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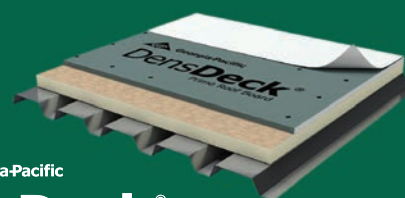


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The perils of idleness

People are leaving the workforce to do absolutely nothing

by Ambika Puniani Reid



By now, we all have heard about the Great Resignation, which describes the recent exodus of employable people from the U.S. workforce.

Yes, the COVID-19 pandemic is partly the cause, but as *The Wall Street Journal* reporter Mene Ukeberuwa writes in “The Underside of the ‘Great Resignation,’” the true causes are more nuanced—and historic—than people realize.

Ukeberuwa interviews Nicholas Eberstadt, a political economist for the American Enterprise Institute and author of the book *Men Without Work*. Eberstadt explains what is happening in the labor force is not unprecedented though the levels are striking.

“Male labor force participation has dropped after most recessions in the postwar era,” he says. “When the economy recovers, it ticks up a little but never gets back to where it was.”

Eberstadt says overall labor force participation peaked in 2000 at 67% and now is 61%.

“Would we think it was a crisis if the work rate fell below the Great Depression level?” he asks. “Well, you can check that box. We’re already there.”

But what is filling the time of those voluntarily unemployed?

“... What [males] report doing is ‘watching.’ They report being in front of screens 2,000 hours per year. ... Women ... say they spend seven hours a day in ‘leisure,’ a category dominated by entertainment,” Eberstadt says.

Because jobs are there for the taking, Eberstadt posits government benefits have contributed to the problem.

In his book, Eberstadt writes these programs may not have caused the male flight from work but “they at least financed it” and “the widespread contempt for many ordinary jobs may be making the problem worse.”

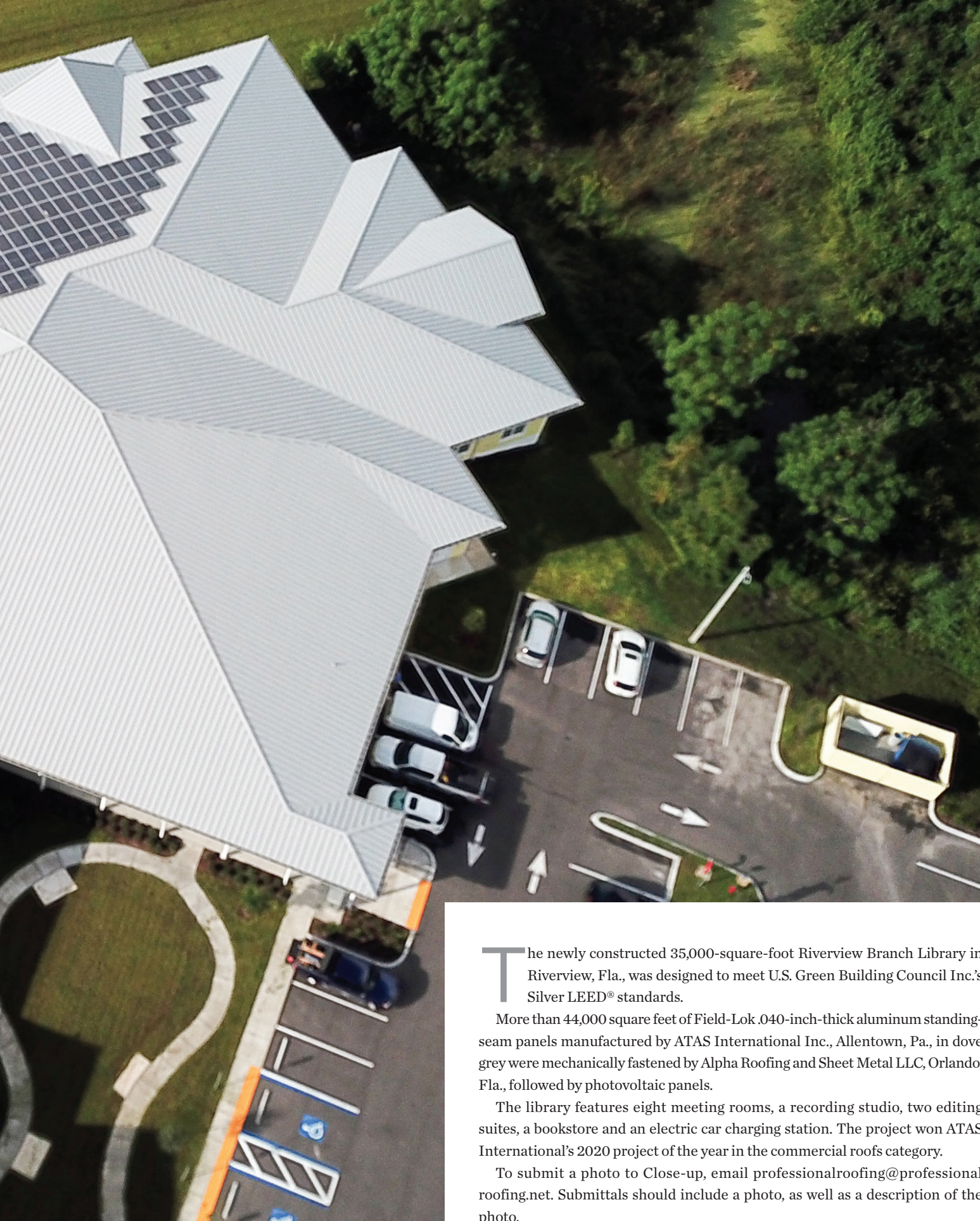
Ukeberuwa writes: “Instead of stigmatizing low-skill jobs, we would do better to stigmatize idleness, especially among men.”



To view a chart depicting the number of people who have quit their jobs during the Great Resignation, go to professionalroofing.net.

AMBIKA PUNIANI REID is editor of *Professional Roofing* and NRCA's vice president of communications.





The newly constructed 35,000-square-foot Riverview Branch Library in Riverview, Fla., was designed to meet U.S. Green Building Council Inc.'s Silver LEED® standards.

More than 44,000 square feet of Field-Lok .040-inch-thick aluminum standing-seam panels manufactured by ATAS International Inc., Allentown, Pa., in dove grey were mechanically fastened by Alpha Roofing and Sheet Metal LLC, Orlando, Fla., followed by photovoltaic panels.

The library features eight meeting rooms, a recording studio, two editing suites, a bookstore and an electric car charging station. The project won ATAS International's 2020 project of the year in the commercial roofs category.

To submit a photo to Close-up, email professionalroofing@professionalroofing.net. Submittals should include a photo, as well as a description of the photo.

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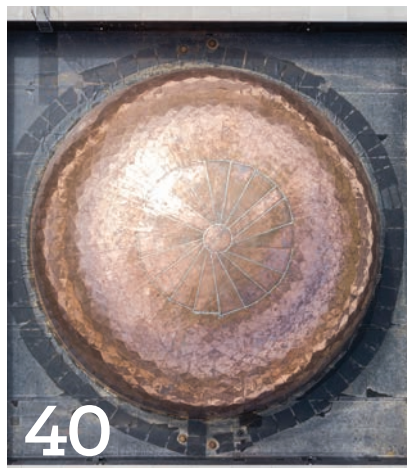
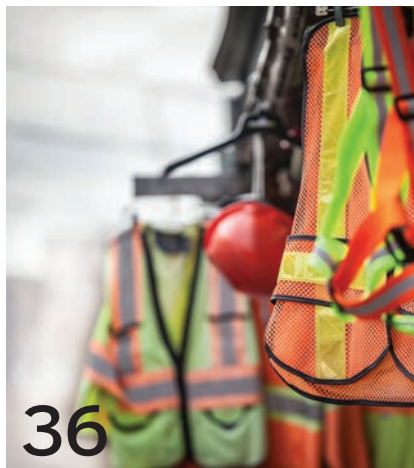
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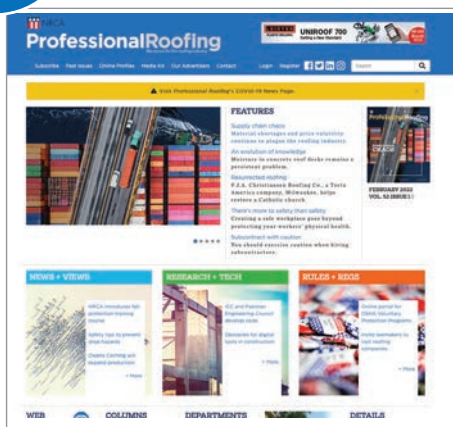
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An NRCA director of enterprise risk management



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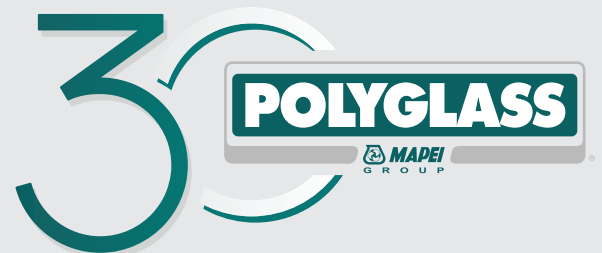
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#HASHTAG

#ROOFREPLACEMENT

According to Statista, in 2020, there were nearly 141 million housing units in the U.S.—that's a lot of roofs! As spring approaches, homeowners are likely to call upon their local professional roofing contractors to perform roof system inspections and discuss roof replacement. Check out roofing professionals who are talking about #roofreplacement across social media!



