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ROOFING ELEMENTS

METAL ROOFING MAGAZINE SPECIAL SECTION

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**ICE COMPLIANCE:
A BRIEF GUIDE
FOR CONTRACTORS**

**FIRE RESISTANCE
OF METAL ROOFING**

SOLAR SHINGLES 101

**ATTIC
VENTILATION:
CONSIDERATIONS IN
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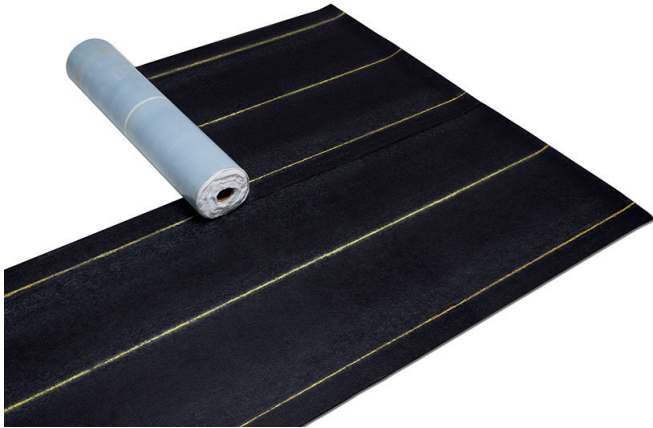
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WESTLAKE ROYAL BUILDING PRODUCTS™ CITADEL™ PRO

Westlake Royal Building Products™ (Westlake Royal), a Westlake company (NYSE:WLK), has introduced Citadel PRO, a self-adhered poly-coated base sheet that provides superior protection and simplified installation for roofers, when compared to mechanically fastened base sheets. Citadel PRO, which will be available in the Florida market, features a styrene-butadiene-styrene (SBS) modified asphalt core that self-seals around nail or screw penetrations to offer increased leakage protection.

Citadel PRO is equipped with a peel-and-stick application to maximize deck adhesion and a poly-coated top surface for increased cap sheet adhesion while eliminating the need for special tools or hot asphalt in the adhesion process while also providing superior moisture resistance and thermal stability. The poly-surface provides excellent foot traction and offers up to three months of UV resistance, perfect for uncovered exposure during the construction process.

Designed to be used with Westlake Royal TileSeal™ HT, Westlake Royal MetalSeal™ HT and GatorSeal® underlayments, Citadel PRO carries a 30-year manufacturer's warranty when installed under Westlake Royal TileSeal HT and MetalSeal HT and a 20-year warranty when used under GatorSeal. Citadel PRO has been rigorously tested and certified to meet ASTM D1970 standards and Florida Building Code for both HVHZ and non-HVHZ regions as listed in FL14317; it is available in 3' x 66.7' rolls covering 200 square feet.

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AMERICAN WEATHERSTAR PONDLEVEL 610

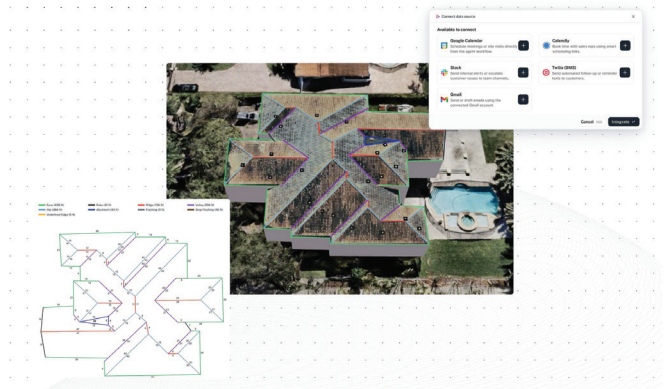
American WeatherStar has introduced PondLevel 610—a quick-curing, highly durable compound designed to eliminate ponding water on flat and low-slope roofing systems.

It's formulated to fill low spots or building crickets for improved drainage, PondLevel 610 helps extend roof life and ensure proper water runoff across a variety of substrates, including aged roof-

ing substrates and concrete. It eliminates ponded water areas on flat roofs and has exceptional adhesion and extreme resistance to water and freeze-thaw cycles.

