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ROOFING **ELEMENTS**

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WINTER 2023
Vol. 3, Issue 4

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AGAINST
ICE
DAMS**

**FINDING
MOISTURE WITH
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ROOFS VS. ICE

The seasons, once again, are completing their cycle. While there are areas of the country where seasons aren't felt as much, here in Central Wisconsin the transition between seasons can be pretty abrupt. We even had a snowy Halloween. As I sit by the fire writing this on a blustery November day, I know it won't be long before snow and ice will be here to stay.

Snow can be a big deal in many regions of the US. A recent snapshot: On January 1, 2022, 39% of the Continental US (CONUS) was covered by snow and ice, according to NOAA's National Snow Analysis of 2022. Their annual snow report details: "Snow blanketed many of the western U.S. mountain ranges, northern Plains, Great Lakes and New England. A cold front traversed the central Plains, Great Lakes and eastern U.S. from January 2-4, bringing the CONUS snowcover to 50.5 percent on the 3rd."

Snow and ice pose significant hazards for people and structures.

Most obvious are the avalanches that can slide off steeply sloped roofs, injuring or damaging whatever is below. People who rake snow from a roof are also susceptible to injury. Furthermore, the buildup of heavy snow and ice can cause the roof to collapse, causing even more extensive damage.

Less obvious is the damage that can be caused by ice damming. As ice builds up at the eaves, and through the melt and freeze cycling, water can intrude under the roofing materials.

You've probably already surmised that we're addressing ice dams in this edition. We lead off with a technical report from ARMA, which includes their guidance for ice dam prevention when installing asphalt roof systems. Paul Scelsi then explains how insulation and ventilation work together to prevent the formation of ice dams. And to wrap things up, Allison Crosby, technical support manager at FloTrace Heat Tracing helps teach how ice dams can be prevented with self-regulating deicing cables. ●

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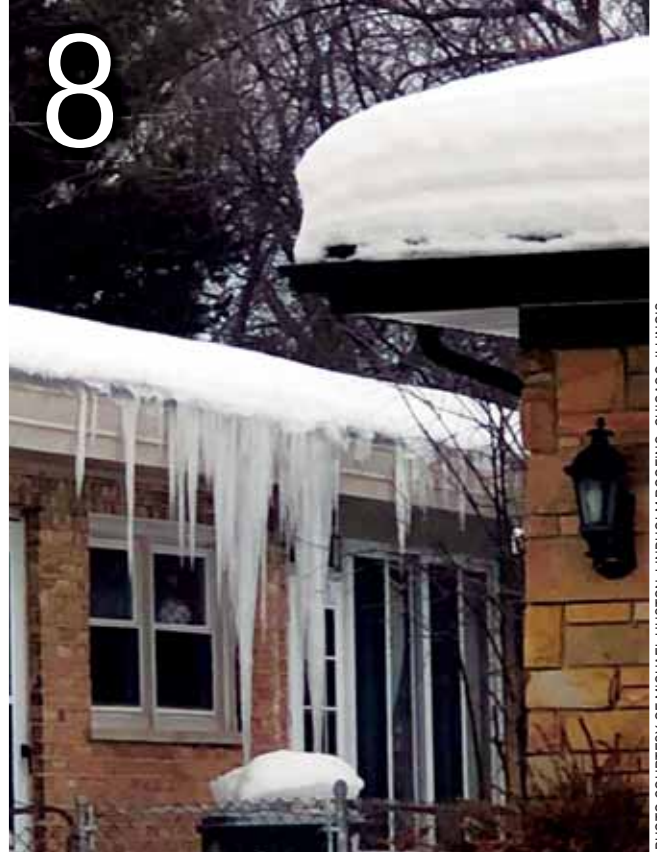


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**Gary Reichert,
Publisher, Shield Wall Media**

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Standing seam metal roof in need of ice dam mitigation.
SHIELD WALL MEDIA PHOTO.

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TECH REPORT

PROTECTING AGAINST DAMAGE FROM ICE DAMS

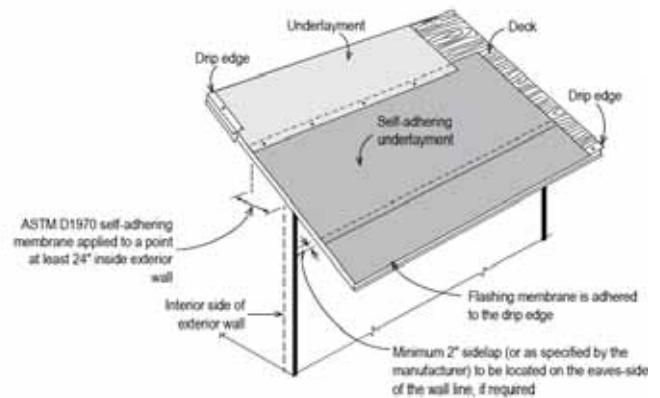
By The Asphalt Roofing Manufacturers Association (ARMA)

Editor's Note: The Asphalt Roofing Manufacturers Association (ARMA) has prepared many technical reports to aid roofers in the proper installation of various asphalt roofing systems. ARMA [<https://www.asphaltroofing.org/>] has granted permission to publish this report for the benefit of roofers.

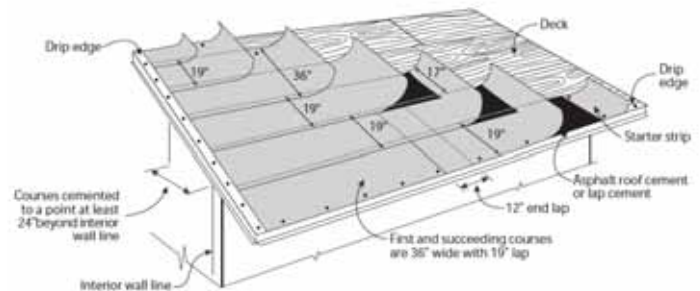
Now and ice accumulation on steep-slope roofs can lead to ice dams at the roof eaves. Ice dams are typically formed by the repeated thawing and freezing of melting snow or backing up of frozen slush in gutters. When ice dams occur, water can be forced under the roofing materials and may cause damage to a home's ceilings, walls and insulation, and long-term damage to structural components.

The installation of an ice dam protection layer along eaves is recommended to protect against leakage from ice dams. Per the International Building Code and the International Residential Code (IBC and IRC), in areas where there has been a history of ice forming along the eaves causing a backup of water, an ice barrier shall be installed. The International Residential Code (IRC) refers back to the local authority having jurisdiction. There are two methods of creating an ice dam protection layer. The installation of a polymer modified bitumen self-adhering underlayment that complies with ASTM D1970 (one layer) is one approach, as recognized by the current version of the IRC. It is ARMA's recommendation that the product should be extended a minimum of 24 inches (610 mm) inside the interior wall line of the building. There are some jurisdictions that will require eave protection to extend further up the roof slope, and other jurisdictions that will call for less. In all cases, apply per the roofing manufacturer's installation instruction and your local building code.

As an alternative, use two layers of asphalt saturated felt as the ice dam protection. Thoroughly adhere the felts to each other with a continuous bed of plastic cement from eaves to a point at



Self-adhesive as Ice Dam Protection



Double felt application for Ice Dam Protection

least 24 in. inside the interior wall line of the building. Begin by applying the felt in a 19 in. (483 mm) wide strip along the eaves, overhanging the drip edge by $\frac{1}{4}$ to $\frac{3}{4}$ in. (7 to 19 mm). Place a full 36 in. (900 mm) wide sheet over the 19 in. (483 mm) wide starter piece, completely overlapping it. All succeeding courses will be positioned to overlap the preceding course by 19 in. Refer to the roofing manufacturer's installation instruction and the local building code for any additional requirements. ●

***DISCLAIMER OF LIABILITY:** This document was prepared by the Asphalt Roofing Manufacturers Association and is disseminated for informational purposes only. Nothing contained herein is intended to revoke or change the requirements or specifications of the individual roofing material manufacturers or local, state and federal building officials that have jurisdiction in your area. Any question, or inquiry, as to the requirements or specifications of a manufacturer, should be directed to the roofing manufacturer concerned. THE USER IS RESPONSIBLE FOR ASSURING COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS.

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Rustic Design

With a metal roof in a weathered steel finish



A metal roof in a Weathered Steel finish gives this wildlife refuge visitor center a classic farm-style look reminiscent of agricultural buildings seen at the time of President Roosevelt's visit to this area.

Theodore Roosevelt Visitor Center, Onward, MS Installing Contractor: Central Roofing
Architect: John S. Odom Photo: hortonphotoinc.com

PAC-150 (180° seam)
Metal Roof System
Weathered Steel Finish



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ICE DAMS

HARD COLD FACTS ABOUT ICE DAM FORMATION AND DEFENSES

Eliminating ice dams may be out of the question but you can put up a good fight

By Paul Scelsi, Air Vent

Don't think it's realistic to expect to 100% eliminate ice dams. There are too many variables involved in the formation of ice dams – not the least of which is the harshness of Mother Nature. But I've talked with enough cold climate roofing professionals across North America the past 25 years to know this: It is very possible to significantly reduce the frequency and severity of ice dams.

An ice dam is a blockage of ice that forms near the roof's low edge. These four conditions lead to an ice dam:

1. Snowfall
2. The outside temperature drops below freezing
3. The attic temperature is above freezing
4. The low areas of the roof remain cool (and much cooler than the upper regions of the roof)

Here's an accelerated snapshot summary of what can happen after snowfall.

If there is excessive heat loss from the warmed living space it can escape into the attic. Once it's in the attic, it can cause uneven roof deck temperatures in which the upper portion of the roof is much warmer than the lower portion. With uneven roof deck temperatures comes uneven snow melt. Specifically, the snow near the roof peak melts first and runs down the roof where it eventually reaches the cooler portion of the roof. In the right climatic conditions, it can refreeze. Melting and refreezing is problematic when it's not happening uniformly. Any additional snow melt from above can then reach the refrozen area and become blocked. In time it can find a path under the shingles, onto the roof deck, into the attic, onto the attic insulation, and perhaps into the living space on the ceilings and beyond.

3-PART DEFENSE AGAINST MOTHER NATURE

The best defense against ice dams is a three-part approach of **proper attic insulation, proper attic ventilation, and waterproofing shingle underlayment**. Let's take a closer look.

The goal of the attic insulation/ventilation combination is to help create a cold roof. A cold roof that is similar to the exterior temperature conditions will contribute to an even melting of the snow on the roof. The aim is to minimize the extreme hot



The lack of snow in the roof plain shows where heat is transferring from the conditioned living space to the attic, indicating inadequate insulation and/or inadequate ventilation. PHOTO COURTESY OF TIM CHAPIN, YOUR SAFE AND HEALTHY HOME, AKRON, OHIO.

and cold temperature differences on the roof.

Attic insulation helps minimize the amount of heat transfer from the living space into the attic. There are charts/maps available online recommending the correct R-Value for attic insulation based on climate zone. R-Value is a measure of how well the attic insulation can resist heat transfer. The higher the R-Value the greater the attic insulation's heat transfer resistance. In the end, the less escaped heat from the warmed living space into the attic the better.

Attic ventilation helps to remove the escaped living-space air from the attic before it can become problematic. This is most effective when the attic ventilation is a balanced system of 50% intake vents (placed in the overhang, soffit, or roof's lowest edge) and 50% exhaust vents (placed at or near the roof's peak). When vents become snow covered, air can still pass through because it's porous. The quantity of attic vents needed in total is based on the attic's square footage. There are online calculating

tools to assist with this. Just remember, the correct quantity of attic vents needs to be factored in (that is, the total number of vents) and the correct distribution of airflow needs to be factored in (50% intake and 50% exhaust).

While attic insulation and attic ventilation can be considered active in the fight against the formation of ice dams, **waterproofing shingle underlayment** acts as a defense against the damage the ice dam can cause. It will not help prevent the formation of an ice dam. It is simply the final line of defense against the consequences of Mother Nature in an ice dam event.

POTENTIAL DAMAGE

What kind of damage can result from an ice dam? Here's what roofing professionals have shared with me:

- Damaged shingles
- Water damage to the house overhang (soffit and fascia)
- Damage to the roof deck
- Damage to interior walls and ceilings
- Wet attic insulation (which can reduce its R-Value)
- Gutter damage
- Damaged interior floors
- Framing damage
- Mold
- Large icicles dangling from the roof edge just waiting to fall (look out!)
- Ants and pests, which are attracted to the moisture
- Damage to any items stored inside the attic. ●

Paul Scelsi is marketing communications manager at Air Vent and leader of its Attic



Large icicles have the potential to cause extensive damage and serious injury.

PHOTO COURTESY OF MICHAEL HUSTON, LINDHOLM ROOFING, CHICAGO, ILLINOIS.

Ventilation: Ask the Expert™ seminars (airvent.com). He hosts the podcast, "Airing it out with Air Vent," and he's the chairperson of the Asphalt Roofing Manufacturers Association Ventilation Task Force.

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BATTLING THE ICE

MELT AWAY WORRIES OF POTENTIAL DAMAGE

By Roofing Elements Staff

Shingle-type roofs are designed to shed water one way: down. Problems arise when the conditions exist that allow ice to build up and trap water in a reservoir, which then finds its way under shingles and into the building below.

“Most freeze risks are on roof edges and in roof valleys,” says Allison Crosby, Technical Support Manager at FloTrace, which supplies professionals with deicing heat trace cables and accessories for roofs and gutters.

When water from melting snow runs below the snow pack to the roof edge or valleys, and the edges or valley surface temperatures are below freezing, the water re-freezes into ice before it can leave the roof. More ice will continue to grow, as a mass on the roof and as icicles through repeated freeze and thaw cycles, causing an ice dam that will trap even more water on the roof and/or icicles grow as heavy hazardous spears.



A heated cable system assists with roof and gutter de-icing. PHOTO COURTESY OF FLOTRACE

“Trapped water leads to leaking problems since roofs were never designed to hold water!” cautions Crosby. Trapped water follows the path of least resistance, which means if there is any possible way, it will find its way into a structure and cause costly damage.

Additionally, the snow melt water that flows into gutters and downspouts can re-freeze and build up an enormous amount of heavy expanding ice which disrupts snow melt water flow, causing water to leak into soffits and enter the building. It could even cause the gutters to collapse under the weight. Most rain gutters are not built to hold excessive weight, so there is added potential for significant injury and structure damage.

