

The Only Magazine Dedicated to the Effects of Weather and Climate on Roofing

# ROOFING ELEMENTS

SUMMER 2022 • Vol. 2, Issue 2

[www.roofingelements magazine.com](http://www.roofingelements magazine.com)

JOE KNOWS:

**DRAIN  
FLASHING  
INSTALLATION**

**CASE STUDY:  
FIRE-RESISTANT ROOF**

**SEALING ROOF  
PENETRATIONS**

**HEAT vs.  
ROOFS**



**SEE US AT THE  
FRSA SHOW**



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BUILDING PRODUCTS CORP.

BOOTH #213



BOOTH #508



BOOTH #750



SEE US ON PAGE 28





**DRIPSTOP**  
Condensation control

Fight Condensation Without Insulation

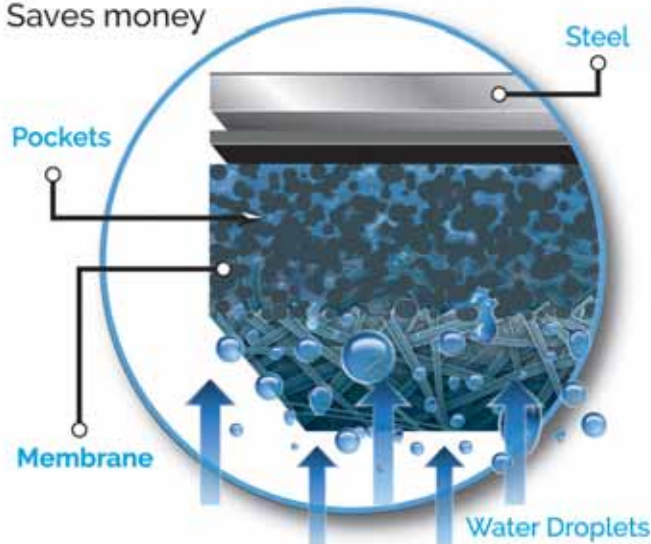
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# BE THE FROG

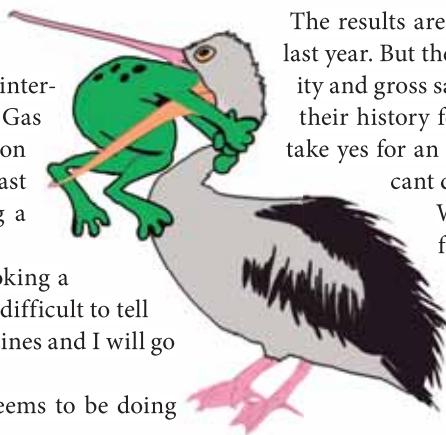
Welcome to the Summer issue of Roofing Elements.

We are surrounded by “interesting” economic news. Gas prices topping \$5/gallon nationally, real wages falling, GDP down last quarter and several major banks predicting a recession.

One of my favorite memes is of a frog choking a pelican that is trying to swallow him (or her, difficult to tell from the drawing). That is the way my magazines and I will go into a recession or economic down turn.

Despite impending doom, our industry seems to be doing pretty well, under the circumstances.

The Business Climate Survey we are conducting should be closed by the time this issue prints and mails. Since it is our own survey, I cheat a little and check the responses as they come in.



The results are not off the charts positive like they were last year. But they are (on average) up slightly in profitability and gross sales. Considering 2021 was the best year in their history for many roofers and builders, we need to take yes for an answer. Less than 5% claimed any significant decline.

We will continue to experience pressure from worker shortages and gas prices. Some of the supply chain issues seem to be sorting out. Lumber prices are coming down and availability improving. I hear rumors that metal may follow.

Roofing, metal roofing and construction are still strong and doing more than just surviving the challenges. Despite warnings that the end is near, we ain't there yet. Take yes for an answer and channel all of your froggishness ... Never give up. ●

## EDITOR'S NOTE

BY KAREN KNAPSTEIN

This issue is so full, there wasn't much room left for me! I'm ok with that; nothing I could say would be more important than the news and features included in this edition.

And this edition is a HOT one ... you'll find loads of information about how heat and UV light impact roofing materials. Not only is it important that you understand the effects of these environmental factors, it's helpful if you can convey to your customers the changes they will see in their roofs over the years — and why.

Also, you'll find the feature beginning on page 44 very interesting. It's a case study about a Wisconsin roof that didn't last nearly as long as it should have. The failure wasn't because of shoddy materials or workmanship on the roof, but because whomever added insulation afterwards packed it to the roof deck and blocked the vents.

If you have re-roof cases and/or photos, we'd love to hear from you. You can reach me at karen@shieldwall-media.com or 715-513-6767. ●

## RICOWI UPDATE

BY JORDAN LOUDON, EXECUTIVE DIRECTOR

The Roofing Industry Committee on Weather Issues, Inc. (RICOWI, Inc., [www.ricowi.com](http://www.ricowi.com)) is currently holding voting for the position of Affiliate Representative to the Board. The position was previously held by James Walas, Revere Copper, who retired in April 2022. RICOWI wants to thank Jim for his years of service as Affiliate Representative to the Board, as well as his service as Secretary/Treasurer of RICOWI, Inc. and the RICOWI Foundation.

The RICOWI Board of Directors met virtually on June 21, 2022.

The RICOWI Conference Committee has been busy planning for the fall seminar. The conference dates are October 5-7, 2022, in Cincinnati, Ohio. The RICOWI Foundation Board of Directors will meet the evening of Wednesday, October 5.

A tour of the Kyocera-Senco Industrial Tools, Inc. plant is scheduled along with speakers on Thursday, October 6. A RICOWI Foundation Fundraising event will take place that evening.

On Friday, October 7, RICOWI Committee and RICOWI Membership meeting will be taking place. Hotel and registration information to be announced. ●



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**Managing Editor**

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

**Editors**

Linda Schmid, Anthony Brass

**Circulation/Subscriptions**

Barb Prill  
barb@shieldwallmedia.com  
920.471.4846

**Digital Product and  
Data Engineer**

For help with online Classified  
Ads & the Business Directory  
contact: Steve Duberstein:  
steve@shieldwallmedia.com

**Publisher**

Gary Reichert  
gary@shieldwallmedia.com  
715.252.6360

**Director of Sales**

Missy Beyer  
missy@shieldwallmedia.com  
920-216-3007

**Executive/Advertising  
Assistant**

Kathy Budsberg  
kathy@shieldwallmedia.com

**Sales Assistant**

Kathy Welk  
kathyw@shieldwallmedia.com

**Graphic Designers**

Tom Nelsen, Kevin Ulrich

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## COMING NEXT ISSUE

- Organic Material & Shingle Decomposition
- Gutters & Rain Handling



## ON THE COVER:

NORTHGATE® SHINGLES IN MAX DEF MOIRE BLACK.  
COURTESY OF CERTAINTEED.

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Unrelated third parties often attempt to sell mailing lists for what they say are our publications. You can be assured that WE DO NOT, HAVE NOT, AND WILL NOT EVER SELL OUR SUBSCRIBER LISTS. We will also NOT sell the attendee or exhibitor lists from our shows. We do provide attendee lists to the exhibitors free of charge and as a courtesy for their support, but we NEVER provide this or any other information to independent vendors.

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

### Correction: Drain Flashing Installation

There was an error on the cover of the Spring 2022 edition of Roofing Elements magazine. The cover should have said "Joe Knows: Drain Flashing Installation," which referred to the page 21 instructional article by Joe Thompson at CertainTeed. Roofing Elements regrets the error.

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### EAGLE GRIP LOCKING TOOLS

Malco Products, SBC announces the launch of Eagle Grip, its newest line of professional-grade locking tools. Eagle Grip Locking Tools are the first full line manufactured in DeWitt, Nebraska, the original birthplace of the locking pliers.

Forged from premium American steel, Eagle Grip tools deliver stronger and more reliable performance on the job and are backed by Malco's 72-year heritage of innovation, quality and dependability.

Eagle Grip is the strongest locking pliers\* in the world and 100% made in the USA. The tools are designed and built to meet the rigorous demands of professional users, and during the company's in-house testing, Eagle Grip tools outperformed the competition on every measure.

The first six products in the Eagle Grip line include locking pliers and clamps for use in sheet metal, automotive, welding and agriculture applications:

- Locking Pliers:

- 7" & 10" Straight Jaw Locking Pliers

- 7" & 10" Curved Jaw Locking Pliers

with Wire Cutter

- Clamps:

- 11" Locking C-Clamps

- 11" Locking C-Clamps with Swivel

Pads

[www.eaglegripusa.com](http://www.eaglegripusa.com)

### DENSDECK® STORMX™ PRIME ROOF BOARD

Georgia-Pacific has announced the launch of DensDeck® StormX™ Prime Roof Board, the first high-performance gypsum roof coverboard designed to



help prepare commercial rooftops to hold tough under the dangers of impact and puncture caused by very severe hail conditions. The product, which is classified for use in approved assemblies meeting FM Global's Very Severe Hail Standard set in 2019, is available nationwide.

Over the past eight decades, multiple factors have combined to raise the risk of experiencing a severe storm. More people and property are in the path of severe weather than ever before, with an estimated 75 percent of American cities experiencing a hail storm annually. Since 1960, there has been a 400 percent increase in weather-related disaster losses.

Through the benefits integration of DensDeck® Prime with EONIC™ Technology and innovative product development, the use of DensDeck® StormX™ Prime Roof Board helps enable structures to meet the FM Global Very Severe Hail Standard while simultaneously enhancing assembly protection.

DensDeck® StormX™ Prime Roof Board is the perfect solution for structures within the Very Severe Hail zone, located across Arkansas, Colorado, Iowa, Kansas, Minnesota, Missouri, Montana, Nebraska, New Mexico, North Dakota, South Dakota, Oklahoma, Texas, and Wyoming.

[www.buildgp.com](http://www.buildgp.com)

### PERMAGLOSS™ CLEAR ELASTOMERIC COATING

Nationwide Protective Coatings is always working on providing the best options in the industry for elastomeric roof coating systems. At this time, Nationwide is expanding its PermaProducts™ lineup to include



PermaGloss™. It is a 100% acrylic, elastomeric clear gloss finish that provides long lasting protection from water and weathering for most surfaces.

This eco-friendly, water based clear gloss sealer has excellent elastomeric adhesion and will bring a freshness and clean look to a finished project. It is not required for Nationwide's coatings, but is an upgrade to provide additional protection to elastomeric roof coatings.

This easy to apply clear sealer system will provide many years of durable protection and will extend the roof's life.

[www.nationwidecoatings.com](http://www.nationwidecoatings.com)

### SUNSTYLE SOLAR ROOF SHINGLES

Solar no longer has to be an addition to the roof — it can be the roof. SunStyle® announces the expansion of its operations to customers in the U.S. Compared to conventional solar panels, the SunStyle solar shingles enhance a roof's appearance by providing an edge-to-edge, full-coverage solar roof that is strong, leak-proof, and integrates well with any architectural style; it also pays for itself with the power it generates.

The company's distinctive Swiss-engineered solar roofing shingles have been installed on hundreds of projects in Europe, including residences, churches, schools, businesses, government and industrial sites. In the U.S., SunStyle's

# Whimsical Roofline



**Vibrant Dynamic Blue Snap-Clad metal panels** brighten the playful roof shapes and walls of two interior courtyards, invigorating this mixed-use building that houses a Chicago Public Library, childcare center and community meeting space.

Altgeld Family Resource Center, Chicago    Installing contractor: Progressive Dynamics    Architect: KOO LLC  
Owner: Chicago Housing Authority    Photo: hortonphotoinc.com



**Snap-Clad**  
Metal Roof and Wall System  
Custom Dynamic Blue



View the  
case study  
and video







“dragon scale” tiles can be seen on Google’s new campus in Mountain View, California, and are being installed on commercial and residential projects around the country.

SunStyle’s UL/IEC-certified solar roof shingles are made with monocrystalline PERC solar cells to maximize the efficiency of the roof. Aesthetically pleasing yet rugged, the solar shingles are more durable than most standard roofing materials, even in harsh weather conditions. SunStyle’s solar tiles meet both the industry standards for solar modules as well as the standards required by building and construction codes, including achieving the highest possible ratings for hail (FM 4473 Class 4), fire (UL 790 Class A), and wind resistance (ASTM D3161 Class F).

[www.sunstyle.com](http://www.sunstyle.com)



### TITAN™ HYDRA X SPRAYERS

Titan has introduced two new high-flow gas-powered roofing and protective coatings sprayers: the Hydra X 4540 and Hydra X 7230. Equipped with Titan’s exclusive HydraStroke® Technology and Severe Service™ fluid section, these

powerful sprayers have additional new features including the AutoLift™ system and a quick-change fluid section.

The Hydra X 4540, which is designed for heavy coatings like asphalt emulsion and acrylic roof coatings, supports up to six guns at pressures up to 4,500 psi. The Hydra X 7230, which is designed for harder to atomize materials like silicone roof coatings, supports up to five guns at pressures up to 7,200 psi. Both will easily spray standard architectural coatings.

HydraStroke Technology is an efficient electronically controlled hydraulic system. It provides contractors versatility to spray both heavy- and light-bodied coatings, delivering a consistent and professional finish every time. The hydraulic motor is optimized with just one moving part, reducing heat and extending the life of the sprayer while a two-stage cooling system keeps the unit running cool all day.

