CAST POLYMER
CONNECTION
Fall 2017

Government rules and standards

- What to expect during inspections
- Update on regulations to watch
- ANSI's take on baths and sinks
- Respirable silica concerns

Also:
Estimating tools

POLYCON 2018 IN CHICAGO

INSIDE THIS ISSUE...

ON THE COVER: This issue of Cast Polymer Connection seeks to connect readers with the latest developments in the world of regulations and guidance for the industry. It also covers what happens when an OSHA inspector shows up at the door. See story on page 4. Photo: Dreamstime/Irina88w

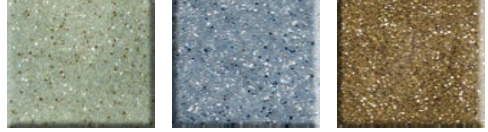
PRODUCED BY
The Tibbs Group

Genilee Parente, Editor
gsparente@verizon.net

PUBLISHED BY
THE ICPA
INTERNATIONAL CAST POLYMER ASSOCIATION

Phone: 470-219-8139
www.TheICPA.com

For advertising rates, please contact Jennifer Towner at Jennifer@theicpa.com or 470-219-8139



PRESIDENT'S LETTER

The year ahead

I WANT TO START MY FIRST PRESIDENT'S LETTER BY THANKING MY PREDECESSOR BILL SANDERS. Bill did an outstanding job of leading us through an exciting year of beginnings as we expanded our annual meeting, solidified our committee structure, brought in the member numbers we needed to pass our milestones and accomplished many other goals. Between Bill and his predecessor Todd Werstler as well as leaders like Royce Newsom who made ICPA the organization it is today, I know I have some tough shoes to fill.

By way of introduction, I have been manufacturing marble since I was 13 sweeping the floors of my parents' operation. I graduated to molds, spraying, pouring and finishing and worked my way up to become president of Elite Marble Company, which I purchased from my parents in 2006. Like many in our business, my roots are firmly planted.

I find the prospect of serving as the leader of ICPA particularly exciting because I've always felt we needed a strong association to guide us in the ways we manufacture our products each day. The large steps we've taken recently to help out with technical issues through online guides and videos, a new and growing website, an information-packed POLYCON, an upgraded Cast Polymer Connection and more, are, by themselves, worth becoming an ICPA member.

My BHAG (Big Hairy Audacious Goal) for this organization is to transform the ways we use technology for our members so that ideas can flow more fluidly and rapidly. One hope is that videos and pictures can be shared more frequently by members as a way to solve problems and improve both the ways we function as an organization and the quality of the work we do as individual manufacturers and suppliers. We make very cool things every day, and we should be exchanging information with each other on the best ways to do that.

> "MY BHAG (BIG HAIRY AUDACIOUS GOAL) FOR THIS ORGANIZATION IS TO TRANSFORM THE WAYS WE USE TECHNOLOGY FOR OUR MEMBERS SO THAT IDEAS CAN FLOW MORE FLUIDLY AND RAPIDLY."

We are now in the process of planning our fourth POLYCON in Chicago, and I'm happy to be part of that effort. Be sure to mark your calendar for April 18-20 next year because this is not a meeting you can afford to miss.

In the meantime, enjoy this issue, which is concentrated on providing you some top-notch articles on the regulatory and technical issues of today. If you need to contact me, feel free to pick up the phone or email me (608-297-2175; lhaas@elitemarble.com). I welcome your ideas and feedback. ■

Luke Haas
ICPA President

Featuring 35 dazzling

New Artistone™ & Durastone® colors.

With the unique innovative products offered by ACS, its easy to stay ahead of the competition. ACS strives to create progressive working relationships with our customers while supplying the essential tools needed in today's highly competitive market.

Check out the new colors online at **www.acsinternational.com** to preview our filler options and color selections or call **1-800-669-9214** for more information.

MARBLE-PRO
low resin demand marble filler

ACS INTERNATIONAL

ONYX PRO 50™
high translucency alumina tri-hydrate

Dura Stone®
premium solid surface fillers

Artistone™
castable engineered granite

Featherlite
weight reducing filler blends

Poly Stone™
sprayable granite and solid surface material

Know your rights:

How to handle an OSHA inspection

BY KELLY DEBUSK

THE DREADED INSPECTION BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) is something many companies today fear. It doesn't need to be that way.

A common misconception, for example, is that businesses under inspection cannot challenge what OSHA says. But business owners who know and understand their rights when it comes to inspections will know the steps they can take to successfully navigate the process, including how to question what's happening.

The following examples are actual inspections from companies in the composites industry within the last two years. Using these examples and heeding a few tips should make the dreaded inspection a little less stressful.

Two sources of complaints

An employee within Company ABC filed a complaint that resulted in an inspection. An important point to note here is that employee complaint-generated inspections are limited to looking at only the areas or processes that the employee specifically mentions in the complaint, though that can be expanded if the inspector sees an obvious violation elsewhere while investigating.

Company XYZ was subject to a routine spot inspection. During such a

visit, the inspector can study any and all parts of a facility.

In both these cases, OSHA has warrant power, which means that the agency can get a warrant to be allowed entry. However, entry of a facility can be delayed until a company officer or owner is available to conduct the tour. This is vital because the person in charge of accompanying the inspector should be extremely knowledgeable on all plant operations and reasonably knowledgeable about OSHA regulations specific to the cast polymer industry.

The employee complaint

In the case of Company ABC's inspection process, the employee complaint concerned dust and the fact hardhats were not required in overhead crane areas of the facility. In this case, entry was granted for an initial inspection and no violations were issued based on the complaint. However, the inspector determined that the investigation should be expanded to include styrene monitoring for employees. The styrene monitoring results were found to be well within allowable limits. But the inspector then decided to expand the investigation even further to monitor styrene levels for a specific process. Again, no overexposure was found during the seven-minute process under question, but the inspector focused on one clause of one paragraph of the OSHA standard and cited a violation of that standard, which resulted in fines totaling $8,200. The clause under question stated that for this specific process, exposure had to be equal to or less than half the allowable exposure. During the OSHA-conducted test, the levels were found to be 0.5 points above half the allowable limit. The test itself only had an 11% accuracy rate.

What did Company ABC do about the citation?