Furthermore, it has a fast cure time—can apply roof system within 4 hours—and cures to a flexible and highly durable waterproof membrane.

www.americanweatherstar.com



AETHER GO-TO-MARKET PLATFORM

Aether, a Y Combinator-backed startup, has launched a software platform designed for roofing contractors that combines roof measurement, quoting, proposal generation, lead management, follow-ups, and job tracking into a single system. The platform uses aerial imagery and proprietary AI to generate roof measurements—including slopes, facets, ridge lines, and square footage—without requiring an on-site visit. Contractors can generate digital proposals that include branded templates, multiple pricing options, financing details, and e-signature capability. The system also allows for real-time proposal tracking and status updates.

Aether includes lead management tools that score and prioritize prospects based on their likelihood of needing a new roof. It automates reminders and follow-ups to reduce missed opportunities. The platform features an “AI Agent Hub” to handle repetitive tasks such as sending follow-up emails, updating pipeline stages, and assigning jobs. A “Workflow Builder” lets users automate task sequences, such as lead assignments, scheduling, and production notifications, without writing code.

Designed for scalability, Aether supports additional trades such as solar installation, HVAC, and energy efficiency upgrades. It uses a shared CRM and unified customer records to coordinate across multiple services. Aether is intended to help contractors streamline operations, reduce manual tasks, and manage their sales and production workflows more efficiently.

www.aethernrg.com ●

DRAIN FLASHING

FLASHING A DRAIN ON A ROLLED ROOFING SYSTEM

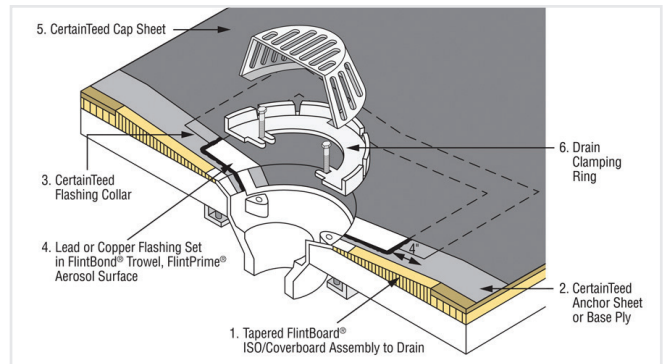
Roof leaks are a nuisance that can lead to property damage and lost workdays. Most flat roof leaks occur as the result of an improperly flashed penetration. One of the most important flashing details to master is a drain. That's because a drain's primary function is to collect water and divert it away from the roof system. Ensuring a drain is flashed properly and with precision will keep it watertight and prevent pooling or ponding in these areas.

Fortunately, this extremely important flashing detail can be secured against leaks if you follow these proven techniques. Read on for a step-by-step guide to flashing a drain on a rolled roofing system.

STEPS TO FLASH A DRAIN

CertainTeed Flintlastic SA Cap, Flintlastic SA MidPly or Flintlastic SA PlyBase, FlintBond SBS Adhesive and FlintPrime Aerosol:

1. With any drain detail, you want to make sure you have positive slope from the field down into the drain. The FlintBoard Hinged Target Sump offers a quick, material-efficient way to achieve a positive slope.
2. When working with self-adhered membranes, prime all metal surfaces. Apply FlintPrime Aerosol to the top surface of the drain, and let that flash off until it's tacky to the touch—approximately 30 minutes. Tape off exposed bolts to avoid getting primer in the thread.
3. Position your base sheet and roll out over the drain. Allow the bolts to penetrate through the membrane before cutting out the drain access. Your base sheet should be positioned to avoid sidelaps running across the drain of either the base or the cap sheet.
4. The membrane should extend slightly over the drain edge. As with any self-adhered membrane, apply a weighted roller to remove any entrapped air.
5. Once your base sheet is in place, install a field-cut flashing collar of Flintlastic SA PlyBase or Flintlastic SA MidPly — sized to ultimately extend 4" beyond the lead on all sides.



6. Position the collar and press the bolts to the membrane before cutting out the drain access.
7. Position your lead centered on the flashing collar. Be sure to round the edges of both the flashing collar and the lead.
8. Use a mallet to define the bolt locations before cutting holes. Use the same technique to cut the drain access.
9. Now, set your lead in a 1/8" bed of FlintBond SBS-Modified Adhesive — Caulk or Trowel Grade. Set either to the back surface of the lead or onto the collar and apply pressure with a hand roller.
10. Apply FlintPrime Aerosol to the top surface of the lead, and again, let that flash off until it's tacky to the touch — approximately 30 minutes.
11. Now you can install your cap sheet. Make sure you're completely covering the drain bowl. You don't want any sidelaps or endlaps in this detail. Just like the base sheet, the fastest way is to roll out your membrane, allow the bolts to come through, and cut out your opening.
12. Once you've fully waterproofed the drain bowl, install the clamping ring.

