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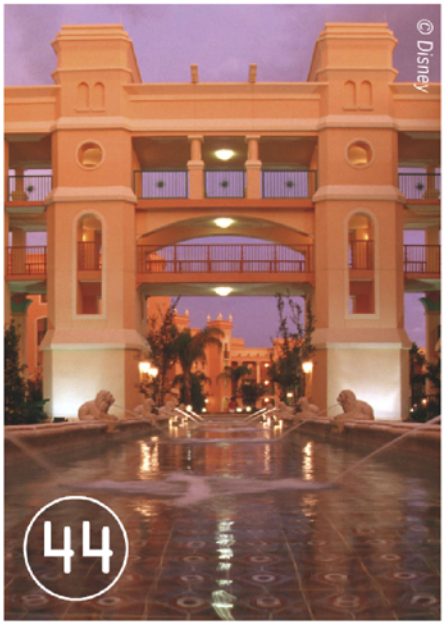
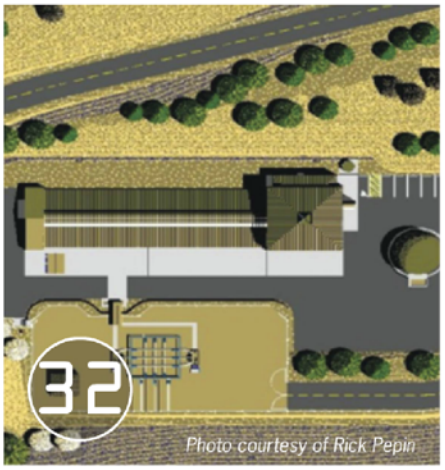
JOURNAL OF PROTECTIVE COATINGS & LININGS

The Voice of SSPC: The Society for Protective Coatings

Cover: Disney's Coronado Springs Resort © Disney

FEATURES





DEPARTMENTS

Also This Month

From the Offices of SSPC

The Society For Protective Coatings

Courtesy of Wild Florida

Staff

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Also This Month

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SSPC The Society For Protective Coat

Courtesy of Wild Florida

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Florida Will Be Fantastic

SSPC will be holding its next conference in Orlando, FL, at the Coronado Springs Resort, a Disney property, from February 10 to 13, 2014. It is hard to believe that a year has gone by, and we are at conference time again. Orlando is a vibrant and diverse city with theme parks, attractions, and shopping to keep you busy during non-conference times. It also has one of the most interesting science centers in the nation. Especially relevant to our industry, the Orlando Science Center has an exhibit that deals strictly with corrosion. SSPC, with the Department of Defense and other not-for-profit organizations, was privileged to be part of its development. If you have the time, it is well worth the trip to see the exhibit and the entire science center.

SSPC 2014 will be as great as ever. The entire conference program was developed by an outstanding group of volunteers from our industry and should address all the needs of industrial structure owners, specifiers, engineers, consultants, contractors, and others who need and use coatings information. Currently, we have planned 73 technical presentations on surface preparation, coating application, coating formulation, and coating inspection included in 36 sessions. These sessions consist of 17 regular sessions, six mini-sessions, nine workshops, two women's sessions, one leadership panel, and one coating failure panel. We also have 31 training courses scheduled before, during, and after the conference. Besides our normal selection of application, inspection, and surface preparation classes, we are offering several new courses: Bridge Maintenance: Conducting Coating Assessments; Coating Specifications Essentials; Inspection Planning and Documentation; and Concrete Coating Inspection Supplement: Determining the Level of Moisture in Concrete. Technical information and education about good painting practices have been SSPC's core products since our first national conference, and we have worked hard to build on the past and make it even better.

There are two other meetings I would like to mention. The first is the International Spotlight: Canada, which is a new event at this year's show. Major projects in Canada and the impact they may have on the Canadian economy will be discussed. The second one is the Mega Rust Mid-year meeting, which is a follow-on to the annual Mega Rust conference.

Right now, 25 committee meetings are scheduled at the conference. Here is where you, as a member or an attendee, can make a big difference. Too often, I hear about someone or a particular group who is upset when a standard is issued and how it hurts the industry or makes someone's work even harder. Committee meetings are where consensus standards are developed. This is your opportunity to participate and get involved to ensure that your needs and desires are heard before the standard is published rather than complaining after the fact. It is similar to when a politician you dislike is voted into office, but you did not even make the effort to vote. Once a standard is developed, it remains in effect until the committee makes changes to it during the next review cycle.

With the conference's technical program and the strength of its training programs, SSPC 2014 remains the one-stop shop for coatings information. Please look at the advance program beginning on page 44 of this issue. I know you will find something that fits your needs. The opportunities to visit exhibitors, learn about new products and ideas, and interact with your peers, clients, and customers will be invaluable. Come to SSPC 2014 in Orlando. Learn, have fun, and return home refreshed and ready to tackle your job or your next project. I am sure the things you will learn at this all-encompassing coatings conference will help make your career more productive and satisfying. See you in Orlando.

Bill Shoup

Bill Shoup
Executive Director, SSPC

Lstiburek to Keynote at *Durability + Design* Conference

Acclaimed public speaker and lecturer in building science Joe Lstiburek is scheduled to deliver the keynote address at the inaugural *Durability + Design* (*D+D*) Conference and Exhibition, to be held May 20–22, 2014, at the historic Hilton Netherland Plaza Hotel in Cincinnati, OH.

Joe Lstiburek

The conference, which the host plans to make an annual event, is designed to integrate the emerging technical communities of specifiers, architects, contractors, and building owners through their shared interests in building performance and aesthetics.

Lstiburek, a principal at Building Science Corporation, Somerville, MA, is an expert in air barriers and other areas of construction technology. He has written numerous books and technical papers on building construction, and has forensically investigated building failures nationwide.

Lstiburek heads a line-up of architects, contractors, and manufacturers presenting papers on the conference theme, "Advances in Protective and Aesthetic Technologies for Buildings."

For more information and to register for the 2014 *D+D* Conference, visit durabilityanddesign.com.

Rhino Acquires Protective Coating Supplier

On November 5, 2013, Rhino Linings Corp. announced the acquisition of Advanced Coating Solutions (ACS), a protective and marine coatings manufacturer and Rhino supplier based in Bellevue, WA.

Rhino said it would continue producing ACS's current commercial products, which include water-based polyurethanes, acrylic coatings, and water-based acrylic emulsion coatings.

Founded in 1988 and headquartered in San Diego, CA, Rhino Linings has five divisions, Vehicle Protection, Industrial, Epoxy, Flooring, and Military. ACS provides thermal insulation coatings for marine, industrial, and commercial applications.

ACS employees will be relo-

PPG Appoints New Protective/Marine, EHS VPs

PPG Industries announced the appointing of Diane M. Kappas, a chemical engineer and 27-year PPG employee, as Vice President, Americas, Protective and Marine Coatings (PMC), effective Dec. 1. She had been vice president of the company for environment, health and safety (EHS). Kappas will assume full responsibility for PPG's PMC business in the United States, Canada, and Latin America.

Diane M. Kappas

Kappas joined PPG in 1986. She earned a B.S. in chemical engineering from the University of Pittsburgh and an MBA from Duquesne University.

Dr. Jane Valenta, also a 27-year PPG employee, will succeed Kappas as Vice President, EHS. Valenta is currently associate director of performance coatings for research and development, supporting the aerospace, architectural coatings, automotive refinish, and PMC businesses.

Dr. Jane Valenta

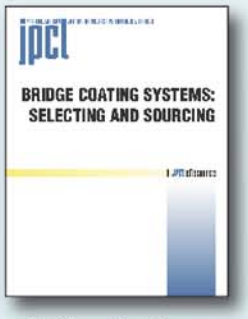
Valenta will assume responsibility for all EHS functions, including environmental affairs, product stewardship, health, safety, compliance assurance, and corporate medical. She will also contribute to PPG's corporate sustainability efforts.

Valenta joined PPG in 1986. Valenta holds 10 patents and earned a Ph.D. in analytical chemistry from the University of Pittsburgh.

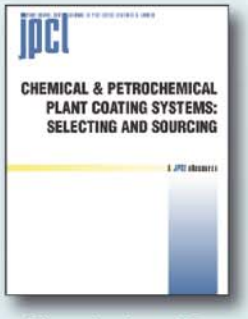
10 New *JPCL* eBooks Available

JPCL has released 10 new, free eBooks designed to help guide users in selecting and sourcing coating systems for a variety of industrial applications. These eBooks include relevant *JPCL* articles as well as *JPCL* Buying Guide material for each subject.

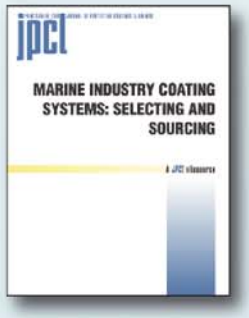
The new eBooks are:



• Bridge Coating Systems: Selecting and Sourcing

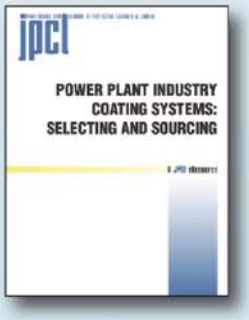


• Chemical and Petrochemical Plant Coatings: Selecting and Sourcing

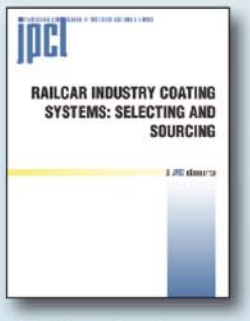


• Marine Coatings: Selecting and Sourcing

• Offshore Platform Coatings: Selecting and Sourcing

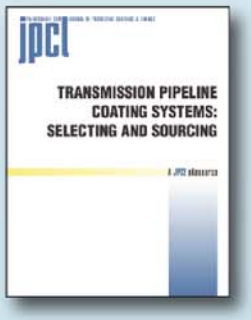


• Power Plant Coating Systems: Selecting and Sourcing

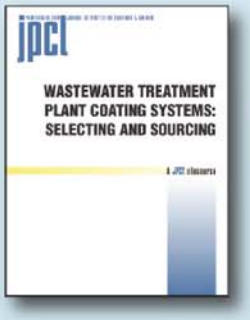


• Railcar Coating Systems: Selecting and Sourcing

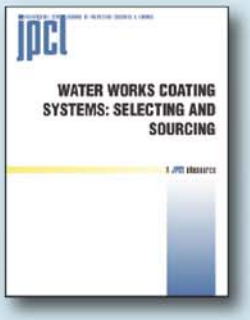
• Specialty Function Coating Systems: Selecting and Sourcing



• Transmission Pipeline Coating Systems: Selecting and Sourcing



• Wastewater Plant Coating Systems: Selecting and Sourcing



• Water Works Coating Systems: Selecting and Sourcing

These eBooks are available for download, free of charge, at paintsquare.com/store.

cated to Rhino's San Diego headquarters, and production will be based in that facility. Additional terms of the acquisition were not released.

JPCL

Omission

The following Editor's Note was omitted from the November 2013 *JPCL* article, "Laboratory Evaluation of Metalized Coatings for Use on Reclamation Infrastructure," pp. 22–33.

Editor's Note: This article is based on a paper the authors gave at the annual conference of SSPC: The Society for Protective Coatings, SSPC 2013, held January 14–17, 2013, in San Antonio, TX. The original paper is published in the SSPC 2013 Conference Proceedings, which is available from SSPC (sspc.org).

The BUZZ on PaintSquare.com

By Anita Socci, JPCL

HOT TOPIC

Whose responsibility is fall protection?

The Hot Topic in this month's The Buzz mirrors the topic of the Most Popular Poll (see below). Also related is a *PSN* story published Nov. 7 about a painter who fell from a bridge during a painting project.

Most Popular Poll

(as of Dec. 9)

Deaths and citations from worksite falls are reaching new highs. So why do so many workers still skip fall protection?

32% Supervisors and foremen don't provide or insist on it.

29% The equipment is uncomfortable and/or a hassle to use.

26% Workers aren't adequately trained or made aware of the hazards.

13% The macho worksite culture discourages it.

Quentin Smith: *"It is my experience that the foremen are the worst offenders. Working with no safety equipment at all. I also fault the customer for not stopping work and insisting that safety policies be followed."*

Simon Hope: *"Poor training, poor enforcement, lack of awareness, damaged and incorrectly maintained equipment, lack of proper anchorages, there are far too many things to go wrong! Throw in cost cutting and incompetence and you have a recipe for a disaster!"*

Car, F.: *"Employers must clearly establish safety policies and procedures, teach them to the workers, and enforce them. Those who do not follow the rules can be subjected to discipline."*

PSN TOP 10

(As of Nov. 4)

1. Bridge Corrosion Closes MN Highway
2. Corrosion Blamed in Fatal Plant Blast
3. Hazmat Exec Gets Prison after 2 Deaths
4. Bridge's 9-Year Paint Job Complete
5. Concrete Training Goes Fatally Awry
6. Owner Pleads Guilty in Bid-Rigging
7. Rig Knocks Bridge onto TX Interstate
8. Tools and Methods of Hand Tool Cleaning
9. Ship Blasting Sparks Fire, Toxic Fumes
10. PPG Navy Contract Could Top $44M

MOST POPULAR QUIZ

(As of Dec. 9)

High cross-link density contributes the most to what type of corrosion protection?

Ronald Beebe 19/19
Doug Driscoll, Sr. 18/19
Michael Beitzel 18/19
L. Steven Moore 18/19
Robin Hasak 18/19

Results

Get the coatings industry buzz at paintsquare.com, or scan the QR code with your smart phone for instant access!

When Can You Coat New Concrete?

How can I determine when concrete has cured sufficiently to be coated, besides waiting the 28 days typically specified?

From William Slama
International Paint/Ceilcote Products

Most persons concerned with this issue consider two primary factors—attained strength and residual water content. In most cases, depending on the concrete mix and initial wet curing for hydration to take place, strength is not the critical factor. The typical "requirement" for the 28-day cure comes from the engineer and relates to any physical or structural requirement. However, in most cases, such as a floor or non-structural wall, the 28-day cure is not a significant factor for coating or lining. Moisture content, or more particularly, moisture availability at the surface, is the important factor that impinges on successful application and performance of the coating or lining.

There are several electrical methods to measure internal moisture content on concrete surfaces, but these methods are all subject to interpretation, and most do not measure more than the top inch or two of the concrete. Most coating and lining manufacturers require either the moisture emission rate test method that uses calcium chloride as a desiccant (ASTM F1869) or the plastic sheet test (ASTM D4263). Typically, the calcium chloride test is required to be below about 3 lbs. of water emission per 1,000 square feet of surface area per 24 hours. This usually requires the test specimen to be sent to a lab for analysis before getting a result. It is believed that this result depends on the amount of not-yet hydrated water near the surface. That amount is a combination of theoretical water amount not yet hydrated and excess water ("water of convenience") within the concrete mix. The result can also be influenced by the availability of water on the reverse side of the concrete, which can be an excess because of a high water table and lack of a vapor barrier below a slab.

We strongly prefer requiring the ASTM Plastic Sheet Test. The reason is that for

proper performance of the coating or lining, two requirements must be met. Basically, the concrete surface needs to remain dry for 16 hours. This condition 1) allows the primer or first polymer layer to properly wet and penetrate the concrete surface while free of water, and 2) allows that contacting layer to begin to cure (cross-linking or simple solvent evaporation), also in the absence of liquid water. Beyond that, a system's capability to withstand liquid water later at the concrete/polymer interface depends on the characteristics of the applied system.

The worst case will be that high water pressure at that interface will cause loss of coating or lining adhesion to the concrete surface and subsequent blistering. The system properties necessary to withstand future reverse blistering are complex and without agreed definition. But most industry people agree that good penetration and adhesion, as well as the rigidity of the system, are important to withstand later blistering by water within or from underneath the concrete.

Experience has shown that well-designed systems can be applied as early as seven days after concrete placement by specifying a high early curing concrete system with additives to limit the amount of excess water; wet curing for three days and then allowing surface water to evaporate for the rest of the time. That practice will usually allow adequate concrete strength and ability to pass the plastic sheet test.

From Marcin Mazurewicz
Intertek

The 28-day period refers to achieving maximum strength of the concrete. You can determine the level of moisture in the concrete either by drilling a hole and checking the humidity level with a probe inserted inside the hole (accurate, but destructive) or by using a non-destructive meter. There may be a discrepancy between these two methods, especially when readings are taken at humidity levels higher than is actual "inside."

Learning To Anticipate Job Hazards and To Respect Danger

Manufacturing industries have the advantage of having "fixed" hazards that can be identified and controlled through review, training, and process control. Painters and blasters in the industrial construction industry continually work in new surroundings, use new coatings and linings, solvents, and abrasive materials and equipment, and have to deal with the unique hazards of the work area and means of access. Work occurs in high places, confined spaces, ships, bridges, pipelines, and everything in between. While OSHA requires the employer to perform job hazard analyses to identify and control potential hazards, painters and blasters need to understand and implement the required controls and be constantly aware of new and changing hazards. OSHA defines a hazard as the potential for harm. In practical terms, a hazard often is associated with a condition or activity that, if left uncontrolled, can result in an injury or illness.

Editor's Note: The original ATB on job hazards was written by Craig Henry, Service Painting Company, for the August 1989 JPCL. *The 1989 article was updated by Alison B. Kaelin, COA, ABKaelin, LLC, for* JPCL*'s current ATB series.*

Control of hazards is most effective when managed proactively by contractor management through an effective and dynamic safety culture that includes all levels of the company and involves the owner or safety professionals when appropriate.

Before the work begins, the employer should conduct a job hazard analysis to identify predictable hazards and those hazards that are unique or specific to the work environment. The employer then should develop and implement safety plans, training, and controls to eliminate or control the hazards.

Before the work begins, the employer should conduct a job hazard analysis to identify predictable hazards and those hazards that are unique or specific to the work environment.

We will look briefly at each of these areas and summarize potential hazards and ways to avoid, control, or eliminate them. This ATB is not intended to be exhaustive or a replacement for a job hazard analysis on any site. Each site is unique.

Work Site Hazards

Hazards that may be associated with the work site may include working over water or near traffic. Other hazards associated with the work site include working in confined spaces or heights, working in high or low temperature environments, electrical hazards due to power lines and equipment, excavation, struck-by, the presence of toxic contaminants in coatings or in abrasives (e.g., silica, lead, cadmium, hexavalent chromium, beryllium, arsenic), and materials currently or previously contained in or on surfaces (such as oil, sewage, bird or animal droppings, etc.)

Equipment

Surface preparation includes mechanical paint removal operations such as use of power tools (e.g., needle guns, scalers, sanders) and the use of high-pressure equipment for abrasive blasting, water jetting, and other surface preparation operations. Spray coating operations may involve air-less, conventional, plural-component spray equipment or the use of thermal or metalizing application equipment.

All of these types of equipment and operations may expose workers to respiratory hazards, high-pressure hazards, noise, electrical hazards, and impact hazards. Ignition and power sources of the equipment as well as bonding and grounding should be considered related to flammable/ignitable materials that may be present or used in or out of confined spaces.

Use of access equipment such as lifts, scaffolds, and other methods for access to the work area also may introduce or contribute to hazards related to loads, rigging, falls, and electrocution. These systems typically require that load limits are identified and not exceeded during use, as well as daily inspection of rigging and scaffolding and user training.

Material Hazards

Hazards that may be associated with the materials can include the substrate being prepared (e.g., concrete); abrasives or paint strippers used; and coatings, linings, and the solvents applied. Hazards related to coating and lining materials include toxic constituents, fire, and explosion hazards. All types of abrasives may contain silica, beryllium, arsenic, and cadmium.

When performing a job hazard analysis for materials, employers should consult the Safety Data Sheet for all materials that will be used to 1) determine potential toxic constituents, the recommended ventilation, personal protective equipment (PPE) and work practice controls, and 2) to understand the fire and explosion hazards of the materials.

Depending on the materials present, OSHA may require the implementation of engineering controls, work practices, personal protective equipment, and respiratory protection. Equipment and controls implemented may include

- containment and ventilation;
- provision of fire extinguishers;
- limiting ignition sources and prohibiting smoking or spark producing equipment;
- providing hand or eye wash stations, decontamination facilities and showers, and first aid stations;
- establishing alarm systems: what each alarm means and the appropriate action to be taken when they sound;
- emergency plan: plan for evacuation of the worksite; assembly point and head count procedure; and
- lockout/tag-out procedures for shutting off power, material, or other sources and equipment to allow them to be safely worked around.

Use of respiratory protection is dependent on the hazard and potential or actual employee exposures. When supplied air is necessary, clean, dry, grade D breathing air;

a type CE helmet; and carbon monoxide monitors are needed. For negative pressure, air-purifying respirators, solvent and particulate filters may be necessary (as well as medical clearance and fit testing). Additionally, PPE, such as protective clothing, eye, head, foot, and hearing protection, may be necessary depending on the materials present and their concentrations. Fall prevention equipment, reflective vests, or life jackets may also be necessary, depending on the work site.

Before the Work Begins

At start-up, a pre-job meeting should be held with all potentially exposed employees and may include a safety professional, site representatives, the contractor's supervisory personnel, and the owner's representative. This meeting should include a discussion of the scope of work, the work site, equipment and material hazards, and the work site setup and controls that will be implemented based on the job hazard analysis.

Conclusion

Finally, it is important to develop a positive, "do-it every time" attitude about safety. The first line of defense is the person exposed to the hazard. Use the training, tools, PPE, and equipment that are provided by your employer to protect yourself. If you see a hazard, report it and don't expose yourself to it. Accidents are going to happen. However, job hazard analysis, planning, training, and implementation will all help reduce accidents or their severity.

Alison B. Kaelin, CQA, has more than 25 years of public health, environmental, transportation, and construction management experience in the coatings industry.

She is the owner of ABKaelin, LLC, a provider of OSHA training; quality assurance, auditing, consulting, and related services to the protective coatings, construction, fabrication, and nuclear industries.

Kaelin is a certified quality auditor and NACE-certified coating inspector. She was a 2012 *JPCL* Top Thinker, a 2012 *JPCL* Editor's Award Winner, and an SSPC Technical Achievement Award winner in 2005. She is a *JPCL* contributing editor.

JPCL

Q&A with Todd Gomez

By Charles Lange, JPCL

Todd Gomez is the Technical Sales and Marketing Manager at VersaFlex Inc., a company that formulates and manufactures 100%-solids pure polyurea protective coatings, linings, and sealants for a variety of industrial, commercial, and maintenance environments. Before joining VersaFlex, Gomez held management positions with The Sherwin-Williams Company and was a project manager with Concrete & Masonry Restoration, Inc. He will co-present a paper, "Robotic Sprayed-in-Place Pipelining: The Polyurea Goes Round and Round," at the SSPC 2014 conference in Lake Buena Vista, FL, this February. He earned a B.S. degree in Business Administration from Newman University and an MBA from Penn State University.

JPCL: What does your current job entail? What are some of your daily duties at your position?

TG: I handle inquiries from engineers, owners, architects, contractors, and applicators about possible projects or applications that could involve polyurea, or questions on how to use a product, and so on. It really runs the gamut. I also get involved in writing specifications for polyurea systems tailored to a specific project. A team of us deals with various marketing activities as well.

JPCL: How did you get your start in the protective coatings field?

TG: My grandfather and father owned and operated a painting business in Wichita, KS. They started out doing residential work, evolving to commercial and industrial projects. I worked part-time and was around it while growing up. I started with Sherwin-Williams out of college and gained experience in several different cities, markets, and customer bases. I also worked for other companies involving property management and restoration work, but still had a hand in the coatings side. Now with VersaFlex Inc., I am involved in a variety of tasks from sales, to technical services, to system specifications and marketing.

JPCL: Your company develops and manufactures polyurea products. What do you think are some of the most important benefits of polyurea development and usage over the past 20 years or so?

TG: Education and training are very important in polyurea technology. It has come a long way in the last several years. Polyurea technology is exciting. However, there are some misconceptions of what polyurea is and isn't in the industry today. It is not uncommon to encounter someone who has never heard of it, or doesn't know what it is or how it may be utilized. Helping provide awareness and insight to others so that they can learn about the technology is fun.

JPCL: Working on the sales and marketing end of the business, how do you translate some of the more technical aspects of your company's products and work to potential clients who might not be as well-versed in polyurea technology as you are? Or do you find that your clients are generally knowledgeable on coatings issues?

TG: In large part, many contacts are familiar with coatings in general, but may be unaware of polyurea technology and how it can and cannot be utilized. Some of the systems are complex, and along with the necessary processing equipment, it can all seem overwhelming. The communication usually involves a series of discussions and e-mails to fully understand a scenario or project before material is purchased and applied on a job. I like to start simple, and as things progress, continue to learn more to effectively handle a matter. Treating the inquiry like discussion, rather than a canned response, helps the customer see that you care about what they have going on.

Roles like mine have become more technical in nature. These roles require deeper product knowledge and more field assistance, beginning at the design phase, all the way through construction. A background in construction is a big plus toward success in a career such as mine—as well as being personable with people.

JPCL: You gave a presentation at SSPC 2013 last year, and you will present at this year's SSPC conference, as well. What do you enjoy about attending and presenting at conferences like SSPC's? What are your favorite parts of these conferences? (i.e., exhibit hall, presentations, social/networking opportunities, etc.)

TG: I thoroughly enjoyed giving the presentation in San Antonio. The SSPC conferences and others like it are great for the industry, particularly with new products available on the market. There are many learning opportunities from those who are more experienced in the industry, as well as networking opportunities. You never know when you will meet someone, then run into one another again at a job site, a training class, or another venue.

JPCL: What do you think are some of the most important qualities that a young person looking to enter the coatings industry must possess?

