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ROOFING ELEMENTS

SPRING 2021 • Vol. 1, Issue 2

MIAMI-DADE COUNTY SETTING THE BAR

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RE-ROOF?**
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SCREW-DOWN PANEL PROFILES

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|------------------|------|-------|-------|
| Ameridrain | Yes | 15001 | 10001 |
| 5-V Panel | Yes | 15002 | 10002 |
| Pro Panel II | Yes | 15003 | 10003 |
| Strong Panel I I | Yes | 15004 | 10004 |
| ¾" Hi Rib | Yes | 15005 | 10005 |
| M/U Panel | Yes | 15006 | 10006 |
| Agri Panel | Yes | - | 10007 |
| Delta Rib | Yes | - | 10008 |
| 2.67 Corrugated | Yes | 15009 | 10009 |
| Morton Hi Rib | Yes | - | 10015 |
| Hip&RidgeVent | Yes | 15049 | - |
| Unprofiled | No | 15000 | - |

COMMERCIAL

| | | | |
|----------------|-----|-------|-------|
| Spanline | Yes | - | 10018 |
| R Panel | Yes | 15019 | 10019 |
| Multi Rib | Yes | - | 10020 |
| Pro-S 12 Panel | Yes | - | 10040 |

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STANDING SEAM PANEL PROFILES

| STANDING SEAM | GLUE | 50FT | 100FT |
|--------------------|------|-------|-------|
| SL-12 | No | - | 10013 |
| SL-16 | No | 15014 | 10014 |
| 1" x 5/16" x 12" | No | 15016 | 10016 |
| 1" x 5/16" x 16" | No | 15017 | 10017 |
| Medallion Loc 16" | No | 15032 | 10032 |
| Metalogic 3000 12" | No | 15034 | 10034 |
| SSR Panel 16" | No | 15036 | - |
| SSR Panel 18" | No | 15037 | - |
| Metalogic 3000 16" | No | 15039 | 10039 |
| Medallion Loc 18" | No | 15041 | 10041 |



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COMING NEXT ISSUE

- Heat Effects on Roofing
- Fasteners for Extreme Environments



ON THE COVER:

Photo courtesy of GAF.

For information on wind uplift resistance of asphalt shingles, see page 34.

Cover design by Kevin Ulrich.

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SUBSCRIBE—IT'S FREE

Here we are, already sending out our second issue of *Roofing Elements*. It feels like yesterday that we celebrated the launch and send of the premiere issue! This publication has taken off like a rocket, garnering attention beyond what we ever dreamed.

If you like this magazine as much as we do, please be sure to subscribe! We are currently sending these issues “polybagged” with our other titles until *Roofing Elements* has its own collection of subscribers. When we reach that point, if you haven't officially subscribed, you won't receive each and every issue. Find the prepaid subscription card within your printed issue, email us at subs@shieldwallmedia.com, call our friendly subscription manager at 920.471.4846, or visit our online subscription page at www.constructionmagnet.com/subscribe to sign up for this and any of our other publications (which are always free

to those in the trades).

In this issue, you'll find a full feature on underlayments, an intro to Miami-Dade County product approvals (a broad topic that will be covered in detail in future articles), wind uplift resistance by roof type, a beautiful half-round gutter system installation, and more. As always, feel free to write with comments (or criticism)—I look forward to any and all feedback.

Jessica Franchuk, Managing Editor
jessica@shieldwallmedia.com

Correction: In the Premiere issue of Roofing Elements, ASTM International, a global standards development organization, was inadvertently referred to with an outdated name in the “Wildfire Ready” article. We apologize for the error.



Whether your metal roofing or metal building project is new construction or replacement, make sure you specify the most versatile long-life fastener available today—

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Rustic Design

With a metal roof in a weathered steel finish



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

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



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Metal Roof System

WEATHERED STEEL FINISH



CASE STUDY @ [PAC-CLAD.COM/ROOSEVELT](https://www.pac-clad.com/roosevelt)

NOTE: Due to the pandemic and state or local restrictions, many events have been rescheduled or cancelled. We recommend contacting the show coordinators prior to making travel arrangements.

2021 JUNE

16-18. **The International Surface Event (TISE)**. Las Vegas, Nevada.
www.intlsurfaceevent.com.

16-18. **Roofing Contractors Association of Texas (RCAT) Annual Roofing Conference**. San Antonio, Texas.
www.roofingcontractors-texas.com.

17. **A'21 American Institute of Architects (AIA) Virtual Conference on Architecture (part 1 of 4)**.
www.conferenceonarchitecture.com.

2021 JULY

8. **A'21 American Institute of Architects (AIA) Virtual Conference on Architecture (part 2 of 4)**.
www.conferenceonarchitecture.com.

21-23. **Florida Roofing & Sheet Metal Expo and FRSA Annual Convention**. Kissimmee, Florida.
www.floridarooft.com.

29. **A'21 American Institute of Architects (AIA) Virtual Conference on Architecture (part 3 of 4)**.
www.conferenceonarchitecture.com.

30. **Construction Institute (CI) Student Days—Virtual**. Denver, Colorado.
www.ascestudentdays.org.

2021 AUGUST

10-12. **International Roofing Expo (IRE)**. Las Vegas, Nevada.
www.theroofingexpo.com.

19. **A'21 American Institute of Architects (AIA) Virtual Conference on Architecture (part 4 of 4)**.
www.conferenceonarchitecture.com.

2021 SEPTEMBER

15-20. **International Institute of Building Enclosure Consultants (IIBEC) International Convention and Trade Show**. Phoenix, Arizona.
www.iibec.org.

21-23. **Greenbuild Expo**. San Diego, California.
greenbuild.usgbc.org.

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21-23. **Western Roofing Expo.** Las Vegas, Nevada.
www.westernroofingexpo.com.

29-30. **Shed Builder Expo.** Grand Rapids, Michigan.
www.shedbuilderexpo.com.

2021 OCTOBER

5-8. **Building Component Manufacturers Conference (BCMC).** Omaha, Nebraska. www.bcmshow.com.

6-8. **METALCON.** Tampa, Florida. www.metalcon.com.

2021 NOVEMBER

4-5. **Garage, Shed & Carport Builder Show.** South Bend, Indiana. www.constructionmagnet.com/garage-carport-shed-builder-show-home-page.

9-11. **Midwest Roofing Contractors Association (MRCA) Con Expo.** Milwaukee, Wisconsin. www.mrca.org.

2022 FEBRUARY

1-3. **International Roofing Expo.** New Orleans, Louisiana.
www.theroofingexpo.com.

8-10. **National Association of Home Builders (NAHB) International Builders' Show (IBS).** Orlando, Florida.
www.buildersshow.com.

2022 MARCH

New Dates to Be Announced. New York Build. New York, New York. www.newyorkbuildexpo.com.

10. **National Roofing Contractors Association (NRCA) LEGALCon.** Rosemont, Illinois. www.nrca.net.

2022 NOVEMBER

9-10. **3rd Annual Construction Rollforming Show.** Ernest N. Morial Convention Center. New Orleans, Louisiana. Details to come at www.constructionmagnet.com.

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MFM BUILDING PRODUCTS ANNOUNCES EXPANSION PROJECT

MFM Building Products, a manufacturer of a full envelope of waterproofing and weather barrier products for the building industry, has recently announced a substantial expansion project for 2021. The company hosted a groundbreaking ceremony for local dignitaries and media on March 19.

The thrust of the project is adding close to 50,000 square feet to the production area, and the acquisition of new production equipment to meet the rising demand for orders. MFM has been acquiring additional raw materials to ensure product availability for their customer base, and this new facility will accommodate the additional inventory. The building is planned to be completed by fall of 2021, and the new production equipment to be installed and operational by early 2022.

Other aspects of the expansion project include razing a building on the company property, constructing new offices in the main headquarters building, and the addition of a new, state-of-the-art Research & Development laboratory for increased qual-

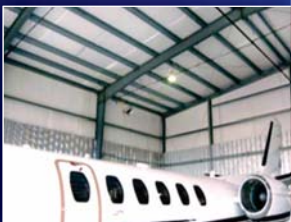


ity control and new product development. In total, the company expects to hire an additional 20 full-time employees as part of the expansion.

According to Tony Reis, President, “The expansion project is the result of continued company growth and the company’s



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commitment to meeting the needs of our customers today and in the future. With this investment, we hope to introduce new waterproofing projects to our portfolio of existing waterproofing membranes. As an ESOP company, there is a lot of excitement among our employees as MFM continues to grow.”

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NEW POLYISO INSULATION MANUFACTURING FACILITY FOR CARLISLE COMPANIES

In late April 2021, Carlisle Companies Incorporated announced plans to invest more than \$60 million to build an innovative manufacturing facility

in Sikeston, Missouri. Consistent with Carlisle’s Vision 2025 strategy to invest in high-returning businesses, the plant will support organic growth initiatives and also create jobs for the city of Sikeston and its surrounding communities. This 445,000-square-foot facility will be the 50th for Carlisle’s Construction Materials segment, CCM, a manufacturer and supplier of energy-efficient building products and related technologies for the commercial and residential construction markets.

This central location will both reduce the carbon footprint of CCM’s supply chain and improve material lead times for customers in this region, where the

use of insulation in the building envelope is steadily increasing. At this new facility, CCM will manufacture energy-efficient polyiso insulation.

Construction is planned to commence in summer 2021, with the first phase of the facility expected to be operational by the first quarter of 2023.

Chris Koch, Chairman, President, and Chief Executive Officer, said, “I am extremely pleased to announce this investment in CCM and in the state of Missouri, which demonstrates our continued commitment to be a leading supplier of innovative products for energy-efficient buildings, utilizing ESG principles in our processes and products, and delivering the premium Carlisle Experience to our customers.”

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GAF CREATES FIRST ASPHALT SHINGLES FROM RECYCLED WASTE SHINGLES

GAF, a Standard Industries company, announced a new patented shingle recycling process that has successfully produced the industry’s first asphalt roofing shingles containing recycled material from post-consumer and post-manufacture waste shingles that may have otherwise been landfilled.

This breakthrough represents an

Continued on page 16

HAIL AND WIND PROGRAMS COMBINED

PLUS THE LATEST ELECTED OFFICERS

The Roofing Industry Committee on Weather Issues (RICOWI) recently held its second webinar in March 2021. One presentation featured Phil Dregger discussing advanced wind forensics and small changes that led to big problems. Bob LeClare gave an update on gutter codes, and the Metal Construction Association provided a prerecorded test that demonstrated Load Resistance of Flashings Used With Metal Roof Systems.

Prior to the second webinar, RICOWI held officer elections during its annual meeting in early March. Congratulations to all of the elected officers: Jason Hoerter, Chairperson; Al Janni, Vice Chairperson; Pete Keener, Secretary/Treasurer; Randy Ober, Director at Large; and David Balistreri, Past Chair.