To prevent the formation of ice in the first place, a heated cable system can be installed on roof edges, in valleys, and in gutters and downspouts. The heating cable is designed to prevent re-freezing and allowing snowmelt water to exit off roofs, gutters and downspouts. These systems can be installed on new and existing roofs made from standard roofing materials, including shake, shingle, rubber, tar, wood, metal, and synthetic.

To use the least amount of energy while still being effective, as ambient temperatures get warmer, self-regulating heating cables reduce their power output to the lowest possible point. It's designed to continue to provide protection against ice formation as it decreases energy consumption.

The system installation and requirements vary, depending on the conditions and the roof materials, but the result is the same: Water isn't given the chance to re-freeze on the roof or in the gutters. (Remember: Gutters and downspouts need to be large enough to handle all the water runoff.)

One can't ignore what goes on above the edges and valleys. In heavy snowfall areas, a lot of snow can build up on a roof in a short amount of time. “As a general rule,” Crosby advises, “it is always a good precaution to install snow fence on pitches 8:12 or higher to avoid snowpack/ice avalanches. We use the term ‘avalanches’ when talking about shingled roofs because shingled roofs have the tendency to hold snowpack until gravity wants to take over and snowpack is released in a thundering slide.”

Icicles will develop on most unheated roof edges. A heated metal panel system heats a roof edge (and/or valleys) on a continuous basis, which assists with ice and snow management. It's another tool to be used to prevent damage caused by ice dams and icicles. ●



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IRE 2024

INTERNATIONAL ROOFING EXPO HEADS TO LAS VEGAS FEB. 6-8, LAUNCHES METAL ROOFING CLINIC

The International Roofing Expo (IRE; www.theroofingexpo.com), the largest and most comprehensive event dedicated to the roofing and exteriors industries, returns February 6-8, 2024, in the Central Hall of the Las Vegas Convention Center, fueling the industry and meeting demand for new materials and innovations.

The expo opens on February 6 with a keynote presentation, sponsored by Malarkey. The three-day event is expected to cover more than 180,000 square feet of exhibit space, hosting over 600 companies including Carlisle, Polyglass, Holcim and IKO. Eight educational tracks will be available covering 45 topics across over 100 sessions providing critical conversation and training toward challenges and opportunities facing the ever-changing landscape of roofing.

Multiple Building Clinic demonstrations highlight roofing and metals installation, as well as the inclusion of innovative materials ethylene propylene diene terpolymer (EPDM) and thermoplastic polyolefin (TPO). The Exterior Pavilion, first launched in 2022 and continuing to grow, features demonstrations and practices for exterior replacement projects.

IRE continues to expand on cultural initiatives that further support the roofing and exteriors networks. The International Roofing Expo now offers registration capabilities in Spanish as well as on-site bilingual staff and signage for a more inclusive experience. Each year, IRE drives engagement through ini-



Multiple Building Clinic demonstrations will highlight roofing and metals installation at IRE 2024.
PHOTO COURTESY OF INFORMA MARKETS

tiatives such as the designated SRS Para Latinos lounge on the expo floor. This space recognizes the significant contributions of Hispanic professionals in the industry, in addition to specific feature learning sessions designed to service Hispanic contractors. In partnership with the National Roofing Contractor Association's Diversity and Inclusion Committee, IRE provides designated space within the Welcome Party for the Hispanic community.

In a session titled Diversity and Inclusion for the Hispanic Community, Teresa Ramirez, CEO and Founder of Southeast Contracting Services, discusses the resources available to the roofing community, including tools to further career advancement. In the session, How to Start with Commercial Projects, hosted in Spanish and presented by Sergio Terreros, President and CEO of the National Hispanic Contractors Association, speaks to small and medium-sized roofing companies interested in expanding from residential roofing to commercial roofing.

In continued partnership with National Hispanic Contractors Association, Latinos En Roofing, Labor Central and Southeast Contracting Services, IRE is committed to facilitating conversations to Hispanic groups.

"The International Roofing Expo serves as the meeting place to not only discover new products and materials to grow individual skillsets and knowledge, but also to build connections that inspire and unite the growing sector," says Rich Russo, Show Director, International Roofing Expo. "Through the multitude of specialized conference and training dedicated to all groups that power the field, our community can learn from one another and gain new perspectives that ultimately drive business forward together."

A key pillar of the International Roofing Expo, the 15th Annual Community Service Day takes place February 5, gathering suppliers and contractors to give back to the region through hands-on restoration in Las

Vegas residential housing. Rebuilding Together and IRE partner for a full day to volunteer to make critical home repairs for displaced neighbors, assisting with roof replacements, exterior maintenance and various renovations. Attendees may participate in the Give Back Program to celebrate and positively impact the local municipality. If not able to volunteer in person, attendees can donate to Rebuilding Together during the registration process.

NRCA will host multiple events throughout the week including The Annual NRCA ROOFPAC Fundraising Reception, with food and refreshment, as donors bid at the live auction to support ROOFPAC, the only political action committee dedicated to advancing roofing in Washington, D.C. The NRCA awards ceremony formally recognizes the roofing industry's most prestigious companies and individuals. In addition, NRCA's Roofing Alliance hosts a construction management student competition promoting careers in roofing. (See page 38 for a list of competitors.)

Additional networking includes the sixth annual National Women in Roofing Day conference (February 4), the First-Time Attendee Reception (February 6) followed by the IRE Welcome Party and lastly the SRS Distribution Extreme Tailgate Party, with outdoor entertainment and activities.

NEW PARTNERSHIP FOR METAL ROOFING CLINIC

IRE has also announced its partnership with the Metal Construction Association and the Metal Roofing Alliance to debut the all-new Metal Roofing Clinic, presented by the Metal Construction Association and Metal Roofing Alliance, at the February 6-8, 2024 expo in the Las Vegas Convention Center.

The Metal Roofing Clinic will offer three days of hands-on learning as well as demonstrative activities in metal roof



Find Kirsch Building Products/SharkSkin Underlayments in the Las Vegas Convention Center's Central Hall booth 4749. SHIELD WALL MEDIA PHOTO.

installation and repairs, where industry experts will walk attendees through the benefits, methods and types of materials used in metal roofing installation.

The metal roofing segment is projected to experience the most rapid pace of annual growth as demand for metal shake, shingle and tile roofing is forecast to expand as the demand for durable materials increases and homeowners gravitate towards more sustainable options with better performance.

"The International Roofing Expo prioritizes discovery through connection and we strive to provide the most up-to-date resources for traditional and innovative roofing methods available with our strategic leading partners," says Rich Russo, Show Director, International Roofing Expo. "Our new partnership with the Metal Construction Association and Metal Roofing Alliance offers the ever-expanding roofing industry the tools they need to increase efficiency and longevity in roofing practices."

"The Metal Roofing Alliance (MRA) and Metal Construction Association (MCA) are excited to be leading on-floor installation training at IRE 2024. The use of metal roofing in both residential and non-residential buildings is on the rise; the MRA has seen growth in residential metal roofing year over year for the last several years...putting metal roofing at 18% market share in 2022, second only to asphalt," says Renee Ramey, Executive

Director, Metal Roofing Alliance. "As the market continues to grow, we are seeing more and more installers interested in learning about metal roofing...the products, market and installation. In partnering with IRE for on-floor training, MRA and MCA will help answer questions, showcase the install process and help ready more installers for metal roofing."

"MCA is excited to partner with MRA in hosting the Metal Clinics at IRE," says Jeff Henry, Executive Director, Metal Construction Association. "Interest in metal roofing has soared and MCA together with MRA are proud to share our insights into proper manufacturing and installation techniques. Metal's sustainability attributes and its resiliency will continue to drive increased interest and use of metal as a primary cladding material. We look forward to an exciting 2024 show."



S-5! (booth 7320) always has an impressive — yet welcoming — exhibit. SHIELD WALL MEDIA PHOTO.

IRE continues to innovate and adapt to serve the growing needs of the construction industries, where consumer trends are visible. As the roofing industry is projected to generate \$56.7 billion in revenue in 2023, new roofing materials continue to develop, further advancing the industry.

Registration is now open for the 2024 event, with supplemental housing options available during the busy February Las Vegas season. Attendees are encouraged to plan and register in advance. ●

BACK TO THE FRONT

WHY PRINT ADVERTISING STILL WORKS IN THE CONSTRUCTION INDUSTRY

Welcome to Fall. The nights are cooling, leaves are turning, and businesses are budgeting for the coming year.

For many companies, the season includes building a marketing budget and getting proposals for advertising. While I am not an expert on all advertising, I do have a reasonable handle on print and digital advertising for Business to Business. I will mostly limit myself to the B2B side, but most of the general information and concepts included here will apply to consumer advertising as well.

There is one HUGE difference between most B2B and B2C: B2B is predominantly branding and education. Using our publications as an example, a \$250,000 roll former or finding a new supplier is not usually an impulse buy. Capital equipment and building supplies have longer buying cycles.

If a contractor needs a fastener supplier, their existing supplier either fell through on an order or raised prices. There is no way to know when you can capitalize on a competitor's mistake. To be prepared is all about branding and frequency; when the customer needs you, they need to be able to find you. They will either find you in that publication, or they need to remember your name to find you online. SEO is good and necessary, but branding means they search for you by name.

BUYER EDUCATION

Education is about distinguishing your



product so it is not seen as a commodity. Customers purchase commodities primarily on price. Sophisticated customers purchase on features and benefits. Educating consumers combines editorial and advertising functions. Editorial presents the message in a credible and accurate form. Advertising repeats the message so consumers remember. The two together create sophisticated and knowledgeable customers.

This corresponds with big-ticket B2C items. Houses, cars, or major renovations are not usually impulse purchases. Much of the common information on advertising applies more to selling T-shirts than selling a custom home.

PRINT AND DIGITAL

At Shield Wall Media, we are obviously firm believers in print media — especially in our niche. There are multiple reasons why:

1. A large portion of our audience is plain community.
2. Our audience is primarily decision makers or C-Suite level. This group is older and often prefers printed media.
3. Print is consumed in a different manner than digital. More time is spent viewing and more attention is paid to a specific item. Print readers have less tendency to bounce around.
4. Research shows that information from printed media is retained longer than information from digital media.
5. Printed magazines are physical, can easily be passed between readers and are seen multiple times.

Digital works best as a direct-response medium. In many ways, that is more suited to consumer products and an impulse buy. [I have many T-shirts that made me laugh for inappropriate reasons. I may not be able to wear them in polite company, but they have my money.]

Branding in digital is largely companies with million-dollar budgets. Because the impression is not recalled as easily, more impressions are required. To achieve that frequency level on a large platform requires an investment beyond the reach of most companies.

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How To Make Informed Decisions

Always ask *yourself* these questions:

1. What do I want to achieve with my advertising?
2. Do I think this product will reach my potential customers?
3. Will my message appeal to my prospective customers?
4. Will my audience be able to see and/or read my message in the ad?
5. Will my budget allow me the frequency required for consumers to remember my message?
6. Is the ad rate appropriate to the audience reached?

Always ask the *company* supplying the media these questions

1. Is your product opt-in (if digital) or qualified requested (if print)?
2. How many readers or subscribers do you have and how can I verify them?
 - a. Are you a registered periodical with the USPS?
 - b. What issue contains your Statement of Ownership?

SUCCESSFUL PLANNING

All successful advertising focuses on message, audience, and repetition.

Audience refers to the type of person, and how many of them receive the magazine or digital product. For B2B publications, demographics like age and sex are nearly irrelevant. You will want to know if the subscribers are applicable for your product and their role in the buying decision. Most advertising targets decision makers and influencers for obvious reasons.

Most B2B trade publications are “qualified” and “free requested” publications. For someone to be a subscriber, they must answer a few questions to say they are “qualified” and ask to receive the publication. For digital products this is an “opt-in” list. Opt in indicates someone asked to receive it but there are usually no criteria showing they are legitimate prospects.

After determining the magazine reached your audience, verifying the number of copies printed and mailed is the most important step. The circulation determines the advertising rates.

For print media, the U.S. Postal Service has a several requirements to be a “publication” and qualify for discounted postal rates. The Post Office verifies subscribers when they audit a magazine or grant it publication status. They pick subscribers

randomly from the list and confirm the address is valid and that they requested the publication.

The USPS requires that over half of the subscribers have been subscribers for less than three years. They also require an annual Statement of Ownership (SOO). These have to be submitted every year and published in the magazine. They state the ownership and the number of copies printed. The SOO is a simple way to verify the circulation of any magazine. An SOO is required for a magazine that is registered as a periodical and receives a lower postage rate. If a magazine does not publish an SOO, you should ask why.

Advertising is based on Cost Per Thousand, abbreviated as CPM. CPM is how rates are determined for both print and digital media.

For printed B2B/trade publications, CPM for a full page 4-color ad varies between \$150 and \$300 depending on the focus of the publication. The narrower the focus, the more requestors will be in your specific target audience. Rural Builder incorporates different types of construction, all parts of the building and everything from residential to agricultural. Rollforming targets metal forming for construction. Since Rollforming is more targeted, the CPM will be higher.

As an example of CPM pricing, Frame

Building News has 20,000+ requested subscribers. With a CPM of \$150 to \$300, the rate for a full page would range between \$3,000 and \$6,000 depending on the focus of the magazine. Frame Building News is exclusively about post-frame, so it’s fairly targeted and falls in the middle of that range.

By contrast Garage, Shed & Carport Builder has 8,000+ subscribers. The range for a full page would be \$1,200 to \$2,400 ... A smaller circulation results in a smaller rate.

Note that offering a black and white rate is usually a sales trick or a forgotten leftover from years ago. Years ago, some pages in a magazine were printed in black and white some pages in color. It cost more to print the color pages, so the rate was higher. Virtually all magazines today print every page in 4-color so there is no cost difference for black and white. This doesn't apply to newsprint or some small event programs.

By contrast, CPM for digital advertising varies between \$25 and \$60. An email of 15,000 then would be between \$375 and \$900. The question to ask regarding any email campaign is: “Is it opt in?” That is the equivalent of being “requested” for a print publication.

