

WALLS & CEILINGS

August 2013 | Volume 76, Issue 8 | The Voice of the Industry Since 1938™ | www.wconline.com

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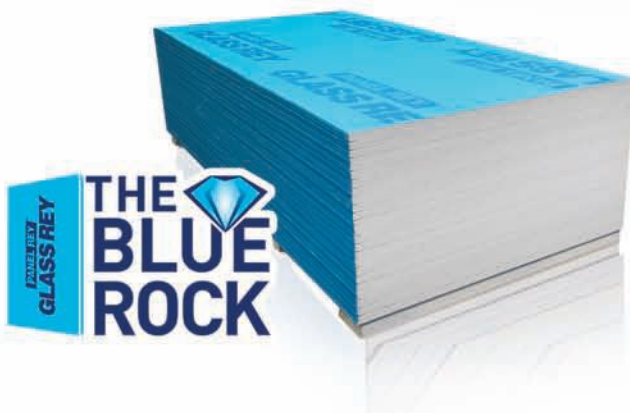
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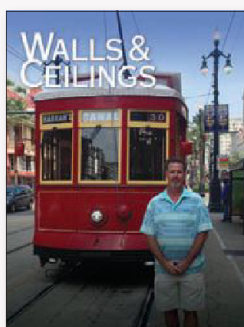
VOLUME 76 NUMBER 8

columns

- 06 Up Front by Mark Fowler
- 32 All Things Gypsum by Michael Gardner
- 34 Centered on Solutions by Cecilia Padilla
- 36 Straight Green by Chris Dixon
- 38 Industry Voices by Evelyn Shapiro-O'Connor with Gary Fasso and Jack Gamboa

departments

- 10 Trade News
- 14 Product Focus
- 41 Classified Marketplace
- 42 Advertiser Directory



on the cover

Keith Frazier of Southwest Lath & Plaster on Canal Street in New Orleans during this year's SCWCPA Trade Show and Conference. Photo by Ed Hiller.

features

16 Four-part Harmony

Southwest Lath & Plaster works on a Texas school with a serious EIFS application.

18 The History of Plaster in Architecture—The Renaissance and Baroque

Patrick Webb continues his series from last year on historic plaster trends throughout time.

20 Hot and Cold Weather Stucco Applications

Some helpful hints for the placement of plaster/stucco materials in both hot and cold conditions.

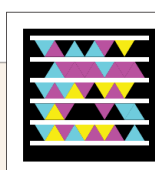
26 Growth of Polyurethanes in Commercial Applications

Polyurethane insulation products continue to evolve and grow in popularity because of some of the thermal resistance values.

ON THE WEB

Breaking News
W&C Blogs
Web-only Features
Special Sections
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How about a **Twinkie?**

The Hostess bakery strike and subsequent bankruptcy was fascinating to watch develop and I found myself conflicted as to what the real story was behind the scenes. My response was, “Twinkies, Ho Hos and Wonder bread

in trouble? Say it ain’t so.” The mega-bakery company had filed for bankruptcy and re-organized a few years ago but this seemed more serious. Then the unthinkable happened when two sides seemed determined to destroy each other and compromise was simply not an option. Even the movie *Zombieland*, where Woody Harrelson, the hardcore zombie killer with a quest for the last Twinkie on earth, could not save the cream-filled sponge cake that had become an American institution. Even as I watched the news, the company was in trouble again—but I simply refused to believe it. They would survive, I thought, and they just had to as a salute to overweight Americans everywhere.

Then it happened: I awakened to the morning news that the workers for Hostess were on strike. The workers refused the last and final offer made by management to save the company. Within days, the company filed bankruptcy and announced they were closing the doors to Hostess for good. What? No more Twinkies, no more Wonder bread to build bodies stronger in twelve ways? The next day, the CEO of Hostess went on air to admit both sides had made mistakes. But regardless, it was truly over.

TOO LITTLE, TOO LATE

While I blame labor for not being more sympathetic and willing to help the company, I also had to

look at the leaders of Hostess and ask myself, “What planet were they on?” Did they not notice the strong shift to healthier snacks and treats? Could they not have come up with some new products to meet the new trends? I decided to dig a bit deeper.

Hostess’ top brass had tried to introduce some healthier options but far too little and a bit too late. Labor apparently deserves its share of the blame, as they allegedly refused to alter work rules and allow the factories to re-tool with more modern machines that would be more productive and allow Hostess to keep up with its competition.

The end result was clear and everyone lost as Hostess went down for the count. Workers lost jobs and even the top executives for the company should have a hard time finding new high level careers. After all, who would hire people that lack vision for the future to lead a firm?

While blame is all around, management is the leader of the ship and they steered the company to failure by a lack of vision to adapt to obvious changes in societal trends going on in the market. Did they continually defend their marketing position to the end? Or did they solely blame the workers and were too willing to sink the ship rather than change? Management complained about costs being too high and while finances are always a concern, I wonder if anyone refused to buy a Twinkie because it was too expensive as compared to the competition? Most consumers buy on name-brand recognition and are willing to pay a slight premium. There was a shift in paradigms and Hostess failed to adapt to them. Adding fuel to the fire, there are even claims of pension problems, unwarranted executive bonuses and poor financial practices. Now that will leave a sour taste in the mouth. **W&C**



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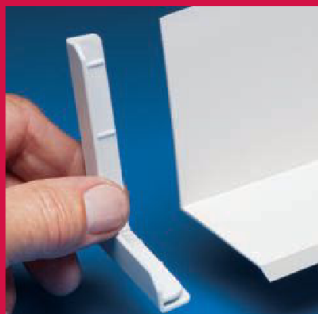
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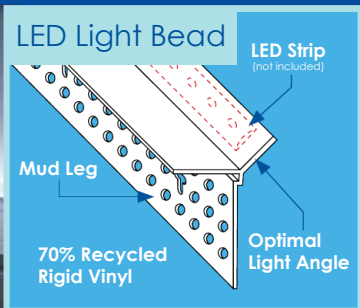
LONE STAR FUNDS TO PURCHASE LAFARGE NA GYPSUM BUSINESS

Lafarge SA has agreed to sell its North American Gypsum business with an enterprise value of \$700 million to an affiliate of Lone Star Funds, as reported in a story by Simon Thiel of the *Bloomberg News*.

The business had 2012 sales of \$310 million, the Paris-based company said via an email statement in late June.

The New Look LED Light Bead

Trim-Tex offers over 200 rigid vinyl shapes in more than 600 styles and lengths.



The Trim-Tex LED Light Bead is a rigid vinyl product that installs directly onto the drywall. The angled leg creates a crisp line and accent shadow for a sharp clean look. Use the LED Light Bead in hallways, to accent soffits, to create light coves and more. The possibilities are endless.



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The deal is predicted to close “very soon” and will help Lafarge to focus on the cement, aggregates and ready-mix concrete businesses, the company said.

The company’s CEO Bruno Lafont is selling assets to repair a credit rating that has fallen below investment grade. The company is also cutting jobs and procurement costs, as well as pushing sales of higher-margin services and products to counter a construction slump in Europe and political turmoil in the Middle East.

As this story develops, *Walls & Ceilings* will report on how this change to Lone Star will impact Lafarge’s customers’ stateside.

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ROXUL AND CARLISLE ENTER PARTNERSHIP

ROXUL Inc. announced a strategic partnership with Carlisle Construction Materials, a manufacturer of

PEOPLE

ClarkDietrich Building Systems announced that **Christopher Little** has joined the company as senior product manager.

Parex USA announces the promotion of **Buck Buchanan** to senior vice president of Marketing and Supply Chain Management and the addition of **Steve Heaton** as new vice president, Façade Sales.

Phillips Manufacturing Co. has promoted **David Sweet** to outside sales representative and appointed **Carol Reed** as inside sales representative.



Reed

commercial roofing materials. This partnership will introduce new and innovative commercial roofing systems to the North American market.

Featuring a hybrid approach to roofing insulation, these new systems will include the option of a limited thermal warranty, which will provide a guarantee of the insulation R-values for the duration of the roofing system warranty up to 30 years.

“Energy efficiency and fire safety are huge issues today and will only become more important in the future. Stone wool roof insulation,

used in a hybrid assembly, adds to the performance of polyisocyanurate and EPS (expanded polystyrene), which are two well-known insulation materials,” said Brian Le Voguer, vice president, Building Envelope for ROXUL Inc. in North America. “The partnership of ROXUL and Carlisle brings to the design community the confidence of working with two global leaders.”

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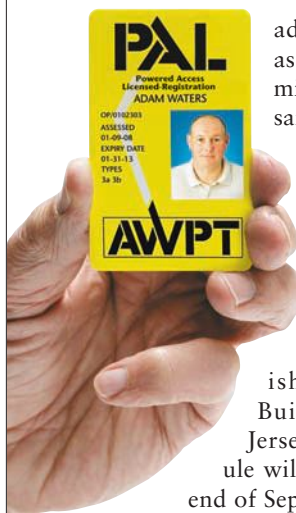
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TRADENEWS



ada is now available in Spanish, as part of IPAF's continuing commitment to provide training and safety material in other languages.

"Vulnerable workers" in the U.S. who are not proficient in English may be at risk of not being properly trained for safe work at height.