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



TECH BULLETIN

CONSIDERATIONS IN ATTIC VENTILATION SYSTEM SELECTION

By The Asphalt Roofing Manufacturers Association (ARMA)

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

The 2021 International Residential Code defines an attic as “the unfinished space between the ceiling assembly and the roof assembly.” Attics generally fall into one of three configurations. The most common places insulation on top of the ceiling of the underlying rooms, resulting in an unconditioned space not regulated for temperature and relative humidity. In some cases, HVAC equipment for the conditioned portion of the building is located in this unconditioned space. Ventilation for this attic space may or may not be present.

A second attic configuration incorporates insulation at the underside of the roof deck using an adhered, batt, or loose form of insulation. Although this may also include insulation on top of the ceiling of the underlying rooms, the attic space is not conditioned for temperature or humidity control. HVAC equipment serving the conditioned areas of the building may be placed in this unconditioned space. Ventilation for this attic space may or may not be present.

A third attic configuration places insulation at the underside of the roof deck level and conditions the space beneath by using HVAC equipment to control temperature directly and relative humidity either passively or actively. This conditioned space may or may not be habitable. Ventilation between the roof deck and the insulation may or may not be present.

Each attic configuration interacts with and affects the asphalt roofing systems installed over the attic space. Thoughtful consideration of these interactions can lead to improved roofing system service life.

CONSIDER THE FUNCTIONS OF ATTIC VENTILATION

Moisture conditions and temperature in attics are important considerations tied closely to the geographic location of the building. Attic configurations that work well in one climate may not function well in others. Failure to properly manage moisture and temperature has consequences for the building and the roofing system above the attic.

It is critical to handle moisture entering the attic from the building below. Water vapor generated by occupants of the building is the key source of this moisture. If excess moisture enters an unconditioned attic space and is not handled effectively, it may condense on surfaces during colder times of the year. This may cause wood framing, decking, walls, and ceilings to deteriorate. In some cases, mold may begin to grow on surfaces. Without proper ventilation, excessive moisture fluctuations within an attic may cause the deck components to expand and contract and buckle the overlying shingles. In a conditioned attic, an effective HVAC system manages moisture that enters the space and reduces or eliminates moisture-related issues. In an unconditioned attic, effective ventilation balanced with intake and exhaust airflow removes excess moisture.

Attic temperature is another important variable to address. Unconditioned attics may experience wide fluctuations in interior temperature as roof surface temperatures increase during sunny days and decline during cloudy times and after the sun sets. Heat buildup in an attic may accelerate the aging of asphalt roofing products, and heat transfer from the attic into the occupied areas of a building reduces energy efficiency. Ventilation helps take the heat out of the attic space. Insulation above the ceiling of the underlying rooms helps prevent heat transfer between occupied areas and attic spaces. Consult local building codes for the minimum R-value of insulation required above the ceiling.

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

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Ice damming is another issue related to attic temperature management. Ice dams form during cold weather when heat from the conditioned space of a building rises into an attic and causes cyclical snow thawing over the warmer portions of a roof and re-freezing at the colder eave area. Ventilation can reduce the heat in the attic space to mitigate or eliminate the snow thawing over that space. More information can be found in ARMA's technical bulletin, "Protecting Against Damage from Ice Dams."

VENTILATION: A KEY ELEMENT OF ATTICS AND ROOF SYSTEM ASSEMBLIES

Ventilation, which is the free flow of outside air through the space immediately beneath the deck of an asphalt roofing system, maximizes the service life of asphalt roofing materials, improves the energy efficiency of the building, removes excessive moisture in the attic space, reduces the likelihood of mold and mildew growth, and mitigates ice dam formation in cold climates. ARMA strongly recommends incorporating ventilation into all three attic configurations discussed previously. Natural attic ventilation is effective because warm air rises. Outside air flows through an attic space when intake vents allow warm air to rise and escape through exhaust vents at or near the upper portion of the roof while cooler air draws in at the lower portion.

RECOMMENDED PRACTICES FOR VENTILATING ATTICS

Installing an appropriate minimum amount of attic ventilation is important, and three factors should be considered:

- Size of the attic; measured length x width (area) of the attic floor
- Placement of the two types of vents (intake and exhaust)
- Airflow rating of the vents (expressed as net free ventilation area)

Building codes generally recommend a minimum net free ventilation area equal to one square foot per 150 square feet of attic floor area. Reduction to as low as one square foot of ventilation area per 300 square feet of attic floor area is permitted by building codes in some cases, provided an acceptable ratio of properly located intake and exhaust vents is present and, in Climate Zones 6, 7, and 8, a vapor barrier is appropriately installed.