Hydra X sprayers are the only direct immersion sprayer systems with AutoLift™ for raising the fluid section and hydraulic motor straight up with the touch of a button. It makes material changeovers much easier for both 55-gallon drums and five-gallon buckets. There’s no need for a transfer pump, and AutoLift can be operated with or without the gas engine running.

The units feature balanced, ergonomic carts with large 12” pneumatic tires for greater mobility and traveling over rough surfaces. They feature a curved design that fits perfectly with the diameter of a 55-gallon drum. A built-in storage tray holds tips, pins and small tools and the unit can be easily lifted by pressing on the rear lift bars with a foot.

Hydra X sprayers are outfitted with Honda’s powerful GX390 engine with low oil alert and electric start. They are backed by the best and longest warranty in the industry Titan WearGuard™, which includes a four-year manufacturing defect warranty.

[www.titantool.com](http://www.titantool.com)



### CANDUIT™ CONDUIT CLAMP

S-5! introduces its new electrical conduit clamp for metal roofs.

The new CanDuit™ clamp secures and supports chases and raceways, cable trays, gas piping, condensate lines and other round-shaped objects to metal roofs, in combination with any S-5! clamp or bracket, including the GripperFix® utility mounting system.

Made from electro-zinc coated steel, the CanDuit clamp features two halves that clamp around the pipe or conduit with an EPDM liner pad that protects against abrasion and a threaded M8 stud that allows for attachment to S-5! products—providing easy, organized securement without scratching, corrosion or other damage to the roof.

The CanDuit can be used in both residential and commercial settings for a range of applications including electrical, solar, plumbing for gas or water and condensate drainage.

The new clamp is available in 14 sizes with outer pipe diameters ranging from .79” (20 mm) to 4.6” (117 mm), adjustability enables minor size adjustment to secure most conduit and other piping, and the M8 threaded shaft mounts directly to S-5!’s non-penetrating clamps for standing seam roofs and factory weatherproofed brackets for exposed-fastened roofs.

Benefits of using CanDuit clamps include easy installation, prevention of scratches and corrosion, and a 10-year warranty against manufactured defect.

[www.S-5.com](http://www.S-5.com) ●



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# ELDRIDGE HOME RISES THROUGH THE ASHES

## METAL ROOF HELPS PROTECT HOME FROM WILDFIRE

Story & Photos By Drexel Metals

**A**ccording to the United States Forest Service, increased heat, shifting rain and snow patterns and other climate-related changes over the past few decades have made wildfires bigger and more intense. These changes have also nearly doubled the length of wildfire season. What was once a summer phenomenon has inched into the winter months.

In December 2021, the residents of the greater Boulder, Colorado, area experienced just how damaging these winter fires can be. The fire prompted the evacuation of 35,000 people, consumed over 1,100 homes and businesses, and burned thousands of acres of land and property. But for the Eldridge family, the property damage caused by the fire was minimal due in part to their home's metal roofing system from Drexel Metals.

### THE FACTS BEFORE AND DURING THE FIRE

The Eldridge family originally chose the metal roofing system from Drexel Metals because it provided exemplary hail and wind protection. Completed in April 2021, the roof of

the Eldridge home is comprised of 24-gauge, 16-inch-wide Galvalume® steel panels. The metal system is finished with a high-performance Sherwin-Williams PVDF coating in Drexel's standard Classic Bronze and roll-formed to the DMC150SS profile. This color and profile lent striking sightlines to the 6,970 square foot roof.

Before the fire, the roof helped the family live sustainably by

### BUILDING DETAILS

## ELDRIDGE HOME

**Location:** Boulder, Colorado

**Completion:** April 2021

**Substrate/Profile:** DMC150ss seamed 90 degrees in 24 gauge 16" wide Galvalume panels

**Finish:** Sherwin-Williams PVDF, Classic Bronze

**Contractor:** Dean / Dalton Smith Front Range Seamless





## THE DM-ARM HAS YOUR BACK!

*Drexel Metals Association of Regional Manufacturers (DM-ARM) is a comprehensive portable roll former program designed to help you meet building codes and build your brand locally. The Drexel Metals DM-ARM program allows installers and regional manufacturers to grow their businesses by offering better local control, greater profits, freight savings, less scrap, and the ability to provide metal roofing on-demand.*

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[www.drexmet.com](http://www.drexmet.com).

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Exclusive to DM-ARM members, the Sherwin-Williams® Roofing Passport is a groundbreaking platform that simplifies metal roof estimation and ordering. As a fully automated program, this digital platform enables project estimation in one click. The Sherwin-Williams Roofing Passport creates a powerful link between EagleView's highly accurate roof measurements and SmartBuild's automated estimation software, creating an easy-to-use bidding platform.

Learn more at [www.drexmet.com](http://www.drexmet.com)



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providing a cool roof rating to help offset heating and cooling energy loads. The roof had also been fitted with solar panels, per Boulder County requirements of new builds. Using Drexel's approved solar attachment, the solar panels attached to the top of Drexel metal roofing's standing seams, eliminating the need for penetrating the Eldridge's new metal roof.

In addition to hail and wind, the Eldridge family soon found out the metal roofing system also helped to protect their home from wildfires. Less than a year after completion, the home faced the 2021 wildfire Colorado Governor Jared Polis called "absolutely devastating." When it tore through the Eldridge's neighborhood, high winds fanned its flames, intensifying its heat. Further, the fire caused a large propane tank to explode near the home, showering the area with flames, ash, and destructive shrapnel.

### PROVIDING DEFENSE FOR THE HOME AND THE NEIGHBORHOOD

Despite the destructive nature of the fire and the explosion it caused, the Eldridge home remained standing because the Drexel metal roofing system worked with the home's fiber cement siding to provide critical fire protection. The contractor and insurance agency handling the case said the physical damages were limited to the fencing, decking, windows, insulation, and compromised roofing panels. These replacements are much less costly than a complete rebuild, which might have been the case had the Eldridge family left a 6,970 square foot hole in their home's armor by not purchasing a fire-resistant metal roofing system. The home's interior and the family's belongings only experienced smoke damage.

The metal roofing system and fiber cement siding also did more than protect the Eldridge's home. These systems seem to have provided critical defense for the area that surrounds it. By not bursting into flames itself, the home reduced the amount of potential fuel for the fire. Neighbors and those near to the Eldridge home also claim the roof shielded the homes behind it from the flames, heat,



and propane tank shrapnel. The claim that the house acted as a fire break seems to be supported by the trail of destruction the fire left behind, which promptly stops at the Eldridge home.

### MANY SOLUTIONS IN ONE SYSTEM

The Eldridge family could not have known that a fire said to be able to consume football field lengths of land in seconds would devastate their neighborhood less than a year after their home

was completed. However, that is exactly what happened.

The DMC150SS Prefinished Galvalume panels helped provide critical protection from the wildfire for the home and possibly the neighborhood. Though it was originally chosen to protect the home from wind and hail and to elevate the design aesthetics of the house, the metal roofing system worked with the home's fiber cement siding so the home could endure the heat with minimal damage. ●



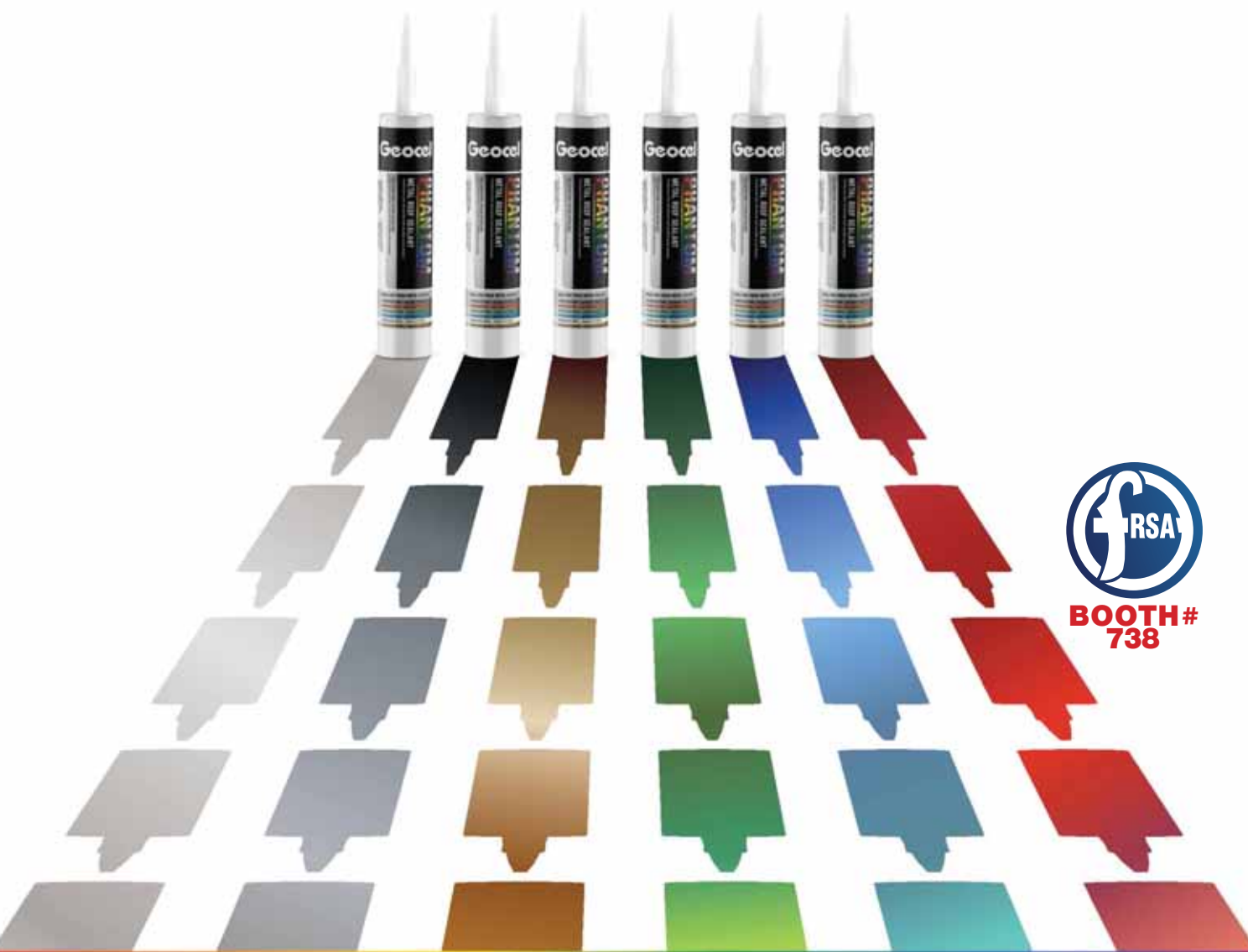
# Geocel

## SIX COLORS THAT DO THE WORK OF DOZENS.

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# ROOF PENETRATIONS

## SEALING GUIDANCE FROM MANUFACTURERS

**A**ny roof penetration is a potential leak. Because they can be a challenge to seal, the leak-prone areas are roof penetrations like curbs, drains, pipes, and other flashed details. We surveyed several roofers to learn what their biggest pain points are when it comes to flashing. One of the comments we heard several times, pertaining to many roof types, was: “There seem to be a lot of roofers out there who don’t know how to flash a chimney/ drain/ pipe.”

We turned to roofing material manufacturers to help address this issue by providing straightforward, practical advice for preventing leaks. We extend our thanks to these manufacturers for their contributions.

### COMPATIBILITY & SAFETY

Be sure to verify compatibility of all products before you use them. Using the same type of material for the flashing as the roofing membrane is a safe practice. For example, use EPDM flashings for EPDM membrane systems, TPO flashings for TPO membranes, and so on. When a roof system is covered by a manufacturer’s warranty, using like products is nearly always required to prevent interruptions in warranty coverage.

For repairs to non-warranted roofs, other types of flashing materials can be used, such as liquid-applied coatings with or without fabric reinforcement. Also, use an appropriate primer whenever possible. Don’t use products designed for steep-slope applications on low-slope roofs or vice-versa.

When re-roofing, never re-use existing flashings. Remove old flashings completely and install new materials. Be sure to properly clean the area before installing the new flashing materials. Replace old worn-out pitch pans and fill with new pourable sealant. Another option would be to coat the entire penetration with a superior liquid flashing product and reinforce

it with fabric. In some cases, using the liquid flashing option may allow it to be included in the manufacturer’s warranty of the full roof system, whereas the old pitch pan would likely be excluded from the warranty.

When welding thermoplastic materials, first conduct test welds on scrap material to ensure the right temperature setting of the hot air welder, and adjust the temperature as needed throughout the day. Follow the membrane and welding equipment manufacturers’ recommendations, and always follow good safety practices when using hazardous materials or equipment.

### SELF-ADHERING FLASHING

Always think about how water flows. If using a self-adhering flashing, be sure to install the membrane in a fashion where the water will flow over the overlaps rather than against them. It’s best to apply the membrane directly to the roof substrate (make sure any damaged sheathing is replaced), as opposed to over the top of felt or synthetic underlayment to ensure protection against the elements. Again, be sure the area is free of loose dirt and debris.

