Theme: Historic Restoration
Location: Baltimore, MD |

UPCOMING NATIONAL EVENTS

- | | |
|-----------------|---|
| Nov 9-11, 2016 | ICRI 2016 FALL CONVENTION
Location: The Westin Cleveland
Hotel Downtown
Cleveland, OH |
| Jan 16, 2017 | ICRI Kick-Off Party
Location: Las Vegas, NV |
| Jan 16-20, 2017 | World of Concrete
Location: Las Vegas, NV |
| March 15, 2017 | ICRI 2017 Spring Convention
Location: Montreal, Quebec |

THE BALTIMORE/WASHINGTON, DC CHAPTER OF ICRI

September 8, 2016

Maggiano's Little Italy
2001 International Drive
McLean, VA 22102
703-356-9000
Tysons Galleria



INTERNATIONAL
CONCRETE REPAIR
INSTITUTE

BALTIMORE WASHINGTON CHAPTER

Advance Reservations by 09-01-16:	\$50
After 09-01-16 & Non Members:	\$60
4:00 pm	Board Meeting
5:30 pm	Social Hour
6:30 pm	Dinner & Presentation

"Cementitious Coatings for Sustainable Concrete Restoration & Protection"
(AIA Accredited #CRP-01)

OUR FEATURED SPEAKERS

George Reedy & Trevor Foster **Crossfield Products Corporation**



George Reedy has over 40 years of experience in the construction industry primarily in the field of concrete production, restoration, waterproofing and protection. He joined the Miracote Division of Crossfield Products Corp. in 2006, and was appointed National Sales Director in March of 2012. A graduate of Northern Illinois University with a B.S. in Business Administration and Marketing, George has gained throughout his career extensive technical experience in sales, marketing and product management. Leaving the ready-mixed concrete industry in 1979 for a future in restoration and waterproofing, he spent the next 20 years with Sika Corporation in both sales and marketing management positions, and became one of the original founders of ICRI in 1988.



Trevor Foster has been in the concrete waterproofing, restoration, and decorative coatings industry for 22 years. He has been involved in all aspects of the industry, starting as a crew foreman for a concrete and concrete overlay company in Colorado while attending college, to starting up and running his own successful company for 5 years. Trevor's company was subsequently acquired by one of Denver's largest concrete contractors. Trevor then went from an experienced, hands on contractor to working for a well renowned, historical manufacturer – Miracote a division of Crossfield Products Corp. He is now responsible for sales growth in the 8 western states and handles all field technical assistance, and technical on-site evaluations. Some of his higher profile projects are Bass Pro Shops, Pepsi Center, Water World, and Market Square.

OUR FEATURED PRESENTATION

Cementitious coatings have a proven track record and long history of performance since as far back as the 1930's when Jack Crossfield was the first to patent the use of latex with Portland cement.

Latex-modified cementitious coatings and concrete overlays were ideal for use on commercial and naval ship decks due to their resistance to water and chloride intrusion, superior physical properties and minimal weight burden.

Since then numerous developments and improvements in polymer technologies have provided the concrete restoration, waterproofing and protection industry with a much broader range of product choices and applications including architectural and decorative options to enhance the aesthetics of resurfacing existing concrete.

This presentation will introduce those developments and product choices, and then focus on the decorative advantages of cementitious coatings and numerous finishes available. In addition, a good portion of the presentation will delve into the specifics of the do's and don'ts for contractors to learn when installing decorative cementitious coatings.

REGISTRATION DEADLINE IS SEPTEMBER 1, 2016 NO-SHOWS WILL BE BILLED

Please email (bradcliff@etc-web.com) or print this page and fax to **Bobby Radcliff**, Secretary, at 410-740-9409 no later than September 1, 2016. Checks to ICRI BWC may be turned in at the meeting or mailed with your form to:

Bobby Radcliff, Secretary
ICRI BW Chapter
c/o Engineering & Technical
Consultants
8930 Old Annapolis Road, Suite G
Columbia, MD 21045-2121

**You may also register and
pay online at**

www.ICRIBWChapter.org

Name:	_____
Company:	_____
Telephone:	_____
Email:	_____
Number of Attendees:	_____ Payment: <input type="checkbox"/> Enclosed <input type="checkbox"/> Online (Please include receipt)
Attendee Names:	_____
Attendee's Company:	_____

CAUSES AND SOLUTIONS FOR KEEPING CONCRETE RESIDUE OFF GLASS

Glass continued from Page 3

Plus, repeated aggressive cleaning techniques may damage the glass. Painting the concrete will be effective as long as the coating remains intact. Besides being a maintenance issue, coatings change the aesthetics of the building. Also, most owners select concrete because it's normally a low maintenance material. As discussed previously, most clear water repellents are effective for only a few years.