Proper location and quantity of intake and exhaust vents are necessary to create a functioning system. Place intake vents at the eaves or in the lower portion of the roof. These are often located on the underside of enclosed eaves. Install exhaust vents at the ridge or upper portion of the roof to provide efficient exhaust of heat and moisture from the attic space.

The location of intake and exhaust vents must ensure airflow in all areas of the attic space. Continuous vents along eaves and ridges are an excellent and popular option. If using a series of individual vents for either intake or exhaust, space them equally

and close enough to each other to ventilate the entire attic. Be sure to avoid blockage or restriction of airflow, such as due to improperly installed insulation over the soffit or intake vents.

The net free ventilation area of intake and exhaust vents should be close to equal, with slightly more intake than exhaust. As a recommended practice, intake vents should comprise 50-60% and exhaust vents should comprise 40-50% of the net free ventilation area of the total system. However, always follow the shingle/vent manufacturer's instructions. To create a properly functioning system, the intake amount should never be less than the exhaust amount.

A combination of different types of intake and exhaust vents may be necessary for proper ventilation in each attic space. However, combining different types of exhaust vents on the same roof above a common attic space may cause short-circuiting of the attic ventilation system and adversely affect performance. Using different vent types together often is inconsistent with the vent manufacturer's installation instructions.

ADDITIONAL CONSIDERATIONS: ATTICS WITH INSULATION AT THE UNDERSIDE OF DECK

It is possible to implement this attic configuration with an unconditioned or a conditioned attic. The same principles related to the amount of ventilation, placement of intake and exhaust vents, and balance between intake and exhaust apply when venting this kind of attic. However, this approach may require additional steps to ensure there is open airflow from eave to ridge between each rafter space.

There are various approaches to accomplish open airflow between the insulation and the underside of the roof deck. Placing baffles between rafters prior to insulation installation is one option. Using Structural Insulated Panels (SIP) that include a built-in ventilation space is an option for new construction. An approach called above-deck ventilation installs a second deck on spacers to create a surface for installing asphalt shingles with a space between the decks for ventilation. This option may be suitable in both new construction and roof replacement situations. These designs require continuous eave and ridge ventilation unless cross ventilation is present in the above-deck ventilation design.

ADDITIONAL CONSIDERATIONS: CONDITIONED ATTIC SPACES

It is possible to employ the previously discussed approaches for the construction of conditioned attics, which of necessity have insulation placed at the deck level. Taking the extra steps to create a space between the underside of the roof deck and the insulation to permit ventilation will have the long-term benefit of maximizing the service life of the overlying asphalt roofing products by facilitating the dissipation of heat caused by incoming solar radiation. Failure to do so may accelerate the aging of asphalt roofing materials. ●



SOLAR SHINGLES 101

ARE SOLAR SHINGLES A PROSPECTIVE ADD-ON TO YOUR ROOFING OFFERINGS?

BY LINDA SCHMID

Saving money on energy bills is always appealing to homeowners, who often look to highly efficient appliances and quality insulation to help with that. Another option is solar energy. This isn't news of course; people have been cutting down on their energy bills with solar panels for decades. What is more current in the industry is roofing that incorporates electricity-generating technology right into the shingles.

Now you can take advantage of this trend to upsell solar shingles as part of the roof package. People like the aesthetic as, instead of intrusive panels attached over the roofing, these shingles meld into the roof. Further, customers can shrink their carbon footprint and turn a traditionally depreciating roof into an asset that saves them money.

Solar shingles have been on the market for the last decade or so, and CertainTeed was among the first companies to develop them. We interviewed CertainTeed's Andrew Wickham, Senior Director of Product for Solar, to find out the basics.

SOLAR SHINGLES DESIGN

How do these shingles work? They work like traditional solar panels, and they are largely designed like traditional panels, except they are shaped into shingles and wrapped in a composite

material that does not allow moisture in. Durability can vary depending on the solar shingle chosen, but CertainTeed's Solstice® Shingle features Class 3 impact resistance meaning it can withstand weather extremes including hail. It passed wind resistance testing with wind velocity of 110mph, class F, and the TAS 100 wind-driven rain test which involved winds of 110mph along with water streaming at 8.8 inches per hour aimed at the solar shingled roof's eaves. These tests qualified the shingles to obtain Florida High Velocity Hurricane Zone authorization.