Once issued, a business has 15 days to either sign the citation and agree to implement a regulatory program to abate the violation or to contest the violation citation. The company took the 15 days allowed to study the entire standard upon which this violation was based. (Note here that any OSHA violation issued will include the standard that is cited.)

After the rule was reviewed in its entirety, the company determined that, although the condition was over half the allowable limit, other considerations must also be met for the entire standard to be enforced at the facility. The facility also noted that it had conducted over 100 tests for the process, all showing no overexposure. Because of these two considerations, the facility opted to contest the citation, and an informal hearing was scheduled.

The first thing OSHA did at the informal hearing was to agree to cut the fines in half if the company would plead guilty to the citation. This is common practice at informal hearings, which means it isn't a bad idea to contest anything that isn't a blatantly obvious violation. However, by admitting guilt, a company should know that, if the violation isn't abated, it becomes a willful violation when cited a second time. A willful violation carries a maximum penalty of up to $126,749. This reality is important to know if resolution isn't obtained at the informal hearing and a decision must be made whether to proceed to the next step. No resolution was reached at this informal hearing, and Company ABC still felt it was exempt from the regulation. The next step was arbitration.

OSHA HAS WARRANT POWER, WHICH MEANS THAT THE AGENCY CAN GET A WARRANT TO BE ALLOWED ENTRY. HOWEVER, ENTRY OF A FACILITY CAN BE DELAYED UNTIL A COMPANY OFFICER OR OWNER IS AVAILABLE TO CONDUCT THE TOUR.

During arbitration, it's extremely critical to seek expert counsel. Company ABC hired an OSHA expert to confirm its belief that the facility was exempt from the regulation. This expert then began mediation with OSHA to find an agreeable solution. At this point, health experts were also consulted to provide additional data to support the company's case. No resolution was reached, however, so the case went to pre-litigation, and the company hired a lawyer who deals solely in OSHA cases.

Once a company decides to take OSHA to court, the OSHA inspectors and supervisors turn the case over to the agency's lawyers, who decide if OSHA has enough evidence to support its initial findings in court. OSHA only has two years from the original citation date to decide to prosecute a case once this step in the process has been reached. Currently, Company ABC is still in negotiations but is approaching the prosecution deadline.

While all this might sound costly, having to comply with the standard would have forced the company into hiring a full-time employee to oversee the regulatory requirements to comply with the standard. In this situation, it was more cost effective to challenge than to comply with a regulation from which the facility should have been exempt in the first place. Although the outcome is not yet final, it is looking favorable for Company ABC.

The spot check

Next, let's look at Company XYZ's inspection. As mentioned before, XYZ was under inspection as part of a routine spot check, so the inspector was not limited to any specific area of the facility. Entry was granted and several violations were cited. The company immediately fixed several of the problems that resulted in the violations, then signed off on the entire citation letter. That meant the company had to fix, to the satisfaction of OSHA, all the items of the citation.

Once the facility fixed the issues it could resolve on its own, the company brought in outside help to fix some of the other items on the list of citations. The consultant determined that the facility was clearly exempt from requirements of one serious violation listed in the citation. The abatement for this serious violation would consist of costly and lengthy analysis of all the potential hazards at the facility and contingency plans for any deviation from normal operations. Such an analysis also must be performed every three years to remain in compliance with the OSHA standard cited. Several OSHA and industry experts were consulted, and these experts contacted OSHA on behalf of Company XYZ to no avail. Although, the facility was exempt from the standard, the company was forced to run the analysis to satisfy the abatement because it had signed the citation. Had Company XYZ taken the time to research the standard cited, it could have contested that portion of the citation and likely would have won its case and saved money in the process. In the end, the company had to pay each of the experts brought in, as well as pay all the original fines.

Lessons learned

What can you learn from these two scenarios?

Company ABC's violation concerned a somewhat gray issue. But because the company studied the standard and took the proper steps to contest it, the citation will mostly likely be thrown out. Company XYZ's violation, meanwhile, was clearly something the facility should have been exempt from; because the facility assumed that OSHA knew more about its own rules than the company did, the business signed the initial violation and in the end had no measure of recourse. The lesson here is that once you admit guilt, you waive your right to either an informal or formal hearing with OSHA.

Another lesson learned, however, concerns preparation. Neither company prepared for an OSHA inspection. These inspections are usually surprise visits and most companies do not think there are ways to prepare. This is simply not true. There is a way to prepare for an OSHA inspection that will make a plant safer and cut down on potential pesky fines. Businesses should have someone do a mock walkthrough inspection annually to look for possible violations. Those that don't have an OSHA-trained employee onsite can check with their states to see if it has a cooperative program. If so, this state program will send someone to a facility to do a walkthrough.

While no fines will be levied when participating in such a program, a company should be aware it may be required to agree to fix any violations found. However, participation in the program is typically a free service. A final option is to hire an outside third party. With such a move, the company can choose to disclose information to OSHA as a proactive measure or it can keep the information confidential.

Mock walkthroughs

Mock walkthrough should look for what violations OSHA seeks to pinpoint; a list of common violations for each industry by North American Industry Classification System (NAICS) code and Standards Industrial Classification (SIC) code is available on OSHA's website at www.osha.gov. NAICS is the six-digit code system the federal government uses to classify what a company is, based on how it produces certain goods or services. SIC is the four-digit code that classifies by specific industry types (it's also used by agencies in other countries). Referring to OSHA's NAICS/SIC checklists is a great way to find what could be violations. Once a walkthrough is completed, the observed violations should be ranked in order of potential hazard to employees. The greater the hazard, the greater potential for heavy fines. Because of this, issues should be fixed in the order of how they rank. While chances are these walkthroughs may not result in a perfect OSHA inspection, addressing them now can ensure no serious violations are found.

What to do

If a company does get inspected, there are steps to mitigate the results.

If OSHA requests entry to inspect a facility, a company has the right to have one of its officers or an appointed representative present to accompany the inspector. This person should have a thorough knowledge of the company—both day-to-day plant operations as well as general knowledge of OSHA regulations applicable to the industry. He or she doesn't need to know everything that's in the OSHA code for an industry. But the person should at least have general knowledge of the agency's inspection process. (Note here that the mock inspection, whether conducted by someone

at the facility, the state, or an outside third party, will give a company much of the information needed to prepare for an inspection.) If no one is present who meets the requirements, a company can delay entry but not prevent it. Companies that are proactive and know what they're doing don't need to worry about allowing admittance.