Guidelines for Coating and Sealer Selection

To drastically reduce silicates from getting onto the glass, the concrete surface must be kept as dry as possible. The coating or sealer must keep water from "wetting" the surface of the concrete (see figure 2). Properties that are needed are:

1. A highly hydrophobic surface on the concrete.
2. Either chemically bond or have excellent adhesion to the concrete.
3. Long-term weather resistance

The mistake that is commonly made when specifying a sealer is to misinterpret a product's claims. Test methods used to indicate performance of sealers focus on water absorption, chloride ion reduction, and penetration into the substrate. Surface characteristics of the treated concrete are not tested in regard to silicate absorption. In addition, UV or weathering resistance is normally overstated.

The best water repellents for concrete are silanes. They are effective against traditional efflorescence for 10 plus years. Unfortunately, they have limited effectiveness against silicate deposits. Silanes are designed to penetrate the concrete. There is a limited amount of silane on the concrete's surface. This material will rapidly breakdown due to UV radiation. Moisture can wet the concrete surface and allow the silicates absorb into the rain water.

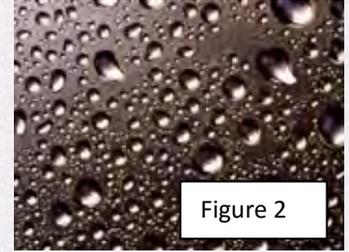


Figure 2



Figure 3

See Glass Page 6

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CAUSES AND SOLUTIONS FOR KEEPING CONCRETE RESIDUE OFF GLASS

Glass continued from Page 5

Higher weight sealers that do not penetrate as well, siloxanes and silicones, may have a few years effectiveness. But, a combination of initially poor water repellency(3) and degradation from weathering limit their effectiveness.(4) A high build coating is an option if the owner is willing to accept the expense and the physical change to the building.

There is a family of low surface energy sealers based on silicon nanotechnology that show promise in mitigating silicate rundown. This technology is based on a silane backbone and a fluorinated functional group. The advantage is chemical bonding to the concrete (silane component) and a highly hydrophobic surface (like Teflon). The product is clear and allows water vapor to escape the concrete. The main advantage is the silane-fluorocarbon molecule is inherently weather resistance. The energy from UV radiation is not strong enough to break the bonds.

Points to Remember

- White deposits on glass are not necessarily efflorescence.
- Before beginning a restoration project, inspect the windows for staining. Take photos and point out to the owner that the staining is preexisting.
- If cleaning the concrete, make sure the windows are also rinsed with water or protected. Pressure washing can cause concrete particles to run onto the glass increasing the silicates contacting the glass.
- Before choosing a sealer or coating, apply a test section.



- 1) ACI 116R-00, "Cement and Concrete Terminology." (Farmington Hills, MI: ACI-2000)
- 2) TD-107, "Residue on Glass." (Pittsburg, PA, PPG Industries, Inc. 2002)
- 3) Al-Gahnati, A.S., Ibrihim, M., "Performance of concrete Surface Treatment Systems", Concrete International, (January 1999), pp. 64-68.
- 4) Noll, W., "Chemistry and Technology of Silicones", Academic Press, Inc., 1995, p. 471.

2ND QUARTER MEETING

IMPORTANT UPDATES TO OSHA RULING DISCUSSED AT MAY CHAPTER MEETING

by Adam Hibshman, President

The new OSHA ruling on respirable silica was the topic of the night on May 5th at the Marriott in Gaithersburg, MD, for the Baltimore Washington Chapter of ICRI's second dinner meeting of 2016. Charles (Chuck) Brienza, the Safety Director with Concrete Protection & Restoration, was the speaker for the evening. Thank you to Tom Ouska of Manganaro, the chair of the program committee, for bringing this topic and presenter together.