TG: Be adaptable and learn how to be resourceful on just about anything you can that is relative to your industry. You may not know the answer to everything, but you can utilize the resources available and be able to find it. Of course, be passionate about it and enjoy what you do. Also, surround yourself with positive-minded people. Positive-minded people generally possess a great deal of knowledge that they are willing to share. Be a sponge about the knowledge and share it with others along the way.

JPCL: What is the best piece of advice you've received, either related to your work or just life in general?

TG: DWYSYWD—that stands for "do what you say you will do." If you tell someone that you are going to do something, do it! Customers appreciate follow-up and will respect you for it. I learned that philosophy from a manager many years ago.

JPCL: What is your favorite thing about the work you do?

TG: Helping customers discover solutions to problems. I enjoy getting involved in projects where I can play a part of seeing some success at the end. But the true success is seen by the customers at the end of the project. If you are able to help them once, they may call on you again. This is where the true value is seen, when they can rely on you for real answers.

At VersaFlex, I have the opportunity to wear different hats, which makes the job enjoyable, challenging, and rewarding. A smaller-sized type of company allows an individual to experience this.

JPCL: What has been the highlight or proudest moment of your career thus far? Do you have any career goals that you would still like to achieve?

TG: Winning awards for performance goals and becoming a PCS. A great deal of time, effort, and perseverance were put into both of them, with the rewards, experience, and achievements all being quite satisfying. I have also started the process through SSPC to become an inspector in the future. I hope to make time for this someday while handling other responsibilities.

JPCL: What are some of your interests outside of work? How do you like to spend your free time?

TG: I have always been an avid golfer, since learning to play when I was nine years old. I also really enjoy watching college and pro sports. But the bigger and best responsibility I have is being a husband and a father of three young girls.

JPCL

FBE Performance on Desert Pipeline: Overview and Options for Rehabilitation

By Baker S. Hammad,
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Fig. 1: Old tape wrap pipeline with complete failure in wet/Sabkha Area
All photos courtesy of the author

The major oil and gas companies in Saudi Arabia and the Gulf Coast Countries (GCC) own and operate an average of more than 33,000 km (20,000 miles) of oil and gas pipeline networking systems. Due to the differences in the geographical area of the region, the service life, operations, and maintenance costs of these pipeline networks vary and depend on the location of the pipeline. These cross-country pipeline locations run from East to West, North to South, and vice versa. The trunklines and the flowlines can be divided into two main exposure environments: dry sand areas and wet sand areas.

These existing pipelines are between 40 and 50 years' old, and the average design life span is between 20 and 25 years. The external protection coating systems applied to these pipelines varied from old cold-petroleum tape wrap to hot coal tar enamel (late 1950s—early 1980s), liquid coating, and fusion-bonded epoxy (FBE) as a single-coat powder coating from the mid-1980s to date, including three-layer polyethylene (3LPE and 3LPP) for cross-country pipelines. However, the internal protection was not implemented until mid-1980s, with liquid coatings, first in the field, and FBE powder coatings, by shop application, afterwards, when the FBE powder coating became the dominant system in the pipeline coating industry. This article gives background on the general performance of all of these coatings and a subsequent inspection program to survey performance, focusing on FBE coating systems.

Background

The external tape wrap, the oldest protection coating system for pipelines, started having severe failures after years in services, due to external corrosion, predominantly in the Sabkha area. The Sabkha area is defined as the area where the water table is saturated with high levels of salts, dissolved hydrocarbon

gases (mainly H_2S and CO_2), and other hydrocarbon elements. Some old pipelines that had been tape wrapped were performing well and were able to survive, but in dry sand areas only.

In addition to the type of the tape wrap material, bad application, and pipe operating temperatures, the severe failure and deterioration of the tape wrap pipes in wet/Sabkha sand is due mostly to the "shielding" phenomenon associated with the cathodic protection (CP) system, which is applied as a backup protection system for external buried pipeline (Figs. 1 and 2).

IInternal corrosion, which leads to an internal pinhole in the pipe, was another factor for pipeline failure. These internal and external pinhole failures led to leaking of hydrocarbon products throughout the pipeline network in different locations, particularly in wet/Sabkha and high water table areas, where corrosion is accelerated.

Until the early 1990s, no advance inspection equipment was available to predict the pipeline failure in general in the past. Consequently, the pipeline rehabilitation became a major issue for the aging pipeline network in all oil and gas companies so that they could sustain the network operations for pumping the oil and gas. In the early 1990s, the in-line Inspection (ILI) tool, Magnetic Flux Leakage (MFL), Transverse Field Inspection (TFI), Ultrasonic Testing (UT) inspection tool, and other pipeline inspection tools were introduced to the industry and used by oil and gas companies as assessment instruments in major rehabilitation projects for restoring their pipeline network's integrity to meet the increase in design capacity and maximize the oil and gas production capacity to meet the world demand.

Fig. 3: Buried FBE pipe was found in good condition after 22 years in service in dry sand.

Fig. 2: Examination of corrosion deposit scale on failed old tape wrap pipeline removed from service

Since then, pipeline rehabilitation and replacement projects have been ongoing to cover the huge spread of the companies' aging networks, following the latest recognized pipelines industry practices and standards. Several innovative scoping, design, and field execution methods were introduced to enhance the rehabilitation projects' effectiveness. The pipeline coating standards were also revised to phase out some obsolete pipeline protection methods, such as the use of tape wrap and hot/cold coal tar enamel pipes in most big oil companies, and to mandate FBE powder coating for shop application and liquid coating for field application for external and internal pipeline network rehabilitation programs.

Pipeline Survey

A field survey was conducted on several underground FBE buried pipelines a few years ago in the GCC at several locations in

both dry and wet or Sabkha sand areas. The surveyed lines had diameters ranging from 20 inches Ø to 56 inches Ø and lengths averaging 100 km (62 miles). These large-diameter pipelines are known as the cross-country pipelines or trunk lines. The purpose of the field survey was to examine and evaluate the condition of the external FBE powder coating applied in early 1990s for pipeline protection under the ground. Since these pipes were placed in dry and wet sand/Sabkha area, the intention was to examine whether the life span of the pipe with the FBE could be extended for another decade.

The survey revealed that the single FBE coating system was performing very well after more than 20 years of service at dry sand areas in the desert. The FBE coatings were still intact, with good adhesion and in excellent condition on steel pipe. Minor coating defects were observed on the spiral seam weld areas; the observed defects were natural and expected due to the difficulties of coating welded areas.

However, the single FBE powder coating condition in the wet sand or Subkha area was not as good as in the dry sand. Blisters, external corrosion, metal loss, and coating delamination were found in addition to color discoloration of the FBE powder coating (Figs. 3 and 4).

Details of the survey of specific pipelines follow.

Fig. 4: Buried FBE pipe in Sabkha wet sand bordered with water had deficiencies within five years in service.

Fig. 5: 46-inch Ø Pipe FBE damage on spiral girthweld

FBE in a Dry Sand Area

After 22 years in service, a 46-inch Ø FBE crude oil pipeline was excavated for inspection and evaluation of the external FBE powder coating applied in 1981. The average range of dry film thickness (DFT) was 18 to 22 mils. A visual inspection, field evaluation, and testing were conducted on a few selected pipeline bellholes. The FBE coating was found in good condition without any blisters or other major defects.

Fig. 6: Minor mechanical defect observed on the pipe body.

However, coating delamination from the steel substrate was observed in other locations—at the 12 o'clock position and at 5 o'clock position. The delamination most likely resulted from anomalies at initial stage during pipeline installation. Minor defects on weld joint and on the pipe's body were also observed due to mechanical defects. Neither corrosion nor deep pitting was observed (Figs. 5 and 6).

A few holidays were found on the pipe spiral-weld from a repair at the girth weld at the 7 o'clock position due to incomplete weld bead during welding the pipe joints, which most likely happened in the shop. It's important to point out that coating girth welds areas, whether by liquid coating or powder coating, is not easy, and holidays are expected due to the welds' bead configuration pattern (Figs. 7 and 8).

In general, the finding shows that the external FBE in dry sand areas was in either good or excellent condition after 22 years in service, according to the data record for the 46-

Fig. 7: Defects at repaired girth weld area at the 7 o'clock position due to incomplete weld beads.

Fig. 8: The heat shrink sleeve for girthweld pipe joint protection was found in satisfactory condition in dry sand only.

Fig. 9: The FBE in wet Sabkha found with blisters and corrosion under the FBE coatings.

inch Ø pipe body. Most likely, this coating application was one of the earliest shop applications of the FBE for buried pipeline projects in the region.

FBE in the Wet Sabkha Areas

However, the single FBE coating system placed in the wet Sabkha sand areas was disbonded, and external corrosion deposits were observed under the FBE coating film after a short period in service, either a few months or a few years. Factors that accelerated the corrosion cell on the pipeline surfaces included the high salinity water table bordering the pipe; the operating temperatures of the crude oil, normally between 110 and 120 F; and the dissolved hydrocarbon gases, mainly H_2S and CO_2 gases, which constitute an aggressive environment. Because all coatings are permeable with time, including the powder coating film, water molecules will permeate the film and reach the steel substrate even under ideal conditions. Some FBE pipelines in wet areas exhibited coating disbondment, calcare-

Fig. 10: Unidentified black spots under damaged coating were observed at the 11 o'clock position.

Fig. 11: FBE delamination at the 12 o'clock position was caused by mechanical damage.

ous deposits, and corrosion blisters, particularly in the Sabkha area, after only 4 to 5 years of service (Fig. 9).

Another crude line was coated with FBE in 1998 and placed in the Sabkha area with an approximate operating temperature of 120 F. The pipeline exhibited some coating disbondment within five years of service. A few bellholes along the pipe segment were excavated for inspection. A bellhole is normally an excavation area 20 to 40 feet long by 13 to 16 feet wide around a buried pipeline and intended for pipeline inspection or maintenance.

The survey showed that the FBE coating peeled off easily by hand in large pieces and showed very little remaining bond to the pipe wall. The exposed area shows mainly unknown dark gray shaded circles. There were small areas of rust scale but no measurable metal loss.

Some coating blisters were visible and were found full of water when cut open. The water was extremely acidic, where it should have been alkaline. Apart from the few localized blisters, the coating looked good with no discoloration. However, the coating film was hard and could be removed easily with a scraper or inspection knife, leaving bare steel. The steel surface was clean, with no corrosion or discoloration and showed a good anchor pattern. The findings were the same as on other locations, except with fewer blisters visible. The coating could be removed easily from the blistered areas and from areas without blisters (Figs. 10 and 11).

Most of the bellholes excavated and inspected in the Sabkha area were in a sandy soil area type and not a rocky area type with vegetation and a high water table. The bottom of the ditch between the 4 and 8 o'clock positions was full of water and required pumping out or de-watering, which is a key cost element in pipeline maintenance.

The FBE coating was intact on pipeline surfaces when the adhesion X-cut test was conducted with an inspector's knife. However, a few big blisters and corrosion underneath were observed at the 6 o'clock position on the pipe body and at girth weld zones. Some poor workmanship using liquid epoxy coating to repair holidays was also observed. Other blisters found were small, dry, and free of water underneath them. Moreover, there was no corrosion or pitting under these blisters. The

Table 1: Recommended External-Internal Pipe Coating System Options

Coating System / Pipe Category	External Pipe Coating		Internal Pipe Coating		Remarks
	Shop Application (New Pipe)	Field Application (Existing Pipe)	Shop Application (New Pipe)	Field Application (Existing Pipe)	
Trunk Line Pipes (Ø >20")	• Single FBE powder • 3LPE/PP • Liquid coating • Composites	• Liquid coating	• FBE powder • Liquid coating • Liners • Composites	• Liquid coating	Launcher and receiver required for field application
Flow Line Pipes (Ø<20")	• FBE powder • Liquid coating • Composites	• Liquid coating • Composites	• FBE powder • Liquid coating • Composites	• Liquid coating • Liners	Composites and liners have limitations on pipe diameters and pipe length
Estimated Service Life Time in Ideal Conditions	20–25 Years	+15 Years (new pipe) +10 Years (old pipe)	20–25 Years	+15 Years (new pipe) +10 Years (old pipe)	Depends on the coating materials and application conditions

steel substrate was clean and shiny, which indicated that the CP system was working (Figs. 12 and 13).

It is believed that the defects that were repaired and touched-up with liquid repair epoxy coating material had resulted from mechanical damage during pipe installation. The discoloration and slight fading of the FBE on the pipe body is common in all epoxy coating systems; however, the coating integrity is not affected, including in this case (Fig. 14).

In general, the FBE coating survey of pipeline in prolonged service showed that the pipes were in good and satisfactory condition. No major coating failure issues or significant defects were observed in dry sand, only at the locations of the pipe in Sabkha or wet areas. The defective areas were a result of either poor repair and poor workmanship or unintentional welding burns through the FBE coating during installation. Both defective

Fig. 12: FBE coating blisters at 5 o'clock position in wet Sabkha area, which was exposed to the water table.

Fig. 13: Poor repair workmanship at girth weld using liquid epoxy coating at the 6 o'clock position.

areas were insignificant relative to the total pipe length. No major corrosion or pitting was observed under defective areas at Sabkha. The color degradation or variations were expected; they are common in the epoxy coating systems and had no effect the FBE coating properties. The pipe at defective areas was well protected from further corrosion by the CP potential system of the pipelines. The service life of the pipelines was expected to extend another 10 to 15 years under ideal conditions.

Current Status of Pipeline Rehabilitation in the GCC

Currently, the oil and gas companies in the Gulf region are rehabilitating their entire onshore pipeline networking using the latest available protective coating system in the industry. For external pipeline coating protection of existing pipes in the field, the tape wrap is completely removed and replaced with either high-build epoxy liquid coating system or with visco-elastic wrapping material applied to the pipe body at the pipe ditch for limited or short pipeline sections and for girth-weld (GW) zones or areas. For new pipe joint replacements, the FBE powder coating is applied, but only in the shop, except on the GW areas, which can be applied in the shop of the field. For internal pipe rehabilitation, however, depending on the pipe size and length, in-situ liquid coating can be applied in the field, as can some composites and liners that can be used for existing pipelines, again limited to the pipe length and size. The coating protection system used at offshore subsea lines, which is the concrete weight coat (CWC) over the FBE, is beyond the scope of this paper.

Various protective coating systems are available in the pipeline industry for external/internal pipeline as alternative protection for pipelines, including the following.

External Coatings Options

- FBE single-/multi-layers coating system, shop application only for new pipes
- Liquid coating system, field/shop application
- Multi-component, high-build liquid epoxy coating system, field/shop application
- Visco-elastic coating system, field/shop application
- Composites repair system, field/shop application
- CWC over the FBE for offshore only

Internal Coatings Options

- FBE coating system, shop application only, for new pipes
- Flow liquid coat system, shop application

Fig. 14: The FBE color discoloration and fading, which is common with epoxy coatings

only, for new pipes

- In-situ liquid coating in the field for existing old/new pipelines
- Composite/non-metallic liners in the field for existing lines

Options for Pipeline Rehabilitation:

Consequently, the recommended pipeline external/internal coating option will be based on the general concept of the ability of the external or the internal coating to extend the service life for more than 20–25 years for new coated pipes and more than 10–15 years for old existing pipes.

A comparison of costs and benefits of the use of a coating system over other types of corrosion prevention methods, such as chemical inhibitors and CP, should be conducted.

Conclusion

The FBE pipeline coating survey revealed that the external FBE condition was, generally, in a good and satisfactory condition in the dry sand environment and that it can serve for another 10 to 15 years under continuous maintenance and a high-quality corrosion control program. While the FBE in the Sabkha wet areas is questionable and the service life depends on the regular pipeline survey and nonstop maintenance plan, in addition to high-quality corrosion control backup systems. Systems such as CP for the external FBE/liquid coating and chemical inhibitors for the internal FBE/liquid coating system should be used to maintain the service life of the pipe in the harsh and aggressive Sabkha environment.

The oil and gas companies should look for the latest new technology in the market that is available, is easy to apply, is fast curing, has

a longer service life, is cost effective and is inexpensive. In addition to the above points, the pipeline coating industry should look and work on the following suggested technologies.

1. A method to retain the tape wrap's condition/performance without removing the tape from the pipeline, e.g. by coating over or encapsulating the tape wrap
2. Invention or utilization of nano-technology coatings to come up with coating systems that can withstand Sabkha conditions of high salinity level and high hydrocarbons of H_2S and CO_2
3. New measures and advanced corrosion monitoring systems for pipelines
4. More development and research in the field of non-metallics for pipeline repairs
5. Establishment of the common factors for the poor bonding of the FBE on pipelines in wet environments for further investigation by pipeline companies, R&D organizations and end user companies

References

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2. Author's Studies and Technical Survey Reports.

About the Author

Baker S. Hammad is a retired certified Engineering Consultant and Coating Specialist from Saudi Aramco and The Saudi Council of Engineers (SCE) with 30 years of experience in the oil and gas industry. He worked as the Protective Coatings Vice-Chairman, Team Leader, and Instructor in Saudi Aramco. He

holds a B.S. degree in Mechanical Engineering from KFUPM, Saudi Arabia, and an Advance degree in Polymers and Coatings Technology from EMU in Michigan. He is the Founder and Chairman of SSPC Saudi Arabia Chapter. He is a member of SSPC, NACE and SCE. He is a Licensed Consultant by SCE and a NACE Certified Coating Inspector. He is also a qualified instructor for protective coatings and corrosion prevention courses in Aramco, SSPC, and Co-Instructor at NACE. He has a USA patent in Concrete Weight Coat for subsea lines. He is an author/co-author in several international technical publications and conferences at SSPC, NACE, Aramco and *JPCL*. Currently, Baker is an Independent Consultant & Training Service Provider in the oil & gas industry and the owner of BSH Engineering Consultant Office, based in Saudi Arabia and Bahrain. **JPCL**

Courtesy of the author

Concrete Crack Repair and Deck Sealing at the Durango Pumping Plant

By Rick Pepin, U.S. Bureau of Reclamation

The U.S. Bureau of Reclamation's mission is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public. Among the many structures under its care is the Animus-La Plata water project.

The Animus-La Plata water project included the construction of a 280 cubic feet per second (7.9m³s) pumping plant on the Animus River just south of downtown Durango, Colorado, and an underground pipeline to carry water from the pumping plant to an off-stream reservoir, Lake Nighthorse, at Ridges Basin Dam, southwest of Durango.

Construction of the pumping plant took approximately five years, with state-of-the-art design and construction practices to monitor, examine, and build the plant. However, even with these programs implemented, construction flaws occurred in the concrete deck of the pumping plant. This outdoor concrete deck covers some of the electrical controls and computers at the plant. Leaks in the deck have been a constant maintenance headache for the project. This article describes successful strategies the Bureau has taken to reduce water migration.

Since 2010, an ongoing strategy of crack injection with chemical grout and

Sealing cracks in the deck and overall sealing of the concrete deck were needed to reduce water migration through the deck.
All photos courtesy of the author.

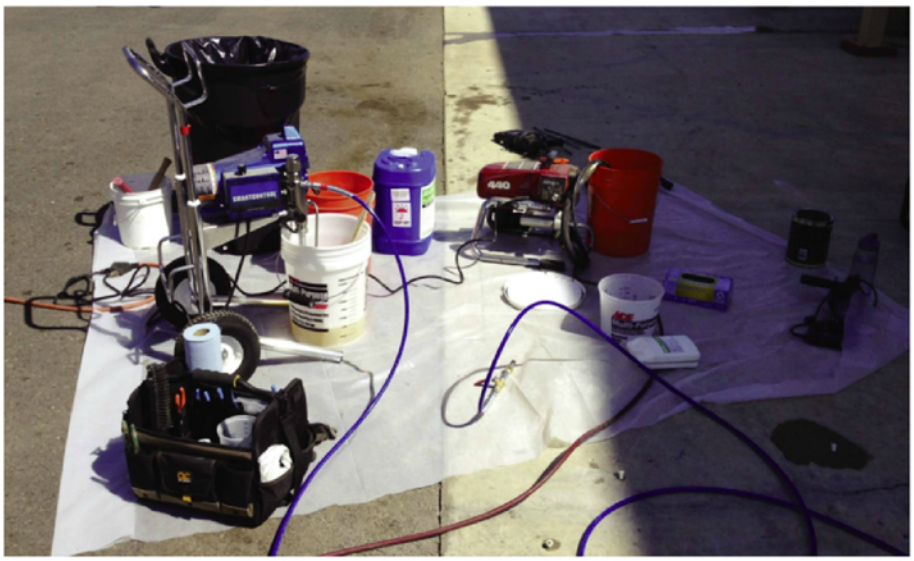
epoxies has been implemented. This process has sealed some of the larger cracks in the concrete, stopping or slowing the water infiltration into the pumping plant.

In 2012, Management of the Bureau of Reclamation's Four Corners Construction Office, Durango, Colorado, decided that an overall sealing of the deck would reduce water migration through the smaller cracks in the concrete.

The same Management group asked the Bureau of Reclamation's Denver Office Technical Service Center—Materials Engineering and Research Laboratory (MERL) to conduct the 2012 deck sealing operation. The total cost, with material and five days of the crew's time, was approximately $40,000.

Four people from the MERL Laboratory in Denver traveled to the Durango Pumping Plant in August 2012 and initially injected the few remaining larger cracks that were not completed in previous crack sealing work. Injection ports were used to access the concrete cracks below the top surfaces. Once the larger cracks had been sealed, surface imperfections were removed by grinding, and the surface was cleaned for the next phase of the project.

By applying sealers to concrete, the permeability of the concrete can be reduced by up to one order of magnitude. The permeability of the concrete is one of the most important factors that will affect the rate of water migration, and thus, steel reinforcement corrosion, carbonation, the effects of freeze-thaw cycles, and the overall deterioration of the concrete. The deck was sealed with a two-component, clear, coating-type epoxy sealer, designation type 2b (Alberta Transportation Technical Standards Designation—Specification for Concrete Sealers B388[1]), with quartz sand broadcast for slip resistance.



Equipment for sealing the few remaining larger cracks in deck

The first consideration with any application is the surface preparation. The substrate must be clean and dry, and free of any grease, oil, dirt, or other contaminants. The texture of the surface should meet the International Concrete Repair Institute (ICRI) Technical Guideline No. 03732-profile CSP 3 (light shot blasting).[2] The surface was to be shot blasted with steel shot, which does roughen surfaces.

Before application of an epoxy healer/sealer with a broadcast system, it is important for the surface to be roughened and not smooth, and for all large cracks and irregularities to be patched.

The Technical Service Centre (TSC) crew started preparing the 5,400-square-foot concrete deck by blowing down the surfaces with compressed air to remove dirt and dust.

Areas that had been contaminated with oil or grease were treated with a solvent, which was then soaked up with clean rags.

The next step was to use a shot blaster to remove the weak surface layer or laitance and to open the pore structure of the concrete so that the sealer would penetrate more easily into the concrete. The shot blaster had a vacuum recovery system to hold down dusting and to help recycle the shot blast medium. Shot blasting took approximately one and a half days to prepare the concrete surfaces. Any loose steel shot was picked up with a magnet and reused.

Application of the epoxy healer/sealer in direct sunlight or while temperatures are rising can cause pinholes and blisters from outgassing of the concrete. The air in the porous concrete expands during these periods and escapes, potentially causing the blisters or pinholes in the epoxy. The TSC crew applied the epoxy sealers during the mornings in late summer to reduce heat buildup and the chance of pinholes and blisters.

The application of the first modified epoxy healer/sealer coat and broadcast sand took one full day. The epoxy healer/sealer is a two-component, modified epoxy, mixed at a 1:1 ratio. Once mixed, it was poured over the application area, spread over the surface with rubber squeegees, and worked back and forth over cracks to ensure proper filling and coverage. It was important to spread the material to prevent ponding. Approximately 26 gallons of material was applied to the concrete deck area for the first coat. In some areas, the concrete absorbed a lot of resin in a relatively short period of time, and the surface appeared dry. Where this was observed, resin was applied until the concrete was saturated.

Once the first layer of applied epoxy healer/sealer became tacky, approximately 20 minutes after mixing, a single layer of quartz sand was broadcast over the treated area. Spreading initially was done with an abrasive blasting pot and hose, but the process was too slow, and the coverage was spotty. Switching to drop spreaders allowed ten 100-pound bags of quartz sand to be applied to saturation in a relatively short period and with very good coverage. The sand was hand-applied for difficult-to-reach corners and edges. The sand layer

The finished product after an afternoon thunderstorm—watertight

protected the modified epoxy healer/sealer from sunlight (UV) degradation and provided a slip-resistant surface.

The next day, the crew removed approximately 20 pounds of loose sand using a mechanical sweeper. This sand was broadcast again for the second coat.

Workers used spikes on the bottom of steel-toed shoes to keep them out of the epoxy. The epoxy sealer is a high-solids, low-VOC epoxy, so respirators were not required when applying it in unconfined spaces. Workers also wore safety glasses, used disposable gloves when mixing and handling the sealer, and used masks when sweeping and creating dust. They used non-graded quartz sand, which was not dusty during the application from the drop spreaders.

The crew began application of the second epoxy healer/sealer coat the following day,

after the loose sand was cleaned up. Due to the increase in surface area created by the application of the quartz sand, a large volume of epoxy, approximately 118 gallons was needed. Just as with the first coat, once the epoxy became tacky, sand was broadcast onto the concrete surface, this time, 20, 100-pound bags of sand. A total of 144 gallons of epoxy healer/sealer and 3,000 pounds of quartz sand were applied to the concrete deck surface.

Late that afternoon, as things were wrapping up for the day, there was a thunderstorm. Fortunately, the epoxy sealer was set, and the rain did not damage or affect the epoxy sealer in any way. The next day, activities were sweeping up 40 lbs. of loose sand and disposing of it. The crew performed full site cleanup and the trucks were packed for the trip back to Denver.

The crack injection and deck sealing will reduce or eliminate the water migration through the concrete deck for years to come.