The company and its expert should also understand the purpose of the inspection. If it is complaint based, only the areas and processes mentioned in the complaint will need to be accessed. Unless an obvious violation outside of the complaint is witnessed, an inspector cannot seek to study anything else. For a routine spot inspection, access must be granted to all areas of the facility.

If a company is issued a citation, the most important thing to do is: do not sign it! This is a vital point because, unless a blatantly obvious violation exists, contesting the findings initially is usually fruitful. OSHA will give companies that contest more information about the citations and usually will offer to cut fines. Contesting also gives a company the chance to research the rules that were cited and determine any exemptions. At this point, a business can decide if the violations are applicable, discuss acceptable abatements and address any violation it feels is unwarranted. If no satisfactory resolution is agreed upon between OSHA and the business, arbitration is the next step. At that point, companies should weigh the cost and difficulty of abatement against the cost of an appeal. If the evidence is on the company's side, the business should not be hesitant to follow through.

Facilities that have already signed a citation, but later realize they were probably exempt, should contact state and national elected representatives. Because OSHA is a government entity, elected government officials should know how OSHA regulations and the inspection process affect their constituents. Forcing compliance with a rule that a facility is clearly exempt from, simply because the company signed something it only had 15 days or less to review, isn't fair. Companies that can prove exemption at any point in the process should be considered as having sought abatement (at the very least.)

As Alexander Pope said, "To err is human…" Remember: OSHA inspectors are only human. It's all right to ask questions and challenge findings. If a business knows its rights and has prepared, it is in a much better position should a surprise inspection occur. ■

KELLY DEBUSK is the owner of Composites Compliance, LLC (www.compositescompliance.com). She has over 20 years of experience in environmental and safety regulations governing the composites industry. She can be contacted at k_debusk@compositescompliance.com.

REGULATORY UPDATE

What's happening in government circles

BY JOHN SCHWEITZER

CHANGES OCCURRING EVERY DAY IN SCIENCE, regulation and government policy promise to impact the business practices of cast polymer manufacturers for many years to come. Those business owners and managers who keep informed about what's happening have the tools to make the best decisions about cost-effective compliance. Here's an update on what to be watching in the world of regulations.

Communicating with customers

The Occupational Safety and Health Administration's (OSHA's) Hazard Communications Standard requires manufacturers to inform customers if the normal anticipated use of products generates combustible dust.

This is an important topic for any manufacturer of products that are polished, sanded, cut, ground or otherwise mechanically worked by downstream customers (any company that is between the cast polymer manufacturer and the ultimate end user, e.g., homebuilders, commercial contractors, designers) or end users themselves. Even though many cast polymer products are comprised mostly of non-combustible minerals, even a small amount of resin in the product will likely mean the dust will combust when using the OSHA-approved tests. Many companies use Safety Data Sheets or other documents provided with products to inform customers of combustible dust hazards as well as the importance of housekeeping to prevent accumulation of harmful quantities of dust. (See also, "OSHA's Respirable Silica Standards" by Kay Rountree on page 12).

California's Prop 65

Research by the American Composites Manufacturers Association (ACMA) suggests most composite products—including cast polymer products—are exempt from Proposition

Pictured here is delivery of cultured marble paste to test molds during a recent ICPA-sponsored test of monomer emissions from cast polymer operations. ICPA members can obtain the test report from www.theicpa.com "members resources" page or by contacting ICPA Executive Director Jennifer Towner at jennifer@theicpa.com.

65 (Prop 65) regulations. Prop 65 is a California law that addresses toxic substances in drinking water along with sources of potential exposure including countertops and sinks. It requires toxicity warnings for customers and end users in that state. The exemption, however, is product-specific and can be formally established only by taking an enforcement action to court.

Legal experts believe that suppliers of products sold to consumers via retail or the internet are at highest risk of Prop 65 enforcement. Cast polymer manufacturers supplying products sold to homeowners in California should consider providing warnings that comply with California Environmental Protection Agency's Article 6 requirements for "clear and reasonable" warnings.

Impact on the environment

The U.S. Environment Protection Agency (EPA) and state agencies regulate release to the atmosphere of styrene, methyl methacrylate (MMA) and grinding dust, which are among substances found in cast polymer manufacturing shops. Companies need reliable estimates of the emissions of these substances from their operations before they can apply for permits or comply with reporting and emission control requirements.

A widely accepted tool for estimating styrene and MMA emission is the Unified Emission Factor standard issued by ACMA, which will soon include estimation factors for cast polymer operations. Also, ACMA's recently issued guidance and workbook for particulate matter (PM) emissions was reviewed by a major state regulatory agency to ensure its completeness and practical applicability. These references are available at www.acmaeducationhub.org/regulatory-tools.

Several state and local regulatory agencies, including those in Ohio, Indiana and California's Mojave Desert air quality district, are revising regulations to ensure that volatile organic compounds and PM control requirements for composites manufacturing operations (including cast polymer) comply with EPA's updated standards for ambient air quality. Companies with operations in these locations should work with the regulatory agencies to support revised standards that are technically and economically feasible.

Workplace exposure to styrene

The composites industry would be very different if small manufacturers could not use the thermosetting resins that use styrene as a reactive diluent. ACMA works very closely with the Styrene Information & Research Center (SIRC) to support SIRC's comprehensive styrene toxicity research program, to advocate for classification and regulation of styrene health effects that reflect the best available science, and to promote the use of appropriate employee protection measures. ACMA's "Staying Healthy While Working with Resin" bulletin provides a concise summary of the findings and recommendations for controlling workplace exposures to styrene.

Workplace health and safety regulatory agencies, most notably the federal and California OSHAs, are considering updates to standards protecting workers from adverse impacts resulting from styrene exposure. OSHA's 8-hour-average Permissible Exposure Level for styrene is 100 parts per million (ppm), while the California standard is 50 ppm. Cast polymer manufacturers should consider participating in the federal and California rulemaking efforts to ensure the feasibility of revisions.

EPA AGREED TO CONSIDER EXEMPTING FROM TSCA REVIEW USES OF CHEMICALS ALREADY REGULATED BY OTHER AGENCIES, SUCH AS OSHA.