Chuck's presentation was one of the most interesting, informative, and frightening to have been presented in a long time. The heart of the presentation was OSHA's reduction in the PEL for silica and the controls that are required to be utilized. In summary, water suppression or HEPA vacuums will be required for all activities that generate silica dust. This will have a massive effect on the industry.

The OSHA ruling (if it holds) will change the way that concrete restoration work is performed. It will also drastically increase the market pricing for our work. The implementation date is coming in 2017 which is rapidly approaching. Building owners would be wise to get as much concrete repair work completed prior to the implementation of this change.

The facilities committee chair, Kevin Kline, of Concrete Protection & Restoration, made the arrangements for the venue which provided cold drinks for the networking and an excellent buffet enjoyed prior to the presentation. For any of you who missed the presentation, Chuck was gracious enough to post it online on the ICRI BW webpage at: <http://www.icribwchapter.org//index-news.htm>. Come out and join us at the next dinner meeting on September 8th on Decorative Concrete presented by George Reedy of Miracote.

BUILDING TRUST



Randall Kratz

District Manager
MD, DC, & N. VA

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2ND QUARTER MEETING

ICRI BALTIMORE WASHINGTON CHAPTER
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2ND QUARTER MEETING



TOP GOLF IS CHAPTER'S SPRING OUTING

MEMBERS ENJOY MAY SOCIAL

By Adam Hibshman, President

On May 19th, the Baltimore Washington Chapter gathered together at Top Golf in Alexandria for a social outing. About 20 ICRI members attended the event which was sponsored by the chapter. Thank you to Kevin Kline for organizing the entire event. Another big thank you to Randall Kratz with Sika for buying most of the refreshments.

The competition was tough, but Brian Baker with PPSI held the high score for most of the night. However, just before the closing bell, Matt Wills of Valcourt posted a 128 and took home the top score of the evening. The Top Golf facility turned out to be an excellent location for the social gathering, allowing for lots of fun, and plenty of networking opportunities.

(Below is a picture of Justin Long of SK&A preparing to blast a driver at the Top Golf Facility)





INTERNATIONAL
CONCRETE REPAIR
INSTITUTE

BALTIMORE WASHINGTON CHAPTER

2016 ICRI Baltimore Washington Chapter Outstanding Repair Project Awards

Purpose: Recognition for Exceptional and Innovative Repair Projects in the Baltimore/Washington, D.C. Area

Project Eligibility Requirements

1. Repair and/or Restoration **must** be the major aspect for the overall project. This is defined by *at least 25%* of the project costs being associated with the repairs and/or restoration scope of work.
2. Repair and/or Restoration portion of the project **must** be performed, designed and/or supplied by an ICRI Baltimore-Washington Chapter member, in good standing.
3. Project submitted for consideration must be completed between June 1st the year prior to the Award (2015) and by May 31st of the year of the Award (2016). A single phase of a long term project may be submitted provided it meets the above completion timeline.
4. Maximum of one (1) award per individual ICRI Baltimore-Washington member or member-company with multiple submittals.

Project Scoring Criteria

A. Planning/Phasing, Design Issues & Project Administration (Maximum 30 Points):

1. Scheduling - Describe project schedule in terms of night (or day) work to minimize noise intrusion; working around the building/facility's peak operational periods; and climatic considerations (severity of the winter/summer, periods of frequent rain, etc.)
2. Environmental Controls - Describe methods of dust, water (hydro-demolition), fumes, and noise control.
3. Communication - Describe methods of communicating project information such as the schedule, impacts to the operation of the building/facility and/or the availability of parking, access or other coordination aspects to the facility users and adjacent properties.
4. Phasing - Describe how the work for the project was phased and staged to optimize site/building availability, reduce down time, minimize traffic flow effects, and the effects on operational revenues during construction. Describe any unique aspects of phasing the project.
5. Administration - Briefly describe any unique aspects of administrating the project, such as the type of contract quantity measurements, procedures, etc.
6. Quality Control - Describe any unused quality control procedures, including testing, inspection, construction observations, warranties, guarantees, enforcing warranties and guarantees, etc.
7. General Design Issues - Describe any unique features in the design of the project.