A board vote was recently taken to approve the merge of RICOWI's Hail Investigation Program (HIP) and Wind Investigation Program (WIP). The new temporary name of the sole committee is the Weather Investigation Program. This decision was made after much deliberation and consideration by the RICOWI Board and the HIP and WIP Program Chairs. The goal of the merged committee will remain the same: to publish unbiased reports that can be accessed by all. This change

will allow for a broader scope of potential investigations.

The reports published on past Hail and Wind Investigations are available for complimentary download on the RICOWI website, under the Resources tab. The reports have been used by many in the industry and are referenced by members and non-members today. If you are interested in joining the Weather Investigation Program, you must be a RICOWI member.

RICOWI is planning a fall seminar in conjunction with the 2021 IIBEC International Convention and Trade Show. The RICOWI seminar dates are September 15 and 16, 2021. A tour of the ATAS International Inc. plant in Mesa, Arizona, is scheduled, along with a whiskey tasting for the RICOWI Foundation fundraising event. At this time, an in-person event is tentative. We hope to be able to safely meet and enjoy one another's company—should an in-person event happen, hybrid attendance will be an option. ●

When appropriate, we will include updates and reports from RICOWI in future issues of Roofing Elements. In the meantime, visit www.ricowi.com for further information and to sign up for email updates.

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2022 CONSTRUCTION
ROLLFORMING SHOW
NOVEMBER 9-10
NEW ORLEANS, LOUISIANA



SUPPLIER NEWS

Continued from page 12

important milestone in delivering more sustainable, affordable roofing materials and has significant implications for improving sustainability and circularity across the roofing supply chain.

“This latest innovation from GAF represents the first major step toward a circular economy for asphalt roofing shingles,” said Jim Schnepfer, President. “We envision a future where every homeowner, when replacing their roof, can do so with high-quality, affordable shingles made with recycled asphalt.”

The new shingle recycling process reduces the amount of raw materials required to make new shingles without compromising product quality or performance. During its successful tests, GAF was able to reclaim more than 90% of the waste shingle material (by weight), to be reused in the manufacture of new shingles. GAF additionally demonstrated its ability to manufacture new shingles containing up to 15% recycled material that

were UL-certified for their safety and effectiveness. The U.S. Patent and Trademark Office issued GAF three patents covering this new shingle recycling process.

GAF is committing more than \$100 million to bring the recycling process to commercial scale, including the development of a pilot operation in 2021 that will enable the company to conduct additional research and development on its process. Through the pilot, GAF expects to assess the maximum amount of recycled asphalt that can be used to make new shingles meeting the company’s high standards, while optimizing the manufacturing process prior to scaling it across its operations.

“This innovation has the potential to reduce a significant waste stream in the U.S. and represents an important advance within the roofing industry,” said Tad Radzinski, Certification Officer for GreenCircle Certified, a third-party certification organization. “Through the recovery of valuable end-of-life

roofing materials, GAF is setting the course to reduce environmental impacts across the shingle product life cycle and provide a truly circular, sustainable solution for roofing products.”

As a leading manufacturer in North America, the company is uniquely positioned to extend the impact of this innovation across manufacturing facilities to help reduce landfill waste and continue to offer more sustainable roofing options to its customers.

www.gaf.com



DUPONT™ LAUNCHES TEDLAR® FILM FOR METAL LAMINATION IN NORTH AMERICA AND THE CARIBBEAN

DuPont recently announced it has introduced a new DuPont™ Tedlar® polyvinyl fluoride (PVF) film for laminating metal roofing and building wall panels. The new product will be sold by Titan Steel and its affiliated company, Metal Alliance, in the North American and Caribbean markets.

Resistance to harsh chemicals and corrosion are two key attributes of Tedlar®-laminated metal. This means that roofing and metal panels laminated with Tedlar® film provide greater resistance to corrosion from seawater and salt spray, even as close as 1,500 feet from the ocean. These features, combined with resistance to fading, chalking, cracking, and blistering caused by UV exposure, plus unmatched pliability, round out an overall robust product for commercial and residential applications alike. With no coastal waterway restrictions, Tedlar® film provides a powerful solution to the metal roofing and wall panel industry.

“The use of Tedlar® film laminated to metal has been proven

on projects in building and construction markets in Europe and Japan for decades, so it was only natural to expand the product offering to other areas of the globe, working with our partners Titan Steel and Metal Alliance in North America,” said Fallyn Flaherty-Earp, Global Marketing Manager, DuPont™ Tedlar®.

“Titan Steel is very excited to be partnering with DuPont™ and Metal Alliance in launching DuPont™ Tedlar® laminated metal for exterior wall and roofing panels in North America. The Tedlar® product represents a functional increase in durability and weatherability. We see its superior fade and corrosion resistance as an excellent fit for residential and commercial coastal applications,” said Drew Munera, Director of Technical Sales at Titan Steel.

Tara Faulkner, Business Development Manager at Metal Alliance, added, “In the increasingly commoditized metal panel industry, it’s not often we have a chance to offer something new. That’s why we’re excited to work with DuPont™ to introduce Tedlar® film for metal panel roofing and wall panels. Its track record of delivering superior protection to metal and other essential surfaces around the world is setting a new standard for metal panel performance that architects, contractors, and consumers will greatly value.”

From the Incheon Basketball Hall in South Korea to the Komoro Train Station in Nagano, Japan, the Okinawa Thermal Power Plant, built within 1,500 feet of the sea, and the iconic Pullman Hotel in Paris, France, Tedlar® PVF film laminated to metal surfaces can be found all around the world.

www.dupont.com

ATLAS’ STATE-OF-THE-ART SHINGLE LAMINATING LINE

Atlas Roofing Corporation recently announced it will build a new shingle laminating line at its Ardmore, Oklahoma, facility. Construction is scheduled to begin in the first quarter of 2021 with an anticipated startup in the fourth quarter of 2021. Current Ardmore production will continue while the new line is completed.

“The Ardmore facility and its people are a big part of Atlas and our history,” said Mike McCaig, Vice President of Operations for the Atlas Shingles and Underlayment Division. “We have a great team at Ardmore and building a new line at this site will help make it competitive for many years to come.”

The new laminating line will create a significant increase in Atlas’ overall laminate shingle capacity and will create efficiencies throughout the plant to help increase overall throughput. The existing facility has been operating since 1960 and technology in the production of asphalt shingles has changed significantly since then. ●

www.atlasroofing.com

MIAMI-DADE COUNTY

SETTING THE BAR IN BUILDING CODES AND PRODUCT STANDARDS

BY JESSICA FRANCHUK

In 1974, almost 50 years ago, the state of Florida began requiring all local governments to enforce a minimum building code. However, after Hurricane Andrew devastated southern Florida in 1992, severe flaws in the state's code compliance and enforcement were revealed. It is said that Hurricane Andrew created the state's worst insurance crisis of all time, which ultimately led to the creation of a state-wide Florida Building Code.

Beginning on March 1, 2002, the Florida Building Code officially superseded all other local codes in the state. Updates are made every three years, with the occasional annual amendment for any necessary clarifications. All facets of "building" are included, from design, planning, and construction to modi-

fications, repairs, and demolition—also encompassing products used in these processes.

So how does Miami-Dade County fit in? They issue Notices of Acceptance (NOA) for products that are allowed to be used in their county. All of these products will also meet Florida Product Approval, but have also satisfied the more strict requirements of Miami-Dade County. According to Mark Gies, Director of Solar Business for S-5!, "Miami-Dade County is known to have the most stringent building code requirements in the *country* since they have arguably the toughest High-Velocity Hurricane Zone (HVHZ). It is a good certification to have because NOAs are generally accepted by other jurisdictions that view them as meeting or exceeding their local



product approval process. NOAs are accepted all over Florida, as well as surrounding states and territories, and places like Hawaii and the Caribbean.

“The state of Florida has its own product approval process with its own baseline requirements for different wind zones, including their own HVHZ. Gaining product approval from the Florida approval process is valuable for projects in most of Florida; it is not accepted in Miami-Dade or Broward counties. Overall, it is not as universally accepted by Authority Having Jurisdictions (AHJs) as an NOA is.”

MANUFACTURERS PUT TO THE TEST

What does all of this mean for those who actually produce and manufacture roofing products? Alex Pecora, Director Product Development for CertainTeed Roofing, shared, “Florida’s building code requires various building products, including roofing, to be tested and registered with the state via a statewide approval system. In contrast, Miami-Dade County’s Notice of Acceptance approval process is performed at the county level and may permit more evaluation categories than the state does.”



Above: This building survived Hurricane Irma, with a roof design capable of withstanding 180 mph winds. Photo courtesy of S-5I

Left: All building products used in Miami-Dade County must meet their strict standards and receive a Notice of Acceptance. Photo courtesy of Drexel Metals.

Right: Photo courtesy of Petersen

The manufacturer must decide if each individual product needs to achieve an NOA. “Not all of a company’s products will be Miami-Dade approved, and this is generally based on the expected Return on Investment (ROI). We must be able to justify the additional expense of getting the product tested, based on what we expect in sales. Of course, we have had products with a high demand in Miami-Dade County, which we went ahead and got approved,” explained Sal Delfino, Technical Manager of

Codes and Testing for Petersen.

S-5I’s Mark Gies and Dustin Haddock, VP of Research & Development, went into detail on the process for their products, including one-time NOAs: “S-5I’s approach in Miami-Dade County has been to obtain project-specific product approvals in which we have been successful with many of our clamps and brackets, as well as our direct-attach™ solar mounting system. In

MANUFACTURERS & SUPPLIERS WITH MIAMI-DADE APPROVALS

Roofing manufacturers with NOAs can be found via Miami-Dade County’s Product Control Search: www.miamidade.gov/building/pc-search_app.asp

LOW- AND STEEP-SLOPE ROOFING

- ABC Supply Co.
- Carlisle Syntec Systems
- CertainTeed
- Drexel Metals
- Firestone Building Products
- GAF
- The Garland Company
- Petersen/PAC-CLAD
- ProVia

INSULATION

- CertainTeed
- GAF

VENTILATION

- CertainTeed
- GAF
- Marco Industries
- Petersen/PAC-CLAD
- Ventco

UNDERLAYMENT

- CertainTeed
- Firestone Building Products
- The Garland Company
- Levi’s Building Components
- MFM Building Products
- Titanium Synthetic Underlayment

FASTENERS

- Atlas Bolt & Screw Co., LLC
- Direct Metals Inc.
- Maze Nails

MIAMI-DADE COUNTY
APPROVED




these cases, we receive a one-time Notice of Acceptance from Miami-Dade. For the one-time NOAs, our testing is specific to the roofing material, manufacturer, and finished profile. These tests are conducted at an ISO/IEC 17025 accredited laboratory and meet the requirements of Miami-Dade County concerning testing laboratories. Because we are able to illustrate the capacities of our products on a specific standing seam basis, it is fairly easy for project-specific NOAs to be obtained.