Congress's major reform in 2016 of the Toxic Substance Control Act (TSCA) increased the chance EPA will subject the composites industry's use of styrene to a major risk assessment and possibly issue control requirements if exposures are found to exceed a "no unreasonable risk" standard. The recently issued final rules for TSCA risk assessment adopted ACMA's recommendations that EPA comply with the risk assessment best practices the National Academies of Sciences, Engineering and Medicine endorsed. Furthermore, EPA agreed to consider exempting from TSCA review uses of chemicals already regulated by other agencies, such as OSHA. This development makes the update of the federal workplace styrene exposure standard especially important to the industry.

Conclusion

Although many ICPA members know they need to keep track of what's happening, it's hard to find time in light of the many tasks that come with running a plant. Magazines such as Cast Polymer Connection, publications such as ICPA's Monthly Insider, organizations such as ACMA and ICPA can help, and companies that are up to date stand a much better chance of knowing what's coming and how to react. ■

JOHN SCHWEITZER is senior advisor to the president of the American Composite Manufacturing Association (www.acmanet.org). He can be reached at jschweitzer@acmanet.org.

ANSI standards cover baths and sinks

BY PAUL HENDERSON

THE NON-PROFIT ORGANIZATION AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) is tasked with developing standards that impact businesses in nearly every industrial sector. Three of those standards—ANSI Z124.1, ANSI Z124.3, and ANZI Z124.6—are of particular interest to many cast polymer manufacturers.

What they are

ANSI Z124.1 is the American National Standard for plastic bathtub units while ASNI Z124.3 covers plastic lavatories and ANSI Z124.6 covers plastic sinks. All three were developed to address the lack of a comprehensive standard that existed in the 1960s and 1970s. At the time, there was a market need for product acceptance standards for gel-coated, glass fiber-reinforced plumbing fixtures.

In this article, the three standards referenced above are discussed with a higher level of detail given to ANSI Z124.1 and similarities and deviations identified for ANSI Z124.3 and ANSI Z124.6. Bath and sink manufacturers use the standards for performance criteria for their products.

ANSI Z124.1 establishes physical requirements for plastic bathtub units covering materials, workmanship and finish of plastic bathtubs. Many different materials and methods of manufacture are permitted in meeting those requirements. Achieving minimum performance levels in the standard indicates the plastic bathtub is acceptable as a plumbing fixture.

This standard discusses several finish types including cast-filled polymers with or without a pre-coated finish. To meet the standard, surfaces are inspected by cleaning the unit with detergent and water, then applying ink and checking for cracks, chipped areas, blisters or any blemishes. A dirt abrasion test is used to check for subsurface voids. Structural integrity of a unit is tested by running a point impact load as well as testing loads on wall surrounds. Passing criteria shows no cracks or chips.

Physical characteristics are tested for colorfastness, staining, clean-ability, chemical resistance and flame resistance. The colorfast test ensures no significant change in color is observed under certain conditions. Under the staining tests, items such black crayon, black shoe polish, blue ink, lipstick, hair dye, iodine solution and Gentian violet solution are used as stains. These stains are scrubbed and measured using a pre-determined rating system. Abrasion resistance

is determined through use of brushes and abrasive slurry. Clean-ability is measured by checking white-light reflectance before and after application of dirt. A cigarette test uses lit cigarettes placed on the surface for two minutes after which the area is wiped to ensure no ignition or glow of the surface exists during or after contact. Chemical resistance is tested by applying drops of 13 reagents, including alcohols, ammonia, bleach solutions and solvents. Any damage that results must be repairable using polishing compounds. Flame testing includes placing samples over a propane torch for specified periods of time—they should cease to burn within 30 seconds.

An important parameter to test for with bath and sink products is water exposure resistance. This is tested by exposing specimens to boiling, distilled water for 100 hours or exposing them to 65°C (149°F) distilled water for 100 hours depending on specimen type. Change is documented using a pre-determined rating system. Thermal shock resistance is tested by applying water at 65.5°C (149.9°F) for one-and-a-half minutes, allowing the water to drain for 30 seconds, then following that action with cold water at 10°C (50°F) for one-and-a-half minutes and allowing that water to drain. These actions are considered one cycle. Performance criteria assessed include no cracking, crazing, blistering or delamination after 250 cycles.

DREAMSTIME/IRINA88W

Major uniformity exists between the three standards. An important note, however, is that a plastic lavatory unit is a separate bowl or a bowl and integral top. However, in ANSI Z124.6, "sink" refers to a kitchen sink, bar sink, service sink or laundry tray.

ANSI Z124.3 for plastic lavatories includes the same tests referenced above for ANSI Z124.1 except flame spread is measured and a bond strength test is included as well as an accelerated aging test for thermoplastic sheet material, shell-coated surface finish units.

ANSI Z124.6 for plastic sinks is similar to the other two standards; however, it also adds the flame testing as well as tests beyond ANSI Z 124.3 (plastic lavatories). For example, it includes a knife drop (for kitchen and bar sinks), a skillet drop (for kitchen sinks) and a vibration test. Other differences include a heated pan test and hot wax test for kitchen sinks. The standard drop impact test uses a one-and-a-half-inch diameter, half-pound steel ball dropped from 24 inches to impact once on each of four different areas on the sink: two on flat areas, two on convex. The test looks for no cracks upon impact. A one-ounce steel knife with a rounded tip is used for the 24-inch knife drop test. A 10.5-inch iron skillet at four-and-a-half pounds held with the handle up is dropped from 12 inches high on two points between the drain and the side wall. The heated pan test for kitchen sinks involves placing a heated (185°C or 365°F for 15 minutes) aluminum disc on a flat surface of the sink to ensure no cracking, crazing or discoloration. The hot wax test for kitchen sinks involves pouring 10 ounces of heated (185°C or 365°F) bath wax for five seconds to check for cracking, crazing or discoloration.

Whether or not your products are already tested to these standards, it is vital to understand what is involved as well as the minimum requirements needed for passing. This information allows manufacturers to recognize what it means when products are identified in the marketplace as meeting or exceeding the ANSI Z124 standards. ■

PAUL HENDERSON, CCT-CP, is a technology manager at Reichhold, LLC2. He is currently on the ICPA board as well as the technical committee. He can be reached at Paul.Henderson@reichhold.com.