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gasperroofing This job located on Pennsauken NJ we removed existing Roofing systems and got a surprise that all of the plywood had to be replaced because of the leaks and delamination after contacting the homeowner because he was out town we had to install 59 sheets of cdx 1/2in plywood followed by a new Owen's Corning roof systems color #brownwood the total of the job was \$13,703



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Gloves are double-coated for cut resistance

Brass Knuckle® has made available SmartCut™ BKCR4420 gloves. The gloves offer cut resistance with double-coated protection. A foam nitrile topcoat adds grip security, and a sandy grip finish reportedly increases abrasion resistance and cut protection. The gloves have a water-based polyurethane coating that helps reduce liquid penetration. The polyurethane is infused into the gloves with water instead of chemicals for gloves that feel softer and provide breathability, fit and manual dexterity. SmartCut BKCR4420 gloves also feature seamless, full-knit wrists to prevent dirt, debris and cold air from getting inside.

brassknuckleprotection.com



Asphalt shingles look like stone

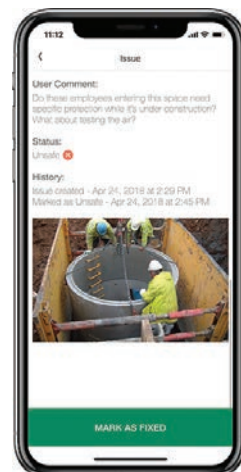
BP Building Products of Canada has introduced its line of Manoir laminated asphalt shingles designed to mimic the appearance of European castles. The shingles feature Building Products of Canada's Weather-Tite® PLUS Technology for increased wind resistance. The shingles' Weather-Tite Band protects against wind-driven rain, and a Hurricane Band® reportedly helps prevent shingles from blowing off. Manoir shingles also feature an extensive dual-layer construction, and their polymer-modified asphalt formulation adds flexibility and long-term granule retention. Manoir shingles are available in five colors that replicate the look of natural stone and slate finishes.

bpcan.com

App connects users to safety experts

Rabbit Run Ventures has introduced Safety Badger,™ a mobile app that provides 24-hour on-demand access to qualified safety experts said to help a user avoid accidents, injuries and fines. Safety experts can review job-site issues, offer corrective solutions, cite relevant Occupational Safety and Health Administration codes and help support a user during OSHA visits. The Safety Badger app enables a user to take a photo on-site and upload it with a brief description or question, and a safety expert will respond to the user in less than 15 minutes. Users also will receive product recall notices and regulatory updates.

safetybadger.osea.com



Vents improve energy efficiency

Atlas Roofing Corp. has added three vents to its line of ventilation products. TruRidge® PRO 25, HighPoint® AL 50 Slant Back and HighPoint GL 50 Slant Back vents are designed to improve energy efficiency, optimize roof performance, and reduce excessive attic heat and moisture that can contribute to structural damage. The TruRidge PRO 25 rolled exhaust vent provides the rigidity of a sectional ridge vent with the flexibility of a lightweight roll for easy installation. The HighPoint AL 50 aluminum vent is designed to extend roof and shingle life with a one-piece base and throat said to be durable and weather-resistant. HighPoint AL 50 includes fixed louvers and an 8-inch throat with a 50-square-inch net-free area to maximize airflow. The HighPoint GL 50 vent is constructed from heavy-duty galvanized steel with a one-piece base and throat design and fixed louvers. The 8-inch round throat provides 50 square inches of net-free area for unobstructed airflow. The three vents are designed for roof slopes of 3:12 to 8:12. atlasroofing.com/roof-ventilation



Workstation has multifunctional tabletop

KNAACK® has introduced PLANZBOARD,™ a mobile planning workstation developed for the construction industry. PLANZBOARD features a multifunctional tabletop that can be used as a plans table, whiteboard or collaborative meeting station. The 42-inch heavy-duty tabletop provides a sturdy work surface that can be positioned horizontally, vertically or at an angle. The tabletop's white powder-coat finish doubles as a whiteboard surface. The workstation is magnetic and has a built-in lip to hold pens and markers. PLANZBOARD features powder-coated 16-gauge steel and dual heavy-duty locking hinges said to withstand tough job-site conditions. The workstation can be assembled using hand tools and fits through 36-inch door frames.

knaack.com

Ladder supports up to 375 pounds

Werner has made available its Multi-Max Pro ultra-flexible multiposition ladder with a load capacity of 375 pounds. The aluminum ladder reportedly combines the functions of five ladders: It can be used as a twin-step ladder, stairway-step ladder, wall ladder, extension ladder and leaning ladder. A user can adjust a hinge at the ladder's central pivot point to easily change positions. The Multi-Max Pro ladder features slip-resistant feet and 7 inches of built-in leveling to keep a user safe on uneven surfaces. The ladder's top can lean securely against walls, poles, corners and studs and can be used to hold tools and paint. A single-rope height-adjustment system can be used to convert the ladder into an extension ladder with one pull. The Multi-Max Pro multiposition ladder is rated for a 375-pound load capacity meaning it can support two workers at a time along with their tools while in twin-step ladder mode.

wernerladder.com





Same but different

The current inflationary state bears similarities and differences to the past

by Reid Ribble

As I write this column, news is breaking about the inflation rate. Prices are going up and, in some cases, a lot. The 7.1% inflation rate at press time was the highest level since 1982. That's the highest level in 39 years.

Think about it. In the 1980s, Ozzie Osbourne bit the head off a bat at a live concert. President Ronald Reagan announced sanctions on Libya. The U.S. broke ground on a new memorial honoring those killed in Vietnam. Sally Ride became the first American female astronaut. And most notably (at least for me) my favorite rock band, The Doobie Brothers, broke up.

I look to the 1980s for a reason. At the time, President Reagan was saddled with high inflation coming on the heels of the Carter administration. There are traditionally two approaches the government has used to tame inflation. One is simply to ride it out and risk it becoming embedded into the economy for years. That was President Jimmy Carter's approach. The other is to lay waste to it by allowing a recession to occur, which is what the Reagan administration did, ushering in a 40-year period with relatively



low inflation. Reagan preferred a flash fire to a slow burn.

Yet the causes of inflation of years past are notably different from the causes of our current situation. Although I would love to rant about my thoughts about COVID-19, that's better left to others. But notable was the government's response to the pandemic. The primary tool used to fight the pandemic's effects on the economy was to overstimulate. Trillions of dollars via direct payments and quantitative easing were rushed into place. The problem was in 2020 there weren't many places to spend it because much of the economy was shut down.

Then, 2021 came, a new president wanted to make his mark on history, and even more direct payments were disbursed: About \$1.6 trillion were sent to individuals who already couldn't spend what they got in the previous rounds of governmental gift giving. Except by this time, vaccines were in distribution, and, combined with pandemic fatigue, citizens went on a spending binge. They drove up demand and pricing, which put supply and demand out of balance. Add to this the global supply chain disruption, and you have a perfect storm of problems.

For those who think I am oversimplifying this, I don't disagree. But I have limited space here, so simplification is required. We have too many dollars chasing too few goods. On top of that, the government arbitrarily decided to send money to everyone earning

less than a specific amount regardless of their employment status. A lot of money has been floating around, and now there is surplus savings in the trillions of dollars. This is going to take some time. So now what?

I believe it could go a few ways. The most likely is the Federal Reserve continues moving interest rates higher until things slow down. This is recessionary and, in my opinion, the most likely path. However, recessions are bad news in an election year, so President Joe Biden will be under increasing pressure to spend even more, in essence adopting the Carter doctrine. This is also a possibility.

What I would prefer to see is the president announce we are in the endemic stage of the pandemic and annual or biannual booster shots will be needed for the foreseeable future. Much like flu shots are commonplace, so likely will be COVID-19 shots.

When and if the pandemic ends, the economy should return to a more normal pattern of 2%-3% annual GDP growth. The

government can stop overstimulating the economy, and a regular cycle of supply and demand should return. I am not entirely hopeful.

For the past 75 years, every time we experienced bouts of inflation, it almost uniformly triggered a recession. That's my

guess now. Not good news, but if a slowdown causes things to return to our boring normal, I am good with being bored. 🍷🍷🍷



To view a chart of historical inflation rates since 1914, go to professionalroofing.net.

REID RIBBLE is NRCA's CEO.

 @NRCA_CEO

DERBIGUM Americas now is Performance Roof Systems™

DERBIGUM Americas Inc., Kansas City, Mo., a leading producer of APP polymer-modified bitumen roof systems and accessories for the low-slope commercial roofing market, has changed its name to Performance Roof Systems Inc., A SOPREMA® Group Company.

The decision to change the corporate name is meant to reflect the company's legacy and strengthen the strategy to focus on Performance Roof Systems' roofing solutions. It also formally aligns the relationship as "A SOPREMA Group Company."

SOPREMA Inc., Wadsworth, Ohio, a manufacturer of commercial roofing, building envelope waterproofing, wall protection and civil engineering waterproofing solutions, acquired DERBIGUM Americas in August 2018.

The company's ownership and product line will not change.



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Pandemic-related absences have cost employers billions of dollars

A Dec. 20, 2021, analysis from the Integrated Benefits Institute shows during the previous 22 months, workers' COVID-19 pandemic-related absences have cost employers more than \$78.4 billion—nearly \$1 billion each week, according to [constructiondive.com](https://www.constructiondive.com).

The institute considered disability wage payments, state disability insurance, sick leave wages and employee benefits in its calculation. It used data from the U.S. Bureau of Labor Statistics, as well as “lost workday experiences contained in its own dataset of employer-sponsored disability claims to model lost work time

impacts” based on total COVID-19 case counts in the U.S.

California, Texas and New York exhibited the highest lost work time. Among metropolitan areas, New York City, Los Angeles and Chicago incurred the largest lost work time cost.



To access a *Harvard Business Review* list of ways employers can support employees' mental health, go to professionalroofing.net.

Although it can be easy to track tangible pandemic expenses, Integrated Benefits Institute Research and Analytics Director Joseph Aller says there are costs in a more intangible area.

“The true cost of the COVID-19 pandemic to employers is far more than just the expense of workplace sanitization, testing and masks,” Aller says. “A holistic view of productivity presents a more accurate overall cost estimation.”

There may be productivity issues even among workers who are present because stress can cost employees hours of work time. To combat employee stress before it becomes severe, many employers have adopted or improved mental health benefits.