COMPARISON TO TRADITIONAL SOLAR PANELS

Often the cost of a roof incorporating solar shingles is comparable or slightly more than the cost of a conventional roof with solar panels installed over it. The cost of course depends on the product chosen, the labor required, and the markup the roofer chooses.

Installation can be done by a solar tech, or you can choose to install the system yourself. A homeowner can't install the system itself. If you choose to install the solar shingles and hire an electrician to handle the electrical work on the ground, you are setting the price point. Training on solar shingle installation should be accessible through the vendor per Wickham. Licensed roofers are

encouraged to apply for CertainTeed's Credentialed Contractor Program.

"CertainTeed offers free training on our solar shingles through online videos," Wickham said. "Further we have trainers that go to the customer's jobsite to train them on installation."

Solstice Shingles have a 19.85% efficiency rating, which is pretty comparable to traditional solar panels which often have an efficiency rating in the low 20s. The shingles are rated 70 watts.

"When it's rated 70 watts, that is how much energy the panels output," Wickham said. "People get confused and think that they will only get 19.85% of the 70 watts," he said. "You have to explain to them that the 19.85% efficiency rating refers to the percentage of the sunlight the panel is exposed to that is captured and turned into solar energy."

WARRANTIES

Warranties are usually between 15 and 30 years on asphalt shingles, and in CertainTeed's case their shingles, whether solar or asphalt have a solid 25-year warranty on manufacturer's defects and labor. It is best if the whole roof needs replacing at the same time because homeowners may not want to have to replace a portion of the roof, then a few years later have the professionals back to fix the rest of the roof.

If the inverter has a problem and certified solar shingle roofers installed the inverter, CertainTeed stands behind it.

Integrated solar systems have an advantage over conventional solar panels; they avoid the possibility of shingles being harmed during the installation of the solar panel rack and thereby revoking the roof's warranty.

Another consideration with solar energy is that solar panels' power output slowly declines over the years. CertainTeed guarantees that these shingles will at minimum perform in this manner: 98% of labeled power output during the first year. Thereafter, the power output will decline annually by no more than .055% for 24 years. This means that in the 25th year of operation, a power output of at least 85% of the original labeled output would be achieved.

INSTALLATION

Some solar shingles can require specialized flashing, underlayment, and may be more complex to install, while others can be much simpler. CertainTeed's Solstice Shingle is screwed in, allowing roofers to install it with standard roofing tools, and crews can be trained fairly easily. It is designed to install alongside the asphalt panels and, therefore, can be installed on



just a portion of the roof if desired.

SOLAR SHINGLE REPAIRS

Though the product and installation be of the highest quality, sometimes something goes awry. When one Solstice Shingle requires repair, all of the solar shingles are affected Wickham said. This is due to the wiring system. When one solar shingle goes out, you must replace it, and you will have to remove the shingles above to do so. If under warranty, the labor for this repair would be covered. Many solar panel systems also require faulty panel replacement for the system to work, especially if the system is older. It depends on how a system is wired and whether it has modern microinverters or DC optimizers.

SHINING A LIGHT ON THE FUTURE

CertainTeed entered the solar arena in 2010 with its Apollo series of solar tiles and shingles. The Solstice product line of panels and shingles were then introduced in 2023. In 2024, the company started its partnership with SunStyle, which was originally a European product with a beautiful aesthetic which actually integrated the solar energy generation into the shingle. Now Solstice Shingle has made installation faster and easier while providing a new aesthetic that helps the shingles to blend in with the asphalt shingles.

These exciting solar products could help your company expand your footprint in energy efficient products that many customers are looking for today. And there's more to come.

Wickham said the CertainTeed team expects the next generation of solar shingles to bring repair improvements, making it easier to remove one shingle without disturbing the rest of the shingles. Further down the line, they are hoping to create solar shingles that will work with different types of roofs such as composite or metal. The future of solar roofing looks bright. Now is the time for homeowners to take advantage of the federal solar tax credit, which is set to expire at the end of this year. ●





BRIAN GAILEY-STOCK.ADOBE.COM

HOT TOPIC

HOW METAL IS SHAPING RESILIENT BUILDING DESIGN IN A CLIMATE OF CRISIS

BY FIONA MAGUIRE-O'SHEA, METALCON WRITER

As wildfires rage across the American West, hurricanes intensify in the Southeast, and insurance markets tighten nationwide, the demand for fire-resilient, climate-ready buildings is no longer theoretical—it's urgent. What was once seen as rare or exceptional is now becoming the new norm, both in the U.S. and globally. In the metal construction sector, leaders are taking note and taking action.