References

1. Alberta Transportation Technical Standards Branch, 2nd Floor, Twin Atria Building, 4999-98 Avenue, Edmonton, Alberta, T6B 2X3.
2. International Concrete Repair Institute, 10600 West Higgins Road, Suite 607, Rosemont, IL 60018.

About the Author

Richard Pepin is a Senior Coatings Specialist with the US. Bureau of Reclamation in Denver, CO, a water resource management agency of the Department of the Interior, with over 28 years of experience, 14 of which are in the field of protective coatings. He is an SSPC-certified Protective Coatings Specialist, a NACE-Certified Coatings Inspector Level 2, and holds a BS degree from Montana State University. He performs coating failure analyses, coatings system recommendations, specification preparations, and project management for a variety of water projects and hydropower generation projects. **JPCL**

Photo courtesy of the Las Vegas Convention and Visitors Authority | LVCVA.com

2014 World of Concrete Show Celebrates 40 Years

The Las Vegas Convention Center in Nevada will host the 40th annual World of Concrete (WOC) trade show and exhibition from January 20–24, 2014. The annual international event, dedicated to the commercial concrete and masonry construction industries, will feature educational programs and an accompanying indoor and outdoor exhibition.

According to show organizers, the intended audience for WOC will include commercial, residential, general, and repair contractors; construction managers; dealers and distributors, architects, engineers, designers, and specifiers; brick, pipe, block, and ready mix producers; rental equipment centers; repair contractors; decorative and specialty concrete contractors; concrete pumpers; precast/prestressed concrete producers; and others in the commercial concrete and masonry construction industries.

WOC's technical program, to be held January 20–24, will feature more than 100 skill-building seminars offered in 90-minute and three- and four-hour sessions. Interactive workshops will focus on leadership building, strategic planning, certification opportunities, and safety training.

More than 1,300 original equipment manufacturers and distributors of equipment, products, and services will occupy more than 500,000 square feet of exhibit space from January 21 to January 24.

The following preview includes a list of seminars relevant to coatings professionals, as well as a list of exhibitors involved in the surface preparation and coating of concrete. All information is current as of press time. For further details, visit www.worldofconcrete.com.

Monday, January 20

- MO01 Concrete Basics I: Concrete Mixtures, Materials and Fresh Properties, 8:00–11:00 a.m.
- MO120 Waterproofing Product Types and Systems, 8:30–10:00 a.m.
- MO02 Concrete Basics II: Ordering, Making, Placing & Finishing Concrete, 1:00–4:00 p.m.
- MO10 Troubleshooting Concrete Cracks: Understand and Minimize Cracking, 1:00–4:00 p.m.
- MO402 ACI Specialty Commercial/Industrial Concrete Flatwork Review, 1:00–5:00 p.m.

Tuesday, January 21

- TU03 Concrete Basics III: Curing, Effects of Weather & Sustainability, 8:00–11:00 a.m.
- TU11 Repairing Concrete Cracks:

Evaluation and Selection of Repair Methods, 8:00–11:00 a.m.

- TU17 Restoration and Repair of Decorative Concrete, 8:00–11:00 a.m.
- TU23 Troubleshooting Moisture Problems in Concrete Floors, 8:00–11:00 a.m.
- TU26 Preventing and Handling Efflorescence, 8:00–11:00a.m.
- TU121 Introduction to Concrete Part I: Concrete Materials and Technology, 8:30–10:00 a.m.
- TUPTD How to Place & Finish Floors, 1:00–5:00 p.m.
- TU122 Introduction to Concrete Part II: Placing, Finishing and Curing, 1:30–3:00 p.m.

Wednesday, January 22

- WE12 Concrete Repair Fundamentals I: Surface Preparation, Reinforcement Repair, Material Selection and Placement, 8:00–11:00 a.m.
- WE24 Polishing Retail and Industrial Slabs—Design and Construction Best Practices, 8:00–11:00 a.m.
- WEPTD1 How to Place & Finish Floors, 8:00 a.m.–12:00 p.m.
- WECR1 Concrete Repair, 12:00–3:45 p.m.
- WEPTD2 How to Place & Finish Floors, 1:00–5:00 p.m.
- WECR2 Concrete Repair, 1:45–5:30 p.m.

Thursday, January 23

- TH21 Understanding, Selecting and Troubleshooting Sealers and Coatings for Decorative Concrete, 8:00–11:00 a.m.
- TH13 Concrete Repair Fundamentals II: Waterproofing and Corrosion Protection, 8:00–11:00 a.m.

Friday, January 24

- FR14 Advanced Structural Repair: Strengthening Solutions, 8:00–11:00 a.m.

Exhibitors

The following is a list of exhibitors of interest to the protective coatings industry. Company names and booth numbers are current as of press time.

AP/M ConShield C6086
Aquafin Inc. S10549
ARAMSCO S10955
Arizona Polymer Flooring Inc. ...S10752
Aurand Manufacturing & Equipment Co. S11419
BASF Construction Chemicals ...S10107
BlastPro S11339
Blastrac S10117
CIM Industries Inc. S12522
CDC LaRue Industries Inc. S11455
CETCO S10138
ChemCo Systems Inc. S10554
Chemline Inc. S12907
Citadel Floor Finishing Systems S12639
Convergent Concrete Technologies LLC S10415
Cortec Corporation S10455
Crown Polymers S12013
CS Unitec Inc. O30747
DeFelsko Corp. S12356
Denso S11755
Doosan Portable Power O30538
Dow Building Solutions C4249
Dow Chemical Co. CE35
Durability+Design/JPCL/ PaintSquare S12950
Dur-A-Flex O40643, S12127
Dustless Technologies S13056

EcoQuip Inc.	O31101
EDCO–Equipment Development Co., Inc.	O31035
Flexmar Coatings LLC	S12915
Harsco	S12612
HP Spartacote	S11515
Husqvarna Construction Products	C4305
IBIX North America Surface Technologies LLC	S12800
Integument Technologies	S12917
ITW Polymers Coatings North America	S12944
Jetstream of Houston LLP	S12319
Key Resin Co.	S11654
Lignomat USA	S12354
3M	O31218, O31224
NLB	S11413
Novatek Corp.	S10355
Polycoat Products	S11521
Polyguard Products Inc.	S10749
Proceq USA Inc.	S11847
Putzmeister America Inc.	C5727
Raven Industries	S12507
Roadware Inc.	S11249
Rust-Oleum Corp.	S11250
SASE Co., Inc.	S10215
Seymour Midwest	S12047
Simpson Strong Tie Anchor Systems	O31746
Sky Climber LLC	N1427
Smith Manufacturing	S11554
SPE North America Ltd.	O30337
Specialty Products Inc.	S12506
SSPC: The Society for Protective Coatings	S10352
Sulzer Mixpac USA	O30526
Tramex Ltd.–Black Hawk Sales Inc.	S12410
U.S. Silica	S12725
Vector Corrosion Technologies	S11354
VersaFlex Inc.	S12822
W.R. Meadows	S10707
Wagner Meters	S12149
The Wooster Brush Co.	S12523

On Failure Analysis

The September F-Files, "The Case of… Bubbles, and Pinholes, and Blisters, Oh My!" by James Machen, pp. 21–28, was an interesting failure and a well written article. But I have a problem with the paragraph stating that infrared spectroscopic analysis (IR) "identified bound moisture" in the urethane topcoat, and the conclusion that "the moisture would have had to have been present on the MCU zinc-rich primer over which the polyurethane finish was applied" (p. 28).

The author does not present the spectra that show the presence of bound moisture, but I assume they probably show a strong, broad band near 3300 cm^{-1} and a weaker band near about 1630 cm^{-1}, typically associated with water.

If the spectra were obtained via the potassium bromide (KBr) pellet technique, and especially if they were weak, the water bands could be coming from traces of moisture in the KBr powder itself, not the paint.

Some indication of moisture in IR spectra of coatings exposed outdoors is common because small amounts of moisture can permeate any coating, or at least become adsorbed in the upper surface layers. Indeed, in this case, water from the external environment has completely permeated the topcoat, because white rust was observed in and on the underlying zinc-rich primer. As the author notes, this means that rain or condensing moisture "was gaining access to the… primer through voids in the polyurethane finish coat." Thus, it is likely that IR detected this external water, not water that was painted over.

If a urethane topcoat was applied over a thin layer of water, the isocyanate in the topcoat would react with and consume the water and result in the formation of carbon dioxide gas. There would be no water "left over" to be detected later by IR spectroscopy. Hence, the "bound water" detected by IR had to have come after the topcoat cured.

If a layer of water was present on the primer when topcoated, this would likely have caused the topcoat to peel from the primer (unless the water was consumed very rapidly by the isocyanate in the topcoat). However, no intercoat adhesion failure was mentioned.

Sincerely,

Dwight G. Weldon
Weldon Laboratories, Inc.

The Author Responds

Contrary to the concerns raised by Mr. Weldon, the analysis of the failing sample referenced in the article is correct, and the results of the entire case must be reviewed relative to all of the facts and the many samples that were analyzed. In any failure analysis, there is great risk in focusing on any single piece of data, taken out of context. There were many causes of the failure in this project, with the presence of moisture at the time of the field repairs being one of them.

The problems began with the application of the polyurethane finish to the moisture-cured urethane (MCU) primer in the shop before the primer had fully cured. The outgassing of the uncured primer led to the creation of voids and pinholes in the finish. When the steel was received in the field, the deficiencies were to be corrected by localized removal of the finish and the application of additional coating. In some cases, the field finish was applied over a damp surface. The one sample selected for the article being questioned is from one of the failing field-painted areas, an area that exhibited blistering.

It is important to distinguish moisture permeation through the finish coat from moisture penetration through the many pinholes. As indicated in the article, moisture is gaining access to the primer through pinholes. If moisture permeation through the finish were responsible for moisture reaching the primer, the moisture would have been revealed in all of the IRs, but it was detected only in the failing finish coat samples that had been field-applied as a repair.

The combination of field observations, microscopic examination of coating cross-sections, and IR spectroscopic analysis showing bound moisture only in failing samples of the field-applied topcoat discount the other sources of moisture hypothesized. Moisture contamination of the KBr could have jeopardized the analysis. As is proper in any laboratory using KBr, it was dry, and we followed our standard laboratory procedures and checked systematically to confirm that moisture was removed from KBr before use.

Jim Machen
KTA-Tator

Editor's Note: Read the article in JPCL's archives on PaintSquare.com. JPCL welcomes Letters to the Editor but reserves the right to edit them for length and style. Send letters to kkapsanis@paintsquare.com.

WELCOME

SSPC 2014 featuring GREENCOAT

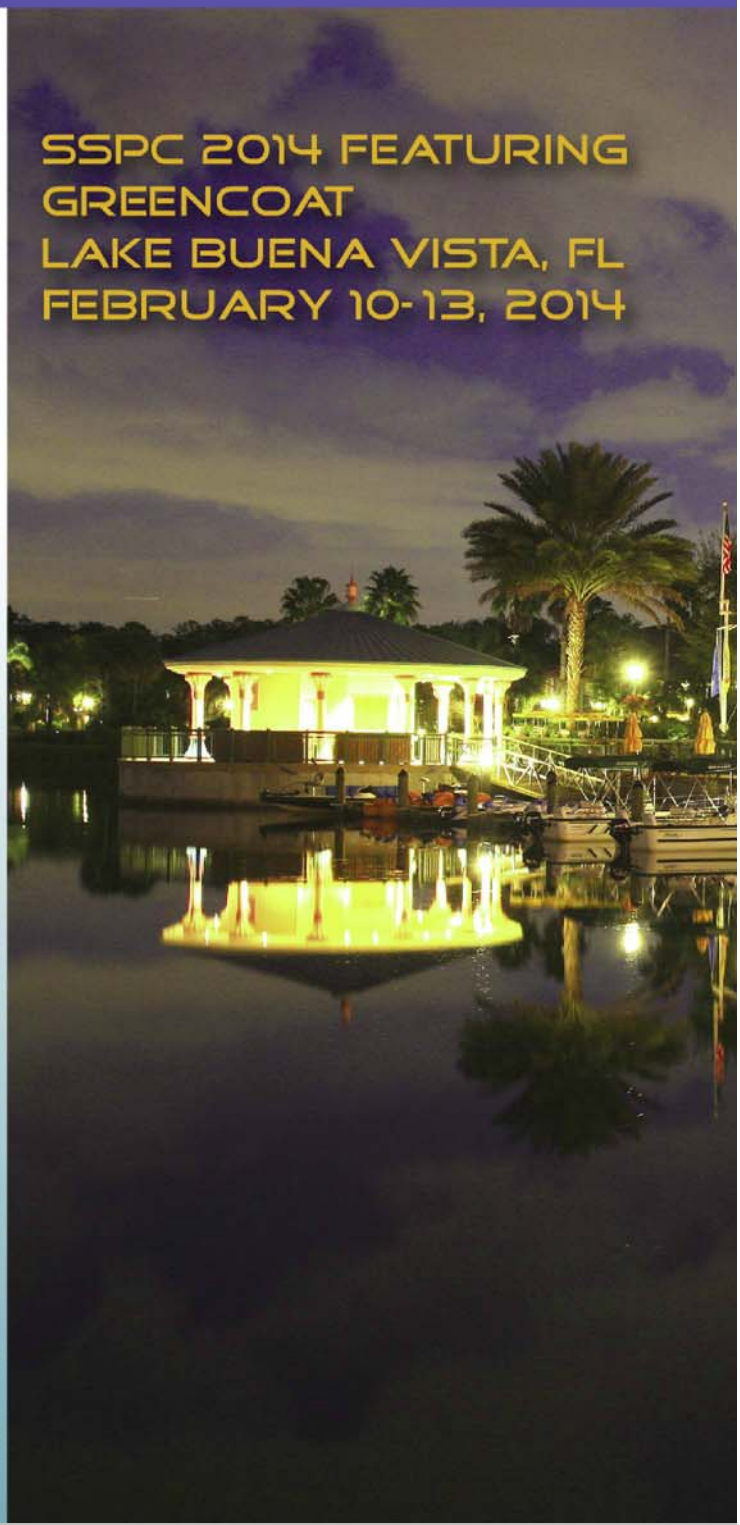


Photo: © Disney

TO SSPC 2014

SSPC The Society For Protective Coatings

www.sspc.org 40 24th Street 6th Floor Pittsburgh, PA 15222-4656 P: 412.281.2331 T: 877.281.7772 F: 412.281.9992

Dear SSPC Members and Guests,

I would like to personally invite you to join your colleagues and me at SSPC 2014 featuring GreenCOAT. The annual SSPC meeting is set for February 10-13, 2014 at the Coronado Springs Resort in Orlando, Florida.

As many of you know, SSPC has been in existence since 1950 as *the* resource for the protective coatings industry. As a professional society, it is our goal to serve you as members and attendees, and provide you with the necessary tools to drive the industry to greater heights. From standards to best practices, it has been our mission to ensure that people who have any part in the use of coatings have access to the latest, most relevant information needed for success on their project. The annual SSPC conference and trade show is one of those tools.

Let's face it, in the days of Internet research, it's easier than ever to jump on a search engine and find information. Whether it's knowledge, equipment or materials, most of what you're seeking is only a click away. In many ways, it's faster, it's cheaper, and there are no travel hassles compared with attending a trade show. But nothing beats the ability to shake a colleague's hand, speak face-to-face with the developer of some new technology or product, or absorb a week's worth of learning, free from the buzz of ringing office phones and mindless cubicle chatter.

If you've never been to an SSPC show, 2014 is the year to make that change. The education program is as well rounded as it's ever been, featuring some of the strongest technical content in years. In addition, we're offering four new training programs, as well as a new feature called Mini Sessions, that are designed to allow you to maximize your time in the conference center on Wednesday and Thursday. And of course, the exhibitors are planning a product-packed exhibit hall that includes the latest equipment, tools and services along with the return of outdoor exhibits.

SSPC is growing stronger every year. In 2013, we are poised to eclipse the 10,000-member mark for the first time. That is due to expanding opportunities across our industry and the hard work and dedication of members like you. This is your society. Make the most of your membership by joining us in Orlando, participating in committees, and gathering information that will last you a lifetime!

Whether you make, use or talk about coatings, SSPC 2014 will be a great place to take another step forward in your evolution as a professional.

I look forward to seeing you there!

Sincerely Yours,

Ben Fultz

SPECIAL EVENTS, AWARDS

SSPC 2014 featuring GREENCOAT

SSPC 2013 Awards Luncheon. Courtesy of SSPC.

SSPC 2014 attendees and their guests can take part in a variety of scheduled special events and awards ceremonies. For more details, visit sspc2014.com.

OPENING CELEBRATIONS

WELCOME RECEPTION

Monday, Feb. 10, 5:30–7:30 p.m.

The welcome reception, sponsored by Carboline (carboline.com), is an opportunity to enjoy hors d'oeuvres and cocktails amongst SSPC Board members, staff, colleagues, and business acquaintances. SSPC and Carboline will be giving away an iPad at the reception; you must be present to win.

EXHIBIT HALL GRAND OPENING

Tuesday, Feb. 11, 5:00–8:00 p.m.

The ribbon will be cut, and the doors to the SSPC 2014 exhibit hall will open amid great celebration. Attendees can enjoy food and drinks as they explore the variety of suppliers and other exhibitors.

AFTER PARTY *NEW!

Tuesday, Feb. 11, 8:00–10:00 p.m.

The *After Party*, sponsored by Jotun (jotun.com), offers attendees an opportunity to snack, sip on cocktails, network, and mingle in a relaxing atmosphere with upbeat music in the Coronado H Ballroom. SSPC staff will line the path from the exhibit to the *After Party* to direct attendees to the new event. All full conference registrants will receive a complimentary drink ticket with their registration. Jotun will also be distributing additional tickets from Booth 1025 during the Exhibit Hall Grand Opening.

ANNUAL BUSINESS MEETING AND AWARDS LUNCHEON

Monday, Feb. 10, 11:30 a.m.

Join SSPC President Ben Fultz, the Board of Governors, and Executive Director Bill Shoup to hear SSPC's Annual Report and to honor the 2014 award recipients at the Annual Business Meeting and Awards Luncheon. The following is a list of awards to be given at the luncheon.

SSPC STRUCTURE AWARDS

The eighth annual SSPC Structure Awards will honor teams of contractors, designers, end users, and other personnel for the excellence and expertise demonstrated on industrial and commercial coatings projects. Awards to be presented are:

- The William Johnson Award for outstanding achievement in aesthetic merit in industrial or commercial coatings work;
- The E. Crone Knoy Award for coatings work that demonstrates innovation, durability, or utility;
- The Charles E. Munger Award for a coatings project that demonstrates the long service life of the original coating;
- The George Campbell Award for the completion of a difficult or complex coatings project; and
- The Military Coatings Award of Excellence for exceptional coatings work performed on U.S. military ships, structures or facilities.

JPCL will feature this year's Structure Awards winners in a photo essay next spring.

SSPC HONORARY LIFE MEMBER

This honor is bestowed on an individual by the Board of Governors for extraordinary long-term activity on behalf of SSPC. To become an honorary life member, an individual must be nominated by a Board member and approved by two-thirds of the Board of Governors. Only one honorary life membership is awarded each year. The Honorary Life Member recipient for 2013 is John B. Conomos, Chairman of John B. Conomos, Inc.

ON TAP FOR SSPC 2014

JOHN D. KEANE AWARD OF MERIT
Named for SSPC's executive director from 1957 to 1984, this award acknowledges outstanding leadership and significant contribution to the development of the protective coatings industry and to SSPC. The John D. Keane Award recipient for 2013 is Derrick Castle, Chemical and Corrosion Laboratory Specialist, Kentucky Transportation Cabinet.

COATINGS EDUCATION AWARD
This award is given for significant development and dissemination of education material and technical information relating to protective coatings and their application. The three recipients of the Coatings Education Award for 2013 are Stephen Cogswell, BAE Systems Southeast Shipyards; Abdul (Bani) Quim, Valiant Coating Consultancy; and Muniandi Dewadas, Coating Consultant.

TECHNICAL ACHIEVEMENT AWARD
This award is presented annually to recognize outstanding service, leadership, and contribution to the SSPC technical committees. The Technical Achievement Award recipient is Dr. Lisa Detter-Hoskin, Principal Research Scientist, Georgia Tech Research Institute.

WOMEN IN COATINGS IMPACT AWARD
This award, which will be awarded for the first time ever this year, was established to recognize women in the coatings industry who have contributed to creating a positive impact on the culture of the industry. These women are leaders in their profession and demonstrate commitment to the advancement of the coatings industry, among many other things. This award will be announced at the show.

PRESIDENT'S LECTURE SERIES AWARD
Handpicked by the SSPC President, this technical presentation is chosen for its reflection of the coatings industry and profession. Past winning papers offered thought-provoking and relevant information important to the growth of the industry. The presentation will be highlighted in the Onsite Guide, and the winner will be recognized at the awards luncheon. The President's Lecture Series Award winners are "Field and Laboratory Experience with Polyurethane Pipe Linings," by Allen Skaja, Ph.D., David Tordonato, Ph.D., and Bobbi Jo Merten, U.S. Bureau of Reclamation; and "When Size Does Matter: In-Depth Analysis of Brooklyn Bridge Project Data to Determine the Most Efficient Size of Abrasive Blast Containment Units and the Workforce," by Guerman Vainblat and Timur Kolchinskiy, Greenman-Pedersen, Inc.

SSPC OUTSTANDING PUBLICATION AWARD
This award is given annually to the author(s) of the technical paper or presentation from the SSPC International Conference and Exhibition or the *Journal of Protective Coatings & Linings (JPCL)* that scores highest in the following categories:

- Clarity of expression and organization
- Originality of content or presentation
- Importance to the protective coatings industry
- Effectiveness of figures, tables, and examples

***JPCL* EDITORS' AWARD**
The same panel of judges selects the recipients of the *JPCL* Editors' Awards, which also recognize excellence in technical writing. Winners are selected from a field of more than 100 eligible papers from SSPC 2013 and JPCL articles published between May 2012 and July 2013. Awards are also based on clarity, originality, significance to the industry, and effective use of illustrations.

SSPC OUTSTANDING CHAPTER AWARDS
Each year, SSPC presents awards for the Outstanding North America Chapter and the Outstanding International Chapter. Chapters are evaluated on the overall operation of the chapter and the creativity and quality of the events that they hold each year.

SPOUSE AND GUEST TOURS

Two optional tours for attendees' spouses and guests are available. Tickets for the tours must be purchased separately.

ALLIGATOR & AIRBOAT TOUR AT WILD FLORIDA
Tuesday, Feb. 11, 9:00 a.m.–2:00 p.m.
Take a closer look at alligators and exotic wildlife as you glide through 4,200 acres of

Airboat tour. Courtesy of Wild Florida.

untouched nature preserve located in the headwaters of the Everglades. This swamp is free of any development and is 100% pure Florida wilderness, offering an array of wildlife including bald eagles, deer, cows, boars, turkey, alligators, and more. In addition to an airboat tour, you can enjoy natural Florida on the 500-foot dock that overlooks the swamp, have your picture taken holding a baby alligator, or browse the gift shop for unique take-home items. You will also lunch at the property's authentic barbecue restaurant. Make sure to bring a camera and capture the beautiful nature of Wild Florida!

ART OF THE WOK COOKING CLASS AT MING COURT
Wednesday, Feb. 12, 11:00 a.m.–2:30 p.m.
Ming Court embodies the art of innovative Oriental dining in a spectacular setting based on the centuries-old architecture of the Ming Dynasty and situated on two acres, surrounded by beautiful garden settings. This popular class introduces guests to the origins of Oriental cuisine, authentic cooking techniques and special ingredients used in the preparation of Chinese cuisine. Presentations are conducted by a senior staff member, and the cooking demonstration is conducted by Ming Court's Executive Chef. The program focuses on the art of using a Wok to create delicious traditional foods. Note: There must be a minimum of 20 guests.

CLOSING CELEBRATIONS

EXHIBIT CLOSING BLAST
Thursday, Feb. 13, 1:30–3:00 p.m.
The exhibit hall opened with a bang, so SSPC will close it with a blast! With no technical sessions scheduled in opposition, attendees can enjoy food and drinks as they take one last trip through the exhibit hall.

SSPC 2014 CLOSING PARTY
Thursday, Feb. 13, 7:00–9:00 p.m.
The Closing Party, sponsored by The Brock Group (brockgroup.com) and SSPC's Hampton Roads Chapter, gives attendees the chance to celebrate the closing of another successful SSPC show in style! Gather with friends old and new and enjoy food from the buffet to put a cap on the week.

Learn traditional Chinese cooking techniques at Ming Court. Courtesy of Ming Court.

EXPAND YOUR KNOWLEDGE IN SSPC 2014's WORKSHOPS

There are nine workshops scheduled as part of SSPC 2014's technical program. Questions about the technical program can be directed to Sara Badami at badami@sspc.org; or 412-281-2331, ext. 2208.

MONDAY, FEBRUARY 10

Afternoon Session 1, 1:30–4:30 p.m.

• "Proper Use of Coatings Inspection Instruments and Visual Guides," by Matt Fajt and Richard Burgess, PCS, KTA-Tator, Inc.

This workshop will discuss the proper use of coatings inspection instruments, as well the industry standards vital for those involved in corrosion protection using protective coating and lining systems. It includes an orientation to the basics of instrument use, followed by a series of hands-on workshops. Small groups will work with gages and visual guides on a number of topics, including measuring ambient conditions and surface temperature; measuring surface profile; assessing surface cleanliness (SSPC Visual Guides); measuring coating thickness by destructive means; detecting surface chlorides/conductivity; and measuring coating thickness.

Afternoon Session 3, 1:30–4:30 p.m.