“Full product NOAs are given when a roof system passes the required testing. A ‘system’ includes many components and factors, such as the clamp, standing seam profile, material thickness, concealed clip, the screw securing the clip to the structure, and the structure of the roof. This creates endless potential combinations that would require individual testing, so our strategy has been to pursue project-specific NOAs, which is not uncommon for companies like ours.”



Selecting and using the wrong product in a corrosive (seaside) environment can result in premature failure of the materials. Photo courtesy of Petersen.

Delfino added, “Non-approved products cannot legally be installed in Florida. If non-approved products are used in a roof installation and this is discovered during an inspection, they must be removed and replaced with an approved product.” So if you’re installing a roof in this strict county, it is wise



MIAMI-DADE COUNTY

MIAMI-DADE COUNTY, FLORIDA
DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES
PRODUCT CONTROL SECTION

**CHECKLIST #0145 FOR THE APPROVAL OF:
METAL ROOFING SYSTEMS (NON-STRUCTURAL)**

- Basic Requirements Checklist:
- One set of the manufacturer's 'approval document' including:
 - Extrusion or cross section with details, properties and all dimensions,
 - Details of all sections with dimensions and thickness,
 - Fastener diagram
 - Details of all connections including size and location, corresponding with tests,
 - Installation instruction, and
- List of the manufacturing location(s) of product seeking approval.
- One set of manufacturer's design drawings marked and verified by the testing laboratory

The following current laboratory tests and reports in compliance with protocol TAS 301.

- Accelerated Testing of coating 2000 hours per ASTM G152
- Salt Spray Testing of coating 1000 hours per ASTM B117
- Fire Testing per ASTM E108 or UL790. (Not required if system is assembled with an approved fire barrier.)
- Uplift resistance test per TAS 125. (UL 580 Class 90 or higher. The permanent deformation area, at any location, shall not exceed the area of a 1" diameter circle.) **See Note 5.**
- Wind Driven Rain Test per TAS 100. **See Note 4.** (If system is to include a valley assembly and/or horizontal joints, the valley assembly and/or two horizontal joints shall be incorporated in TAS 100 test.)

Notes:

1. System must be tested with the same approved fastener: no change in configuration washer and/or diameter will be accepted.
2. System should be installed over minimum 15/32" thickness plywood attached to the framing using corrosion resistance #8 wood screws or annular ring shank nails.
3. The permanent deformation of nonstructural roof systems shall not exceed 1.00 inch in diameter.
4. Specimen for TAS 100 on systems that are mechanically fastened to the substrate through the panels must be identical to the specimen tested in TAS-125 with the most amount of seams and closest fastener spacing.
5. Different insulation thickness and density will be acceptable as follows:
 - a. Density and compression strength is limited to the one tested or greater
 - b. Testing an insulation thickness between ¾" and 4" will qualify that range.
 - c. Testing an insulation thickness between 4" and 6" will qualify that range.
 - d. Testing below ¾" or above 6" will qualify the insulation thickness tested only.
6. If multiple manufacturing locations for the product being approved are to be included in the approval document, then testing must be performed and submitted for the manufactured product from each location.

to follow their requirements and rules.

OUTSIDE OF FLORIDA?

Don't do business in Miami-Dade County or even in the state of Florida? You should still pay attention to those products with NOAs. Pecora shared, “We believe the Miami-Dade NOA does appeal to roofing contractors, builders, and homeowners in other regions. Since Miami-Dade is considered a High-Velocity Hurricane Zone, they have some of the country’s strictest building codes. A roofing system with a Miami-Dade NOA will provide superior protection from wind events, no matter where it is installed. This type of protection is

even more important due to the extreme weather events many areas in the country are now experiencing for the first time.”

Ken McLauchlan, Director of Sales for Drexel Metals, added, “A lot of reps want to talk about [NOAs], but they aren't really *needed* outside of the region. However, those contractors in coastal or gulf states may look to these products for guidelines.”

In conclusion, even if you don't install roofs in Miami-Dade County or even in Florida, products that have achieved an NOA may still be good additions to your supply list—you can rest easy knowing that they have been subjected to the most rigorous product testing around. ●



Photo courtesy of CertainTeed

TO REPAIR OR RE-ROOF?

EDUCATE YOUR CUSTOMERS
FOR AN EASY ANSWER TO THIS COMPLEX QUESTION

BY JESSICA FRANCHUK

You've received the calls—"There's water coming from the ceiling!" "A bunch of shingles blew off in last night's storm..." and "How much to replace the dented panel?" When a homeowner makes these panicked calls, they're likely looking for a quick fix or an easy answer—a simple "I'm on the way." But that simple answer can quickly turn into a selling opportunity for an entire new roof system (depending on the actual damage involved). Educate *yourself* so you can educate your future customers.

VISIBLE VERSUS HIDDEN PROBLEMS

The solution to a repair call cannot be offered until a thorough inspection of the entire roof has been completed. Summed up into an easy-to-remember phrase, "You can't see what you can't see." Ken McLaughlan, Director of Sales for Drexel Metals, advised, "Depending on the severity of the damage or the reason for repair, you cannot inspect the condition of the substrate, flashing, underlayments, etc. If you are performing a repair or replacement, there is typically a reason, and it is always best to



Top, Above, and Right: “How not to repair a roof”—some previous repairs can give you an idea of what you’re in for when you get up on the roof. Photos courtesy of Petersen.

TOP 5 CONSIDERATIONS

- 1 The roof’s age:** If the roof is already nearing the end of its estimated life span, it’s likely time for a full replacement rather than a repair.
- 2 Leaks, and what comes with them:** Finding the true source of a leak can be a challenge, with potentially more issues that can’t be seen.
- 3 Percent of damage:** Is the issue mostly aesthetic? Or is there deep, structural damage that requires a full take-off?
- 4 Location/region:** If the area is prone to hailstorms or hurricanes, a replacement with a more resilient material might be in order.
- 5 Cost:** Repeatedly repairing an old, damaged roof can cost more in the long run than a new roofing assembly.



completely inspect or remove and replace what is necessary.”

On the same point, Dave Landis, Manager: Technical Services SE Region for Petersen, elaborated: “The number one thing here is not being able to see what condition the roof deck assembly is currently in. Is there rotted plywood from a slow water leak somewhere? Or, with a steel deck assembly, is the ISO board insulation wet and spongy? These things will be difficult to pick up if you’re just doing a repair. When going in for a quick fix, you just can’t see underneath the entire roof covering and you don’t know what condition the deck and the entire building are in.

Also, if you’re going to repair a roof that you didn’t install yourself, you have no idea what the previous person has done. Other than assuming they met the proper codes, you just don’t know.”

Just assuming you know what condition the roof deck is in can be a huge risk, potentially creating more problems than you are trying to solve. Alex Pecora, Director Product Development for CertainTeed Roofing, said, “Roof repairs can be tricky as

opposed to installing a new system. If the repairs are not properly performed, more damage may occur to the rest of the roof system and even to structural components.”

Not to mention the fact that a contractor who doesn’t know exactly what is under the roof is putting their own safety at risk. Landis added, “On a pre-engineered metal building, the roof system is installed over open purlins that are typically 5’ on center. If there’s a roof issue, you certainly wouldn’t want an inexperienced roofer walking on that roof. You need experience and the proper safety equipment in this scenario.” Landis also included that if the original manufacturer provided a weather-tight warranty and the building owner calls for a repair without notifying the manufacturer, they’ve probably just voided whatever warranty they had.

A FOCUS ON EDUCATION

When you’re the one inspecting and repairing the roof, it’s an obvious choice to opt for a full, new installation rather than a



Above: A full, new shingle roof means there are no hidden issues. Photo courtesy of CertainTeed.



Left: Come across this when hunting for a roof leak, and you're sure to find many more problems. Photo courtesy of Petersen.

small repair. But your customers might only see flashing dollar signs, especially if they were not expecting a re-roof to be suggested. Re-roofing does have numerous benefits for the building owner though:

- **Aesthetics:** Regarding the looks of the home, Pecora said, “A roof accounts for approximately 40% of a home’s curb appeal, so a new roof will make a noticeable impression.” If the owner is considering a sale of the property anytime soon, a new roof can not only make the home more attractive, it can also be a huge selling point for buyers.

In this same regard, repairing a roof might create an unsightly problem. Pecora added, “Shingles can fade over time due to ultraviolet (UV) exposure, so it may be difficult to match the shingle color, which can negatively affect aesthetics.” Landis also noted, “While it is possible to match profiles of metal roofing, depending on the age of the roof, you’re going to have color fade. So if you have a 10-year-old metal roof and you go back and put a new panel on it, you’re going to notice that new panel.”

- **Peace of Mind:** Sitting down with the customer and outlining the significant benefits of a full re-roof is critical. “During my contracting experience, my goal was always to educate the customer, homeowner, or property management company. The better they understand the roofing system and the suspected cause of the issues, the better solution we can provide in that situation,” McLauchlan stated.

When you’re trying to fix a roof with materials that differ from the original assembly, that can also cause future issues down the road. Pecora laid it out: “Generally, a roofing manufacturer’s system components are designed to work in unison versus mixing components from multiple manufacturers. Therefore, a homeowner will have peace of mind in knowing that their new roof is one cohesive system that has been engineered to offer maximum performance.”

- **Material Advances:** Today’s roofing options differ vastly from those developed even 10 years ago. Products are being created and updated constantly, shared Pecora, “Roofing manufacturers are always developing technological advancements that may not have been available when the roof was installed 10 or 20 years ago. For example, as weather patterns are shifting and, in some regions, becoming more severe, a homeowner may want to consider greater impact- or wind-resistant shingles (when a decade ago, that type of roof may not have been necessary).”

It might seem natural for a roofing contractor to go on a call and try to sell a new roof for monetary gains. However, the reasons behind this choice are significant and better yet, can be explained in layman’s terms. The next time you get the “Help!” call, consider the options and take your time to educate the customer. ●

SELF-ADHERED INSTALLATIONS

HOW TO ACHIEVE MAXIMUM PERFORMANCE

BY DAVID DELCOMA, PRODUCT MARKETING MANAGER, MFM BUILDING PRODUCTS CORP.

Self-adhering or “self-stick” roofing underlayments have been around for more than 30 years—protecting building structures from moisture damage caused by wind-driven rain, ice dams, or failure of the finished roofing surface. Because of their added cost versus traditional felt and synthetic underlayments that are mechanically attached, many roofing contractors don’t have experience installing self-adhering products. Most of their experience is primarily with self-adhering “ice and water” underlayments installed along the roof eave and valleys, which is code in most building locales.

There are a number of advantages to covering the entire roof with a self-adhering underlayment, which will protect the home’s interior from unnecessary water damage before, during, and after the final roofing system is installed. The major disadvantage of mechanically attached roofing felts and newer synthetic underlayments is they can’t provide the same level of protection should water or moisture penetrate the roofing system.