Be wary of digital pretending to be print. Print ads often do not work as digital ads. This number increases every day, but currently about 49% of digital media is consumed on phones. Even a full-page ad scaled down to 2.75” sideways and 5.5” high will be virtually unreadable. The magazines should also be reformatted to be read on a device. A PDF or flip book does not work on a phone.

Advertising is a product like any other. To be satisfied with the product, understand what you are buying and how you plan to use it. ●

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ADMIT 1

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BUILT TO LAST

RESILIENT HOUSING PROGRAMS ADD VALUE TO CONTRACTORS AND CUSTOMERS

More frequent and intense natural disasters cause billions of dollars in damage for homeowners annually. In fact, the Insurance Information Institute estimates that in the past five years, roughly one-third of all US homeowners have been impacted by severe weather. With the rise in damage comes the added expense of home repairs and temporary relocation.

To avoid these costs, many families are demanding homes built or retrofitted to better withstand extreme weather and natural disasters. Recent survey data shows 40% of homeowners, primarily in the South and West regions, have implemented home improvements for increased resiliency against severe weather. Similarly, 63% of homeowners say they are willing to spend up to \$5,000 to gain additional protections.

Resilient construction programs like FORTIFIED [fortified-home.org], administered by the Insurance Institute for Business & Home Safety (IBHS), provide contractors and other building professionals with an opportunity to meet this need while growing their businesses and strengthening their communities.

WHAT IS FORTIFIED?

Fortified is a voluntary, beyond-code construction standard that provides buildings with additional protection against severe weather. The processes and materials outlined in the standards are backed by decades of IBHS research. Fortified aims to help property owners reduce avoidable damage by requiring additional bracing, reinforcement and other steps to improve structure durability.

TOP-DOWN STANDARDS

Fortified offers standards for single-family homes, multifamily communities and commercial properties, each with three levels of protection.

FORTIFIED Roof

During a severe weather event, the roof acts as a building's first line of defense. When it fails, damage can escalate quickly as water invades a home. This is one of the most common types



When putting a roof on a new or existing home, Fortified requires sealed roof deck seams, among other requirements. PHOTOS COURTESY OF IBHS.



(LEFT) Enhanced roof deck attachment, as with ring shank nails, is a qualification for all three levels of the Fortified standard. PHOTO COURTESY OF INSURANCE FOR BUSINESS & HOME SAFETY

of property damage, but by paying attention to some minor details, it's also one of the most preventable.

Fortified Roof™ focuses on providing additional support to vulnerable areas of the roof, keeping it intact and preventing water intrusion. When putting a roof on a new or existing home, Fortified requires enhanced attachment of roof decking, sealed roof deck seams, locked down roof edges and weather-resistant attic vents.

FORTIFIED Silver

In addition to the Fortified Roof requirements, Fortified Silver focuses on reinforcing parts of the home that are more vulnerable to storm damage, including wind-rated garage doors, extra bracing at gable ends and anchoring of any attached structures. In hurricane-prone areas, Fortified also requires impact protection for windows.

FORTIFIED Gold

Fortified Gold, which is primarily seen in newly constructed

 THE NATIONAL STANDARD FOR RESILIENCE <small>A PROGRAM OF IBHS</small>	  		
	Roof	Silver	Gold
Enhanced Roof Deck Attachment	✓	✓	✓
Sealed Roof Deck	✓	✓	✓
Locked Down Roof Edges	✓	✓	✓
Impact-resistant Shingles Rated by IBHS**	✓	✓	✓
Wind & Rain-Resistant Attic Vents	✓	✓	✓
Impact Protection for Windows & Doors*	✓	✓	✓
Impact* & Pressure-Rated Garage Doors	✓	✓	✓
Chimney Bracing		✓	✓
Reinforced Soffits*		✓	✓
Anchored Attached Structures		✓	✓
Gable End Bracing		✓	✓
Pressure-rated Windows & Doors*			✓
Stronger Exterior Sheathing*			✓
Engineered Roof-to-Wall Connections			✓
Engineered Story-to-Story Connections			✓
Engineered Wall-to-Foundation Connections			✓

* Required in Hurricane Prone Areas Only ** Required for Hail Supplement

homes, provides the greatest protection from strong winds and heavy rain. It includes the requirements of Fortified Roof and Fortified Silver. On top of that, it requires an engineered continuous load path which ties the roof to the walls, each story to the one above and below and walls to the foundation, anchoring the entire structure from the top down.

Weather-Specific Standards

There is no one-size-fits-all standard when it comes to weather. Local climate significantly impacts the type of home preparations needed for that area. The Fortified standard keeps this in mind and requirements differ depending on a home's location. For example, homeowners who seek the hail supplement to a Fortified designation will need to use impact-resistant shingles, whereas owners in hurricane-prone areas will have extra wind protection, such as reinforced exterior sheathing and impact-resistant doors and windows.



Impact-resistant shingles are required for Fortified certification.

HOW THE FORTIFIED PROCESS WORKS

All Fortified standards are available at no charge on the Fortified website, fortifiedhome.org. Any contractor can follow these to provide a more storm-resistant product. To be eligible for a Fortified designation, a certified Fortified evaluator must document the construction or roofing process with photo and written evidence, which are then submitted to IBHS for evaluation. If documentation is provided and the standard has been met, IBHS issues an official Fortified designation certificate, which is valid for five years.

4 WAYS FORTIFIED BRINGS VALUE

- **Affordable protection.** The Fortified standards enhance your build quality and can help homeowners protect their property at an affordable and accessible cost. For most requirements, they allow multiple methods to achieve structural goals. This allows contractors to select from a range of materials at varying costs, keeping resilience accessible.
- **Confidence in quality.** Because Fortified designations are documented by a third-party evaluator who works independently from the contractor, customers can be confident in their home's ability to withstand a storm.
- **Reduced insurance premiums.** Many insurance companies provide discounts on homeowners insurance for Fortified homes, providing additional incentives for customers.
- **More opportunity.** Many government grants and housing programs require Fortified standards for homes built using government funds, giving contractors with Fortified certification an advantage.

HOW TO GET FORTIFIED CERTIFIED

The training process for Fortified is straightforward. Applicants must register with Fortified Wise University and complete the training for their selected certification (Roofing Contractor, Home Professional or Evaluator.) Once training is complete, applicants take the corresponding exam and must achieve a score of 85 or higher.

Qualified applicants can then submit their scores along with the necessary paperwork, including a signed Service Provider Agreement, proof of insurance and contractor's license (where required by the state) for consideration. If all required documents have been provided, the applicant will become a certified Fortified service provider.

To be listed in the Fortified service provider directory, a business must have at least one employee who has successfully completed the appropriate training, passed the exam and submitted the necessary documentation. ●



SEALANTS 101

SEALANT PERFORMANCE AND COMPATIBILITY: THE GREAT DISCONNECT

BY BEN HIXSON, CCCA, CCS

Sealants are materials used to block the penetration of liquids, gases, dust or other contaminants from one area to another by creating an adhesive barrier. Many sealants function as both a barrier and an adhesive, giving strength to sealed substrates. Sealant applications can vary greatly and the sealant products available exhibit a wide range of properties, including their base chemistry and cure mechanisms, adhesive strength, elongation, resistance to liquids and environmental stresses plus preferred application method.

Urethane and silicone sealants are two

widely used products in the commercial building market. While urethane sealants have their place in the construction industry, an argument could be made that the majority of building owners and property managers will choose the superior performance offered by neutral cured silicone sealants in lieu of the short-lived performance offered by urethane sealants for exterior joint openings when fully informed.

Water-based urethane sealant cures fully in a week and can be painted after it cures. In fact, painting over urethane is recommended because exposure to the sun's UV rays causes chalking if not

painted. Urethane sealants do not bond to polycarbonate plastics, but they do bond to most everything else. Urethane sealants resist abrasion well making them suitable for use on floors.

Alternatively, silicone sealants contain solvents and adhere tightly to glass, metal and tiles but not to wood. Although one should not paint over them, they don't degrade in sunlight. Instead, they remain flexible allowing some building movement without failing. Clean-up of silicone sealants requires solvents.

Because silicone is inorganic, it is unaffected by UV radiation and resists mold and mildew. Silicone can be applied



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at virtually any temperature and can stand up to adverse weather conditions shortly after application. There are silicones formulated for most substrates, but most important, silicone adheres to nonporous substrates better than any other sealant, making it the best choice for surfaces such as glass, metal, ceramic tile and porcelain.

Under direct UV exposure, heat oxidation can cause deterioration of urethane sealants in less than three years. The reported satisfactory performance of exposed urethane sealants is in the range of five to eight years. Few if any owners or property managers budget for and implement replacing failed joint sealant every three to eight years. The great disconnect is the short-term mindset of creating building envelope barrier systems and sealing exposed exterior joint openings with urethane sealants versus long-term performance expectations.

Compared with urethane sealants, neutral cure silicone sealants have satisfactory performance service



lives exceeding 20 years. After adequate initial testing for compatibility and documentation of successful field peel adhesion performance, sealant manufacturers offer 20-year weatherseal and adhesion warranty coverage. The coverage is to remedy defective materials and includes replacing failed sealants. The great disconnect is not including adequate specifications for sealant installers to obtain 20-year warranty coverage for exterior joint sealants.

With the extensive reliance on sealants for building envelope waterproofing and with the vastly superior service life from silicone sealants, why would the design-construction team focus on urethane? There are several performance and aesthetic reasons for past use of urethane sealants: early silicone sealants were not available in more than five colors; architects could not obtain desired colors to match cladding or to match door and window framing. Likewise, different colors weren't available for accents. Urethane sealants bond more readily to common building materials without use of primers. Early silicone sealants had objectionable staining of adjoining porous cladding and accents,

took longer to cure and collected airborne dirt. Contractors charged more to install silicone sealants, and, finally, the initial cost of urethane sealant material was one-third the cost of early neutral cure silicone sealant.

The great disconnect today is that with silicone sealant color options greatly expanded, improved adhesion, no staining of most cladding, fast cure times, competitive installation costs and price of materials approximately two times the cost of quality urethane sealants, the green building design community hasn't rapidly gravitated to requiring neutral cure silicone sealants. When sustainability is a critical design factor, exposed exterior joint sealants should be neutral cure silicone sealants or one of the other high performance, long-term, warranty coverage polymeric joint sealants. Analyzing costs associated with replacing failed exposed exterior joint sealants, the life-cycle cost advantage clearly goes to neutral cure silicone sealants even without consequential damages.

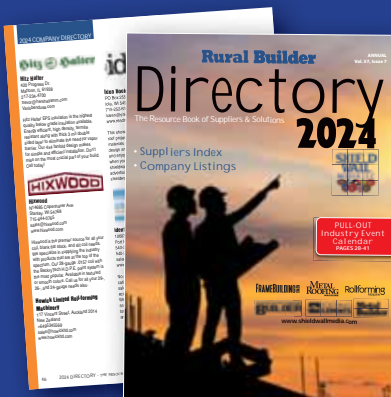
Sealant compatibility with air barriers, moisture-resistive barriers and self-adhered modified bitumen wraps and flashings is most important to long-term adhesion. Adequate adhesion can only be obtained with sealant, building wrap and flashing compatibility. Sealant selection needs to be driven by the recommendation of the substrate component manufacturer. Incompatibility issues arise when a single joint sealant is installed at all joint openings and in conjunction with all types of air barriers, moisture barriers and self-adhered modified bitumen wraps and flashings. Urethane sealants are more compatible with barriers, wraps and flashings than neutral cure silicone sealants.

Too many times we find either no sealant or incompatible sealant installed. Consequences with no sealant and an incompatible sealant are similar when it comes to water intrusion. Also, the silicone sealant solvents may be denaturing the plastic and petroleum based barriers, wraps and flashings. That deterioration may make the likelihood for objectionable moisture entry an even greater possibility. The design-build team should consider obtaining written approval for sealant use when a specific sealant is not on the barrier, wrap and flashing manufacturers' recommended sealant list. And, monitoring the sealant installation for the intended quality is necessary regardless of the sealant selection. ●

Ben Hixson formed the applied technical resource consulting company, *Hixson Consultants, Inc.* [<https://bedocs.com/>], to provide expert roofing, architectural sheet metal, glazing, wall system and waterproofing consulting services for the total building envelope. He has over 40 years of experience in roof, wall and waterproofing condition analysis, life-cycle cost analysis, budgeting, design specifications and CAD detailing management, component selection and systems designed to remedy the many causes for problems including mold.

