ORANGE PEAL

Volume 51, No. 6

May/June 2017

Newsletter of the Orange County Chapter, Construction Specifications Institute

www.occcsi.org

Program Information

Tuesday, May 9, 2017

Orange County CSI Chapter
May Meeting

Program: Annual Joint Meeting with RCI & OCCCSI
Understand how MVER barrier technology works, and how and when to specify.

Speaker: Eric Brown
California Sales Manager for Aquafin, Inc

The Orange County Chapter of the Construction Specifications Institute and So Cal Chapter of RCI, Inc. invites you to learn, network and dine at our Joint-Technical Dinner Meeting. This program is designed to improve the knowledge base of consultants, contractors, and design professionals practicing in the roofing, waterproofing and building enclosure field.

Eric Brown will conduct a non-proprietary presentation on moisture mitigation touches on the basic principles of moisture vapor emissions, the causes of moisture vapor emissions, the problems associated with moisture vapor emissions and potential solutions to avoid failure of roofing and waterproofing systems. The presentation will also explore case study examples pertinent to exterior concrete slabs with subsequent roofing and waterproofing installation.

The objectives of the presentation are:

1. Take an in depth look at moisture issues in concrete slabs and the effect of high Moisture Vapor Emission Rate (MVER) on membranes, coatings, waterproofing and flooring finishes.
2. Identify the various industry-approved methods for testing of MVER and for generating accurate data.
3. Recognize conditions that generate excessive moisture in slabs and methods to resolve them.
4. Understand how MVER barrier technology works, and how and when to specify.

The seminar provides 1.0 AIA LU's and 1.0 RCI CEH's.

Time:	**5:45 - 6:45 PM Social/Tabletop Exhibits/No Host Bar** **6:45 - 7:30 PM Dinner** **7:30 - 8:30 PM Program**
Location:	**Phoenix Club** **1340 S. Sanderson Avenue** **Anaheim, California**
Parking:	**Plenty of free parking**
Dinner Cost:	**$35.00 cash/check discount for OCCCSI members and nonmembers with reservations.** **$45.00 at the door. (No-show reservations will be billed)**
Tabletops:	**Product representatives are invited to display at this meeting.** **The cost for a tabletop is $80.00.** **Contact David Jordan Smith at 949.250.0880 for information.**

Reservations required by May 5, 2017. Call the OCCCSI hotline at 714-434-9909.

Board of Directors

OCCCSI Credit Card Use Policy

The OCCCSI Board of Directors has a fiduciary responsibility to all of its members. Those members and others who choose to purchase events or opportunities by check or cash will receive a discount. Discounted prices will appear in the newsletter and PDF announcements via emails. Those who choose to use their credit cards will be able to purchase at the price printed on our website, occcsi.org. Credit card transactions must be made by the printed deadline in the newsletter or in person at monthly meeting events. Credit card purchase for CPSE trade show registration and exhibit space will NOT be accepted the day of the trade show. This policy is effective on April 8, 2014 by Board approval.

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See our website, occcsi.org, for further disclaimer information.

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SAVE THE DATE

Marconi Automotive Museum & Foundation for Kids

1302 Industrial Drive
Tustin, California 92780

October 12, 2017

THE PRESIDENT'S MESSAGE

Bryan Stanley, CSI

EIFS: IT'S NOT JUST FOR BREAKFAST ANYMORE

Hi everyone! This was supposed to be my last column (or second to last I don't really know). However, back by popular demand (my own), I probably will be your President for one more year (unless I'm impeached before that). So this power of the pen will remain. Bow down to your king! I meant to say I'm humbled to possibly remain as your President……..

Before I became a worldwide leader in the cement plaster industry (anyway my Son thinks so), I cut my teeth on EIFS. I didn't know how to spell stucco back then. My first day as an inside sales rep for a distributor, I told a customer we did not sell "rock". Who knew that was a nickname for drywall? Today I know everything. Just don't ask me to build anything. I built a toothpick once and had to get a tetanus shot. Now that the self-deprecating is over, let us move on.