In a METALCON Online webinar, a high-caliber panel of experts came together to unpack the intersection of building science, climate policy, material innovation and insurance economics.

With METALCON 2025 on the horizon, the session was moderated by Frank A. Stasiowski, FAIA, CEO and founder of METALCON and PSMJ Resources. He was joined by Alan Scott,

FAIA, director of sustainability at Intertek; Dick Davis, former fire engineer and technical specialist with FM Global; Brian Partyka, vice president of business development of Carlisle Companies; and Anoush Brangaccio, senior policy advisor at the Florida Office of Insurance Regulation.

From testing standards and code lag to community planning and insurance incentives, the discussion emphasized one central theme: metal has an integral role to play in the future of resilient construction.

CODES ARE CATCHING UP—TOO SLOWLY

Recent catastrophic fires and storms have revealed painful shortcomings in how the construction industry approaches resilience. Many buildings, especially older ones, were not designed to withstand the hazards resulting from today's

extreme climate events. While building codes are evolving, our panelists were unanimous in a critical point: they're not keeping pace with the climate.

"The fact that there has been such disaster, it shows you cannot rely on the existing codes and standards," said Dick Davis. "We have to look closely at the science and figure out what materials to use whether it is residential, commercial or industrial construction."

Alan Scott added, "Recognize these hazardous events can happen anywhere. What happened in the past is not necessarily indicative of what will happen in future occurrences, so assessment is required." Scott shared a sobering example of a California apartment building that highlighted the flaws in current fire risk mapping. Depending on which map you used, the building was shown in both a low-risk and high-risk zone—yet it ultimately burned to the ground in the recent wildfires. "Perhaps some preassessment to determine risks might have prompted some action to reduce those before hazard happened."

Anoush Brangaccio explained the structural delays in the code-update process. "The building code is updated every three years," she said, adding that some states lag even further. Not all states have uniform building codes, and if they don't, it's time they consider implementing one.

Davis confirmed that reality: "I've seen situations where some states were still using the 2003 code when the 2015 code came out. That's how backlogged it can get. And people need to remember that code requirements are minimum requirements. There's nothing wrong with exceeding those requirements."

CLIMATE IS THE DRIVER—AND IT'S CHANGING THE GAME

"I would just add that climate change is really the key driver behind most of these tragedies," said Brian Partyka, "including stronger storms, heavier rainfall, more intense winds and worsening droughts in California."

Frank Stasiowski asked whether these events are catalyzing innovation or constraining it. "It spawns innovation," Partyka responded. "We've stopped talking about a metal roof and [started saying], 'Let's talk about a fire-resistant underlayment product with a two-hour burn rate.'"

Partyka pointed to multiple product innovations in development: "We have a two-hour fire-rated wall insulation product that's made of denim jeans, old, recycled denim jeans. It's pretty awesome to watch the innovation that happens as a result."

METAL'S EDGE IN A HAZARD-RICH WORLD

While no single material can solve every risk, metal stands out as one of the most effective front-line defenses—especially in fire-prone regions.

"Metal roofing would be a wonderful solution for areas that are prone to fire, wind and hail," said Partyka. "Will they dent in hail? For sure, they'll dent in hail...but the metal roof is going to have a Class A fire rating."

He noted that organizations like the Insurance Institute for Business & Home Safety (IBHS) are pushing for more rigorous

standards. "There's a wildfire prepared neighborhood program by IBHS... and metal roofs are mentioned in that as a non-combustible Class A fire rated [product]."

But Partyka was careful not to oversell. "It's not the end-all-be-all...I don't want to say this is the cure, and everybody should have a metal roof. I think it will help to eliminate some of the possibilities of ignition."

Davis explained why not all metals perform equally in fire scenarios: "The melting temperature of aluminum is about 900 to 1,200 degrees Fahrenheit; copper is approximately 2,000 degrees; and steel is north at 2,600 degrees. Actual flame temperatures vary from 1,000 to 2,000 degrees."

TESTING, CERTIFICATION AND INSURANCE: THE APPROVAL MATRIX

"I think one of the successes in Florida has been their Florida Product Approvals system," said Partyka. "You don't have that code approval or that number, then guess what? You're not going to be able to sell your products in the state of Florida."