• "An In-Depth Look at Standards Most Frequently Used by Industrial Painters," by L. Skip Vernon, PCS, MCI, Coating and Lining Technologies, Inc.; and Michael Damiano, PCS, SSPC: The Society for Protective Coatings

This workshop will explore new and recently revised versions of SSPC standards used by industrial painters, including a review of the revised water jetting standards; revisions to SSPC-PA 2, SSPC-SP 11, SSPC-SP 15 and SSPC-AB 1; the new SSPC standard for determining compliance with steel profile requirements, and some of the most frequently encountered existing SSPC standards. The workshop will address what constitutes an industry standard, the contractual implications of specifying using only a standard, and the impact of secondary and tertiary references in standards.

TUESDAY, FEBRUARY 11

Afternoon Session 1, 1:30–4:30 p.m.

• "Failure Analysis of Paints and Coatings," by Dwight G. Weldon, PCS, Weldon Laboratories, Inc.; and Gary L. Tinklenberg, PCS, Tinklenberg Consulting Group

With almost 70 years of combined failure analysis experience, the two instructors for this workshop will present the methodology involved in solving coating failures. Topics will include what to look for at the jobsite, sample taking, laboratory techniques, and what you can learn from laboratory testing. Emphasis will be placed on recognizing patterns in the failure, and the significance of those patterns. Several laboratory techniques will be covered, such as microscopy, infrared spectroscopy, SEM-EDS, gas chromatography, and differential scanning calorimetry. The limitations of these techniques will also be discussed. Case histories will be presented covering several types of coatings and failures.

El Centro building at Disney's Coronado Springs Resort. ©Disney

Afternoon Session 3, 1:30–4:30 p.m.

• "Confined Space Safety Training," by Charles Brown, Greenman-Pedersen, Inc.

This workshop will review what owners, contractors, and safety personnel need to know in order to comply with the OSHA 1910.146 Permit Required Confined Space regulations. The instructor will discuss definitions of confined spaces, testing, permits, written programs, work place surveys, and training requirements. The workshop will review the difference between permit required and non-permit required confined spaces; confined space hazards; PPE and equipment requirements; and the duties of authorized entrants, attendants, and entry supervisors. There will also be a discussion on the types of safety equipment for confined spaces.

Fountain at Disney's Coronado Springs Resort. ©Disney

WEDNESDAY, FEBRUARY 12

Afternoon Session 1, 3:00–5:00 p.m.

• "Coating Inspector Forum," by Earl Bowry, PCS, Jotun Paints, Inc.; and J. Peter Ault, Elzly Technology Corporation

This workshop will address a number of topics, including:

- Should continuing education be required for coating inspectors?
- Inspection ethics and etiquette; when does the inspector become a liability rather than an asset?
- Should an inspector be a teacher/mentor as well as an inspector?
- Should an inspector help a contractor; where is the line drawn when the inspector tries to assist the applicator?

Afternoon Session 4, 3:00–5:00 p.m.

• "Waterborne Protective Coatings" (GreenCOAT), by Dr. Leo J. Procopio, The Dow Chemical Company

This workshop will provide an overview of waterborne coatings, with a detailed discussion on waterborne acrylic, epoxy, and polyurethane technologies. It will focus on polymer chemistry and how waterborne resins are produced (e.g., what is unique about an acrylic latex or epoxy dispersion versus a solvent borne analog); formulation of waterborne resins into coatings; the mechanism of film formation; performance expectations; and recent developments in improving performance. Suitable environments and end-use applications for waterborne coatings will also be discussed, along with common causes of and solutions for coating defects and failures. Surface preparation, application methods and conditions, and equipment considerations unique to waterborne technologies will also be described.

THURSDAY, FEBRUARY 13

Mid-Morning Session 1, 10:00 a.m.–Noon

• "Painting Over Hot Galvanizing with Live Adhesion Testing," by Kevin Irving, AZZ Galvanizing Services; Dee McNeill, The Sherwin-Williams Company; Ted Hopwood, PCS, Kentucky Transportation Center, University of Kentucky; and Todd Williams, Ph.D., and Ahren Olson, Bayer MaterialScience LLC

This workshop will explain the "synergestic

effect" between painting and galvanizing to protect steel surfaces from corrosion. It will discuss the benefits of painting over galvanizing, including extended service life and cost-saving. The workshop will explain the science of HDG steel and will provide a review of ASTM D6386, Standard Practice for the Preparation of Zinc (Hot-Dip Galvanized) Coated Iron and Steel Product and Hardware Surfaces for Painting. Attendees will use HDG steel samples that will be painted by Bayer Lab and the University of Kentucky to perform adhesion testing of the paint. There will also be a highlight of a 100-year maintenance free bridge that FHWA is currently seeking.

Mid-Morning Session 4, 10:00 a.m.–Noon

- "Protective Coatings—An Overview," by Christopher Farschon, PCS, Tony Serdenes, Kirk Shields, and Ron Quesenberry, Greenman-Pedersen, Inc.

This workshop will provide an overview of an industrial protective coatings project, including design considerations, material selection, surface preparation guides, ambient conditions, and basic quality control techniques. It will provide a basic understanding of how protective coatings are specified and applied to meet the goals of a project, and will review typical inspection instruments used on a paint project, surface preparation guides, how to read a product data sheet, and how to measure ambient conditions. The workshop will include participation exercises and examples of some industrial coatings materials.

Afternoon Session 2, 3:00–5:00 p.m.

- "Writing Effective Corrective Actions," by Cory Allen, PCS, Vulcan Painters, Inc.

This hands-on, interactive session will train participants to write effective corrective actions as they relate to typical problems for an industrial coating contractor. This workshop should be particularly attractive to SSPC-QP-certified contractors, as -QP 1-certified contractors are required to document corrective actions. It will include a review of quality standards that require corrective actions (e.g., -QP 1, ISO 9001, NQA-1, etc.); the corrective action process and format; the background and benefits of corrective actions; and how to determine the effectiveness of a corrective action. Key definitions and case histories will be presented as each is component examined.

GET TRAINED AND CERTIFIED AT SSPC 2014

Registration for all SSPC Training Courses must be done separately from the SSPC 2014 conference registration. Some courses have prerequisites, which can be found under the "Training and Certification" section of the show website, sspc2014.com. To register, e-mail or fax a completed training registration form to Nicole Lourette at lourette@sspc.org, or 412-281-9993. Information on how to complete registration is also available at sspc.org/how_to_register/. The deadline to register is January 17, 2014.

Navigating NAVSEA Standard Item 009-32
Feb. 7
This course describes the naval ship cleaning and painting requirements found in Standard Item 009-32. It covers the cleanliness, surface preparation, coating application requirements, and system application instructions for various Navy vessels. Requirements of referenced standards are also reviewed. This course will help attendees better understand the painting requirements outlined for U.S. Navy surface ships, submarines, and aircraft carriers.

Applicator Train-the-Trainer (ATT)
Feb. 13–14
This course is designed to train owners, supervisors, and other representatives of industrial painting contracting companies on the delivery of two levels of the SSPC Applicator Training Program for surface preparation and coating application. It provides a standardized curriculum for applicator training to present at the shop or job site. This course is available to contractors and facility owners.

Bridge Coating Inspector (BCI)
Feb. 8–12 (Level 1); Feb. 8–13 (Level 2)
The BCI program covers the fundamentals of how to inspect surface preparation and application of protective coatings on bridge steel. The course covers situations that affect inspection in the field (e.g. containment, field safety hazards, changing weather conditions), and the skills required to inspect new bridge steel painted in the shop, in the field, or maintenance systems applied in the field.

Fundamentals of Protective Coatings (C1)
Feb. 8–12
The C1 course provides an overview for those who are new to the protective coatings industry. It is also an ideal refresher for reviewing the fundamentals of corrosion and the use of coatings as a protective mechanism against corrosion and deterioration of industrial structures.

Planning & Specifying Industrial Painting Projects (C2)
Feb. 8–12
C2 is designed to provide those who understand coating fundamentals with an overview of the principles of planning, awarding, and monitoring the quality of new construction or maintenance painting projects. Students will become familiar with tools to develop effective coating projects and play a more active role in managing painting projects to successful completion.

Lead Paint Removal (C3)
Feb. 10–13
The C3 course includes background information on the hazards of lead and other toxic metals, as well as the current legal and regulatory environment. The course contains specific discussions on protecting workers, compliance with environmental regulations, proper management of waste streams and operations that result in potential exposures to lead, and associated control technology. The course also addresses reading specifications and developing programs to effectively control risks to workers, the public, and the environment. There will be a discussion of insurance and bonding issues and an introduction to other safety and health issues.

Lead Paint Removal Refresher (C5)
Feb. 12
C5 provides refresher training for supervisors/competent persons responsible for industrial deleading operations. It includes a review of basic information about lead and its human health hazards; a review and update of relevant EPA regulations and progresses through discussions of 29 CFR 1926.62 and changes in the Respiratory Protection Standard (29 CFR 1910.134); and discussions about emissions control as presented in SSPC Guide 6.

Several state supplements are available. The C5 course also meets the requirements of state programs that require refresher training to maintain supervisor certification and meets QP 2 requirements for competent person refresher training certification.

Abrasive Blasting Program (C7)
Feb. 11–12
C7 is designed for contractor personnel who wish to obtain certification or others who wish to learn about dry abrasive blast cleaning of steel. It covers principles of surface preparation, surface cleanliness, surface profile, dust and debris control, and abrasives. Students who do not want to receive the C7 certification can attend and receive a certificate of attendance by only attending the lecture portion of the training and observing the blaster demonstration.

Floor Coating Basics (C10)
Feb. 8–9
This course is designed to meet the practical training requirements of SSPC-QP 8 Section 4.4, which require that each job crew chief and each QC manager complete a minimum two-day overview of concrete components, coating and surfacing types, and surface preparation and substrate repair techniques based on SSPC consensus standards TU-10, "Procedures for Applying Thick Film Coatings and Surfacings Over Concrete Floors."

Airless Spray Basics (C12)
Feb. 9–10
C12 is designed to train and certify marine/industrial applicators to operate airless spray equipment. The course also assesses the skills of applicators who have at least 800 hours applying protective coatings with airless spray.

Coating Application Specialist (CAS) Refresher
Feb. 12
The CAS Refresher is an overview of surface preparation and application covered in the Body of Knowledge of SSPC-ACS 1/NACE No. 13 Applicator Certification Standard No. 1, Industrial Coating and Lining Application Specialist Qualification and Certification. It covers topics in surface preparation and coating application and is especially designed for employees that are new to the coatings industry.

Coating Application Specialist (CAS)
Feb. 13 (Level 1); Feb. 13–14 (Level 2)
The CAS Certification Program is designed to certify individual craft workers who have experience and training in all aspects of hands-on surface preparation and coating application of complex industrial and marine structures. This is an exam only; no formal training is offered during this program.

Concrete Coating Inspector (CCI)
Feb. 8–9 (Conc. Ctg. Basics); Feb. 8–12 (Tech. Level); Feb. 8–13 (Cert. Level)
The CCI program provides several different paths to certification, depending on the attendee's current level of experience; these can be found on SSPC's website. The Concrete Coating Basics (CCB) provides basic training and is a prerequisite for individuals seeking CCI certification. The objective of the CCI program is to thoroughly train individuals in the inspection of surface preparation and the installation of protective coatings on industrial concrete structures and facilities.

NAVSEA Basic Paint Inspector (NBPI)
Feb. 8–12
NBPI is an inspection course developed by Naval Sea Systems Command (NAVSEA) to train coatings inspectors to inspect critical coated areas as defined by US Navy policy documents. These areas include (but are not limited to): cofferdams, decks for aviation and UNREP, chain lockers, underwater hull, bilges, tanks, voids, well deck overheads, and others. This course is especially valuable, as it also provides the technical and practical fundamentals for coating inspection work for any steel structure projects other than ships.

Using SSPC PA 2 Effectively (PA 2)
Feb. 7
This half-day workshop explains the key highlights of SSPC PA 2: Measurement of Dry Coating Thickness with Magnetic Gages. Students will learn to verify the accuracy of a DFT magnetic gage; measure the DFT of a coating with Type 1 or Type 2 gage; and describe and implement the procedure to determine if the film thickness in a given area conforms to the maximum and minimum levels specified.

Protective Coatings Inspector (PCI)
Feb. 8–12 (Level 1); Feb. 8–13 (Level 2), Feb. 14 (Level 3)
PCI Level 1 has no prerequisites, but it is not an entry-level course. C1 is strongly recommended as a prerequisite for the PCI program. The objective is to thoroughly train individuals in the proper methods of inspecting surface preparation and installation of industrial and marine protective coatings and lining systems

on an array of industrial structures and facilities. Candidates should be prepared for an intense and fast-paced week of training with evening homework and study.

Students who pass the Level 1 exam and meet the prerequisites for Level 2 can take the written and hands-on Level 2 certification exams on day six. A passing grade on both exams is required to become a Level 2-certified inspector.

PCI Level 3 identifies and awards recognition to individuals who have in-depth knowledge in the inspection of industrial coatings. Those who pass the Level 2 exam and meet the prerequisites for Level 3 can take the Level 3 exam on day seven.

Protective Coatings Inspector (PCI) Workshop
Feb. 11
This one-day workshop trains individuals in the proper methods and equipment for inspecting surface preparation and installation of industrial and marine protective coatings and lining systems on an array of industrial structures and facilities. It was designed as a supplement to students who have completed the PCI online program.

Protective Coatings Specialist (PCS) Exam
Feb. 13
The PCS Certification Program identifies and awards recognition to individuals who have in-depth knowledge of industrial coatings technology. PCS certification demonstrates mastery in assessment of coatings systems, development of coatings specifications, surface preparation and coatings applications, economics of coatings, contract planning and management, coating failure analysis, and inspection.

Quality Control Supervisor (QCS)
Feb. 14–15
The QCS program provides training in quality management for SSPC-certified contractor personnel, Technical Quality Managers (TQM), and inspectors employed by SSPC-QP 5 inspection firms. It gives an overview of the quality management aspects of surface preparation, paint, coatings, and inspection operations that a QCS needs to know. It is highly recommended that persons attending the QCS course have recent inspection training or equivalent formal training and some quality control experience.

Basics of Estimating Industrial Coatings Projects
Feb. 11
This course covers the fundamentals of estimating industrial painting job costs including surface area calculations, labor and production rates, and equipment and material requirements.

Inspection Planning and Documentation *NEW!
Feb. 12–13
This course will teach coating inspectors how to plan inspections and document results of tests and inspections conducted. The training will emphasize carefully reviewing plans and specifications in order to develop a comprehensive inspection plan, as well as using forms to accurately and legibly document project-specific inspection and test results, non-con-

forming work, and rework. This course is designed for practicing coating inspectors already familiar with commonly-used coating inspection instruments and standards of practice.

Bridge Maintenance: Conducting Coatings Assessments *NEW!
Feb. 8–9
This course covers the fundamental inspection skills required to conduct a visual coating condition assessment of an in-service steel bridge. It provides a wide range of concerns that can affect the condition of the coating and presents a reporting and rating system that coincides with the AASHTOWare BrM coating rating system, enabling the owner to make an educated decision on how to repair the damaged and deteriorated coating.

CCI Supplement: Determining the Level of Moisture in Concrete *NEW!
Feb. 14
This certification course covers the skills required to conduct moisture testing of concrete substrates prior to coating application. It defines and explains the steps for measuring moisture in accordance with ASTM Standard Test Methods. Candidates must have taken and passed the Certification Level of the SSPC's Concrete Coating Inspector (CCI) Program.

Evaluating Common Coating Contract Clauses
Feb. 10
This course will provide a basic overview of the clauses most common to coatings contracts. It follows the outline of a standard construction contract while also teaching students to identify the key provisions that may be missing from contracts they receive.

Project Management for the Industrial Painting Contractor
Feb. 12–13
This course offers an introduction to project management concepts used on industrial painting projects. Attendees will learn about generating new business, reviewing contracts, navigating employee relations, and building safety into the job. The second day of this course involves an exam in which participants resolve real-world project management scenarios.

Coating Specification Essentials *NEW!
Feb. 11–13
This course presents an overview of the development of coating specifications, building upon CSI specification writing knowledge. It reviews the concerns that can affect project success, presents a checklist for developing coating specifications, and focuses on the technical requirements to consider when preparing specifications for coating work, with an emphasis on steel and concrete industrial and marine structures.

DOD FUNDING FOR SSPC 2014 COURSES
Under the DoD Corrosion Prevention and Control Program, funding for some of the courses offered at SSPC 2014 featuring GreenCOAT has been provided to train DoD, Army, Navy, Air Force, Marine Corps, NASA, and Coast Guard personnel. For more information, contact Jennifer Merck at 877-281-7772, ext. 2221; or merck@sspc.org.

TAKE IN SSPC 2014's VARIED TECHNICAL PROGRAM

SSPC 2014 will feature an expanded Technical Program this year, including seven new one-hour "Mini Sessions," which will be held on Wednesday and Thursday morning.

The following is a list of the technical presentations and workshops that will make up SSPC 2014's Technical Program. For updates, visit sspc2014.com.

MONDAY, FEBRUARY 10

AFTERNOON: 1:30–4:30 P.M.

Session 1: Workshop

• "Proper Use of Coatings Inspection Instruments and Visual Guides," presented by Matt Fajt and Richard Burgess, PCS, KTA-Tator, Inc.; 1:30–4:30 p.m.

For a description, see Workshops, p. 54.

Session 2: Development and Performance of Complex Coatings

• "Two Coat vs. Three Coat Paint Systems," presented by Shameem A. Khan, Maryland State Highway Administration; 1:30–2:00 p.m.

This presentation will summarize the findings from a recent Maryland State Highway Administration (MDSHA) study, conducted through the Federal Highway Administration's Innovative Bridge Research and Construction Program, which compared two-coat acrylic-urethane systems versus three-coat zinc-epoxy-urethane systems on a bridge coating project. The findings gathered in this study are the result of five years of service with annual inspections.

• "Industrial Protective Coating Tradeoffs: Understanding Why Industrial Coatings Can Be Complicated," presented by J. Peter Ault, PCS, Elzly Technology Corporation; 2:00–2:30 p.m.

This paper will explore some of the reasons why industrial protective coatings can be surprisingly complicated for the inexperienced user or specifier. It will provide the specifier, end-user, or applicator with a broad perspective of choices that need to be considered when specifying and using protective coatings.

• "Evaluation of Various Coating Chemistries Using High Temperature Cathodic Disbondmental Testing," presented by Surojit B. Mukherjee, AkzoNobel; 2:30–3:00 p.m.

This paper will discuss attempts made to evaluate and compare the performances of various coating chemistries using high temperature cathodic disbondment testing. It will also demonstrate other factors that can influence lining performance on applications in the oil and gas upstream sector.

• "Development of Linings for High Temperature, High Pressure Applications for Petrochemical Applications," presented by Ted Moore, PCS, and Mark M. Morrison, The Sherwin-Williams Company; 3:00–3:30 p.m.

This presentation will focus on the chemistry and the use of laboratory methods to ensure performance of linings for high temperature, high-pressure applications in the petrochemical processing industry. It will also address potential challenges, including chemical resistance, abrasion resistance, adhesion under cycling temperature and pressure conditions, flexibility, application properties, resistance to pressure, and temperature.

• "Anticorrosive Zn Free Pigments: Their Performance," presented by Dr. Ricard March, Nubiola; 3:30–4:00 p.m.

This paper will discuss the development of new ranges of zinc-free anti-corrosive pigments, their activity, protection and anti-corrosive mechanisms, and evaluation of the coatings. It will also explain the methodology behind development of these pigments by means of classical accelerated tests, as well as fast electrochemical techniques.

• "Technological Development of Anti-Fouling Paints With EPS as a Natural Biocide," presented by Rodrigo de S. Melo, Federal University of Rio de Janeiro; 4:00–4:30 p.m.

This presentation will summarize the technological development of new anti-fouling paints using exopolysaccharides (EPS), a class of renewable polymers that exhibit interesting anti-fouling and anti-corrosion properties. These EPS additives may be used as an alternative to conventional additives currently used in anti-corrosive paints for marine applications.

Session 3: Workshop

• "An In-Depth Look at Standards Most Frequently Used by Industrial Painters," presented by L. Skip Vernon, PCS, MCI, Coating and Lining Technologies, Inc.; and Michael Damiano, PCS, SSPC: The Society for Protective Coatings; 1:30–4:30 p.m.

For a description, see Workshops, p. 54.

Session 4: Coatings for Water and Wastewater

• "Triangle of Trust—Client-Driven Coating Specifications for Wastewater Facilities," presented by Joe Cesarek and Dan Zienty, PCS, SEH, Inc.; 1:30–2:30 p.m.

This presentation will help users identify some of the basic pitfalls in developing wastewater specifications, define an "owner-driven" specification, explore the project stakeholder relationship in the "triangle of trust," and realize the importance of having

a qualified coating specialist as a key member of the design team.

• "Adhesion Measurements of Coatings on Cylindrical Steel Pipes: Variability and Significance," presented by Stuart Croll, North Dakota State University; 2:30–3:00 p.m.

The presenters will explain some of the fundamental problems encountered when measuring polyurethane coating adhesion on steel water pipes using tensile pull-off measurements for quality assurance. The presentation will highlight possible sources of variation in measurements, such as pipe diameter, glue type, dolly diameter, polyurethane formation, and scoring. It will also attempt to contemplate any link between tensile adhesion measurements and eventual corrosion protection.

• "Galvanic Corrosion in Water & Wastewater Structures: Coupling Stainless and Carbon Metals Leads to Accelerated Corrosion," presented by Travis C. Tatum, P.E., Dunham Engineering, Inc.; and Vaughn O'Dea, PCS, Tnemec Company, Inc.; 3:00–3:30 p.m.

Although stainless steel is occasionally selected for use in the waterworks industry because of its inherent corrosion resistance, designers often overlook the associated corrosion problems with coupling bare stainless steel with coated carbon steel metals. This presentation will provide a review of the galvanic (bi-metallic) corrosion theory, present the results from a galvanic coupling study testing the distance effect and area effect, and provide examples where stainless steel and carbon steel metals were coupled in various water and wastewater structures.

TUESDAY, FEBRUARY 11

MORNING: 8:30–10:00 A.M.

Session 1: Coatings for Ships and Marine Structures, Part I

• "Cavitation Erosion Comparison Between Commercial Paint Coatings and Polyurethane Coatings Containing Nano-Carbon," presented by Se-Woong Kim, Samsung Heavy Industries Co., Ltd.; 8:30–9:00 a.m.

The presenter will summarize the findings of a study that compares the performances of commercial paints versus polyurethane coatings containing nano-carbon powers in protecting ship and vessel components from cavitation erosion. Methodology in measuring erosion and coating performance, as well as factors that may help improve erosion resistance such as spray application of the polymer coating, will also be discussed.

Lobby at Disney's Coronado Springs Resort. © Disney

• "DDG 1000: Challenges Associated with Painting the U.S. Navy's State of the Art Destroyer," presented by Robert Cloutier, Bath Iron Works (BIW); 9:00–9:30 a.m.

The DDG 1000 Zumwalt Class Destroyer is a unique design for US Navy ships. The vessel's tumblehome wave piercing bow, composite superstructure, and low profile stealth design has presented special challenges for surface preparation and coating. This paper will review the processes and procedures employed by Bath Iron Works to address these challenges.

• "The Case Study of Foul Release Coating Application and Its Key Issues for the Shipbuilding Industry," presented by Sang-ki Chi, Samsung Heavy Industries Co., Ltd.; 9:30–10:00 a.m.

In an attempt to construct more eco-friendly, efficient ships and sailing vessels, many ship owners prefer using silicone foul release coatings (FRC) to reduce maintenance costs and environmental restriction. However, this material should be applied in a different method compared to conventional self polishing compounds (SPC) coatings. This presentation will investigate several potential defects of using silicone FRCs, including workability, protection, fouling, and slippage issues. It will also discuss an effective plan for dealing with this material when foul release coatings are applied in the field.

Session 2: Coating Technology the Aerospace Industry

• "NASA STD 5008A Qualification of Coatings for NASA's Qualified Products List," presented

by Dr. Mark R. Kolody, NASA Corrosion Technology Laboratory; 8:30–9:00 a.m.

This presentation will illustrate the unique and very corrosive conditions for launch structures and ground support equipment at the Kennedy Space Center, highlight the testing protocol that is used to ensure that coatings will perform in the aggressive launch environment, examine the performance of an actual set of coatings that have been tested for inclusion into the NASA Qualified Products List, and describe the laboratories' use of the NASA Beach Corrosion Test Site and its integration into the testing protocol.

• "Silicones as Protective Coatings," presented by Mark Vedder, NuSil Technology, LLC; 9:00–9:30 a.m.

This presentation will demonstrate how, when compared to other polymeric materials, silicone offers greater performance in harsh environments. Reasons for this include silicone's large coefficient of thermal expansion (CTE), low modulus, and a low glass transition temperate, as well as exceptional durability.

Session 3: Pipeline Coatings Performance

• "Field and Laboratory Experience with Polyurethane Pipe Linings," presented by David Tordonato, Ph.D., U.S. Bureau of Reclamation; 8:30–9:00 a.m.

Dr. Tordonato will summarize the U.S. Bureau of Reclamation's evaluations of polyurethane pipe linings for severe immersion exposure applications in outlet works and penstocks. He will discuss the advantages of polyurethane usage in the field, methodology for laboratory testing of the coatings, including Electrochemical Impedance Spectroscopy, and potential permanent repair solutions.

• "Finite Element Analysis to Locate Maximum Values of the First and Second Principal Strains in the Tensile Pull-Off Test for Coating Adhesion on Large Pipes," presented by Stuart Croll, North Dakota State University; 9:00–9:30 a.m.