AWPT-approved training centers that will be offering the operator course in Spanish include Valcourt Exterior Building Services based in New Jersey. The AWPT eLearning module will be available in Spanish by the end of September.

Firestone BUILDING PRODUCTS

FIRESTONE ANNOUNCES SUSTAINABILITY REPORT

Firestone Building Products Co. announced the release of its 2012 sustainability report. The report, the first for the company, covers the fiscal 2012 year and is available for download at firestonebpc.com.

A subsidiary of Bridgestone Americas, Firestone Building Products declared its commitment to working with the company's many stakeholders to realize a sustainable society. In order to achieve its environmental mission of habitat enhancement, natural resource conservation and CO² reductions, the company adhered to sustainable manufacturing processes that balance industrial needs with the needs of neighboring communities, challenged its teammates to engineer sustainable products that would inspire customers and empowered teammates to carry out sustainable activities at work and in the community.

The Firestone Building Products 2012 sustainability report fulfills the requirements of the Global Reporting Initiative's Application Level C.

"At Firestone Building Products, sustainability is not just our end goal, it is part of our company-wide commitment to continuous improvement," said Tim Dunn, president of Firestone Building Products. "We are pleased to demonstrate this commitment to produce sustainable building performance solutions and reduce our environmental footprint by sharing the results of our efforts in our 2012 sustainability report." **W&C**





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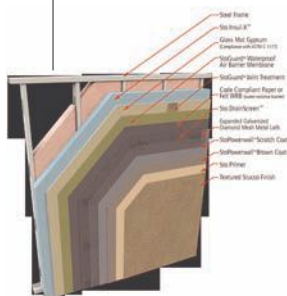


EIFS foam wall rasp

DEMAND PRODUCTS

Designed specifically to rasp EIFS EPS foam walls, the DuraRasp is a heavily brazed #12 grit tungsten-carbide rasp. In ten months of testing by professional contractors, the product lasts 100 times longer than standard rasp paper. This custom-crafted and serial-numbered tool features non-foam gouging rounded corners

and comfort-grip handles. Available in 2, 4, 6 and 8 inch widths, it's easy to find just the right size to fit any job need. The company also offers self-adhering abrasive rasp paper that can be applied to any standard rasp tool. Using the 4-foot product can sometimes be more efficient as it addresses more surface area and assists in overall substrate flatness.



Rigid EPS foam insulation board

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Sto Insul-X is a rigid extruded polystyrene foam insulation board intended to be used as the continuous insulation component for StoEnergy Guard systems. The product is a 4-foot-by-8-foot board that is scored longitudinally on 16 and 24 inch centers, making it easy to size to commonly used widths beneath masonry veneer, and in full sheets beneath stucco, stone and thin brick veneer. The product is available in three different thicknesses and can be easily resized to ensure a perfect fit for any project.



Hydrophobic acrylic finishes

BASF

Tersus is a line of modified acrylic finishes designed to provide excellent water repellency and enhanced resistance to environmental soiling. The finishes provide an aesthetically pleasing surface color and texture for wall cladding systems, as well as other exterior surfaces. The finishes utilize a proprietary company formula to produce a highly hydrophobic, non-polar surface that repels water. Its anti-soiling properties have been tested using two industry established test methods, Dirt Collection ASTM D3719 and Dade County TAS 143 (modified

for textured coatings). The finish is available in two textures; a 1.0 and 1.5 millimeter sand texture, and can be produced in a wide variety of colors.



Veneer plaster system for new drywall or existing finishes

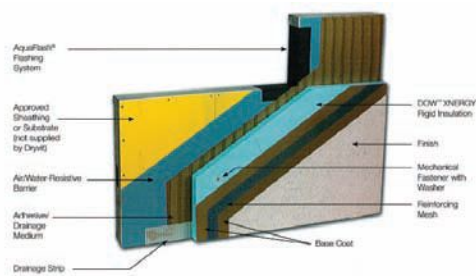
VELLA VENETIAN PLASTER SYSTEMS

Along with its decorative applications, Vella Veneer Plaster is also an ideal surfacer for taking a Level 3 drywall finish or existing painted orange peel/ knock-down textures to a perfect smooth surface and ready for paint. As most other decorative finishes require a Level 5 surface before applying, the plaster product will simplify the subcontractor's processes. Utilizing a 5-gallon contractor pail and the addition of an aggregate pack turns this product into a Marmarino finish. The product allows applicators to go over non-uniform surfaces at \$10 per gallon and 100 square feet per gallon coverage that competes with other products in production capability and aesthetics.

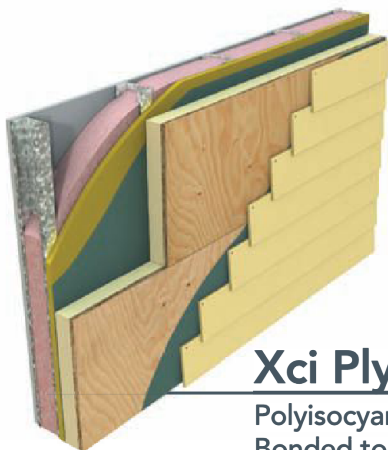
High performance cladding system

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Outsulation X is a high performance cladding system that yields a 39 percent greater energy efficiency and 36 percent better impact resistance (compared with similar EPS-based systems with similar weight reinforcing mesh), and incorporates 2-inches of Dow XNERGY rigid insulation. The system is suitable for new construction and renovation, and meets both current and proposed ASHRAE design standards and IGCC/IECC code requirements for the use of exterior continuous insulation. Outsulation X, the newest member of the Outsulation System family, provides architects with a single-source solution for the air and water-resistive barrier, exterior continuous insulation, and finished appearance of the exterior wall. The company provides a written system warranty upon request.

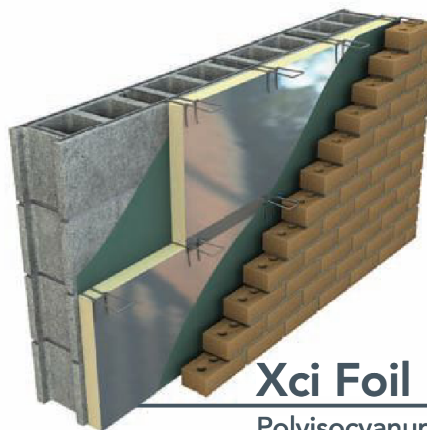


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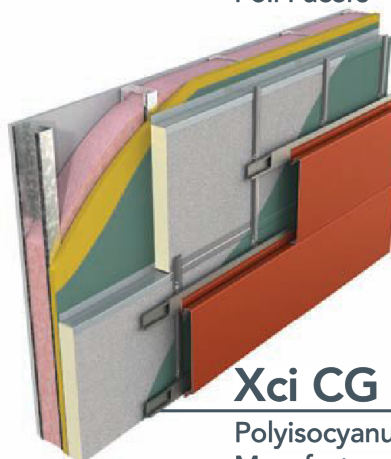
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FOUR-PART HARMONY

It's hot. No, it's Africa hot. Members of the South Central Wall and Ceiling Plaster Association are working with *Walls & Ceilings'* staff to corral fellow association colleague Keith Frazier for a photo op. We're in New Orleans before noon and the sun—mixed with the humidity—makes for an unpleasant weather cocktail. Regardless, Frazier is a trooper and acts stoic as we wait for the right photo opportunity. What seems like quite a while lasts minutes and the team is able to get this done quickly from the Canal St. location where the shot is taken.



A Dallas-area subcontractor brings EIFS to school.

By John Wyatt

Attendees at the annual SCWCPA event know Frazier as a regular. He serves as COO at Southwest Lath & Plaster, of Garland, Texas. The company, ran by Roger (CEO) and Susan (President) Burke, specializes in commercial design/build construction projects showcasing its expertise in traditional and Venetian plasters, stone and thin brick. Southwest Lath & Plaster also prides itself on having in-house AWCI-certified

“EIFS Smart” applicators. The company was founded in 1985 and currently employs 40.

Frazier has responsibility for all company operations, including estimating and project management. A 30-year veteran, he began working for a friend's dad that was involved in the trades. He started off as a scaffold builder and lather, moving to job supervision and project management. He is equally experienced, and has managed small to high dollar projects including commercial, government and medical. Frazier is also an “EIFS Smart” certified applicator, as well as “Green Advan-

PROJECT NOTES:

Project: Harmony School of Business, Houston

Owner: Cosmos Foundation Houston

Architect/Designer: Heights Venture Architects Houston

Applicator: Southwest Lath & Plaster, Garland, Texas

Manufacturer: Parex USA

Product: Teifs Weathertight VNT system

Square Footage Installed of EIFS: 63,612 square feet of walls and 5,353 linear feet of architectural shapes

tage Certified” and has managed LEED projects.

Like other contractors, both in Texas and the rest of the country, Southwest Lath & Plaster experienced the recession and today Frazier describes business as average.

“We are far better than a great many states out there,” Frazier says. “We look for work in many places that others don’t go. We can get projects that are more profitable.”

The company is willing to travel as far as 200 miles away to work on a project. Southwest Lath & Plaster are true plasterers, which Frazier considers the company’s niche. The subcontractor’s outlook for the rest of the year is great, he says.

Although he doesn’t particularly enjoy estimates, Frazier does say the most rewarding aspect of the job for him is, “Taking a piece of paper and turning it into a building.”