Some applications may expose the self-adhering flashing membrane to the elements. In these cases, the membrane must be rated for UV exposure. Membranes not rated for direct exposure to sunlight will ultimately break down and lose their waterproofing properties in a very short time frame.

If using caulks or sealants with self-adhering membranes, make sure they are compatible with the adhesive system of the membrane. Some caulks and sealants contain plasticizers or other chemical components that can liquefy the adhesive. Always consult the manufacturer when using a caulk or sealant that will encounter the adhesive system of a self-adhering membrane.

In most roofing applications, the membrane will be penetrated with roofing nails or other types of fasteners. When using self-adhering membrane, make sure the membrane is self-sealing around the fasteners for a waterproof barrier.

### HOW HIGH?

To prevent water infiltration from above the deck, waterproofing protection should reach 4”-8” up roof penetrations (or more, depending on the situation). Use pre-molded corners and pipe flashings when possible. Another option: Fashion corner patches from self-adhesive underlayment. [Learn how: <https://bit.ly/SharkCorner>.]

#### THANK YOU TO THE FOLLOWING MANUFACTURERS AND SUPPLIERS FOR ALLOWING US TO USE THEIR EXPERTISE TO EDUCATE ROOFERS:

• Aztec Washer Co.	<a href="http://www.aztecwasher.com">www.aztecwasher.com</a>
• Firestone Building Products	<a href="http://www.firestonebpco.com/us-en">www.firestonebpco.com/us-en</a>
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• MFM Building Products	<a href="http://www.mfmbp.com">www.mfmbp.com</a>
• Polyglass USA	<a href="https://polyglass.us/">https://polyglass.us/</a>



Whenever possible, make sure the penetration lines up within the center of the course; avoid having a penetration on a membrane side lap or end lap, or on a seam on a metal roof. If a penetration through a membrane lap is unavoidable, the use of a target is recommended.

For hot pipes such as woodstove and furnace flues, silicone pipe boots are recommended. EPDM won't hold up to constant hot temperatures and will break down prematurely. Silicone pipe boots can withstand continuous high temperatures. Use products that are tested and proven to withstand high temperatures. For example, some silicone flashings are tested to withstand +500°F (+260°C) with intermittent heat exposure, and +437°F (+225°C) with continuous heat exposure.

Details positioned on a rooftop are blasted by UV light; use EPDM flashings or silicone flashings that are made to resist weathering from ozone and ultra-violet light.

## CURBS

For low-slope applications, once a curb location is properly marked by the mechanical contractor, be sure to cut the membrane in such a way that you maximize the use of the existing membrane; don't cut the membrane in the shape of a large 'X' because more new material will be needed at the corners. Install appropriate base tie-ins and termination bar or counter-flashing to ensure long-term performance of the flashing.

The laps from the field to the flashing should be staggered. Cutting the first piece of flashing to end mid-way from the end of the field sheet will ensure that each successive flashing will end offset from the field.

For steep-slope applications, be sure to install crickets or saddles as recommended by the Sheet Metal and Air Conditioning Contractors' National Association [www.smacna.org]. Standing water behind the curb often results in leaks. Saddles are generally recommended when the roof slope is greater than 6:12, when the curb width is greater

than 12", or when water is likely to accumulate (e.g., when there is a wall or other obstruction immediately above the new curb).

These are just a few pointers from manufacturers of roofing materials. When you have questions about materials

and methods for your projects, local roofing distributors are often a valuable resource. ●

**Note:** If you have advice, tips and tricks to share with roofers, email to editor Karen Knapstein at [karen@shieldwallmedia.com](mailto:karen@shieldwallmedia.com).

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# HEAT: NO ESCAPE

## THE THREE R'S OF HEAT: RETENTION, REFLECTIVITY, and RESISTANCE

BY Jason Smith, Senior Chemist, The Garland Company

**T**he one weather variable that all roofs will face at some point, regardless of their geographic location, is heat. While some climate zones may have greater variability and more severe winters, all roofs will need to measure up to some period of intense UV radiation and the heat that comes with it.

How a roof withstands heat can, in the near term, have a direct effect on the energy efficiency of the building and the comfort of those inside. Over time, a roof that doesn't hold up against heat can lead to an early need for replacement or restoration, and can even contribute to urban heat islands that are proven to have a negative impact on an entire community. In this article, we examine what heat does to a roofing system and how you can best prepare your roof for the heat.

The sun is an inescapable constant in roofing. With the sun comes its two byproducts: UV radiation and heat. UV radiation penetrates into the polymer binder and bitumen, targeting specific molecular sites to chemically break down and stiffen the membrane. This leads to cracking that presents a problem during a freeze event. Granule retention can also suffer from UV degradation. The mineral granules on modified bitumen membranes act in a similar fashion as sunscreen on skin, protecting the polymer modified blend from the damages of UV radiation. As the minerals gradually fall off, the polymer and bitumen are at the mercy of UV degradation. The ability of a membrane to retain minerals is measured by a "scrub test," which is exactly what its name implies, as a mechanical



*Above: The Bass Art Museum holds up to South Florida's intense heat with a premium capsheet designed for superior mineral retention.*



*Left: An example of a roofing system where UV damage and thermal cycling have caused blisters and cracking. Images courtesy of Garland Co.*

brush repeatedly goes across a membrane sample to see how many minerals are lost and how many stay on the sheet. While the ASTM standard passes a sample that loses 2g or less of mineral, new advances in compound viscosity optimization are leading to some manufacturers delivering results with as little as 0.5g of mineral loss, a positive sign for a membrane's resistance to heat long-term. Single-ply surfaces fare well in the heat because the chemistry itself is its best defense. TPOs are regarded as being highly UV resistant while PVCs and KEE-PVCs are more geared for high-temperature surfaces.

TPO single-ply surface are formulated

for excellent resistance to heat and UV resistance because there is nothing in its formula that UV radiation can further break down. In spite of this superior weather resistance, TPO sheets have their drawbacks, including issues with weld popping, crazing, and cracking. They do wear eventually, and once the scrim reinforcement is exposed, the sheet is doomed.

PVC single-ply roofs are more flexible than TPO roofs, but during continual heating the PVC plasticizers, are leached out. The use of KEE as a solid flexibilizer eliminates the need for a plasticizer and does not leach out upon heat exposure.



Both are usually white, which cools down the surface and slows the degradation process.

Heat exacerbates the UV degradation process and contributes to the formation of surface blistering. When moisture is inadvertently trapped in mopping voids or on the interply sheet during storage, evaporating water has no place to go as it tries to penetrate through an impermeable top sheet. Physics tells us that pressure and volume are directly related to temperature: If temperature increases, either the pressure or volume must increase proportionally. Water vapor trapped in a void (fixed volume and pressure) beneath a membrane on a cool morning (low temperature) must either gain pressure or increase its volume, or a blend of both, as the heat of the day increases. The heat from the sun softens the asphalt somewhat to allow the increased pressure to expand the void sideways or toward the top cap sheet. This cycle continues, sometimes gathering more trapped water as voids link with other voids until the blister is quite large. The result is a blister that can range from the size of a blueberry to a few feet in diameter.

Further, when surface heating is followed by a rapid cooling process such as a sudden rain, there are dimensional changes that occur in the membrane that can cause stress cracking or other failure. Additionally, heat on a roof, especially a wet one, provides the perfect conditions for microbial growth. If there are not safeguards in the formulation to account for microbial growth, it will not take long for a continually wet roof to show signs of algal growth (reddening or blackening), or fungal attack. Advances in polymer modification have improved the longevity of membranes by retaining the minerals longer, purposely engineering the polymers with more heat resistant or UV stable components. Furthermore, the use of cool roof coatings such as white or aluminum acrylics, polyurethanes, or silicones can lower the surface temperature by as much as 50 to 60°F. Proper drainage at time of installation remains the best way to remove standing water and the risk of microbial growth in those areas.

Heat is an inevitable challenge to a roofing system, but with the right focus on the “three R’s” a roofing system can successfully fight the heat, protect the comfort of the building’s inhabitants, and may have a positive impact on an entire community’s climate:

**RETENTION:** For modified bitumen membranes, how well does the cap sheet

retain its minerals, preventing loss and providing added protection to the compound that can extend the roof’s life?

**REFLECTIVITY:** How bright is the coating or mineral? Has it been certified by the Cool Roof Rating Council (CRRC)?

**RESISTANCE:** Is the roofing system formulated for resistance to heat and UV?



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# HOT & GETTING HOTTER

## IMPACT OF HEAT ON RESIDENTIAL ROOFS

BY Mike Smyth, Overson Roofing

**T**he Summer of 2021 was the sixth hottest since 1880 for the lower 48 states, according to a report by the National Oceanic and Atmospheric Administration [<https://bit.ly/3wEjvn8>]. With summers trending hotter, roof issues are becoming as bad as those during the winter. Understanding how the summer climate affects the roof allows you to help homeowners prepare in advance and prevent problems.

### HIGH TEMPERATURES

Unless there are trees in the owner's yard providing shade, the roof will suffer from the effects of increasing heat. Temperatures on a home's asphalt roof can exceed 150 degrees on a 90-degree summer day. When temperatures get this high, it leads to the breakdown of the roofing materials. Asphalt shingles can loosen, granules on the shingles can dislodge, tiles can crack, and underlayment can dry out.

Position yourself as someone who can help. Encourage homeowners to inspect their roofs from the ground by standing back and looking for any damaged or dislodged shingles or cracks in tiles. They should also inspect the ground around their home after storms. The granules on asphalt shingles will wash off during heavy rains leaving small pebbles around the edges of the home.

### SUMMER STORMS

Strong storms, hurricanes and torna-

does come up often during the summer. These storms result in high winds leading to roofing elements becoming damaged. In addition to wind damage, branches and other debris falling on the roof causes tiles to loosen, and holes to appear. Hailstorms will further damage exposed areas on the roof.

After a storm, it is important to inspect the roof. During the inspection, look for missing shingles or tiles, damaged areas, exposed underlayment, and ponding water. Attics should also be inspected for telltale signs of roof damage such as sunlight sneaking in and moisture.

### THERMAL SHOCK

When a roof is subject to direct high heat during the day and cold temperatures at night, this can lead to thermal shock. The heat of the day causes the roof to expand, and the cold temperatures contract the roofing materials. Newer roofs aren't as susceptible to thermal shock because the materials are still flexible. But, as the materials age over time, thermal shock stresses the roof, which leads to splits or cracks in shingles, tiles, underlayment, or even the framing.

Prevention of thermal shock is not possible, so regular roof maintenance is necessary to help the roof stay in good condition. In areas with extreme temperature swings, roofs should be checked frequently to identify any cracked tiles or shingles indicating thermal shock damage.



*Ultra-violet light from the sun penetrates the shingles or tile on the roof, which causes damage over time.*

### ULTRA-VIOLET LIGHT

During the summer, sunlight hits roofs at full force. Ultra-violet light from the sun penetrates the shingles or tile on the roof causing damage. UV light will even penetrate during overcast days, meaning no roof is safe from UV exposure during the summer.

UV light impacts the quality of the roof, causing materials to deteriorate at a faster rate. Wood will bleach, tiles may crack, and shingles will curl, peel and split over time. The UV light also causes the oils in the roof to dry out making the material brittle. Shingles that are lightening due to the UV light is the initial indicator that it is time for a professional to offer homeowners an inspection for any underlying damage.

### HIGH HUMIDITY

Many parts of the country experience high humidity during the summer. Humidity can lead to water damage even when it hasn't rained. Moisture





build-up will damage shingles, framing, eaves, and underlayment. Moisture can also seep through the exterior roofing materials and become trapped in an attic or crawl space.

High humidity in the attic will lead to structural decay affecting the stability of the entire roof. To prevent this, the roof

must have adequate ventilation. When air is moving through the attic it better regulates the roof temperature. Make sure there is a vent at the uppermost part of the attic and one lower along the floor. This allows air to flow through, which draws in fresh air and exhausts stale, moisture-laden air.

When signs of humidity damage are present, it's time for professional repairs. The longer the roof is subjected to excess moisture, the more prone it is to damage

from storms and decaying wood.

### MOLD DAMAGE

Summertime brings rain and humidity, especially across the Southeast. High humidity areas lead to the growth of mold and mildew. Mold loves dark, damp spaces, so it may be noticed growing under gutters, awnings, or in the corners of roof fascia.

The most common mold found on roofs is *Gloeocapsa magma*, a blue-green algae. Stains and streaks on shingles and tile are the identification factor of mold. While this form of mold is not dangerous, it is unsightly and causes the roof to stay damp, which leads to rot.

Mold should be identified and removed as quickly as possible. It can be tracked into the home on the bottoms of shoes after rain rinses it off the roof and onto the ground. Mold also penetrates roofing materials, which promotes wood rot and the erosion of shingles. If left untreated for a long period of time, the damage

can become irreparable and result in the need for a new roof.

If streaks are noticed on shingles, or mold is noticed in crevices a professional should clean the affected area due to the potential health hazards.

### CONCLUSION

Heat worsens many roof condition issues. Educating homeowners about how to spot telltale roof changes or damage — especially on homes with older roofs — will help them know when they need to call you for roof maintenance, repair, or replacement. ●

**About the Author:** Mike Smyth is the General Manager at Overson Roofing [www.oversonroofing.com] in Mesa, Arizona. The company has served its clientele with professionalism and respect for over 30 years. It won the Better Business Bureau Blue Torch Award for ethics in 2016 and the Angie's List Super Service Award in 2020.