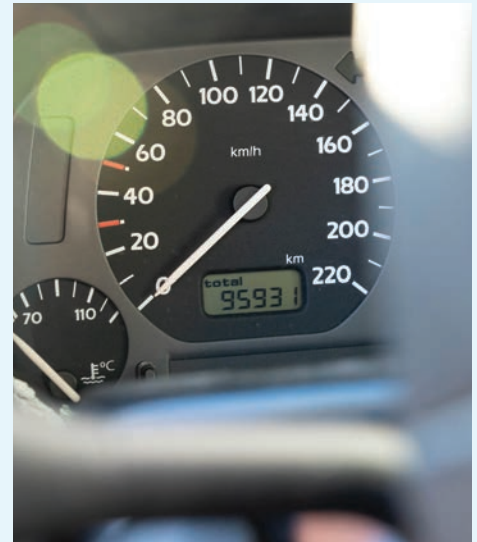
Metal-Era® and Hickman Edge Systems join NRCA's One Voice initiative

NRCA has announced Metal-Era LLC and Hickman Edge Systems, owned by parent company MTL Holdings, Waukesha, Wis., have joined its One Voice initiative as partner members.

NRCA's One Voice initiative is a transformational approach to addressing the roofing industry's most critical issues and concerns—with one voice—to secure its future.

NRCA invites manufacturers, distributors, architects, engineers, consultants and service providers to fully engage with NRCA, as partners, and actively address the industry's most pressing issues, including workforce certification; effecting change in Washington, D.C.; building codes and insurance; and increasing professionalism in all industry sectors.

For more information about NRCA and its One Voice initiative, including a list of One Voice member partners, go to nrca.net/onevoice.



IRS releases 2022 standard mileage rates

The Internal Revenue Service has announced the 2022 optional standard mileage rates for calculating deductible costs associated with using an automobile for business, charitable, medical or moving purposes.

As of Jan. 1, the standard mileage rate for the use of a car, van, pickup or panel truck is 58.5 cents per mile for business miles driven. The standard mileage rate is 18 cents per mile driven for medical or moving purposes and 14 cents per mile driven in service to a charitable organization.

During 2021, the business mileage rate was 56 cents per mile and the medical and moving rate was 16 cents per mile. The charitable rate is set by statute and remains unchanged.

It is important to note under the Tax Cuts and Jobs Act, taxpayers cannot claim a miscellaneous itemized deduction for unreimbursed employee travel expenses. Taxpayers also cannot claim a deduction for moving expenses, except members of the Armed Forces on active duty moving under orders to a permanent change of station.

Additional information is available at irs.gov/pub/irs-drop/n-22-03.pdf.



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The second round

ICC's 2024 code development process continues

by Mark S. Graham

As development of the 2024 I-Codes continues, NRCA monitors progress and actively participates in developing the codes' roofing-related provisions. Following is a brief update about the status of the 2024 I-Codes.

Group A

The International Code Council® has split its development process for the 2024 I-Codes into two groups: Group A, which occurred in 2021, and Group B, which occurs this year. Although most of the roofing-related content in the International Building Code®'s Chapter 15-Roof Assemblies and Rooftop Structures and International Residential Code®'s Chapter 9-Roof Assemblies falls within Group B, several roofing-related topics were addressed in Group A, including attic ventilation, rooftop occupancy requirements, the plumbing code's roof drainage requirements and the fire code.

At ICC's Group A committee action hearings, which were held online April 11-May 5, 2021, more than 1,250 code change proposals were considered. Thirty-two proposals directly applied to roof assembly design and installation.

ICC held its Group A public comment hearings Sept. 21-25,



2021. The hearings offered proponents of code changes and other interested parties an opportunity to attempt to amend or overturn the committees' recommendations from the committee action hearings. The public comment hearings had 339 code change proposals on the agenda. Six proposals from NRCA's roofing-specific watchlist were on the agenda, and four were approved during the public comment hearings.

Code Change S10 provides IBC code requirements for raised deck paver walkways, such as pavers on raised pedestals. Previously,

the code did not specifically address these assemblies, which sometimes resulted in inconsistent interpretations of the code's requirements.

Code Change G20 establishes occupant load and exit and egress requirements for occupiable roofs, such as vegetative roofs with assembly areas and rooftop patios and terraces. Previously, IBC had limited requirements applicable to occupied roofs and, as a result, interpretations varied.

Code Change F15 differentiates between vegetative roofs and landscaped roofs in the IBC and International Fire Code.® With this code change, a landscaped roof is a localized area on a roof that includes landscape planters, vegetation and hardscape. A vegetative roof is a roof assembly with vegetation throughout. IBC and IFC previously used the two terms interchangeably, which

“NRCA has been an active participant in ICC's code development process since its inception in the late 1990s”

sometimes resulted in confusion and inconsistent interpretations.

Code Change WUIC15 as it applies to the International Wildland-Urban Interface Code® requires vents, including attic intake and exhaust vents, to be tested for entry of burning embers and direct flame impingement or meet specific prescriptive criteria.

From Oct. 15-Nov. 1, 2021, ICC held its online governmental consensus vote to ratify the decisions resulting from the public comment hearings. The published results of the online governmental consensus vote show ICC's code official members ratified all but four of the decisions. None of the four code change proposals overturned by the online governmental consensus vote were on NRCA's roofing-specific watchlist.

Group B

ICC's Group B covers most of the requirements in IBC's Chapter 15, IRC's Chapter 9 and the International Existing Building Code.® Reroofing is addressed in IEBC's Chapter 7-Alterations-Level 1.

The deadline for submitting Group B code change proposals was Jan. 10. NRCA submitted 29 code change proposals to IBC, IRC and IEBC. Several manufacturers and other roofing associations also submitted Group B code change proposals.

ICC published its monograph of Group B code change proposal submissions on its website, iccsafe.org, Feb. 23.

ICC's Group B committee action hearings

will be held March 27-April 6. ICC's Group B public comment hearings will be held Sept. 14-21 in conjunction with ICC's annual conference. The Group B online governmental consensus vote will start about two weeks after the conclusion of the public comment hearings and be open for two weeks.

The code change proposals already approved during ICC's Group A and those that will be approved during the Group B process will be published as the 2024 I-Codes in mid-2023. The 2024 I-Codes are intended for first adoption by state and local jurisdictions no earlier than 2024.

Closing thoughts

NRCA has been an active participant in ICC's code development process since its inception in the late 1990s. NRCA also participated in the code development processes of the legacy model codes since they first included roofing-specific chapters in the mid-1980s. I have represented NRCA at the legacy codes' and ICC's code development processes since 1993.

NRCA members can direct code-related questions to NRCA's Technical Services Section at (847) 299-9070, option 4, or nrcatechnical@nrca.net. 📞📧

MARK S. GRAHAM is NRCA's vice president of technical services.

 [@MarkGrahamNRCA](https://twitter.com/MarkGrahamNRCA)

Tips for longer, safer power tool battery life

The Power Tool Institute Inc., Cleveland, has identified steps users can take to care for and maintain power tools and their batteries to keep them operating safely at peak performance for a longer life cycle.

Before operating a new power tool, read the manufacturer's instruction manual and only use the system components—tool, battery and charger—from the same manufacturer. Use a power tool's battery solely for the defined purpose as specified by the manufacturer.

During a power tool's life cycle, regularly inspect its battery for signs of damage such as crushing, cuts or punctures. Be mindful of abnormal battery behavior, such as failure to fully charge or hold a charge, longer-than-usual charging times, noticeable drop in performance, liquid leakage from the battery or melted plastic anywhere on the pack. These are indications of an internal problem. Discontinue use if a battery has received a sharp blow, been dropped or is damaged.

Never tamper with a power tool's battery. As a general practice, it is

best to unplug battery chargers and remove battery packs from them when not in use. Do not store batteries on their chargers. Always use and store a battery within the temperature limits stated by the manufacturer. Do not store in a closed location where sunlight may cause elevated temperatures, such as near a window or inside a vehicle.

Immediate action is required if a battery is exhibiting signs of overheating such as flames, smoke, smoldering or melting. If the battery is connected to a charger, unplug the charger first. Pour copious amounts of water on the battery and then submerge the battery in a sturdy container filled with water. When transferring the battery, avoid direct contact with the battery and use appropriate personal protective equipment to protect face, hands and body. Contact the manufacturer for guidance regarding proper battery disposal.

Additional information about power tool and battery maintenance and safety is available at powertoolinstitute.com.

Construction is the most-targeted industry for ransomware attacks

New desk research by NordLocker, Panama City, shows construction is the No. 1 industry hit by ransomware, according to forconstructionpros.com.

An analysis of 1,200 companies globally that were hit by cyber extortion between 2020 and 2021 revealed where ransomware is the most widespread. Of 35 identified industries, the highest number of ransomware attacks occurred in the construction sector.

The 93 companies affected in the construction industry range in size from small family-owned businesses to large businesses consulting on billion-dollar projects. Construction could be attractive to cybercriminals because of the industry's time-sensitive processes.

"The reputation of firms in this industry is largely built upon on-time service delivery, which is at risk during any delays caused by ransomware attacks," says Oliver Noble, a cybersecurity expert at NordLocker. "This factor, together with the industry's razor-thin profit margins, provides the ransomware groups with conditions that make a payout more likely."

Noble offers the following cybersecurity tactics to help protect your business.

- Ensure your employees use strong, unique passwords and encourage implementation of multifactor authentication.
- Secure your email by training staff to identify signs of phishing, especially when an email contains attachments and links.
- Implement and enforce periodic data backup and restoration processes.
- Adopt zero-trust network access—every access request to digital resources by a staff member should be granted only after his or her identity has been appropriately verified.

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Paid to train

The Workforce Innovation and Opportunity Act provides federal funding to train workers

by Deborah Mazol

With NRCA's support and advocacy, the Workforce Innovation and Opportunity Act became law July 22, 2014. This legislation streamlined an outdated and inefficient workforce development system and is designed to help job seekers find employment, education, training and support services by matching them with employers that need skilled workers.

Background

The act reauthorized the Workforce Investment Act of 1998, which consolidated state and local programs aimed at helping displaced workers develop employment skills and find jobs.