EIFS (Exterior Insulation and Finish Systems) were developed for the express purpose to conserve energy and have the aesthetic appearance of stucco. Europe experienced an energy crisis way before the United States, and the solution to the problem was EIFS. It was discovered that 24 inch by 48 inch foam panels adhesively applied to the exterior of structures provided continuous insulation (CI) and provided energy savings. The system is a fiberglass mesh embedded into proprietary polymer enriched cement and finished with a proprietary acrylic finish. The lamina provides a strong, yet flexible lamina to protect the foam. It is also the primary water-resistive barrier of the system.

Today, national and state energy code regulations require a more prevalent use of CI that prevents or minimizes the thermal transfer often referred to as "thermal short circuiting" or "thermal bridging". Designers and contractors are encouraged to consider EIFS to comply with energy code regulations. They provide excellent protection against thermal transference at relatively economical cost. These systems are fully tested by each proprietary manufacturer and are now part of the International Building Code. In addition to these generic guidelines, I recommend visiting www.eima.com and contact your local EIFS manufacturer's rep for more information.

EIFS was developed in Europe after World War II and was initially used to retrofit masonry walls that lacked insulation value. EIFS was introduced to the U.S. market in 1969 and became very popular because of interest in high energy efficiency wall systems that EIFS provide. In North America, EIFS was initially used almost exclusively on commercial, masonry buildings and made its way into steel and wood framed buildings. Gradually EIFS was accepted into residential construction.

Until the mid 1980's, the major EIFS manufacturers only allowed properly trained applicators to purchase their products. However, newer companies looked at EIFS as a commodity item and "the big four", at the time, had no choice but to relax their policies. Soon anyone with a pickup truck was now an EIFS installer.

EIFS was only offered as a barrier system. Bulk water entering the system for any reason would affect the substrate but, by 1995, 200 million square feet was being installed annually. Unfortunately, 1995 saw "Ground Zero" for barrier EIFS occurring in Wilmington North Carolina.

Before "Ground Zero", "Emily", a category three hurricane deluged Wilmington Labor day weekend 1993. To a lesser extent Hurricane "Gordon" also affected the region a year later. Unfortunately, at the same time, problems started developing due to water leakage in EIFS-clad buildings. This created an international controversy and numerous lawsuits. Critics argue that, while not inherently more prone to water penetration than other exterior finishes, barrier-type EIFS systems (non-water-managed systems) do not allow water that penetrates the building envelope to escape.

The EIFS industry has consistently maintained that the EIFS itself was not leaking, but rather poor craftsmanship and bad architectural detailing at the perimeter of the EIFS was causing the problems but, as a result, building codes began mandating a drainage system for EIFS systems on wood frame buildings and additional on-site inspections.

In 1999 "Dateline NBC" ran a story vilifying EIFS. Insurance companies started to refuse insurance to EIFS-Clad home owners and were no longer offering liability insurance to contractors installing EIFS.

Today, EIFS has virtually disappeared from the residential market. However, the commercial market survived. Building owners and the design community are rethinking EIFS as a viable cladding. Insurance companies are "softening" up to EIFS (thanks to the efforts of the EIFS Industry Members Association: EIMA). Lastly, stricter Energy Codes are making EIFS a better option than ever.

See you at the next meeting and you should start thinking about a costume for October's product show. I feel a hunka hunka burning love in my future.

WREN'S WESTERN OUTPUT

The Way We Were - Part 7

By Annette Wren, FCSI, CDT

Those of you who live and (maybe will) die with your GPS and navigation tools, listen up! In "the old days", those of us in this industry actually used something called a **map**. What is that?

Back in the "old days", we had Thomas Maps that were required for anyone negotiating their way around the roads in a vehicle. Today, we have a few apps and GPS systems that assist us. My experience with these tools is very positive. We have many wonderful technilogical advances in our world that makes our days more efficient. However, there is still a place in our daily existence for "old fashioned" tools like a map and common sense. Take a look at the following examples:

Case 1: A person known to me was driving to a job site in downtown Los Angeles. His navigation tool was a GPS with a map on the screen. He relies on his GPS solely and does not have a working knowledge of the geography in the area. He is a twenty-six year old native Southern Californian. He was on the 60 Freeway and traffic was quite bad. Taking a look at his GPS, he noticed that the 60 freeway and the 210 freeway, with better traffic conditions, ran parallel. So, he drove north on the 605 Freeway to proceed to downtown on the 210 Freeway. From the 210, he drove down on the 5 Freeway to downtown. He had no concept that this move took him farther north. If you are agreeing with his decision, you need to look at a hard copy map.