Southwest Lath & Plaster’s goal is, in Frazier’s words, to make \$5 million annually and to keep its crew working consistently.



AWARD-WINNING PROJECT

While at the show, the SCWCPA named Southwest Lath & Plaster’s work on the Harmony School of Business as “Best Exterior Commercial EIFS” project. The company was subcontracted to do the EIFS and scaffolding (which was 1,680 frames erected by staff). The Harmony School of Business will be a four-building campus that will be constructed in two phases. Phase 1 will consist of three 15,700 square feet of classroom buildings. Phase 2 will consist of a 14,400-square-foot building that will house the gym and cafeteria. The three classroom build-

ings will be two-story buildings and connected with enclosed walkways.

For the EIFS, Southwest Lath & Plaster applied Parex’s Teifs Weathertight VNT system. The system provides water-resistive barrier and means of drainage.

“This system is superior in that the water-resistive barrier is liquid applied, which means less chance of rips and tears,” says Ed Hiller, CSI, CDT, regional manager of South Central with Parex USA. “This liquid-applied WRB also acts as an air barrier allowing for climate control systems to operate more efficiently. Means of drainage is achieved through vertical ribbons of adhesive providing a larger drainage plane for incidental moisture.”

Southwest Lath & Plaster applied 65,000 square feet of EIFS for the Harmony Schools project.

“On all projects, the foreman on-site makes or breaks a job,” says Frazier. “We happen to have an incredible foreman that made the finish product come alive.” **W&C**

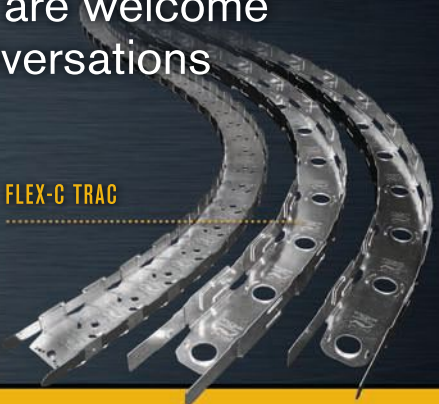
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— THE HISTORY OF — PLASTER IN ARCHITECTURE — THE RENAISSANCE AND BAROQUE —

During the European Middle Ages, plaster continued as a craft but was largely diminished as an art. With few exceptions, the prevailing Romanesque and Gothic architecture principally utilized stone both for construction and ornamentation. However, by the Late Middle Ages, a significant societal shift was underway. The Moors had established themselves as the dominant cultural force on the Iberian Peninsula. Islamic architecture, which originated a decoration based on an interlaced geometry of the infinite as well as a formalized depiction of natural vegetal forms, “the Arabesque,” culminated in triumphant fervor with the completion of the great Alhambra palace in the 14th century. The prominent artistic medium was plaster.

The magnificence of Islamic art certainly did not go unnoticed in

The author continues his series of historic plaster trends throughout time. **By Patrick Webb**

Western Europe. It perhaps served as the final impulse for the Early Renaissance dawning in the Republic of Florence at the close of the 14th century. The Florentines looked back to a glorious Imperial past drawing inspiration to reassert their own cultural values. One Florentine family in particular, the Medici, established a unique liaison between wealth, power and patronage of the arts.

THE HIGH RENAISSANCE IN ROME

Towards the end of the 15th century the rich and powerful Cardinal Giovanni de’ Medici of Florence funded excavations of the newly discovered *Domus Aurea* or “Golden

House” of Emperor Nero in Rome. The 17-year-old prodigy Raphael and his 13-year old assistant Giovanni di Udine received the Cardinal’s patronage and were granted unfettered access to the excavations, allowing them opportunity to study the epitome of Hellenistic luxury. Awaiting them in the grottoes were perfectly preserved, highly ornamented plaster panels framing bas-relief grotesques, candelabras and arabesques, all modeled in “stucco duro” lime plaster, as well as myriads of exquisitely realized frescoes depicting mythological histories.

Cardinal Medici, now Pope Leo X, extended Raphael’s commission to decorate the loggias of the

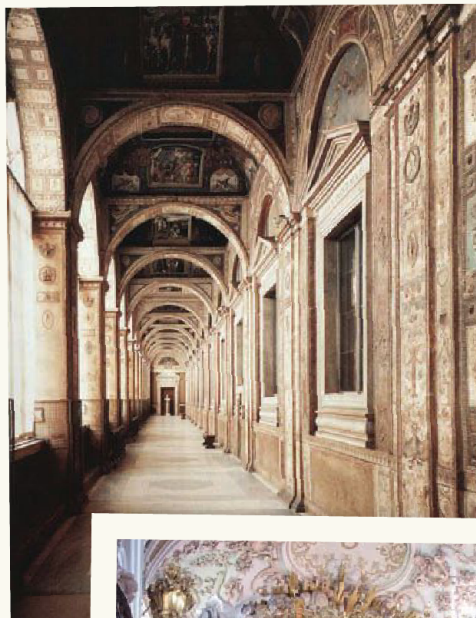
papal palace of St. Peter's, which were then under construction. Concurrently, Vitruvius' architectural treatise of the 1st century, *De Architectura*, which included a book on manufacture and application of lime for stucco and buon fresco, had significantly influenced Raphael's contemporaries Leonardo Da Vinci and Michelangelo. According to Vasari's account, Giovanni di Udine uncovered the ancient stucco duro formulation and took the lead in the ornamentation, while Raphael focused his considerable talents on fresco. Their teams of apprentices would diffuse the resurgent art of plaster to northern Italy and eventually the entire European continent.

THE LATE RENAISSANCE IN VENICE

Venice had a basis of power and wealth nourished by a flourishing trade with the East, separate from that of Rome and Florence. Venetian architecture was influenced by Byzantine and Islamic themes, and the Venetians were slow to fully adopt the resurgence of the classical forms typical of the High Renaissance. However, after the sack of Rome in 1527 a number of stuccoists and fresco artists found employment among the wealthy patrons of the Veneto region. Together with painters, they established the "Venetian School" and created a distinctively Venetian classical style.

Andrea Palladio was perhaps the most influential architect of the Renaissance who achieved the purest expressions of classical design. Apprenticed as a craftsman of traditional stone carving he extensively utilized plaster as a medium for architectural expression. Palladio's Villa Rotunda near Vicenza is a signature example of symmetry and articulation of the Ionic order; the exterior being completed with lime stucco. Similarly, the interior was finished with lime plaster and adorned with beautifully modeled ornament and buon frescoes. Palladio would become a case study, an ideal example of an architect who had appren-

ticed in a trade and possessed a tactile understanding of craftsmanship. His numerous masterpieces were not just the result of his individual genius but also of the cooperation he engendered between himself, the patron, and respected artists and craftsmen



who both contributed to the design and executed the work.

THE GERMAN BAROQUE

The first stirrings of the Baroque began in Rome. Architects like Bernini felt the best of Roman classical design had been explored, understood and recreated, and were eager to push its boundaries. The result was a distinct stylistic departure that could be best described as exu-

berance. Formal panels, symmetry and bas-relief gave way to flowing, unbounded ornamentation in alto-relievo. Strong yet lightweight, easy to sculpt and affix, plaster excelled like no other medium in conveying the dynamic vigor of the Baroque.

The conflict arising from the Protestant Reformation of the 16th century culminating in the devastating 30 years war hindered artistic development of the High and Late Renaissance in Germany until the first half of 17th century. The Church, quick to understand the emotional power of the Baroque style, increasingly dictated its inclusion in the architecture of the period. Baroque reached its zenith in Germany as an architectural manifestation of the Counter Reformation. It was a determined architecture bearing the message of the grandeur of the Church. The focal point of the great Baroque cathedrals was always above, heavenward. Floors were plain, walls were relatively unadorned at

eye level but the ceilings were transformed into the very archetype of heaven itself and the altar, the Most Holy. The feeling conveyed was one of astonishment and humility. Dynamic volumes, shadow, and suspended angels with hidden armatures manifested a divine reality only possible with plaster.

By the close of the 17th century great societal changes were underway across the globe. The Age of Discovery and subsequent colonization had enriched and empowered an ascendant of European nobility. Coupled with the emerging Age of Enlightenment, a dramatic shift of power from church to state was occurring across Europe.

In our next article, we will explore the history of plaster in the architecture of French Rococo and English Neo-Classical. **W&C**

Patrick Webb is senior technical consultant at Plâtres Vieuxjot.

Read his first article "The History of Plaster in Architecture: The Ancient and Classical Periods" online at wconline.com or W&C August 2012.



HOT & COLD

Weather has a significant effect on the application requirements and nuances of plaster/stucco seasonally, and sometimes daily. Contributing factors are: temperature, humidity, wind and the exposure of the sun.

Every plasterer knows that plaster/stucco sets faster in the summer and slower in the winter. In this article the goal is to offer some helpful hints for the placement of plaster/stucco materials in both hot and cold conditions.