B. Structural, Architectural and/or Operational Improvements (Maximum 15 Points):

1. Structural Improvements - Explain the original structural problems and the solution developed. Describe improvements incorporated into the project, specifically ICRI published standards and practices, to address existing structural shortcomings.
2. Architectural Improvements - Describe any modifications/upgrades implemented to improve the appearance of the overall project and/or the components of the project.
3. Operational Improvements - Describe any original deficiencies or shortcomings with the existing operational aspects of the facility/building and what modifications/upgrades were incorporated to improve such operations.
4. Historic Restoration Considerations - Describe any historical significance of the project and/or elements of the project. Describe solutions, materials or other strategies specified, employed and/or accepted to address Historical Restoration Considerations and measures taken to ensure that the repair/restoration not detract from the Historical Fabric per NPS.

C. Technical Innovation (Maximum 40 Points):

Technical Innovation evaluates the restoration design and/or the implementation of that design. Contractor implementation of restoration project components is an indication of effective quality control and pre-qualification requirements, and/or realistic project specifications. Implementation is also an indication of the successful construction administration and coordination by the design professional, and in some instances, the material or system manufacturers. Therefore, based on these considerations, document any innovations incorporated into the repair and/or restoration project, including the following:

1. Accelerated Repair/Restoration Techniques;
2. Logistical issues for demolition, shoring, debris removal, concrete delivery, etc.
3. Complex Structural Repairs;
4. Corrosion control measure, including cathodic protection systems;
5. Waterproofing systems, including fume and odor controls;
6. Substantial cost savings or cost effectiveness;
7. Repair/Restoration materials or material suppliers of products instrumental in the success of the project, especially if they collaborated in the development of non-typical or unique repair/restoration measures;
8. Other program specifics.

D. Costs (Maximum 15 Points):

Explain in narrative format the costs associated with the project and address the differences, if any, between the established budget, the actual bid/award cost, and the final project cost. ***Costs should not include costs for project design, land, or utility relocation.*** Describe any conditions unique to the project and how these conditions affected the final overall cost of the repair/restoration project. Indicate the effect that any structural, architectural and/or operational improvements incorporated into the project had on the cost of this project. Explain the cost implications of the aforementioned phasing design issues and technical innovations.

Submittal Process

1. Submittal information will be available to Baltimore-Washington Chapter members and posted to the ICRI Baltimore Washington website by **June 2016**.
2. Submittals shall be in the form of three (3) 3-ring binders containing the required submittal information. Submit all three (3) 3-ring binders and one (1) electronic, full-color format copy (PDF, etc.) of the submittals for distribution to the Award Judges.
3. Project submittals shall be addressed and forwarded to:

ICRI Baltimore Washington Chapter Outstanding Repair Project Awards Program
c/o Mr. Justin P. Long, P.E.
Smislova, Kehnemui & Associates, P.A.
12435 Park Potomac Ave, Suite 300
Potomac, Maryland 20845
justinl@skaengineers.com

Due Date: Friday, September 16, 2016 no later than 4:00 PM.

4. Entrants must have permission from project Owner/Client to submit project for the award.
5. Project submittals will not be returned and may be used by the Baltimore-Washington Chapter for display at chapter meetings.

Required Submittal Information

Part I:

1. Only one (1) copy of **Part I** information is required per one (1) group of submittals.
2. The **Part I** information should have, on a single sheet of paper:
 - Name of the Project
 - Name of the Repair Contractor
 - Owner/Owner Representative
 - Architect/Engineer
 - Material Supplier(s)
 - General Contractor (if applicable)
3. The **Part I** information should be sealed in a separate envelope with the *Project Name* typed across the front of the envelope.

Part II:

1. One (1) copy of **Part II** information is required with each submittal (i.e. four (4) copies of **Part II**, one with each binder and one included with the electronic submission):
 - The Name of the Project along with City and State where the Project is located.
 - Overall repair/restoration project budget and duration.
 - A written overview/summary of the repair/restoration project not exceeding 500 words.
 - A written narrative/summary for *each* category of the aforementioned repair/restoration Project Scoring Criteria not exceeding 500 words per section **OR** 2,000 words total.
 - No more than 15 photographs (8 ½" x 11" maximum size) showing before, during and after photos of repairs and scope of repairs. Individual photographs may be included under specific narrative sections **AND/OR** included as a comprehensive photo log.