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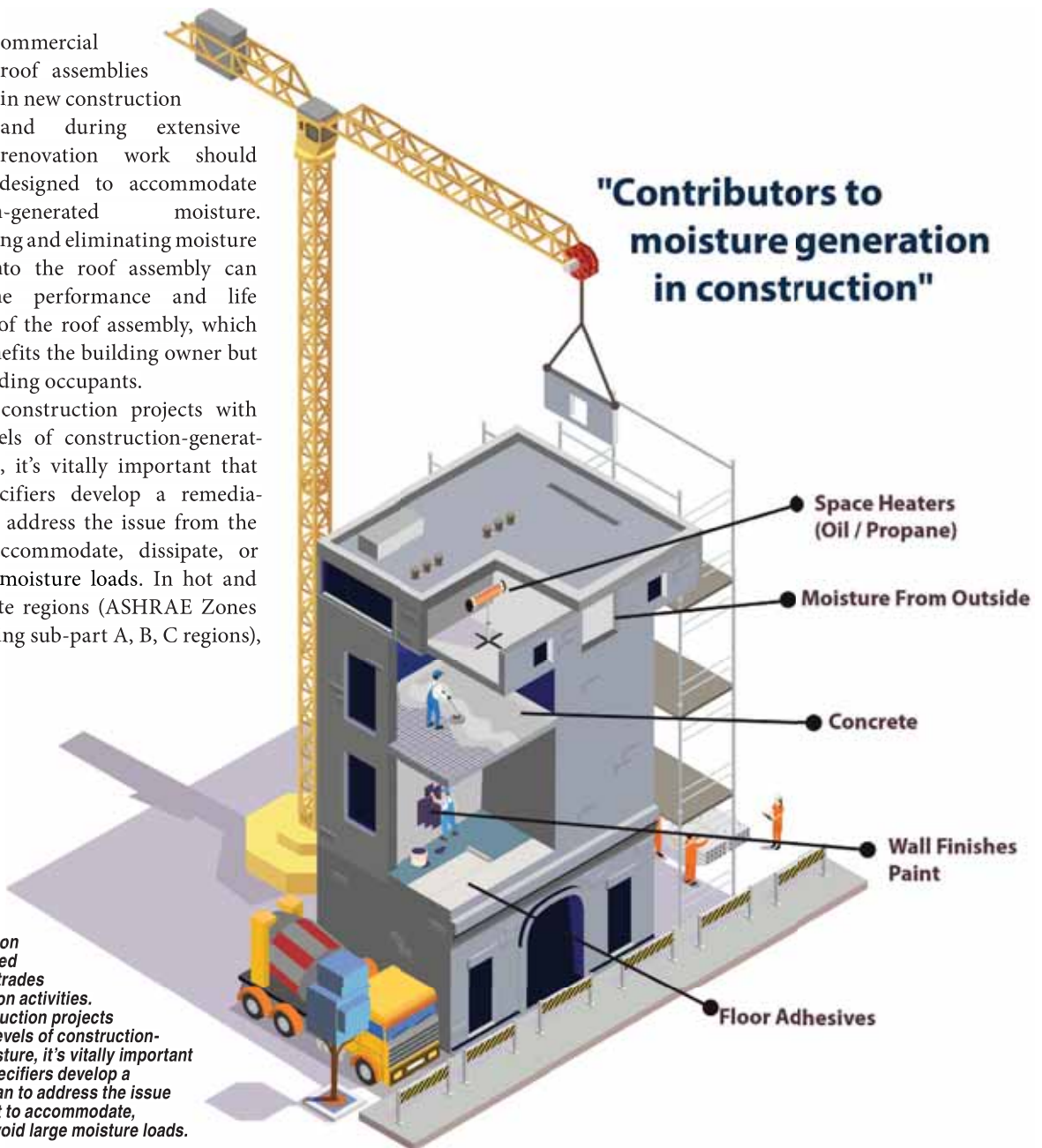
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MOISTURE ALERT

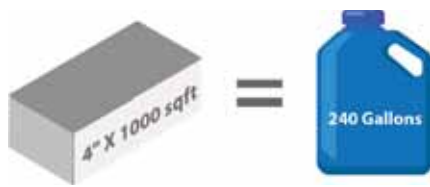
CONSTRUCTION-GENERATED MOISTURE AND ITS EFFECT ON ROOF SYSTEMS

Commercial roof assemblies in new construction and during extensive renovation work should always be designed to accommodate construction-generated moisture. Understanding and eliminating moisture intrusion into the roof assembly can improve the performance and life expectancy of the roof assembly, which not only benefits the building owner but also the building occupants.

For new construction projects with elevated levels of construction-generated moisture, it's vitally important that roofing specifiers develop a remediation plan to address the issue from the outset to accommodate, dissipate, or avoid large moisture loads. In hot and warm climate regions (ASHRAE Zones 0-3 – including sub-part A, B, C regions),



Moisture associated with construction can be generated by a variety of trades and construction activities. For new construction projects with elevated levels of construction-generated moisture, it's vitally important that roofing specifiers develop a remediation plan to address the issue from the outset to accommodate, dissipate, or avoid large moisture loads.



According to *The Manual of Low Slope Roofing Systems - 4th Edition, Griffin & Fricklas, 2006*: A four-inch-thick concrete floor slab poured in an enclosed building generates about 240 gallons water per 1,000 square feet of concrete.

construction-generated moisture may go unnoticed until musty air is detected, or mold growth is discovered. However, in colder climate regions (ASHRAE Zones 4-8 – including sub-part A, B, C regions), construction-generated moisture may first appear as water droplets inside the building, typically after the first freeze/thaw cycle, and be misinterpreted as a roof leak.

CONSTRUCTION GENERATED MOISTURE

Moisture associated with construction can be generated by a variety of trades and construction activities. According to *The Manual of Low Slope Roofing Systems - 4th Edition, Griffin & Fricklas, 2006*.

- A four-inch-thick concrete floor slab poured in an enclosed building generates about 240 gallons water per 1,000 square feet of concrete.

- Propane heaters for providing more comfortable working conditions or to help “dry” the construction also generate large quantities of moisture. In fact, every 200-pound tank of propane burned releases 30-gallons of water into the surrounding air.

- Oil-burning heaters produce 1 gallon of water for every gallon of oil burned.

Other contributors to construction-generated moisture and potential water accumulation in the roof assembly include paint, plaster, and drywall finishing.

MOISTURE MIGRATION

Construction-generated moisture can contribute to excessive levels of relative humidity inside the structure when

proper remediation measures are not taken. When the outside temperature drops, condensation can begin to form and appear on any surface with a temperature at or below the dew point, which can include the underside of skylight domes, uninsulated portions of the roof deck, roof insulation, or the underside of the roof membrane.

Warm, moisture-laden air migrating upward can infiltrate or “intrude” into the roof assembly through deck-to-wall joints, gaps around penetrations, or voids in the deck. The intruded air is then trapped within the roof assembly and cannot escape due to the air-impermeable roof cover. Condensation occurs as the air cools, and moisture collects on colder surfaces, turning to frost and ice at temperatures below freezing. The higher the level of interior relative humidity and the greater the temperature differential between the interior and the exterior of the building, the more moisture will collect.

In extreme cases, and especially with a single layer of insulation, ice build-up, due to condensation, can be identified by a “cracking” sound when walking on the roof membrane. Also, heavy ice formation along insulation joints can generate expansion forces that push laterally, causing insulation joints to widen. Condensation within the roof insulation may cause permanent damage, loss of R-value and loss of wind uplift resistance.

As the outside temperature rises and the roof assembly warms up, the frozen moisture begins to thaw, resulting in drips inside the building. The drips are not associated with rainfall or snow accumulation on the roof and are, in fact, more likely to occur on sunny days when roof surface temperatures warm to above freezing. Furthermore, the intensity of the drips is directly related to the amount of moisture that has intruded into, and condensed within, the roof assembly. Perhaps not surprisingly, the concentration of drips is more likely to be visible around the perimeter of the

roof and at deck end-laps or openings.

Typically, when this occurs, the dripping is misdiagnosed as a roof leak, leading to extensive resources searching for a leak that does not exist.

CONTROLLING CONSTRUCTION-GENERATED MOISTURE

To control construction-generated moisture during the design process, roof design professionals must identify the sources of moisture and develop a remediation plan to be implemented during construction. To reduce the probability of condensation, buildings under construction must be adequately ventilated, particularly during concrete hydration and other high moisture-related construction activities.



Propane heaters for providing more comfortable working conditions or to help “dry” the construction also generate large quantities of moisture. In fact, every 200-pound tank of propane burned releases 30-gallons of water into the surrounding air. *THE MANUAL OF LOW SLOPE ROOFING SYSTEMS - 4TH EDITION, GRIFFIN & FRICKLAS, 2006*

Commercially available high-volume ventilation systems can be especially helpful when used during construction. Some of these systems include a dehumidification function, which is essential for removing large amounts of moisture from the air. The building’s HVAC system, which is designed to control the temperature inside the finished building, is not sufficient for removing construction-generated moisture.

COLD CLIMATE DESIGN

In cold climate regions (ASHRAE Zones 5-8), the following design recommendations should be considered



Oil-burning heaters produce 1 gallon of water for every gallon of oil burned. *THE MANUAL OF LOW SLOPE ROOFING SYSTEMS - 4TH EDITION, GRIFFIN & FRICKLAS, 2006*

as a matter of general practice. These recommendations are intended to supplement the measures taken to control construction-generated moisture and include some roofing-specific recommendations.

- Always avoid using wet materials, particularly in the roof assembly, and whenever possible, avoid materials with an excessive moisture content.
- Avoid incomplete construction without at least a temporary method to enclose completed areas that are sensitive to water and moisture migration.
- Include vapor retarders in the roof assembly to prevent moisture accumulation caused by air intrusion. The vapor retarder must be positioned within the roof assembly so that its temperature is always warmer than the dew point temperature. This prevents the warm, moist air from reaching the dew point, and thereby eliminating condensation. Consult a roof design professional or the roof materials manufacturer/supplier to ensure that the proper amount of insulation (R-value) is used to keep the vapor retarder “warm.”
- Once the air or vapor barrier is installed, never penetrate that barrier.
- Install at least two layers of roofing insulation with staggered joints to help retard warm, moist airflow from the interior of a building up into the roof assembly.
- Always seal the deck-to-wall joints and gaps around roof penetrations to further limit air infiltration into the roof assembly.

EXISTING CONDITION REMEDIES

In buildings where drips frequently occur, measure the relative humidity of the interior space. If the interior humidity exceeds the outdoor humidity, a condensation problem may exist. The building should be adequately ventilated and dehumidified to remove excess moisture. Additionally, the following recommendations may help to eliminate dripping water.

Verify that the design operating temperature of the facility has not been exceeded. The warmer the air, the more moisture it can hold.

Provide air circulation using mechanical or electrical fans during the winter months to mix warmer and colder air, preventing moisture-laden air from accumulating beneath the roof deck.

Check to ensure that the deck-to-wall

joints and joints between the deck and roof penetrations have been sealed from the underside to prevent warm air intrusion from inside the building.

CONCLUSION

Buildings under construction should be adequately ventilated during concrete hydration and other high-moisture related construction activities. In cold climate areas the use of a vapor retarder should be considered as determined by a roof design professional. Consider adjusting the construction schedule and/or temporary enclosure/protection measures to control or avoid moisture intrusion and related damages. Eliminating moisture intrusion into the roof assembly during construction will improve the performance and life expectancy of the roof, which benefits the entire building industry. ●

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47 AND GOING STRONG

NORTH DAKOTA GUTTER BUSINESS CONTINUES TO THRIVE IN CHANGING INDUSTRY

In 1976, Lyle Brandt started a small gutter installation company in Fargo, North Dakota. Nearly five decades later, All New Gutter Service Inc. is now the oldest and largest seamless gutter company in the state.

The company is currently under the ownership of Mike Bullinger. Lyle and his subsequent business partner, Ron Schwartz, sold the company in 1991, with Lyle continuing to work there until his retirement.

The gutter industry has undergone many changes over the course of the company's history. The willingness to adapt is credited with its longevity. As General Manager Ray Blaha explained: "There have been a number of advancements in the materials we use to make sure we are always providing the best possible product to our customers ... we have also adapted to changing styles, designs, and trends to meet the demands of customers throughout the years."

Being in the industry for 47 years gains customers' confidence. "Our customers know us as "The Original Gutter Guys" and put their trust in us to take care of and protect their homes and businesses," Ray said.

EQUIPMENT

All New Gutter exclusively works on the jobsite. "We don't use any shop machines. It is all custom to the project and cut to length on the jobsite," Ray said.



An All New Gutter installer finishes up a residential gutter installation.
ALL NEW GUTTER SERVICE PHOTO

Their go-to for portable roll formers is Eastside Machine Co. "They are durable, they perform well, and we work closely with Eastside, so if any problems arise, they are easy to resolve," Ray said.

To keep machines in top condition, a skilled maintenance technician from Eastside Machine Co., also based in Fargo, inspects and performs routine maintenance, replacing any old or worn parts, cleaning the rollers, and checking every aspect of the machines to keep them running as they should. "Our machines are what keep us working and growing, so it's important that we take care of them!" Ray said.

Due to the weather challenges in North Dakota, trailers are not just enclosed, they are also insulated and heated. "Winters can get brutal in North Dakota, with temperatures regularly in the negative values, so our heated trailers are really the best option both for keeping our equipment and coil warm, as well as our crews," Ray explained.

FOUR POINTS OF MANAGEMENT

The success of All New Gutter to withstand good times and bad goes beyond equipment as Ray said: "Our focus on adaptability, innovation, diversifica-



Leafaway Gutters being manufactured on site with an Eastside Machine portable roll former.
ALL NEW GUTTER SERVICE PHOTO

tion, and employee development plays a big role in our ability to overcome hard times.” He outlined how each of these four points play a role:

Adaptability – When Lyle Brandt started the business, his primary customers were homeowners, and he installed gutters. Homeowners and gutter installation remain at the core of the business today, but a lot more has been added.

All New Gutter has followed the trend to offer complete gutter protection systems with a menu of options for downspouts, soffit, and fascia, along with gutter cleaning and repair services. “Our goal is to minimize customer maintenance of their gutters as much as possible,” Ray continued, “whether that means installing a gutter protection system on their existing gutters, replacing their whole gutter system, or simply cleaning out their gutters to prevent damage to their home from leaks and ice dams.”

The most popular gutter profiles are the 5-inch and 6-inch K-style gutter systems in a .032-inch-thick aluminum, available in over 15 standard colors and endless custom color options. Standard colors feature an industry-leading 70% PVDF paint finish technology.

But adaptability means satisfying a variety of needs and half-round and F-styles are also offered.

Even with gutters, trends are always changing. Currently popular in their region are dark colors. “We are seeing a lot of projects utilizing black or other similar colors for their trim and accent pieces like gutters and downspouts,” Ray noted. “The chalk and fade protection that our products offer certainly makes this possible, so customers don’t have to worry about discoloration over the years.

Innovation – With so many years of experience to rely on, a culture of innovation has arisen at All New Gutter and there is a ‘we-can-do-better’ mentality that has led to important innovations. As an affiliate of Eastside Machine Company, they were able to help introduce the Leafaway® Gutter Protection System developed by Eastside. Leafaway is a one-piece gutter protection

system that uses liquid adhesion to direct water into the gutter while keeping leaves and other debris out.

They were also pioneer users of the Superspout™ downspout introduced by EMCO Building Products. Superspout is a 3-inch square downspout that improves water flow by 50% over conventional downspouts, greatly reducing clogs while maximizing draining potential.

Diversification – All New Gutter still does business out of Fargo but in 2004 also added an office in Bismarck. Its reach, however, has expanded to cover service areas across the state of North Dakota as well as South Dakota and Western Minnesota. “We serve multiple locations and a variety of industries,” Ray said, also pointing out the diversity of its customer base: “In addition to homeowners, we also work with homebuilders, contractors, commercial businesses, and more. This makes our crews versatile and



All New Gutter pulled out all the stops for this job, installing a complete water carrying system with soffit, fascia, gutter and downspouts in the currently popular color of black. NEW GUTTER SERVICE PHOTO



This home features Leafaway Gutters manufactured and installed by All New Gutter Service. ALL NEW GUTTER SERVICE PHOTO

allows us to approach any project with expertise.”