Case 2: Good choices can be made with your navigation tools. They give you side streets as alternates to freeways. Most suggestions lead you to your destination with ease. One example is using Washington Blvd that parallels the 5 and 10 Freeways. Keep your eyes open on navigation tool recommended side streets. It is not a good choice when you see gang bangers on the sidewalk. Choose again!

Case 3: A few years ago, a group of friends were meeting for dinner by my daughter's house up in Oregon. The restaurant was about a mile from her home. All the friends frequently visited her home and were familiar with the area. One guy used his GPS to locate the restaurant. Following GPS instructions, he drove about 30 miles in the opposite direction to the edge of a lake. The information he entered into his GPS was correct, apparently there was a glitch. The major glitch was his lack of common sense.

Case 4: Common sense should tell you that driving off a major highway in the winter or extreme heat summer is not a good idea no matter what short cut your GPS claims. You can search the Internet for examples of these incidents which all ended badly. "Death by GPS" is an interesting read. Driving blindly with GPS as your sole tool while in unfamiliar territory is plain stupid. Unfortunately, this has become the status quo. It may simply be termed the "lack of responsibilty" by the driver. With drivers following their navigation devices blindly, you can envision a future where "natural selection" can take its course. A possibility of

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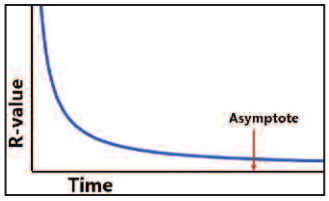
WOLFE'S HOWL

Spock as a specifier

By Sheldon Wolfe, RA, FCSI, CCS, CCCA, CSC

025165772811 In our never-ending search for truth in specifications, we often lose sight of reality. We're inundated with advertising, product data, test reports, and white papers; where once specifiers complained about a lack of information, we now struggle to keep up with what we receive. We can't know what we don't know, and we have no time to evaluate what we have seen. As if that weren't bad enough, we often find that what we thought we knew isn't true.



As an example, consider building insulation. The way it works and its value have been understood since antiquity, and until recently we have felt comfortable with evaluating, specifying, and detailing various types of insulation. And then, several years ago, everything began to unravel.

Several years ago, the accepted nominal R-value of polyisocyanurate insulation was reduced. Until then, manufacturers conditioned insulation for six months prior to testing and those properties were published, even though it was known that the R-value continued to decline after six months. Architects typically assumed the published values to be constant and gave no more thought to the issue.

When plotted, the insulating value of foam insulations is seen to follow an asymptotic curve, always decreasing, but at a rate that also decreases. The result is a curve that always decreases toward a limit, but never reaches it. The term LTTR (long-term thermal resistance) became part of our vocabulary, a method to calculate a nominal R-value closer that more closely represents the properties of insulation. The reason for the reduction is the off-gassing of the blowing agents, which slows down as the concentration in the cells decreases.

I recall the discussion surrounding the introduction of LTTR. Maybe my memory is faulty, but as I recall it was focused on polyisocyanurate insulation. As it happens, extruded polystyrene also loses R-value. More important is the definition of LTTR, "the time-weighted average of thermal resistance over 15 years." In other words, it does not show the R-value of insulation that remains in place longer than 15 years. What does that mean for buildings designed for a service life of 50 or 100 years? How will the operating costs change? The nature of the curve, which has been shown to be reasonably accurate, means there won't be much change, but it's a question worth asking.

The reported performance of insulation is in itself suspect. In Info-502: Temperature Dependence of R-values in Polyisocyanurate Roof Insulation, Building Science Corporation shows the results of testing 15 samples of polyisocyanurate insulation. The range of R-values is about 1.5 points at 25 degrees mean temperature, a 30 percent difference. Yet all manufacturers,

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(* deceased)

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CPSE 2016 EXHIBITORS

We are proud to present our exhibitors from our Construction Products & Services Expo 2016 on October 13th. This column will report on groups of exhibitors in each issue right up to the next show. Learn more about them right here!