Blown-off shingles, ice dams, or seam leaks on metal roofing systems allow water to get beneath the finished roof system. Self-adhered underlayments offer secondary water protection for the entire roof in the event of a roofing breach. Most of these self-adhered underlayments are also self-sealing around roofing fasteners, ensuring a fully waterproof barrier. It’s no wonder that today, there are more self-adhered products available than single-ply and built-up membranes combined.

Although self-adhered underlayments are relatively easy to install, there are several installation keys that should be followed closely to provide maximum performance once the product is installed:

- **Building Codes:** Know all applicable building codes, as well as the manufacturer’s recommended installation instructions,



PHOTO COURTESY OF MFM BUILDING PRODUCTS CORP.

prior to the installation of any roofing underlayment. There are often minimum installation temperatures, roof pitch restrictions, and UV exposure ratings on self-adhered underlayments to ensure that the products are installed as intended.

- **Product Approvals:** Self-adhered underlayments can be certified or comply with industry standards to ensure their performance on the job site. Issuing bodies such as the ASTM, International Code Council (ICC), Miami-Dade County, and Florida Building Code can provide documentation of a prod-

uct's intended use and limitations. Always check to see if your roofing project and/or location requires a code-approved underlayment.

- **Ventilation:** Self-adhered underlayments are typically vapor barriers, which means they require proper ventilation of the roof system. Without proper ventilation, condensation can form, causing damage to the interior structure. Items such as roof or soffit vents will need to be installed to ensure the proper flow of air for the roof.

- **Adhesion Is the Key:** Ensure that the roofing substrate is clean, dry, and free of waxes, dirt, or debris. Dust and dirt will impair the adhesive properties of the self-adhered membrane. Weathered surfaces require the use of a primer prior to installation to provide a clean and smooth surface. Contact the underlayment manufacturer for their list of approved primers.

- **Flash Penetrations:** Always flash around roof penetrations such as vents, chimneys, and other protrusions. Many times, when a roof leaks, it is around these penetrations because they were not properly flashed. You can often use the underlayment itself as a flashing material or purchase specialized roof flashing tapes.

- **Flashing Deck Panel Seams:** This is a growing trend with roofing contractors and has also become a required code in some building locales. There are specialized products on the market designed specifically to flash the seams on plywood and OSB roof deck panels. Searching for viable products or asking the underlayment manufacturer should produce a list of suitable products.

- **Eliminate Gaps:** Do not use the underlayment to bridge gaps in the roofing substrate. Always use a flashing membrane or roofing tape to seal the gap,



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then install the underlayment.

- **Caulks and Sealants:** Caulks and sealants that contain plasticizers may react adversely to the adhesive system of the underlayment, which may cause the

mastic to liquefy. It is the responsibility of the installer to ensure that the underlayment is compatible with any product it will come in contact with.

- **Overlaps:** Always start at the eave and work up toward the ridge to ensure that water will flow over all side laps, which are normally 3" on most self-adhered products. End laps are typically recommended to have an overlap of 6". Again, contact the underlayment manufacturer for recommended lap requirements.

- **Apply Pressure:** Applying sufficient pressure with a large 80 lb push or hand roller over the entire surface while paying special attention to any overlap areas is critical in establishing solid

adherence to the roofing substrate.

PEACE OF MIND

The most important aspect of self-adhering underlayments is that when installed correctly, they can provide the roofing contractor with peace of mind and greatly reduce the number of callbacks to fix a leaking roof. Information should be readily available from the manufacturer in the form of technical data sheets, installation instructions, installation videos, and other resources.

By properly informing yourself prior to the job, you stand a much greater chance of future referrals from pleased customers. ●

CHANGES IN STANDARDS

A NEW ASTM STANDARD FOR QUALIFICATION OF SYNTHETIC UNDERLAYMENTS

BY GREG KEELER, TECHNICAL SERVICES LEADER, OWENS CORNING

Synthetic underlayments have been available for over 20 years, and very early versions left a bad impression on some contractors. However, things have now changed for the better.

WHY SYNTHETIC UNDERLAYMENT?

Roofing contractors are always

looking for ways that they can do their job more efficiently, and seeking products that they feel improve the quality and durability of the installed roof. Asphalt felt underlayments, also referred to as "felt paper" or "tar paper," have served the roofing industry well for decades. However, there have always been shortcomings of these products.

As the monikers indicate, the most prevalent drawbacks to these paper products is that they are essentially paper that has been saturated with asphalt. The organic paper core of these products tears easily and is sensitive to changes in humidity. Also, because the paper core isn't 100% saturated, the paper can still absorb moisture, which can cause waviness

when installed on the roof. Generally, the heavier the paper core, the higher the potential for waviness.

The other major drawback of these products is their propensity to tear easily. Tearing is a concern especially where it occurs around fasteners when the product is enduring foot traffic during roof covering installation. Tearing can also be a major issue when it comes to the ability of the underlayment to remain in place in a high-wind event, especially if the roof covering is blown off.

The above concerns were the primary drivers that led to the development of synthetic underlayments. Synthetic underlayments are designed to provide superior strength—including resistance against both tensile (pulling) and tearing. However, the test standards for these products never caught up to their product development—until now.

HISTORY OF SYNTHETIC UNDERLAYMENT TESTING

Early synthetic underlayments were tested and qualified for use under ASTM Standards that were intended to be applied to asphalt-impregnated felt underlayments. For many years, the International Codes (IBC and IRC) and the Florida Building Code have referenced ASTM D226, ASTM D4869, and ASTM D6757—all Standards that were intended to apply to asphaltic felt underlayments.

The problem with that approach was that those Standards are primarily composition driven. Since they were intended to be applied to asphaltic underlayments, there is very little testing that can be performed on synthetic underlayments. In fact, when a synthetic underlayment is tested under ASTM D226, for instance, the only tests that can be applied are the Unrolling, Breaking Strength, and Pliability tests.

Those who have installed underlayment know these three tests alone demonstrate very little about a product's suitability.

It didn't take too long for the roofing industry to recognize the unsuitability of the existing felt Standards for assessing synthetic underlayments. As a result, several synthetic underlayment manufacturers worked with the International Code Council's Evaluation Service (ICC-ES) to develop Acceptance Criteria for synthetic underlayments. Acceptance Criteria are similar to ASTM Standards, with a couple of distinct differences:

- They are not consensus-based standards—the test requirements and conditions of acceptance are determined by the manufacturer and ICC-ES with very limited input from industry stakeholders.
- The Acceptance Criteria cannot be referenced in the I-Codes as a Reference Standard.

Acceptance Criteria are deemed to be an alternative compliance path that applies to products for which the codes do not include prescriptive requirements. Additionally, they are limited to use exclusively for the purposes of obtaining an ICC-ES Evaluation Report. The two applicable Acceptance Criteria are:

- AC 188: Acceptance Criteria for Roof Underlayments
- AC 207: Acceptance Criteria for Polypropylene Roof Underlayments (limited to spunbond polypropylene underlayments)

DEVELOPMENT OF AN ASTM STANDARD

After years of increasing numbers of synthetic underlayment products being introduced into the market—with no



PHOTO COURTESY OF OWENS CORNING

defined process for qualifying the underlayments—the roofing industry decided it was finally time to develop a consensus standard for these products.

Over an approximately 8-year period, members of an ASTM Task Group worked to develop a Standard that establishes appropriate and stringent performance requirements for synthetic underlayments. Task Group members represent contractors, roof consultants, product manufacturers, test labs, test equipment manufacturers, and more. This diverse membership lends credibility to the process and the resulting Standard.

Many years of hard work resulted in ASTM D8257: Standard Specification for Mechanically Attached Polymeric Roof Underlayment Used in Steep Slope Roofing. This Standard

establishes a high bar for synthetic underlayment performance and durability. It includes many test requirements that are unprecedented for underlayment standards. These tests include fastener pull-through, UV resistance, and hydrostatic resistance, among others.

The next step in this process is to propose inclusion of the new Standard into the I-Codes and the Florida Building Code. This important work is currently underway and there are many industry stakeholders working in concert to support this effort. The underlayment technology available today provides a much more diverse array of products. Product innovation continues to improve existing products and provide an even wider variety of products to complete your next job. ●

TIPS & TRICKS

INDUSTRY EXPERTS SHARE THEIR TOP ADVICE FOR UNDERLAYMENT SELECTION AND INSTALLATION



WWW.ALPHAPROTECH.COM

Our top two important considerations:

- Don't always consider price as you select underlayments. Products are built for performance with the longevity to hold up under the final roof covering, keeping the elements out for years. The longer the warranty, the longer it will keep the elements from penetrating into the interior. Also, the price of a product is often based on how well it will install, and the strength of tear and walkability. Cheap isn't always good, and good isn't always cheap.

- Make sure that the product selected is correct for the exterior roof cladding (specifically if used with metal, tiles, or other types of exterior claddings than shingles). Many synthetic underlayments are not made for performance with these types of claddings and will not hold up to the installation or longevity of these final roofing materials.

A pair of helpful tips:

- Always follow the manufacturer's installation instructions—always! These are designed around the testing that was done to get the necessary approvals, so they are very specific to performance and warranty.
- Use cap fasteners even when not listed in the installation instructions and *always* fasten where it is printed on the product. If you follow these two tips, you will keep yourself out of trouble (at least in regards to underlayments).



WWW.ENGLERTINC.COM

There are important considerations that roofing contractors should keep in mind when selecting the proper roofing underlayment for specific jobs:

- What temperatures is the product going to be able to withstand? Surface temperatures of darker roofs are generally hotter than lighter colored roofs. Likewise, unpainted metal roofs will get hotter than Kynar-painted metal roofs. Make sure that your underlayment will perform underneath the project's roof system.

- Is the underlayment compatible with the decking and/or roof system? Will a slip sheet be required? Will it be covered as part of the roof system's single source warranty? Many roofing system manufacturers require the use of their own underlayment. Technical representatives from the manufacturer can help answer project-specific questions.

Our tips and tricks:

- Job site conditions differ between regions and times of year. Combine those factors with different roof deck substrates and you'll discover that underlayments may require the use of a primer and/or cap nails.

- Exposure ratings will tell you how long the product is rated to be left exposed before being covered by the roof system.

- Lighter colored roofing underlayments may be easier and more desirable in warmer temperatures, while dark colored roofing underlayments may be more advantageous in colder climates. In colder climates where you may have a frosty, icy roof deck from the night before, consider using a temporary covering or tarp that can be removed at the start of the day to keep the deck dry and safe.

- Installation guides should be consulted and are available from most major manufacturers.

- Although generally underlayments are installed horizontally, there are times and situations where their installation can be approved to be installed vertically.



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Two important considerations roofing contractors (of all material types) should keep in mind when selecting the proper roofing underlayment for their specific job:

- There are many different underlayment options available in today's market; it's important to know that these products aren't always designed for the same purpose or functionality. All of the leading manufacturers of roofing underlayments make high-performance underlayment with longer warranties. The specific product you should use will depend on several things, including: type of roof system being installed, climate, roof slope, and budget. A low-slope roof in a rainy climate would need a different product than a steep roof in a hot, dry climate. Another example is choosing a high-temp membrane when metal systems will be applied. This will help combat the elevated temperatures that a metal roof can impose.