Davis emphasized the importance of rigorous testing. "There is a requirement pretty much everywhere for testing exterior exposure, fire exposure roof covers...that test is ASTM E108 or UL790." He warned that not all materials are held to the same standard: "Codes have more or less grandfathered or waived the tests for certain types of materials...but aluminum is not grandfathered."

Scott added, "Generally, architects aren't aware enough about resilience issues...there needs to be greater awareness among the design community about all the different standards and tests."

From the insurance side, Brangaccio detailed how Florida incentivizes high-performance materials: "We do offer discounts...relating to the roof, roof coverings, connections." She added, "We've even broken out metal roofs, and...metal roofs compared to some of the other roofs would get a higher credit for wind."

HOLISTIC DESIGN AND SYSTEM THINKING

The consensus was clear: resilience isn't about one product, one material or one code update—it's about the system.

"Whether we're talking about fire resistance or hurricanes or floods," said Scott, "designing buildings that have overall greater sustainability like designing for passive house type standards...means you're both resilient against those hazard events and...have a building that's less expensive to operate, uses lower utilities and has a lower carbon emission."

Davis drove the point home with a stark reminder: "If that fire gets inside the building, no matter how it gets in there, you could destroy the whole building." He emphasized the need to consider the entire building envelope to protect the structure from wildfire exposure—the roof, the walls, the window systems, soffits and even vent mesh. He commented that people often overlook the importance of the windows and should use fire-rated glass, which includes heat-blocking gel layers, or double-pane tempered glass, which withstands high heat better than standard glass. "Think of the window as a system, it's got

a window frame.” Steel is ideal, while vinyl should be avoided unless reinforced with steel due to its low melting point.

GLOBAL PERSPECTIVES, LOCAL URGENCY - HOW DOES THE U.S. COMPARE GLOBALLY?

“I think that we’re ahead of most of the rest of the world regarding wind design,” said Davis, referencing his work with international clients during his time at FM Global. But in terms of fire design, “They use a lot of mineral wool insulation in Asia, which is good. It’s a better fire performer than a lot of the other insulations on the market.”

Still, differences in testing standards—ASTM in the U.S. vs. ISO elsewhere—pose challenges. “We don’t always agree on what’s the best test,” he admitted.

WHERE TO GO FROM HERE— AND METALCON’S ROLE

As disasters evolve, who’s responsible for keeping the industry ahead?

“I don’t like to put too much reliance on waiting for the codes to change to solve all the problems,” said Davis. “If a celebrity in Southern California wants to build a \$5, 10, \$20 million house, I would tell him to first engage a fire protection engineer and a structural engineer to give him some guidance. If he’s going to spend that kind of money on a house, build something that’s actually going to last.”

Scott suggested a multi-layered approach: “It’s state and local policy and codes. It’s urban and regional planning and zoning... all of those layers have to fit together to create the complete package of resilience.”

Anoush Brangaccio added, “If we’re going to ask our consumers and our residents to do this, they need to get something back to help offset it.”

That’s where METALCON, the only global event dedicated to the application of metal in construction and design, comes in.

“We at METALCON have a role in this—and our role is to keep this communication going,” said moderator Frank Stasiowski in closing. “We need to make sure that the innovation happening in labs and factories is matched by awareness in the field—and that’s a communication challenge we’re ready to take on.”

WHERE TO GO FOR GUIDANCE AND ACTION

Panelists referenced several valuable tools and organizations that can help professionals and consumers make informed, resilient choices. Whether you’re a builder, architect, manufacturer or homeowner recovering from disaster, these resources offer guidance, standards and real-world solutions:

1. IBHS (Insurance Institute for Business & Home Safety)

The IBHS is at the forefront of research on building resilience to natural hazards, including wildfire and wind. Their Wildfire Prepared Home program outlines steps for homeowners and builders to reduce risk.

<https://wildfireprepared.org/>



PHOTO BY MICHAEL HELD ON UNSPLASH

2. FM Global Data Sheet 9-19

FM Global provides free access to its technical data sheets, including 9-19, which outlines recommended practices for wildfire exposure mitigation. Registration is required, but access is free.

<https://www.fmapprovals.com/>

3. California Department of Insurance – Wildfire Resources

For homeowners in California, the state insurance commissioner’s office offers a range of tools, from insurer contact information to risk assessment programs and discount eligibility.