The cement used in plaster/stucco is hydraulic in nature, meaning the water mixed with the plaster is the catalyst for the chemical reaction that makes the material take on its initial set, get hard and subsequently cure. Hot weather poses a few challenges for plaster construction practices. As ambient temperatures rise and materials and equipment heat up during application, moisture evaporates more quickly therefore leaving less water for cement hydration. Losing the water

Some helpful hints for the placement of plaster/stucco materials in both hot and cold conditions. **By Mike Griffin**

too quickly can result in lower tensile strengths and cracking. ASTM C 926—*Specification Standard for Application of Portland Cement Based Plaster* requires wetting or fogging the wall between successive coats and for up to several days after the application to aid in the curing process. Heat, wind and humidity all play a big part in the limiting the curing process and if the wall has not received a sufficient amount of watering and “fogging” during this process, a wall with soft material and excessive cracking may result if the plaster has dried out too quickly.

HOT WEATHER

Hot weather is defined as ambient temperature exceeding 100 degrees Fahrenheit (37.8 degrees Celsius) or 90 degrees F (32.2 degrees C) with

a wind velocity greater than 8 mph (12.9 km per hour). Compounding factors include low relative humidity and direct sunshine. Below are some of the effects on the plaster:

- Workability is reduced
- More water is required for workability
- Initial and final set occur earlier

The result is that the plasterer can experience difficulty in placing and working the material. In addition to negatively affecting the workability, the rapid increase in drying time can result in a lack of sufficient water or proper hydration of the plaster. Inadequate hydration can result in a lack of strength development and contribute to the plaster cracking. The following techniques should be followed during hot weather installations:

- Schedule construction to avoid hot midday periods.
- Work earlier during the cooler temperatures (“run from the sun”).
- Minimize exposure of materials and equipment to direct sunlight.
- Use cool water to mix.
- Use cool water on shovels and mud boards.
- Control amount of plaster spread so as to not get too far ahead of rodding/leveling wall surface
- Moist cure the plaster “fog the wall.”
- Protect the wall from uneven curing or exposure. Draping a tarp over the scaffold to shield the plaster during hot windy days is very effective.

Some other helpful hints for hot weather construction:

- Do not apply plaster/stucco to hot surfaces.
- Use plaster/stucco materials with optimal water retention, workability and consistency. Using a preblended plaster/stucco helps to achieve this and can be custom blended.
- Do not apply cementitious materials at temperatures above 100 degree F (37.8 degrees C) without preparations. Monitor the extended weather forecast during the instal-

lation and curing period for severe temperatures.

- Keep materials shaded to reduce temperatures upon installation.

COLD WEATHER

Plastering when the temperature is at or near freezing causes another set of problems for the contractor

a period of not less than 24 hours after initial set has occurred. Plaster shall be applied when the ambient temperature is higher than 40 degrees F (4.4 degrees C) unless provisions are made to keep cement plaster work above 40 degrees F (4.4 degrees C) during application and 48 hours thereafter.”

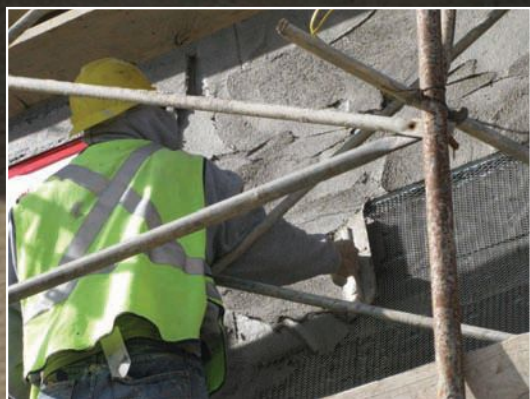
***Cold dry air on the surface of the wall
can absorb warm moisture from the wall rapidly
and can lead to plastic shrinkage cracks.***

or installer. There are precautionary measures that can be taken to protect the project during cold adverse weather conditions. Extra care should be observed if the temperature is not at least 40 degrees F (4.4 degrees C) and rising, or if the temperature drops below 32 degrees F (0 degrees C) after the wall has been plastered.

The International Building Code for cement plastering requires in Section 2512 that “plaster coats shall be protected from freezing for

Similarly ACI 24, *Guide to Cement Plastering*, requires that, “Plaster installed when ambient temperatures are below 40 degrees F (4.4 degrees C) must be maintained in a sheltered and heated environment with continued curing to assure cement hydration.”

At 32 degrees F (0 degrees C) and below, plaster will freeze on the wall and cause weakening of the plaster. Damage to the plaster can be so severe that you can rub it off the wall by using your hand.



HOT&COLD

Cold dry air on the surface of the wall can absorb warm moisture from the wall rapidly and can lead to plastic shrinkage cracks. Low temperatures can cause all cement plaster to take longer than normal to set and gain strength which delays floating, trowelling and production which raises labor costs unnecessarily. If a wall has been frozen the resulting wall may have excessive porosity which can cause further deterioration during freeze thaw



cycles if a driving rain hits it and it freezes. Cold conditions, as such, can also make the wall more susceptible to efflorescence forming on the surface of the wall. To counteract these cold weather problems several

precautionary measures can be taken which may involve enclosing and heating the structure.

When the cooler weather approaches a contractor should plan in advance and budget for enclosing and heating the project if necessary. This will reduce the effect of cold weather on plastering/stucco projects and increase the likelihood of successful project completion in freezing weather.

When air temperatures start to fall towards the end of the year, special considerations/precautions need to be given to the installation/application of cement plaster/stucco. The application of cementitious materials is typically restricted to temperature of 40 degrees F (4.4 degrees C) and rising. This minimum is critical to the proper curing and overall performance of the material. Application of materials in cold and freezing conditions can cause materials to crack, flake, soften and delaminate.

- Hydration of cement based materials is slower at cooler temperature.
- Set times of the material will be slower in cooler temperatures they may freeze or not set up at all.
- Strength development of the material can be reduced.
- Thermal fluctuations will cause movement in the substrate which can produce cracking. Any crack in the substrate including joints between substrate components is subject to movement. Thermal cycling and therefore maximum movement is at its highest frequency during the fall months. Cracks that appear narrow in the warmth of the afternoon (when substrates are expanded) may widen significantly during the night when the temperature falls. This thermal movement can cause surface cracking. (In repair/restoration situations the cracking can be even more severe as the patching material that fills in and around existing material has not developed full strength.)

Some helpful hints:

- Do not apply plaster/stucco to frozen surfaces.
- Do not apply cementitious materials at temperatures below 40 degree Fahrenheit without monitoring weather conditions. Monitor

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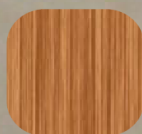
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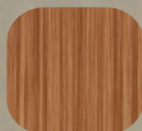
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HOT&COLD

the extended weather forecast during the installation and curing period for severe temperature drops.

- Keep materials stored at 45 degrees F (7.2 degrees C) or higher if possible.
- Tenting and enclosures may need to be utilized for the proper application under cold conditions to avoid freezing and if they are pay close attention to enclose the entire application area to properly withstand wind and rain.
- Adequate ventilation should be engineered into the enclosure for safety and to provide for proper air movement for curing. Avoid using gas, kerosene or other fossil fuel heaters because they can cause rapid carbonation of cementitious material during initial set and cure.
- The heated enclosed area also needs to have the heat source run long enough before and after the application for proper conditioning and cure times.



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- The temperature of the substrate also needs to be taken into consideration. Heating the mixing water up to 120 degrees F (84.4 degrees C) (do not exceed 120) can offset the lower temperatures of the substrate/wall surface and plaster materials themselves. Using a pre-blended plaster/stucco eliminates the need to heat the sand and frozen sand piles.
- Reduce the amount of mixing water to the practical minimum to minimize shrinkage cracking, install sufficient control and expansions joints and properly water cure and retain heat until plaster has reached sufficient strength.

CONCLUSION

It has been observed that efflorescence is usually a seasonal problem associated with cooler weather. Cooler days and nights seem to bring out salts that are not as evident during warmer periods. The cause behind cold weather efflorescence can be linked to seasonal variations in the evaporation of moisture. Under warmer or hot conditions the rate of evaporation may be very high so that the moisture evaporates within the cladding rather than on the surface. In colder weather, however evaporation may be very slow allowing moisture to move to the outer surface of the plaster/stucco before it evaporates leaving the salt deposits on the surface. Following the proper cold weather processes may reduce and/or eliminate some of the efflorescence experienced during the cooler months. **W&C**

Mike Griffin is stucco products manager for The QUIKRETE Companies. He is also the newly elected president of the National One Coat Stucco Association. He can be reached at mgriffin@specmix.com.

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Sandwich/insulated
metal panels

Growth of Polyurethanes

in Commercial Applications

If you have driven to work, gone for a jog, gotten a good night's rest or opened your refrigerator lately, chances are that you have encountered a special type of plastic—polyurethane. Polyurethanes are a polymer composed of a chain of organic units, joined by urethane links.

Although not yet a “household name,” polyurethanes are prevalent in everyday life. Polyurethanes pad your car's steering wheel and seats, form the soles of your shoes, cushion your mattress and help keep your fridge cold, among many other uses.

A highly versatile material, polyurethane can be flexible (foams for furniture or mattresses) or rigid

Polyurethane insulation products continue to evolve and grow in popularity because of the thermal resistance values.

By Monica Karamagi

(spray polyurethane foam and polyiso board insulation for buildings). Polyurethanes' superior insulating properties and ability to be molded into any shape also make them ideal for many commercial and residential applications.