- It is important to understand how long the underlayment will be exposed during the construction process. Try to choose an underlayment with an exposure rating that meets the needs of the specific project.

Two general tips or tricks that roofing contractors (of all types) should know regarding the proper installation of underlayment to keep the elements out:

- Low-labor solutions like self-adhering membranes continue to grow in the industry. Whenever possible, use a primer when self-adhered underlayments are utilized. This is very important for the best possible adhesion. Water-based or acrylic primers not only provide a low VOC option, but they will also not over soften the mod bit compound of a self-adhering sheet.

- Temperature is an important and often overlooked variable when installing roof underlayments (especially in cooler temperatures). Not only are warmer ambient temperatures critical for better adhesion, but so are warmer substrate temperatures that the membrane will be adhering to. A good rule of thumb is to install when ambient, membrane, and substrate temperatures are 50°F and rising. This will help with getting the best overall adhesion.



Roofing Ventilation & Accessories

WWW.MARCOINDUSTRIES.COM

Our tips are simple, but critical:

- One consideration is whether the underlayment is approved for the particular type of roofing that is chosen for the project. Not all underlayments are suitable for all roofing products.
- Another would be the exposure of the underlayment. Certain roofing products can have long lead times from the date of order to the date of arrival at the job site. This can be due to custom cuts required on products such as metal roofing, or custom colors that the manufacturer may not have in stock. Regardless, in order to avoid project delays, the framing and roof deck may be completed weeks before the roofing product arrives and is installed. Not all underlayments have an exposure rating to accommodate the wait for the roofing. If the underlayment is on the roof longer than the exposure rating, it can break down, wrinkle, or leak, thus causing the building owner or contractor to remove and replace it.
- Always follow the underlayment installation instructions from the underlayment manufacturer for the particular roofing material that is going to be installed.



WWW.SHARKSKINROOF.COM

Considerations to keep in mind when selecting the proper roofing underlayment for a specific job:

- Choose a roof underlayment that matches the performance parameters and installation requirements of the primary roof covering. For example, roof underlayments installed with clay or concrete roof tile should be able to handle abrasive foot traffic from all trades, tile loading, and UV exposure.
- Consider roof underlayments specifically engineered to be installed based upon the climate conditions. For example, use

self-adhered roof underlayment that will adhere at low-temperatures if you're installing in the winter. And choose roof underlayments that can handle high temperatures if installing under standing seam metal roofing.

- Consider using a roof underlayment that provides energy savings by reducing heat transmission into the attic or building, as well as air and vapor barriers for commercial roofing that reduce heat loss and decrease energy costs.

Top tips regarding the proper installation of underlayment to keep the elements out:

- Read the installation instructions from the manufacturer, as well as the local building code requirements. Many installers simply don't read the installation instructions!
- Again, make sure the proper roof underlayment is being used with the primary roof covering. It's critical that the roof underlayment matches the performance criteria of the primary roof covering.
- Install roof underlayments that have a long track record of success when installed under specific primary roof coverings.



WWW.VAPROSHIELD.COM

When selecting the proper roofing underlayment:

- A vapor-permeable roof underlayment can be a durable option for protecting the underlying materials in a steep-sloped roof assembly, including the building's structure, from exposure to liquid water. Although several types of roof underlayment products exist, a vapor-permeable underlayment can resist liquid water and still allow for assembly drying—something that vapor-impermeable underlayment products cannot provide.
- By designing a roof assembly that incorporates a vapor-permeable underlayment, moisture issues from interior vapor drive and construction moisture can be mitigated, allowing the roof to perform, as designed, to its maximum life span.

General tips for the proper installation of underlayment:

- Install in an overlapping shingle fashion, with the upper courses overlapping the lower courses to shed water down the roof.
- Pre-cut underlayment to desired manageable lengths prior to removing the release film. Allow for excess material to accommodate roof-to-wall air barrier WRB membrane transitions. ●

PART 1: PIPE FLASHING

HOW THE PROS DO IT—THE FIRST STEP-BY-STEP INSTALLMENT OF A 5-PART FLASHING SERIES

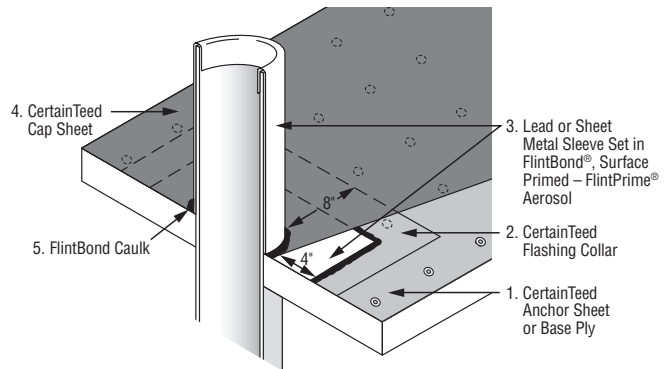
When thinking of pipes, the first thing that probably comes to mind is plumbing inside wall cavities of a building or home. However, pipes are also commonly found protruding from a rooftop—penetrations made through the roof to allow pipes to vent noxious gases and odors from equipment in the building or home into the air. Pipes can also help bring air in and out of a building or home to keep it properly ventilated.

Pipes are vital to a building’s health, but it is also critically vital to properly flash or waterproof the pipe penetration to prevent moisture and water incursion into the structure. As many home or building owners are painfully aware, unwanted or uncontrolled moisture can cause damage to people and/or property, and lead to mold growth that requires expensive and time-consuming remediation efforts.

STEPS TO FLASH A PIPE

Using CertainTeed SmartFlash ONE; CertainTeed Flintlastic SA Cap; and CertainTeed Flintlastic SA NailBase:

1. First, get your field membrane in place, cutting a hole to accommodate the pipe.
2. When you’re ready to flash in, start by roughing up the pipe.
3. Then, prepare the polyester fabric reinforcement. Wrap the fabric around the pipe, measuring with a 2” overlap.
4. Once you have that cut, cut “fingers” into the bottom half of the fabric. This will allow the fabric to radiate around the pipe.
5. Next, we need our target patch, which will sit on top of the fingers. You’ll take 6” on each side, overlapped by 2” in the middle. Simply cut out fabric to accommodate the pipe.
6. You can tape off the edges and pipe approximately 1” beyond the reinforcement. This allows for a clean finish. Now we’re ready for resin.



7. SmartFlash ONE is thick and can be applied easily with a brush or roller without dripping. First, apply the resin around the pipe and onto the base at approximately 30 wet mils thick.

8. Then, lightly press in your finger flashings.

9. Now fully cover the fabric with resin, making sure to put resin in the 2” overlap. You should not see any fabric.

10. Next, press in your target patch. Again, fully coating the surface and overlapping area with resin.

11. For full warranty coverage up to 20 years, give this between 2 to 4 hours to dry and then come back with a final coat that is approximately 30 wet mils thick.

12. While not required for warranty, but if desired for aesthetics, broadcast CertainTeed color-matched granules into the wet resin.



For a video by CertainTeed’s Joe Thompson that includes these step-by-step instructions, visit blog.certainteed.com and search for “Joe Knows.”

VENTILATION VIEWPOINTS

EXPERTS SHARE THEIR TOP TRICKS FOR PRODUCT SELECTION AND INSTALLATION

We asked manufacturers and suppliers of roofing ventilation product lines for their top recommendations when choosing and sourcing these items for a specific project's location, as well as for general tips on installing these products to keep weather and the elements at bay. Here is the information they provided:



Two important considerations roofing contractors (of all material types) should consider when selecting the proper roofing ventilation for their climate/region:

- Roofing contractors should balance the amount of space used for intake vents and exhaust vents based on the attic size and roof slope.
- Determine the type of vents required. For example, if there are no soffits, consider using a drip edge vent. And don't mix the type of exhaust vents—a roof with a wind turbine does not require a box vent. If there are ridge vents, a power fan is not necessary.

Two general tips or tricks that roofing contractors (of all types) should know regarding the installation of ventilation and keeping the elements out:

- Consider using ridge vents that have curved channels or mesh to help reduce the risk of wind-driven rain penetrating the vent's opening.
- Keep wildlife out of vents by covering the opening with hardware cloth—the cloth will still permit airflow but will make it difficult for animals to chew through.

www.certainteed.com



Important factors to note when choosing and installing roofing ventilation products:

- Always remember that proper ventilation is essential in any climate—warm, cold, or mixed. It is needed to remove warm air from the attic, reduce ice dams on the roof, and remove moisture from the space.
- When selecting a ventilation product, consider how each piece and component will be exposed and/or affected by the elements. Ventilation with hidden fasteners not only creates a clean look on the roof, but also protects the fasteners from the elements. Exposed foam or other components can also be an open invitation to birds and rodents, offering an clear path into the roofing assembly. Any selected ridge caps must be water-resistant at all times, even in driven wind and rain or snow.
- In ventilation, the net-free area is the number that really counts. A higher number is ideal, which is typically associated with compression-free products.
- Products that are easy to install save the contractor both time and money. Any time spent trying to *make* a ventilation product work is costing precious dollars.
- Our top five key points for ventilating any roof properly are as follows:
 1. Completely seal the attic floor.
 2. Maximize insulation above the roof's top plate.
 3. Continuously vent the soffit.
 4. Have adequate space in the roof.
 5. Slightly pressurize the attic.

www.standingseamroofvent.com



When selecting the proper roofing ventilation for the building's climate/region, roofing contractors should follow these guidelines:

- Consider your build's ventilation and air quality needs before starting construction. Every structure's ventilation needs are unique, so be sure to calculate the airflow needed prior to building. Otherwise, your solutions will become limited and may even result in expensive repairs/replacements.
- Always consider the intake-to-exhaust relationship: in the event the intake and exhaust are not equivalent, a slightly larger intake than exhaust is preferred.
- Another important consideration for ventilation is moisture control. Proper ventilation paired with foil insulation is a preventative measure worth exploring when considering moisture control. Because traditional insulation absorbs heat, it also absorbs moisture. This reduces R-value over time as traditional insulation compresses from moisture. Meanwhile, foil insulation utilizes reflectivity rather than absorption.