NOTE: All submittal information **cannot** contain any Company or product information, Company logos or any other identifying information except for as required in **Part I** to ensure judges have no knowledge of Companies or products involved. *Part I envelopes will be opened after submittals are scored.*

Submittal Judging

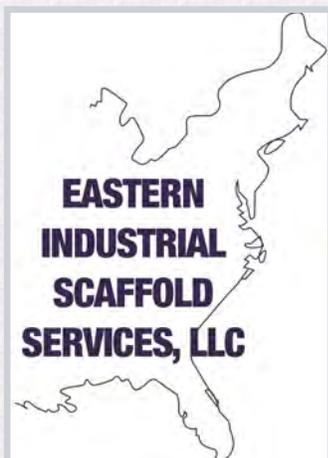
Three to five judges, selected by the ICRI Baltimore-Washington Chapter Awards Committee and approved by the ICRI Baltimore Washington Chapter Board of Directors, will review and judge each awards project submittal. Judges will judge and score each project submittal utilizing the Project Scoring Criteria. Scores submitted by the judges will be tabulated by the Awards Committee which will select the highest scoring project submittal for the award. Judges will be ICRI members of record outside of the Baltimore Washington D.C. Chapter consisting of a *minimum* of one repair contractor, one material supplier and one engineer/architect. Submittals missing any of the required submittal data will be penalized during scoring of the projects. Judges will not contact entrants for any missing information.

Award and Project Presentation

1. A \$500 ICRI National Convention Scholarship will be presented to the entrant that has the highest project award submittal score and will be presented the ICRI Baltimore Washington Chapter Repair Project of the Year Award. Outstanding Project Awards will also be presented to the 2nd and 3rd highest scoring entrants.
2. *If* the ICRI-BW Chapter 1st Place winner chooses to submit the *winning* entry to **ICRI National's Outstanding Concrete Repair Project Award Program** for the following year, the ICRI-BW Chapter will pay the project's entry fee on behalf of the winner.
3. The winning project's entry fee will be paid by the BW Chapter *if* the submitter chooses to submit the project for the **National ICRI Outstanding Concrete Repair Project Award Program** for the following year.
4. The project award winners will be contacted before the end of October 2016 by the Awards Committee.
5. Project of the year will be presented, in a 30 minute presentation, by the entrant during the **2016 ICRI-BW Chapter's Annual Awards Banquet in November**. Second and Third place projects are to be presented, in 15-minute presentations each, by the entrants during the same meeting of the BW Chapter. All other submitted projects will receive recognition at the fall meeting by the awards committee.

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SAFETY COLUMN

Safety Policy Development

by Charles J Brienza, CHST, Safety Director, Concrete Protection and Restoration, Inc.

Once you have identified the hazards posed on your jobsite(s), a safety policy must be developed to protect your people from those hazards. A safety policy does not have to be a voluminous compendium that covers every minuscule detail of your operations. A safety policy the size of a phone book tends to bog down under the burden of its own weight. A simple, concise and effectively written safety policy will provide your people with a tool to help them be safe on a jobsite yet allow freedom of movement *within* the policy that will let your people adapt it to hazards that were unforeseen at the time of its publishing.

The first consideration in writing a safety policy is to define responsibilities; who does what. Without a definition of responsibilities, there can be no accountability. Without accountability, the safety culture you're trying to grow in your organization will have no cohesion. For example, if it is a Superintendent's responsibility to conduct a Job Hazard Analysis on a particular jobsite and it hasn't been done, there is absolutely no question to whom a manager turns to apply the next aspect of a safety policy; DISCIPLINE.