The tensile pull-off test for measuring coating adhesion can often produce joint failures and provide inconsistent results, brought on by a number of variables. The presenters will use calculations to show the differences in

the mechanical properties of three different coatings and two glues, in an attempt to determine the locus of a coating failure after tensile pull-off testing is performed.

• "Efficient Polyurethane Pipe Coatings for Harsh Conditions," presented by Andreas aus der Wieschen, Bayer MaterialScience LLC; 9:30–10:00 a.m.

This presentation will summarize the findings of laboratory tests designed to evaluate the performance of solvent-free two-compenent polyurethane (2-K-PUR) coating systems applied to tanks and pipeline in harsh conditions. The tests were engineered to correspond to typical ambient conditions in the Middle East region, and the results demonstrate the high performance and durability of 2-K-PUR coatings.

Session 4: Coating Failure Investigations

• "Failure Investigation: Field Sampling and Communication to Maximize the Effectiveness of the Laboratory Analysis," presented by Rick Huntley, PCS, KTA-Tator, Inc.; 8:30–9:00 a.m.

This presentation will help users recognize the importance of effective communication in coating failure investigations, understand various sampling strategies to maximize the effectiveness of the investigation, identify sampling techniques to assure compatibility with various laboratory testing techniques, and identify methods and strategies to communicate field observations to laboratory personnel.

• "The Curse of the Mummy: Mysterious Tank Lining Failures in WAC Vessels," presented by Mike O'Donoghue, Ph.D., International Paint LLC; 9:00–9:30 a.m.

In the search for a "chemical mummy" in the Canadian oil patch, this paper will outline discoveries made from forensic work to unravel epoxy lining failures in several water treatment WAC (Weak Acid Cation) vessels. The chemical dig exumes third party independent testing of several linings at elevated temperatures in chemical immersion, scrutiny of the epoxy lining chemistry/application process, and the severity of the real world service of a WAC vessel versus pre-screening accelerated laboratory testing. The "proof of the mummy" was in the digging and the lessons learned in comparing simulated laboratory tests with real-life field conditions.

• "Failure Analysis & Prevention through ISO 12944," presented by Gunnar Ackx, PCS, Scicon Worldwide; 9:30–10:00 a.m.

This presentation will elaborate on the standard ISO 12944, the way it is set up and how it can not only prevent premature failure from occurring in the first place, but also facilitate in the failure analysis process and help determine the root-cause of the problem.

MID-MORNING: 10:30 A.M.–12:30 P.M.
Session 1: Coatings for Ships and Marine Structures, Part II

• "NSRP Surface Preparation and Coatings Update: Specs to Decks," presented by Stephen Cogswell, BAE Systems Southeast Shipyards; 10:30–11:00 a.m.

This presentation will offer an update of current and recently completed work of the NSRP Surface Preparation and Coating Panel on various topics, including RH, retention of pre-construction primer, single-coat application, cost of QA, evaluation of spot and sweep surface preparation, zeroG® mechanical arm SY applications, and the future state of the Navy painting process and new projects including Laser Ablation of shipboard coatings and a benchmarking study of foreign shipyards. All of this work is focused on reducing cost to the US Navy while maintaining quality.

• "A Low VOC and Sprayable Nonskid/Nonslip Coating for the U.S. Navy and Non-Military Markets" (GreenCOAT), presented by Eric B. Iezzi, Ph.D., Naval Research Lab; 11:00–11:30 a.m.

The presenter will compare a new siloxane-based nonskid/nonslip coating, recently developed by the Naval Research Laboratory, to other commercial two-component epoxy- and amine-based coatings. He will highlight the coating's positive properties, including exterior durability, low-VOCs and viscosity, and easy spray application

using commercial pressure-pot equipment.

• "Changing the Corrosion Culture Through Education and Training," presented by Dan Dunmire, Office of Under Secretary of Defense Acquisition, Technology & Logistics; 11:30 a.m.–12:30 p.m.

This presentation will outline the DoD Corrosion Prevention and Control Program's (CPCP) attempts to transcend traditional methods of corrosion prevention and control and to change the prevailing corrosion culture of "wait, fix, and find" by pushing forward new education and training programs, as well as product development. It will also highlight efforts made by organizations such as SSPC in influencing professional performance in the coatings industry.

• "Effects of Heat Treatment on the Corrosion Protection Performance of Thermal Sprayed Aluminum Coating," presented by KyungJin Park, Hyundai Heavy Industries Co. Ltd.; 12:30–1:00 p.m.

The presenter will discuss the use of thermal sprayed aluminum (TSA) coating for corrosion control of offshore structures due to the advantage of excellent corrosion prevention capability and durability. It will point out the effects high temperatures can have on the coating's composition, microstructure, and corrosion protection performance. Laboratory tests will show that how, as the temperature increased, corrosion resistance of the TSA coating was degraded but the performance of the TSA coating, to protect steel substrate from corrosion, was significantly enhanced.

Session 2: Assessing and Treating Building Components, Part I
Sponsored by Durability + Design

• "Rules of Removal: Chemical Paint Stripping on Historic Masonry," presented by Al Morris, PROSOCO, Inc.; 10:30–11:00 a.m.

This presentation will discuss the challenges in removing paints and coatings from historic masonry, the proper guidelines that must be followed on a historic project, and suggestions for the best and safest procedures to avoid problems.

• "Selecting Appropriate Protective Treatments for Finished Concrete Flooring," presented by Joe Reardon, PROSOCO, Inc.; 11:00–11:30 a.m.

This presentation will identify common concrete flooring finishes and protective treatments for them. It also includes criteria for treatment selection, as well as a brief discussion of the role of maintenance in the performance of both floor and protective treatment.

• "Increasing Weathering Test Acceleration Through Higher Irradiance," presented by Allen Zielnik, Atlas Material Testing Technology LLC; 11:30 a.m.–12:00 p.m.

This presentation will detail how to increase weathering test acceleration by testing at higher irradiance levels than that provided by normal solar radiation. It will

explain irradiance reciprocity, detail some of the reasons for "reciprocity failure," describe a simplified test validation method, and illustrate examples of higher irradiance testing and their acceptance in standards.

• "Case History—Site-Applied Decorative Polyaspartic Flooring in a Residential Garage Floor Application," presented by Steven Reinstadtler, Bayer MaterialScience LLC; Noon–12:30 p.m.

This presentation will discuss the use of a high-solids polyaspartic coating applied in a residential garage floor in order to add a functional yet decorative element to the home. Attendees will learn about polyaspartic floor coating attributes, surface preparation of the concrete floor, and how polyaspartics can enhance the design element of a normal floor in residential and commercial venues. A 3.5-year-old case study will be cited and discussed in-depth as a real world learning example.

Session 3: Concrete Floor Protection

• "Concrete Moisture & Testing: It's All About Keeping Your Floors Above Water!" presented by Roland A. Vierra, Flooring Forensics, Inc.; 10:30 – 11:30 a.m.

The science behind concrete moisture testing has changed dramatically over the past 10 years. This presentation will offer an overview of how moisture moves through concrete and damages floor coverings (including coatings), current test method procedures, and a discussion of the limitations of each test method.

• "Dimensional Profiling: Providing Sustainable Slip Resistance with a Known Approximate Static Co-Efficient of Sliding Friction Value," presented by Timothy Post, TM Post Construction; 11:30 a.m.–Noon

The presenter will highlight previous work that established the benchmark for determining the static co-efficient of friction of a surface and created a means for examining the relative slip resistance of other surfaces intended for pedestrian traffic on working and walking surfaces.

• "Understanding Testing as it Relates to Product Evaluation and Selection in the Polymeric Flooring and Coatings Industry," presented by Steven Schroeder, Crossfield Products Corporation, Noon–12:30 p.m.

This presentation will present a limited but comprehensive overview of the uses, features, advantages, and benefits of epoxy resins and hardeners, as well as the inherent limitations of these highly versatile construction materials. It includes a review of ASTM-specific language and standards and will help attendees make rational decisions related to testing.

Session 4: Bridge Protection & Repair

• "FDOT—Metalizing Existing Bridge Structures: Lessons Learned," presented by Greg Richards, KTA-Tator, Inc.; and Will Watts, Florida DOT; 10:30 a.m.–11:00 a.m.

This presentation will cover the field metalizing of two existing high-level bridges for FDOT District 2 including project design,

economic considerations, specification development, field construction, and lessons learned. These structures were the first metalizing, sealing, and topcoat applications that FDOT utilized metalizing as the primary corrosion control for existing in place bridge structures. The goal is to assist other districts in Florida and other owners to make sound decisions in choosing coating systems for maintenance and bridge rehabilitation projects.

• "When Size Does Matter: An In-Depth Analysis of Brooklyn Bridge Project Data to Determine the Most Efficient Size of Abrasive Blast Containment Units and the Workforce," presented by Guerman Vainblat, P.E., Greenman-Pedersen, Inc.; and Timur Kolchinskiy, E.I.T., Hirani Group; 11:00–11:30 a.m.

This paper will attempt to determine the optimal size of an abrasive blast containment using real data collected during the last three years of the Brooklyn Bridge rehabilitation project, which is still ongoing. The data in this presentation was compiled and analyzed with one simple goal: to come up with recommendations, and possibly a "magic formula", for managing the size of blast containments and the workforce in order to achieve optimal results, with higher production rates, while delivering a high-quality product to the owner.

• "Rapid Installation of Replacement Connection Plates on the County of Placer/Foresthill Road Bridge—A Novel Engineered Approach to a Unique Set of Challenges," presented by Raymond S. Tombaugh, KTA-Tator, Inc.; 11:30 a.m.–Noon

This presentation will recap the replacing of gusset plates at the bolted connection points during the seismic retrofitting of the County of Placer/Foresthill Road Bridge, and how contractors were able to address concerns using a novel testing program to determine when the field-applied organic zinc primer was dried sufficiently to be mated to the shop-applied inorganic zinc in a bolted connection and provide resistance to slip once bolted. It will describe the engineered approach, the experimental design, and the results of the slip coefficient testing.

• "Experimental Beam End Treatment," presented by Bobby Meade, Greenman-Pedersen, Inc.; and Sudhir Palle, Kentucky Transportation Center; Noon–12:30 p.m.

This presentation will summarize a University of Kentucky Transportation Center (KTC) and Kentucky Transportation Cabinet (KYTC) endeavor to select and recoat an Interstate bridge with an intermediate, not an abutment, expansion joint with a nonfunctioning strip seal. There was significant corrosion of the structural steel and delamination of the concrete pier beneath the joint. KTC performed a low-level-of-effort surface preparation on the corroded steel surfaces and applied nine experimental protective coatings. The concrete surfaces were pressure washed and eight experimental coatings/stains were applied. The presentation

will evaluate effectiveness and user friendliness of the nine coatings.

• "Weathering of High Performance Coatings on Florida Bridges," presented by Paul Vinik, Florida DOT; 12:30–1:00 p.m.

In this presentation, The Florida Department of Transportation will present the findings of a study that evaluates the ability of high performance coating systems to resist color and gloss degradation from weathering in Florida's unique environment. This is an aesthetic study, and the corrosion resistance properties of these systems are not presented. The study utilized test panels exposed to xenon arc radiation and outdoor exposure, as well as several bridges throughout Florida. In addition, some of the highest profile bridges, including the Sunshine Skyway in St. Petersburg and the Hart in Jacksonville, were used as test structures for this study. Multiple coating systems and colors have been evaluated, and color and gloss data will be presented for coating systems incorporating fluorourethane and clear coatings with UV inhibitors for finish coats.

AFTERNOON SESSION: 1:30–4:30 P.M.

Session 1: Workshop

• "Failure Analysis of Paints & Coatings," presented by Dwight G. Weldon, PCS, Weldon Laboratories, Inc.; and Gary L. Tinklenberg, PCS, Tinklenberg Consulting Group; 1:30–4:30 p.m.

For a description, see Workshops, p. 54.

Session 2: Assessing and Treating Building Components, Part II
Sponsored by Durability + Design

• "Building Wall and Coating Condition Evaluation," presented by Kevin Brown and Ken Trimber, PCS, KTA-Tator, Inc.; 1:30–2:00 p.m.

The performance of coatings applied to cementitious building walls is a function of both the coating itself and the integrity of the building. This paper will address the tests that can be conducted to assess both the condition of the coating and the building, including: infrared thermal imaging; moisture testing of walls and insulation; examination of sealants, coping, scuppers, gutters, and downspouts; assessment of air infiltration and exfiltration; analysis of coating thickness, adhesion and continuity (coverage, holidays, pinholes); determination of coating type; and assessing wind-driven rain resistance.

• "Commercial Contractor and Applicator Certifications," presented by Jeff Theo, PCS, Vulcan Painters, Inc.; 2:00–2:30 p.m.

This paper will discuss the latest revisions to SSPC-QP 9 Application of Architectural Paints/Coatings and the development of SSPC-ACS 1, Applicator Certification Standard 1. The author explains the benefits of certification for contractors and applicators and the benefits of specifying these standards for owners, specifiers, and coating suppliers.

• "Preparation of Concrete for Rapid Coating Application," presented by Fred Goodwin, BASF

Construction Chemicals; 2:30–3:00 p.m.

This presentation will describe rapid hardening and drying concrete mixtures, use of dry surface preparation methods, and application of moisture-mitigating or tolerant surfacing systems to reduce delays required for concrete curing, moisture dissipation, and preparation for coating selection and installation.

• "Durability of Paint/Coatings on the Exterior of Building Enclosures," presented by Kevin Knight, Edifice Tutorial, Inc.; 3:00–3:30 p.m.

Paint and coatings utilized on the exterior of a building enclosure are no longer being used purely for their aesthetics. Control of the flow of air, liquid water, and vapor, as well as durability, are functions that many paint and coating systems must now manage. This paper will discuss the damage mechanisms at both the macro and micro levels of the exterior building enclosure, compare the service life of the building to the paint or coatings, and consider the impact on the building and occupants when paint or coatings lose aesthetics, and lose the ability to control the requirements for environmental separation.

• "Tiffany Metalwork Relies on High-Performance, Environmentally Safe Coating System," presented by Kurt Wood, Arkema, Inc.; 3:30–4:00 p.m.

The presenters will describe work done in collaboration with conservators at the Philadelphia Museum of Art and Portland State University to develop water-based fluoropolymer coatings that meet the critical needs of the conservation and architectural communities. These developments will help provide outdoor monuments, sculptures and high-value architectural metalwork with longer-lasting protection against corrosion and degradation, while being safe for the environment.

• "Waterborne Epoxy Hybrid Coatings for Commercial Architectural Applications," presented by Zhenwen Fu, The Dow Chemical Company; 4:00–4:30 p.m.

This presentation will compare some currently used waterborne epoxy hybrid technologies with a newly developed, waterborne epoxy hybrid system that combines the best features of each, including the fast property development and ultimate resistance properties of epoxy/amine systems, quick dry times, and excellent UV durability of acrylic/epoxy coatings. Evaluation of the novel epoxy hybrid chemistry in the context of wall and floor coatings for commercial architecture will be described.

Session 3: Workshop

• "Confined Space Safety Training," presented by Charles Brown, Greenman-Pedersen, Inc.; 1:30–4:30 p.m.

For a description, see Workshops, p. 54.

Session 4: Tools of the Trade: Application and Inspection of Coatings

• "Psymplified Psychometrics," presented by Robert Ikenberry, PCS, California Engineering Contractors Inc.; and Don Schnell, DRYCO;

1:30–2:00 p.m.

Psychometrics, or the study of water in the air, is used every day in the HVAC and humidity control industries, and while the industrial painter is involved with a small part of this science, very few really understand the concepts that affect their job every day. This presentation will condense the psychrometric concepts down to what is important to the coatings professional. Proven teaching techniques and clear, visual analogies will be used to illustrate several psychometric concepts.

• "Speed Up Your Dry Film Thickness Measurements Using a Scanning Probe," presented by John F. Fletcher, Elcometer Limited; 2:00–2:30 p.m.

This paper will describe some of the new models of scanning probes and their uses, as well as the benefits of new data collection modes and data management processes. It will also describe how coating thickness data can be collected for analysis using the method described in SSPC-PA 2 for determining conformance to dry coating thickness requirements.

• "Positive Displacement Proportioning of Two-Component Intumescent Epoxies for Passive Fire Protection," presented by Eric Rennerfeldt, Graco, Inc.; 2:30–3:00 p.m.

The presenters will explain some of the factors that can affect the proportioning and spray of plural-component epoxy intumnescent fireproofing, including agitation, feed pressure, spray pressure, temperature, material composition, and compressibility. The goal of this presentation will be to provide applicators, material suppliers, inspectors, and clients with a better understanding of the more technical aspects of plural component proportioning, and to provide guidance to material suppliers as they formulate new products.

• "Robotic Sprayed-in-Place Pipelining: The Polyurea Goes Round & Round," presented by Dudley J. Primeaux, II, PCS, and Todd Gomez, PCS, VersaFlex Inc.; 3:00–3:30 p.m.

This presentation will discuss some of the most recent robotic SIPP (sprayed-in-place-pipe) developments, polyurea systems designed for application work in industrial and water or wastewater applications, and the industry standards being prepared for robotic sprayed-in-place pipe.

• "Flexible Measurement Solutions for Industrial Painting and Inspection Applications," presented by Paul Lomax, Fischer Technology; 3:30–4:00 p.m.

This presentation will provide an overview of the technological advancements in non-destructive measurement of coating thickness and holiday detection, as well as recent improvements in safety and ease of use made to streamline the test inspection process, improve quality, and reduce costs.

• "Specifying Dehumidification for a Blasting and Coating Project," presented by Brian Battle, Dehumidification Technologies, LP; 4:00–4:30 p.m.

This presentation will cover some of the

variables that need to be considered when specifying the proper environment during coating application to prevent flash rusting or other conditions that may cause a coating failure, including relative humidity, dew point, air changes, and temperature.

• "Advancements in Intumescent Epoxy Rapid Rise Passive Fire Protection Reduce Labor and Installation Costs," presented by Gordon Walker, Jotun Paints, Inc.; 4:30–5:00 p.m.

This presentation will cover the development and testing of a mesh-free Passive Fire Protection (PFP) system, an epoxy intumescent coating solution available where jet fire protection is required for safety of critical steel structures, divisions, and vessels. This new process will save time, lower costs and reduce risks compared to systems that require mesh reinforcement.

WEDNESDAY, FEBRUARY 12

MORNING, 8:30–9:30 A.M.

Mini Session 1

• "Tank Lining Selection and Application: Old and New Wisdom," presented by Mike O'Donoghue, Ph.D., International Paint, LLC; 8:30–9:30 a.m.

The presenter will discuss several new technologies in tank and vessel linings that have been introduced into the market place over the last 10 years. He also will examine issues and questions that intrinsically impact the success or failure of tank lining applications.

Mini Session 2

• "Regulatory Update: Current and Emerging Trends in Occupational and Environmental Health," presented by Alison Kaelin, ABKaelin, LLC; 8:30–9:30 a.m.

The author will update attendees on environmental, health, and safety issues; current and expected regulatory rulemaking; emphasis programs; and enforcement initiatives. Reviews of OSHA proposed and final rules related to confined space in construction, silica, and beryllium will be provided.

Mini Session 3

• "The Gas Fracking Boom: Expanded Opportunities for the Protective Coatings Industry," presented by E. Bud Senkowski, P.E., PCS, KTA-Tator, Inc.; 8:30–9:30 a.m.

The presenter will discuss the recent boom in natural gas exploration through hydraulic fracturing (fracking) and how the technique has opened up new markets for pipeline and joint coating materials to provide corrosion protection in the adverse conditions found during pipeline maintenance.

Mini Session 4

• "Safe Application of High-Performance Polyurethane Coatings," presented by Barbara Cummings, Bayer MaterialScience LLC; 8:30–9:30 a.m.

The safe use of polyurethane coatings applied in the field on commercial and industrial infrastructure will be discussed. Results of airborne measurements performed during polyurethane coatings appli-

cations and recommendations for worker safety will be presented.

MID-MORNING, 10:00 A.M.–NOON
Session 1: Surface Preparation Foundations and Methods

• "Lowering the Total Cost of Surface Preparation," presented by Brad Gooden and Jerry Gooden, Blast-One International; 10:00–10:30 a.m.

A brief but comprehensive presentation will be given on the top five mistakes made by blasting contractors and how these mistakes can be resolved. Videos will be used to demonstrate and explain each point, and attendees will learn how to calculate total project cost and see how small adjustments can impact the cost a surface preparation project.

• "Replica Tape—A Source of New Surface Profile Information," presented by David Beamish, DeFelsko Corp.; 10:30–11:00 a.m.

The presenter will examine replica tape as a source of many of the surface profile parameters required by coatings professionals, and he will explain how it is possible to obtain new information from replica tape using simple, low-cost field devices.

• "Educating Customers on the Difference Between Wet Abrasive Blasting and Water Jetting," presented by Duane Hough, Champion Painting Specialty Services Corp.; 11:00–11:30 a.m.

The author will discuss resources and methods of educating customers on the differences between wet abrasive blasting and waterjetting; the differences in achieved surface preparation; and SSPC cleanliness standards and appropriate visual standards and how to correctly specify them.

• "Air Balancing is More than a Building Science," presented by David Simkins, Polygon US Corp.; 11:30 a.m.–Noon

Knowing how the various components in an air treatment system operate is not only helpful, but also critical to achieving required environmental conditions on coating projects. This presentation will explore the total air system design and demonstrate the importance of choosing the right environmental control equipment, including the dust collector, dehumidifier, heating, and cooling.

Session 2: Perspectives of Women in Business

• "Understanding Your Customer/Client," presented by Joyce Wright, Newport News Shipbuilding; 10:00–11:00 a.m.

The presenter will teach attendees the importance of effective communication skills, while staying in tune with their customer's needs and enhancing their business.

• "Women in Business," presented by Sarah Huckabee Sanders, Tsamoutales Strategies; 11:00 a.m.–Noon

The primary focus of this presentation will be on the role of women in the business community, specifically in leadership positions.

Session 3: Panel Discussion

• "Agree to Disagree: Exploring Differing Views on Causes of Coating Failures," moderated by Dwight G. Weldon, Weldon Laboratories, Inc.; panelists will be Gordon Kuljian; Gunnar Ackx, Scicon Worldwide; and L. Skip Vernon, Coating & Lining Technologies, Inc.; 10:00 a.m.–Noon

A panel of specialists in the field of premature coating failure will review the same photos and laboratory data about a specific coating failure, and then, in turn, will explain their views on what happened. Each specialist will represent a different party in the dispute (owner, general contractor, painting contractor, and paint manufacturer). The panel moderator will lead a discussion about the differences in interpretation of the same facts.

Session 4: Leadership Network Program

• "Applied Positivity for Leaders," presented by M. Clark Canine, CLARK + UNJU; 10:00 a.m.–Noon

The Leadership Network Program provides attendees with a unique opportunity to develop and enhance their leadership skills. The primary goal of the Program is to identify, prepare, and support new leadership within the coatings industry.

AFTERNOON, 3:00–5:00 P.M.

Session 1: Workshop

• "Coating Inspector Forum," moderated by Earl Bowry, PCS, Jotun Paints, Inc.; and J. Peter Ault, PCS, Elzly Technology Corp.; 3:00–5:00 p.m.

**For a description, see Workshops, p. 54.*

Session 2: Panel Discussion

• "Women in Coatings: The Coatings Industry Impact Awards Panel," moderated by Cynthia O'Malley, PCS, KTA-Tator, Inc.; and Joyce Wright, Newport News Shipbuilding; 3:00–5:00 p.m.

This discussion will be a question and answer format. The Coatings Industry Impact Awards panel will feature four to six of the award nominee finalists, who will be asked questions about their accomplishments, personal gender challenges in the industry, and how their, or another's, contributions have impacted the culture of the coatings industry. Attendees will then have the opportunity to question the finalists.

Session 3: Paperless QA (GreenCOAT)

• "Electronic Management of Paint Records—Paperless QA," presented by James Taylor and Larry Wilkerson, Newport News Shipbuilding; 3:00–4:00 p.m.

The presenter will talk about Newport News Shipbuilding's move from a physical paper system to a paperless/electronic system for tracking and documenting surface preparation, paint application, and associated inspections on coatings projects. Some of the benefits of the paperless system, which include improving efficiency, eliminating physical storage space, and minimizing

manual entry errors, will be discussed.
• "SSPC-PA 2, New Electronic Data Collection Solutions," presented by Joseph Walker, Elcometer Limited; 4:00–4:30 p.m.

This presentation will focus on two new methods designed to meet the data retention requirements of SSPC-PA 2, while reducing data collection time by up to 80%. The presentation will show the data gleaned by four different data collection methods in side-by-side testing on an identical structure.
• "Robust Functional Paperless Paint," presented by Ross Boyd, TruQC LLC; 4:30–5:00 p.m.

This presentation will address the challenges, successes, and overall comprehensive benefits of the Robust Functional Paperless Paint Project, a first-of-its-kind project to build a paperless NAVSEA Standard Item 009-32-complaint documentation tablet app.

Session 4: Workshop
• "Waterborne Protective Coatings," presented by Leo Procopio, Ph.D., The Dow Chemical Co.; 3:00–5:00 p.m.
For a description, see Workshops, p. 54.

THURSDAY, FEBRUARY 13

MORNING, 8:30–9:30 A.M.

Mini Session 1
• "Unique Rigging Application for Suspended Scaffolding," presented by Clint Ramberg, Spider; 8:30–9:30 a.m.

The presenter will discuss how to solve complicated rigging application challenges across multiple projects and give examples and case studies on tank rigging, structural steel bridges, dams, angled wire ropes, and rigging stars among others.

Mini Session 2
• "Case Studies: High Productivity and Performance Polyaspartic DTM and 2-Coat Systems," presented by Todd Williams, Ph.D., Bayer MaterialScience LLC; 8:30–9:30 a.m.