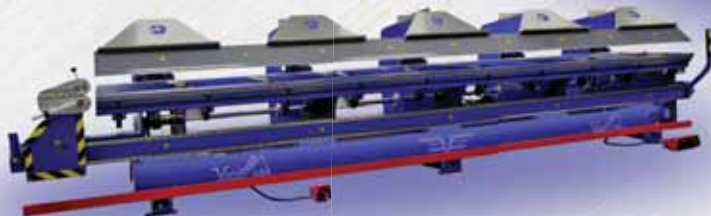
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# SIGNS OF DISTRESS

## INSPECT THE ATTIC WHEN QUOTING A NEW ROOF

By Robert Carnick, Marco Industries

**A**s part of your professional engagement with customers, it's important that roofers conduct a thorough attic inspection when bidding a job. The attic inspection will help the roofer establish a consultative relationship with the homeowner. The hazards of skipping a roof inspection will be covered here, as well as the signs of inadequate ventilation and insulation.

The key to broaching the topic of attic inspection with potential customers is to let them know that it is a routine part of your overall roof inspection, detailed roof report, and project proposal. Let them know if an attic is not inspected, damage from inadequate ventilation will go unnoticed. If hazardous conditions are not addressed at the time of re-roof or roof repair, there is potential for ongoing conditions that will lead to damage-causing excessive heat and moisture in the attic.

Homeowners may not realize how much water vapor is produced each day and how serious the problems caused by excess moisture can be. The average family of four releases two to four gallons of water vapor daily through breathing, perspiring, showering, cooking, and washing dishes. Trapped moisture and heat buildup will cause premature deterioration to the insulation, rafters, roof deck, and shingles. Rafters and roof decks become susceptible to wood rot, while shingles can blister, suffer granule loss and crack. Trapped moisture can also lead to mold and mildew growth that will impact air quality.

Furthermore, excess heat build-up will cause higher air conditioning costs and reduced air conditioning system life. In cold-weather climates, excess heat in the attic can penetrate to the roof deck causing ice dams that will lead to roof leaks, as well as roof and gutter damage. The damage can run into the tens of thousands of dollars with potentially serious health hazards.

When conducting an attic inspection, make sure soffit vents



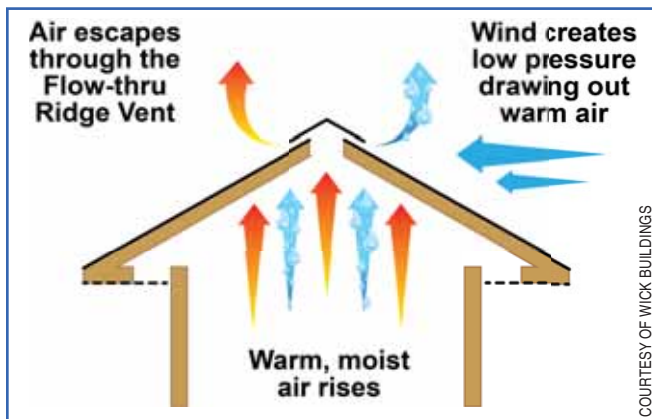
*Inspect attics for mold and other problems. Be sure to report all findings to the homeowner.*

are not blocked by debris, storage, or insulation. Insulation contractors and homeowners believe there is no such thing as too much insulation. However, this can be counterproductive if vent openings are blocked.

Pay attention to attic floors. Look for improperly sealed attic floor penetrations and floors over conditioned-space ceilings where there may be light fixtures or duct work. This is especially important as those two to four gallons of water vapor generated every day can easily migrate to the attic where it will cause damage.

While you're at it, inspect attic insulation to make sure it is not moisture laden, which would reduce insulation values and result in excessive attic heat and possibly even mold. The presence of mold — as well as the conditions that contributed to the mold growth — must be abated to eliminate a serious health hazard and to prevent it from happening again. Of course, structural damage must be repaired during the re-roofing process.





## INSULATION NEEDS

You can determine if there is an adequate amount of insulation by following the NAIMA Insulation Institute and the US Department of Energy guidelines. The NAIMA Insulation Institute [<https://insulationinstitute.org/>] has recommendations about the amount of insulation depending on the location and age of the home at <https://bit.ly/InsulNeeds>. The Department of Energy recommends attic insulation levels for commonly used fiberglass, mineral wool and cellulose insulation assuming about R=3 per inch:

- Most Southern Climates R-38, 13"-14" deep.
- Most Northern Climates R-49, 16"-18" deep.

The Insulation Institute advises one should look across the span of the attic to determine if more insulation is needed. Observe the tops of the floor joists; if the insulation is just level with or below the joists and you can easily see them, more insulation is needed. Insulation may be sufficient if the floor joists cannot be seen because the insulation is well above them. Insulation should be evenly distributed with no low spots; make sure that soffit openings are not blocked by insulation. (Learn more from the EPA's free, downloadable guide to attic insulation and ventilation, which can be found at <https://bit.ly/AtticAir>.)

## CALCULATE VENTILATION NEEDS

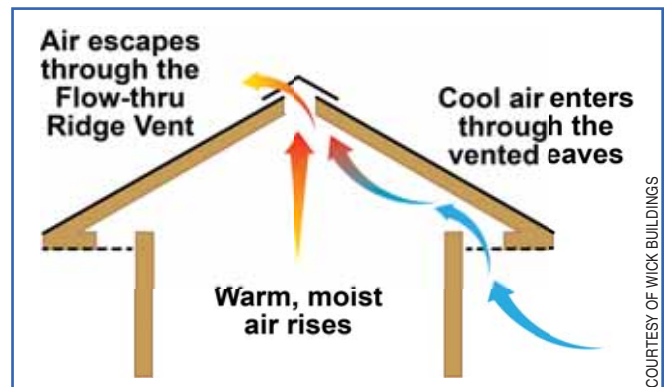
Striking a balance between air intake and exhaust is critical for a ventilation system. On a steep-slope residential roof, cooler outside air flows in at the eaves through soffit vents, combines with the warmer moist attic air, and rises to exit through the vents at the ridge or near the top of the roof. This air flow is assisted by prevailing winds that create areas of high and low pressure, which tend to pull air out of the attic. This unimpeded air flow of equal air intake and exhaust venting keeps attics cooler and dryer.

Now for some math. According to the International

Residential Code Chapter 8 Section R806.2, there should be a minimum of one square foot of Net Free Ventilating Area [NFVA] for every 300 feet of attic space. To determine the ventilation requirements for a 1,000 square foot attic, you would use this formula:  $1,000 \text{ ft. sq.} \div 300 = 3.33 \text{ sq. ft.}$  Convert square feet to square inches by multiplying by 144, which is the number of square inches in a square foot:  $3.33 \text{ sq. ft.} \times 144 = 480 \text{ sq. in.}$

The ventilating area must be split equally between intake and exhaust. Since the 1,000 square foot attic requires 480 square inches of NFVA, dividing 480 in half will result in the amount of NFVA required for each, intake and exhaust:  $480 \div 2 = 240 \text{ sq. in.}$  for each.

Furthermore, in a basic gable roof construction with two eaves, the 240 square inches would be divided by two, determining 120 square inches of NFVA are necessary per eave. Intake ventilation can be greater than the exhaust ventilation but never less than the amount of exhaust ventilation as inadequate intake starves the system. Most roof system and ventilation manufacturers have online ventilation calculators that will help determine the number of exhaust and intake vents required.



**Note:** Where eave vents are absent, shingle-over intake vents may be added that will introduce intake air into the attic through the top side where the shingles are and toward the bottom of the roof. Also, many roof designs are "chopped up" or have a hip design where off-ridge roof vents may be used near the top of the roof instead of ridge vents for exhaust ventilation.

## CONCLUSION

That the integrity of a roof system depends, in part, on ventilation that is balanced between intake and exhaust. It also needs unimpeded air flow, adequate insulation, and an attic floor that is properly sealed. If ventilation and insulation conditions are lacking, the soundness of the roof you put on now may experience problems long before it should, which would result in costly callbacks and problems for your reputation. ●



# FIRST LINE OF DEFENSE

## AGAINST CRITTERS IN THE ATTIC

BY Jeff Barnard, CSI, CDT

Architectural Sales Representative, Englert Inc.



**A**s a roofer, it is your job to provide homeowners with roofs that work, and one of the most common problems a homeowner will experience is animals in their attic. Rodents, birds, and insects find ways to sneak in and they can cause damage leading to costly repair bills, mold, and other problems.

Roofing and gutter contractors are on the front lines to prevent these problems. Proper initial installation of roofs and thorough repairs and maintenance can help owners avoid or minimize these issues. Proper gutter installation and maintenance also contribute to preserving the integrity of the home.





## ROOF INSTALLATION AND MAINTENANCE

The most important thing a roofing contractor can do to help prevent animals from getting into their customers' homes is to make sure the job is done correctly the first time around. When installing a roof, it's important to follow the manufacturer's standard details. Make sure you're utilizing the appropriate sealants, caulking, underlayment, and closure pieces in any areas where even the narrowest gap is present. This will establish a protective barrier and a tight seal on the roof. Chimney caps, screens over plumbing, and gas vents are also fundamental in making sure the roof is installed correctly.

Animals, birds, and insects are very resourceful – they can very quickly turn a tiny gap into a large opening that can enable them easy access to attic spaces. Generally, vents are the easiest point of access for insects or animals. Make sure insect screens are included whenever you are installing a vent. Additionally, try to steer clear of plastic or wood components when practical. Metal is, of course, more difficult for animals and insects to chew through or penetrate and more resistant to damage and rot. However, if you are using wooden components, you should consider redwood and cedar woods. These are natural repellents to critters.

Metal flashing is also better at preventing entry of pests into the home. One common mistake roofers make is not extending a flashing all the way into a corner, leaving an access point for bugs or small rodents. For example, roofers can make this mistake under an overhang where they are primarily concerned with water penetration, not considering insects or animals.

Roofs not properly installed can lead to ponding water, especially in low-slope roofing, and will attract animals and insects. Make sure the roof is pitched correctly to avoid this and roof drains are kept clear.

Once a roof is installed, the relationship with the homeowner doesn't end there. It's important for roofers to help their customers understand that a little preventative maintenance can go a long way. According to Zillow, roofs should be inspected by a professional once a year. They should also be inspected if there is an extreme weather event, such as a tornado, hurricane, or hailstorm. While homeowners might think they should take on

this job themselves, it's best for them to leave these jobs to roofing professionals. Roofers have the experience and expertise to spot small problems before they become bigger ones — not to mention the experience and equipment to keep them safe on roofs.

## GUTTER INSTALLATION AND MAINTENANCE

When installing new gutters on a customer's home, it's important to not only replace the gutters but to make sure the fascia board and shingles near the edge of the roof are in good shape. Otherwise, these should be replaced as well. One of the most common homeowner problems is clogged gutters due to leaves, debris, or animals and birds building nests in them. When gutters are clogged or not pitched properly during installation, the water can overflow the back of the gutter or under the roofing shingles causing damage and rot to fascia board and soffits. Moist, damp wood is the perfect breeding ground for damaging insects such as hornets, wasps, mosquitoes, termites, and other pests.

Contractors can also offer gutter guards as added protection to their customers. Various options exist, such as screens and hoods, and can prevent or minimize animals and debris from getting into gutters in the first place. For customers who opt not to use a gutter guard, contractors can establish a regular maintenance plan to clean their gutters as often as needed. ●



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# SUNLIGHT AND UV ON ROOFS

## ADVANCEMENTS TO RESIST FADING AND DECOMPOSITION

BY ANTHONY BRASS

PHOTO COURTESY OF DREXEL METALS.

**T**he roof you install must withstand the elements. The sun takes its toll on a roof as powerful UV rays affect exposed areas. Composition of roofing components, or its coatings, can limit or delay the effects. You may find signs of UV damage during a roof inspection. Customers want to know the causes of the damage and options that will maximize the life of their next roof.

### SHINGLE ROOF ADVANCES

Contemporary shingles last longer and include advancements for resisting fading and decomposition.

Granules on shingles are the first line of defense against UV rays. Shingles covered with stronger granules, with a lower rate of separation from the surface, aid in resisting long-term exposure of asphalt to harmful sunlight.

“You need to have very strong granule adhesion to the asphalt,” says CertainTeed Director of Product Management Alex Pecora. “When the

asphalt doesn’t have the protection of the granules, that area is more likely to have issues with UV exposure.” Shingle advancements include complete granule coverage with no asphalt exposed, and improved granule retention. Added improvements include blending rubberizing polymers with premium roofing asphalt to enhance strength and pliability to assist in granule adhesion.

Pecora says today’s shingles have advanced coatings applied to granules to resist fading and maintain effectiveness against decomposition, extending shingle life by decades. Some are also designed with granule surface blends that reflect more heat than older shingles, lessening fading and degradation from long-term exposure.

The pigments in coatings used for shingle granules vary in quality. Many shingles include stronger coatings with advanced pigments to reflect rays.

“Pigments push back at the UV lights,” says Pecora. Many pigments, even within the darker shingles, are formulated to

hold up longer as a barrier against the adverse effects of sunlight. Effective UV protectants are in granule coatings to maintain the original look.