CENTRIA is based in Moon Township, PA and formed 20 years ago, when the then well-known and well respected H H Robertson, E G Smith and Steelite merged. As a combined company, CENTRIA has well over 111 years of experience in the system design, engineering, and manufacturing of the most complete line of high quality and high performance exterior grade insulated and non-insulated metal wall and roof panel systems. The varied product line include: Formawall Dimension Series, Formavue Window Systems, Versawall/Versapanel insulated metal panels, Intercept Aluminum Plate, Formabond and Formabond II aluminum composite panel systems; along with Profile Series (concealed and exposed fastener) non-insulated metal panel systems, SRS Roof Panels, and a wide selection of metal panel colors and accessories. CENTRIA's newest innovations to the construction industry include MetalWrap, Integrated Metal Vertical Joint, Formawall PE vertical seal plate, and enhanced color technologies. CENTRIA has a long history and involvement in the sustainability movement, and offers many benefits to its customers through sustainable practices and environmental stewardship. Our mission is to meet the sustainability needs of our customers by putting innovative ideas into action. Contact: Gary M. Kehrier, CSI, CDT; Southern California District Sales Manager at 949.589.0997.

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Parex USA, parent company of Parex, Teifs, LaHabra, ElRey and Variance brands, provides high-performance building material solutions, including: energy efficient cladding solutions (EIFS & stucco) • air & water-resistive barriers • manufactured stone masonry & veneer assemblies • floor tile mortars • wall tile adhesives & thin sets • crack bridging membranes • grouts & shower pan membranes • dampproofing & waterproofing solutions • abuse & impact resistant finishes • Venetian Veneer Finishing Systems • specialty coatings & finishes • fade resistant colorants, and more. Contact: 866.516.0061; www.parexusa.com. Parex USA, Inc. - Anaheim CA: Keith Simchuk (714) 319-7690.

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The Orange County Chapter of the Construction Specifications Institute

Announces

Our Annual Installation & Awards Banquet At

Zov's Bistro – Wine Room
17440 E. 17th Street
Tustin, California 92780

On June 13, 2017

You are cordially invited to attend our Installation & Awards Banquet at Zov's Bistro. Founded in 1987 by Chef Zov Karamardian, legendary Zov's Bistro & Bakery has become a culinary institution. Zov's unique cuisine blends contemporary cuisine with Eastern Mediterranean influences, in an upscale chic environment.

Family support has constantly been Zov's foundation and inspiration throughout her culinary career. Zov, in addition to her husband, Gary, her son Armen, and her daughter Taleene, have created a rare family business recipe that has taken the comforting creations of the family kitchen blended with Chef Zov's culinary artistry.

Dinner Choices are as follows:
- Zov's Grilled Chicken
- Almond Crusted Salmon
- Spinch Couscous Risotto

Time: 6:00 – 6:45 PM Social
7:00 – 8:00 PM Dinner
8:00 – 9:00 PM Installation & Awards

Parking: Plenty of Free Parking

Dinner Cost: $60.00

Mail your check with your entrée choice to OCCCSI
Post Office Box 8899
Anaheim, CA 92812

Reservations by mail required by June 9, 2017.

Event: **Construction Products & Services Exposition 2017**

Marconi Automotive Museum & Foundation for Kids

1302 Industrial Drive
Tustin, California 92780

October 12, 2017

Sponsor: **Orange County Chapter Construction Specifications Institute**

Invitation:

- You are invited to participate as an exhibitor.
- Display your products for local design professionals, owners, contractors, facilities managers and others.
- Exhibit hours are 4:30 p.m. to 7:30 p.m.
- Gourmet hors d'oeuvres passed during exhibit hours.

Reservation: Please make your check payable to the Orange County CSI Chapter. Upon our receipt of your check, you will then receive set-up details and location confirmation. No credit card reservations will be accepted after October 10th. For questions, please call Dave Brown (714) 329-8498, E-MAIL dbrown.dpe@gmail.com or Bryan Stanley (714) 221-5520, E-MAIL: bryan@tsib.org.