This case study focuses on the increased cost savings and performance of using one-coat DTM and two-coat polyaspartic coatings on three industrial maintenance applications. Also discussed will be the technical benefits of two-coat polyaspartic systems vs. traditional zinc/epoxy/urethane; cost comparisons of using polyaspartics; and the reasoning and methodology behind the longevity of polyaspartic formulations in the field.

MID-MORNING, 10:00 A.M.–NOON

Session 1: Workshop
• "Painting Over Hot Galvanizing with Live Adhesion Testing," presented by Kevin Irving, AZZ Galvanizing Services; Dee McNeill, The Sherwin-Williams Co.; Ted Hopwood, PCS, Kentucky Transportation Center, Univ. of Kentucky; and Todd Williams, Ph.D., and Ahren Olson, Bayer MaterialScience LLC; 10:00 a.m.–Noon
For a description, see Workshops, p. 54.

Session 2: Multifaceted Green Coatings (GreenCOAT)

• "Looking Past the Reflection—Conservation of Energy through Insulation Coatings," presented by David Hunter, Hunter Engineering Consulting, Inc.; 10:00–10:30 a.m.

In this presentation, Mr. Hunter will compare and contrast insulation coatings vs. reflective insulative coatings and provide specific examples of applications which improve performance or reduce consumption of energy.

• "Development of Supercritical CO_2 Spray Coating System for VOC Reduction," presented by EunHa Song, Hyundai Heavy Industries Co. Ltd.; 10:30–11:00 a.m.

The author will report on the findings of a study that tested the performance characteristics of various coatings where supercritical carbon dioxide was developed and used as the solvent.

• "Is Your Waterborne 2K Epoxy Formulation Giving You a Headache? Here is the Cure!" presented by Ramon Sanchez Morillo, Allnex USA, Inc.; 11:00–11:30 a.m.

This presentation will introduce a new "Easy Cure System" for waterborne 2K epoxies that has been developed with a focus on product handling and application behavior and rivals current waterborne systems. Performance testing results will demonstrate the key features of coatings prepared with the new hardener.

• "Waterborne Coatings with Increased Cross Link Performance," presented by Dr. Steffen Pilotek, Buhler Group; 11:30 a.m.–Noon

The presenter will discuss a cross linking technology that results in increased performance of an emulsified polymer that can be used in 1K formulations without impeding shelf life.

• "Motivating Green Paints in Middle East Challenges," presented by Nawras Rimawi, Al-Jazeera Paints Academy; Noon–12:30 p.m.

The World Health Organization (WHO) has reported a 20-40% increased risk of certain types of cancer (in particular, lung cancer) for individuals who come into regular contact with paint. The author will highlight the challenges facing the adoption of green paints in the Middle East and report on the current status on using green paints.

Session 3: Business Development and Planning

• "Double Your Business in the Next 12 Months," presented by Richard Bueckert, KDC Enterprises, Inc.; 10:00–11:00 a.m.

The presenter will explain how applicators can grow their business by using targeted lead generation techniques to effectively identify potential customers, create interest, get orders, and generate referrals.

• "Basics of Decision—Models in the Making," presented by Doug Sawyer, CDS Group, LLC; 11:00 a.m.–Noon

The author will discuss a disciplined approach to the decision-making process by developing supported defensible rationale for why we do things. These things can be developing estimates, determining sales strategy, developing focus (vertical) mar-

kets, and increasing the size of one's business, among others.

Session 4: Workshop

• "Protective Coatings—An Overview," presented by Christopher Farschon, PCS, Tony Serdenes, Kirk Shields, and Ron Quesenberry, Greenman-Pedersen, Inc.; 10:00 a.m.–Noon

For a description, see Workshops, p. 54.

AFTERNOON, 3:00–5:00 P.M.

Session 1: Field and Laboratory Testing

• "Volatile Organic Compound (VOC) Content: Are Regulations Beyond What Can Be Accurately Measured?" presented by Cynthia O'Malley, PCS, KTA-Tator, Inc.; 3:00–3:30 p.m.

This presentation will explore possible solutions that the industry can provide to coating suppliers for accurately determining compliance to current and future VOC regulations.

• "Setting the Color Straight," presented by John W. Winfrey, VersaFlex Inc.; 3:30–4:00 p.m.

The author will share test methods for evaluating color stability when coatings are exposed to ultraviolet energy; compare results from accelerated exposure vs. natural exposure; explain the importance of long-term weathering to ensure performance requirements; and highlight the usefulness of accelerated weathering as a quality assurance tool.

• "Re-Evaluating Electrochemical Impedance Spectroscopy (EIS) for the Field Inspector's Toolbox: A First Approach," presented by Bobbi Jo Merten, Ph.D., U.S. Bureau of Reclamation; 4:00–4:30 p.m.

This presentation will examine bringing EIS to the field as a tool for inspectors to interpret field EIS data and quantitatively describe a coating's condition to owners. The goal is to provide an estimated remaining service life based on the EIS field data. The influence of environmental and other factors, accuracy, and the logistics of applying this theory for coating life assessment during maintenance inspections are discussed.

• "Soluble Salt Determination Using the Saturated Filter Paper Extraction Method," presented by John F. Fletcher, Elcometer Limited; 4:30–5:00 p.m.

SSPC Guide 15 describes the saturate special filter conductivity meter methodology, amongst others, for the retrieval and analysis of soluble salts from steel and other nonporous surfaces. In this presentation, the author will highlight the measurement method and present a case study of the analysis of test panels to demonstrate the performance of the method.

Session 2: Workshop

• "Writing Effective Corrective Actions," presented by Cory Allen, PCS, Vulcan Painters, Inc.; 3:00–5:00 p.m.

For a description, see Workshops, p. 54.

SSPC COMMITTEES PLAN TO CONVENE IN ORLANDO

SSPC 2014 featuring GREENCOAT

Various SSPC Committee meetings are scheduled to take place at the conference. The list below provides committee names, meeting dates, time, and locations. All information is current at press time. Visit sspc2014.com or contact Aimée Beggs, beggs@sspc.org, for more details.

MONDAY, FEBRUARY 10

- Standards Review Committee, 8:30–10:30 a.m., Cancun *(Invitation Only)*
- Surface Preparation Steering Committee, 1:30–3:00 p.m., Cancun *(Invitation Only)*
- Coatings Steering Committee 3:30–5:00 p.m., Cancun *(Invitation Only)*
- Local Chapter Chairs, 3:30–4:30 p.m., Baja
- Bridge Coating Advisory Committee, 3:30–5:00 p.m., Coronado E

TUESDAY, FEBRUARY 11

- PCCP Advisory Committee, 10:00 a.m.–Noon, Cancun *(Open)*
- C.2.12 Location of Soluble Salt Measurements, 10:30 a.m.–Noon, Coronado B
- SSPC/NACE TG 006 Dry Blast Cleaning Standards Revision, 10:30 a.m.–Noon, Coronado D
- PCCP Advisory Committee Business Meeting, 1:30–3:00 p.m., Cancun
- Polymeric Floor Coating Advisory Committee, 1:30–3:00 p.m., Coronado B
- C.1.14 Thermal Spray Committee

Revision of CS 23.00, 1:30–3:00 p.m., Coronado D
- C.2.13 Salt Contamination on Coatings, 1:30–3:00 p.m., Yucatan 1
- NBPI Instructors Meeting, 2:30–3:30 p.m., Baja
- C.1.3.D Polyurethane Coatings, 3:30–4:30 p.m., Cancun
- C.3.12 Revision of SSPC-PA 9 DFT over Concrete, 3:30–4:30 p.m., Fiesta 3
- C.1.8 Fluoropolymer Coatings, 3:30–4:30 p.m., Yucatan 1

WEDNESDAY, FEBRUARY 12

- C.8.0 Commercial Coatings, 8:30–10:00 a.m., Cancun
- C.2.17 Solvent Cleaning SP 1 Revision, 8:30–10:00 a.m., Fiesta 3
- C.7.4 Qualification of Concrete Contractors QP 8 Revision, 8:30–10:00 a.m., Fiesta 4
- C.8.1 Commercial Cleaning and Painting, 10:30 a.m.–Noon, Cancun
- C.8.4 Commercial Air Barrier Coatings, 10:30 a.m.–Noon, Fiesta 3
- C.7.5 Classification of Concrete Texture, 10:30 a.m.–Noon, Fiesta 4
- C.8.2 Commercial Coating Materials, 1:30–3:00 p.m., Cancun
- C.8.3 Commercial Floor Coatings, 1:30–3:00 p.m., Fiesta 4
- International Chapters Meeting, 3:00–4:00 p.m., Baja
- C.8.5 Commercial Contractor Qualification, 3:30–5:00 p.m., Cancun
- C.2.16 AB 2 Revision, 3:30–5:00 p.m., Fiesta 4

THURSDAY, FEBRUARY 13

- C.1.1 Zinc-Rich Coatings, 8:30–10:00 a.m., Yucatan 1
- Government Affairs Committee, 9:00–10:00 a.m., Coronado D
- C.5.3.C Environmental Monitoring (TU 7 Revision), 10:30 a.m.–Noon, Cancun
- C.2.18 Surface Preparation of Preconstruction Primers, 10:30 a.m.–Noon, Fiesta 9
- SSPC Instructors Open Meeting, 12:30–1:30 p.m., Baja
- C.2.14 Dehumidification, 1:30–3:00 p.m., Coronado D
- Instructor Committee Meeting, 1:30–2:30 p.m., Cancun *(Invitation Only)*
- Education Committee Meeting, 3:00–4:00 p.m., Cancun *(Invitation Only)*
- SRC Wrap-Up, 3:00–5:00 p.m., Fiesta 9 *(Invitation Only)*

EXHIBITORS TO SHOW WHAT'S NEW IN COATINGS AT SSPC 2014

Night at Disney's Coronado Springs Resort. © Disney

More than 120 companies are slated to exhibit at SSPC 2014 featuring GreenCOAT at the Coronado Springs Resort in Lake Buena Vista, FL. Below is a list of exhibitor descriptions and booth numbers known to *JPCL* at press time.

For further information on exhibiting, contact Kate Jurik, jurik@sspc.org.

• **Abrasives, Inc.** manufactures Black Magic® coal slag and Dakota Gold™ silica sand. Rail access allows the company to deliver abrasives in the U.S. and Canada. Glen Ullin, ND; phone: 701-348-3610; abrasivesinc.com. Booth 729.
See our ad, p. 87.

• **AIR Systems International** provides customers with confined space ventilation, Grade D and E breathing air equipment, and environmental products. It also has the capabilities and knowledge to customize or design products to safely solve customer's issues. This year the company celebrates 30 years of quality and innovation within the safety industry. Chesapeake, VA; phone: 757-424-3967; airsystems.com. Booth 1102. *See our ad, p. 93.*

• **Allnex**, a global company with $1.5 billion in sales, supplies resins and additives for architectural, industrial, protective, automotive, and special purpose coatings and inks. It is recognized as a specialty chemicals pioneer and for offering a broad portfolio of

Exhibit Hours

TUESDAY, FEB. 11

Exhibit Hall Ribbon Cutting
5:00 p.m.
Exhibit Hall Opening Reception
5:00–8:00 p.m.
*After Party**
8:00–10:00 p.m.
**NEW for 2014! Sponsored by Jotun Paints*

WEDNESDAY, FEB. 12

Exhibit Hall Open
11:00 a.m.–4:00 p.m.
Lunch in the Exhibit Hall
11:30 a.m.–1:00 p.m.

THURSDAY, FEB. 13

Exhibit Hall Open
10:00 a.m.–3:00 p.m.
Lunch in the Exhibit Hall
11:30 a.m.–1:00 p.m.
Exhibit Hall Closing Blast
1:30–3:00 p.m.

high quality products, including innovative liquid resins and additives, radiation cured and powder coating resins and additives, and crosslinkers for use on wood, metal, plastic, and other surfaces. With 16 manufacturing and 13 research and technology support facilities throughout the world, Allnex provides responsive, local support to its customers and helps bring advanced coating solutions to the market. Smyrna, GA; phone: 678-255-4651; allnex.com. Booths 301/303.

• **ARID-DRY** mobile desiccant dehumidifiers, manufactured by Controlled Dehumidification, are used for temporary humidity control and constructive drying. Features include special filtration, cooling, and heating; units are available in 600-25,000 CFM supply volumes. Brighton, MI; phone: 810-229-7900; cdims.com. Booth 510.

• **ArmaKleen Company**, makers of ARM & HAMMER products, manufactures ARMEX® Blast Media, a line of baking soda-based abrasives sold through a network of independent distributors worldwide. ARMEX is an excellent abrasive for use in industrial service applications, from general cleaning to paint removal, in petrochemical, oil and gas field services, pulp and paper, and food processing industries. Use in either dry or wet blast systems to achieve a deep level of clean, with minimal waste disposal concerns due to its benign nature and water solubility. Princeton, NJ; phone: 800-332-5424; armex.com. Booth 314. *See our ad, p. 108.*

• **ARS Recycling Systems, LLC** manufactures abrasive grit blasting and recycling systems, as well as dust collection systems, for the bridge, marine, and storage tank refinishing markets. ARS recycling systems have an efficiency of 99.6%, providing a low operating cost while greatly reducing the amount of waste for disposal. ARS's dust collection systems are durable and reliable, and it offers unparalleled performance, service and customer support. ARS was chosen as the preferred Abrasive Recovery/Recycling System by 8 out of 10 contractors in a recent *JPCL* Contractor Opinion Poll. Lowellville, OH; phone: 330-536-8210; arsrecycling.com. Booths 531/630 and indoor equipment space B. *See our ad, p. 50.*

• **Atlantic Design, Inc.** is a full service engineering and manufacturing business that has over 30 years of experience dedicated to the blasting and coatings industry. It provides innovative and efficient solutions to meet each individual customer's needs. Its engineering staff continuously researches and develops systems to deliver safe, affordable, and dependable equipment. The company sells and rents new and used equipment, as well as retrofits, upgrades, and troubleshoots any existing equipment. Abingdon, MD; phone: 410-335-1400; calladi.com. Booths 831/930 and indoor equipment space E. *See our ad, p. 74.*

• **Barton International** supplies high-performance garnet abrasives for a wide variety of blasting applications. Its Mil-Spec- and CARB-approved blasting abrasives provide superior health and environmental safety and maximum performance for all applications. Garnet abrasives are harder, heavier, and more durable than other blast abrasives, and Barton offers a variety of grades to match customers' project requirements. Glen Falls, NY; phone: 800-741-7756; barton.com. Booth 307. *See our ad, p. 88.*

• **Belzona Inc.** has 60 years' experience in the design and manufacture of industrial protective coatings and polymer repair composites for the repair and protection of machinery, equipment, buildings and structures in the oil and gas, nuclear, water and wastewater, power, mining, and marine incudstries. Belzona product lines are manufactured to resolve erosion, corrosion and physical damage by reducing labor by eliminating the need for disassembly, welding, and post weld heat treatment; decreasing costs through increased asset availability; and enhancing safety by allowing in-situ cold work with VOC-free materials. Miami, FL; phone: 305-594-4994; belzona.com. Booths 726/728.

• **Benjamin Moore & Co** offers a complete portfolio of industrial maintenance coating systems through its COROTECH® High Performance Coatings. These superior-grade industrial coating solutions feature over 40 products that include waterborne acrylics systems, aliphatic urethane systems, and an extensive array of epoxies, enamels, and corrosion protection primers. Information on COROTECH® High Performance products is featured on its redesigned website, www.corotechcoatings.com. Montvale, NJ; phone: 800-344-0400; benjaminmoore.com. Booths 1101/1103/1200/1202.

• **Binks** offers fluid handling and spray finishing equipment solutions for protective coatings applications, spray guns, pumps, 2k, accessories, hose, clean air coalescers, filters, and pressure tanks. Glendale Heights, IL; phone: 630-237-5169; binks.com. Booths 822/824. *See our ad, p. 102.*

• **BlastPro Manufacturing** offers a complete line of shotblasting, scraping, and cutting surface preparation equipment compatible with Blastrac® equipment, and breakdown equipment for cleaning steel storage tank floors. Oklahoma City, OK; phone: 405-491-6464; blastpromfg.com. Booth 923.

• **Bullard Co.** has manufactured high-quality personal protective equipment marketed worldwide since 1898. Product lines include hard hats, face shields, respirators, air quality equipment, fire and rescue helmets, and thermal imagers. Durability, comfort, safety, quality and innovation are hallmarks of every Bullard product line. Cynthiana, KY; phone: 859-234-6611; bullard.com. Booths 1001/1003. *See our ad, p. 84.*

• **Carboline Company** offers a global line of high performance coatings, linings, and fireproofing products for steel and concrete protection. For over 60 years, Carboline has combined innovative product development with unparalleled technical knowledge. Its products are both applicator-friendly and owner-preferred. St. Louis, MO; phone: 314-644-1000; carboline.com. Booths 601/603/700/702.
See our ad, inside front cover.

Continued

• **CESCO/Aqua Miser** is a major supplier of abrasive blasting, paint spray, and safety equipment, as well as the manufacturer of the Ultra High Pressure Water Blaster "Aqua Miser." CESCO is capable of supplying any type of equipment or supplies necessary to make a surface preparation and coatings project successful. North Charleston, SC; phone: 843-760-3000; blastandpaint.com. Booths 1007/1106 and outdoor demo space I.

• **Chlor*Rid International Inc.** provides soluble salt information, CHLOR*TEST field test kits, soluble salt removal products, the HOLD*BLAST surface passivator, and education for surface preparation. Chandler, AZ; phone: 480-821-0039; chlor-rid.com. Booth 807.

• **Clemco Industries Corp.** manufactures abrasive blast equipment and related products, including portable blast machines, specialty blast products, operator safety equipment, blast cabinets, recovery systems, and blast rooms. Washington, MO; phone: 636-239-0300; clemcoindustries.com. Booths 901/903/1000/1002. *See our ad, p. 104.*

• ***CoatingsPro Magazine*** offers an in-depth look at coatings based on case studies, successful business operation, new products, industry news, and the safe use of coatings and equipment. San Diego, CA; phone: 858-768-0825; coatingspromag.com. Booth 211.

• **CSI Services, Inc.** is a third-party, SSPC QP 5-certified coating inspection firm that provides consulting, inspection, and testing services to the coatings industry. Santa Clarita, CA; phone: 877-274-2422; csiservices.com. Booth 926.

• **Dampney® Company, Inc.** manufactures specialized industrial and heat resistant coatings for the petrochemical, power generation, and OEM markets. Thurmalox® products are designed to provide heat and color stability for a wide range of metals up to 1600°F (871°C). Thurmalox is a unique silicone resin technology, which allows for ambient or hot applied installations to avoid costly downtime of assets. From stack exteriors to boiler interiors, Dampney offers a wide range of products for industry's most challenging environments. Everett, MA; phone: 617-389-2805; dampney.com. Booth 806.

• **DeFelsko Corporation** manufactures PosiTector 6000, PosiTest, and PosiPen coating thickness gages and inspection instruments, including surface profile gages, adhesion testers, dew point meters, and wall thickness gages. Ogdensburg, NY; phone: 315-393-4450; defelsko.com. Booths 507/509/606/608.
See our ads, pp. 11, 35, and 37.

• **Dehumidification Technologies, LP (DH Tech)** provides temporary humidity and temperature control solutions to multiple industries in the U.S., Canada, Australia, and Thailand. In addition to quality equipment for every job, DH Tech boasts an experienced

and highly trained technical staff. Owners Ken Armstrong and Brian Battle work closely with employees to deliver unparalleled customer service. Houston, TX; phone: 713-939-1166; rentdh.com. Booth 627.
See our ad, p. 96.

• **Denso North America Inc.**, a subsidiary of Winn & Coales International, manufactures a full range of fast cure, high build epoxies for a variety of above and below ground corrosion protection applications, including hand or spray-applied Protal protective pipeline coatings. Houston, TX; phone: 281-821-3355; densona.com. Booth 809.
See our ad, p. 108.

• **DESCO Manufacturing Co., Inc.** manufactures dust-free surface preparation tools and critical filtration vacuums designed to remove and contain lead, asbestos, silica, and beta hot spot decontamination with minimal secondary engineering controls. Rancho Santa Margarita, CA; phone: 800-337-2648, descomfg.com. Booth 618.

• **Detroit Tarp Inc.** has manufactured tarps, covers, and custom enclosures for 49 years. It will display materials used nationwide for containing lead from abatement projects, overspray, weather enclosures for construction projects, and tarps for all needs. Romulus, MI; phone: 800-457-5054; detroittarp.com. Booth 1115.
See our ad, p. 66.

• **Dex-O-Tex®, div. of Crossfield Products Corp.**, develops polymeric and cementitious construction chemistries designed to repair, protect, and beautify commercial, industrial, and institutional decks, floors, and walls. Products include acrylics, epoxies, urethanes, and cementitious systems; decorative and functional floor and wall coating systems; chemical, slip, and temperature resistant floor and coating systems; electro-static, dissipative, and conductive flooring systems; underlayments, waterproofing membranes, and repair systems; promenade and roof decking; parking deck surfacing and sport surfacing systems; moisture vapor transmission mitigation systems, and marine deck coverings. Rancho Dominguez, CA; phone: 310-886-9100; dexotex.com. Booth 1016.

• **DoD Office of Corrosion Policy and Oversight** endeavors to minimize the impact of corrosion to our military's assets and ultimately to the DoD mission. Arlington, VA; phone: 315-339-7009; corrdefense.org. Booth 825.

• **Doosan Portable Power** has more than 100 years of manufacturing expertise and application experience with a focus on providing the highest quality machines with unrivaled customer service and reliability. Its product line includes mobile generators, air compressors, light towers and light compaction equipment. Statesville, NC; phone: 704-883-3500; www.doosanportablepower.com. Booths 631/730 and indoor equipment space C.

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• **Dow Coating Materials** elevates waterborne coatings to industrial scale with acrylic-based technologies offering stronger protection, easier application, and lower VOC. Its products include AVANSE™ and MAINCOTE™ Acrylic Resins for metal; PARALOID™ B66 Resin in VOC-exempt solvent for concrete; ROSHIELD™ Acrylic Resins for wood; and RHOPLEX™ Binders for elastomeric wall coatings. Philadelphia, PA; phone: 800-447-4369; dow.com/coatingmaterials. Booth 626. *See our ad, back cover.*

• **DRYCO, LLC** provides industrial climate control for the blasting and coating industry, specializing in desiccant and ArcticDRY mechanical dehumidifiers, cooling, heating, and temporary power. Downers Grove, IL; phone: 866-379-2600; drycogroup.com. Booth 607. *See our ad, p. 78.*

• **Dustless Blasting** has manufactured abrasive blast equipment for over 70 years, including equipment with the no-clog pot. Houston, TX; phone: 800-727-5707; dustlessblasting.com. Booths 107/109/111/206/208/210.

• **DUSTNET by EMI International** is a liquid dust suppressant. Applied at only 40 ounces per ton of dried material, DUSTNET will control 97% of dust in normal transfer operations and 76% in actual blasting operations. DUSTNET has no negative effect in adhesion of coatings. Pensacola, FL; phone: 850-380-6214: dustnet.com. Booth 922.

• **Eagle Industries** services the industrial painting industry with containment and ventilation solutions, including containment tarps, shrink wrap, scaffold sheeting, paint screens, ventilation equipment, surface preparation tools, dust collectors, industrial vacuums, and more. The company has warehouses on the East Coast, West Coast, and Gulf Coast. New Orleans, LA; phone: 504-733-3510; eagleind.com. Booths 612/614/616 and indoor equipment space G. *See our ad, p. 83.*

• **Elcometer** will showcase and demonstrate its entire line of inspection equipment and software for protective coatings and NDT inspection, including corrosion gauges, flaw detectors, adhesion testers, coating thickness gauges, surface profile gauges, and climate/humidity gauges. Rochester Hills, MI; phone: 248-650-0500, elcometer.com. Booths 701/703/800/801/802/803. *See our ad, p. 3.*

• **EnTech Industries** has been manufacturing high quality field tested mobile and skid dust collectors for 20 years. The collectors are offered in diesel, electric and diesel/electric combination, in capacities from 2,000 cfm through 60,000 cfm. East Grand Forks, MN; phone: 218-773-6505; entechindustries.com. Booths 431/530 and indoor equipment space A. *See our ad, p. 77.*

• **Ervin Industries** produces carbon steel and stainless steel metal abrasive sold under the brand names Amasteel and Amacast. It offers application assistance and on-site training. Ann Arbor, MI; phone: 734-769-4600; ervinindustries.com. Booth 103. *See our ad, p. 69.*

• **Excalibar Minerals LLC** is a quality processor and supplier of industrial minerals. Excalibar's services include sourcing, processing, packaging, and distributing high quality minerals used as fillers/extenders in paint, plastics, ceramics, and oil service end products. Founded in 1990 and headquartered in Houston, TX, Excalibar has facilities strategically located in prime industrial and/or oil exploration regions. Katy, TX; phone: 281-872-4539; excalibar.com. Booth 1028.

• **Fischer Technology Inc.** provides specific solutions for the precise measurement of corrosion protection coatings according to international standards IMO, PSPC, and SSPC-PA2. Fischer Dual and Eddy current probes feature a patented conductivity compensation for measuring various aluminum alloys without the readings being affected by the conductivity. Windsor, CT; phone: 860-683-0781; fischer-technology.com. Booths 300/302. *See our ad, p. 28.*

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• **Front-Line Coatings** manufactures Super-Flex #7, a single-component coating that encapsulates existing rust/corrosion and prevents new metal, concrete, wood, brick, and roof materials from deteriorating. The coating is flexible, resists nitric and sulfuric acids, caustic soda, UV, graffiti, sand blasting, and extreme temperatures. Lakewood, CO; phone: 303-587-9517; Booth 201.