OSHA's Respirable Silica Standards

BY KAY ROUNTREE

MANUFACTURERS IN THE CAST POLYMER INDUSTRY need to be aware that their facilities may be dealing with silica dust on several levels—from on-site installation practices to what happens in their plants. Because of this and because of two important pending deadlines, they should become familiar with the Occupational Safety and Health Administration's (OSHA) Respirable Crystalline Silica (RCS) standards.

OSHA issued the standards in March 2016. They consist of two separate standards: one for construction (1926.1153) and one for general industry and maritime (1910.1053). While the two have similarities, there are also significant differences. Meanwhile, the deadlines for compliance are Sept. 23, 2017 for construction-covered employers and June 23, 2018 for general industry/maritime-covered employers.

The standards apply to employers that may have exposures to RCS exceeding action levels (the level of a substance that would require medical surveillance, increased industrial hygiene monitoring or biological monitoring) under any foreseeable conditions. Those conditions include situations where the engineering controls already in place to manage exposure fail, resulting in overexposure. As with all OSHA expanded health standards, the exposure applies whether or not an employee is wearing a respirator.

The standards' purpose

Long-term exposure to respirable RCS can cause silicosis, a potentially disabling lung disease with no cure, lung cancer and renal disorders. OSHA issued its standards in the belief that the existing limit for RCS did not adequately protect workers or the public. The agency estimated the new rules will save more than 600 lives per year.

Silicosis among "countertop" (OSHA's terminology for surfaces manufacturers) workers has been reported in four countries, including a young worker in Texas that had only a decade of workplace exposure. It is interesting to note that in

Although the construction aspect of OSHA's standard doesn't apply in the factory, companies doing installation onsite should familiarize themselves with what's included.

one of the studies done to investigate all this, silicosis cases occurred even in facilities where water was used to control dust exposures. Studies by the National Institute for Occupational Health and Safety (NIOSH) have also confirmed that while water and exhaust ventilation can reduce exposure, employees may still be exposed to RCS at levels over the new Permissible Exposure Limit (PEL).

RCS defined

These OSHA standards apply only to respirable crystalline silica. It is important to understand what each of these words mean.

Respirable: Only particles that are of respirable size are covered. Respirable particles are very small and can penetrate deep into the lungs when inhaled. OSHA uses the example that a respirable-sized particle of crystalline silica is at least 100 times smaller than sand found on beaches or in playgrounds. When released into the air, these small particles may not be visible to the naked eye so the absence of visible dust may not be proof exposure didn't occur. Once the particles become airborne, they can remain suspended in the air for very long periods of time and readily drift into other areas beyond where they are generated. Some materials may not be present as respirable dust particles in the form in which the materials are sold. For example, sand grains may not be respirable as is, but as the sand goes through processing equipment, the particles can become pulverized into very small, respirable-sized particles, then become airborne. Liquid materials containing crystalline silica don't present a dust hazard in liquid form. But once dry, processes such as grinding and sanding on these materials can create respirable crystalline silica dust exposure.

Crystalline: Silica is a mineral composed of silicon and oxygen (silicon dioxide or SiO_2). It can exist in crystalline or non-crystalline forms. In the crystalline form, the silicon and oxygen atoms are arranged in an organized, three-dimensional structure. The crystalline forms can cause silicosis; while the non-crystalline forms do not. Examples of non-crystalline forms of silica include amorphous silica, fused silica, silica gel, silica fume, colloidal silica and precipitated silica. The RCS standards do not cover these substances.

Silica: Crystalline silica exists in three forms (also called polymorphs): quartz, cristobalite and tridymite. Quartz is by far the most common form. Cristobalite, is found less frequently, and it can be found in nature or can be created when quartz-containing materials are heated to high

temperatures. Tridymite is rare. Silica is different from substances such as silicone, silicates or silicon, which are covered by the RCS standards.

Buyers of products using safety data sheets (SDSs) as a basis should look for terms such as crystalline silica, quartz, cristobalite, SiO_2, silicon dioxide or free silica. These terms indicate the product could result in exposure to RCS during use. Some SDSs do not clearly identify whether crystalline silica is present or state that it could present a hazard to downstream users.

OSHA's Hazard Communication Standard (1910.1200) requires that any product that contains more than 0.1% crystalline silica must be classified as a carcinogen. It does not matter if the crystalline silica is added to the product intentionally, is present as an "impurity" in one of the ingredients or is labeled by the supplier as a "trace" substance. OSHA is also clear that hazards created during the anticipated use of the product (also called downstream hazards) must be addressed on SDSs and product labels. Even if the product as sold does not contain crystalline silica in a respirable form, users must be told of its presence so proper protection measures can be taken if downstream processes could create respirable dust.

Where RCS is found

This is one of the least known factors about RCS—how widespread its prevalence is. Here are some considerations:

- ***Products/materials that can contain crystalline silica include:*** abrasives, cement, clay, concrete, concrete coloring compounds, feldspar, flint, gravel/crushed stone, industrial sand, limestone/dolomite, mortar and grout, polishing media, silica flour and stone (natural and engineered).
- ***Processes or activities that can create airborne RCS dust include:*** blasting, compressed air usage, cutting and sawing, drilling, grinding, housekeeping tasks, polishing and sanding, transfers of dry material from bulk containers (e.g. bags, supersacks, totes), and transfer of materials in conveying systems.

The specifics of the standards

What the RCS standards have done is as follows:

- Lowered the PEL to 50 micrograms of cubic air (µg/m^3)(0.050 mg/m^3) as an 8-hour time-weighted average (TWA). The new standard is for RCS; the old formulas used by OSHA that were based on respirable dust containing silica no longer apply.
- Established an action level of 25 µg/m^3 (0.025 mg/m^3) as an 8-hour TWA
- Required employee exposure assessments or in the case of covered construction activities, adherence to Table 1, of 1926.1153
- Required certain additional actions depending on the exposure levels
- Required a Written Exposure Control Plan
- Prohibited housekeeping methods that create dust unless other methods aren't feasible
- Required proper recordkeeping
- Established compliance deadlines

When the construction standard applies

Just because a company doesn't define itself as a "construction" company, doesn't mean that tasks performed wouldn't be considered "construction" work by OSHA. The 29 CFR 1926 Construction Standards apply, or may apply, to the following situations even when employees of an employer typically covered by General Industry Standards do the work:

- Construction, alteration and/or repair activities, including painting and decorating
- New construction, repair of an existing facility or replacement of an existing structure or any of its components

Construction building or work does *not* include the manufacturing work, furnishing materials for work or building servicing and maintenance.