Prices of Exhibits: **BEFORE, August 1, 2017 (Postmarked) DISCOUNT CHECK/CASH**

Tabletops (6' x 2-1/2' table).....$600.00 each
Mini-Booths (8' x 2-1/2' table).....$700.00 each
Booths (approx. 10' x 8').....$900.00 each

AFTER, August 1, 2017

Tabletops (6' x 2-1/2' table).....$700.00 each
Mini-Booths (8' x 2-1/2' table).....$800.00 each
Booths (approx. 10' x 8').....$1,000.00 each

For credit card transactions and prices go to our website at occcsi.org until October 10, 2017.

Mail to: Orange County CSI Chapter
Post Office Box 8899
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RETURN THIS PORTION WITH YOUR CHECK

Event: **Construction Products & Services Exposition 2017**
October 12, 2017 - Marconi Automotive Museum & Foundation for Kids

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OCCCSI - WWCCA March Meeting

(photos By Jamie Kovacs)

OCCCSI - WWCCA March Meeting

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OCCCSI - WWCCA March Meeting

(photos By Jamie Kovacs)

BUCH NOTES

By Ed Buch,CSI, CCS, AIA, LEED AP

The Race Underground: Boston, New York and the Incredible Rivalry That Built America's First Subway

Author Doug Most's book isn't so much about a race as much as it is a chronicle of the rivalries between the men involved. Boston's subway was completed in 1897 before construction had even started in New York. The book is most importantly the story of the men who were behind the subway financing and construction in both cities during the Gilded Age of the late 19th Century. The Whitney brothers, William Sprague, William Steinway, August Belmont, and John McDonald to name a few. These men had the foresight, ingenuity, determination, and raised the money to literally change the face of large American cities forever.

The last half of the 19th Century saw many breakthrough civil engineering projects such as the Brooklyn Bridge, the Erie and Panama Canals, and the Transcontinental Railroad. Thomas Edison had begun lighting the world with his electric light bulbs and Henry Ford was about to launch his first automobile. Elisha Otis had invented the passenger elevator. But the development of the subway solved an everyday problem that confronted everyone living in large cities; the inability of people to get across town without taking, literally, a half a day to do it. Prior to the construction of the first subways, (London in 1863 and Boston in 1897), pedestrians, horse drawn streetcars, wagons, and carriages so clogged city streets that traffic was in perpetual gridlock. Add to that the mess and smell of horse manure on warm or rainy days and you can understand the impetus for a solution to the problem.

The subway was not the first mass transit solution proposed. Elevated trains had already been constructed in portions of New York, Philadelphia, and Chicago by the 1870s. These were noisy, didn't have sufficient capacity, and filled the air with choking smoke from their coal burning steam engines. Steam locomotives were also used in the first subway constructed in London. This made riding subways there dirty and the air was chokingly difficult to breathe. Street cars powered by underground cables were also used with limited success in parts of Philadelphia and New York but, again, they were expensive, didn't have the capacity to solve the problem of congestion and were, in fact, creating more congestion.

The first operational subway was constructed in New York by Alfred Beach in 1870. While this was only 300 ft. long it successfully demonstrated the potential to the 400,000 people who rode it in the year it was operational. Beach's subway cars were propelled by forced air, like capsules in a pneumatic tube. Aside from the significant technical problems with the use of forced air as motive power, Beach's plan for a subway in NY City was killed by the political powers in control at the time. The idea of a subway was dead for another 25 years until Henry Whitney's subway was constructed in Boston.