The Workforce Innovation and Opportunity Act provides federal funding for state and local workforce training programs that prioritize veterans and low-income trainees but are open to anyone in the U.S. seeking employment-based skills training. The act authorized \$9.5 billion in federal funds for 2015; \$2.8 billion was specifically designated to fund training available to a broad array of U.S. workers. Authorized funding grew modestly through 2020, and Congress currently is discussing ways to reform the system, including \$4.5



billion in additional funding contained in President Joe Biden's Build Back Better initiative.

Benefits

You can take advantage of the Workforce Innovation and Opportunity Act's workforce development benefits in a few ways. You can hire workers through one of the nearly 2,400 American Job Centers or apply for reimbursement of work-based training you have provided. To support the legislation's efforts, you can serve on a state or local Workforce Investment Board, partner with an educational institution to provide worker training, or participate in a

regional partnership with educators or other employers in the roofing industry.

One of the act's goals is to expand the types of training offered through American Job Centers. About 8 million people currently are using the centers to develop employment-related skills and training, and workers are available to hire with varying skill levels.

Funding for training

There are two basic types of federal funding provided for workforce training.

The first is vouchers that are provided to individuals who use employment-based services. The vouchers are provided through Individual Training Accounts and only payable to training providers registered within the system. Every client who qualifies for

training receives a voucher he or she can use at any qualified training provider in the area, including vocational/technical centers, community colleges, trade association programs, union programs or for-profit training centers. The vouchers range in value depending on geographic area, but the average value is about \$5,000. In the past, most of the funding provided through the federal workforce development system has been paid through Individual Training Accounts.

The second funding option is reimbursement for providing work-based training. In most cases, the funding is paid directly to employers. The Workforce Innovation and Opportunity Act is designed to increase the percentage of funding allocated to reimbursements directly to employers. There are three types of reimbursable workforce training: on-the-job training, customized training and incumbent worker training. Employers apply for training reimbursement through state or local Workforce Investment Boards.

The goal of on-the-job training is to give newly hired workers the knowledge and skills they need to do a job "proficiently." Trainees must qualify for on-the-job training by obtaining approval from an American Job Center. In most cases, an employer is reimbursed for 50% of a trainee's wages; in some cases, an employer may receive up to 75%. Although the training usually is for new employees, it also can be used for workers already employed if the company has introduced new technologies or procedures.

Customized training can be used for workers not yet on the payroll or for those already employed. Trainees must qualify for assistance by applying through an American Job Center. An employer commits to hiring a worker after successfully completing training, which usually is provided by a third party. The employer is expected to pay a "significant portion" of the training costs, and the training must lead to an industry-recognized credential.

The purpose of incumbent training is to help currently employed workers improve their skills. An employer must show the

training will help workers "retain employment or avert layoffs" and/or raise worker wages, enhance company competitiveness or help the state economy. Funding is available for 50% to 90% of the training costs depending on a company's size. Depending on an employer's state, NRCA's Training for Roof Application Careers may qualify for employers to receive a stipend for a portion of the cost of employee training.

Looking ahead

NRCA members who have used Workforce Innovation and Opportunity Act programs have reported the paperwork and reporting requirements are manageable, but NRCA is advocating for further streamlining during the legislation's reauthorization by Congress. NRCA continues to advocate for Workforce Innovation and Opportunity Act reforms that will make it easier for employers and prospective roofing workers to take advantage of the workforce training system.

To begin exploring Workforce Innovation and Opportunity Act opportunities that can help your

company address its workforce development needs, contact your state or local Workforce Investment Board or a local American Job Center.

The executive director, staff and/or board members can direct you to more information about hiring workers, worker training reimbursement and how to partner with local educational institutions to provide training. Additional information is available at doleta.gov/wioa. 📞🌐



To find an American Job Center near your company or read a letter NRCA CEO Reid Ribble sent to the Senate Committee on Health, Education, Labor and Pensions in support of Workforce Innovation and Opportunity Act reform, go to professionalroofing.net.

DEBORAH MAZOL is NRCA's director of federal affairs in Washington, D.C.

OSHA resources can help employers address workplace falls

The Occupational Safety and Health Administration continues to offer resources to address falls in the workplace—the leading cause of construction worker fatalities.

The resources are intended to help promote awareness about common fall hazards in construction; educate employers and workers regarding fall prevention; and reduce the number of fall-related injuries and fatalities. Continuing the goals of the Department of Labor's Office of Compliance Initiatives, the resources also encourage and facilitate compliance evaluations.

Falls in the workplace can be prevented if employers plan ahead to ensure a job is done safely, provide the correct equipment and train workers to use equipment properly. OSHA is working with industry stakeholders to provide informative compliance assistance resources.

OSHA's ninth annual National Safety Stand-Down will be May 2-6 to raise awareness about the hazards of falls in construction. OSHA, the National Institute for Occupational Safety and Health, the National Occupational Research Agenda, and the Center for Construction Research and Training will lead the effort to encourage employers to pause during their workdays for topic discussions, demonstrations and training regarding how to recognize hazards and prevent falls. Additional information is available at osha.gov/stop-falls-stand-down.

More fall-prevention resources are available on OSHA's website, osha.gov, including a series of safety videos; OSHA's Fall Prevention Training Guide for employers; fact sheets about the safe use of ladders and scaffolding while performing construction activities; and social media graphics.

OSHA adjusts penalties for inflation

The Occupational Safety and Health Administration increased civil penalty amounts for workplace safety and health standard violations in 2022 to adjust for inflation, according to osha.gov. The adjusted penalty amounts took effect Jan. 15.

New maximum penalties for willful or repeated violations are \$145,027 per violation; serious and other-than-serious violations are \$14,502 per violation; and failure to abate violations are \$14,502 per day beyond the abatement date.

OSHA state plans must adopt maximum penalty amounts that are at least as effective as federal OSHA's penalty amounts.

Additional information is available at osha.gov/penalties.

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IBHS HAS DEVELOPED NEW HAIL IMPACT TEST PROTOCOLS FOR ASPHALT SHINGLES

by Anne Cope, P.E., and Ian Giammanco

Severe storms in the U.S. have been responsible for billions of dollars of insurance company losses during the past several years. Hailstorms are a significant portion of those losses and often result in roof system replacements, especially for asphalt shingle roof systems, which cover more than 75% of single-family homes in the U.S. When replacing their roof systems, homeowners look to roofing contractors for guidance about selecting the right products and trust their recommendations.

To help educate insurers, roofing contractors and consumers, the Insurance Institute for Business & Home Safety® has spent years collecting data and identifying the relative performance differences of impact-resistant-labeled asphalt shingles. IBHS is a nonprofit, scientific research organization funded by the property insurance industry. Charged with advancing building science, influencing residential and commercial construction, and creating more resilient communities, IBHS recreates real-world severe weather conditions to test buildings and building components, including asphalt shingles, against wind, wind-driven rain, hail and wildfire.

IBHS recently developed a new, peer-reviewed test method for hail impact resistance to provide a better connection to real-world performance against hail; tested widely sold basic impact-resistant asphalt shingles; and published the results in its Roof Shingle Hail Impact Ratings document. The protocol and performance ratings inform consumers wanting to purchase better performing products, roofing contractors looking to distinguish themselves from their competition and manufacturers seeking to improve their products.

Background

Hail can occur with any strong thunderstorm, which means hail is a threat to roofs throughout the U.S., especially east of the Rocky Mountains. All asphalt shingles when first installed should offer some degree of protection against hailstone impacts. Impact-resistant asphalt shingles are marketed as performing better in hailstorms. However, not all products labeled as such perform equally. Consumers deserve to have confidence that impact-resistant shingles live up to marketing claims.

There are two types of impact-resistant shingles. One type, which has become a legacy manufacturing technique, includes adding mesh or scrim reinforcement to the backside of a standard, oxidized asphalt shingle. The second type is made by modifying the asphalt with polymers, which has become the more popular technique.

Impact-resistant shingles have passed one of two standardized tests: UL 2218, "Impact Resistance of Prepared Roof Covering Materials," which uses steel balls, or FM 4473, "Specification Test Standard for Impact Resistance Testing of Rigid Roofing Materials by Impacting with Freezer Ice Balls," which uses pure water ice balls. Both tests are based on the relationship between hailstone diameter and kinetic energy and are rooted in research from the 1930s that assumes damage severity is directly tied to a projectile's kinetic energy. Projectiles in the tests range in size from 1¼ inches for Class 1 to 2 inches for Class 4.

For UL 2218, a steel ball bearing is dropped onto a roofing test panel from a height necessary to replicate the theoretical kinetic energy that spherical hailstones of similar diameter would have. Each target location is impacted twice in the same spot. Performance is evaluated by visually inspecting the impact locations on the back side of the shingle bent over a mandrel for a crack or tear under magnification, and a pass or fail determination is made.

For FM 4473, a pure water ice ball free of cracks and air bubbles is launched perpendicularly at a roofing test panel at a speed necessary to develop the intended kinetic energy. Again, each target location is impacted twice in the same spot. Performance is evaluated visually from the top and bottom for any sign of cracking or breakage, and similar to the UL 2218 test, a pass or fail designation is assigned to the product.



HAIL

NO!



To learn more about IBHS' hailstorm field research, go to professionalroofing.net.

However, neither test accurately replicates the type and severity of damage found on roofs after hailstorms. These test standards were developed before the material properties of natural hail were known. Although historical hail studies had quantitative data about mass, diameter and density, the strength or hardness of hailstones was described qualitatively.

IBHS field research

To fill this knowledge gap, IBHS launched a field study in 2012 to begin collecting quantitative data about hailstone properties to expand understanding of the phenomenon. Researchers followed severe thunderstorms to collect hailstones and measure their masses, diameters and strengths.

IBHS designed an instrument to measure the hardness, or compressive strength, of hailstones by measuring the amount of force needed to fracture a hailstone. The data provides a deeper understanding of hailstones' aerodynamics, kinetic energies when they reach the ground, mass-to-diameter relationships and strengths.