Buildings account for almost 40 percent of the total energy consumed in the U.S. In commercial buildings, heating, cooling and ventilation consume 34 percent of the energy used onsite. The building envelope provides

a boundary between the interior of the building and the outdoor climate, and is designed to perform as an effective thermal barrier, maintaining a comfortable indoor environment. Polyurethane insulation products continue to grow in popularity as they provide some of the highest thermal resistance values, contributing to high energy efficient building envelopes.

Foam plastic insulation products like polyurethane insulation are projected to enjoy significant growth.



Polyiso board



Spray polyurethane foam

The Freedonia Group reports that, “demand for foamed plastic insulation, which accounted for the second-largest share of the market in 2011, is expected to rise 7.3 percent per year to \$3.9 billion in 2016.” According to Principia Consulting, “the shift to more stringent codes will drive the trend to higher R-values overall. Foams, which have a higher share in high R-value applications, will be the major beneficiaries of this trend.”

POLYURETHANES IN COMMERCIAL BUILDINGS

Polyurethanes have a long history of use in construction. They are formed from the reaction between isocyanate and hydroxyl groups, a reaction that was discovered in the 19th century and further developed during World War II as scientists searched for a replacement for rubber. The first commercial application of the polyurethane polymer was developed between 1945 and 1947 in coatings and adhesives.

Flexible foams were commercialized in 1953, followed with rigid foams like polyurethane insulation for buildings in 1957. Spray polyurethane foam roofing systems have been applied since the 1960s. Hospitals, schools, offices buildings, cold storage facilities and retail stores are just a few of the commercial structures that use polyurethanes for insulating and roofing.

Today, spray polyurethane foam is one of the world’s most popular, energy-efficient and versatile type of insulation. However, there are many other forms of polyurethane insu-



lation—including polyisocyanurate foam, one-component foam, insulated metal panels and structural insulated panels—that can also offer significant design versatility while making commercial and residential properties more efficient and comfortable.

TYPES OF POLYURETHANE INSULATION PRODUCTS

Polyisocyanurate foam: Polyiso chemistry is a modified form of the polyurethane reaction, with higher levels of isocyanate used to generate the polyisocyanurate molecule, which imparts greater fire resistance to the polymer. Polyiso insulation typically comes in a rigid board form.

Spray polyurethane foam is produced when a mixture of fast-react-

ing, foam-forming ingredients are combined at the moment of application. SPF can be applied to almost any substrate that is clean, dry, and free of dust. SPF performs as both an insulation material and an air sealant to help create a tight building envelope. In 2012, SPF insulation was a \$1 billion market at the manufacturer level, and over \$2 billion in installed value.

One-component polyurethane foam, applied mainly from pressurized containers, is used to seal doors and windows in construction as well as to fill gaps, for example around pipes or in walls and floors.

Sandwich/insulated metal panels consist of a foam core and two metal faces. As composites, these have excellent load-bearing properties, making them especially suitable for self-supporting roofs and walls, and other applications with structural requirements.

Structural insulated panels are engineered panels made of a thick layer of polyurethane or polyiso foam sandwiched between two layers of oriented strand board, plywood or fiber-cement. SIPs are used throughout a building: the framing, flooring, ceilings and roofs and as a single-piece exterior sheathing.

BENEFITS OF POLYURETHANE INSULATION

The rise of polyurethane insulation can be attributed to its promise of significantly reduced energy consumption. According to the U.S. Depart-



Spray polyurethane foam



Sandwich/insulated metal panels

ment of Energy, as much as 40 percent of a building's energy is lost due to air infiltration. One of the best and most practical solutions to reduce greenhouse gas emissions is improving a building's insulation, thus reducing the heating and cooling loads and reducing the energy consumption.

Polyiso board is a roofing insulation of choice for many new, low-slope commercial construction projects. It has high thermal resistance, cost-effectiveness, superior fire performance, and compatibility with various membrane adhesives. Polyiso sheathing board is available for use as wall insulation in residential and commercial buildings.

With its very high R-value (around 6 per inch), builders turn to SPF to both insulate and air seal, as well as lower noise levels. By creating an air barrier, SPF can also minimize the pollutants, pollen and moisture that often infiltrate buildings. It also adds structural strength; studies have shown that SPF can actually help a building withstand high winds and hurricanes.



Sandwich/insulated metal panels

One-component polyurethane foam also works as an air barrier. One-component foam is ideal for weatherization—the process of modifying a building to reduce energy consumption—because it contains two key elements in one product: insulation and air sealing. A study by the American Society of Heating, Refrigerating and Air Conditioning Engineers found that sealing of existing homes with one-component spray polyurethane foam (foam-in-a-can) pays for itself in an average of 4 months and provides a 7-year return on investment of 4,400 percent.

In addition to their structural properties, IMPs give architects and

engineers extensive choice in project design. They can be produced in various dimensions (length, width and thicknesses), and feature different joints, metal surface profiles, embossments, colors and high thermal insulation values. The growth of sandwich/insulated metal panels has also been supported by their simple, fast and cost-effective installation process.

As their name implies, structural insulated panels provide both structural support and superior insulating properties. They form a dense, continuous air barrier and offer efficient thermal performance that can reduce energy usage. SIPs are also able to withstand high winds and seismic forces. SIPs are lightweight and smaller panels can be installed by one person.

HEALTH AND SAFETY BEST PRACTICES

Some types of polyurethanes, like SPF, are reacted on-site and have health and safety requirements set forth by

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the Occupational Safety and Health Administration. Before applying SPF, consult the manufacturer for more information on health and safety issues. Select a professional SPF applicator, who is trained, and work with subtrades to address what constitutes a safe work environment. The SPF applicator can also provide information about recommended times before reentering the area and ventilation.

Another factor to keep in mind is that a building insulated with spray foam can be very tight due to the absence of fresh air infiltrating through cracks and gaps. A building insulated with SPF is inherently very thermally efficient with a tight envelope. This means that temperature loads will be greatly reduced, but latent (humidity) loads will likely remain where they have been. Adequate fresh air ventilation and design for good humidity removal to address these changes are important. Using mechanical fresh air exchange can often address issues associated with improper ventilation.

Most rigid polyurethane foam insulation products are formulated with fire retardant additives to reduce the rate of fire growth, and allow time for occupants to leave a building in the event of a fire. In most cases, the fire retardants selected have undergone rigorous risk assessments. Consult with your supplier for specific questions on the fire retardants in the products you select.

ADDITIONAL RESOURCES

There are many resources available for contractors, building owners and architects who would like to learn more. For architects or contractors wishing to specify polyurethane products, visit the websites www.whysprayfoam.org, www.sprayspolyurethane.org, www.pima.org, and www.metalconstruction.org/imp to find excellent information about using polyurethane products safely and effectively. **W&C**

Monica Karamagi chairs the Outreach Committee of the Center for the Polyurethanes Industry of the American Chemis-

try Council. CPI serves as the voice of the polyurethanes industry in North America, promoting its development and coordinating with polyurethane trade associations across the globe. Karamagi is also the regional marketing and industry affairs manager for the Polyurethanes Division of Huntsman Corporation.

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Updating Gypsum Association Documents

The Gypsum Association's Building Code and Technical Committee reviews the organization's technical publications on a regular basis to ensure that document content keeps pace with product development and

usage. The review process also makes certain that the most current version of each association-sponsored document displays a timely date and that the document text reflects contemporary building code requirements.

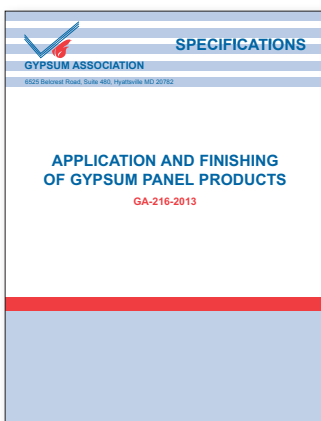
While most organizations have a regular document review schedule, the Gypsum Association, with a handful of exceptions, does not. Experience has taught us that tying documents to a rigid modification schedule can inappropriately delay action on an important issue. We prefer to discuss needed changes as they arise and take appropriate action as soon as possible.

In addition, nearly all of the documents we produce are published only in electronic format, so updating text is a relatively simple process. When an issue with the content of a document is identified the relevant text or diagram is reviewed by the committee and, if appropriate, an updated edition is created. If a document has not required a content modification for a significant period

of time, generally about ten years, the committee will review it and re-issue it with a contemporary date.

EXCEPTIONS TO THE RULE

There are three exceptions to this review process schedule. Two excep-



tions are the primary documents produced by the association: GA-216, *Application and Finishing of Gypsum Panel Products*, and GA-600, *Fire Resistance Design Manual*, both of which have defined three-year review cycles. Given the significant quantity of fire and sound tests that are pro-

duced by industry participants and the subtle but often significant, modifications to application specifications that are created by the release of new gypsum panel products, both documents could be re-issued every year. Because that would be impractical, both for document users and association staff, a prescribed review cycle for each document was instituted about 25 years ago. The review cycles for each document are not concurrent; a new edition of GA-600 is released

approximately one year prior to the updated edition of GA-216.

The third exception to the standard review pattern is GA-214, *Levels of Gypsum Board Finish*. GA-214 is unique in that its content is the responsibility of a consortium of five industry organizations. It also is one of the three technical documents that bear an association identification number that is printed by an outside vendor; GA-216 and GA-600 being the other two documents.

Updating GA-214 is nearly always a protracted exercise. Because it serves five masters, the document modification process often requires several draft iterations and can last for years. In the 1990s, the process to update the first edition took more than four years.