Employee Development – Despite all the hype about at-home workers these days, with gutter installation services you can’t just ‘phone it in,’ and keeping employees motivated, educated, and showing up for work takes special attention.

Ray explained that All New Gutter has a process of orientation for new workers. “Our craftsman orientation covers everything from jobsite safety requirements like loading coil, ladder setup, fall protection, and proper lifting techniques, to trailer inspections and cleanliness,” he said. “For those with less experience, we offer a 0-4-month training program that consists of classroom training and on-the-job paid training to help them be successful in their role and grow in their career.”

Training continues after hiring. “In addition to their orientation when hired, our installers attend annual safety training to ensure they are always performing the job under the safest conditions for both themselves and our customers,” he said. “This covers many of the same safety protocols they receive during their orientation, including preventing slips, trips, and falls on the jobsite; staging safety equipment like safety cones; securing loads; driver’s safety training; and daily vehicle and trailer inspections.

Education never stops. “Our team members are always working to improve their skills and stay up to date on the latest technologies and processes to ensure we provide the best service to our customers. We conduct yearly training with our installers to ensure both safety and productivity.”

Training is done in a combination of ways, from training videos to hands-on training to factory training. Factory training is done by Eastside Machine Company. “They offer excellent training to prepare installers to use the machines safely and efficiently,” Ray said.



An All New Gutter installation featuring a complete rain carrying system in traditional white. ALL NEW GUTTER SERVICE PHOTO

In North Dakota, the weather isn’t always good for outdoor installation, but All New Gutter always finds a way to keep employees on the job. “In the climate that we work in, some businesses lay off employees in the winter months; we are able to offer stable, year-round work for our installers to keep them earning and thriving,” he said.

“We also find it important to maintain an open line of communication between installers, foremen, and management to address any concerns they might have,” he continued. “Building a rapport and positive relationship between employees and their supervisors is so valuable.”

Building that style of teamwork allows employees to climb not just a physical ladder but also the professional ladder. At All New Gutter, Ray said “the sky is the limit in terms of growth. We love to see apprentices turn into crew foremen, and crew foremen advance to positions in management and sales!” ●

RIDGEWORTH ROOFING

THE BUSINESS MODEL: HELPING PEOPLE

By Linda Schmid

YESTERDAY

In 1974 the U.S. economy was not in a good place; the energy crisis was in full effect and prices had soared. Many people would have hesitated to begin a new business venture in this situation, but that's just what Robert Petrick did.

Robert was working as an engineer at a roofing company, and he realized that he wanted more. He found a couple of partners and, with the help of the company he had been working for, they began a new company, providing sheet metal, ventilation, and architectural sheet metal services. The partnership did not last long, however, and soon Robert pivoted to the roofing business, an industry he was familiar with, and Ridgeworth Roofing was in business.

TODAY

The company provides commercial roof installation, inspections, and maintenance for buildings across the Chicagoland area. They install products from Carlisle, Johns Manville, Elevate and Garland.

Rod Petrick, Robert's son, and the current owner of Ridgeworth Roofing said, "We love to work on old commercial roof projects. Even after so many years in the business, I'm still

fascinated by these old buildings."

While they work on old roofs, the company sees many of the current trends, and energy consciousness is one of them. Reflective roofing is incorporated into Chicago's ordinances. Further, many people are having solar panels installed on their roofs. The commercial roofing business is always moving forward Rod said.

Another current trend is that the niche which seems to have the most opportunity is the public sector. The company works in commercial, industrial, and institutional markets, but the public sector has the most work now.

CHALLENGES VANQUISHED

One of the challenges Rod has seen companies struggle with in his 48 years in the industry and his time as past NRCA Chairman is business succession. Company leaders want to maintain the company they have built into the future by selling to their children or other businesses, but the transition stymies them.

"It surprises me how many people struggle with business succession. My son Ryan met a bunch of hurdles I put out there. I told him specifically, "These are the things you must do before





you can assume the role.’”

The requirements included things like taking classes and learning specific tasks, and with the company backing him, he was successful.

Another challenge that seems to be a common denominator in the industry is finding and keeping employees. Rod finds that the best employees are the people that are referred by their current people, many of whom they train into A-level employees. Perhaps the ability to secure and maintain the work force they need has something to do with the way this leader looks at employees.

“I hope that my guys feel like they are working with family,” Rod said. “I know everyone by name, kids’ names, anniversaries, and I have an open-door policy. I want everyone to know that I want them to be safe,” he continued, “they are part of my family, and I cherish them being with us.

PEOPLE ENGAGED

Rod engages his customers as well as his employees due to a philosophy instilled in him by his dad — one that he hopes he

has instilled in his son, too. “I want my customers to consider me their friend,” Rod said.

Customers call Ridgeworth because they need help with something he continued, and it is important that we are there to help them, regardless of the day or time.

“I enjoy helping people with problems, and I’m fortunate to be able to help people in need. We work with Ronald McDonald House in Chicago, and some time ago, I spearheaded a project where roofing contractors adopted 165 Ronald McDonald Houses around the country. We help people locally too. It’s important in our company that we give back.”

LESSONS LEARNED

Rod has advice for people who are new to their roles as company leaders: “First, make sure you hire the right people to help you. When you hire people with the right experience, they’ll help you grow your company.”

Second, owning a business takes a lot of time, Rod said, but you have to take time for your family and make sure that the people who work for you take time for their families, too.

THE FUTURE IS WIDE OPEN

Rod looks forward to seeing what Ryan and his team do going forward. “I’m looking forward to controlled growth, hopefully staying in the old building sector. However, as Ryan builds his own legacy, you may see him looking at different and new opportunities and options going forward.” ●

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METAL ROOFING MINUTE

DEVICE FIGHTS WIND UPLIFT ON STANDING SEAM ROOFS

Wind speeds vary widely throughout the U.S.; roofs in high wind-prone coastal areas and some mountainous regions are especially susceptible to damage. In addition to location, the surrounding terrain, the building's size and geometry also affect the impact of wind on a roof.

According to the 2021 International Building Code, Section 1609: Wind Loads, "Wind loads on every building or structure shall be determined in accordance with Chapters 26 to 30 of ASCE 7." In other words, roof design must take uplift forces into consideration, following the Minimum Design Loads and Associated Criteria for Buildings and Other Structures established by the American Society for Civil Engineers (ASCE).

Standing seam metal roofing has an advantage over some roof types because it serves as a structural covering, as opposed to merely an enclosure. Standing seam metal can be engineered to stand up to just about any force imposed by wind. Its outstanding performance in high-wind conditions is due in part to the attachment methods and to its interlocking installation; roof panels are overlapped, seams are sealed and crimped or snapped together, and attached to the roof deck, thereby reducing the ability of wind to disrupt the panels.

When engineered properly, standing seam roof systems can withstand extremely high wind forces. One of the

components that can add even more wind resistance to a standing seam metal roof is the WindBar.

The WindBar from IceBlox, Inc., which is headquartered in Lemoyne, Pennsylvania, is a wind uplift prevention system that was developed specifically for standing seam metal roofs and meets



ASCE 7-98. The system, which can be added to either new or existing standing seam metal roofs, acts as external purlins, thereby increasing the resistance to wind uplift, keeping the roof system intact and even reducing uplift noise.

HOW IT WORKS

Uplift under negative wind pressure is a common issue with many standing seam roofs located in areas that experience high wind conditions. The principle behind the WindBar is the patented WindStopper foot. A bar spans between non-penetrating clamps, which are attached to each standing seam with stainless steel, non-penetrating seam clamps.

WindStopper feet are mechanically fastened to the back of the bar and rest

against the flats of the panel. While the feet are not mechanically attached to the panels, they apply pressure to the flats, forcing them tightly against the roof structure. This pressure prevents the panels from flexing and vibrating during high wind conditions. Therefore, the system prevents seam disengagement as well as "pillowing." According to test results, wind resistance performance increases up to 300%.

The system is effective if it is designed and installed properly. According to the company: "On standing seam panels with seam spacing of less than 18", one WindStopper per panel centered is required. Panels with seam spacing of 18"-24" require 2 WindStoppers per panel spaced evenly. Panels with seam spacing of larger than 24" require 3 WindStoppers per panel spaced evenly."

Additionally, rows of bars should be installed beginning 1 foot up from the eaves (or over the end wall on an unsupported overhang). Ideally, the WindBars should be installed at evenly spaced vertical intervals, and must be installed no more than 5 feet apart.

As a "bonus" the WindBar system also doubles as an extremely heavy-duty snow and ice retention system.

CONCLUSION

Standing seam metal roof systems have a history of withstanding decades of use and extreme weather events. A wind mitigation system, if designed and installed as intended, can add to the integrity of the entire roofing system. ●

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NEW PRODUCTS

S-5I Unveils New Clamp for Riverlock Profiles

S-5I, the inventor of engineered, manufactured, metal roof attachments, introduced its new S-5-RC™ clamp for attaching a wide range of rooftop accessories to the Riverlock's metal roof profile. The two-piece design of the S-5-RC interfaces with the rib geometry and creates a mechanical interlock strong enough to support most rooftop applications with certified holding strength, protecting the roof from corrosion and preserving the metal panels' thermal cycling characteristics. Applicable for small- and large-scale industrial, commercial and institutional projects, the clamp can be installed anywhere along the seam for placement flexibility. Installers can utilize the S-5-RC with rails or pair the clamp with the S-5I PVKIT™ solar solution for streamlined rack-less and penetration-free solar mounting to save time and money. Made of high-tensile structural aluminum to match Riverlock's long-lasting performance, the S-5-RC requires no maintenance or reinspection and is warranted for the life of the roof.

New Stanley's Control-Lock™ Tape Measures

Stanley has released the new Control-Lock tape measures that feature an integrated finger brake, providing users with maximum control and protection when extending and retracting the blade. Coming in lengths of 12, 16, 25, 26, and 30 feet, they're made to reach out to 12 feet. Features listed:

- An integrated finger brake that provides improved control of the blade when measuring and retracting

Malco Products Expands Line of C-REXEX Drivers

Malco Products, SBC, one of the nation's leading solution developers and manufacturers of a variety of high-quality tools for the building trades, today launched an extension of its line of award-winning, Cleasable, Reversible Magnetic Hex Drivers: the Building Construction Series, which features deeper sockets for installing fasteners with higher head heights such as concrete anchors, pole barn screws and other common fasteners for roofing, siding and gutter applications.

The C-REXEX Building Construction Series models are available in six lengths from 2" through 12". Reversible 1/4" and 5/16" hex sockets allow for quick changes between sizes, and the Building Construction Series drivers are designed to work effectively with painted fasteners, as well as specialized polishes in the internal sockets prevents fastener sticking.

End-users can save valuable time and effort by having access to two reversible hex sizes in one driver with color-coded grooves for easy identification. These drivers are built with S2 hardened steel

Bosch: New Cordless Rotary Hammer Has Corded Power

Bosch has released a new cordless rotary hammer that it says has the power of a corded tool. The concrete rotary hammer is called the Protector 18V SDS-Max 1-5/8" Rotary Hammer (GBH18V-40C) and outperforms its corded counterpart, the Bosch 11264EVS, according to Bosch. Features listed:

Cordless Design: Delivers corded hammer performance, with 6.7 Ft.-lbs. of impact energy (EPTA) powered by a single 18V CORE18V 8 Ah or 12Ah battery, making concrete work easier.

KickBack Control: Reduces the risk of sudden tool reactions in binding conditions.

Soft Start and Controlled RPM: Adjusts the tool rpm and bpm for more controlled drilling and chiseling applications when working with softer materials like brick and tile.

Anti-Vibration System: Helps to reduce tool vibration, due to the longer air cushion built into the hammer tube and dampers added in the handle.

Lock-On/Off Button: Keeps the tool running when locked on (hammer mode only) and helps prevent accidental activation of the tool trigger when locked off.

KEVIN O’CONNOR OF THIS OLD HOUSE TO KEYNOTE SPRAYFOAM EXPO

The Spray Polyurethane Foam Alliance (SPFA; www.sprayfoam.org) has announced that Emmy-award winning host Kevin O’Connor of This Old House and Ask This Old House will keynote the upcoming SprayFoam 2024 Convention & Expo being held March 3-6 in Las Vegas, Nevada. The keynote address is part of the event’s General Session, which is scheduled for 8 a.m. on Tuesday, March 5.



O’Connor is a nationally-recognized home services industry expert. Not only has he been active with the This

Old House shows since 2003, he has also hosted shows for Roku, the DIY Network, and The History Channel, as well as Clearstory, a top-ranked podcast. O’Connor is also the author of The Best of Homes from This Old House, a book chronicling ten of the show’s finest home transformations and is a member of the editorial board of This Old House Magazine.

During his keynote address, O’Connor will lead a discussion on the essence of recruiting, hiring and retention in the construction trades. With a focus on the spray foam industry, he will address the current state of the job market and what your company can do about it, including techniques of building a brand, embracing social media, expanding your talent pool and embracing flexibility. His experience working with thousands of

contractors will inform his keynote and the strategies that work best. The keynote is open to all registered full and one-day (Tuesday) conference attendees of SprayFoam 2024 Convention and Expo and will be held at the Westgate Resort Ballroom AB, in Las Vegas, Nevada. (The Westgate is also the event’s official hotel.)

The SprayFoam 2024 Convention & Expo attracts industry leaders from across the U.S. and abroad. This year’s agenda includes: Over 40 educational break-out sessions; an exhibits hall; SPFA Professional Certification Program (PCP) courses, installer training, written exams and free field exams; and more.

OX ENGINEERED PRODUCTS INVESTS IN CAPACITY AT MANUFACTURING FACILITIES

OX Engineered Products, manufac-

ARMA Releases 2023 Q3 Report on Asphalt Roofing Product Shipments

The Asphalt Roofing Manufacturers Association (ARMA; www.asphaltroofing.org) has released its third Quarterly Product Shipment Report for the year 2023. The report covers asphalt roofing product shipments in the United States and Canada in the third quarter, as well as year-to-date shipment information and a comparison with the prior year’s data.