IBHS then developed a second field instrument: an impact disdrometer. A disdrometer collects in-situ data and measures how much energy a hailstone imparts on

a surface to further understand hailstone size distribution and how size varies within a storm.

The disdrometers were deployed in an array ahead of thunderstorms and captured data of the swaths of hail produced by storms. IBHS was the first to use 3D laser scanning technology to scan and produce highly detailed digital models of

natural hailstones. IBHS then printed 3D hailstones and flew the models in vertical wind tunnels. These digital models allowed more detailed assessments of hail aerodynamics.

IBHS has collected thousands of hailstones and

observed dozens of storms, enabling it to establish the largest research-grade database of hailstone characteristics. Data analysis revealed natural hail is, on average, slightly stronger than pure ice but ranges in strength depending on the air pockets trapped inside during hailstone formation. The range in strength produces different modes on impact. It also was found that existing test methods overestimate hail's mass, fall speed and impact energy. Additionally, the data disproved a long-held belief that hailstone strength and density were correlated.

Working with collaborators at the National Center for Atmospheric Research; Penn State University, University Park, Pa.; University of Oklahoma, Norman; and Johannes Gutenberg University, Mainz, Germany, researchers were able to rapidly advance knowledge of hail and redefine the relationship between hailstone size, its fall speed and energy to improve laboratory testing and paved the way for a new test method.

Into the lab

Armed with field data and the resulting new insights, IBHS researchers developed a method to recreate these properties in the laboratory for use in a new test method that would produce damage more representative of natural hailstorms.

Initially, to prove ice could be created with the density of natural hailstones, seltzer water was used with conventional injection molds. The bubbles in the carbonation trap gas in the ice during the freezing process to mimic the properties of hailstones observed in the field.

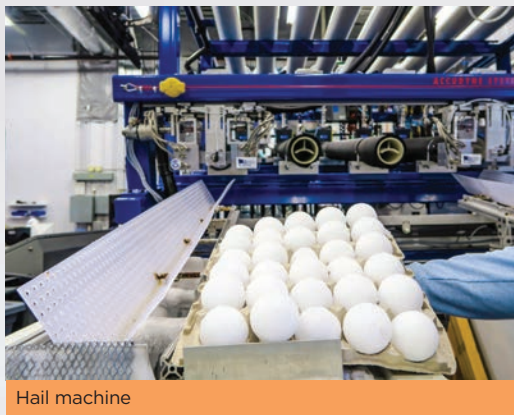
Although the proof-of-concept testing was successful, it wasn't efficient and did not produce enough controllability for true laboratory test applications. To create the volume of laboratory-manufactured hailstones needed, IBHS worked with Accudyne Systems Inc., Newark, Del., to develop and patent a hail manufacturing system with the ability to mass produce hailstones for testing. The machine allows IBHS researchers to control the properties of ice by adjusting the amount of diffused carbon dioxide, the pressure in which gas is diffused into the water, temperature and freeze time to produce ice that matches the variety of hailstone strengths observed in the field.

The system can support molds to create hailstones between 1 and 4 inches in diameter. The damage created by these manufactured hailstones is highly representative of that produced by natural hailstones.

After recreating hailstones in the laboratory in a



Hailstone produced in the laboratory



Hail machine

controlled, repeatable way, IBHS researchers learned three things can happen when hail hits a roof:

- A hard bounce impact (a hailstone bounces off an asphalt shingle with the hailstone remaining nearly intact)
- A hard shatter impact (a hailstone fractures into many pieces leaving no ice behind on a shingle)
- A soft impact (a hailstone turns to slush upon impact with a shingle)

These three impact modes occur because of variations in strength and density of hailstones observed in the field. The two hard impact types typically cause asphalt shingle granule loss, deform shingles, leave behind shingle dents, and create breaches or tears. The soft, slushy impacts also cause granule loss but leave less noticeable deformations.

Each of these damage types can reduce a shingle's functionality. Dents and tears can allow water to penetrate a shingle. This can compromise a shingle's water-shedding function and lead to water reaching the underlying deck and possibly entering a home's interior. Although not an immediate concern, loss of granules exposes the asphalt to ultraviolet radiation, causing it to degrade and become more brittle with time and can reduce the shingle's fire resistance classification. This can shorten the useful life of an asphalt shingle roof system and potentially make it more susceptible to the next hailstorm.

Test protocol

IBHS developed the IBHS Impact Resistance Test Protocol for Asphalt Shingles to highlight high-performing products and raise the bar for others. The new protocol specifies the method and criteria for laboratory-manufactured hailstones to test the impact resistance of asphalt shingles. The publicly available IBHS asphalt shingle hail impact ratings are based on 2-inch hail results. A hail cannon launches hailstones perpendicularly at roofing test panels at speeds that mimic the current scientific assessment of kinetic energy of natural hailstones for the given diameter.

Perpendicular impacts impart the most severe impact energy per square area by testing the worst-case impact for a shingle.

The IBHS test panel is the same configuration used in the UL 2218 test method: a 3- by 3-foot frame that includes a middle structural member simulating a roof rafter or truss. The test panel has a plywood deck, underlayment and shingles installed according to manufacturer instructions. The IBHS test method requires the

shingles be purchased via the distribution chain in the same way a roofing contractor would order shingles and how a homeowner would receive them.

The IBHS test method consists of the following:

- When testing three-tab shingles, 20 impacts per hailstone size are required.
- When testing architectural shingles, 40 impacts per hailstone size are required (20 on the single-layer portions and 20 on the multi-layer portions).
- Impacts are focused on the main field of the shingles, avoiding edges, joints, corners, the outer frame and middle structural member.
- The IBHS test protocol impacts a targeted location once because duplicate impacts can obscure damage from initial impacts.
- For each hailstone size, an equal number of hard and soft impacts are required. Some variation is allowed between the hard shatter and hard bounce modes. This ensures the protocol captures a realistic performance expectation for a product.



Hail cannon stone impact



Damage types

Damage assessment

The IBHS test protocol evaluates three damage modes: presence of a tear; volume of dents and ridge of dents; and area of granule loss. Capturing performance across these damage modes accounts for the different damages observed from the three types of impacts to accurately distinguish product performance.

IBHS developed an objective tool to evaluate damage and improve on the pass-or-fail ratings of the existing test methods that were vulnerable to human error and subjectivity. IBHS worked with a software development company to create an image-processing tool known as the Hail Impact Parameterization System to measure the volume of deformations and the area of granule loss on a shingle. The application uses a series of more than a

To learn more about the IBHS FORTIFIED Home™ program, see "Building stronger buildings," June 2014 issue.



For a link to the latest shingle performance ratings and technical documents related to the IBHS test standard, visit professionalroofing.net.

dozen photos to create a 3D model of an impacted shingle that can then generate precise measurements of damage.

The tool can measure dents, ridges of dents, individual granule loss and areas of patch granule loss. By collecting these quantitative measurements, the damage evaluation can go beyond pass or fail and quantitatively rate damage severity. These measurements allow the damage assessment to consider the severity of damage. The third damage mode is assessed by expert judgement and visually assigned a severity level.

For the IBHS test protocol, the damage evaluation is assessed from a shingle's top side. This is the same vantage point a roofing contractor or insurance adjuster would have to assess a roof system after a hailstorm.

A severity score for each damage mode is determined for each of the 20 impacts for three-tab products or 40 impacts for architectural products for a given hailstone test size. The severity scores are numerically averaged to determine an individual impact severity score. All individual impact severity scores then are averaged to determine a product's overall performance evaluation rating. This method provides more confidence in a product's performance ability than past standardized tests.

The ratings

For the release of the test protocol and initial ratings, IBHS tested eight of the most widely sold, basic impact-resistant shingles on the market in April 2019. IBHS publicly released the protocol and ratings in June 2019.

Products are rated Excellent, Good, Marginal or Poor in overall performance as well as in each damage category: dents/ridges, tears and granule loss. By providing performance ratings by damage category, consumers gain additional insights into product performance.

As scientific understanding of hailstorms continues to grow, homeowners and roofing contractors can use this extra information to select asphalt shingles based on the primary damaging hail characteristics in their regions. For example, the region along the front range of the Rocky Mountains experiences many hailstorms but

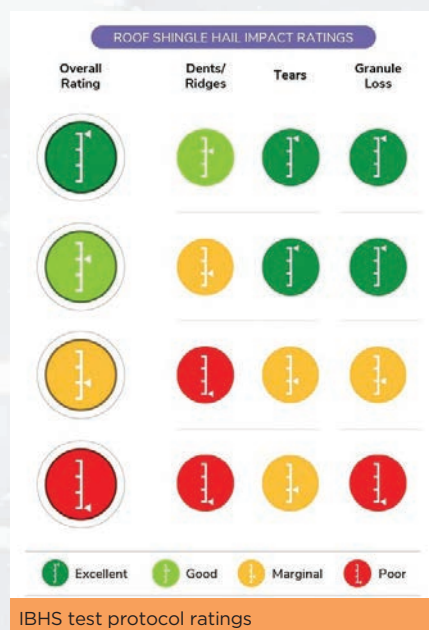
often sees smaller hailstones and more hailstones per square foot than a location like Dallas-Fort Worth, and an asphalt shingle with good granule loss scores would be an effective product in this region.

With the release of its ratings, IBHS committed to retest all products every two years and to test new products within six months of their release to ensure the ratings reflect products being installed on roofs in the U.S.

When the ratings initially were released in June 2019, one of the eight products tested received a poor rating. Less than six months later, that product no longer was available for purchase, demonstrating manufacturers' eagerness to improve their products. The initial ratings

included five products rated as good or excellent.

During the following two years, shingle manufacturers continued to improve products, and two additional scorecard updates incorporated new products. For the first scheduled retest of products, released in June 2021, nine basic impact-resistant shingles were tested; eight of the nine products earned a good or excellent rating. These improvements will not change the performance of products already installed; however, new construction and reroofing projects will benefit from asphalt shingle manufacturers incorporating the latest science to improve their products.



The shingle performance ratings are part of the IBHS FORTIFIED Home™ program, which helps homeowners seek more resilient roof systems. Products rated as good or excellent qualify for use on an IBHS FORTIFIED Home—High Wind & Hail designation.