What should be done

Understanding the OSHA standard is the first step of the process. The second is to recognize what should be done. Hiring a consultant to help is a certainly a possibility but there also are plenty of sources out there for information that can give companies direction. One of those sources is ICPA's "member resources" portion of its website. Another is websites of consultants (see my site below). Wherever a company gets information, it is taking a step in the right direction by being aware. ■

KAY ROUNTREE, CIH, is owner of Industrial Hygiene Sciences (www.ihscience.com). She has been in the field of industrial hygiene for more than 30 years, providing consultation to employers in the manufacturing industries as well as several other sectors. She can be reached at kayihs@tds.net.

EDITOR'S NOTE: ICPA has posted Kay Rountree's presentation on this subject at POLYCON 2017, as well as the second half of this article, which gives specific advice on what companies can do. Go to www.theicpa.com "member resources."

THE R. J. MARSHALL COMPANY

www.Rjmarshall.com
Customer Care: 888-514-8600
salesinfo@rjmarshall.com
toll free: 800-338-7900

"We Seek To Make Our Customers Successful"

Onyx Fill™

Alumina Trihydrate for Cultured Onyx

Product	Translucency (foot-candles)	Color
OF250	115	Cool White
OF500	100	Cool White
OF300	110	Champagne

With advancements in veining techniques, demand for countertops with a veining feature is growing. This trend can be seen as many of the leading surfacing companies have recently introduced veined designs similar to natural onyx and natural marble.

The R.J. Marshall Company continues to offer a full line of high quality onyx and marble fillers carefully controlled for consistency and designed to give optimal performance and beauty.

Estimating:
Do you WAG, SWAG or use a stick?

BY ANDREW GREGSON

TOO MANY SMALL BUSINESSES PRICE their goods and services based on guesswork. They use what I call the WAG method (the Wild Ass Guess) or they add just a few numbers for a SWAG (a Scientific Wild Ass Guess). Others use the stick method, which is basically to cost out every stick and nail in the joint.

Why don't such systems work, and why do they always result in C-minus profits?

The WAG and the SWAG

WAG is an experience-based method for pricing whereby trial and costly errors may have already taken place so a company uses what it's learned to go forward. The assumption is that, if we've remodeled bathrooms a certain way for the past 10 years and it's cost us $5,000 to do so under the best conditions, presumably, $5,000 is the price to give. That thinking is doomed for obvious reasons. Faced with creep-

ing labor costs and sudden spikes in the price of materials or plumbing fixtures, this method cannot change to meet the new challenges quick enough. Also, faced with a new competitor in the market who is willing to undertake similar bathroom renovations for $3,500 leaves a WAG method practitioner scratching his or her head.

There is simply too much information that must be kept in an estimator's head to stay current and remain competitive yet profitable by "guestimating" based on experience. Estimators are also human: They tend to respond to the last comment they had from a customer. If that comment was a customer saying the price was too high, the price on the next job will drop. If the business owner is also the estimator, the price may not reflect value to the customer or even the costs, but rather the threadbare state of a bank account at the time. Does this all sound familiar?

IF THE BUSINESS OWNER IS ALSO THE ESTIMATOR, THE PRICE MAY NOT REFLECT VALUE TO THE CUSTOMER OR EVEN THE COSTS, BUT RATHER THE THREADBARE STATE OF A BANK ACCOUNT AT THE TIME.

So we move onto the SWAG method. As the term "scientific" implies, this method has some numbers to back up the experience-based approach.

> *"Okay, so that job will take four men five days to complete, and I pay them $20 per hour. With this labor cost of $3,200, I then add $3,200 for materials and the $3,200 I seek as profit and I come up with $9,600."*

This rough method does not take into account factors such as travel time, overhead and management costs, payroll taxes nor does it allow a fudge factor in case things go wrong. In the end, this job might actually lose money.

On the other end of that pole is the stick method, the name given to the clumsy and time-consuming method of working out the costs of each and every nail, foot of strapping, two- by four-inch board, pot of paint and labor to the nearest 15 minutes to arrive at a total cost. That means a lot of time is consumed doing the figuring. In fact, the typical delay from computer bashing can often be the deciding factor in whether or not a company gets that job.

The stick method is, in fact, an adaptation of industrial manufacturing cost accounting methods to service providers and custom builders. In my years in the building field, I have seen some very elaborate spreadsheets meant to cope with this vast amount of information. The advantage to the method is that, having gone to the trouble of detailing every aspect of this "virtual build," if the customer finally says "okay," the estimating company has a bill of materials and a plan for the carpenters.

The disadvantage is that, having committed so much time and effort to the quote, the price is not easily altered to reflect customer expectations. In other words, if the quote is $7,000 and the customer's budget does not extend beyond $5,000, it's not easy to find the savings to meet the value expectation. There is simply too much information on the table to alter the quote quickly. The only line item that can easily be altered is the bottom line and doing so may mean the job makes no money.

What to do: some estimating solutions

There is more than one solution to these dilemmas. For example, there's:

Estimating software

Industry-related packages for estimators are constantly being developed and released. Many of them use the power of computers and spreadsheets to manipulate large quantities of information without error. This can be the stick method on amphetamines, but it's a better-armed stick than a spreadsheet.

The best place to look for software packages is trade magazines and other publications. Part of choosing this approach to estimating systematically and correctly is to have a test run of the software: Entering data from an existing quote will show exactly how the numbers will work in reality. If the software is truly sophisticated, it will also create a bill of materials for the purchaser, saving hours of time for the estimator.

Estimating books – OEM and industry service providers

Significantly, there are many companies and organizations today out there that provide estimating in a packaged form that will quickly get to a final number. The one with which I have a working familiarity is Walt Stoeppelwerth Estimator Books and Software by Home Tech (www.hometechonline.com). This one package is focused on the construction trades. The company creates formulae into which the es-

timator plugs data such as square feet, height above normal height, number of windows and/or doors or an outcome desired as economy, medium or fancy. In just a few minutes, a number is created that is then multiplied against a regional factor to arrive at a selling price. (Such systems take into account cost differentials tracked through regional surveys).