<https://www.insurance.ca.gov/>

4. Build LA Initiative

An initiative promoting fire-resilient construction and planning in Los Angeles County. This site includes resources for local permitting, building materials and fire-resistant design best practices.

<https://buildla.lacity.org/>

5. AIA Resilience and Adaptation Resources

Architects can turn to the American Institute of Architects (AIA) for research, guides and white papers on resilient building design and sustainability standards.

www.aia.org/resource-center/resilience-design-toolkit

6. Florida Product Approval System

A model of regulatory rigor, Florida’s system requires all building products—especially roofing materials—to meet minimum performance standards. Builders and code officials can search approved materials to ensure compliance.

<https://floridabuilding.org>

7. METALCON

From code compliance to climate resilience, METALCON’s educational programming uncovers how the fire-resistant and non-combustible properties of metal are reshaping building design in high-risk areas.

www.metalcon.com ●

ICE COMPLIANCE

A BRIEF GUIDE FOR CONTRACTORS

In early June 2025, major media outlets reported that the Department of Homeland Security issued internal directives instructing Immigration and Customs Enforcement (ICE) field offices to target approximately 3,000 arrests per day and to expand workplace operations in sanctuary jurisdictions, including major cities such as Chicago. Referred to by some media sources as “Operation Safeguard,” this enforcement push signals a return to large-scale worksite inspections across a range of industries, with construction remaining a primary focus. Roofing contractors whose crews may include U.S. citizens, lawful permanent residents, temporary visa-holders, and undocumented workers face significant disruption risks and potential legal exposure under this renewed enforcement strategy.

For roofing businesses, understanding what this heightened enforcement entails is the first step toward mitigating risk. DHS leadership has made it clear that enforcement will not be limited to border states or industries traditionally scrutinized. Local governments have already responded with public education campaigns to prepare residents and employers for intensified ICE activity. Contractors should assume that worksite visits could occur without warning and that preparation is essential to maintain compliance and minimize operational impact.

ICE generally uses two primary tools in its worksite enforcement activities. The first is a Notice of Inspection (NOI) or administrative subpoena, which compels an employer to produce Form I-9 records within three business days under 8 C.F.R. § 274a.2(b)(2)(ii). The second is a site visit supported by a warrant. Determining whether a warrant is judicial (signed by a federal judge) or administrative (issued by DHS on Form I-200 or I-205) is critical. Administrative warrants authorize arrests but do not grant entry into non-public areas such as job trailers, break rooms, or roof decks without employer consent. Only a judicial warrant signed by a judge grants that authority.

Employees may decline to answer questions and need not provide documents absent a judicial warrant or another applicable legal requirement. Retaliating against workers for asserting these rights risks liability for unfair immigration-related employment practices under 8 U.S.C. § 1324b.

Proactive preparation is the most effective defense. Every roofing project should have a designated ICE coordinator, typically a

superintendent, who is trained to meet agents, review and copy warrants, control access to restricted areas, and immediately contact legal counsel. Employers should maintain a secure, digitized I-9 file system, separate from personnel records, to ensure quick, organized responses to NOIs. Posting signage that non-public areas require consent or a judicial warrant helps reinforce Fourth Amendment protections. All encounters should be documented, including the names and badge numbers of agents, time of arrival, and details of any search. Supervisors must also avoid on-the-spot document re-verification or selective terminations prompted solely by an ICE visit.

Risk management should also extend to contract language. Prime contractors can protect themselves from ICE-related delays by including enforcement-response provisions in subcontracts. These clauses should require subcontractors to follow comparable protocols, grant schedule extensions for enforcement-related work stoppages, and include mutual representations against knowingly employing unauthorized workers. Coupled with a well-drafted force majeure clause, these provisions help allocate risk without undermining customer relationships.

Supporting the workforce in a lawful and responsible way is equally important. Employers can provide bilingual “Know Your Rights” materials, allow flexible unpaid leave for immigration proceedings, and create confidential channels for employees to raise concerns. Transparent, consistent communication fosters trust, reduces fear-driven absenteeism, and promotes jobsite safety even during enforcement events.

The renewed focus on ICE worksite enforcement is already influencing operations across the roofing industry. Contractors who combine legal awareness with clear, practiced response plans and updated contractual protections will be best positioned to navigate this evolving environment. Being prepared not only protects the company from liability but also safeguards the workforce and keeps projects on track. Staying informed and proactive is no longer optional; it is a business necessity in the current regulatory climate. ●

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