As hailstorms continue to occur, the IBHS Impact Resistance Test Protocol for Asphalt Shingles will continue to provide manufacturers with important performance data and contractors with critical product selection information for customers in hail-prone regions. 🌩️🔧

ANNE COPE, P.E., is chief engineer at IBHS, and **IAN GIAMMANCO** is senior director for product design and lead research meteorologist at IBHS.

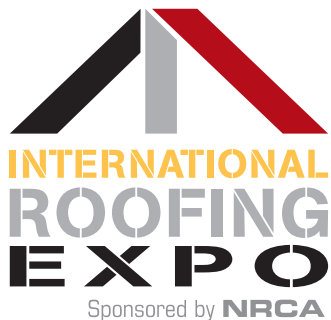
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¹ 25-year StainGuard Plus[™] Algae Protection Limited Warranty against blue-green algae discoloration is available only on products sold in packages bearing the StainGuard Plus[™] logo. See GAF Shingle & Accessory Limited Warranty for complete coverage and restrictions, and qualifying products.

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BLUE-GREEN ALGAE AND HOW YOU CAN HELP PROTECT YOUR CUSTOMERS FROM IT

The dark stains you see on roofs all over the U.S. and Canada are often caused by tiny cyanobacteria called *Gloeocapsa magma* — commonly known as blue-green algae.

It's a bacteria that travels on the wind and thrives in moist environments — so if one house in a neighborhood has it, others have probably been exposed as well. The darkening effect can impact the appearance and resale value of a home, as well as the effectiveness of highly reflective cool roofs.

Across the U.S., blue-green algae growth is often just a matter of time. The GAF Time-Release Algae-Fighting Technology used on shingles with a StainGuard Plus™ Algae Protection Limited Warranty¹ is formulated to put time back on your side.

The GAF StainGuard Plus™ Algae Protection Limited Warranty¹ provides 25 years of coverage against blue-green algae discoloration. It now comes with many of the most popular GAF Shingles, as well as hip and ridge cap shingles and visible starter strips.

Algae protection is important to customers. In fact, when GAF asked homeowners about it, 87% said it was very-to-extremely important to protect their roof from blue-green algae stains.² 89% said warranty length was very or extremely important when purchasing an algae protection product.²

GAF helps answer these customer needs. Shingles and roof accessories with a StainGuard Plus™ Algae Protection Limited Warranty are covered for 25 years against blue-green algae discoloration.¹ They also provide long-lasting

algae-fighting power thanks to GAF Time-Release Algae-Fighting Technology.

Proprietary GAF Time-Release Algae-Fighting Technology

At certain concentrations, metals like copper and zinc are toxic to blue-green algae, and can help prevent it from growing. In fact, on much older homes you may still see pitted copper and zinc strips tucked up under the ridge caps.

Using copper is also the idea behind traditional algae-prevention granules. They contain a layer of copper that leaches onto the roof. And that works for a while. But eventually, the granules degrade and release less copper, which makes them less effective at stopping algae growth.

GAF Time-Release Algae-Fighting Technology delivers the algae-fighting copper in a whole new way. Instead of a copper layer, specially-engineered capsules are infused throughout with thousands of copper microsites, which release copper steadily over time, for long-lasting algae-fighting power. It's algae resistance so powerful it allows us to offer the 25-year StainGuard Plus™ Algae Protection Limited Warranty¹ on many of our most popular products.

The long-lasting algae-fighting power and warranty coverage your customers want is now available from eave to ridge — only with GAF Time-Release Algae Fighting Technology and the 25-year StainGuard Plus™ Algae Protection Limited Warranty.¹



GAF Timberline HDZ
High Definition® Shingles

Find out more at gaf.com/HDZ

¹ 25-year StainGuard Plus™ Algae Protection Limited Warranty against blue-green algae discoloration is available only on products sold in packages bearing the StainGuard Plus™ logo. See GAF Shingle & Accessory Limited Warranty for complete coverage and restrictions, and qualifying products.

² Based on 2021 survey commissioned by GAF of 500 homeowners in areas with moderate to high amounts of blue-green algae.

³ 15-year WindProven™ limited wind warranty on Timberline HDZ® Shingles requires the use of GAF starter strips, roof deck protection, ridge cap shingles, and leak barrier or attic ventilation. See GAF Roofing System Limited Warranty for complete coverage and restrictions. Visit gaf.com/LRS for qualifying GAF products. For installations not eligible for the WindProven limited wind warranty, see GAF Shingle & Accessory Limited Warranty for complete coverage and restrictions.

Hazard Ahead

by Rich Trewyn

New product innovations keep employees and job sites safe

Too often, NRCA hears about a roofing contractor being cited for an Occupational Safety and Health Administration violation under 29 CFR 1926, “Safety and Health Regulations for Construction,” when the contractor believed he or she had been in compliance.

Safety and OSHA compliance can be tricky because of the number of variables involved. To help your workers stay safe and you avoid OSHA violations, NRCA offers tips to help you ensure job sites are set up properly and employees are using the most recent innovative safety solutions.

Job hazard analysis

In some cases, contractors say they tried to include fall protection in their safety plans but couldn’t because of the type of roof involved. In other cases, a hazard wasn’t detected before work began. Although these reasons may seem valid, OSHA likely will not find them to be acceptable.

OSHA’s General Duty Clause states employers must ensure employees have a workplace free of recognizable hazards.

One way to ensure your job sites are set up properly is to incorporate a job hazard analysis, such as NRCA’s job hazard analysis template, which is offered free for NRCA members on NRCA’s website, nrca.net. NRCA’s job hazard analysis template helps you detect and eliminate hazards on a job site before work begins.

A job hazard analysis helps to determine what hazards may be present on a particular job and allows the user to address ways to control those hazards before the job begins. NRCA’s template provides users with a variety of common issues seen on roofing job sites in an easy-to-use format that can be used to help on any job.

PPE

Personal protective equipment will not eliminate hazards, but when worn properly, it will protect against them. But finding adequate PPE solutions requires research and planning, and that is where a robust safety program comes into play. And new product developments offer more options than before.

Harnesses

PPE citations remain one of the top 10 OSHA violations for the roofing industry.

As the figure on page 39 shows, two of the top 10 violations specifically focus on PPE. If we were to dive into some of the fall protection-related citations, many of them are specific to systems, including the use of harnesses.

Unfortunately, this is a story I can relate to from personal experience.

When I was working for F.J.A. Christiansen Roofing Co. Inc., Milwaukee, one of the first employees I had reporting to me complained the harness issued to him was uncomfortable and the leg straps bothered him during the workday. My focus was on enforcement, so I made him wear the harness rather than looking for a better solution. The employee took it upon himself to loosen the leg straps. When the





Photo 1: A V-FORM™ full-body safety harness from MSA Safety Inc.



Photo 2: FallTech®'s Dorsal D-Ring Fall Arrest harness



Photo 3: The VERTEX® strapped helmet from Petzl®

employee slipped and fell, the system worked as intended. However, because the straps were too loose, the employee was seriously injured in the fall. An OSHA citation was issued and consisted of three violations: a training violation and two systems and criteria violations. Could these citations have been avoided? Yes!

Fall-protection harnesses have evolved to be more comfortable and user-friendly. For example, Cranberry Township, Pa.-based MSA Safety Inc., a manufacturer of personal fall-arrest equipment, has created a series of V-FORM™ full-body safety harnesses (see Photo 1) that allow for greater upper-body movement, something lacking in harnesses of the past. And FallTech,® Compton, Calif., has created its FT series of harnesses (see Photo 2) designed to fit workers while eliminating fatigue by adding padding in strategic locations.

Other manufacturers are addressing weight, padding, adjustability and sizing of harnesses to help workers feel more comfortable. Instead of one-size-fits-all manufacturing, companies are taking into consideration end-users' opinions to create harnesses that are more worker-friendly.

Although prices increase with more specialized harnesses, ranging from \$45 to \$250 per harness, Dave Hood, executive vice president of Emergent Safety Supply, Batavia, Ill., says selecting the right PPE far outweighs the cost.

"Choosing the correct PPE will make your workforce more productive," Hood says. "It's not a matter of which one is going to cost less. Instead, consideration of comfort and wearability should be the key to selection. A harness is only going to protect a worker if it's being used."

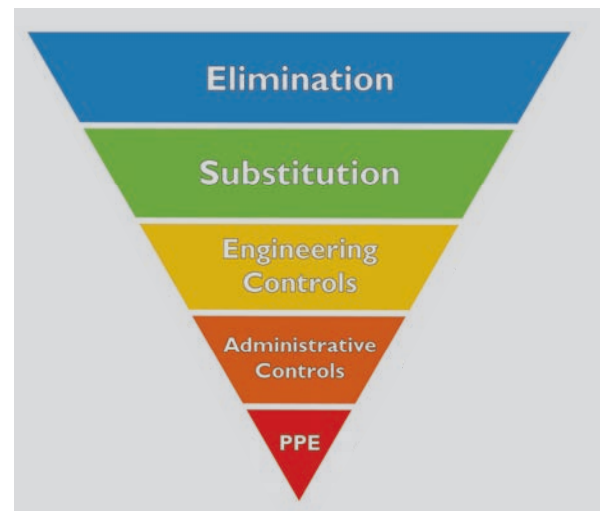
Head protection

Just like fall-protection harnesses, eyewear has evolved to be more comfortable and user-friendly. When I started in the industry 25 years ago, there were only a handful of safety glasses available, and they were bulky, ugly and came in one-size-fits-all styles. But soon, safety equipment companies began to focus on comfort and style as well as protection. Safety glasses began to resemble more

fashionable sunglasses and eyeglasses. Not only did the safety equipment companies make safety glasses more stylish but they also made them lighter weight and more comfortable so workers more likely would wear them on the job.

Throughout the years, there also have been many advancements made to helmets. Many contractors are switching from traditional hard hats to newer versions that offer more protection in certain circumstances.