The top installation considerations to be aware of are:

- One should always consider the architectural specifications with respect to building size and scope, as every build is different.
- Avoid the thought process that "bigger is better"—always aim to match the ventilation system to your building's needs and consult an expert if you are unsure. For example, improper use of a high-profile ventilator/ridge vent on a building that does not require a high-profile ridge vent can lead to the suction of elements (snow, rain, etc.) into the building through the ridge, causing moisture concerns and possible damage.
- It's also important to be aware of your decorative elements. Make sure your cupola(s) are installed to the proper specifications provided by the manufacturer. Improper installation can lead to leakage and unwanted elements from the outdoors.
- Also, if you choose to leave your cupola open to the build, a wire mesh screen mounted over the curb is a great way to keep unwanted birds from entering the structure.

www.mwicomponents.com



Proper roofing ventilation is important. Our recommendations are:

- A home is a significant investment, so everything that can be done to protect it needs to occur. This includes choosing the best roof ventilation products. There are many types of ventilation systems, but the ridge vent is one of the most popular. Ridge vents are typically installed under the eaves and they work best when paired with a vented soffit. Having proper (residential) attic vents offers many benefits.
 - It's natural for warm air to make its way into the attic, since hot air rises. If it's 90°F outside, an attic can get as hot as 140°F. If you don't have good roof ventilation, the hot air can make its way into living spaces. This forces fans and air conditioning units to work harder to keep the home cool. However, with adequate roof ventilation, warm air will flow out of the home instead of getting trapped.
 - Condensation can become a problem during the colder months without the necessary attic vents. When the warm air from inside a home rises and touches cold surfaces, it can lead to a range of issues including stained ceilings, mold, and structural damage to the rafters and trusses. The roof decking may swell, buckle, or rot and this will reduce the amount of weight it can bear. If the problem isn't addressed in time, the entire roofing assembly may need to be replaced. Excessive moisture can also lead to poor indoor air quality, which can result in respiratory issues for the home's inhabitants. There are, therefore, multiple reasons to have effective roof ventilation systems.
 - Ice dams form at the edge of the roof and prevent melting snow from flowing off the roof. The water that pools behind the ice can leak into the house and cause damage to the ceiling, walls, and insulation. Ice dams occur when the higher parts of the roof are warmer than the lower parts, so if an attic is too warm, they're likely to form. To prevent ice dams, roof ventilation needs to balance the temperatures of the interior and exterior.
- If a roof is not properly ventilated, it must be addressed as soon as possible. However, there is no need to panic since this doesn't automatically mean that a complete roof replacement is in order.

www.profilevent.com

WIND UPLIFT RESISTANCE BY ROOF TYPE

METAL ROOFING

BY THE METAL ROOF EXPERTS™, S-5!

Metal roofing is known for its durability, long-lasting performance, and reliability. The exceptional performance of metal roofing in high-wind conditions is due in part to its attachment methods and interlocking installation where roof panels are overlapped and attached to the structure of the building, reducing the ability of wind to disrupt the panels.

Standing seam metal roofing has an advantage over other roof types, such as membrane and hot-applied asphaltic roofs, because it serves as a “structural” covering, meaning it can be engineered to withstand almost any force imposed by wind. When so designed, some structural standing seam profiles can withstand extremely high forces, often making metal the roof of choice in high-wind regions.

DESIGN WIND SPEEDS & WIND FORCES

Wind speeds vary throughout the United States with high wind-prone areas found in coastal communities and in some mountainous regions, and lower wind-prone areas found in much of the interior states. The design wind speed is



Damaging winds can occur throughout the U.S., with wind speeds up to 100 mph during severe thunderstorms. Photo courtesy of S-5!

primarily determined by the area’s highest recorded 3-second wind gust (measured 33’ above ground), which in turn is used to calculate the maximum overturning forces on a building and maximum uplift forces on a roof.



Wind speed (mph) has to be translated into units of force (psf) for design purposes (in accordance with ASCE-7—Minimum Design Loads and Associated Criteria for Buildings and Other Structures). The resulting forces can be different in various roof zones. A building's size and geometry impact those forces and zones. For example, a 60'-tall building experiences stronger wind forces than a 30'-tall building, even if both are in the same area with the same design wind speed. The overall terrain and the building's immediate surroundings also impact wind forces. Valleys, hills, slopes, and cliffsides, as well as obstacles in the wind's path, such as nearby buildings and wooded areas, can reduce—or in some cases—increase wind speed/force. Open terrain or open water can also set the stage for increases.

WIND UPLIFT: A DESIGN ENGINEERING CONSIDERATION FOR ANY ROOF

Proper roof design depends on the region's design wind speeds and how the aforementioned factors alter the wind forces acting upon it. No matter where a building is located or what it is constructed from, there are minimum standards of forces it should withstand, including wind uplift forces on its roof. So, the roof must be strong enough to withstand the maximum uplift design forces determined for the building. As the minimum uplift forces increase in areas with higher winds, such as hurricane-prone areas, roofs must be more durable. Metal roofing lends itself to high wind-prone areas since it can easily be engineered to withstand nearly any uplift force.

IMPACT OF METAL ROOF DESIGN ON WIND RESISTANCE

Metal roof installation methods are relatively similar everywhere, but it is the building and the roof system design that affects resistance to wind forces. Critical design factors impacting the roof's strength include roof panel design and thickness, the clips attaching the roof to the underlying structure, and the underlying structure itself (rafters and purlins).

There is a myriad of choices for roof panels, all with various strength characteristics.

Some standing seam roofs and clips are designed specifically for tremendous uplift performance. Features can be manufactured into the roof, such as rib shape and increased metal thickness, that control the roof stiffness and strength. Additionally, the appropriate clip must be used to meet the wind uplift requirements for each building—not all clips are the same. Various materials, material gauge, length, and points of attachment all affect the performance of the clip.



Selected clips need to meet or exceed the wind uplift requirements for every unique building. Photo courtesy of S-51

For example, one might use a 26-gauge clip to obtain a specific wind rating, while one might use a 22-gauge clip to increase the performance—should the failure mode be the strength of the clip.

Using more material to increase wind uplift performance can be done either by increasing material thickness or just using more material in general—either in the clip (more folds, longer length), the seam (more folds), and/or decreased clip spacing (more clips). Installing additional clips (attachment points between the roof and structure) increases the roof's wind resistance. The number of purlins installed on a building impacts the overall strength of the roof and controls the allowable attachment points.



Part of the involved process that goes into roof uplift testing. Photo courtesy of ProVia.

Finally, new or existing uplift performance can be significantly increased with the use of externally applied clamp products for a comparatively low cost. Placed over the roof's seams at designated intervals, these external clamps can increase the roof's wind-resistance capacity, preventing multiple modes of failure, including seam separation and clip disengagement when used at roof clip locations.

TESTING STANDARDS FOR WIND RESISTANCE

As discussed, metal roofing is designed for buildings throughout the country and around the world, with varying resistance to wind forces. So, materials, products, and designs are tested for all wind pressures in those markets to demonstrate their strength. Thus, various resistances to wind force can be attained through testing specific roof system assemblies.

UL 580: Tests for Uplift Resistance of Roof Assemblies is one of these test standards. The uplift resistance of a roof assembly is listed as Class 15, 30, 60, or 90. The spectrum of 15 to 90 is comparative ratings, which are not related to specific wind speeds. For example, Class 90 involves 56.5 psf vacuum pres-



A demonstration of ASTM E1592, used to determine maximum/ultimate wind load, which in turn is used to specify the appropriate design wind load. Photos courtesy of S-5!

sure and 48.5 psf upward pressure from below on a 10' x 10' specimen anchored at its perimeter.

Another test standard, FM-4471: Approval Standard for Class 1 Panel Roofs/Roof Assemblies lists roofs to Class 1 to 60, 90, 120, 150, and 180. The nomenclatures 60 to 180, in the FM standard, relate to static pressure—also not wind speed but a larger specimen.

The most notable test standard is ASTM E1592: Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference. This is somewhat different from other test standards whereby sample roof assemblies are subject to increasing loads until failure. The maximum load obtained is published as an ultimate load, and

a design load is determined from the appropriate safety factor, which is then used to select a system for wind pressures.

MAIN TAKEAWAY

With appropriate design and testing, metal roofing affords greater durability than other roof types and is particularly critical for use in high-wind areas. According to Monroe County, Florida's staff summary, post-Hurricane Irma inspections found that "metal roofs fared far better than those roofs covered by asphalt shingles" and in recent years, county officials even proposed an ordinance to require all new or replacement roofs to be metal. That's a true testament to the sustainability and durability of metal roofing, particularly in high wind-prone areas. ●

ASPHALT SHINGLES

BY DAVID ELLIS AND HELENE HARDY PIERCE, GAF

We discussed the concerns regarding wind uplift and asphalt shingles with David Ellis, Vice President of Residential Marketing, and Helene Hardy Pierce, Vice President of Technical Services, Codes, & Industry Relations, both with GAF. They share their knowledge here:

Roofing Elements: Is wind uplift always a concern for asphalt shingles? Or is it a regional issue (only in hurricane-prone areas, etc.)?

David Ellis: Winds affect nearly everyone, nearly everywhere. In fact, damage from severe thunderstorm winds accounts for half of all severe weather reports in the lower 48 states.

Roofing Elements: What unique problems are asphalt shingles



Certain areas of a roof are more prone to wind uplift than others. Photo courtesy of CertainTeed.

prone to when it comes to wind? Curling, tearing, or something else?

David Ellis: There isn't a "unique" problem with asphalt shingles



As a common roofing material, asphalt shingles are subjected to the necessary wind uplift tests. Photo courtesy of CertainTeed.

gles per se, but what is often misunderstood is that if all of the necessary components that provide wind resistance are not present or are not installed properly, the roof will perform poorly in a wind event.

What is often forgotten is that the installed shingle roof works

as one cohesive unit. If one shingle fails to seal, then it can have a “zipper effect” on adjacent shingles where many other shingles can fail also.

Roofing Elements: How do asphalt shingle roof installation methods affect the overall wind resistance of the roofing material?

Helene Hardy Pierce: Following the manufacturer’s recommendations for proper installation is key. Not just for the shingles, but ensure all components of the roof, including the underlayments and accessories, are properly installed. Also, properly placed and “seated” fasteners are critical. If a fastener is not properly driven, it can prevent a shingle from sealing and then it will fail in a wind event, either becoming damaged or tearing apart/off.

Roofing Elements: At what wind speeds are the materials tested/rated, and how has this changed over time?

Helene Hardy Pierce: Shingles are tested and listed to either ASTM D3161 (Standard Test Method for Wind Resistance of Steep Slope Roofing Products—Fan-Induced Method) or ASTM D7158 (Standard Test Method for Wind Resistance of Asphalt Shingles—Uplift Force/Uplift Resistance Method).



Photo courtesy of GAF

Our shingles carry the highest rating and are qualified for use where the basic wind speed is 150 mph. These shingles are D3161 Class F (shingles that passed testing at 110 mph) and D7158 Class H (shingles that resist uplift at wind speeds up to 150 mph).

Roofing Elements: What factors make a shingle product more resistant against high winds? Size, composition, profile/edge, or something else?

David Ellis: The quality, placement, and ability of the sealant to seal is very important (for example, shingles with a nailing area enabling a dual-phase, shingle-to-shingle seal). First, the sealant pairs with the smooth microgranule surface of the nailing area for a fast tack. Then an asphalt-to-asphalt monolithic bond cures for durability, strength, and—most importantly—exceptional wind uplift performance.