In the past, many traditional or strip shingles were manufactured with only one layer, leaving the roof more susceptible to wear and damage after years of UV exposure. Shingles today have two or three layers and are laminated. The quality of the top of the shingle matches the underneath section.

Shingles are designed with granule surface blends that reflect more heat than traditional shingles, which delays and lessens fading and degradation. Advances are considered the shingle version of the “Cool Roof,” those that carry an official qualifying rating established by the Cool Roofing Rating Council (CRRCC) that determines UV and heat reflectivity and energy efficiency.

Pecora says customers should let professionals do an assessment and show them the effects of UV including supplying pictures. Traditional asphalt



shingles without the newer protections may fade, but this doesn't mean their strength or effectiveness is compromised. Discoloration shows shingles are drying out from the elements and are toward the end of their life, and prone to warping.

Darker shingles reflect less radiant energy from the sun, absorb much more heat, and fade faster than lighter-colored shingles. A lighter color reflects more radiant energy and better sustains its original color.

The direction a house and roof face determines how early fading occurs. An unshaded, south-facing roof accelerates fading.

After years of sunlight exposure, fading occurs when more heat is absorbed than reflected back into the atmosphere. The granules on those shingles are coated with coloring pigments. UV rays affect the pigments and cause fading. As shingles lose granules they become less effective.

Shingles degrade after years of absorbing UV energy. The heat generated from sunlight contributes to the breakdown of the shingles, which then warp, harden, become brittle or crack, dent, decay, lose granules that protect them or develop dark spots.

Shingles also go through the rigors of expansion and contraction from temperature fluctuations, leading to further breakdown.

UV rays also alter the chemical compounds, leading to decomposition. Oxygen mixes with hydrocarbons in asphalt and breaks down the protective coating. This dries out shingles and they crack and warp.

## METAL ROOFING AND UV

Weather can't be stopped, and neither can the sun's rays on a metal roof. Advances in pre-applied metal coatings now better resist fading and chalking than they have in the past.

After long-term UV exposure, the offset of degradation settles in some panels without advanced coatings, and "chalking" (a visible white residue) results. This phenomenon happens when resins in coatings break down and degrade after years of exposure to harmful rays. These



*Residential metal roof with UV protectants.* PHOTO COURTESY OF DREXEL METALS



*CertainTeed Presidential Solaris roofing shingles.* PHOTO COURTESY OF CERTAINTEED

resins act as a protectant and hold the pigments together. After they deteriorate, resins are further exposed to UV, pollution particulates and oxygen, turn white and leave residue on the surface. The loss of the protective layer can compromise the metal underneath.

Metal panel coatings have varying contents and degrees of effectiveness against UV. Kynar is a superior PVDF-

resin coating that helps retain color and prevent fading and chalking. Kynar includes 70% PVDF of the total resin content in the paint, which makes the coating more durable. Kynar coatings provide long-term conformity in color across the entire roof that resists fading, says Drexel Metals Director of Sales and Business Development Ken McLauchlan. "The big thing is how consistent it is, and

to what degree.”

PVDF coatings are comprised of a pigment “floated into” a clear resin, rather than the other pigments available, that are a tinted primer. The chemical composition of PVDF paints maintains the original color after decades of UV exposure.

FEVE (fluoroethylene vinyl ether) is another effective resin in coatings that provides similar protection. These resins include carbon-fluorine bonds, which absorb more UV energy.

SMP (silicone-modified polyester) is a level below these first two types of coatings. However, this paint has ceramic pigments, which can hold up against sunlight exposure for several years.

Paint systems containing plastisol and polyester are also available, but they are less effective against UV. Plastisol is plasticized vinyl and commonly used on coils that will be exposed to corrosive environments. This resin protects against degradation but is more susceptible to premature fading.

Another option is polyester paint, which is a synthetic, elevating the likelihood of fading and chalking. “Paints

with polyester don’t have the longevity of the paints used today,” says McLauchlan.

Each installed panel is precoated with paint containing resins, pigments and solvents designed to enhance color and protect metal from dirt, corrosion and those intense UV rays. If the coating is not formulated with strong resins or pigments, fading can occur much sooner, leading to blistering, crazing (fracturing) and flaking. When water, pollution, and chemicals in the atmosphere react with the pigments they break down, fading occurs. Inorganic pigments are created from metal oxides and are less susceptible to fading than carbon-based organic pigments.

## COMPOSITES

Composite shakes and shingles are increasing in popularity. They have the natural look of slate tiles and cedar shakes, but instead are made with materials that last longer and resist UV damage.

Composite tiles are made with pure resins and contain UV and thermal stabilizers. Some are manufactured with proprietary engineered polymers that

include virgin resins and inorganic pigments. This combination helps resist fading, cracking and rotting.

When composite materials contain virgin resins, heat and UV rays from sunlight take much longer to break down the polymer chains than composites made using a recycled version of the same resin. Pure resins in shingles and tiles provide a stronger, longer lifespan. Shingles containing these resins are more effective than products containing resins made from recycled contents.

Some composites include a virgin resin product that goes through two steps to become a finished tile: compounding and injection molding. These roofing tiles have the strongest chance to survive long-term, says DaVinci Roofscapes.

Recycled resins have already gone through their original manufacturing processes where they have encountered high heats and pressures, then go through a cleaning and grinding process before a second set of manufacturing processes to create new tiles. DaVinci says these additional processes put recycled tiles at a disadvantage, as they’re built back up again to serve as a roof tile in its “second” life.

Composite shingles with superior resins have the greatest consistency. “If you’re on a job and run short of material, you order more,” says DaVinci. “No problem with a virgin resin roof; the product is stable from batch to batch.” The color and composition of these tiles remains consistent. DaVinci adds that with a recycled resin product, the source can be unclear from week to week. The content of the recycled tiles may be inconsistent, giving differences in color from the first batch.

## CONCLUSION

Understanding how roofing systems fight the effects of the sun will allow you to know how long a roof will sustain its original look. If you can give your customers clear expectations about their roof’s performance and long-term appearance, it will help you gain their trust and land you more jobs. ●



*CertainTeed Presidential Shake Shingles on a gable roof.*  
PHOTO COURTESY OF CERTAINTEED.





## School is in Session at FRSA

**T**he 2022 Florida Roofing & Sheet Metal Expo ([www.floridarooft.com](http://www.floridarooft.com)), will be held July 20-22 in conjunction with FRSA's 100th Anniversary Convention at the Ocean Center in Daytona Beach, Florida, July 19-22.

The Expo features more than 230 exhibiting companies that will display the latest products and services, making the Expo the largest regional roofing show of its kind in the country. It's a strategic event for professional roofing and sheet metal contractors.

The State of Florida requires every licensed contractor operating in the state

to earn 14 hours of continuing education (C.E.) credit during a two-year cycle. FRSA's Convention will be offering 22 hours of C.E. credit, along with 11 hours of non-C.E. business courses. "It's important that we offer a variety of educational topics, including business courses that are valuable to contractors but carry no credit," stated FRSA Executive Director Lisa Pate. "With the addition of so many new roofing companies and licensed professionals, basic business training is essential to help ensure these companies remain solvent for years to come."

In addition to educational offerings, the Convention includes two luncheons,

a Welcome Reception and the Officer Installation Dinner – perfect opportunities for networking.

Expo hours are Wednesday, July 20, 11 a.m.-4 p.m.; Thursday, July 21, 11 a.m.-4 p.m. and Friday, July 22, 10 a.m.-2 p.m. The Expo is free to all contractors.

To show their appreciation to the industry, FRSA is giving back by offering free seminars on Friday, July 22. In addition to free seminars, this package includes refreshment breaks, free lunch (sponsored by SOPREMA) and free admission to the Florida Roofing & Sheet Metal Expo. ●

## FRSA offers more than 20 classes with continuing education credits

### WEDNESDAY, JULY 20, 2022

#### Seminar #1: 7-8 am

Advanced FRSA-TRI Tile Manual  
6th Edition Review  
Manny Oyola, Jr. and Mike  
Sillers, CPRC  
1.0 Hour ADV – CILB-0613892

#### Seminar #2: 7-8 am

Ethics in Construction, Trent  
Cotney  
1.0 Hour L&R – CILB-0612137

#### Seminar #3: 7-8 am

Preventing Falls Using a Deck  
Inspection Program  
Brad Mang  
1.0 Hour WPS – CILB-0612175

#### Seminar #4: 8:15-9:15 am

Collecting Payment on  
Construction Contracts  
Trent Cotney  
1.0 Hour BSP – CILB-0612537

#### Seminar #5: 8:15-9:15 am

Underlayment Requirements,  
Greg Keeler  
1.0 Hour G – CILB-0613850

#### Seminar #6: 8:15-9:15 am

Estimating the Right Way  
John Kenney

1.0 Hour BSP – CILB-0614145

#### Seminar #8: 9:30-10:30 am

Advanced FBC and Major  
Changes in Low Slope Roofing,  
Riku Ylipelkonen  
1.0 Hour ADV – CILB-0613887

#### Seminar #9: 9:30-10:30am

Update to Florida's Licensing  
Requirements, Trent Cotney  
1.0 Hour L&R – CILB-0613780

### THURSDAY, JULY 21, 2022

#### Seminar #10: 7-8 am

The History of Roofing, John  
Kenney  
1.0 Hour G – CILB-0613779

#### Seminar #11: 7-8 am

Understanding Your Workers'  
Comp Insurance  
Debbie Guidry and Alexis Ayala  
1.0 Hour WC – CILB-0610698

#### Seminar #12: 7-8 am

The OSHA Inspection & Citation  
Process, Trent Cotney  
1.0 Hour WPS – CILB-0609675

#### Seminar #13: 8-11:00 am

Architects & Building  
Officials Program

Advanced FRSA-TRI Tile Manual

6th Edition Review

Manny Oyola, Jr. and Mike  
Sillers, CPRC

1.0 Hour ADV – CILB-0613892

1.0 Hour – OPT-ARCH-9878862,  
G-BCAIB-5008602

Advanced FBC and  
Major Changes in Low Slope  
Roofing  
Riku Ylipelkonen

1.0 Hour ADV – CILB-0613887

1.0 Hour – OPT-ARCH, G-BCAIB

Underlayment Requirements  
Greg Keeler

1.0 Hour G – CILB-0613850

1.0 Hour – OPT-ARCH, G-BCAIB

#### Seminar #14: 8:15-9:15 am

Vehicle Safety, Kevin Lindley  
1.0 Hour G – CILB-0610080

**Seminar #16: 9:30-10:30 am**  
Wind Mitigation Methods, the  
Law!

Rob Irion

1.0 Hour WMM – CILB- 0609669

#### Seminar #17: 9:30-10:30 am

Contract Negotiations, Trent  
Cotney

1.0 Hour BSP – CILB-0614146

### FRIDAY, JULY 22, 2022

#### Seminar #19: 7-8 am

Understanding Your Workers'  
Comp Insurance  
Debbie Guidry and Alexis Ayala  
1.0 Hour WC – CILB-0610698

#### Seminar #20: 7-8 am

Vehicle Safety, Kevin Lindley  
1.0 Hour G – CILB-0610080

#### Seminar #21: 7-8 am

Estimating the Right Way,  
John Kenney  
1.0 Hour BSP – CILB-0614145

#### Seminar #22: 8:15-9:15 am

Underlayment Requirements,  
Greg Keeler  
1.0 Hour G – CILB-0613850

#### Seminar #23: 8:15-9:15 am

Preventing Falls Using a  
Deck Inspection Program  
Brad Mang  
1.0 Hour WPS – CILB-1612175

#### Seminar #25: 8:15-9:15 am

Wind Mitigation Methods, the  
Law!

Rob Irion

1.0 Hour WMM – CILB- 0609669



## DON'T MISS THESE EXHIBITORS AT FRSA!



### AppliCad

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We weren't able to make it to FRSA, but we'd love for you to visit us virtually at [www.applicad.com](http://www.applicad.com). "See" you soon!



### Direct Metals Inc.

**Booth #115**

[www.directmetalsinc.com](http://www.directmetalsinc.com)

Direct Metals Inc. supplies fasteners, foam and vented closure strips and other roofing accessories to the metal roofing industry. Primary products include long-life Dade County code compliant SCAMP 304 SS Cap metal to wood fastener as well as PANCLIP Pancake & Wafer head screws and panel clips for standing seam metal roofs. Additional products include pipe flashings, butyl mastic for side laps, 304 SS rivets, windows, reflective insulation and polycarbonate panels for skylights. The new PHANTOM translucent sealant for painted metal panels reduces the need to stock a multitude of colors.



### Kirsch Building Products / Sharkskin Booth #811

[www.sharkskinroof.com](http://www.sharkskinroof.com)

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### Hershey's Metal Meister

**Booth #753**

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vative solution for their business needs. Variobend USA machines are assembled in Illinois with American and European parts and engineering. Our machines are backed by customer-focused, service technicians who actually build the machines from the ground up! Our technicians are also backed by a massive parts inventory. Any questions and any needs, feel free to reach out. We would be happy to serve you.



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Python

**Booth #750**

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### BUILDING PRODUCTS CORP.