It is a common misconception that the Gypsum Association controls the content of GA-214 because we print it and it bears an organizational identification number. In 1990, The Gypsum Association agreed to print the first edition of GA-214 and has never abdicated the responsibility. It bears an association identification number for convenience; however, given that its content is the responsibility of the consortium it is not an "association document."

MAJOR UPDATES TO TECHNICAL DOCUMENTS

In 2012, the committee reviewed a number of association technical documents. Four have recently been released. The most significant is the 2013 edition of GA-216.

No modifications were made to any of the diagrams or charts in GA-216; however, there were a number of changes to the text. These include:

- Section 4.7.3 has been modified to more clearly define the requirements for control joints in interior ceilings. The new language directly addresses suspended and direct applied ceilings.
- Extensive modifications were made to the finishing requirements for exterior soffits. Language was added to address the finishing of gypsum panel products other than

exterior soffit board when they are used on an exterior soffit. Specific text now mandates the use of glass mesh tape when finishing joints between gypsum panel products other than soffit board.

- Information was added to Appendix section A.3.4 to more clearly define the requirements for painting or texturing gypsum panel products. The new text reinforces the distinction between the two finishing processes and it includes some additional language for panels that are to be finished with wallcoverings.
- Appendix A3.6 now clearly states that gypsum panel products that are to be covered with ceramic tile are not to be skim coated with joint compound.

A number of minor changes to the text were also included in the update. The specific changes update titles for standards referenced by GA-216, and clean up some formatting issues.

NOTING MINOR CHANGES

Two other documents, GA – 236, *Joint Treatment under Extreme Weather Conditions* and GA-610, *Fire Resistance Provided by Gypsum Board Membrane*, were modified slightly and released in a 2013 edition.

Minor editorial changes were made to GA-236. The primary reason for the 2013 edition was to permit the document to be issued with a current publication date. GA-610, on the other hand, had been technically updated and re-issued in 2012. The 2013 edition of GA-610 reflects a simple editorial change to incorporate a reference to Canadian testing standards.

Another document, GA-230-13, *Vapor Retarder over Water-Resistant Gypsum Backing Board*, had not been updated for well over a decade. The document describes the conditions and recommended methods for including a vapor retarder over water-resistant gypsum backing board.

Because the document had not been updated, portions of it were outdated. The existing version did not reflect modifications inserted in building codes in the past decade that preclude the use of water-resistant gypsum board in bathroom wet areas, and the text referenced a consensus standard that is no longer available. In addition, like GA-236, the document also needed a more relevant date.

The 2013 edition of GA-230 now fully reflects contemporary building code mandates that address the use of water-resistant gypsum board and the references to the standards addressed by the document are fully updated and clarified.

It's all important information for those involved in gypsum contracting and it can all be read or downloaded for free. To find the documents described, and many more, access the publications section of the Gypsum Association Web site at www.gypsum.org. **W&C**

Michael Gardner is the executive director of the Gypsum Association, an international trade association representing gypsum board manufacturers in the United States and Canada.

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Get Organized to Get Profitable (Part 1)

Recently I had the pleasure of working with Norb Slowikowski, president of Slowikowski & Associates, on a webinar. Slowikowski has worked in the construction industry since 1982. He is a renowned productivity expert who has helped

more than 300 contractors to improve their productivity to maximize their profitability. I invited Slowikowski to provide his expert insight on how contractors can get organized to increase their profitability. His full presentation can be found in the webinar series “Get Organized – Get Profitable.” Information on how to view the full webinars on-demand can be requested via the On Center Web site. The following are the highlights of Slowikowski’s profitability directives. This is the first in a two-part series on this topic.

THE INEXTRICABLE LINK BETWEEN PROFIT AND PRODUCTIVITY

Profit is a result, not an activity. It is not something you do; it is something you reach.

This is the first lesson that Slowikowski wants contractors to learn. “Profit isn’t something that is guaranteed from every project,”

he points out. “Profit comes from a well-managed project. It’s what is recovered after all costs are paid. Profits are fragile, and many times contractors bid on jobs that ultimately only add three to five percent of profit to the bottom line.”

The journey to profitability begins with productivity. Unfortunately many construction industry contractors subscribe to the myths that productivity is out of their control, and that profitability is only figured after the project is complete. In fact, quite the opposite is true; productivity—or the lack of it—is in the hands of every contractor’s management team, and profitability is earned or lost with every step of a project.

“Ask yourself this simple question,” says Slowikowski. “Are my people working as productively as possible, day in and day out?” There are three components to productivity: the effective utilization of all

resources which achieve a desired quality and a desired quantity of output. Let’s have a look at each of those components and what they mean.

- Desired quality of output—every employee must perform his assigned tasks right the first time. In order to facilitate quality delivery, everyone must understand the scope of work and the quality specifications of the job. Companies simply cannot afford any rework.
- Desired quantity of output—this comes down to meeting the general contractor’s schedule, which typically is very tight. The foremen must manage the resources effectively to meet that schedule. Labor can cost anywhere between 40 and 60 percent of a job. Therefore a subcontractor really has to manage its labor budget and give their foremen an accurate estimate of the hours for the job.
- Effective utilization of resources—there are seven types of resources that are needed to support a productive environment. It’s up to the project manager to get the resources in place to support the project:
 1. Tools—workers must have the proper tools to do their jobs.
 2. Equipment—workers need the right equipment at the right time and know how to operate it safely.
 3. Materials—it’s essential to have the right materials at the right time with a secure and convenient place to store it at the job site.
 4. Manpower—every project needs the right amount of people who possess the right skills to get the job done.
 5. Information—the foremen must have all the information needed to run the job effectively and efficiently.
 6. Training/Coaching—there are some things that workers will need to learn on the job, and they need the right training or coaching from others to build their skills.
 7. Support—all workers need support from others when problems or conflicts arise.

When all of the components of productivity are in place, a contractor is much more likely to earn a healthy profit.

COSTS AFFECT PROFITABILITY TOO

A contractor can get the highest level of productivity from its crew but still make little profit if costs are not controlled. Recall that a profit is what is recovered after all costs are paid. There are several types of costs:

- Cost of getting the business—a contractor has to spend money just to bring jobs in the door. This includes putting together marketing programs and materials to create awareness of what the company can do; having salesmen knock on doors and establishing relationships with general contractors; having engineers and estimators work up a design and bid a project; and so on. It's possible to sink these costs and not even get the work.
- Cost of delivering services to the customer—by far the largest category of cost for contractors, this bucket includes the purchasing department to buy materials and equipment; the manpower to deliver the services; the tools, material and other resources to do the job by the labor; and more.
- Cost of operating and maintaining the contractor's facilities—this is largely overhead costs such as office and warehouse space; utilities; maintenance and repairs for equipment; vehicles; insurance; support staff salaries; and the like. A portion of these costs is usually applied to each project the company works.
- Cost of staying ready to work—a company must maintain its staff through training, certification and licensing; adhere to safety rules and regulations; and maintain information. These costs are actually investments back in the company.

ORGANIZATION IS KEY TO MAINTAINING PRODUCTIVITY AND CONTROLLING COSTS

Slowikowski defines the process of "organizing" as "systematically arranging all of the pieces of the work product through effective planning and coordination," he says. "If a project is disorganized, this will diminish your profitability." There are many steps that go into the organizing process and

they all need to be followed. These steps include planning, prioritizing, scheduling, dividing work, delegating, performing, linking up and supporting, monitoring and following up, and problem solving. Let's walk through the steps, one by one.

- Planning—planning starts with the goal of where a contractor wants to be by a certain point in time. The foremen should be documenting (i.e., writing down, not keeping in his head) all the tasks that will be performed during the week with the goal of projecting where the project will be at the end of the week. The plan also should include what materials, equipment and labor are needed to complete the activities and the hours that are budgeted to get everything done.
- Prioritizing—it's a fact of life that everything can't be done at the same time. The foremen need to sequence the tasks of the plan in order of importance.
- Scheduling—the GC will provide a contractor with a macro schedule that outlines where the contractor should be working at certain times. From there the contractor's foremen should be creating a rolling two-week plan that he regularly shares with the GC's superintendent.
- Dividing Work—this step involves breaking large tasks down into smaller, measurable tasks, each with a deadline of when it must be completed. When the foremen sees the project divided into a series of individual tasks, it's easier to understand when something is off-schedule and to work to get it back on track.
- Delegating—now it's time to assign work duties to people, ensuring that they understand what is expected of them for quality work and adherence to standards.
- Performing—action is everything. Now it's time for everyone to be moving forward toward the same goal with the intention that nothing will need to be reworked due to poor quality or failure to meet standards.
- Linking Up and Supporting—teamwork is critical to succeed in this game. There are worker interdependencies and everyone, includ-

ing field and office personnel, must be supportive of each other.

- Monitoring and Following Up—this step involves verifying that work has been done and done properly.
- Problem Solving—big or small, problems arise all the time and the contractor must be prepared for continuous problem solving to keep the project on track.

The contractor that can keep a project organized through all of these steps is well-equipped to make a healthy profit.