Roofing Elements: Before a shingle roof is installed, is there anything that can be done to aid in wind resistance? Specific underlayments, orientation of the roof, etc.?

Helene Hardy Pierce: Always make sure to follow the manufacturer's recommendations. Some installation instructions may be different for high-wind areas, such as the use of six fasteners versus four fasteners. Always make sure that the starter strips are installed before starting with the roof itself and make sure that they do not overhang the eave edge too far.

Another helpful suggestion is to wait to install the roof when there will be at least some warmer days so that heat-activated sealant can seal. If you have to install a roof in the middle of colder months, you can hand-seal shingles. This is especially recommended if there is a lot of dust in the air or the roof is in a high-wind area and will be subjected to wind events before the shingles can seal.

Roofing Elements: Anything else you can share regarding asphalt shingle roofing and wind resistance?

David Ellis: GAF recently introduced the industry's first wind warranty with no maximum wind speed limitation when installed with the required combination of accessories. ●

CONCRETE ROOFING TILE

BY ROBIN ANDERSON, TECHNICAL MANAGER, BORAL ROOFING

There are many regions of the United States that are subject to high-wind events, and the roof structure is exposed to some of the worst wind conditions Mother Nature can throw at it. When selecting a roofing material for each particular job, choosing one that can withstand wind conditions is an important consideration. Notably, concrete roof tiles provide a high level of defense against weather-related property damage, especially when it comes to high winds.

Wind can be a complex phenomenon. It is affected by temperature and pressure differences in the Earth's atmosphere, as well as by variations in the land's terrain and topography. However, when wind meets a residence or building structure, the wind tends to perform in predictable ways. For example, wind meeting the side of the structure will travel up and over the roof edge with varying degrees of uplift pressure.

As an integral part of the U.S. building codes, ASCE 7-16 (Minimum Design Loads and Associated Criteria for Buildings and Other Structures) outlines some key wind uplift pressure considerations, including:

- The uplift pressures that affect a roof are highest at the corners of the roof (i.e. eave/rake corner, peak of the ridge at the rake edge).



According to the Tile Roofing Industry Alliance, roof tile provides one of the best defenses against wind-related property damage. Photo courtesy of Boral Roofing.

- The edges (rake and eave) are a close second in uplift pressures.
- As wind moves across a roof's surface, negative pressure (suction) is created and causes an uplift toward the centers of

a roof plane.

Many factors influence how wind may affect a roof, such as its speed and direction when it encounters the structure. Additional factors include:

- **The general design of the roof.** Steep-pitched, gable roofs are more susceptible to wind uplift than the low-pitched, hipped roofs.
- **Fastening methods of the tiles.** The number, style, and frequency of fasteners (such as nails, screws, or foam adhesives) can significantly change the overall wind resistance of the tile's installation.
- **Local weather concerns.** High Velocity Hurricane Zones (HVHZ) receive greater frequency of high winds.
- **Incorrect installation.** Misaligned tiles, improper fastening devices, or poorly installed flashing can reduce the roof's performance in high-wind events.

The Tile Roofing Industry Alliance (www.tilerroofing.org) also provides guidance and information on tile roofing, including both concrete and clay options and their wind resistance, stating:

“In regions prone to tornadoes, hurricanes, or extreme winds, roof tile provides one of the best defenses against wind-related property damage.

- Concrete and clay tile roofing helps in resisting hurricane-force winds.
- Natural air ventilation under the tile created by its high porosity and installation techniques used helps to relieve wind stress.
- Independent testing sponsored by the Tile Roofing Industry Alliance shows that with proper attachment, clay and concrete roof tiles can sustain winds in excess of 125 miles per hour.
- Clay and concrete tile roofing have been tested in accordance with Florida Building Code to meet Section R4402 High-Velocity Hurricane Zones—Roof Assemblies and Rooftop Structures, with wind speeds up to 150 miles per hour.”

To address wind concerns, concrete roof tiles are subjected to various wind testing that is in accordance with performance standards to determine the resistance that a given installation method meets for the design requirements in a given region. One of the world's most stringent testing requirements is for the High Velocity Hurricane Zone of southern Florida. Some of the

wind-resistance tests for tile include:

- ASTM C1568-08(2020) Standard Test Method for Wind Resistance of Concrete and Clay Roof Tiles (Mechanical Uplift Resistance Method)
- ASTM C1569-03(2016) Standard Test Method for Wind Resistance of Concrete and Clay Roof Tiles (Wind Tunnel Method)



Clay and concrete tiles are tested to meet Florida Building Code with wind speeds up to 150 miles per hour. Photo courtesy of Boral Roofing.

- ASTM C1570-03(2016) Standard Test Method for Wind Resistance of Concrete and Clay Roof Tiles (Air Permeability Method)
 - Testing Application Standard (TAS) 100, 101, 102, 102A, 108, 110, and 112 are all standards of procedures for testing the performance of tile roof systems
- Additionally, the Southern Building Code Congress International (SBCCI) commissioned Redland Technology to investigate wind loads on roofing tile systems and to develop a code methodology. Two experiments were performed by Redland to develop their design method:

1. Wind loads were estimated from wind tunnel tests where surface pressures on medium- and high-profile roofing tiles were measured as wind was blown across a tile array.
2. Wind uplift resistance was estimated from constant displacement rate uplift tests that quantified the uplift resistance of roofing tiles with various attachment methods.

The resulting method was incorporated into the Standard Building Code (SBC), and later the Florida Building Code (FBC), and the International Building Code (IBC) as well.

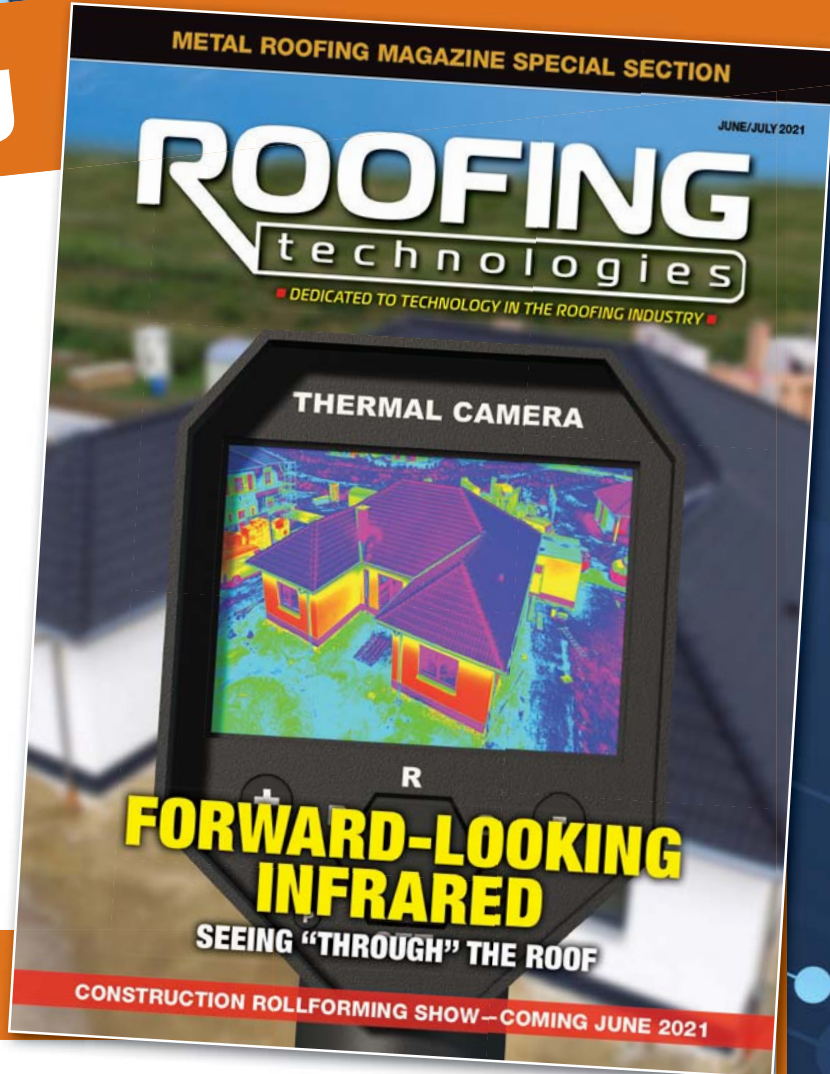
Some concrete roof tile applications have been tested to perform in sustained wind speeds of up to 180 miles per hour when installed to industry and manufacturer guidelines.

While certainly beautiful, concrete tile roofs are also quite functional in the face of subtropical climates and high-wind regions. While no roof is completely *windproof*, tile roofs perform very well compared to many other roofing materials. Concrete tiles are notably sturdy and long-lasting, and can manage sustained winds as well as greater wind gusts. Although tiles are heavier than many roofing materials, their greatest advantage in wind resistance derives from their shape and construction, which allows free wind travel through the system, greatly reducing uplift stresses on the roofing assembly. ●

Introducing

Roofing Technologies is a special section appearing in every 2021 issue of *Metal Roofing Magazine*. It will encompass all of the ways the roofing industry is advancing with the help of technology—from inventory management software to wearable safety products to the latest and greatest in drone capabilities. Knowledge from the experts on these products and services will help you use them in the real world to grow and better your business.

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STEEL SHIELD

ABRASION PROTECTION FOR ROOF RETROFITS

As residential metal roofs become increasingly more practical, more economical, and more attractive, their popularity is naturally growing as well. As I travel to different regions of the country, I see a variety of panel types and profiles on all styles and sizes of homes. I have also learned there are any number of different methods and applications in place across those regions. Several homeowners are choosing to retrofit their existing shingled roofs with metal panels, especially when a complete tear-off is not an option for whatever reason.

I have learned there are different approaches to retrofitting as well. Some roofers opt to use wood furring strips to raise the metal up off the asphalt shingles, then screw the metal into those furring strips. There are numerous benefits to this approach, but it usually comes with an additional cost for the materials and labor.

Others choose an even more economical way to install metal, screwing the panel directly through the shingle. However, since metal expands and contracts with temperature changes, the shingles can etch the underside of the metal panel if it's not protected. Historically, roofing paper, felt, synthetics, and even bubble insulation have been tacked down and used as protection for the metal panels.

Steel Shield was created for the specific purpose of protecting the underside of metal roofing panels from abrasion. My company offers DR!PSTOP, which is a great solution for controlling condensation on metal panels. It is a factory-applied felt membrane that captures moisture overnight and is primarily used in uninsulated metal buildings.