The Whitney brothers, Henry in Boston and William in NY City, (they were of the same socially prominent family for whom the Whitney Museum is named), had street railway company monopolies. Henry saw efficient mass transit as the key to developing his suburban Boston property and didn't see street railways alone as meeting this need. In 1887 he proposed digging a subway tunnel below Boston Common and Beacon Hill through which electrically powered trains would operate and connect with his newly electrified suburban, surface street car lines. Construction of the tunnel would be done by the cut-and-cover method using hand labor and horse drawn wagons for the excavation. The subway was relatively shallow, up to about 50 ft. below grade, (London's subway by comparison ranged from 100 ft. to 200 ft. below grade). Sides of the excavations were supported by steel shoring beams. Waterproofed masonry and concrete tunnel walls supported steel and timber roof beams. These in turn carried the waterproofed masonry tunnel top. Ventilation of the tunnel was critical to its success and was accomplished by electrically powered exhaust fans at each of the eleven stations.

The Boston subway's success was assured when Henry Whitney saw the genius in Frank Sprague's invention of the electric motor as power for his trains. Sprague had in the 1880s demonstrated that his electric motors were powerful and reliable enough to power street cars over 12 miles of hilly terrain in Richmond, VA. This lead to numerous orders for Sprague's motors and by 1890 there were over 200 electrified railways in service around the world. Boston would be added to this group when its 1.8 mile subway opened in September 1897, ahead of schedule and under the $5.0 Million budget. New Yorkers were watching.

It wasn't until 1894 that New Yorkers voted in favor of issuing City bonds to pay for subway construction. This followed the collapse of William Steinway's attempt to assemble a team to privately finance construction. (Steinway was also founder of the Steinway Piano Company in New York.) In spite of the success of Boston's electric trains, those advocating for New York's subway were not convinced of this approach. It was up to a young engineer, William Parsons as chief engineer for the NY Transit Authority, to convince the Authority that electric power was less costly and allowed for better ventilation in the tunnels. (Parsons and his younger brother founded present day global engineering giant Parsons.) On January 15, 1900 bids for construction of the NY subway were opened and local contractor John McDonald had the low offer. He was awarded the contract for $37.5 Million, backed by financier August Belmont.

Most of the NY subway was built using the same cut-and-cover method used in Boston. However tunneling through hard rock, (Manhattan schist), was necessary for a good portion of its length and for this dynamiting was used. In these sections the tunnels were as much as 180 ft. below grade. Carnegie Steel was

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OC NEWS FLASH

Fletcher Jones Motorcars Held "That's What Friends Are For" Fundraiser to Rebuild Anaheim White House April 20

Bruno Serato and Garth Blumenthal can trace their friendship back more than 30 years when one was a busboy just off the boat from his homeland of Verona, Italy and the other, a South African expat just getting into the car business. Today, Sir Bruno Serato, known the world over for feeding 2,200 needy kids each day from the kitchen of his celebrated Anaheim White House, and Garth Blumenthal, general manager of the world's #1 Mercedes Benz dealership, will witness the true meaning of their friendship as they face the aftermath of a tragedy together.

When Blumenthal learned of the the fire that destroyed the Anaheim White House, he was among the first of Serato's friends who pledged to help rebuild the historic structure. Though Serato held fire insurance, it isn't nearly enough to rebuild it back to its former glory.

On Thursday, April 20 from 6 to 9pm, Blumenthal invited the public to attend a fundraiser at his Newport Beach dealership, Fletcher Jones Motorcars at 3300 Jamboree Rd, Newport Beach. Titled "That's What Friends Are For," the event featured live entertainment, hors d'oeuvres prepared by White House Catering, complementary wine and live auction items such as dinner with Serato & Bill Handel of KFI Radio.

In addition, Blumenthal has pledged to donate $100 for every test drive starting on April 20 through the end of the month. Those participating in the test drive program are encouraged to mention that they support Serato.

"I was just a busboy at La Vie en Rose in Brea when I first met Garth. We were both expats just getting a feel for America and I think that's what really sealed our friendship," said Serato. "He was there every step of the way when I bought and renovated the restaurant and he continued to show his support by patronizing frequently. I am so grateful to Garth for holding this fundraiser…it means the world to me."

Added Blumenthal, "Everyone who has ever met Bruno knows how special he is. When I learned about the devastating fire, my first thought was organizing an event where the entire community could come together and show their support. We believe that 'That's What Friends Are For' will realize our hope of rebuilding Bruno's dream."

WREN'S WESTERN OUTPUT

(continued from page 4)

eliminating "blindly" driving folks is quite possible when they follow directions right off a cliff.