ALL IN ALL

In summary, there are several practices that will help a contractor to get organized, improve productivity and increase the likelihood of earning a respectable profit:

- From the front office to the field, people need good information. They need to know what to do, when to do it and how to do it.
- The entire team needs to be organized and on the same page. Everyone needs to be operating from the same playbook and supporting each other.
- The foremen need to ensure that the team uses its resources wisely and is mindful of costs that can quickly eat into profits.

In part two of this piece, I will discuss the role technology plays in both getting organized and improving productivity and protecting profits. For more information on this topic, please request links to watch the on-demand webinars, "Get Organized – Get Profitable, Part 1" and "Get Organized – Get Profitable, Part 2" featuring Slowikowski and the author of this column. **W&C**

Cecilia Padilla, president of On Center Software Inc. is an internationally known expert in the construction industry. Padilla's expertise spans 25 years in drywall, light- and heavy-gauge framing, lath and plaster, EIFS, fireproofing-themed façades, and acoustical ceilings. Prior to joining On Center, she worked for Marek Brothers Systems in Houston and for Raymond Interior Systems in Las Vegas and Orange County, Calif.



Green Globes Vs. LEED: David Vs. Goliath? Or Birds of a Feather?

I began my multi-year involvement with LEED and the USGBC as an architect dedicated to the design of greener buildings at about the time the LEED v1.0 pilot program was coming to a close. I was highly motivated to

get myself onto the Materials and Resources Technical Advisory Group, and after reaching out to the right people, I was eventually given the opportunity to apply and was ultimately appointed as a new member of the group. My involvement with the MR TAG lead to other opportunities within the USGBC and in addition to the MR TAG, I served on the LEED v2.2 core team development committee and also a small “committee” that was responsible for the development of a new LEED accreditation exam (that would meet standardized exam criteria—something the first exam did not do).

My work with LEED and the USGBC was often rewarding, but could also be very tedious and frustrating. Over time, I realized that the USGBC made up rules as it marched along, and was not particularly concerned about following them if they proved inconvenient. This concerned me but I stayed on because I believed the work we were doing was of vital importance, and was going to have significant, positive impact on making buildings greener.

POLITICS ALIVE AND WELL IN THE USGBC

At some point along the way I came to the conclusion that the USGBC was more concerned about politics than it was about doing the right thing. During my participation in the documentation of a LEED-registered project, I had a run in with the USGBC that would profoundly

change my opinion about the organization. I won't bore you with all of the details—but the summary goes like this: Team discovers a material not in compliance with a credit being pursued; team finds test data on product showing it to be superior than credit required outcome; team asks USGBC to accept this finding; USGBC denies team request; team asks again with additional support from Ph.D. expert in the area of concern; USGBC again denies team request; team files formal appeal with USGBC using newly developed USGBC appeal procedures; USGBC President Christine Ervin makes personal call to president of design company and asks that he intervene and ask design team to drop the appeal.

The reason for the USGBC's denied requests and subsequent presidential pressure to call off the dogs was purely political. The credit committee chair was embarrassed at the error discovered in the credit and stubbornly refused to allow any change to be made—even if that change resulted in a better, greener and healthier building.

GOODBYE LEED, HELLO GREEN GLOBES

While this may have been my first experience with the kind of politics that exist within the USGBC, it was not the only one. Prior to my departure from the USGBC, I was caught up in several similar experiences, as did other volunteers and even a few USGBC staff (one that ended

with the dismissal by the USGBC of its Vice President of LEED Nigel Howard). I was disillusioned. I was unhappy with the direction the USGBC was headed. But I still felt that I had much to contribute.

And so, when I got a call from the Green Building Initiative about helping with a new ANSI green building rating system, I jumped at the chance. It was an opportunity to be a part of the development of a new green building rating system—Green Globes—which promised to be everything LEED was not: Performance-based, steeped in sound building science and above all commonsense. Despite the USGBC's best efforts at maligning the process and badmouthing the organization, the technical committee produced an ANSI-certified green building rating system far superior to LEED. A rating system that would result in greener buildings with measurable, verifiable results.

Green Globes was officially approved by ANSI March 24, 2010. We waited for it to be rolled out and used by the general population. And then we waited some more. And nothing happened. The Green Building Initiative shelved it instead and stuck with its web-based distant cousin of the same name, but a wholly different system, a system without any of the performance, science and consensus-based development that defines the new version. Why? After having made several calls and email enquiries over the months and years to learn the answer to this simple question, I never got a meaningful response.

Then, a few months ago, out of the blue, I got a call from the GBI asking if I would be interested in helping to get the ANSI version of Green Globes into the market. “Finally,” I thought and soon after I found myself on a conference call established to align ANSI Green Globes with the current Green Globes Web-based interface. What I learned during the course of the call, however, was that the GBI was moving forward with plans to revise and modify ANSI Green Globes without having to go through the ANSI process. The group spear-

heading the effort called themselves a “mini-ANSI” Green Globes committee. The GBI and its industry supporters have long been critical of the USGBC and it’s made up rules, lack of transparency and less than truly consensus-based undertakings. The GBI Web site takes the high ground by hammering home the fact that ANSI Green Globes was:

“... developed following ANSI’s highly regarded consensus-based guidelines, which are among the worlds most respected for the development of consensus standards, and ensures a balanced, transparent, and inclusive process. A variety of stakeholders including sustainability experts, architects, engineers, ENGO’s, and industry groups participated in its development.”

But its June 4 announcement about the new Green Globes rating system tells a slightly different story:

“The latest version has all the program features users have come to rely on as well as the following major updates:

- *New criteria developed by an ANSI-approved consensus body.*
- *A new approach assessing building assemblies, furnishings, finishes and fit-outs by utilizing multi-attribute certifications, and/or third-party*

assessments by approved standards development organizations.”

SAME RATING SYSTEM, DIFFERENT NAME?

With the introduction of the new Green Globes, the GBI is now no different than the USGBC—making up the rules as it goes and making decisions for political reasons. It

ANSI approved content but have no idea about the rest. What will the EPA make of the new Green Globes after having given the ANSI version superior marks over LEED in its latest evaluation? Will users flock to use Green Globes over the new LEED v4 rating system (which has been roundly criticized as a half-baked disaster by many current

At the time of this writing, the new and improved Green Globes rating system remains under wraps and unavailable for anyone to read and evaluate.

can no longer hold the high ground as the developer of a rating system using a “balanced, transparent and inclusive process.”

At the time of this writing, the new and improved Green Globes rating system remains under wraps and unavailable for anyone to read and evaluate. We know it isn’t the official ANSI Green Globes, but instead a mash up of that version, the old version, and some arbitrarily developed new content cobbled together by the “mini-ANSI Green Globes” committee.

Is it better than LEED? Who knows? Will users get greener buildings using it? I believe so for the

LEED users)? Will LEED v4 even get the member votes needed to become the newest USGBC rating system (voting ended June 30, 2013)?

Hopefully the answers to these questions will be available soon, because instead of getting easier, the green building rating landscape is getting more difficult to navigate and more confusing than ever. **W&C**

Chris Dixon is a registered architect, Certified Construction Specifier, and LEED AP. He serves on GBI’s Green Globes Technical Committee and is a former USGBC Materials and Resources Technical Advisory Group member.

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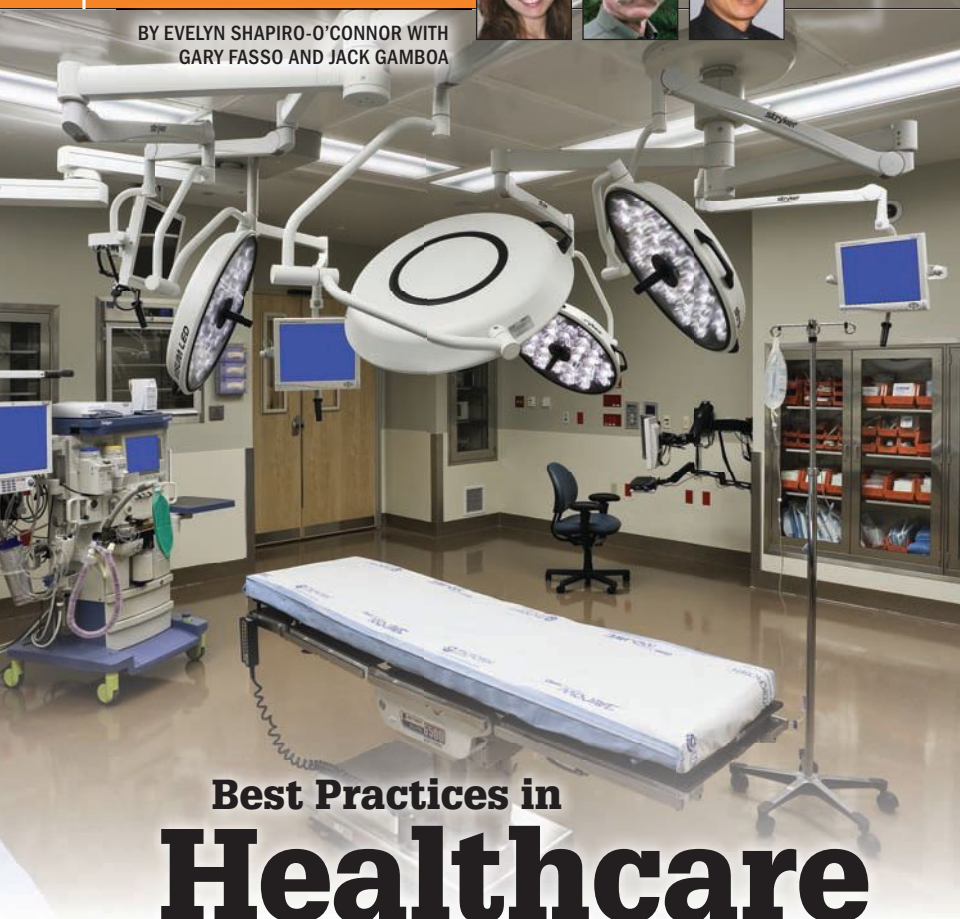
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BY EVELYN SHAPIRO-O'CONNOR WITH
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Best Practices in **Healthcare Construction** —Is the Wall and Ceiling Industry Prepared?