• **FS Solutions Group** has nearly 100 years of collective experience in industrial vacuum loading, sewer and catch basin cleaning, vacuum excavation, and industrial high-pressure water blasting. Elgin, IL; phone: 847-622-7044; fssolutionsgroup.com. Booths 1107/1109/1206/1208.

• **Geoblaster Equipment** manufactures and distributes wet blast equipment, while providing customer service and support. Dunnville, ON, Canada; phone: 905-774-1410; wetabrasive.com. Booths 1125/1127 and outdoor demo space J.

• **Gill Industries** Lancaster, SC; phone: 800-926-2433; gillindustries.com. Booth 519.

• **GMA Garnet (USA) Corp.** supplies garnets for the surface preparation industry. Material is available through its global distribution network and warehouses. Houston, TX; phone: 832-243-9300; garnetsales.com. Booths 407/506. *See our ad, p. 63.*

• **Grace Distributing Inc.** is the exclusive U.S. distributor of LifeGuard Active Rust Primer, a waterborne, 2%-VOC acrylic copolymer universal marine primer that converts rust as it primes any surface profile. Charlottesville, VA; phone: 434-825-1529; gracedistributing.com. Booth 203.

• **Graco Inc.** manufactures dependable and accurate protective coatings equipment for spraying coatings and foam on the toughest materials, including plural-component proportioners, spray guns, transfer pumps, and accessories. Minneapolis, MN; phone: 612-623-6639; graco.com. Booths 909/910/1008/1010. *See our ad, p. 80.*

• **Green Diamond Sand Products** offers environmentally safe, moisture-free abrasives with no free silica. Durability and sharp edges provide faster cutting. Custom blends can be used in numerous applications. Riddle, OR; phone: 541-874-3111; greendiamondsand.com. Booth 323.

• **Greener Blast Technologies, Inc.** manufactures a surface preparation system capable of blasting at pressures ranging from 18–100 psi, making nearly any job achievable. The simplicity of this unit makes it easy for all to use in countless applica-

tions. The Greener Blast System saves time, money, and energy. Tyngsboro, MA; phone: 978-857-0473; greenerblast.com. Booths 900/902. *See our ad, p. 67.*

• **Greenman-Pedersen, Inc.**, an engineering and construction services firm, specializes in protective coatings design, management, and inspection services for governmental and private clients. Affiliate companies include GPI Southeast, Underwater Engineering Services, and Corrosion Control Consultants & Laboratories. GPI and GPI Southeast are SSPC QP-5 certified firms. Tampa, FL; phone: 813-632-7676; gpinet.com. Booth 628.

• **Harsco Minerals** has been recycling byproducts to minimize landfilling since the 1930s, and producing The Original BLACK BEAUTY® abrasives (coal slag) for nearly 80 years. Harsco also offers BLACK BEAUTY® IRON (copper slag) and BLACK BEAUTY® GLASS (crushed glass) abrasives. Harsco's high quality, chemically inert, low free silica, and low dusting abrasives are utilized in a wide range of applications. Mechanicsburg, PA; phone: 888-733-3646; blackbeautyabrasives.com. Booth 1019. *See our ad, p. 27.*

• **HippWrap Containment** specializes in shrink-wrap containment enclosures for protective coatings, asbestos, and weather protection projects. The company offers creative solutions to containment problems. San Diego, CA; phone: 800-362-4477; hippwrap.com. Booth 706. *See our ad, p. 105.*

• **HoldTight Solutions Inc.** manufactures HoldTight®102 Salt Remover/Flash Rust Inhibitor. It is non-hazmat and biodegradable and can be dissolved in water to pressure wash any surface, prevent rust, and degrease. Houston, TX; phone: 713-266-9339; holdtight.com. Booths 915/917. *See our ad, p. 76.*

• **HRV Conformance Verification Associates** provides global, cost-effective quality assurance inspection services, including steel fabrication, precast/prestressed concrete fabrication, coatings, and nondestructive testing inspection, to both public and private entities. Specializing in the bridge and highway construction industry, HRV currently works with numerous departments of transportation and other authorities throughout the US. Other industries served include commercial buildings, water and wastewater, power, oil and gas, rail and transit, and sports and entertainment facilities. Pittsburgh, PA; phone: 412-788-2522; hrvinc.com. Booth 310.

• **IBIX Surface Technologies LLC** is the exclusive North American manufacturer of the low pressure, eco-friendly IBIX cleaning systems, used in various industries. Its unique lightweight aluminum body allows for maximum portability in hard to reach places. Various eco-friendly blast media can be used

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in all systems, including soda, which allows for polishing on sensitive surfaces. Largo, FL; phone: 727-322-4611; ibixusa.com. Booth 918.

• **Indian Valley Industries** manufactures containment tarps for lead blast media, dust, overspray, and pollution control on waterways, bridges, and tanks for any industrial coatings and sandblasting operations. Johnson City, NY; phone: 607-729-5111; ivi-industries.com. Booth 819. *See our ad, p. 57.*

• **Industrial Vacuum Equipment Corp.** manufactures the Hurricane line of industrial vacuum loaders. It sells and rents vacuums and dust collectors from locations through North America, including Canada. Ixonia, WI; phone: 920-261-1136; industrialvacuum.com. Booth 731 and indoor equipment space D. *See our ad, p. 82.*

• **International Marine & Industrial Applicators, LLC (IMIA)** has extensive surface preparation and painting experience in the commercial shipbuilding industry. Whether it's providing a tiger team to finish a job quickly or supplying long term labor and equipment for a large contract, IMIA has the equipment, seasoned deckplate supervision, and mechanics, as well as rigorous corporate safety and quality programs and financial strength, to comprehensively support its customers' preservation needs. Spanish Fort, AL; phone: 251-626-3625; imiallc.com. Booth 908.

• **International Paint LLC** is a global manufacturer of coatings, linings and fire protection. With trusted brands such as Devoe Coatings, Enviroline, and Ceilcote, we provide the highest quality in corrosion protection. These high-performance coatings are now available through a network of International Paint Protective Coatings Centers located throughout North America. Houston, TX; international-pc.com. Booths 1119/1121/1218/1220. *See our ad, p. 89.*

• **IRIS (Intelligent Reporting Inspection Software)** has been developed by inspectors to provide real time reporting on industrial painting works. The integration of international standards makes it a vital tool for today's QA-driven industry. From the single inspector to large asset owners, the multi-layered platform can suit any environment. Hampshire, UK; phone: +442393233147; painttechnologysolutions.com. Booth 429.

• **JAD Equipment Co. Inc.** will be showcasing painting, sandblasting, safety, lighting, and other inventory used in the blasting and painting industry. The company will also have a few new products. Youngstown, OH; phone: 330-746-6100; jadcousa.com. Booths 622/624. *See our ad, p. 100.*

• **Jotun Paints, Inc.** helps protect property by providing solutions that not only enhance the appearance of an asset, but also ensures long-lasting durability. Jotun's range of paints and coatings are inspired by technology, designed to meet the latest industry standards, and developed with sustainability in

mind. Its specialties include premium decorative paints for long-lasting and beautiful finishes, and coatings for corrosion and fouling protection of metal substrates and passive fire protection of steel. Belle Chasse, LA; phone: 504-394-3538; jotun.com. Booths 1025/1027. *See our ad, p. 75.*

• **Kennametal, Inc.** is a North American company that provides high-production abrasive blasting nozzle solutions for most every blasting need. It offers a selection of conventional and specialty blast nozzle designs covering a variety of wear-resistant hard materials. Be sure to investigate its XL Performance nozzle, which offers contractors increased productivity gains without additional capital investment. Traverse City, MI; phone: 231-946-2100; kennametal.com. Booth 1018.

• **KTA-Tator, Inc.** (KTA) is a consulting engineering firm founded in 1949. KTA's specialties include coatings and corrosion engineering and inspection; steel and concrete fabrication inspection; field and laboratory coatings failure analysis; environmental, health and safety consulting; and contract administration for maintenance and construction activities. KTA helps commercial owners, facility managers, and engineering partners properly engineer and oversee the protection and maintenance of building assets. KTA also distributes a complete line of inspection and monitoring equipment, and provides a number of specialized Quality Assurance/Quality Control, and workplace safety training courses. Pittsburgh, PA; phone: 412-788-1300; kta.com. Booths 406/408. *See our ad, p. 79.*

• **Larson Electronics LLC** Kemp, TX; phone: 903-498-3363; larsonelectronics.com. Booth 929.

• **Marco** is a single-source solution for providing innovative and reliable products and services to the surface preparation industry, including abrasives; air-blasting equipment; engineered systems; painting, rental, and safety equipment; and service and repair. Davenport, IA; phone: 563-324-2519; marco.us. Booths 500/501/502/503/600/602 and outdoor demo space H.

• **Mascoat** engineers and manufactures thermal insulating coatings that can protect personnel, prevent CUI, retain energy, reduce condensation, and insulate up to 375 F. Spray-application enables rapid installation with fewer man-hours than conventional insulation. Houston, TX; phone: 713-465-0304; mascoat.com. Booth 724.

• **Mohawk Garnet, Inc.** produces garnet abrasives for all surface preparation and water jet cutting needs. Wahnapitae, ON; phone: 705-694-5783; mohawkgarnet.com. Booths 513/515/517. *See our ad, p. 72.*

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• **Moisture Control Company** rents and sells portable air conditioning and dehumidification equipment. Baton Rouge, LA: phone: 225-293-6226; mcc-dh.com. Booth 707.

• **Monarflex** by Siplast offers Super T-Plus and Super T-Plus Flamesafe scaffold sheeting systems in several roll lengths that are easy to install, durable, and have a patented grommet system. Irving, TX; phone: 469-995-2227; monarflexusa.com. Booth 625.

• **Monti-Tools** Houston, TX; phone: 832-623-7970; monti-tools.com. Booths 1024/1026. *See our ad, p. 103.*

• **Montipower** will showcase the MBX Bristle Blaster, a powered surface preparation tool that removes corrosion, scale, and coatings; imparts a 3-mil surface profile; and cleans to a near-white metal blast. The tool is designed for spot repairs and for jobs where abrasive blasting is prohibited. Manassas, VA; phone: 703-396-8777; mbxit.com. Booths 514/516. *See our ad, p. 92.*

• **Mosebach Manufacturing Co.** manufactures electric heaters for an unlimited number of applications, as well as load banks, neutral grounding resistors, dynamic braking resistors, and dynamic breaking systems for mining and transit industries and other applications. Mosebach's unique, heavy-duty resistors utilize continuous stainless steel ribbons eliminating welds and hot spots. Pittsburgh, PA; phone: 412-914-2293; mosebachresistors.com. Booth 309.

• **NACE International—The Corrosion Society**, focuses on corrosion control and provides standards, training, conferences, and publications that address corrosion issues. Houston, TX; phone: 281-492-0535; nace.org. Booth 213. See our ad, p. 30.

• **National Equipment Corp.** will display its Neco Blast Couplings in addition to its complete product line. Brenham, TX; phone: 979-830-8030; hosecoupling.com. Booth 512.

• **Novatek Corp.** is a manufacturer of critical surface preparation equipment and portable air filtration systems for hazardous and non-hazardous environments. The company will feature its portable air filtration systems, dustless needle scalers, rotary peen prep tools, hand grinders, and HEPA-filtered vacuums. Exton, PA; phone: 610-363-7800; novatekco.com. Booth 823. *See our ad, p. 15.*

• **Olimag Sand** is a large, eastern Canadian producer of non-toxic abrasive for abrasive blasting. Its synthetic olivine JETMAG is produced in a rotary kiln at 2,300 F. Thetford Mines, QC; phone: 418-338-3562; olimag.com. Booth 316.

• **Opta Minerals, Inc.** has provided high-quality, non-silica abrasives and services to the abrasive blast cleaning industry for more

than 130 years. Its 17 locations across North America can meet all blasting abrasive needs. Waterdown, ON; phone: 905-689-7361; optaminerals.com. Booth 919. *See our ad, p. 90.*

• **Pacific Dust Collectors and Equipment, Inc.** provides work on aged wood beams, brick, architectural concrete, barges, coating removal, Dunn Blasting, epoxy, fire damage, heavy duty coatings, heavy equipment, lead removal, and pools. Damascus, OR; phone: 503-318-3860. Booth 428.

• **Painters and Allied Trades LMCI** focuses on industry programs that enhance the market share and work opportunities of industry partners, the IUPAT, and its signatory employers. It specializes in productive labor management relations. Hanover, MD; phone: 410-564-5860; lmcionline.org. Booths 828/830.

• **Pinnacle Central Co.** is a master distributor of Doosan portable air compressors and a provider of a full line of industrial equipment, including portable and electric air compressors, dust collectors, blast pots, and variable reach lifts. The company specializes in surface preparation and is a turnkey provider of blasting equipment and supplies. Jacksonville, FL; phone: 904-354-5746; pinnaclecentral.com. Booth 629. *See our ad, p. 115.*

• **Polygon** provides dehumidification, heating, and cooling services and equipment for coating applications. North Andover, MA; phone: 800-422-6379; polygongroup.com. Booth 1100. *See our ad, p. 97.*

• **PPG Protective and Marine Coatings (PMC)** is a leader in protective and marine coatings, constantly striving to deliver innovative and fit-for-purpose products to its customers in the energy, infrastructure, and marine markets. PPG PMC's Amercoat®, Amerlock™, PSX®, and Sigma Coatings™ lines are used to protect high-profile projects in harsh conditions. Pittsburgh, PA; phone: 412-434-3275; ppg.com. Booths 1013/1015/1112/1114. *See our ad, p. 71.*

• **PreTox Systems/NexTec, Inc.** markets PreTox 2000, a system for rendering lead waste non-hazardous during abatement. The system works with all standard removal methods including abrasive and mechanical. Dubuque, IA; phone: 800-338-8296; pretox.com. Booth 727.

• **PTQ SAFETY LLC** manufactures painters safety goggles that feature a comfortable, multi-lens benefit that allows quick change of the lens. The high-impact, ventilated, anti-fog lenses keep the user safe from debris and potential obscuring of view due to fog. Houston, TX; phone: 832-582-8716; ptqsafety.com. Booth 1118. *See our ad, p. 109.*

Continued on p. 107

• **Purdy/Bestt-Liebco** started in a small garage in Portland, Oregon in 1925, and since then, the art of making premium painting tools has always been at the heart of the Purdy success story. Purdy remains committed to creating the best painting experience. Cleveland, OH; phone: 800-547-0780; purdy.com. Booth 925.

• **Rapid Prep, LLC** is a full service provider of steel surface preparation equipment. We rent and sell equipment for all surface preparation applications including: Dry Abrasive Blast Machines, Grit Blast & Recycling Machines, Shot Blasters, Air Dryers, Dehumidification & Air Conditioning Equipment, Dust Collection to 80,000 CFM, Vacuums of all sizes, and much more. North Kingston, RI; phone: 877-529-2124; rapidprep.com. Booth 1031.

• **RBW Enterprises, Inc.** manufactures centrifugal shot blast cleaning equipment. It specializes in portable systems which can be used both in plant and in the field. It also engineers and manufactures special blast cleaning systems to meet industry needs for surface preparation of pipe, tanks, wind towers, and steel plates. Newnan, GA; phone: 770-251-8989; rbwe.com. Booths 827/829.

• **Rhino Linings Corp.** has been developing top-quality, proprietary, high-performance polymers based on polyurethane, polyurea, and epoxy formulations since 1988. Its protective coatings products lead the spray-on lining market for industrial, commercial, and retail applications. San Diego, CA; phone: 800-747-6966; rhinoliningsindustrial.com. Booth 217.

• **Ring Power Systems** supplies new and used air compressors, air tools, and air compressor parts and services throughout Florida. It also supplies Sullair, Atlas Copco, and Hurricane air compressors, tools, and parts throughout the U.S. St. Augustine, FL; phone: 904-494-1274; compressedair.ringpower.com. Booth 931 and indoor equipment space F. *See our ad, p. 85.*

• **RotoTexx's** Pad-Eye Containment Blast System is designed for shipboard pad-eye (close proximity) maintenance when open-air blasting or large containments are prohibited or cost inefficient. The system cleans effectively, contains dust, and minimizes cleanup, and it significantly reduces exposure to dust and unsafe noise levels. Fresno, TX; phone: 800-231-2085; rototexx.com. Booths 417/419.

• **Royce International®** has globally manufactured and supplied RoyOxy™ epoxy resins, reactive diluents, curing agents, accelerators, and additives to the textiles, paper, plastics, adhesives, paints and coatings, and composites industries since 1929. New product formulation and synthesizing assistance is available. Global locations include NY, NJ, PA, SC, TX, MI, CA, Canada, Europe, and Asia. Sarasota, FL; phone: 941-894-1228; royceintl.com. Booth 413.

• **SAFE Systems** provides manufacturing, engineering, sales, parts, technical support, and service for its full line of U.S.-built portable equipment and fixed blast facilities. Standard or custom designed equipment for blasting, recovery, classification, and dust collection maximize flexibility and customers' return on investment. Kent, WA; phone: 425-251-8662; safesys.com. Booth 725. *See our ad, p. 114.*

• **Safety Lamp of Houston** is the North American distributor of Wolf Safety Lamp Co., specializing in portable pneumatic, LED, and fluorescent lighting solutions for all wet and hazardous areas. Humble, TX; phone: 281-964-1019; safetylampofhouston.com. Booth 906. *See our ad, p. 111.*

• **Safway Services, LLC** is a manufacturer of engineered suspended access systems for use on bridges, buildings, offshore platforms, and special structures. It also sells and rents to contractors. Scotia, NY; phone: 518-381-6000; safway.com. Booths 207/306. *See our ad, p. 98.*

• **Sand Express** is a producer of high quality processed sands and aggregates. Its capabilities include raw sands, industrial sands, and abrasives. The company services industrial and commercial customers throughout the Gulf Coast region and the Central U.S. Columbus, TX; phone: 800-460-8210; sand-express.com. Booth 415.

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• **Sauereisen Inc.** is a third-generation manufacturer of a complete line of organic and inorganic corrosion-resistant materials of construction for new and rehabilitation applications. Its global presence is maintained with a network of technical sales representatives throughout the world. Manufacturing and warehouse facilities located in the U.S., Europe, the Pacific Rim, and Latin America provide worldwide product distribution. Pittsburgh, PA; phone: 412-963-0303; sauereisen.com. Booth 723.

• **Schmidt Engineered Abrasive Systems/Axxiom Manufacturing, Inc.** manufactures Schmidt® engineered abrasive blast equipment and specialized systems that incorporate state-of-the-art metering and control systems with the high-quality workmanship. Products manufactured include air blast equipment and parts as well as vacuum systems, moisture separators, air dryers, after coolers, and other storage and transfer systems. Fresno, TX; phone: 800-231-2085; axxiommfg.com. Booths 315/317/319/414/416/418.

• **Seal for Life Industries** combines high-tech corrosion prevention, sealing, and insulation solutions with direct, easy, cost-, and time-saving applications to protect the integrity of critical infrastructure and assets. Stadskanaal, The Netherlands; sealforlife.com. Booth 215. *See our ad, p. 86.*

• **Seymour Midwest** is a longstanding toolmaker and supplier of tools to the domestic and international protective and marine coatings and decorative concrete markets. Warsaw, IN; phone: 574-267-7875; seymourmidwest.com. Booth 1030.

• **The Sherwin-Williams Company** has manufactured a complete line of protective coatings and linings products for more than 150 years. It has an SSPC- and NACE-certified workforce trained in corrosion control, and a dedicated distribution network that ensures on-time delivery from 4,000 company-owned points worldwide. Cleveland, OH; phone: 800-524-5979; sherwin-williams.com/protective. Booths 813/815/912/914. *See our ad, p. 51.*

• **Spider**, founded in 1947, is a large manufacturer and distributor of access and safety solutions in North America. It also sells, rents, and services powered suspended access platforms, material hoists, rigging, and safety equipment, and it provides turnkey access solutions and OSHA Competent Person training. Seattle, WA; phone: 877-774-3370; spiderstaging.com. Booths 401/403.

• **Sponge-Jet, Inc.** manufactures composite abrasives by bonding conventional abrasives with polyurethane sponge to create dry, recyclable, low-dust, and low-rebound Sponge Media™ abrasives that accelerates blasting and painting operations. High-production, composite-abrasive blasting and recovery systems also are offered. Newington, NH; phone: 603-610-7950; spongejet.com. Booths 400/402 and outdoor demo space N.

• **Sulzer Mixpac USA, Inc.** is a global manufacturer of innovative packaging, dispensing, mixing/spray systems for one- and two-component adhesives, sealants, and coatings; and industry-recognized Mixpac®, Quadro®, Mixcoat®, Statomix®, MK® cartridges, mixers, dispense guns, and spray tips. Salem, NH; phone: 603-893-2727; sulzer.com. Booth 1124.

• **Surface Prep Supply** distributes abrasive blasting media and blasting equipment throughout Florida, Georgia, the Caribbean, and Central and South America. With over 80,000 sq ft of warehousing space between its Miami, Jacksonville, and Haines City (Orlando) facilities, it is conveniently located to serve domestic or international customer needs. Haines City, FL; phone: 888-331-7737; prepsupply.com. Booth 1014.

• **Tank Industry Consultants**, an SSPC-QP 5-certified inspection company, has been providing engineering and inspection services to the storage tank industry since 1979. TIC's professional engineers and field services staff provides unparalleled tank engineering and inspection services. Indianapolis, IN; phone: 317-271-3100; tankindustry.com. Booth 422.

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SSPC 2014 featuring GREENCOAT

• **Tarps Manufacturing, Inc.** offers custom containment tarps, building wraps, and ground tarps in strong nylon and poly mesh. Many options are available in coated fabrics, FR, multi-layered tarps for sound reduction, and special printing. Meredosia, IL; phone: 217-584-1900; tarpsmfg.com. Booth 312.
See our ad, p. 99.

• **The TDJ Group** manufactures Blastox®, an abrasive additive that stabilizes lead-based paint, thereby eliminating the generation of hazardous waste. No additional labor or equipment for on-site application, mixing, or metering is required. Blastox® has been tested by the EPA, FHA, and USACE. Cary, IL; phone: 847-639-1113; blastox.com. Booth 1022.
See our ad, p. 56.

• **Technology Publishing Company** has published *JPCL* for three decades. It provides its audience with a daily eNewsletter (*PaintSquare News*) and a digital edition. Industry professionals focused on building performance and aesthetics read TPC's *Durability + Design*, its daily eNewsletter *(D+D News)*, and a digital edition. TPC also offers PaintBidTracker, the only project lead service dedicated to coatings work, and the recently launched *JPCL* Europe, a digital magazine for the EMEA region. Pittsburgh, PA; phone: 800-837-8303; www.technologypub.com. Booths 423/425/522/524.

• **Tesla NanoCoatings, Inc.**, an Ohio-based nanotechnology company, manufactures the Teslan® product line, a highly effective corrosion control coating for structural steel that uses carbon nanotube (CNT) technology to inhibit corrosion. North Canton, OH; phone: 610-764-1232; teslanano.com. Booths 115/117/214/216.

• **Thomas Industrial Coatings**, dedicated to serving clients through quality, timely workmanship and professional expertise, is a leader in large projects featuring industrial coatings, fireproofing, water jetting, lead abatement, and surface preparation. Pevely, MO: phone: 636-475-3500; thomasindcoatings.com. Booth 529.

• **Tnemec Co., Inc.** makes high-performance coatings for industrial and architec-

tural applications on steel, concrete, masonry, and other substrates. Kansas City, MO; phone: 816-483-3400; tnemec.com. Booths 523/525.

• **Trace Industrial Supply** is a woman-owned, industrial supply company that offers wet abrasive blast equipment sales and rentals, dry abrasive blasting equipment, painting sundries, airless spray equipment, and safety equipment. The company services all of Florida, the Caribbean, and Central and South America. Fort Lauderdale, FL; phone: 888-665-8858; traceindustrialsupply.com. Booth 1113.

• **Tractel® Griphoist® Division–Griphoist® Access Equipment** offers a complete line of man-riding equipment products and fall protection equipment, including traction hoists, secondary brakes, manual hoists, modular platforms, suspension systems, and more. Norwood, MA; phone: 800-421-0246; tractel.com. Booth 518. *See our ad, p. 115.*

• **TruQC** offers cloud-based, job-site documentation for the iPad. Developed specifically for compliance with SSPC-QP and -QS certifications and requirements, the program provides customizable solutions for secure job-site documentation, including documentation storage, and accounting, and time-tracking practices designed to meet OSHA documentation requirements. Kirkwood, MO; phone: 314-457-3920; truqcapp.com. Booth 527.

• **U.S. Minerals** manufactures coal slag abrasive products from six production facilities. Dyer, IN; phone: 219-864-0909; us-minerals.com. Booth 329. *See our ad, p. 59.*

• **Uni-Ram** is a manufacturer of spray gun cleaners and solvent recyclers. Markham, ON; phone: 905-477-5911; uniram.com. Booth 826.

• **Van Air Systems** is a designer and manufacturer of equipment that dries and purifies compressed air used for applying and removing coating systems. Lake City, PA; phone: 814-774-2631; vanairsystems.com. Booth 411. *See our ad, p. 106.*

Continued

• **VersaFlex Incorporated** formulates, manufacturers, and supplies pure polyurea coatings, liners, and sealants for a wide variety of industrial, commercial, and maintenance environments. It is a global company with offices in China, Europe, India, Malaysia, and the Middle East. Kansas City, KS; phone: 913-321-9000; versaflex.com. Booth 325. *See our ad, p. 68.*

• **W Abrasives** manufactures carbon steel shot and grit. It partners technical expertise with high quality carbon steel shot and grit to achieve the most efficient cleaning process for your operation. The W Abrasives lineup includes high carbon steel shot and grit, stainless steel shot, and an innovative line of premium products specific to your cleaning needs. Bedford, VA; phone: 281-480-2341; wabrasives.com. Booth 528.