For example, Petzl,® Salt Lake City, has made the issue of ensuring hard hats stay on during a fall a priority when designing its helmets. Traumatic brain injuries from falls can drastically affect an employee's recovery from an injury while adding direct and indirect costs to an accident. Head protection that stays in place during a fall can help alleviate some negative outcomes. With comfort and impact protection in mind, Petzl, along with other manufacturers, developed a strapped helmet (see Photo 3).



Hierarchy of safety controls

Mobile cart systems

The innovations don't stop at PPE. Recently I was introduced to a mobile fall-protection system that was developed for a reason familiar among those who use rope-grab systems on sloped roofs. The ASAP® LOCK mobile fall arrester by Petzl is designed to reduce handling during rope ascents. During typical use, the device moves freely along the rope without any manual intervention and follows all the user's movements while connected. In the event of a shock load or sudden acceleration, the fall arrester locks on the rope and stops the user. This system has virtually eliminated the need to adjust and readjust the rope grab during movement on the roof.

I am sure many roofing professionals will recall the PR-600 mobile fall-protection system (see Photo 4) from Protective Roofing Products, Hamilton, Ontario, developed during the 1990s. This innovative system allowed rooftop workers to access a nonpenetrating anchorage point that could be moved around a roof. Although the system was not as easy to use as modern carts, it was a huge success and spawned many of the mobile fall-protection cart systems currently in use.

Now, units for as many as four to five people are available, such as the Tie Down Original Penetrator Mobile Fall Protection Cart or the Tie Down Squatch Mobile Fall Protection Cart (see Photo 5) by Tie Down Manufacturing Ingenuity, Atlanta.

Choosing a mobile fall-protection cart system that best works for you and your employees is critical. When making your selection, consider the following:

- Roof deck type
- Location of intended use
- Number of employees expected to use the system at any given time
- Intended use for fall restraint or fall arrest

Once you have determined these considerations, a decision regarding the style of mobile system can be made. Smaller units have been successful for repair crews where ease of breakdown and truck space is a necessity. The Roof Zone Penetrator 2+2 and the Raptor STINGER™ mobile fall-protection carts are only two of the many systems capable of being broken down and assembled on rooftops for use.



Photo 4: The PR-600 mobile fall-protection system from Protective Roofing Products



Photo 5: The Tie Down Squatch Mobile Fall Protection Cart from Tie Down Manufacturing Ingenuity

North American Industry Classification System Code: 238160 Roofing Contractors				
Listed below are the standards cited by Federal OSHA for the specified NAICS code during the period October 2020 through September 2021. Penalties shown reflect current rather than initial amounts.				
Standard	Citations	Inspections	Penalty	Description
Total	7,258	2,886	\$24,911,883	All Standards cited for Roofing Contractors
19260501	2,663	2,606	\$14,167,341	Duty to have fall protection
19261053	1,050	938	\$2,914,188	Ladders
19260503	921	882	\$1,406,504	Training requirements
19260102	643	642	\$1,953,189	Eye and face protection
19260020	307	279	\$1,055,206	General safety and health provisions
19260100	282	281	\$765,928	Head protection
19260502	241	183	\$522,611	Fall-protection systems criteria and practices
19030019	222	195	\$66,143	Abatement verification
19260451	199	120	\$541,443	General requirements
19261060	106	106	\$60,584	Training requirements

OSHA's top 10 list of citations for roofing contractors

Drones and cameras

Protecting workers before, during and after jobs has become simpler and safer through the use of infrared drones and cameras, allowing users the ability to see deck integrity by visualizing a rough heat loss. Infrared technology along with drone usage can eliminate unsafe conditions where estimators and others access rooftops.

With new and improved cameras and drones, you now can identify a hazard without even stepping foot on a rooftop. FLIR,® Wilsonville, Ore., along with a few other infrared technology companies, has developed systems for drones and smartphones. The possibilities are endless.

More advancements to come

Safety equipment improvements coupled with advancements in technology and proper job hazard analysis safety planning are critical for improving job site safety. There always will be a need for new safety products, and the future promises more advancements. By keeping up with new product innovations, the industry will continue to drive down OSHA citations, injuries, illnesses and fatalities. 🌀📡🔦

RICH TREWYN is an NRCA director of enterprise risk management.



To download NRCA's free job hazard analysis template, go to professionalroofing.net.



A DOME IN MACOMB

William Molnar Roofing helps build a new library in Michigan

by Chrystine Elle Hanus

Since 1992, Clinton-Macomb Public Library has been serving residents of Macomb, Mich. A member of the Suburban Library Cooperative, Clinton-Macomb Public Library is part of a community that provides services to the public through 27 libraries in the northern Detroit area.

In July 2001, the library's north branch opened. Twenty years later, in August 2021, the original building closed. And in September 2021, the library reopened in a newly constructed facility. Located within Macomb Town Center, the library's north branch provides quality programs for children and adults and offers the latest in books, DVDs, CDs and more.

William Molnar Roofing Co. Inc., Brownstown, Mich., was invited by the project's construction manager, McCarthy & Smith Inc., Farmington Hills, Mich., to bid on the roofing work and subsequently was selected to install an EPDM low-slope roof system and copper dome.

EPDM

The William Molnar Roofing crew began work on the roofing project in August 2020. Three low-slope roof decks consisted of 18,500 square feet of structurally sloped steel, 4,700 square feet of flat steel and 2,000 square feet of flat double-layer tongue-and-groove wood planks.

On the structurally sloped steel deck, workers mechanically fastened two layers of Carlisle® InsulBase® 2½-inch-thick, 4- by 8-foot 25-psi polyisocyanurate insulation boards using Carlisle HP-X Fasteners. To divert water to drains, workers adhered 4- by 4-foot 25-psi polyisocyanurate insulation tapered ½ of an inch per foot using Carlisle Flexible FAST™ Adhesive. Next, workers adhered ½-inch-thick, 4- by 4-foot Georgia-Pacific DensDeck® Prime Roof Boards using Carlisle Flexible FAST Adhesive followed by Carlisle Sure-Seal 90-mil-thick EPDM adhered with Carlisle CAV-GRIP III Adhesive/Primer.

On the flat steel and wood plank decks, crew members mechanically fastened one layer of Carlisle Insulbase 2½-inch-thick, 4- by 8-foot 25-psi polyisocyanurate insulation boards using Carlisle HP-X Fasteners. Then, workers adhered 4- by 4-foot 25-psi polyisocyanurate insulation tapered ½ of an inch per foot using Carlisle Flexible FAST Adhesive. Next, workers adhered ½-inch-thick, 4- by 4-foot Georgia-Pacific DensDeck Prime Roof Boards using Carlisle Flexible FAST Adhesive followed by Carlisle Sure-Seal 90-mil-thick EPDM adhered with Carlisle CAV-GRIP III Adhesive/Primer.

All the low-slope roofing work had to be completed during winter months, requiring workers to remove snow when necessary. Materials were stored inside the building as well as in "hot boxes" to prevent freezing.



Completed copper dome



To view drone footage of Clinton-Macomb Public Library's copper dome and EPDM roof system, go to professionalroofing.net.

THE CLINTON-MACOMB PUBLIC LIBRARY—NORTH BRANCH FEATURES:

- More than 28,000 square feet of library space plus 6,000 square feet in porticos and courtyards
- A drive-up window to pick up items on hold, return items, pay fines, and renew or obtain new library cards
- Early literacy activities such as a kiosk, writing table and farmhouse with imaginative play kitchen
- Nine study rooms
- Meeting room and conference room for community meetings and library events



North view of library

Project name: Clinton-Macomb Public Library—North Branch

Project location: Macomb, Mich.

Project duration: Aug. 2, 2020–Sept. 14, 2021

Roof system types: EPDM and copper

Roofing contractor: William Molnar Roofing Co. Inc., Brownstown, Mich.

Roofing manufacturers: Carlisle® SynTec Systems, Carlisle, Pa.; GCP Applied Technologies Inc., Cambridge, Mass.; Georgia-Pacific Gypsum, Atlanta; National Metal Sales, Romulus, Mich.

Copper dome

The biggest challenge workers faced was working on a 2,900-square-foot dome atop a third-story structure that was above the newly installed EPDM membrane. Workers had to use extra care when staging and working in this area to avoid puncturing or tearing the membrane.

Additionally, the dome's shape made access difficult.

"With an approximate 44-foot diameter at the base of the dome at an elevation of nearly 30 feet, getting to the work face required us to fabricate a task-specific, curved ladder," William Molnar Jr., president of William Molnar Roofing, explains. "This ladder connected to a central pin. The base of the ladder had rubber tire wheels fixed to it so it could revolve around the dome and allow our tied-off workers to install the copper shingles without applying stress to the installed surfaces."

On the dome's plywood roof deck, workers laid self-adhering Grace Ice & Water Shield® HT underlayment followed by mechanically fastening 20-ounce copper shingles custom-fabricated off-site by William Molnar Roofing craftsmen. On the areas with a slope less than 3:12, workers soldered the shingles.

"There is a certain complexity to the compound curvature of any dome," Molnar says. "There is no standard size for shingles when installing on this type of construction. Computer modeling helped us get close dimensions for bidding and design, but as the installation process continued, physical measuring and layout was necessary."

To ensure there were enough shingles to keep pace with the workers installing the copper, two fabrication shifts worked to create the shingles as the dimensions were measured and called in to the fabrication department.

The project also faced a shortage of workers.

"We had other projects we were committed to in addition to this project," Molnar says. "Because of limited manpower, we had to increase work hours and get 'all hands on deck.' This included administrative staff and management helping out however they could to support the installation teams."

To help alleviate a shortage of workers on future projects, the ratio of roofing workers to apprentices was 1:1.

"The opportunity to challenge our young workforce and watch them use their skills and independent critical thinking to solve problems in real time was the most rewarding part of the project," Molnar says.

Quite a feat

In September 2021, the William Molnar Roofing crew completed work on the Clinton-Macomb Public Library—North Branch. Despite labor being in short supply, the team completed the project in time for the library's opening.