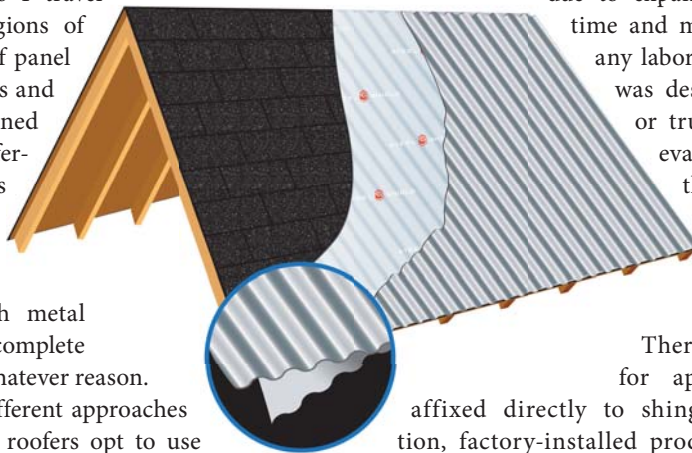
One of the unique qualities of

DR!PSTOP is its exceptional durability and wear-and-tear resistance. Because of this, it wasn't long before roofing contractors started using DR!PSTOP to protect metal panels from scratches due to expansion and contraction. It saved time and money, since it does not require any labor to install. However, DR!PSTOP was designed for use on open purlins or trusses, where air movement will evaporate the condensation—not the case when metal is fastened directly to the shingles.

Left: Steel Shield is applied during manufacturing and arrives on the job site already installed.

Therefore, we invented Steel Shield for applications when panels are affixed directly to shingles. It is an abrasion-protection, factory-installed product that is just as durable as DR!PSTOP, but designed to *not* hold water. Since it also shows up already on the metal, there is no labor or time needed for its installation.

When a brand-new roof or complete tear-off is not in the cards, retrofitting an existing shingled roof with metal panels is a great option. ●



BARE STEEL PLATE



STEEL PLATE PROTECTED WITH FILC STEEL SHIELD

Testing results demonstrate the abrasion protection offered by Steel Shield.



ALL DRESSED UP IN DETAILS

SEAMLESS HALF-ROUND GUTTERS FOR A LAKESIDE RESIDENCE

BY SHARON THATCHER

Located in the great Northwoods of Wisconsin, this four-season lakeside home in northern Wisconsin is one of many that AA Seamless LLC of Athens, Wisconsin, has helped to protect from the elements. The job called for 184' of half-round seamless aluminum gutter (roll stock provided by Lynch Aluminum MFG Co.) in the increasingly popular color of black. The two-story home is topped with double-lock standing seam roofing.

The longest section of seamless gut-

ter for this project was 60' along an open porch with two-step fascia. The gutter is supported by complementing half-round cradle hangers for maximum strength and beauty. The project was finished off with 4" round downspouts to fully capture the classic half-round look.

A KWM Gutterman half-round portable gutter roll former was used for the job. Other tools of choice included Malco Products hand tools and Milwaukee® Tool battery-operated hand tools.

AA Seamless, with offices in both Athens and Rhinelander, Wisconsin,

has been in business since 2007 and has grown from one truck to five (Ford F-350 diesel crew cabs), and from one portable roller former to five (New Tech Machinery 5"/6" Combos and a KWM Gutterman half-round). Roll formers are each transported in Featherlite trailers that have been customized with company-developed custom hoists to load and unload the heavy coil rolls used to form the products.

Headquartered in the rural community of Athens (with a population just over 1,000), the proliferation of business in the



PROJECT OVERVIEW

LOCATION:

Seasonal residence,
Hazelhurst, Wisconsin

GENERAL CONTRACTOR:

Waldmann Construction Inc.,
St. Germain, Wisconsin

GUTTER FORMING AND INSTALLATION:

AA Seamless LLC, Athens, Wisconsin

GUTTERS:

184' of black half-round seamless
aluminum gutters, hand-cut corners

ALUMINUM:

Lynch Aluminum MFG Co.

ROLL FORMER:

KWM Gutterman portable half-round
gutter machine

WWW.WISEAMLESSGUTTERS.COM



Photos by Sharon Thatcher, Shield Wall Media

Northwoods tourism area prompted AA Seamless to add a branch office 70 miles northeast in Rhinelander in 2019.

During their busiest months, the company has completed up to 36 quotes in a single day. Their clientele includes commercial, residential, agricultural, and municipal customers. For this particular half-round job, they worked in concert with Waldmann Construction Inc. from nearby St. Germain, Wisconsin.

(As a side note, the longest seamless gutter AA Seamless has ever rolled and installed was almost 200' in total length, installed on a freestall barn.) ●



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PROJECT OF THE MONTH



MARCO ISLAND LIVING

PICTURE PERFECT, WITH THE OCCASIONAL HURRICANE—A NEW METAL ROOF OFFERS ONE ISLAND HOME PROTECTION FROM THE SUN AND STORMS

Marco Island, Florida, offers a tropical climate, a gorgeous coastline, and postcard-quality sunsets, among many other treats for the senses. However, this gulf-side barrier island, located off the southwestern coast near Naples, can also find itself in the crosshairs of approaching hurricanes. That was certainly the case on September 10, 2017, when Hurricane Irma made landfall with wind speeds of 130 mph. With hazards like Irma always a possibility, residents have learned to respect the weather *and* pay attention to their roofing materials.

One private residence located right on the bay features a PAC-CLAD roof from Petersen designed to stand up to such storms. Island-based firm Moore Roofing installed 10,000 square feet of Snap-Clad 0.032-gauge aluminum panels on the unique multilevel home. The homeowner chose a finish called Cityscape, an Energy Star-rated Cool Color that will perform well in the home's Southern location.

The standing-seam panels feature a continuous interlock to ensure weathertightness, while a 30-year, nonprorated warranty ensures the finish is guaranteed not to fade, even with ongoing exposure to sun and salt air.



PROJECT OVERVIEW

LOCATION:

Marco Island, Florida

REGIONAL CONCERNS:

- Hurricane-force winds
- High Solar UV Index
- Rainfall (54" annual average)
- Saltwater corrosion

PROJECT SIZE:

Roof: 10,000 square feet

CONTRACTOR:

Moore Roofing,
Marco Island, Florida

ROOFING PANELS:

PAC-CLAD 0.032-gauge
Snap-Clad aluminum panels in
Cityscape finish (an Energy
Star-rated Cool Color)

TESTING AND CLASSIFICATIONS

Snap-Clad has been extensively tested to meet the necessary classifications that a coastal home in Florida requires. Classifications and passed tests are described here:

- **UL-580 Class 90 wind uplift:** This test evaluates the comparative resistance of roofing assemblies to positive and negative pressures. It evaluates the roof deck, its attachments to supports, and roof covering materials.

- **UL-1897 wind uplift:** This test is intended to provide uplift resistance data for the evaluation of the attachment of roof covering systems to roof decks by using differential

air pressures. The test evaluates the roof covering system's method of attachment, including all components such as base sheets, ply sheets, slip sheets, membranes, etc., and insulation, if used. Supporting roof decks are evaluated only with respect to span conditions and physical properties such as gauge, yield strength, grade, size and/or species of lumber, and related factors that affect fastener attachment or bond strength.

- **UL-790 Class A fire rated:** These requirements cover the measurement of the relative fire characteristics of roof coverings exposed to simulated fire sources originating from outside a building on which the coverings are installed. Class A

roof coverings are deemed effective against severe fire test exposures.

- **UL-263 fire resistance rated:** The classifications for building construction and materials are intended to register performance during the period of fire exposure. They will evaluate the length of time that assemblies will contain a fire or retain their structural integrity or both, depending on the type of assembly involved.

- **UL-2218 impact resistance rated:** This test provides impact resistance data for the evaluation of prepared steep slope roof covering materials. For purposes of this Standard, prepared roof covering materials are considered to be small units, sheets, or panels designed for installation with multiple layers of such materials installed in overlapping rows on slopes of 2:12 or greater.

- **ASTM E1592 tested:** This test method provides a standard procedure to evaluate or confirm structural performance under uniform static air pressure difference. This procedure is intended to represent the effects of uniform loads on exterior building surface elements.

- **ASTM E283/1680 tested:** This test method covers the determination of the resistance of exterior metal roof panel systems to air infiltration resulting from either positive or negative air pressure differences. The test method described is for tests with constant temperature and humidity across the test subject.

- **ASTM E331/1646 tested:** This test method is a standard procedure for determining the resistance to water penetration under uniform positive static air pressure differences, and simulates wind-driven rain imposed on

sidelaps and rain that is free to drain while building a water head as it flows. For this test, the slope of the roof is significant. These factors shall be fully considered prior to specifying the test pressure difference. ●



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CertainTeed, a North American manufacturer of building materials, has launched its new Landmark ClimateFlex algae-resistant (AR) shingles. This new product improves upon CertainTeed’s popular shingle line with advances in polymer science, offering enhanced granule adhesion, hail resistance, and cold-weather flexibility. Over time, CertainTeed will introduce ClimateFlex technology to other existing shingle lines.

In addition to the impact resistance and cold-weather resiliency improvements of ClimateFlex, CertainTeed will begin introducing its improved NailTrak® feature to many of its most popular shingle lines. NailTrak provides a nailing area three times wider than standard laminate shingles and clear nailing lines that are highly visible even in low-light conditions.

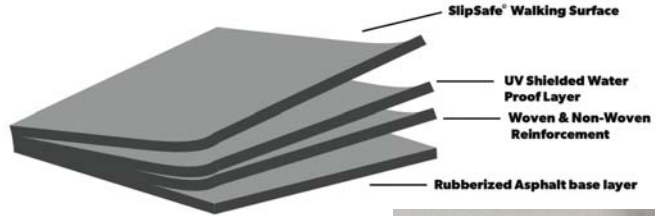
www.certainteed.com

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Safety Hoist Company has designed the Flat Panel Solar Cradle to help transport flat panels quicker and more efficiently. Now, the user can safely and securely lift decking materials, solar panels, plywood, drywall, windows, siding, and much more with the push of a button. The electric- or gas-powered material hoist with the Flat Panel Solar Cradle attachment is lightweight and portable enough to be used on any job without interfering with the workspace, and can lift up to 500 lbs in 20 seconds. Designed to be unloaded directly onto the roof work surface, the flat panel attachment allows workers to safely stand away from the roof edge while unloading their materials. Made using fewer parts, setup and breakdown are quicker and easier than ever before.



www.safetyhoistcompany.com



OX'S NEW ICE AND WATER GUARD ROOF UNDERLAYMENT

Ox Engineered Products, manufacturer of structural sheathing and thermal insulation products, introduces ToughSkin HT Ice & Water Guard™, a self-adhered, slip-resistant roof underlayment. Ideal for tile and metal roofs that can last up to 75 years, ToughSkin HT Ice & Water Guard includes four key components: a rubberized asphalt adhesive base layer; woven and non-woven reinforcement layers (laminated together); a UV-shielded waterproof layer for protection from rain, snow, and ice; and a top layer that includes a SlipSafe® Technology walking surface to reduce the chance of slips or falls during installation.



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