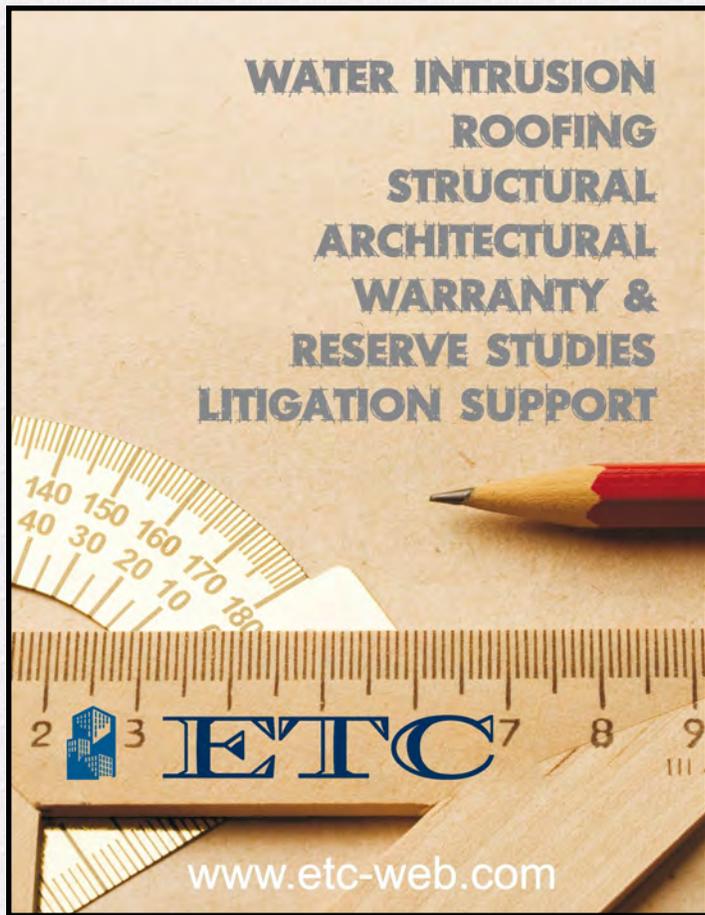
Discipline is an absolute necessity in a safety policy, and the organization itself for that matter. If an employee is clearly instructed as to how to accomplish a task safely, and they do not follow said instructions, they must be reminded in a manner which will ingrain within their memory that there are repercussions for not adhering to the policy. The discipline itself can be any number of actions from a demerit structure to automatic suspensions and possible termination. No matter what the method, discipline has to hurt. Whether it's a fine, losing a day's pay, reduction of bonus or exclusion from an award for good performance, the discipline has to mean something. You can't continuously stuff your employee files with "written warnings" until your employees joke about the lack of impact your "written warnings" actually have.

The next, and largest part, of a safety policy is the body of the policy. It is this part of the policy that actually defines methods of protection to identified and predictable hazards. There are a number of resources to use in writing the body of the policy. To name them all would be impossible for an article this length so we'll just highlight a few:

1. OSHA - 29CFR1910 and 29CFR1926 are the Codes of Federal Regulations which governs General Industry and The Construction Industry. If a company solely utilized these two sources of information, it would at least be compliant with Federal Regulations. Depending on the state in which an organization operates, a "State Plan" compliance organization may also exist. State plans at a minimum are equal to Federal Regulations, but in many cases, exceed Federal Regulations.

2. ANSI/ASME - The American National Standards Institute and The American Society of Mechanical Engineers are both national organizations which have compiled a broad spectrum of *consensus* safety regulations. ANSI/ASME updates their standards far more frequently than OSHA and, thus, are typically on the cutting edge of technology and in tune with the safety issues of the day.

3. EM385-1-1 - The Army Corp of Engineers Engineering Manual 385-1-1 are the regulations that apply to a number of Federal Jurisdictions. Typically, any military institution, whether it be a military base or a single structure owned by a branch of the U.S. military, is under the jurisdiction of the Army Corp of Engineers. If you do any work under their jurisdiction, you know their standards of safety exceed those of OSHA in many cases. Like ANSI/ASME, the EM385 is updated more frequently than OSHA regulations. The most recent revision was published in 2008,



SAFETY COLUMN

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however, a 2012 revision is currently slated for publication "early fall of 2013" according to the Army Corp of Engineers website.