“The shipment report provides valuable insight into the asphalt roofing industry to trade

professionals and interested parties,” said ARMA’s Executive Vice President Reed Hitchcock. “Asphalt roofing data is relevant and meaningful to a number of industries.”

Roofing product shipment data is collected from participating manufacturers by an independent third party, Association Research Inc., and aggregated to create this report. Companies that are not members of ARMA may examine the free quarterly summaries, and those in-

eligible for ARMA membership can subscribe to the full, detailed report on the ARMA website.

The Asphalt Roofing Manufacturers Association (ARMA) is a trade association representing North America’s asphalt roofing manufacturing companies and their raw material suppliers. The association includes the majority of North American manufacturers of asphalt shingles and asphalt low slope roof membrane systems. ●

ASPHALT ROOFING PRODUCT SHIPMENTS

Shipments (squares)	Q3 2023	Q3 2022	% Change	YTD 2023	YTD 2022	% Change
Shingles— U.S. (including individual shingles)	45,717,847	39,434,939	15.9%	131,259,101	127,883,943	2.6%
BUR base, ply, and mineral cap sheets - U.S. (not including saturated felts)	1,490,014	1,819,677	-18.1%	4,673,675	5,657,202	-17.4%
Modified Bitumen - U.S.	11,390,159	9,639,903	18.2%	33,093,908	30,955,689	6.9%
Shingles - Canada (including Individual shingles)	1,901,659	3,084,236	-38.3%	7,693,984	10,540,155	-27.0%

turer of structural sheathing and thermal insulation products, has made significant investments in capacity at two of its manufacturing plants in Constantine, Michigan, and Charleston, Illinois. The capacity increases coincide with a continued rise in demand for the manufacturer's integrated structural sheathing and continuous insulation products used in both residential and commercial construction.

"Increased customer demand necessitated the initiation of a capital improvement plan to bolster our manufacturing capacity," said Todd Gluski, director of marketing at OX Engineered Products. "Construction quickly and strongly rebounded after an initial pandemic-induced dip, and we are still feeling the effects of amplified demand for our products. New production lines help us manage that."

OX added new manufacturing lines in Constantine for its ThermoPLY® product, a 3-in-1 structural sheathing that includes an air barrier and a water-resistant barrier. The additional lines triple OX's ThermoPLY production in Michigan. The organization has also invested in two automated robotic lines in Charleston, doubling the facility's manufacturing output.

HENRY® COMPANY RECEIVES NEW PATENT

Henry® Company has secured a patent for its Dirt Pick-Up Resistance (DPUR) formula, which provides its Pro-Grade® 988 Silicone White Roof Coating with greater resistance to discoloration from airborne particulates.

The United States Patent and Trademark Office recently awarded patent protection to Henry's DPUR technology. The U.S. Patent No. 11,680,171, to Zhu et al., is the first patent of many more to come for roofing and building envelope technology from Henry® Company.

Pro-Grade 988 Silicone White Roof

Coating offers a high-quality solution for roof protection. This system consists of a single-component, moisture-curing silicone rubber coating that is completely free of solvents. Even though they offer the same reflectivity as acrylic roof coatings when first installed, conventional silicone roof coatings tend to attract and retain particulates on the surface, which will diminish reflectivity with accumulation. The DPUR formula in Pro-Grade 988 Silicone White Roof Coating, however, resists particulates and is self-cleaning when exposed to water.

The patent is for a DPUR formula that includes polysiloxane, a silicone polymer that reduces dust attraction, and a surfactant, which features a self-cleaning property that is activated when exposed to rain. The surfactant, which reduces the surface tension between a liquid and a solid, a gas or another liquid, also features a detergent that is chemically tethered to the silicone to reduce leaching. The formulation makes Pro-Grade 988 Silicone White Roof Coating resistant to discoloration, which extends the life of its reflectivity and reduces the frequency of maintenance and replacement.

ATTORNEY OFFERS FREE CONTRACT AUDIT SERVICES

Adams and Reese LLP, a new Business Services partner for the Owens Corning Roofing Contractor Network (OCCN), is providing free contract audits to roofing

contractors¹. These audits evaluate current contracts to identify potential areas that may need improvement in order to help mitigate unknown risk and comply with local, state, and federal laws. The contract audits are performed by Attorney Trent Cotney, Partner & Construction Team Leader at Adams and Reese LLP.

Jon Gardner, Senior Leader of Strategic Partnerships, Learning & Development at Owens Corning, said providing contractors with access to Cotney's expertise and extensive legal resources is another example of Owens Corning's commitment to help contractors solve problems and add capabilities in virtually all aspects of their business.

ALL WEATHER INSULATED PANELS CELEBRATES PLANET PASSIONATE DAY

All Weather Insulated Panels (AWIP) celebrated its company-wide Planet Passionate Day on Friday, Sept. 15, with employee cleanup efforts at its three continuous line production plants across the United States.

Planet Passionate is AWIP's 10-year global sustainability program dedicated to driving energy and carbon out of its business operations while increasing its recycling of rainwater and waste and becoming more involved in the circular economy.

Over 100 AWIP employees gathered



More than 100 AWIP employees gathered at the company's three production facilities to conduct restorations, cleanups, and other work.

PHOTO COURTESY OF ALL WEATHER INSULATED PANELS

at the company's continuous line production facilities in Vacaville, California, Little Rock, Arkansas, and East Stroudsburg, Pennsylvania, to conduct restoration efforts including park and highway cleanups and other volunteer work. Additionally, AWIP staff in Pittsburgh joined the Pittsburgh Parks Conservancy for volunteer work at Highland Park.

AWIP's Planet Passionate Communities initiative empowers employees to volunteer their time and energy toward park, beach and river cleanups, school recycling programs and tree planting. The company also participates in the U.S. Department of Energy Solar Decathlon.

ROOFING ALLIANCE NEWS: 2024 Student Competition Teams Announced

The Roofing Alliance has announced the launch of its 10th Anniversary Construction Management Student Competition. This event will take place Feb. 7, 2024, during the International Roofing Expo® in Las Vegas. The Roofing Alliance [roofingalliance.net] will be announcing finalists in January 2024.

This hallmark event exposes students to roofing as a career choice and provides a valuable opportunity to network and connect with fellow students, faculty and Roofing Alliance members.

Construction management universities have expressed their intent to compete in the 2024 competition. This year's competition is the roof of the prestigious Formula 1 Paddock Building in Las Vegas. Roofed by Commercial Roofers of Las Vegas, this complex project will challenge the following 10 teams, including three new schools who are first-time participants.

The 10 construction management schools competing are:

- Auburn University, Auburn, AL – Team mentor is Paige Harvill, Nations

Roof, Mobile, Alabama

- Bradley University, Peoria, IL – Team mentor is Doug Duncan, Nations Roof, Villa Park, Illinois

- California Polytechnic State University, San Luis Obispo, CA – Team mentor is Rudy Gutierrez, Shell Roofing Solutions, Chino, California

- Clemson University, Clemson, SC – Team mentor is Will Fort, Bone Dry Roofing, North Charleston, South Carolina

- Colorado State University, Fort Collins, CO – Team mentor is Kent Nelson, Front Range Roofing Systems LLC, Greeley, Colorado

- Illinois State University, Normal, IL (First-time participant) – Team mentor is CJ Martin, Showalter Roofing Services, Naperville, Illinois

- Texas A&M University, College Station, TX – Team mentor is Kyle Cahill, King of Texas Roofing Company, Grand Prairie, Texas

- University of Arkansas at Little Rock, Little Rock, AR (First-time participant) – Team Mentor is David Workman, RoofConnect, Sheridan, Arkansas

- University of Florida, Gainesville, FL – Team mentor is Caleb Stauss, Big D Roofing, Ocala, Florida

- University of North Florida, Jacksonville, FL (First-time participant) – Team mentor is Marshall Hall, Childers Roofing & Sheet Metal – A Tecta America Company LLC, Jacksonville, Florida.

Finalist teams will be invited to attend the Roofing Alliance's Welcome Reception, tour the F1 Paddock Building and attend NRCA's Industry Awards Ceremony and Cocktail Reception where winning teams will be recognized on stage.

Roofing Alliance Offers Matching Scholarship Donation Program

The Roofing Alliance [https://roofingalliance.net/] believes that

education is the cornerstone of growth and is committed to education, training and providing scholarships to deserving students to pursue their academic dreams, regardless of financial status. To address this challenge, the Roofing Alliance has established a Matching Scholarship Donation Program to benefit its Melvin Kruger Endowed Scholarship Program. The campaign goal is to raise \$400,000 to fulfil the overall goal of a \$2 million endowment that will benefit the next generation of roofing industry professionals.

The Roofing Alliance has received generous contributions from individuals and organizations who share their vision to empower promising students who demonstrate exceptional academic achievement, leadership potential and a strong commitment to their communities, and now it's time to take the program to the next level.

The Roofing Alliance Melvin Kruger Endowed Scholarship Program offers three scholarship opportunities, including an accredited post-secondary institution scholarship, career technical education scholarship and diversity scholarship. All categories are open to employees of roofing industry companies, their spouses, and their dependent children, as well as construction management students enrolled in undergraduate level or students enrolled in CTE programs or schools (regardless of industry affiliation).

"The Roofing Alliance kindly requests you consider matching our scholarship fund by donating today," states Greg Bloom, 2023-24 Roofing Alliance president and Vice President-National & Strategic Accounts for Beacon Building Products. "Your support will help shape the future of our profession and impact the lives of talented students who are eager to learn about the roofing industry and make a difference in their communities and beyond." ●

January

Jan 17-19

Chicago Roofing Show, Drury Lane Conference Center, Oakbrook Terrace. www.crca.org

Jan 24-25

Garage, Shed, Carport Builder Show, Knoxville Convention Center, Knoxville, Tennessee. <https://garageshedcarportbuilder.com/show-registration/>

Jan 29-31

Metal Construction Association (MCA) Winter Meeting, Scottsdale Plaza Resort & Villas, Scottsdale, Arizona. metalconstruction.org

February

Feb 6-8

International Roofing Expo (IRE), Las Vegas Convention Center, Las Vegas, Nevada. www.theroofingexpo.com

Feb 27-29

International Builders Show (IBS), Las Vegas Convention Center, Las Vegas, Nevada. www.buildersshow.com

March

March 3-6

SprayFoam 2024 Convention & Expo, Westgate Resort, Las Vegas, Nevada. www.sprayfoam.org/sprayfoam24

March 6-8

Frame Building Expo (FBE), Iowa Events Center, Des Moines, Iowa. www.nfba.org

March 12-14

North East Roofing Contractors Association (NERCA) Annual Convention & Trade Show, Encore Boston Harbor, Everett, Massachusetts. nerca.org

April

April 16-17

Roofing Day in D.C., Washington, D.C. www.nrca.net

April 24-26

Metal Building Contractors & Erectors Association (MBCEA) Annual Conference, Rancho Bernardo Inn, San Diego, California. mbcea.org

June

June 5-7

Florida Roofing & Sheet Metal Expo, Gaylord Palms Convention Center, Kissimmee, Florida. www.floridarooft.com

June 5-8

AIA Conference on Architecture 2024, Walter E. Washington Convention Center, Washington, D.C. conferenceonarchitecture.com

June 11-12

Metal Construction Association (MCA) Summer Meeting, Hilton Rosemont/Chicago. metalconstruction.org

June 19-20

Pacific Coast Builders Conference (PCBC), Anaheim Convention Center, Anaheim, California. pcbc.com

June 19-20

Post-Frame Builder Show, Branson Convention Center, Branson, Missouri. framebuildingnews.com/postframe-builder-show-registration/

September

Sept 18-19

Construction Rollforming Show, DeVos Place, Grand Rapids, Michigan. constructionrollformingshow.com

Sept 29-Oct 1

Western Roofing Expo Convention & Trade Show (WRE), Paris Las Vegas Hotel & Casino, Las Vegas, Nevada. www.westernroofingexpo.com

October

Oct 9-11

METALCON, Atlanta Convention Center, Atlanta, Georgia. www.metalcon.com

●
Before making travel arrangements, check with the show producer to confirm there have been no changes to event dates, venue, or show hours. To have events included here, contact Karen Knapstein, 715.513.6767, karen@shieldwallmedia.com.

COMMERCIAL UAV EXPO 2023 REPORTS CONTINUED GROWTH

Commercial drone professionals gathered for Commercial UAV Expo2023 [www.expouav.com/], held September 5-7, 2023, at Caesars Forum in Las Vegas. The ninth annual event hosted 206 exhibitors from 22 countries and 3,449 verified professionals from all 50 U.S. states and 54 countries out of 4,008 registrants.

“Year after year the turnout has been tremendous and continues to grow,” said Lee Corkhill, Group Event Director at Diversified Communications, organizer of Commercial UAV Expo. “Commercial UAV Expo has proven to be the opportunity of the year for anyone who needs to keep up with commercial UAS technology, trends, operating standards and increasingly, workforce development.”

Special features of the 2023 event included numerous networking events, an at-capacity University Roundtable, vendor-delivered exhibitor showcases, a new two-part Advanced Airspace Summit and the DRONERESPONDERS Public Safety Summit, which featured two full days of programming for drone operators and program managers across law enforcement, fire, search & rescue, and other emergency services.

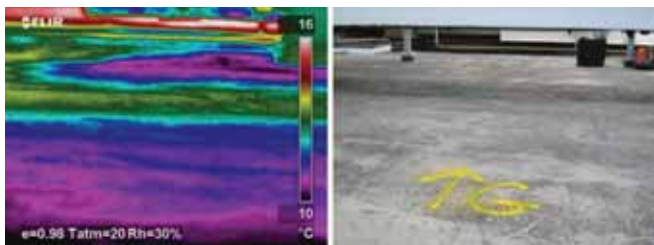
The next edition of Commercial UAV Expo takes place September 3-5, 2024 at Caesars Forum in Las Vegas. ●

FINDING MOISTURE

USING A THERMAL IMAGING CAMERA TO LOCATE MOISTURE IN A COMMERCIAL FLAT ROOF

By *IKO Commercial*

Thermal imaging cameras can create detailed maps of commercial low-slope roofs, showing where excess moisture is trapped, where the source of a leak may be, or where there is soaked or compromised insulation. Roofing professionals scan the roof, taking images to compile into a composite map, or they take an aerial image of the whole roof. These thermal images narrow the search for water intrusion, without damaging or puncturing the roof, saving time and pinpointing areas for repair.