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**Booth #213**

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tions. We offer jobsite and technical support, inventory management, and delivery programs. Select from a wide array of popular commercial-grade products including our TFC SPECIFIC™ brand.



## Petersen/PAC-CLAD

Booth #525

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Petersen, a Carlisle company, manufactures PAC-CLAD architectural metal cladding systems in multiple gauges of steel and aluminum. PAC-CLAD products include hidden- and exposed-fastener wall panels, standing seam roof panels,

flush- and reveal-joint wall panels, vented or solid soffit panels, perforated metal, coil and flat sheet, composite panels, column covers, plus fascia and coping. All are available in a Kynar-based 70% PVDF Fluoropon coating in 46 standard colors and 16 wood grain finishes that include a 30-year finish warranty. Most colors meet LEED requirements and are rated by the Cool Roof Rating Council. Custom colors and weathertightness warranties are offered. BIM and CAD documents are available for most products. Founded in 1965, Petersen's facilities are located in Illinois, Georgia, Texas, Maryland, Arizona and Minnesota. For information on the complete line of Petersen's PAC-CLAD metal products call 800-PAC-CLAD, visit [pac-clad.com](http://pac-clad.com) or write to [info@pac-clad.com](mailto:info@pac-clad.com). ●



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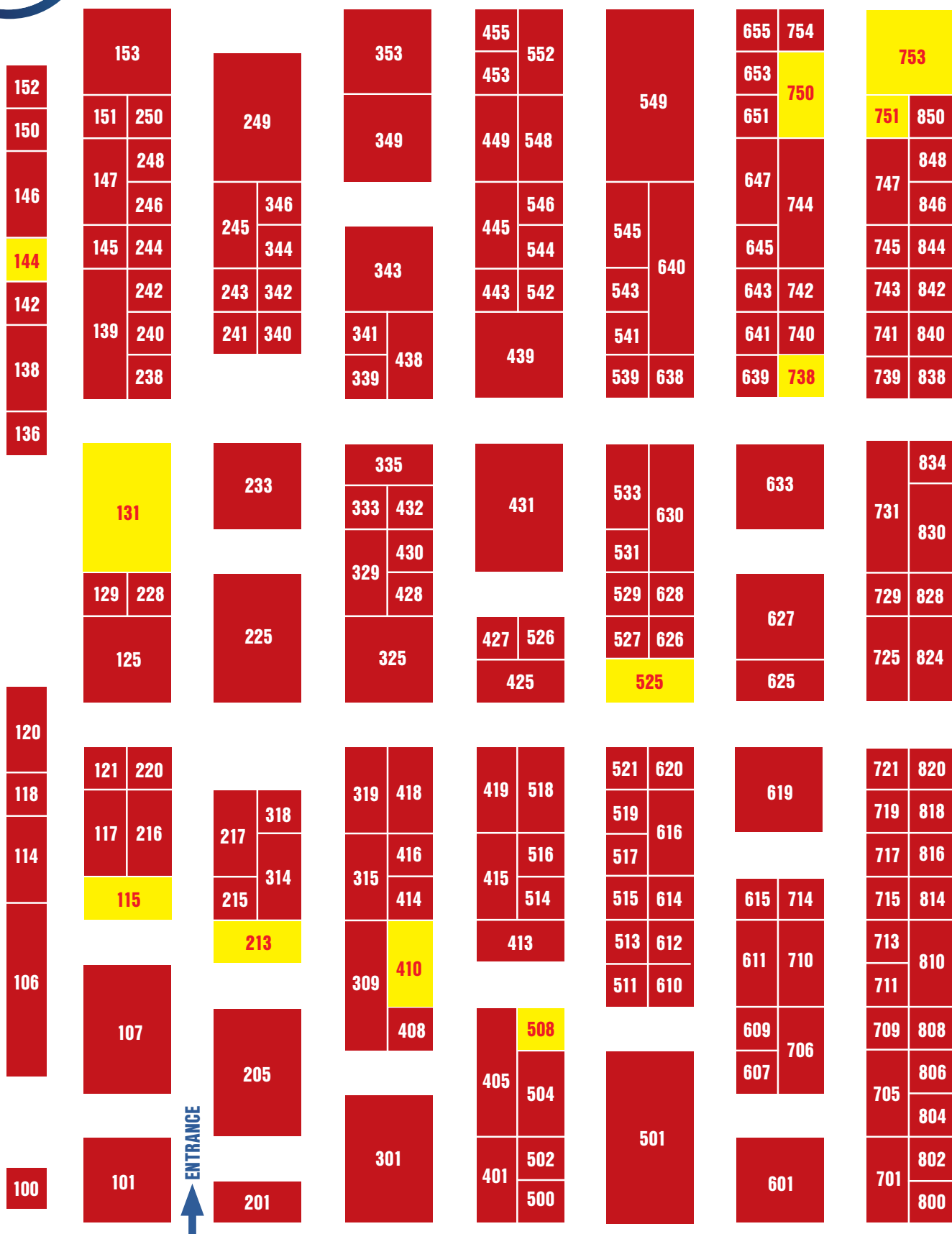
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# FLASHING A DRAIN WITH LIQUID FLASHING

A well-designed low-slope roof directs water towards drains and gutters to eliminate ponding water conditions. Defending against leaks and moisture seepage is essential for maintaining an effective roof system as well as warranty compliance. Yet all too often, an improperly flashed penetration leads to leaks and damage.

In Part 2 of this 5-part flashing series, I showed you how to flash a drain with CertainTeed Flintlastic® SA Cap, Flintlastic SA MidPly or Flintlastic SA PlyBase, FlintBond® SBS Adhesive and FlintPrime® Aerosol. In this installment, I cover how to flash a drain with SmartFlash® ONE, CertainTeed's one-part liquid-applied flashing. Liquid flashing offers advantages when flashing penetrations due to its elasticity, ease of install, and efficiency. It can conform to irregular penetration shapes, requires no priming or component mixing, and unused resin can be stored and used on a future project.

Follow these steps to ensure that your liquid-applied drain flashing is effective and can last for years to come.

## STEPS TO FLASH A DRAIN

Using CertainTeed SmartFlash ONE, CertainTeed Flintlastic SA Cap, and CertainTeed Flintlastic SA PlyBase.

1. With any drain detail, you want to make sure you have positive slope from the field down into the drain. Our FlintBoard® Hinged Target Sump offers a quick, material-efficient way to achieve a positive slope.

2. Position your base sheet and roll out over the drain. Allow the bolts to penetrate through the membrane before cutting out the drain access.

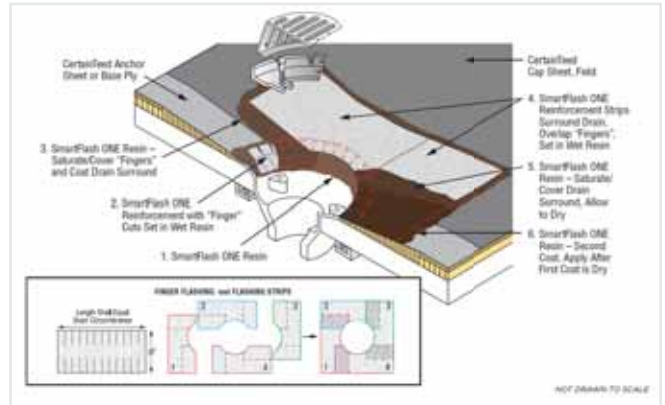
3. Do the same for the cap sheet. Your base and cap sheets should be positioned to avoid sidelaps or endlaps running across the drain.

4. With the membrane in place, cut flush with the edge of the drain bowl. You're now ready to flash in.

5. Start by preparing the polyester fabric reinforcement. First, determine the length of the fabric, assuming a 2" overlap within the drain.

6. Once you have that length cut, cut fingers into the top and bottom of the polyester.

7. Prepare the target patch which will sit on top of the fingers. We have a schematic for achieving the target patch with 6" strips



in the SmartFlash ONE brochure.

8. Take the 6" strips, each measuring a minimum 12" in length, and cut out the fabric to accommodate the bowl. Overlap the pieces as necessary to square the edge.

9. Tape off the edges for a clean aesthetic, though it's not necessary for waterproofing. Now we're ready for resin.

10. SmartFlash ONE is thick and can be applied easily with a brush or roller without dripping. First, apply the resin around the drain and 4" into the drain bowl at approximately 30 wet mils thick.

11. Lightly press in your finger flashings.

12. Fully cover the fabric with resin, making sure to put resin in the 2" overlap. You should not see any fabric.

13. Press in your target patches. Again, fully coating the surface and overlapped areas with resin.

14. For full warranty coverage, up to 20 years in length, give this between 2-4 hours to dry, and then come back with a final coat, approximately 30 wet mils thick. It is not required for warranty, but if desired for aesthetics, broadcast CertainTeed color-matched granules into the wet resin.

15. Once you've fully waterproofed the drain bowl, install the clamping ring.

*This is part 3 of a 5-part flashing series by CertainTeed's Joe Thompson. See Joe demonstrate these step-by-step instructions in his video, Flashing A Drain with Liquid Flashing, at <https://bit.ly/FlashDrain>.*



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*CertainTeed Peachtree City, Georgia, location.*

## **CERTAINTEED EXPANDING NORTH CAROLINA, GEORGIA LOCATIONS**

Saint-Gobain [[www.saint-gobain.com](http://www.saint-gobain.com)], through its building products subsidiary CertainTeed LLC, has announced plans to invest more than \$200 million between its Oxford, North Carolina and Peachtree City, Georgia, facilities.

### **\$118M Expansion in North Carolina**

The company has announced it will invest \$118.8 million over the next five years to expand its CertainTeed roofing shingle manufacturing facility in Oxford, North Carolina. It is an investment that will support the company's growing customer base in the southeastern United States.

The expansion in Oxford is one of the company's largest ever investments in an American roofing plant, and comes only months after Saint-Gobain announced its global Grow and Impact strategy, which includes expanding its presence in key, fast growing markets. This investment will incorporate new equipment and automation to maximize employee safety and provide state-of-the-art technology and processes to align with Saint-Gobain's global vision of carbon neutrality by 2050. Improvements will allow for a 14% reduction of CO<sub>2</sub> emissions per production unit, as well as further water and energy consumption reductions.

The North Carolina project is supported with \$650,000 in reimbursement grants from the State of North Carolina, including funds from the One North Carolina Fund and a Rural Division Building Reuse Grant.

"The investment in our plant in Oxford is an investment in the future — we are committed to our customers, to our employees, to Granville County and to the State of North Carolina," said Mark Rayfield, President and CEO of Saint-Gobain North America and CertainTeed. "As a leader in light and sustainable construction, this expansion will ensure our business has the materials necessary to continue serving our customers and meet growing demand."

The CertainTeed Oxford plant, which began operations in 1978, is already one of the largest roofing shingle manufacturing sites in North America. Sitting on 113 acres in Granville County, the project will create an additional 225,000 square feet of manufacturing space and at least 37 new full-time manufacturing jobs.

### **\$100M Expansion in Georgia**

The company also plans to invest \$100 million over the next two to three years to expand its CertainTeed roofing shingle manufacturing facility in Peachtree City, Georgia.

The expansion in Peachtree City will add over 65,000 square feet of

manufacturing and warehouse space and will more than double production capacity at that location.

The project will be supported by more than \$5 million in state and local tax incentives realized over the next decade.

"Today marks the beginning of an exciting new chapter for our plant in Peachtree City — this is an investment in our company's future ability to supply our growing customer base," said Carmen Bodden, Vice President and General Manager of CertainTeed Roofing Product Group. "We will continue to look for ways to maximize our company's positive impact, for our customers and the communities where we operate, while working to minimize our environmental footprint. We thank Fayette County and the State of Georgia for their support."

(Additionally, Saint-Gobain ADFORS has announced an expansion at its facility in Dublin, Georgia.)

The CertainTeed Peachtree City plant, which began operations in 1976, sits on 23 acres in Fayette County. Currently, the plant employs 83 individuals. As a result of this expansion, at least 27 new full-time operations jobs will be created.

## **ARMA RELEASES STATEMENT ON RECYCLING ASPHALT ROOFING MATERIALS**

The Asphalt Roofing Manufacturers Association (ARMA, [www.asphaltroofing.org](http://www.asphaltroofing.org)) Board of Directors announced that it has adopted a position on the recycling of asphalt roofing materials:

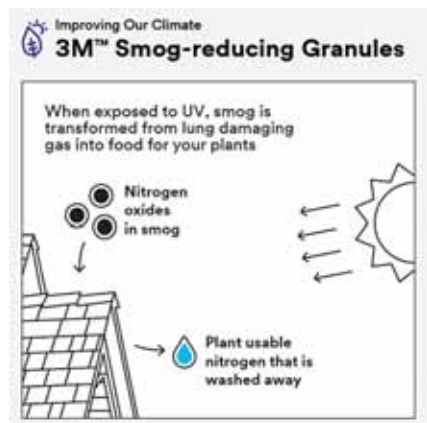
*ARMA Statement on Recycling of Asphalt Roofing Materials: The industry goals are to reduce landfill disposal of asphalt-based roofing materials to 50% by 2035 and to approach 0% by 2050.*

To accomplish these goals, ARMA will foster and promote responsible, economically feasible, and sustainable circular economy options to recycle asphalt-based roofing materials and enhance the

long-term viability of asphalt roofing as the preferred roofing material.