The auto body industry has a similar system that takes into account factors such as how long it will take for a fender to be straightened or a side panel to be hammered out.

From this kind of data, it is easy to determine what real costs are going to be so a markup can be factored. For the auto body people, this creates standard rates that technicians then can improve upon through their own means. If those technicians accomplish in 24 hours what the book says will take 32 hours, for example, the price does not change, but the costs go down, throughput increases and everyone wins.

THE AUTO BODY INDUSTRY HAS A SYSTEM THAT TAKES INTO ACCOUNT FACTORS SUCH AS HOW LONG IT WILL TAKE FOR A FENDER TO BE STRAIGHTENED OR A SIDE PANEL TO BE HAMMERED OUT.

D.I.Y. estimating

If an industry has no package to offer to help in estimating, a company can create its own estimator package that standardizes costs as follows:

- First list all of the steps of an information-gathering stage of a project. What types of materials are available, what size is the project, what finish is required? All the extras should be accounted for such as fancier materials, fast turnaround, as well as what a customer expects from the job.
- Next, a company should list how it currently prices each step of the job focusing on the commonly deployed phases. Do you always begin with a site visit? Do the raw materials always have to be sandblasted first?
- Costs are applied to each step of the project.
- A markup factor is added to get to a selling price.
- And now the most important step—a virtual trial run. Previous jobs that worked out well should be used as a baseline, and the places where money was made should be noted.

All these steps go into what a software developer creates, but they can be incorporated into a spreadsheet program as well.

With more tinkering and constant upgrades, the above can be made into a comprehensive price list that covers the basics and some of the eventualities.

Cost plus leaves $$ on the table

Readers may well recognize in the example above that they are looking at a variation on cost plus markup pricing. Estimating software will deliver more consistency in that pricing than WAG and SWAG, but profits may still be unexciting. And all of this leaves money on the table because it loses sight of a huge factor in the equation: the customer.

When a customer calls and asks a company to solve a problem, that solution is a major factor in cost. Do the customers want flashy, but inexpensive countertops because they are putting the house on the market? Do they need new countertops because they cook regularly and have scarred the old surfaces? Can a company build a price for these two types of customers based on cost structure alone?

Just like the companies doing the estimating, all customers are not equal in expectations or ability to pay. If they were, no one would buy Rolex watches or Mercedes cars.

The answer is to figure in value pricing for the customer. This is a pricing strategy that is really tricky but a vital part of the picture. By working hand in hand with the estimating solution, it's also a factor that will be the key to improved profits, however.

By definition, half of all businesses in an industry are below-average profit makers. The point in having a solid grasp of costs is to get everything to a baseline. To soar, however, a company needs to find a way to use a pricing strategy that focuses on value to the buyer. ■

ANDREW GREGSON (www.intentfinancials.com) is a business advisor specializing in finance and pricing. He writes on business matters and speaks to business groups on how to increase profits and follow the lead of larger companies. He will be authoring part two of this article, which will cover value pricing, for an upcoming issue. Contact him at andrew.intentfinancial@gmail.com.

Proven Performance You Can Trust.

Vicast®
CASTING RESINS

Exceptional consistency, time after time

Chroma-Tek®
COLORANTS & ADDITIVES

Advanced pigments for every color

Vibrin®
GEL COATS

Enduring beauty, inside and out

You can count on AOC for **the best quality, support and service in our industry** — through every step of the manufacturing process.

Contact AOC today at **+01 866.319.8827**
or visit us at **AOC-Resins.com** to learn more.

@AOCresins

Your Formula for Success
RESINS | GEL COATS | COLORANTS

Merger creates global specialty chemicals company

Polynt and Reichhold announced all regulatory approvals have been achieved to close combination of the two companies. The new Polynt-Reichhold (the group) is a global company focusing on the intermediates, coating and composite resins, thermoset compounds, gel coats and niche specialties.

The combination of the two companies creates a global, vertically integrated specialty chemicals player, with a significant presence in Europe, North America and Asia. Polynt initiated the strategy over the last five years with the successful integration of PCCR and CCP. That strategy is further reinforced by Reichhold's global scale, extensive product portfolio, and research and development competencies.

"With 44 plants across the world, the company will be the closest to the local needs of its customers and the just-in-time suppliers of specialty chemicals in the geographies in which they have operations," said Rosario Valido, president and CEO of the new group.

German company acquires ACS

Gebrüder Dorfner GMBH & Co. Kaolin- und Kristallquarzsand-Werke KG (Dorfner) recently acquired ACS International in Tucson. The German company is a successful family-owned company headquarted in Hirschau.

ACS International is a top U.S. manufacturer of decorative, organic fillers made from polyester-resin granulates with many years of business. Dorfner specializes in producing, processing and refining industrial materials for a variety of applications. The two companies have similar company philosophies, focusing on innovation and individualization as well as new solutions to meet customer demands. The new Dorfner company will be known as ACS International Products LP and will assume responsibility for future U.S. sales of products Dorfner produces in Germany.

Purchase of French facility

Ashland Global Holdings Inc. announced a binding offer to acquire a composites resin manufacturing facility in Etain, France, from Reichhold Holding International B.V.

The facility employs about 50 people and manufactures unsaturated polyester resins. Reichhold said the proposed transaction was part of the program to achieve closing on the combination with Polynt.

Live demonstrations at CAMX

Composites One and the Closed Mold Alliance returned to CAMX's exhibit hall this year with live demonstrations on methods of working smarter, faster and more efficiently with composites. The show was Sept. 11-14 in Orlando.

The two created a zone on the exhibit hall designed to educate manufacturers about processes and technologies that can help them produce better parts more efficiently. Each presentation focused on processes and products used in key market segments including marine, architectural, corrosion/oil & gas, aerospace, infrastructure and automotive/transportation.

Cast Polymer Connection is born

To better describe what ICPA's industry is, the magazine has changed its name and created a new logo.

MasterCast Connection is now Cast Polymer Connection.

Along with the name change are several additional upgrades including themes for each issue. The current issue is the first of those themes with its focus on regulations and technical matters.