PHOTOS COURTESY OF IKO COMMERCIAL

Thermal imaging cameras capture infrared radiation, a part of the electromagnetic spectrum that is not visible to humans. Infrared light can be used as a way to measure the heat radiated by an object. Also, because thermal cameras completely ignore the visible light, their heat readings aren't obscured by solid objects, like walls or roof membranes.

The basic principle behind the technology is that moisture adds thermal mass to a roofing material, which makes it hold onto heat longer than the dry material next to it. Under the right conditions, the thermal camera captures that heat the way normal cameras capture visible light, creating an image that shows the extent of moisture problems within the roofing system.

Thermal imaging is an essential element in the predictive maintenance of a multimillion-dollar roof asset. It is an excellent means to illustrate moisture infiltration and migration in the field of a roof and can aid in planning for life cycle bud-

gets and provision for remediation. Thermal imaging can identify good parts of a roof and result in long-term conservation. Utilizing this technology can help prevent water destruction before a leak becomes serious and therefore allows owners to be proactive in stopping collateral damage to the building interior. It is another resource to evaluate the overall health of the roof without random or destructive testing.

There is a lot to learn about thermal imaging to ensure you get the full benefit from it. We'll cover what you need to know in this guide.

WHY THERMOGRAPHIC CAMERAS ARE IMPORTANT FOR ROOFING PROFESSIONALS

Before thermographic cameras were available, roofing professionals used different methods to find leaks and condensation on flat commercial roofs. These methods, such as using dielectric capacitance meters and nuclear density gauges, only allowed for spot measurements and also possibly involved taking sacrificial samples of the roof. Testing an entire roof with these technologies was time-consuming, intrusive and expensive guesswork. In contrast, thermographic imaging is quite fast and relatively inexpensive.



Thermographic imaging offers the building owner significantly more information about exactly where moisture is hidden, even which specific layer of the roof the moisture is on and which areas of the roof are still dry and functioning. This allows owners to save a significant amount on their investment and replace only what is wet, saving money by minimizing tear-offs.

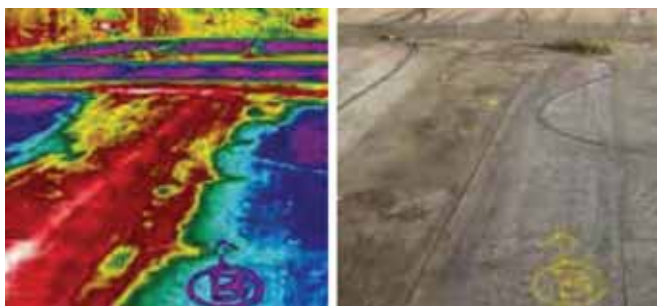
This additional information that thermographic imaging offers also makes it an excellent choice for property manage-

ment companies or large corporations where many people are involved in the decision-making, for several reasons:

- Thermographic imaging produces maps that can be included in reports about the roof's status. With interpretation from a certified infrared professional, these maps can be easy to reference, understand and used to start action outlines.
- These maps can also help plan your budget and estimate the costs of roof repair.
- Facilities managers can use the maps to find leaks and other insidious and dangerous issues, such as formation of mold or moisture erosion of the roof deck's structural integrity. Long-term exposure to moisture can cause some metal decks to rust and weaken.
- Insurance companies may take thermal maps into account when assessing real-time conditions of the building and determining rates. Some roof manufacturers may require thermal imaging to maintain warranties or guarantees. Potential buyers are highly likely to require this type of roof assessment.

HOW A THERMAL IMAGING CAMERA WORKS

Heat gives off infrared light. Thermal cameras capture the infrared light and take a picture of that light, the same way your smart phone's camera takes a picture of visible light.

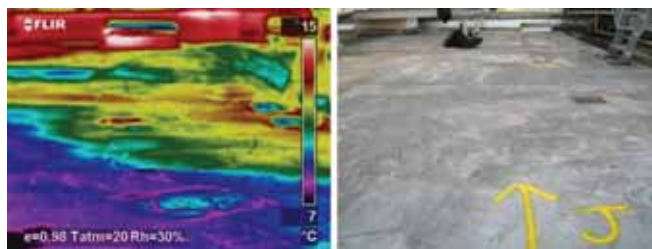


The more heat in an area, the brighter that area appears in the resulting image. Though thermal cameras produce images in black and white, thermographers often use computer software to add colors to the images to make the subtle differences in temperature more pronounced.

Thermography has many applications outside of the roofing world. In particular, it's used by firefighters to find lingering flames, and in night vision instruments to find people and animals. It is also used to map blood flow in humans to help diagnose cancer and other conditions.

HOW THERMAL IMAGING ROOF INSPECTIONS FIND MOISTURE

When using thermographic cameras to find moisture on roofs, certified thermographic professionals take advantage of the fact that water adds thermal mass to objects. Wet roofing insulation soaks up more heat from the sun during the day. At



night, it releases this heat more slowly, appearing warmer in the thermal imaging.

The temperature difference between the wet roofing material and the dry may only be 2 to 4 degrees; so a thermal imaging camera used for this purpose must be very sensitive. There are also many elements on a roof that can appear warmer without being wet, such as HVAC equipment and wet flat-roof drains. A certified infrared professional is needed to determine where these warm elements are before the test and to ensure that the final images are interpreted properly. Reflective roofing materials may also appear to be wet on the thermal image; so it's also necessary for your infrared professional to know precisely what materials have been used in the roof's construction.

Further, because a thermal imaging camera detects the heat from excess moisture, the results of the imaging must be confirmed. Usually, this is done with a nonpenetrating moisture meter.

This tool is a probe that finds moisture in the roof without cutting into the membrane. Checking an entire commercial roof with this tool isn't feasible because it would be very time-consuming. Instead, performing spot checks to confirm the findings of a thermal imaging scan can help prevent unnecessary replacement of roofing materials.



WHEN CAN A THERMAL IMAGING SCAN BE PERFORMED ON A ROOF?

An infrared professional must wait for just the right conditions to scan the roof. Depending on the climate and current weather conditions, there are two options a thermographer may employ: a hot scan and a cold scan.

For a hot scan, outside temperatures must be above 10 degrees C (50 degrees F) and sunny. Without sufficient heat, or with too much cloud cover, the roof will not absorb enough heat during the day to show clear results on the scan. This heat absorption is called "solar loading."

Additionally, it is not recommended to scan after a recent

rain. If the roof is wet from rain, it will be challenging or impossible to tell if the moisture revealed on the scan is from the rain or from a leak. The same principle holds for dew. If the dew point is reached, and condensation forms on the outside of the roof, it will be hard to tell the dew from internal condensation.

As long as it is a warm, dry day, the scan can be performed in the early evening. As temperatures drop at night, the roof will begin to unload its heat; but the soaked areas will hold their heat longer, so they will appear brighter on the scan. The scan must be performed quickly. Depending on the rate of temperature change, even the wet areas of the roof can quickly lose the heat that the scan detects. Ideally, the scan will be completed before this happens; but, if not, it must be resumed again another night.

In cold climates, achieving these warm and dry conditions may not be possible. Instead, building owners in these areas can perform cold scans when the temperature is 10 degrees C (50 degrees F) or less. Instead of relying on the sun for solar loading, this method relies on the internal heat of the building to warm up the roof. It may be necessary to increase the temperature inside the building for a short period of time to make this difference more dramatic.

No matter your climate, an experienced thermographer can guide you to help choose the ideal conditions.

THERMAL CAMERAS FOR COMMERCIAL ROOFING

There are many applications for thermal imaging, and so there are many different types of cameras available on the market. For commercial roofing, the ideal thermal camera should be highly heat-sensitive and capable of detecting a single degree difference. It's also best if the camera measures midwave arrays (3-5 micrometres) over longwave arrays (8 micrometres and more), as these waves are less likely to be distorted by any reflective materials on the roof or its insulation.

Also, a wide-angle lens and high spatial resolution are both important, so that the images show not just the moisture, but enough of the roof that roofing professionals can use them as a



guide to find the exact location of the moisture.

HOW ROOFING MATERIAL AFFECTS THERMOGRAPHIC SCANS

Thermal imaging technology is an incredibly useful tool, but it can only be used on certain commercial low-slope (flat) roof types, under specific weather conditions, and at specific times. Built-up roofing systems and Heat welded membrane systems are usually ideal for infrared roof moisture scans. However, not all commercial roofing materials are ideal for thermographic scans. In fact, certain materials and roof systems make it next to impossible for infrared scanning to be useful.

Commercial roof systems and materials that are incompatible with most infrared roof moisture scan methods include:

- Roofs with concrete decks, especially lightweight insulating concrete with entrained moisture.
- Inverted or protected roof membrane assemblies.
- Certain insulation types, including foam glass and closed cell foam, such as polyurethane.
- Vegetative roofs.
- Heavily ballasted roofs.
- Metal roofs, especially those with reflective coatings.
- White roofs or those with foil-faced insulation assemblies, which are very challenging to scanners.

Any other “cold” roof assembly will make infrared roof moisture scans challenging. These roof types have insulation below the deck and a layer of ventilation that releases heat from under the metal. The only method that can capture moisture in the insulation of these roofs is the “under the roof” method we discuss later in this article.

Roof systems and materials that make infrared roof moisture scans more challenging, but not impossible, include:

- Foil-faced insulation.
- PMA roofs – Protected Membrane Assemblies layer the insulation above the waterproofing membrane, as opposed to conventional roof systems.
- Roof systems that are white or lightly coloured in order to reflect heat.

Other elements of the roof or building that can affect the thermal scan include:

- Ponding on the surface of the roof.
- A great deal of ballast on the roof.
- Heat-producing equipment beneath the roof. (This equipment can simply be turned off a few hours before the scan.)
- Previous repair jobs if the material used was different than the material on the rest of the roof.

CONDUCTING THE SCAN

There are four methods for conducting thermal scans of roofs.

1. Under the Roof Method

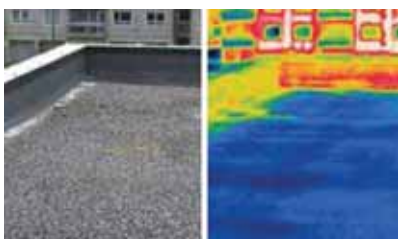
This scan is performed from inside of the building. First, you have to move obstructions out of the line of sight to the roof, including ceiling panels. This can be very labour-intensive, and so this method is rarely used unless no other option is available. This is the only method you can use for metal roofs.

Once the ceiling material has been removed, you simply point and shoot the thermal camera at the roof. The limited angle of view of this method means you'll need to take multiple images and record their positions under the roof to find any revealed moisture later. Further, as your images don't include roof landmarks, it's hard for roofing professionals to use these images to guide their repair efforts when they are on top of the roof.



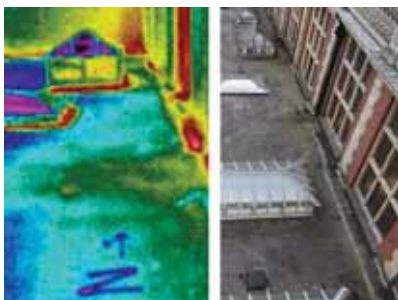
2. On-Roof Method

This scan method involves taking images while standing on top of the roof. Often with this method, the infrared professionals will mark any areas of moisture with paint so that it is easier to find them again later.



3. Elevated Vantage Point Method

Taking thermographic images from an elevated position can make them easier to understand later as they will capture more of the roof's surface, including any features that can be used as landmarks to guide the repair efforts. It's a common mistake for thermographers to take pictures too close to the wet areas, and this method helps prevent that.



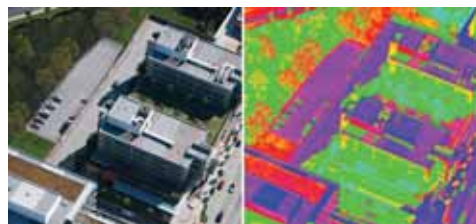
4. Aerial Method

Taking thermal footage from an aircraft or drone has many advantages. Using this method, the roofer can create a whole map of a roof, even a large one. With a high-resolution thermal camera, these maps can be very detailed. However, a very

powerful camera is necessary, as the further you get from the roof's surface, the more the heat dissipates, making readings more challenging.

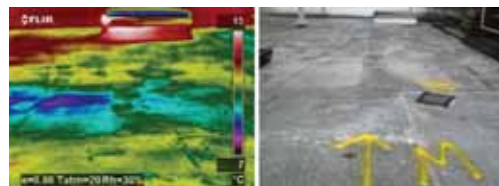
Aerial thermal roof measurements may be the only option for roofs that are inaccessible, dangerous or very large. From the roofer's perspective, an aerial scan is convenient as they can do multiple roofs per night and don't have to carry around their equipment. While previously this type of scanning would have been quite costly, drone technology has made it more accessible.

Before any of these scans are conducted, you or your thermal imaging professional should examine the roof for access points, sources of heat, flashing and penetration details, and any safety hazards. This will help the thermal professional to better interpret the final results and to stay safe while performing the scan.



AFTER THE SCAN

After the thermal imaging is produced, you will need both a professional to interpret the results and a roofer to perform verification, find the exact source of any leaks and complete any necessary repairs.



WHAT ARE THE BENEFITS OF THERMAL IMAGING ON COMMERCIAL ROOFS?

Building owners will benefit from regular thermal imaging roof inspections even if their roofs currently appear to function normally. Establishing a baseline thermal signature can aid in long-term maintenance planning and budgeting. Imaging can provide input into building heat/cooling projections and planning for long-term thermal differentials and loading. Conservationists can identify performing parts of a roof and restore R-values of insulations to original conditions.