“ARMA recognizes that industry initiatives are best achieved when there are common goals, especially in efforts involving sustainability and recycling,” stated Reed Hitchcock, ARMA Executive Vice President. “Increased recycling of asphalt roofing materials will further improve our industry’s circularity and overall environmental footprint.”

ARMA’s vision and mission is to be an association committed to the long-term sustainability of the asphalt roofing industry and to advocate and advance the interests of the asphalt roofing industry by leveraging the collective expertise of its members.



### 3M SHINGLE GRANULES REDUCING AIR POLLUTION

One million trees’ worth of smog-fighting capacity has been installed on roofs using Malarkey Roofing Products shingles with 3M Smog-reducing Granules.

Since the launch of the world’s first smog-reducing shingle, Malarkey Roofing Products [www.malarkeyroofing.com] has provided the industry with enough roofing materials to protect more than 400,000 roofs. Because each roof has the smog-fighting capacity of two to three trees, that’s the equivalent of over 1 million trees of smog-reducing power.

3M Smog-reducing Granules, inte-

grated into Malarkey roofing shingles, remove smog gases from the air with the same effect as trees. Trees help to clean the air we breathe — they absorb pollutant gases like nitrogen oxides, ozone and carbon monoxide. Smog-reducing granules are designed with an integrated photocatalyst that reacts with UV light to transform the nitrogen oxides in smog into a plant-usable form of nitrogen.

“3M Smog-reducing Granules are proof that we can use ingenuity and a science-based approach to solve challenges facing our environment without compromising performance or visual aesthetics,” said Ippocratis Vrohidis, president, 3M Industrial Mineral Products Division [www.3M.com]. “Achieving this ambitious milestone is just the beginning of our commitment to drive impact for the greater good.”

Integrating Smog-reducing Granules from 3M into roofing shingles doesn’t change the shingle performance or its visual aesthetics, but rather puts to work a technology that helps improve air quality on a microscopic level not visible to the naked eye. The photocatalyst does not get consumed in the reaction, so the smog-reducing capability is a continuous cycle refreshed with rain or dew.

When 3M launched smog-reducing technology in its roofing granules, Malarkey made a bold move to integrate the technology into all its shingle offerings to help actively clean the air of emission pollutants. That commitment was in addition to their already sustainable shingle design that integrates upcycled tires and plastic bags.

“For over 65 years, Malarkey has been using 3M Roofing Granules in its roofing products,” said Randy Morgan, director national accounts, 3M Industrial Mineral Products Division. “We applaud Malarkey’s proven leadership in sustainability with its shingles made of upcycled rubber and plastics to reduce landfill waste, and a commitment to work with 3M to continuously seek better,

more sustainable shingle solutions like integrating 3M Smog-reducing Granules.”

According to the American Lung Association’s 2022 “State of the Air” report, covering years 2018-2020, more than 40 percent of Americans live with unhealthy levels of air pollution. In 3M’s 2021 Home Renovation Study, 56% of homeowners surveyed stated they believe all products should have an eco-friendly component. Additionally, 52% stated they would be more active in considering eco-friendly materials if their friends and family were doing so.

### SRS ANNOUNCES EXPANSION IN NEW YORK

SRS Distribution Inc. (“SRS”) has announced it has acquired Florence Corporation (“Florence”) and Amagansett Building Materials (“Amagansett”) (collectively, “the Company”), a distributor of a broad line of building products, including lumber, roofing, siding, windows and doors, and other related products with five locations throughout the Long Island area. Terms of the agreement were not disclosed.

Headquartered in Huntington, New York, SRS was founded in 1946 by Arthur Florence and is run today by Arthur’s grandson, Patrick Droesch, and Patrick’s brother-in-law, Rob Holden. Patrick and Rob will continue to lead the team under the Florence and Amagansett banners, ensuring continuity and consistency for customers, suppliers, and employees.



**Roofing Scholarship Program**  
**CASTAGRA ACCEPTING SCHOLARSHIP APPLICATIONS THROUGH AUG. 29**

The Castagra Roofing Scholarship Program [https://www.castagra.com/scholarship/] is now open for applications. This program was developed to support individuals pursuing a career in





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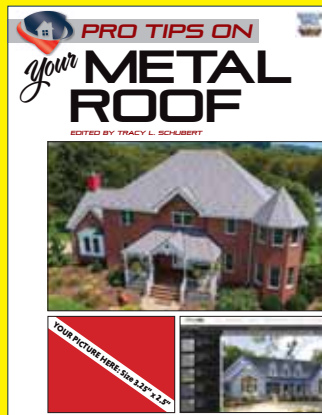
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roofing or a similar field, who are passionate about innovation and/or sustainability. The selected recipient will receive a \$1,000 USD award. All applicants will be evaluated by the Castagra team.

Castagra will also consider applicants who are not planning to attend school. If applicants fit the other guidelines and can prove they are dedicated and passionate about entering the industry, they are also eligible. In this case, the application essay must include what the scholarship funds would be used for.

Applicants to the Castagra Roofing Scholarship Program must be:

- Pursuing a post-secondary education in college or vocational programs\*\* in roofing or a similar field. The similar field must be applicable to the building industry (construction, waterproofing, etc.) (\*\*Essay must include the intended use of the scholarship funds if not attending post-secondary school.)

- Passionate about innovation and/or sustainability

- An American or Canadian citizen or permanent resident

- Castagra Products employees and their family members are not eligible.

Awards are not renewable, but applicants may reapply to the program each year that they meet eligibility requirements. The winner of the Castagra Roofing Scholarship will be notified via email on Thursday, September 1, 2022. Awards are granted without regard to race, creed, color, religion, sexual orientation, gender, disability, or national origin.

## **HOLCIM ACQUIRES MALARKEY ROOFING PRODUCTS**

Holcim [holcim.com] has completed the acquisition of Malarkey Roofing Products, a double-digit growth engine in the US residential roofing market, with projected 2022 net sales of US \$600 million and EBITDA of US \$120 million. Recognized for its leadership in inno-

vation and sustainability, Malarkey is expanding Holcim's range of roofing systems in the highly profitable \$19 billion US residential roofing market.

This milestone acquisition is a significant step for Holcim to achieve US \$4 billion Net Sales in roofing by 2025, while accelerating the expansion of Solutions & Products.

Jan Jenisch, Holcim CEO, said, "I am excited to be welcoming all 600 Malarkey employees into the Holcim family. With their talent and expertise they have made Malarkey an undisputed leader in its field, recognized for excellence in quality, service, innovation and sustainability. Building on Malarkey's legacy of over 60 years of success, I look forward to unleashing our next era of growth together. This is another exciting step in the expansion of Solutions & Products, advancing our 'Strategy 2025 - Accelerating Green Growth' to become the global leader in innovative and sustainable building solutions."

Malarkey Roofing Products was founded by Herbert Malarkey in 1956 and is headquartered in Portland, Oregon. With production facilities in Oregon, California and Oklahoma, Malarkey has a strong presence from the West to the South of the US.

## **APPLE ROOFING ACQUIRES TRIAD, INC.**

Apple Roofing (<https://appleroofingllc.com/>), a roof repair and replacement company with support centers in Plano, Texas, and Lincoln, Nebraska, has announced the acquisition of Kansas City, Missouri-based Triad, Inc.

For more than a decade, Triad has been offering residential and commercial insurance restoration services — including roofing, siding, gutters, and replacement windows — to homeowners and businesses in Missouri, Kansas, and Nebraska. The acquisition adds significant talent and capabilities to Apple's presence in the central Midwest.

"We're excited to be a part of Apple Roofing's vision for the future," said Kerry Copenhaver, founder of Triad, Inc. "Those values of quality, integrity, and service are in direct alignment with Apple's," he continued.

"Throughout this process, we also discovered that both companies had a deeply-ingrained commitment to their employees — that was a key driver in our decision to partner with Apple Roofing," said co-founder, and Kerry's wife, Cindy Copenhaver. "We know, without a doubt, that our employees will benefit from the coming-together of these two great companies," said Cindy.

"Apple is proud to welcome Triad, Inc. to our growing team," said Shawn Lucht, CEO of Apple Roofing. "Kerry and Cindy have built a company with a stellar reputation — we are excited to work with their team and look forward to providing the same level of high-quality service their commercial, residential and insurance carrier customers have come to expect."

## **MULE-HIDE PROMOTES GRUNEWALD TO NATIONAL PRODUCT MANAGER**

Jeremy Grunewald has been promoted to national product manager at Mule-Hide Products Co., Inc.

In his new role, Grunewald has nationwide responsibility for the company's portfolio of commercial roofing products, including single-ply membranes, insulation, fasteners, modified bitumen, roof coatings, sealants, adhesives, accessories and underlayments. He also spearheads the development and implementation of strategic opportunities for new and existing markets, products and systems.

Grunewald joined Mule-Hide Products in July 2021 as product category manager — liquid-applied systems. Prior to that, he was a district sales manager with Tropical Roofing Products.

Grunewald is a Registered Roof Observer through The International

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Institute of Building Enclosure Consultants (IIBEC), is a ProCertified Trainer through the National Association of Roofing Contractors (NRCA), and holds NRCA ProCertification for Training.

Actively involved in the roofing industry, he is on the Board of Directors of the Roof Coatings Manufacturers Association (RCMA) and is a member of ASTM International's Committee D08 on Roofing and Waterproofing.



## WESTLAKE RELEASES ROOFING, ARCHITECTURAL TRENDS RESEARCH

Westlake Royal Roofing Solutions™ has released Roofing and Architectural Trends research and an accompanying CEU (Continuing Education Unit, <https://westlakeroyalroofing.com/education>) course for architects seeking continuing education on the subject. With a direct look into how the pandemic has directly impacted our use of home as well as shifts in residential design aesthetics, roof materials pairings, regional color trends and more, the research and CEU provide architects, builders, remodelers and contractors with key insights into the consumer mindset as well as desires and demands related to home design today.

"This research and CEU is the culmination of an extensive exploration into macro-level, societal influences directly impacting residential roofing and architectural styles today," says Eric Miller, vice president of sales and marketing for

Westlake Royal Roofing Solutions. "Not only will this education help keep architects and building professionals ahead of the curve, these findings will also fuel our own product innovation and releases as we strive to meet actual demand for roofing solutions and design aesthetics among customers in various regions across the country."

The research examines how culture has impacted home design in recent decades and forecasts this decade's trends and what is influencing them. Three defined design periods are reviewed and include pre-2008, the mid-2010s, and 2020-2030. The pandemic and its impacts on lifestyle and the use of the home are also explored.

Three key macro influences to design and roofing trends were identified:

**Naturalism:** The first, the evolving desire for naturalism, represents a shift toward rural-inspired and contemporary escape homes. Two- and three-color palettes are inspired by hues evoking weathering by nature (for rural-inspired homes) and darkened and refined hues (for contemporary escapes).

**Disruption:** The second macro influence, disruption, has led to a home architectural style evoking the new glamour of opposites. Two sub-styles emerge from this influence and include homes in the clean traditional and merged aesthetic styles. Clean traditional homes are often presented in two-color palettes showcasing hues described as high-contrast opposites, while homes in the merged aesthetics style are often presented in two-color palettes in hues described as true traditional tones.

**Ease:** The third macro influence impacting residential architecture and roofing today is ease, which had led to a shift in homes toward the quiet design style. Two types of quiet design homes, quiet transitional and quiet modern

home styles, are presented in one- and two-color palettes of easy muted neutral toned hues.

The new CEU course offers continuing education offering expanded knowledge on the topic for design professionals. Participants who complete the course are eligible for 1 CEU credit.



## 2022 HAND GUIDE RELEASED

Dynamic Fastener [tel. 800-821-5448] has released the 2022 version of its popular Tool and Fastener Hand Guide. This free, 140-page, full-color guide provides concise answers to questions pertaining to fastener applications, engineering data, availability of types, size ranges and fastener materials specific to the metal building and roofing industry.

In addition to discussing screws and anchors, the Guide provides prices and other useful information relating to flashings, sealants, insulation tapes, safety equipment, hand tools, power tools and more. The 2022 publication includes details on the Dyna-Guard snow retention system for metal roofs. It also includes information about the company's new rivet initiative that resulted in a stock level of 100 million rivets with 75 million pre-painted in more than 100 different colors. ●

# INSULATION MISTAKES THAT IMPACT ATTIC VENTILATION

## KEEP AN EYE ON AIRFLOW DURING THERMAL EFFICIENCY PROJECTS

**F**our days before Christmas 2020 I received an email from Ron Bastian, owner of Bastian Roofing, Richfield, Wisconsin. It included a series of photographs showing significant wood rot in a roof deck with the following short note from Bastian:

“The attic insulation is packed tight to the bottom of the roof deck and caused a lot of rot in three years. We did this roof 18 years ago and someone came along since to add insulation. It’s not fun tearing up my old work. This is not the Christmas present the homeowner wanted, I’m sure.”

Attic insulation plays an important role in home energy efficiency and comfort for the people living inside. But a few common mistakes – such as blocking the intake vents in the attic that Bastian discovered – can negatively impact attic ventilation and offset any gains the insulation originally provided. The mistakes can also lead to costly damage.