- Winter 2017 will focus on business and financial trends and provide a preview for POLYCON 2018 in Chicago.
- Spring 2018 will start the year off with design trends.
- Summer 2018 will include coverage of what happens at POLYCON 2018.

Magazine editor Genilee Parente welcomes ideas for future issue themes as well as stories to fit into these themes. Contact her at gsparente@verizon.net.

New board members at ICPA

ICPA President **Luke Haas**, owner of Elite Marble, Montello, WI, recently welcomed two new board members: **Rebecca Erdmann**, Sand & Swirl, and **Paul Henderson**, Reichhold LLC2.

Erdmann is the newest manufacturer director. She and her husband Corey are owners of Sand & Swirl, Ogen, UT. She has served on both the Membership and POLYCON committees. Henderson is ICPA's newest supplier director. He is technical manager at Reichhold LLC2 and is also on the Technical and Educational Committee.

Erdmann and Henderson join these board members:

- Secretary/Treasurer **Dirk DeVuyst**, International Marble Industries, Inc.
- Immediate Past President **Bill Sanders**, Alamo Marble, LTD
- Manufacturer Director **Bobby Medlin**, Majestic Kitchen & Bath Creations
- Supplier Directors: **Larry Branan**, The RJ Marshall Company; **Sean Jacobs**, ACS International; **Ken Legenza**, Interplastic Corporation

Mark your calendar for April 18-20

Planning is in full swing for a spectacular POLYCON Chicago 2018, which will be held at the Eaglewood Resort and Spa in Itasca, IL with plant demos and seminars hosted by Marble Works, South Elgin, IL.

The Chicago conference will feature an agenda in line with the conference theme of Building a Solid Future Together, including a full day of business development sessions and networking along with breakout sessions and round table discussions, an exhibition of products and services—and some fun. Planning is also underway for the plant demonstrations and seminars on how to make specific products or fine-tune processes. Those demos and classes will take place at Marble Works.

The Eaglewood resort is close to the airport, but set out in a scenic area featuring an 18-hole golf course and architecture inspired by Frank Lloyd Wright. The facility is set up for successful meetings, but also leisurely activities such as a full luxury spa, six-lane bowling alley, outdoor recreational activities and a variety of indoor and outdoor dining options.

For information on POLYCON, go to www.POLYCON-event.com. For information on the resort, visit www.eaglewoodresort.com. Marble Works can be reached at www.marble-works.com.

Patio dining at the Eaglewood

Members resources site full of valuable information

The "members resources" portion of the ICPA website is now up and running, offering members some invaluable tools for running their businesses and keeping up on trends. Here's a sample of what's there:

- A paper by Larry Cox and John Schweitzer on "Monomer Emissions from the Manufacturers of Cultured Marble and Solid Surface Products" that describes a study done by American Composites Manufacturers Association (ACMA) in Marshall-Gruber's facility
- The newly updated and digitalized ICPA Quality Manual organized by Larry Branan along with the Technical and Educational Committee
- A small entity compliance guide for respirable crystalline silica
- Data on the CMI fire testing program
- Several material safety data sheet examples that can help manufacturers comply with OSHA's Hazard Communications standards for cultured granite, cultured marble, solid surfaces and cultured onyx
- ICPA's Hazard Communication Standard Manual for complying with CFR 29 Section 1910.1200

That's only a sample. As the association creates materials and gathers them from government sources, presentations and its own studies and reports, it will include them in that location.

Members should go to www.theicpa.com and find "member resources" under the membership tab.

Coming up next: a forum

The next addition to the ICPA website will be a forum page. On that page, members are encouraged to pose questions to be sent to experts, post items for buying or selling, and exchange comments on some of the topics currently affecting the cast polymer industry.

Expect to see the forum on the "members resources" portion of the website by year's end.

Get One Take 20

ICPA's fall membership campaign offers a 20% discount on dues for next year to members that refer new companies and individuals for membership. The association chose this type of campaign in recognition of the fact the greatest tool for spreading the word about why a cast polymer company needs to belong are the members themselves.

This word-of-mouth campaign will continue to the end of 2017. Help spread the message of how ICPA is moving forward with forward thinking.

Working with resin seminar

John Schweitzer, senior advisor to the president of ACMA, is presenting a webinar Sept. 27 that addresses what employers can do to ensure their employees stay safe when handling resin.

The ACMA-sponsored event is for ACMA members. It's a half hour presentation starting at 1 p.m. eastern daylight on the organizations "Staying Healthy While Working with Resin" bulletin, which was created by ACMA's Regulatory Steering Committee. The webinar is designed for business owners, managers and production workers who need to be aware of the hazards associated with resin and gelcoat.

For information, go to https://acmanet.webex.com.

Report on benefit trends

Nearly one-third of the nation's organizations increased their overall benefits in the last year with health (22%) and wellness (24%) benefits leading the way, according to a study by the Society for Human Resource Management (SHRM).

The top reason companies gave for doing so was to remain competitive in the marketplace. The reason was validated by a finding in the study: 68% of employers queried reported experiencing recruiting difficulty and skill shortages in 2016.

The SHRM report, which is based on an annual survey by the organization, also addresses the cost of benefits and provides advice on how to leverage benefits. For information, go to www.shrm.org.

US-Distribution through
ACS International Products

ACS INTERNATIONAL
a dorfner company

Please call 1-800-669-9214 for further information.

Gebrüder Dorfner GmbH & Co.
Kaolin- und Kristallquarzsand-Werke KG

Scharhof 1
D-92242 Hirschau
Germany

www.dorfner-composites.com

together more future®
dorfner

"With the broadest and deepest product line, along with the largest dedicated fleet of trucks in the composites industry, Composites One's priority is to make sure you have what you need, when you need it."

Laura McClain, Distribution Center Manager, Lenexa, KS

People | **Product** | Process | Performance

Working with Composites One gives you access to the broadest, deepest line of cast polymer and solid surface **PRODUCTS** available from the industry's top suppliers. Helping you navigate this one-stop-shop and making sure you get what you need, when you need it, are technical sales experts and regional customer service reps, along with local support teams at more than 37 distribution centers across the U.S. and Canada. All are backed by the service and support that only North America's leading composites distributor can provide.

That's the power of One – Composites One.

COMPOSITES ONE®

800.621.8003 | www.compositesone.com | www.b2bcomposites.com

Check out the latest Product and Process information at compositesone.com.