• **The Warehouse Rentals and Supplies (TWRS)** carries a large selection of abrasive blasting and painting supplies including the safest and most popular brands of equipment. Greensburg, PA; phone: 724-836-0808; twrs.com. Booths 331/430 and indoor equipment space Z.
See our ad, p. 118.

• **Wagner Systems Inc.** manufactures advanced products and systems for coatings and painting. It is strongly committed to innovative marketing, advanced engineering, and quality manufacturing. Headquartered in Markdorf, Germany, Wagner has manufactured and distributed liquid application equipment since the 1950s and powder application equipment since the 1970s. Wagner offers a variety of liquid and powder coating application technologies, from manually operated systems to completely automated systems. Elgin, IL; phone: 630-503-2400; wagnersystemsinc.com. Booth 924.

• **Wasser Coatings** is a manufacturer and supplier of a range of high quality anticorrosion and protective coatings. Products include a variety of moisture cure urethanes and polyurea membranes. Auburn, WA; phone: 800-627-2968; wassercoatings.com. Booth 928.
See our ad, p. 47.

• **Western Technology Lights** manufactures explosion-proof and low-voltage lighting, including the MightyLight LED product line and a complete line of deadman controls. Bremerton, WA; phone: 800-654-5483; westerntechnologylights.com. Booths 311/410.

• **WIWA LP** manufactures airless paint spraying equipment, including standard airless pumps, plural-component equipment, and other industrial systems. Alger, OH; phone: 419-757-0141; wiwalp.com. Booths 200/202. *See our ad, p. 113.*

EXHIBITORS AT-A-GLANCE

SSPC 2014 featuring GREENCOAT

The following is a list of all companies exhibiting at SSPC 2014 and their booth numbers known to *JPCL* at press time. A list of exhibitor descriptions begins on p. 94.

Abrasives, Inc. 729
AIR Systems International 1102
Allnex 301
ARID-DRY 510
ArmaKleen Company 314
ARS Recylcing Systems, LLC 531
....and indoor equipment space B
Atlantic Design, Inc. 831
....and indoor equipment space E
Barton International 307
Belzona Inc. 726
Benjamin Moore & Co. 1101
Binks 822
BlastPro Manufacturing 923
Bullard Co. 1001
Carboline Company 601
CESCO/Aqua Miser 1007
....and outdoor demo space I
Chlor*Rid International 807
Clemco Industries Corp. 901
CoatingsPro Magazine 211
CSI Services, Inc. 926
Dampney Company, Inc. 806
DeFelsko Corporation 507
Dehumidification Technologies, LP (DH Tech) 627
Denso North America Inc. 809
DESCO Manufacturing Company 618
Detroit Tarp Inc. 1115
Dex-O-Tex 1016
DoD Office of Corrosion Policy and Oversight ..825
Doosan Portable Power 631
....and indoor equipment space C
Dow Coating Materials 626
DRYCO, LLC 607
Dustless Blasting 107
DUSTNET by EMI International 922
Eagle Industries 612
....and indoor equipment space G
Elcometer 701
EnTech Industries 431
....and indoor equipment space A
Ervin Industries 103
Excalibar Minerals LLC 1028
Fischer Technology Inc. 300
Front-Line Coatings 201
FS Solutions Group 1107
Geoblaster Equipment 1125
....and outdoor demo space J
Gill Industries 519
GMA Garnet (USA) Corp. 407
Grace Distributing, Inc. 203
Graco, Inc. 909
Green Diamond Sand Products 323
Green Blast Technologies, Inc. 900
Greenman-Pedersen, Inc. 628
Harsco Minerals 1019
HippWrap Containment 706
HoldTight Solutions Inc. 915
HRV Conformance Verification Associates 310
IBIX Surface Technologies LLC 918
Indian Valley Industries 819
Industrial Vacuum Equipment Corp. 731
....and indoor equipment space D
International Marine & Industrial Applicators, LLC (IMIA) 908
International Paint LLC 1119
IRIS (Intelligent Reporting Inspection Software) 429
JAD Equipment Co. Inc. 622
Jotun Paints, Inc. 1025
Kennametal, Inc. 1018
KTA-Tator, Inc. 406
Larson Electronics LLC 929
Luoyang Hong Feng Refractories & Abrasives...927
Marco 500
....and outdoor demo space H
Mascoat 724
Mohawk Garnet, Inc. 513
Moisture Control Company 707
Monarflex by Siplast 625
Monti-Tools 1024
Montipower 514
Mosebach Manufacturing Co. 309
NACE International 213
National Equipment Corp. 512
Novatek Corp. 823

SSPC 2014 DAILY SCHEDULE

All times are current as of press time. This schedule is subject to change. Please see the Onsite Guide for the final schedule.

SSPC 2014 featuring GREENCOAT

MONDAY, FEBRUARY 10

8:00 a.m.–7:00 p.m.	Registration Open
8:00 a.m.–6:00 p.m.	Exhibitor Move-In
8:30–10:30 a.m.	Standards Review Committee
11:30 a.m.–1:00 p.m.	Annual Meeting & Awards Luncheon
1:30–3:00 p.m.	Surface Preparation Steering Committee
1:30–4:30 p.m.	Technical Sessions
	Workshop: Proper Use of Coatings Inspection Instruments and Visual Guides
	Workshop: An In-Depth Look at Standards Most Frequently Used by Industrial Painters
3:30–4:30 p.m.	Local Chapter Chairs Meeting
3:30–5:00 p.m.	Coatings Steering Committee
	Bridge Coating Advisory Committee
5:30–7:30 p.m.	Welcome Reception *(sponsored by Carboline)*

TUESDAY, FEBRUARY 11

7:00 a.m.–7:00 p.m.	Registration Open
7:00 a.m.–3:00 p.m.	Exhibitor Move-In
7:30–10:00 a.m.	Facility Owners Peer Forum
8:00–10:00 a.m.	International Spotlight: Canada Session
8:30–10:00 a.m.	Technical Sessions
9:00 a.m.–2:00 p.m.	Alligator & Airboat Tour at Wild Florida
10:00 a.m.–Noon	PCCP Advisory Committee
10:30 a.m.–Noon	C.2.12 Location of Soluble Salt Measurements
	SSPC/NACE TG 006 Dry Blast Cleaning Standards Revision
10:30 a.m.–12:30 p.m.	Technical Sessions
1:30–3:00 p.m.	PCCP Advisory Committee Business Meeting
	Polymeric Floor Coating Advisory Committee
	C.1.14 Thermal Spray Committee Revision of CS 23.00
	C.2.13 Salt Contamination on Coatings
1:30–4:30 p.m.	Technical Sessions
	Workshop: Failure Analysis of Paints and Coatings
	Workshop: Confined Space Safety Training
2:30–3:30 p.m.	NBPI Instructors Meeting (Invite Only)
3:30–4:30 p.m.	C.1.3.D Polyurethane Coatings
	C.3.12 Revision of SSPC-PA 9 DFT over Concrete
	C.1.8 Fluoropolymer Coatings
5:00 p.m.	Exhibit Hall Ribbon Cutting
5:00–8:00 p.m.	Exhibit Hall Reception
8:00–10:00 p.m.	*After Party*NEW for 2014! (sponsored by Jotun Paints)*

WEDNESDAY, FEBRUARY 12

7:00 a.m.–5:00 p.m.	Registration Open
7:30–9:30 a.m.	PCS Breakfast
8:00 a.m.–Noon	Mega Rust Follow Up Meeting
8:30–9:30 a.m.	Technical Mini Sessions **NEW for 2014!*
8:30–10:00 a.m.	C.8.0 Commercial Coatings
	C.2.17 Solvent Cleaning SP 1 Revision
	C.7.4 Qualification of Concrete Contractors QP 8 Revision
10:00 a.m.–Noon	Technical Sessions
10:30 a.m.–Noon	C.8.1 Commercial Cleaning and Painting
	C.8.4 Commercial Air Barrier Coatings
	C.7.5 Classification of Concrete Texture
11:00 a.m.–2:30 p.m.	Art of the Wok Cooking Class at Ming Court
11:00 a.m.–4:00 p.m.	Exhibit Hall Open
11:30 a.m.–1:00 p.m.	Complimentary Lunch in Exhibit Hall
1:30–3:00 p.m.	C.8.2 Commercial Coating Materials
	C.8.3 Commercial Floor Coatings
3:00–4:00 p.m.	International Chapters Meeting
3:00–5:00 p.m.	Technical Sessions
	Workshop: Coating Inspector Forum
	Workshop: Waterborne Protective Coatings

3:30–5:00 p.m.	C.8.5 Commercial Contractor Qualification C.2.16 AB 2 Revision

THURSDAY, FEBRUARY 13

7:00 a.m.–2:00 p.m.	Registration Open
8:30–9:30 a.m.	Technical Mini Sessions **NEW for 2014!*
8:30–10:00 a.m.	C.1.1 Zinc-Rich Coatings
9:00–10:00 a.m.	Government Affairs Committee
10:00 a.m.–Noon	Technical Sessions *Workshop:* Painting Over Hot Galvanizing With Live Adhesion Testing *Workshop:* Protective Coatings—An Overview
10:00 a.m.–3:00 p.m.	Exhibit Hall Open
10:30 a.m.–Noon	C.5.3.C Environmental Monitoring (TU 7 Revision) C.2.18 Surface Preparation of Preconstruction Primers
11:30 a.m.–1:00 p.m.	Complimentary Lunch in Exhibit Hall
12:30–1:30 p.m.	SSPC Instructors Open Meeting
1:30–2:30 p.m.	Instructor Committee Meeting (Invite Only)
1:30–3:00 p.m.	C.2.14 Dehumidification
1:30–3:00 p.m.	Exhibit Hall Closing Blast
3:00–4:00 p.m.	Education Committee Meeting (Invite Only)
3:00–5:00 p.m.	Technical Sessions *Workshop:* Writing Effective Corrective Actions SRC Wrap-Up
7:00–9:00 p.m.	Closing Party *(sponsored by The Brock Group and SSPC's Hampton Roads Chapter)*

SSPC 2014 featuring GREENCOAT

FEBRUARY 10-13,2014
CORONADO SPRINGS RESORT • ORLANDO, FL

Conference Registration Form

SSPC Member # _____

☐ I am not a member

-- OFFICE USE ONLY --

☐ Speaker (1MS/1NS)
☐ BOG
☐ Facility Owner (1CFO)

First Name/MI: Last Name

Nickname (for your badge)

Your Title Deartment/Division

Company Name

Company Address

City State Zip Country

Area Code/Phone Number E-mail Address

Area Code/Fax Number Website

Emergency Contact Contact Phone

A. SELECT YOUR SSPC 2014 CONFERENCE PACKAGE

*Please Check Box(es) for Registration Below

	Early Bird before 11/23/13	Pre-Show 11/23/13 to 12/21/13	Onsite after 12/21/13
☐ Member Full Conference (1MF)	$500	$600	$700
☐ Member Additional Employee (1MA)	$400	$500	$600
☐ Non-Member Full Conference (1NF)	$700	$800	$900
☐ Non-Member Additional Employee (1NA)	$600	$700	$800
☐ Member One Day Registration (30M) *Choose Day: ○ Mon ○ Tue ○ Wed ○ Thu*	$200	$300	$350
☐ Non-Member One Day Registration (30N) *Choose Day: ○ Mon ○ Tue ○ Wed ○ Thu*	$300	$400	$450
☐ Three-day Exhibit Hall Only (5TN)	$150	$150	$150
☐ Single Day Exhibit Hall Only (7EO) *Choose Day: ○ Tue ○ Wed ○ Thu*	$60	$60	$60
☐ Guest/Spouse Registration (9SP)	$200	$250	$300

REGISTRATION SUBTOTAL $_____ BOX A

B. SPECIAL EVENTS/OPTIONAL TOURS

☐ Welcome Reception Tickets (Mon 2/10)* (REC)	$35	$50	$75
☐ Closing Party Tickets (Thu 2/13)* (BAN)	$35	$50	$75
☐ Alligator & Airboat Tour (Tues 2/11) (SE1)	$95	$105	$115
☐ Art of the Wok Cooking Class (Wed 2/12) (SE2)	$85	$95	$105

*Events marked with an asterisk (*) are included with full conference registration. If you do not register for a full conference, you must purchase additional tickets to attend.

SPECIAL EVENTS SUBTOTAL $_____ BOX B

C. SSPC MEMBERSHIP

☐ 1-year Individual Membership $95
SAVE MONEY! Register at Member Rates!

MEMBERSHIP SUBTOTAL $_____ BOX C

D. TRAINING DISCOUNT

Less $100 Discount for Training Course registrants ONLY

**MUST purchase full conference registration + training to qualify.*

TRAINING DISCOUNT $_____ BOX D

To calculate your amount due, add the amounts in boxes A, B and C, then subtract any discount from Box D, and enter the amount in the "Total Cost" box. This is your total registration cost.

TOTAL COST = A+B+C-D $_____ TOTAL

E. PAYMENT (US FUNDS ONLY)

Select a payment option: ❒ American Express ❒ Visa ❒ MasterCard ❒ Discover

Card Number _____

Exp. Date _____ / _____ Security Code _____

Signature (Required) _____

Print Name on credit card _____

❒ Check enclosed (Payable to "SSPC 2014")

DEMOGRAPHICS

What type of company do you work for?
❒ 1. Architect, Consultant, Engineer
❒ 2. Commercial Contractor
❒ 3. Fabricator
❒ 4. Facility Owner/End User
❒ 5. Industrial Contractor
❒ 6. Manufacturer
❒ 7. Residential Contractor
❒ 8. Supplier
❒ 9. Other _____

What is your gender ?
❒ Male ❒ Female

ADA
❒ If you require assistance under the Americans with Disabilities Act, please contact Kate Jurik at jurik@sspc.org or 412.281.2331 x2211.

CONFIRMATION OF REGISTRATION

You will receive an email confirmation once your registration has been paid (please white-list sspc@prereg.net so the email does not go to your junk file). In early January 2014, a bar code will be emailed to you for you to use to print out your badges and tickets onsite at the SSPC 2014 Registration Desk at the Coronado Springs Resort, in Orlando.

NOTE: *By registering for SSPC 2014 you are consenting to receive written and verbal communication from SSPC via postal mail, courier, telephone, fax, and e-mail. You may opt-out by checking the box below.*

❒ ***Please do not include me in SSPC 2014 communications***

When registering for SSPC 2014 you are authorizing the use of any photographs taken onsite for future promotions.

SSPC 2014 CANCELLATION POLICY:

All cancellations must be received in writing by December 2, 2013 to qualify for a 100% refund less a $50 administrative fee. Cancellation requests received after December 2, 2013 and by January 29, 2014 will receive a 50% refund. No refunds will be given after January 29, 2014 or for No-Shows. SSPC is not responsible for any personal charges associated with your attendance at SSPC 2014 (i.e., air fare, hotel, meals, transportation, etc).

Registration Options

Register Online
www.SSPC2014.com
Email
sspc@prereg.net

OR

Mail this form to:
SSPC 2014 c/o QMS Services Inc.
6840 Meadowridge Ct.
Alpharetta, GA 30005

Important: Full Payment Is Required At This Time.
No registration will be processed until payment is received.

SSPC 2014 featuring GREENCOAT

FEBRUARY 10-13,2014
CORONADO SPRINGS RESORT • ORLANDO, FL

TRAINING REGISTRATION

- Registration for all SSPC Training Courses must be done separately from the SSPC 2014 conference registration.
- To register, e-mail or fax a completed training registration form to Jeannine Bodack at: bodack@sspc.org or 412-281-9993.
- **Deadline date to register is: January 17, 2014.**
- All classes will be held at the Coronado Springs Resort - Orlando, FL.
- Classes run from 8:00 AM to 5:00 PM except PCI which is 7:30 AM to 6:00 PM and PA 2 and ESTIMATING that run from 8:00 AM to 2:00 PM.

Your SSPC Individual ID Number

Please tell us how you heard about this training

Name (as it should appear on your certificate)

Your Title | Company Name

Company Address | City/State/Zip

Area Code/Phone Number | E-mail Address

Area Code/Fax Number | Date and Place of Birth

Your Approving Manager's Name | Title

- ☐ **NEW! Bridge Maintenance: Conducting Coating Assessments (BRIDGE)**
  Training Dates: February 8-9 | MBR $595 • NON-MBR $795
- ☐ **NEW! Coating Specification Essentials (CTG SPEC ESS)**
  Training Dates: February 11-13 | MBR $595 • NON-MBR $795
- ☐ **NEW! Inspection Planning and Documentation (INSPEC PLAN)**
  Training Dates: February 12-13 | MBR $595 • NON-MBR $795
- ☐ **NEW! CCI Supplement: Determining the Level of Moisture in Concrete (CCI SUPP)**
  Training Dates: February 14-15 | MBR $595 • NON-MBR $795
- ☐ **Using SSPC-PA 2 Effectively (PA 2)**
  Training Dates: February 7 | MBR $195 • NON-MBR $295
- ☐ **Navigating NAVSEA Standard Item 009-32 (00932)**
  Training Dates: February 7 | MBR $395 • NON-MBR $595
- ☐ **Floor Coating Basics (C10)**
  Training Dates: February 8-9 | MBR $595 • NON-MBR $795
- ☐ **Fundamentals of Protective Coatings (C1)**
  Training Dates: February 8-12 | MBR $995 • NON-MBR $1195
- ☐ **NAVSEA Basic Paint Inspector (NBPI)**
  Training Dates: February 8-12 | MBR $1095 • NON-MBR $1295
- ☐ **Planning and Specifying Industrial Projects (C2)**
  Training Dates: February 8-12 | MBR $995 • NON-MBR $1195
- ☐ **Bridge Coatings Inspector Program (BCI)**
  Training Dates: February 8-13
  - ◯ **BCI Lvl 1:** February 8-12 | MBR $995 • Non MBR $1195
  - ◯ **BCI Lvl 2:** February 8-13 | MBR $1395 • Non MBR $1595
- ☐ **Concrete Coating Inspector Program (CCI)**
  Training Dates: February 8-13
  - ◯ **CCB:** February 8-9 | MBR $595 • NON-MBR $795
  - ◯ **CCI Technical:** February 8-12 | MBR $995 • NON-MBR $1195
  - ◯ **CCI Certification:** February 8-13 | MBR $1395 • NON-MBR $1595
- ☐ **Protective Coatings Inspector Program (PCI)**
  Training Dates: February 8-14
  - ◯ **PCI Lvl 1:** February 8-12 | MBR $995 • NON-MBR $1195
  - ◯ **PCI Lvl 2:** February 8-13 | MBR $1395 • NON-MBR $1595
  - ◯ **PCI Lvl 3 Exam:** February 14 | MBR $500 • NON-MBR $700
- ☐ **Protective Coatings Inspector Program – Workshop (PCI WS)**
  Training Dates: February 11 | MBR $395 • NON-MBR $595
- ☐ **Airless Spray Basics (C12)**
  Training Dates: February 9-10 | MBR $795 • NON-MBR $995
- ☐ **Evaluating Common Coating Contract Clauses (CONTRACT)**
  Training Dates: February 10 | MBR $395 • NON-MBR $595
- ☐ **Lead Paint Removal (C3)**
  Training Dates: February 10-13 | MBR $995 • NON-MBR $1195
- ☐ **Basics of Estimating Industrial Coatings Projects (EST)**
  Training Dates: February 11 | MBR $195 • NON-MBR $295
- ☐ **Abrasive Blasting Program (C7)**
  Training Dates: February 11-12 | MBR $795 • NON-MBR $995
- ☐ **Lead Paint Removal Refresher (C5)**
  Training Dates: February 12 | MBR $395 • NON-MBR $595
- ☐ **Project Management for the Industrial Painting Contractor (PRO MGMT)**
  Training Dates: February 12-13 | MBR $595 • NON-MBR $795
- ☐ **Coating Application Specialist Refresher (CAS REF)**
  Training Dates: February 12 | MBR $175 • NON-MBR $275
- ☐ **Coating Application Specialist (CAS) Lvl 1**
  Training Dates: February 13 | MBR $175 • NON-MBR $275
- ☐ **Coating Application Specialist (CAS) Lvl 2**
  Training Dates: February 13-14
  - ◯ **Written Exam:** MBR $175 • NON-MBR $275
  - ◯ **Hands-On Exam:** MBR $625 • NON-MBR $725
- ☐ **Protective Coatings Specialist (PCS) Program**
  Training Dates: February 13 | MBR $500 • NON-MBR$700
- ☐ **Applicator Train the Trainer (ATT)**
  Training Dates: February 13-14 | MBR $795 • NON-MBR $995
- ☐ **Quality Control Supervisor (QCS)**
  Training Dates: February 14-15 | MBR $595 • NON-MBR $795

Payment Options

Please charge my credit card in the amount of $ _____

☐ VISA ☐ MasterCard ☐ Discover ☐ AMEX

Card Number | Exp. Date | Security Code

Signature

☐ Check Enclosed Check No. _____

☐ **Add $95.00 for 1-Year SSPC Individual Membership**

Special Note: If you have a disability that may impact your participation in this activity, please call SSPC at least two weeks prior to the date of the event. Prior notification is necessary in order for us to address your needs.

A Free Membership Offer from SSPC

If you register for a training course at the nonmember rate, you automatically become an SSPC individual member. Your membership includes unlimited access to the entire collection of SSPC standards at no additional cost, a subscription to the Journal of Protective Coatings and Linings as well as discounts on publications, conferences and other benefits. After the course, we will process your application and you will receive your membership card and the JPCL shortly thereafter. Please note: by itself, individual membership is $95 per year. This offer is valid only for new members or those whose membership has been inactive for at least six months. Your signature below verifies that you understand this offer.

Signature | Date

Cancellation Policy: SSPC reserves the right to cancel up to 21 days before the scheduled training is to begin due to low registration. If a training event is cancelled, registrants receive a full refund of payments for course fees and supplemental material or SSPC can transfer your registration fee to an upcoming training. If you do not enroll in another class within one year, the fees will be forfeited. SSPC reserves the right to cancel or reschedule a course or part thereof at any time. In the event of SSPC having to cancel or re-schedule a course, attendees will be offered an alternative course date or the option to withdraw from the course and a credit/refund issued if appropriate. We cannot take responsibility for the expenses incurred by the customer as a result of the cancellation or re-scheduling of the course. If you choose to cancel and SSPC receives your written cancellation: A) up to 30 days before the training, the registration fee is refundable, minus a $50.00 service charge or you may select a full credit towards a future training class or event. B) is received from 29 to 17 calendar days before the training, the fee is refundable at 50%, minus a $50.00 service charge or you may select a full credit towards a future conference or training event. C) is received in 16 or fewer days before the training, you will receive credit towards a future conference or training event, minus a $50.00 service charge. If you do not cancel or attend, you are still responsible for the payment. All credits for future classes due to your cancellation are forfeited if you do not attend another class within one year of your first cancellation. Under no circumstances is SSPC responsible for reimbursement of any airline tickets, guaranteed reservations or other expenses associated with a student attending any class. If you contact SSPC 21 days before the start date of the original class you wanted and request to move from that class date to another class date, there is a $50.00 fee. If you replace a student in a class, there is a $50.00 fee.

Four Easy Ways to Register

1. Online at www.sspc.org
2. By phone, toll-free: 877.281.7772 x2204.
3. Fax this form to: 412.281.9993
4. By mail send to: SSPC Training • P.O. Box 200591 Pittsburgh, PA 15251-0591

The Takeaway

By Karen Kapsanis
Editor in Chief, *JPCL*

Closing Thoughts

Years ago, when I joined *JPCL* as the editorial assistant, I told myself that I would stay in publishing for two years and then go back to graduate school.

Many multiples of two years later and now editor in chief of *JPCL*, I am leaving publishing and going back to graduate school to begin another of the five or so career changes that Americans average. (This one will be only my third.)

Anita Socci

I leave *JPCL* and its parent company, Technology Publishing, at the end of this year; Anita Socci will succeed me on January 1, 2014.

Many of you know Anita. She has been the managing editor of *JPCL* since 2011, its manager of directories since 2008, and my trusted senior staffer for well over a decade. *JPCL* will thrive under her care.

Anita will have the same benefit I have had of working daily in the trenches with our remarkable Team *JPCL*: Brian Goldie, our intrepid technical editor; Charlie Lange, our tireless assistant editor (and soon to be managing editor); Marian Welsh, our dedicated publisher; her talented staff of Bernadette Landon, Lauren Skrainy, and Bill Dey; and our very own crew of miracle workers—Milissa Bogats, production manager; Peter Salvati, art director; Daniel Yauger, associate art director; Mikaela Longo, production assistant; and Jo Ann Binz, circulation manager. I have worked with some of these people for nearly two decades (or more), and I am grateful beyond measure to everyone on the team.

I leave with great respect for all of you who do the very hard work of maintaining our infrastructure under what are often trying circumstances. From all of you, I have learned a great deal about the complexity and importance of corrosion protection with coatings.

I'd like to thank all of you who have read, written for, and supported *JPCL* during my tenure; I owe you an enormous debt for your generosity in sharing not only your industry expertise but also, in many cases, your friendship.

Although I am excited about my coming adventures, I leave with sadness and a five-gallon bucket of good memories. I have met many wonderful people in the industry, at SSPC headquarters, and at Technology Publishing.

I have had the help of the capable and caring people at SSPC, including but certainly not only Executive Director Bill Shoup.

It has been an honor to work for the guy who keeps us all on our toes, Technology Publishing's current President and CEO, Peter Mitchel (one "l" at the end of his name, really).

And I close with a shout-out to Harold Hower, founder of *JPCL* and Technology Publishing Company. Harold, you took a chance many years ago, hiring me when I was just a novice in publishing, and you gave me more opportunities than I can count. Thank you.