A young man in coveralls walked down the hallway of a building undergoing a remodel. He was a very conscientious craftsman, having worked in quite a few finished tenant improvement spaces. When he arrived to a room that he

needed to enter temporarily, he very carefully reached down with both hands and dusted off both pants' thighs rigorously to remove the dust on his coveralls that had accumulated in performing his work earlier that day. Then he stomped his feet to remove the dust from his shoes and clothing. Like any responsible, meticulous craftsman, he wanted to be sure that he would not get dust in the finished room. The hallway that he was walking down was in the newborn intensive care ward of a hospital. In an effort to be conscientious, this young man unintentionally spread

dust and mold spores throughout an area inhabited by patients with highly compromised immune systems.

Hospitals and clinics throughout North America are choosing remodels over new construction due to tight budgets and economic constraints. Remodels can be a lucrative way to capitalize on real estate that is already developed. However, in clinical and surgical settings, seemingly cost-effective tenant improvement projects can impact the bottom line with the smallest mistakes. The uncontained spread of construction

dust, debris, mold and overall poor control of infection hazards is a risk for hospital and clinic patients. The spread of dust and mold (especially aspergillus) is a real threat to hospitals and the patients inside.

This issue came on the national radar in 2005, when the Institute for Healthcare Improvement, along with the Center for Disease Control, partnered to form the 100,000 Lives Campaign. This campaign encouraged hospitals and clinics to employ a number of practices designed to reduce deaths resulting from hospital acquired infections. The Institute of Medicine estimates that approximately 100,000 people die each year in U.S. hospitals due to preventable medical injuries, also known as hospital acquired infections. The Centers for Disease Control and Prevention estimate that two million patients suffer hospital-acquired infections each year. Specifically, patients are at a high risk of acquiring some sort of infection from construction related contamination in medical facilities.

INFECTION CONTAINMENT

There is a great deal of dust and mold in demolition. Apprentices and other less experienced workers are often involved in demolition. Weakest links can spread infection widely and rapidly. On the job site, we often hear the phrase, "just use common sense." With Infection Control Risk Assessment, something as intuitive as "common sense" gets challenged. Consider the conscientious worker who removes a light switch and finds the back covered in black mold. Shocked, he takes it down the hallway to his foreman to show him the black mold. They discuss its appearance, as well as how to dispose of it. Meanwhile, the craftsman has unwittingly dispersed spores throughout his travel route. The concept of common sense used and expected on most construction jobs needs to be treated more carefully on an ICRA job site. ICRA is a protocol that construction workers can easily follow.

The issue of infection containment should apply to construction con-

tractors, as well as maintenance contractors. A cancer patient in a high-end, well-known hospital recounted this story:

"I was in the oncology ward of the hospital where I was awaiting treatment. Everyone who came into my room had to promise intensely that they were not sick. They all had to wash hands and use a face mask to come in to my room. One day, as I lay in bed, a maintenance worker came into my room. He set up a ladder, climbed up, and pulled down a ceiling tile over my head. I was shocked that he didn't set up anything to contain his dusty work."

Witness a ceiling tile removed from an established, existing grid and watch the dust and particles that are released in a cascade when that tile is disrupted. Why wasn't that maintenance worker trained properly in ICRA?

Effective training is essential to meet the contractors' and owners' ICRA needs.

TRAINING IS A MUST

ICRA is an effort to reduce the risk of contamination when working in occupied healthcare facilities. In order to provide owners with a crew that will be able to perform effectively under these complex conditions, the best tool to address the issue is training.

Effective training is essential to meet the contractors' and owners' ICRA needs. As far as this author is aware, a couple unions currently offer ICRA training, as well as some private entities. In looking at interior systems unions, the United

Brotherhood of Carpenters offers both carpenter member qualification training and continuing education courses for architects.

Ask any hospital administrator how they are feeling before a major construction project or remodel and they will give similar answers. They believe that construction workers are not aware of how important proper ICRA is to contain infection and mold. With all of this worry, hospitals inevitably devote a tremendous amount of staff time to mitigating construction issues and breaches. It would be naïve to believe that this

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The new energy code regulations will require a more prevalent use of Continuous Insulation over framed wall construction. In steel stud construction especially, the transference of heat and cold through the stud itself, known as thermal bridging, can minimize or negate the desired R value of the cavity insulation. The prescriptive approach of utilizing foam insulation on the outboard side of the framed assembly known as Continuous Insulation can mitigate thermal bridging through the stud assembly and also assist in increasing the required R value.

Incorporating CI into wall assemblies that utilize common aesthetic looks like brick, stucco, wood, and metal presents unique challenges. This webinar will explore some of these challenges and offer views to various solutions to achieve the desired architectural finishes. What you will learn:

- » The challenges unique to brick, stucco, wood and metal
- » Solutions to achieve desired architectural finishes
- » Available wall cladding options containing Continuous Insulation



SPEAKER:

Albert Carrillo
Arizona Manager,
Western Wall & Ceiling
Contractors Association
and Technical Services
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staff time was not billed, ultimately affecting the bottom line of contractors. As patients and insurers get savvier about hospital acquired infections, there is a growing concern about healthcare facility liability. With liability on the table, hospitals will need to factor that into construction plans. With a proactive approach and the use of ICRA, the liability worries reduce significantly.

According to Mike Stobbe with the Associated Press, "... insurers are pushing hospitals to do a better job and the government's Medicare program has moved to stop paying bills for certain infections caught in the hospital."

Hospitals purchase \$100,000 machines in order to stay on top of the spread of infection. Hospitals who take ICRA seriously are consistently impressed with a proactive approach. When hospitals experience trained workforces who go into the project with their head in the game, they respond enthusiastically.

After completing a project with ICRA-trained carpenters, Jeffrey

Clair, infection control coordinator, University of Pittsburg Medical Center, says, "There is a noticeable difference. Now we are getting the workforce that really understands it, really gets it, and is meeting our needs."

Contractors who have ICRA trained workforces have a unique bidding opportunity in the hospital/clinic market. However, the contractors are not alone in the risk. While unions typically offer the training free to the contractor's workforce (compared to rather expensive private qualification programs), bidding healthcare jobs can be a hurdle if there is not some assurance that it will be worthwhile to factor in all of the containment time and other ICRA precautions in the bids. This is where a contractor's partnership with the owners and architects is an important piece of the ICRA recipe. Owners can, and have, developed ICRA policies that are part of the bid requirements for contractors. With those policies in place, unions and contractor associations can pro-

vide the workforce training to complete the puzzle.

The strategy must be multi-pronged to get this problem under control and ensure that owners have a well trained workforce who is able to address the construction challenges. To be successful, the effort to reduce the risk of spreading contamination in hospitals and clinics needs to be embraced on all levels. This translates into owners, developers, architects, contractors and labor organizations making an investment towards the solution. **W&C**

Evelyn Shapiro-O'Connor, a union representative with the Pacific Northwest Regional Council of Carpenters, works in the construction/interior system industry. Gary Fasso and Jack Gamboa, PNWRCC representatives, specialize in Construction ICRA: Best Practices in Healthcare Construction in the Pacific Northwest. To learn more about Construction ICRA, contact: news@nwcarpenters.org or visit the ICRA Facebook page:



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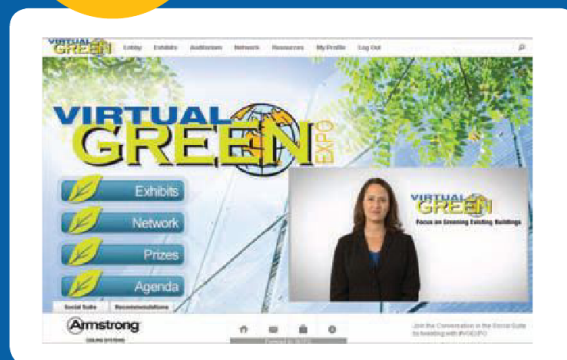
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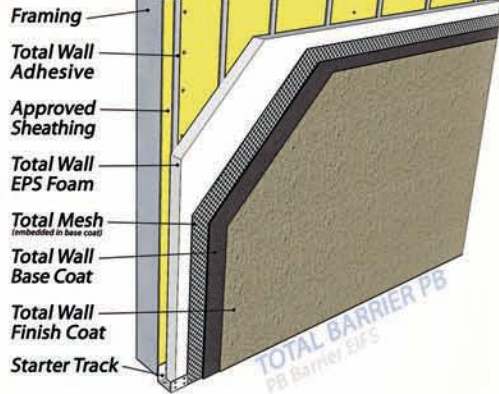
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