If you still believe that relying solely on navigation tools without any knowledge of your environment is the way to go, go for it! Remember that it will not kill you to consult maps and become familiar with your geographic area.

WOLFE'S HOWL

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with one exception, claim the same, ASTM-standard R-value for their products. The exception is a company that reports a 50-year R-value for its XPS. As you might expect, it's not the usual 5.0 we all use, but 4.2. Doesn't it make sense to calculate energy use and mechanical system performance based on the lower value?

One of the problems with all testing is confidence in the results. ASTM and other standards-producing bodies often refer to two aspects of measuring this confidence - repeatability and reproducibility. In theory, a given test method would always produce the same results for the same material. In practice, that rarely occurs due to a number of influences. Because humans are involved, results can vary even when tests are performed by equipment. There may be slight differences in the type of equipment used, and even when equipment is regularly recalibrated, it may not give the same readings.

Briefly, repeatability is a measure of consistency of a test when performed by the same person in the same laboratory using the same equipment, within a short period of time. In contrast, reproducibility measures the differences caused when a test is performed by different people in different locations using the same equipment. I looked at several ASTMs and found both repeatability and reproducibility reported as 95%, which means that the accuracy of test results will be consistent.

The point of all this is that we seem to be caught in a Spock syndrome, citing performance values to unsupportable accuracy. If, for example, you specify an R-value of 5.0, that is the number you expect after rounding. In practice, of course, you would accept a higher R-value regardless of rounding, but the minimum would be 4.95. But when test results show a variation of 30 percent, and manufacturers simply claim a nominal value stated in a standard, what are you really specifying, and what are you getting? Sprayed products present even more problems. I wasn't completely comfortable with material that went on at 60 mils; I cringe when I see product data that claims only 6 mils is required.

I understand the problems involved in manufacturing, application, testing, and so on, and we need some way to compare materials, but I question the validity of Spock-like precision.

CPSE 2016 EXHIBITORS

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BMI Products is based in California and active in the manufacturing and sales of specialized mortars, plaster and stucco finish. BMI is unique in this market for the quality of the products and service to their customers. BMI not only manufactures premium premixed plaster and stucco products but also provides silos and mixing equipment that guaranties a high quality and consistent system. In March 2015, BMI was acquired by Sika Corporation. Contact: Jerry L. Pozo, CSI, CDT, BS; Technical/Specifications Consultant; BMI Products - Sika US; BMI Milpitas Office 1-408-293-4008; Office Phone/Fax: 1-530-885-6828 - Mobile: 1-408-595-2031; pozo.jerry@us.sika.com; http://bmi-products.com.local branch.

BUCH NOTES

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awarded the $10 Million contract for the steel beams and columns in the tunnels and for the 600 miles of steel rails, the largest single eel contract awarded up to that time. By the fall of 1903 the tunneling was complete and the streets above the cut-and-cover tunnels had been restored. All that was left was the installation of the tracks and the trains.

The subway was opened in October 1904, seven years after Boston was opened and 20 years after the completion of the Brooklyn Bridge. When the subway opened it was 21 miles long and was completed on schedule and on budget. It was a great credit to Parsons' design, Belmont's money, Sprague's electric motors, and McDonald's construction.

The Race Underground, by Doug Most, was published by St. Martin's Griffin in 2014. It has 404 pages but only a few photographs and no drawings.

ORANGE PEAL

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Meeting Schedule and Information

Make reservations by the Friday preceding the meeting.
Call the Chapter Hotline at (714) 434-9909

UPCOMING MEETINGS:

May 9 — **OCCCSI Board Meeting (4:30 p.m.)**
Phoenix Club
1340 S. Sanderson Avenue
Anaheim, California

May 9 — **OCCCSI Membership Meeting**
Phoenix Club
1340 S. Sanderson Avenue
Anaheim, California

June 1 — **Newsletter Deadline**

June 6 — **OCCCSI Board Meeting (5:30 p.m.)**
TBD

June 13 — **OCCCSI Installation**
Zov's Bistro – Wine Room
17440 E. 17th Street
Tustin, California 92780