4. Trade Associations such as The International Concrete Repair Institute (ICRI) publish safety guides for their member contractors to use that are user friendly and industry specific. If you are a member of the ICRI, Technical Guideline 120.1 -2009 was recently published and rolled out at a number of dinner meetings across the country. The guideline was written by leaders in the industry that deal with the specific hazards concrete repair contractors deal with on a regular basis.

5. Manufacturers - Tool, equipment and material manufacturers almost always have an instructional manual or a series of warning labels that accompany their products. In the case of materials, Material Safety Data Sheets (MSDSs) or Safety Data Sheets (SDSs) are required to accompany the initial shipment of given chemical to a customer specified destination. Instructional manuals and MSDS sheets are excellent sources of safety information.

In writing your safety policy, include the highlights of each section. Emphasize the areas that could lead to fatalities and serious injury. Keep it simple. Control the urge to write a policy that combines every source of information into one place. If that's what you want, simply stick a piece of masking tape over "OSHA" on the 29CFR1926 and write your company's name. A lengthy policy is often the mark of a company that doesn't train their workforce as much as they should, rather, they write a policy to cover every detail and expect their employees to read the policy before they do anything.

The final part of a safety policy is the Appendix. This isn't necessarily a required component of a safety policy; however, I find it to be a very neat place to compile many of the forms and schematics to which your policy refers. In a policy I recently wrote, the appendix includes a series of accident report forms for various types of accidents, inspection forms for scaffolds, rigging, excavations and equipment as well as a series of schematic drawings of various sloping and benching methods for excavating soil.

In conclusion, I cannot over stress how much better a smaller more efficient policy is for practical use by your people. Some companies feel the need to create large voluminous policies to cover every minute detail and possibility an employee may encounter in the field. The problem with that thinking is the environment in which we work changes faster than a policy can; especially in the repair industry. We uncover conditions and details in the course of our work for which we can never fully plan. How on earth could you ever expect to write a policy which could cover every unexpected detail? Writing a lean and nimble safety policy that allows your well-trained people to adapt it to the situations in which they find themselves on a jobsite is the objective for which we should strive.



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Pay-if-Paid Clause: Contract Mechanism for Shifting Non-Payment Risks

By Jennifer A. Mahar, Esquire

In today's economy, one of the greatest risks on a Project is the Owner's ability to pay. From a contract perspective, this risk ordinarily weighs heaviest on the contractor who contracts directly with the Owner compared to the contractor's lower-tiered subcontractors and suppliers who expect payment from the contractor.

The Pay-if-Paid clause is a contract mechanism used to shift the risk of Owner non-payment due to the Owner's financial insolvency to lower-tiered subcontractors and suppliers. When included in a subcontract between the contractor and a lower-tiered subcontractor or supplier, the Pay-if-Paid clause does not require the contractor to make payment to the subcontractor or supplier until the contractor receives payment from the Owner. Receipt of payment from the Owner is a *condition precedent* to the contractor's payment obligations to the subcontractor (i.e., the subcontractor will not be paid if the Owner does not pay the contractor).

Pay-if-Paid clauses are enforceable in Maryland, Virginia, and the District of Columbia provided the clause's contract language is clear and unequivocal in expressing the contracting parties' intent to shift the credit risk of the Owner's insolvency to the lower-tiered subcontractor or supplier. One example of a Pay-if Paid clause enforced by the Maryland courts reads: "It is specifically understood and agreed that the payment to the trade contractor is dependent, *as a condition precedent*, upon the construction manager receiving contract payments, including retainer from the owner." See Gilbane Building Company v. Brisk Waterproofing Company, Inc., 86 Md. App. 21 (1991).

A Pay-if-Paid clause is not an automatic defense to the payment claim of a lower-tiered subcontractor or supplier. The circumstances surrounding the Owner's failure to make payment to the contractor must be examined. For example, if the Owner's nonpayment is due to the contractor's performance failures (i.e., defective work backcharges), and not the Owner's financial insolvency, then the Pay-if-Paid clause will not operate to relieve the contractor of its payment obligations to its subcontractors and suppliers.

As always it is important to read your contract carefully and understand the terms which govern either your obligations to make payment to your subcontractors or suppliers, if you are the contractor, or your receipt of payment, if you are a subcontractor or supplier.

For further questions, Jennifer can be reached at jmahar@smithpachter.com or 703-847-6300.



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