“There is nothing worse than tearing up your own work after 18 years,” Bastian says. “And it’s hard to explain to a homeowner that what was originally fine is not any longer because someone messed things up over the years. Then, when you dig in, you discover the extent of the damage.”

During the Q & A sessions of our seminars roofing pros and home inspectors across North America share their frustration with what they see when inspecting the intake vents in the attic. Often the insulation has been installed blocking the vents. That shuts off 50% of the attic ventilation because attic ventilation is a 1-2 combination of intake air – through vents low on the roof or in the soffit/overhang – and exhaust air – through vents placed high on the roof or at the peak of the roof. But without proper intake airflow the attic has no ventilation.

“Attic ventilation is a huge part of my roofing projects and I explain its importance to prospective customers as I inspect their roofs and attics,” says Bastian. “It helps set me apart from the competition. I often find myself working on projects that

require fixing the attic ventilation or correcting the insulation to allow for attic ventilation.”

Bastian thinks insulation contractors and DIY homeowners end up blocking the intake vents with insulation because they do not understand either how attic ventilation works or fully realize its importance.

“This roof I installed 18 years ago was fine when we were finished. The attic insulation was sufficient, and the attic ventilation was right,” recalls Bastian. “Then I receive a phone call from the homeowner who suspected a roof leak. When I went into the attic I immediately noticed that in between each rafter spacing the insulation was blocking the intake vents.

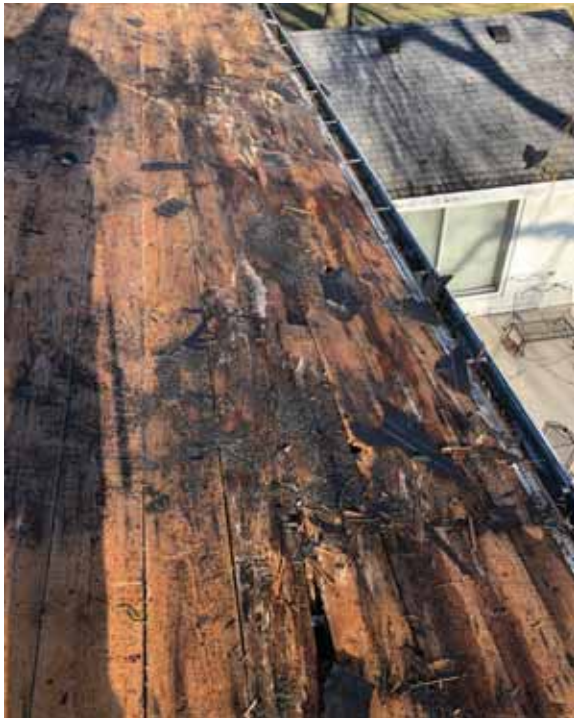
“I grabbed a 1 x 2 and I tried to pull some of the insulation back away from the intake vents. I ended up pulling frozen chunks of insulation out about the size of softballs. When I cleared the insulation enough to insert attic insulation baffles that would keep the intake vents unblocked, I noticed the discoloration on the underside of the roof deck. As I continued to use the 1 x 2 to clear the insulation from the intake vents I nearly poked a hole through the roof because it was so wet and spongy.

“Now I have to explain to the homeowner we will have to tear the roof off and replace rotted roof decking,” says Bastian. The photos show the extent of the damage. “It was not a very good Christmas present for that homeowner. Everyone needs the education about how proper airflow works; the roofing contractor, the insulation contractor and the homeowner,” he says.

### IT'S NOT A ROOF LEAK

When Bastian received the phone call from the homeowner 18 years after installing the roof, it was a request to fix a roof leak. “The homeowner thought there was a roof leak along the outside edge of the house in the bathroom because he noticed some bubbling of the paint and he was convinced water was entering from the roof,” Bastian says remembering the callback.





*Note the condition of the roof deck when Ron Bastian arrived to investigate a roof leak. There was not a leak. Instead, long after Bastian installed the roof 18 years ago, someone added more insulation tight to the roof deck blocking the attic intake vents. In 4 years of cycling through winter and summer what was thought to be a roof leak was much worse than that. Photos by Ron Bastian*



"I went into the attic to see from the bottom side of the roof if I could identify the leak. Water leaves a stain. So if the water is coming through the roof deck you would see it. But the attic insulation was packed so tight against the roof deck I could not see the underside of the deck out toward the gutter edge. That's when I used the 1 x 2 to move the attic insulation and from there the rotted deck was visible," says Bastian.

"It was hard to tell the homeowner, 'Hey, we have a bigger problem than a possible roof leak.' Sharing the photos with the homeowner as I was progressing with the project showing him the damage, he left his work, drove home, and witnessed for himself all the rotted deck we had thrown onto the tarp on ground by the side of the house. The homeowner said, 'I cannot believe this happened,'" says Bastian.

"The insulation was packed so tight against the underside of the roof deck I called it concrete," he says. "And it was completely saturated. We replaced all of the insulation, inserted attic insulation baffles to keep the intake vents free and clear, replaced the roof deck, and installed a brand new roof."

It turns out the attic insulation upgrade project took place 4 years ago. As Bastian noted in our podcast interview with him, it's OK to upgrade the attic insulation as long as you don't block the attic vents. Attic ventilation helps to remove summer heat buildup in the attic and moisture buildup in the attic – but not if the insulation blocks the airflow.

"In three years of cycling through winter/summer, the seasons caught up with the attic and the roof because there was no airflow going through the attic. Once the deck got wet it never had an opportunity to dry," Bastian says.

## CHECK THE R-VALUE

Another attic insulation mistake as it pertains to attic ventilation is not having the proper amount of insulation (defined as R-Value) for the climate zone where the house is located. The R-Value needed in Texas is different than Wisconsin, for example. When an attic ventilation system has been improved to perform correctly it's important to check the R-Value of the insulation because the airflow through the attic has increased. The correct R-Value of insulation will keep the airflow in the attic and not allow it to affect the living space conditions.

If the R-Value is not sufficient for the airflow entering the attic through the ventilation system, homeowners may notice thermal inefficiencies inside the house – and quickly point to the attic ventilation as the problem. But the solution is to always match the R-Value of the insulation to the specific climate zone.

You don't have to be an insulation contractor to talk about this with the homeowner. "When I sell my job I get the proper attic ventilation and I do an attic inspection," Bastian says. "During the inspection I tell the homeowner when I'm done you'll need to hire an insulation contractor to address your insulation because

I do not do attic insulation but I can tell it needs improvement." Bastian has insulation companies he recommends, and he knows they understand the importance of not blocking the intake vents in the attic. "The insulation companies that I would recommend to homeowners have been shown the photos of what goes wrong when you allow the insulation to block the intake vents. They all know better than to do that," Bastian says.

## STAND OUT BY EDUCATING THE HOMEOWNER

Taking the time to explain in layman's terms the importance of attic insulation and its role, even though the roofing contractor does not install attic insulation, has many benefits. "When you educate the homeowner about the full scope of the project you are totally separated from the other contractors who are not educating homeowners," Bastian says. "You're on your own pedestal and the homeowner generally will listen."

Another point of differentiation, as Bastian sees it, is the actual attic inspection when it's safe and practical to do one. "A good roofing contractor should never skip the attic inspection," Bastian says. "I like being the third estimate that the homeowner receives. Let two other roofing contractors submit estimates first and then I will show the homeowner in writing, through brochures, through photos on my phone or iPad exactly why I'm proposing what I am for their roof which includes proper attic ventilation and making sure the intake vents are not blocked.

"Just today I was the fourth contractor to submit a bid to the homeowner for a new roof. I asked if I could grab my step ladder and go into the attic. When I came back down the homeowner told me I was hired without even looking at my price yet. He said no one else even mentioned the attic," Bastian says.

Bastian points to the shingle manufacturers' warranty requirements as it pertains to attic ventilation and the full terms of the warranty coverage. "I'm protecting that roof for the next 30 to 50 years of its life," Bastian says. And he'll point out if he thinks the attic insulation is insufficient to any homeowner – even though he does not install insulation. "Don't skip the attic insulation during the roofing project. Look at it. Determine if there appears to be enough or if it's blocking the intake vents. And if you're not an insulation contractor, which I am not, you can recommend someone you trust." Bastian says this has played out very well for him over the years and says it's the best way to practice his business which is now in its 53rd year. ●

**Paul Scelsi** is marketing communications manager at Air Vent and leader of its Attic Ventilation: Ask the Expert™ seminars ([airvent.com](http://airvent.com)). He hosts the podcast, "Airing it out with Air Vent," and he's the chairman of the Asphalt Roofing Manufacturers Association Ventilation Task Force. He is the author of the book, *Grab and Hold Their Attention: Creating and Delivering Presentations that Move Your Audience to Action*.



## DENVER UNIVERSITY RESIDENTIAL VILLAGE

STANDING-SEAM COPPER PANELS PAIRED  
WITH LONG-LASTING UNDERLAYMENT



When Denver University (“DU”) set out to roof the new Dimond Family Residential Village, a building with 250 dorm rooms, a dining area and numerous common areas, they knew they would use metal roofing panels comprised of copper. DU has utilized copper on many of the roofs and external siding applications throughout campus due to its unique aesthetic appeal, exceptional functionality and renowned longevity.

Installing contractor, Superior Roofing, teamed with local manufacturer, Schafer and Co., to install over 30,000 square feet of double-lock standing seam copper panels. To assure the best results, Superior used a crane to hoist copper coils and a portable roll-former to the top of the four story building so that each panel could be manufactured on-site to a bespoke length and installed immediately. This minimized material waste, decreased loss due to damage and conserved space on a tight jobsite.

Given the extraordinarily long lifespan of copper roofing material and its high level of thermal conductivity, selecting the right underlayment for the project was paramount. The parties involved came to the conclusion that the best possible roof underlayments was Sharkskin Ultra SA®.

Sharkskin Ultra SA® was the underlayment of choice for a number of the features and benefits it provided the project. Because of its superior adhesion, at low temperature, the underlayment could be installed in Denver during the cold fall and winter months. Its 12 month UV protection meant the interior of the building was protected without interior work delays, even before the copper roof panels had been installed and roof completed. The slip-resistant walking surface provided sound footing for roofers and other trades working on the roof. The high tensile strength and anti-oxidant coating formulation will provide a long term moist barrier for the roof system. ●



PHOTOS COURTESY OF SCHAFER AND CO. DENVER, COLORADO

### PROJECT OVERVIEW

**LOCATION:**  
Denver, Colorado

**PROJECT SIZE:**  
30,000 sq. ft.

**CONTRACTOR:**  
Superior Roofing

**ROOF PANELS:**  
Schafer and Co. double-lock  
standing seam copper panels

**UNDERLAYMENT:**  
Sharkskin Ultra SA by Kirsch  
Building Materials





# 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).



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

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## JULY

### July 20-22

Florida Roofing & Sheet Metal Expo (FRSA), Ocean Center and Hilton Daytona Beach, Daytona Beach, Florida; [floridarroof.com](http://floridarroof.com)

## AUGUST

### Aug. 16-20

National Association of Women in Construction's (NAWIC) Annual Meeting and Educational Conference; [www.nawic.org](http://www.nawic.org)

## SEPTEMBER

### Sep. 24-26

Western Roofing Expo (WSRCA), Paris, Las Vegas, Nevada; [westernroofingexpo.com](http://westernroofingexpo.com)

### Sep. 27-29

RCAT / MRCA Roofing Conference, Fort Worth Convention Center,

Fort Worth, Texas; [www.roofingcontractors-texas.com](http://www.roofingcontractors-texas.com)

## OCTOBER

### Oct. 12-14

METALCON, Indiana Convention Center, Indianapolis, Indiana; [www.metalcon.com](http://www.metalcon.com)

### Oct. 26-27

Construction Rollforming Show, Ernest N. Morial Convention Center, New Orleans, Louisiana; [www.constructionrollformingshow.com](http://www.constructionrollformingshow.com)

## NOVEMBER

### Nov. 6-8

RoofCON Roofing & Solar Conference, Orange County Convention Center, Orlando, Florida; [roofcon.com](http://roofcon.com)

### Nov. 8-10

FABTECH, Georgia World Congress Center, Atlanta; [www.fabtechexpo.com](http://www.fabtechexpo.com)

### Nov. 30-Dec. 2

The Buildings Show, Metro Toronto Convention Centre, South Toronto, Canada; <https://informaconnect.com/the-buildings-show/>

# 2023

## JANUARY

### Jan. 18-19

Garage, Shed & Carport Builder Show, Greenville Convention Center, Greenville, South Carolina. [garageshed-carportbuilder.com/show-registration/](http://garageshed-carportbuilder.com/show-registration/)

### Jan. 23-25

MCA Winter Meeting, Hyatt Regency in Clearwater Beach Resort & Spa, Clearwater, Florida; [www.metalconstruction.org](http://www.metalconstruction.org)

## FEBRUARY

### Feb. 12-15

SprayFoam 2023 Convention & Expo, hosted by the Spray Polyurethane Foam Alliance (SPFA), Ocean Center, Daytona Beach, Florida; <https://www.sprayfoam.org/sprayfoam23>

## MARCH

### March 7-9

International Roofing Expo, Kay Bailey Hutchison Convention Center, Dallas, Texas; [www.theroofingexpo.com](http://www.theroofingexpo.com) ●

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