Also, when done well, infrared roof moisture scans can detect very minor moisture problems. This will allow building owners to address these problems before they have a chance to become serious. A leak in a roof may not immediately enter into the building below. Instead, the insulation may soak up the water, becoming ineffective at insulating. It may also damage other layers of the roof by spreading the moisture. ●

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From left – Terracotta, Mocha, Auburn, Jade. Courtesy of ProVia

PROVIA BARREL TILE METAL ROOFING

ProVia has added Barrel Tile Metal Roofing to its roofing lineup. Along with metal Slate and Shake styles, the addition of Barrel Tile provides more options for building professionals.

The metal product has the look of authentic Spanish clay tile and the strength, longevity, and performance of steel. The 26-gauge metal roofing system is galvanized on both sides and fortified with a GalvaTec™ coating that protects against mold, mildew, and harsh UV rays. It's engineered to withstand 130-mph winds and has a Class 4 impact rating and Class A fire rating. It's resistant to damage from hail and wind-borne debris and has a 50+ year lifespan and backed by a Limited Lifetime Warranty with unlimited transfers

The cascading barrel profile is available in the colors: Terracotta, Mocha, Auburn, and Jade. A Kynar™ 500 ceramic pigmented finish provides a low-sheen, matte appearance, and the resin-based topcoat protects the surface from dirt, mildew, and algae stains.

www.ProVia.com

ROOF HATCH SAFETY RAIL

SafePro Safety Products is helping building owners create compliant rooftop access by introducing its updated Roof Hatch Safety Rail. SafePro's flagship product is a leading passive fall protection solution that has reduced packaging dimensions and made one-worker installation possible. Featuring a four-sided design and self-closing gate, the Roof Hatch Safety Rail has patented geometry that incorporates a two-rung ladder extension. With one product, building owners achieve compliance with fall protection and fixed ladder standards. The Roof Hatch Safety Rail is available in universal and common sizes. Custom configurations are also available.



When selecting a passive safety solution, many contractors default to a simple guardrail system. In doing so, they often

overlook the need for a self-closing gate that meets load requirements. Additionally, fixed ladder standards require a 42" extension to aid worker access and egress. The SafePro Roof Hatch Safety Rail was designed to address all these concerns.

www.safeprosafety.com



WERNER STEP LADDER UPGRADES

Werner has introduced two new ladder innovations: LOCKTOP™ ladder tops for Werner fiberglass step ladders and a LOCK-IN™ Tool Bag. Based on customer insights and recent survey data, users believe it is important for each tool to have a designated storage space on the ladder.

Developed with commercial contractors and specialty trades in mind, the Werner LOCKTOP ladder tops are incorporated into the NXT, 6200, and 6300 series of Fiberglass Step Ladders. The NXT ladders have enhanced tops that include storage compartments and inserts for a wide variety of professionals' most used tools. The center insert was specially designed to hold impact drivers. The new ladder tops also come with carabiner holes to tether tools to the ladder top, reducing the potential of dropping equipment.

LOCK-IN™ Tool Bag

Designed for those professionals who want access to a whole assortment of tools at their fingertips, the Werner Model ACBAG15 LOCK-IN Tool Bag provides maximum access and flexibility for the way contractors work. The patented LOCK-IN technology easily locks into the newly updated LOCKTOP and is compatible with the Werner Fiberglass Step Ladder LOCKTOPS going back over 10 years.



The new tool bag features a shoulder strap to ensure safety while allowing for three points of contact while climbing. It is designed with water resistant material for harsh conditions on the jobsite and the interior and exterior pockets include Velcro closure for additional tools or personal item storage. Additional highlights, include a removable divider for precise tool or fitting organization, a tool storage clip for expanded storage outside the bag, and a durable anti-slip plastic bottom.

www.wernerladder.com



BITEC DURAPLAN ECOSSET GREEN

Bitec's DuraPlan™ EcoSet Green adhesive is believed to be the roofing industry's first ultra-low-solvent adhesive designed specifically for cold-process APP modified bitumen roof systems with slopes up to 3:12. Its eco-friendly formula is very low odor with less than 25 g/L VOCs, and can be used to construct single or multiple plies of Bitec-approved base sheets and cap sheets or as a flood coat in cold-process applications.

This moisture-cured, asphalt-free adhesive is ideally suited to schools, hospitals, and other odor-sensitive projects requiring cold application of a long-lasting, durable APP roof system. Its ultra-low-solvent formulation helps reduce the overall carbon footprint of the roofing assembly.

Joel Shealey, vice president of Bitec, Inc. reports, "DuraPlan is a contractor-friendly product that greatly minimizes the odors associated with high-solvent products while maintaining the adhesive performance required for a long-lasting APP roof assembly."

<https://bi-tec.com>

DURO-LAST EV 80 MIL AND DURO-LAST EV FLEECE MEMBRANES

Duro-Last has announced the expansion of its EV membrane solutions with the addition of Duro-Last EV 80 mil and Duro-Last EV Fleece. Duro-Last EV is a Ketone Ethylene Ester (KEE) containing membrane utilizing Elvaloy™ from Dow. Offering superior flexibility and weldability in low temperatures, Duro-



Last EV is available in 50, 60 and now 80 mil thickness options.

Further expanding EV membrane options, Duro-Last EV Fleece combines high-quality fleece material on the underside of the membrane with the proven performance of the Duro-Last EV roofing membrane. Compatible with a wide variety of substrates, Duro-Last EV Fleece is an ideal solution for adhered and mechanically fastened low-slope roofing projects requiring a long lasting, energy efficient membrane. Duro-Last EV Fleece is available in 60 and 80 mil thicknesses.

www.duro-last.com

EVEREST SYSTEMS POLYUREA COATING

Everest Systems recently launched EverMax Polyurea, a durable and flexible coating for commercial roofing applications. This polyurea coating is designed for low shrinkage, extreme flexibility, and has exceptional resistance to mechanical damage.

As a major component in Everest's EverMax Roofing System, EverMax Polyurea raises the performance of the system to a high-impact solution for areas that experience extreme weather events. It has a unique combination of very high tensile strength and exceptional flexibility. The product is well suited to resist hail impact and minimize the need for costly insurance claims, making the system a cost-effective and smart solution for the building owner. The restoration process with EverMax is ideal with minimal downtime for the applicator. Along with durability, flexibility and cost effectiveness, EverMax is a sustainable and environmentally mindful system saving existing membranes from otherwise being removed and replaced. It's a great long-term solution for existing, aged commercial roofs in harsh environments.



The EverMax System consists of a base coat of EverMax Polyurea and a variety of compatible top coats offered by Everest. Everest's Polyurethane Spray Foam is an optional product that can be incorporated. This system can be applied directly over existing membrane after proper surface preparation.

everestsystemsco.com ●

Get Free Business Exposure Here!

We publish a Project of the Month in each edition of our magazines to promote best design and construction practices. We have received feedback from readers that it's one of their favorite features in our magazines.

If you're a roofer or contractor, you can receive **FREE NATIONAL EXPOSURE** for your business (free PR!) by sending roof details, a component list, and a brief description. The component list should identify manufacturers and models so we can give them proper credit, too!

The general description can include details about what the customer wanted, special elements, any other features that make the project noteworthy.

These editorial placements are absolutely free!

WHAT WE NEED:

- Component List
- Brief Description
- Three to five attractive high resolution images (at least one must be the entire roof).



COURTESY OF BECKERS GROUP

Submission is not a guarantee of publication. We reserve the right to edit content.

If you have any questions about the Project of the Month, contact:

Karen Knapstein • karen@shieldwallmedia.com • 715-513-6767

GIVING BACK

ROOFPRO, HABITAT FOR HUMANITY, OWENS CORNING
REPLACE ROOF FOR U.S. ARMY VETERAN



PHOTOS COURTESY OF ROOFPRO, SEVERN, MARYLAND.

Severn, Maryland-based RoofPRO, an Owens Corning Platinum Preferred Contractor, owned by Tim Taylor, donated the labor to replace US Army Veteran Wordell Corbin's badly deteriorated roof. Owens Corning provided the essential components to ensure a durable and reliable roof for Corbin's home as part of the Roof Deployment Project.

Tim has a strong personal connection with Habitat for Humanity. During his time in middle school, life was a challenge as the second of eight children in a family of ten. They all squeezed into a cramped 3-bedroom, 1.5-bath townhouse in an area that had become infested with crime, gangs, violence, and drugs. A family friend introduced Tim's parents to Habitat for Humanity. Through the support of H4H and the generosity of many churches and volunteers, the family was blessed with a modest 5-bedroom, single-family home, which gave them a safe haven from the deteriorating neighborhood they had been living in.

The family's journey to their new home involved numerous sweat-equity hours, as they actively participated in other Habitat for Humanity projects before work on theirs began. Tim recalls, "Working together during the construction of our home was an immensely fulfilling experience. It was truly heartwarming to witness the positive impact on others' lives as we all contributed our time and effort." Throughout the construction process, skilled professionals handled specific trades, while other tasks were performed by volunteers under the professionals' guidance.

"Reflecting on this life-changing experience, I am filled with

awe and gratitude for the seeds of kindness sown by Habitat for Humanity, their partnering churches and volunteers," says Tim. "Their support continues to bear fruit in my life, inspiring me to pay it forward whenever possible. This profound journey has taught me the significance of compassion, community, and the immense power of helping one another."

Which brings us to the roof replacement, which was completed in August. Wordell Corbin, age 77, is a retired mechanic for the State of Maryland and retired school bus contractor for Somerset County. He's known for wearing his heart on his sleeve and will lend a helping hand to anyone.

He's a U.S. Army veteran who served from June 1964-1970. From March 1968 to June 1969, he served in Vietnam until June 1969, when he returned to the States and spent a few days at Ft. Meade, where he was treated for an infection on his leg. He then returned to Ft. Eustis for a year, after which he left the military. "If I could do it all over again," Wordell says, "I would



PROJECT OVERVIEW

OWENS CORNING:

- Trudefinition Duration Shingles, Brownwood
- Proedge Hip & Ridge Algae Resistant, Brownwood
- Proarmor Synthetic Roof Underlayment
- Venturesure 12" X 4' Strip Weather Protector
- Weatherlock Mat • Starter Strip Plus

FASTENERS:

- Duofast Staples, 5/16"
- S&W 3" Electro-Galvanized Roof Nail
- Coil Nail ABC 1-1/4" EG

SEALANT:

- Vulkem #116 Caulk Black

VENTILATION:

- Air Vent SLA Slant Back Aluminum Black

DRIP EDGE & FLASHING:

- Berger C4-1/2 Drip Edge .019 Aluminum White
- Lifetime 1-1/2" Ultra Pipe Flashing
- Velux FS-D26-2004 Deck Mount Fixed Laminate / Aluminum
- Velux EdI-D06-0000B & D26 Flashing



have stayed for my twenty. But at the same time, I would not have my three greatest accomplishments: My daughter and my two grandsons.”

The Roof Deployment Project is an initiative by Owens Corning and its Platinum Preferred Contractors to identify, honor and help protect deserving military families by installing new roofs. With over 475 successful projects completed nationwide since 2016, the Project has left a profound impact on the lives of military members and their families, offering hope and demonstrating the power of compassion and community support. ●

RoofPRO

Severn, Maryland

www.roofproMD.com • 410-Roof-PRO

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RE WINTER 2023

CONSTRUCTION SURVEY INSIGHTS - THE ANNUAL

This November, Shield Wall Media will release our third State of the Industry Survey.

The markets our magazines serve are notoriously difficult to quantify and generally overlooked. The data itself is typically questionable, from sample bias and small sample sizes. We have been working with the Metal Construction Association, METALCON, and several manufacturers to improve the scope and quality of the metrics available.

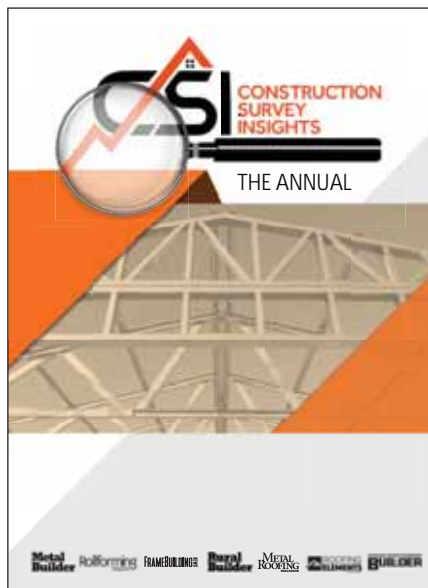
We will continue the CSI columns in our issues throughout the year, but we have an announcement.

In April 2024, Shield Wall Media will launch our first CSI: Construction Survey Insights Annual. This annual will print 80,000 copies and mail free of charge to all subscribers of our publications.

We have engaged Paul Deffenbaugh to help us launch the first CSI Annual. His extensive industry experience uniquely suits him for this task. His knowledge will be instrumental for our next step in data generation.

The Annual will cover the macro-

economic factors affecting construction in general and take a deep dive into the survey data and expert opinions related to the specific markets we serve.



A rough outline of the content follows.

Section 1 – General economy trends and data

Section 2 – Construction-specific trends and data

Section 3 – Rural Builder target audience
Low-rise construction outlook and data including but not limited to:

- Agricultural
- Residential
- Light commercial

Section 4 – Frame Building News audience target (post-frame construction)

Section 5 – Metal Roofing and Roofing Elements audience target

- Primarily residential, some commercial
- Metal roofing specific including metal market share and market forces

Section 6 – Rollforming audience target

- Metal and manufacturing focus, including steel and aluminum forecasts, etc.

Section 7 – Garage, Shed & Carport Builder target audience

- Portable sheds and small buildings
- Include consumer financing data and rent-to-own stats

Section 8 - Metal Builder target audience

- Primarily light-gauge, cold-form metal buildings. ●



Paul Deffenbaugh
Founder, Chief Content Officer
Deep Brook Media LLC

Paul Deffenbaugh has more than 30 years of experience in construction as both a contractor and an industry thought leader. He is founder and chief content officer for Deep Brook Media, which provides editorial and marketing services to the construction industry.

In his unique career, he has led media covering both the residential and

commercial design and construction industries. Among the titles he has directed are Metal Construction News, Metal Architecture, Professional Builder, Custom Builder, Housing Giants, and Remodeling.

An award-winning writer and editor, Deffenbaugh has witnessed firsthand the birth and growth of digital media, and he is clear-eyed about its strengths and weaknesses in serving a trade audience. He also is a strong advocate for encouraging young people to find careers in the trades.

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