"Seeing the project complete and hearing members of the community complimenting the finished project brings satisfaction to anyone who has participated in such an endeavor," Molnar says. "Much credit is due to the whole building team and various trades that worked on the project. Building such a beautiful building with form and function while overcoming all the challenges during a pandemic is quite a feat. The entire construction team should be proud." 🌟🌟🌟

CHRYSTINE ELLE HANUS is *Professional Roofing's* associate editor and an NRCA director of communications.



Know the facts

by Matt Dupuis, Ph.D., P.E.

Cold roof construction can cause several problems in northern climates

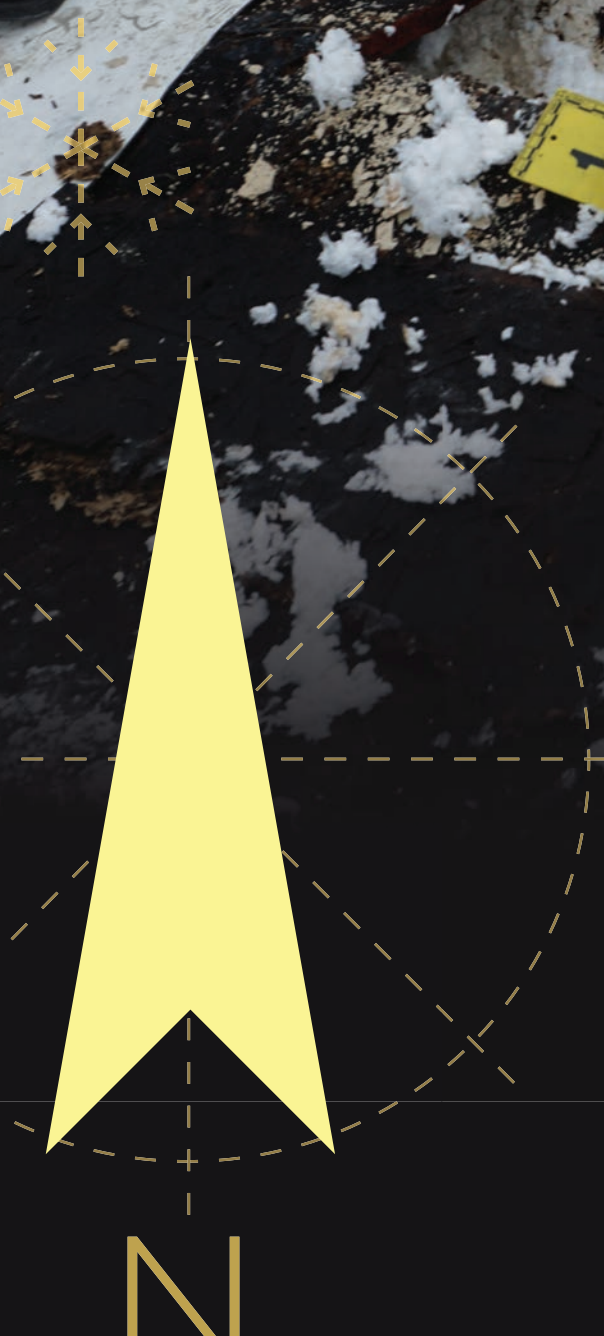


Photo 1: An overview of a cold roof being renovated. The blown insulation has been vacuumed out. The ductwork is visible running in the interstitial space. Although new plywood is being installed, the dark-colored top truss chord resulted from biological growth.



During the past several years, there have been frequent media reports about a looming U.S. housing crisis. In response, architects, engineers, contractors and real estate developers have been producing more multifamily residential construction projects. But these new buildings routinely have been sources of litigation for the roofing industry because of moisture-related failures in northern climates.

For multifamily residential construction, it generally is less expensive to construct low-slope roof assemblies. Although the use of wood or light-gauge steel trusses to create steep-slope systems for these buildings is possible, steep-slope systems can become surprisingly expensive because of the building code's fire resistance requirements and/or smoke walls in the attics along with a dry sprinkler system in the attic space. Therefore, many new multi-unit buildings have low-slope single-ply membrane roof systems.

These new buildings almost exclusively use parallel cord wood trusses, sometimes called floor trusses, because they create a level surface. These floor trusses can be used to create a roof structure, as well. Floor trusses typically are manufactured with a slight slope, such as 1/4:12, on the top chord of the truss and no slope on the bottom of the truss to form the ceiling of top-floor units. When contractors install a 5/8-inch-thick or thicker oriented strand board on top of these trusses, a roof deck is created with minimal labor and materials.

Above the ceiling of the top-floor apartment, a vapor retarder will be installed. Then, resilient channels and drywall will be installed to make the ceiling. Now, a space is created between the roof deck above and drywall below. The space created by the truss and board products is the only space available for an HVAC contractor, electrical contractor, fire alarm contractor and other trades to run

their ducts and wiring. Figure 1 shows an architectural representation of the construction cross-section. Photo 1 shows a roof and truss system for a building under renovation that was constructed in this manner.

At this point, most roofing contractors would not give a project like this a second thought: The roofing work will be straightforward with standard details and materials. Unfortunately, there is a problematic twist: The project has a budget, and the designer will use construction techniques and/or materials that can save costs.

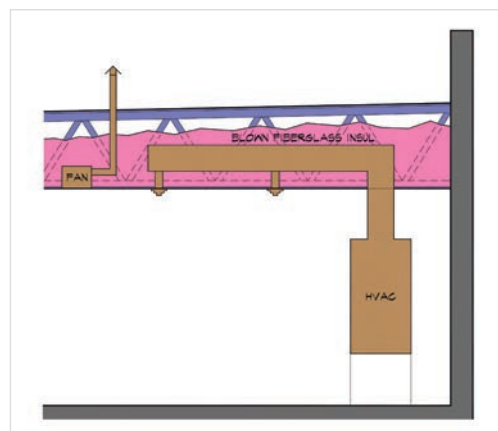


Figure 1: This cross-section of a cold roof deck shows HVAC, bath and clothes dryer ducts that pass through this space. Their position negates the vapor retarder for any air that will leak from these ducts.

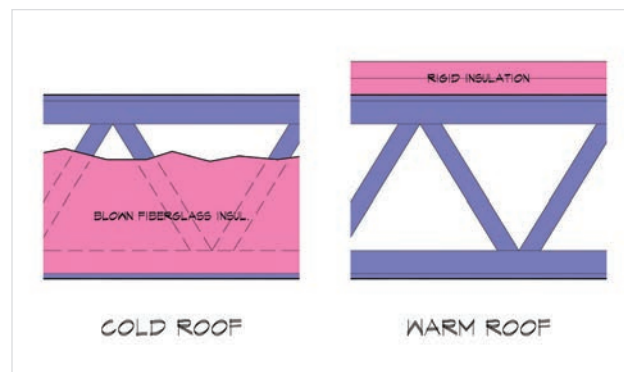


Figure 2: A comparison of the insulation location for a cold vs. warm roof



This construction concept routinely is known as value engineering.

Many decisions will be made in the name of value engineering. A lower grade of carpet may be selected, for example, or less expensive appliances installed. However, the one decision that has led to numerous moisture-based roof system failures is providing the

code-required roof insulation by blowing fiberglass insulation into the interstitial cavity between the ceiling and the roof deck, identified in Figure 1. This creates a condition called a cold roof.

How it functions

A cold roof is a simple concept. For steep-slope applications, NRCA states: "If a roof system is designed as a 'cold roof,' insulation will not be part of the roof system and will be located at the ceiling level of the building." This definition also can be applied to a low-slope roof system.

Conversely, a warm roof would have insulation that is part of the roof system. Figure 2 demonstrates the difference between a cold and warm roof in low-slope applications.

For a cold roof, the typical insulation used is blown fiberglass with installed thicknesses of 24 inches or more, having a substantial R-value of R-60. Although blown fiberglass provides excellent R-value, it is one of the most air- and water vapor-permeable construction products in use. This means air currents can move through and within the blown mass. In addition, blown fiberglass allows water vapor to pass through it as the blown fiberglass is effectively more than 90% air by volume.

Look again at Figure 1. All the HVAC ducts, bathroom fan ducts and clothes dryer ducts are run through the blown fiberglass insulation, and these ducts will leak air. There are numerous industry papers and guidance about this issue.

The Sheet Metal and Air Conditioning Contractors' National Association publishes the industry standard test for air leakage. Tellingly, the standard's tables and equations do not have zero leakage as an option, so the construction industry accepts the ducts will leak. However, some designers argue the ducts can be perfectly sealed.

For example, consider a building with a cold roof that has a single-ply membrane adhered to a gypsum cover board that is mechanically fastened to an OSB roof deck. All the R-60 insulation is below the OSB roof deck. The building is in a northern climate. Winter temperatures can reach 0 F or colder. There will be forced air passing through the HVAC ducts in the plenum space. Hot, moisture-laden air from bathroom fans will pass through the ducts. And hot, moisture-laden air from clothes dryers also will pass through this



Photo 2: An opening made during an investigation into the cause of soft roof areas. The openings were made in winter. The oriented strand board (black in the foreground) is saturated. This is the same roof system as Photo 1.



Photo 3: Another investigative opening made into a soft roof in a northern climate shows a gypsum cover board present. Both the gypsum cover board and oriented strand board roof deck are saturated and cannot support any load. Effectively, only the single-ply roof membrane is preventing people from falling through.



Photo 4: A view of a cold roof in a northern climate with blown insulation. There are numerous soft spots and decayed decking throughout this roof. However, in areas like this where a polyisocyanurate saddle is installed between drains, the oriented strand board is in pristine condition.



Photo 5: A view of an opening into a warm roof in a northern climate with an oriented strand board roof deck and ductwork below and no insulation below the roof deck. The OSB is in pristine condition and should function for the life of the building.

interstitial space, bypassing the vapor retarder in the ceiling assembly all the while leaking air. This process goes on all winter long.

This is when a cold roof can present issues. All the effective insulation is below the OSB roof deck. The OSB roof deck will be at or near the temperature of the outside air during the day and typically below the outside air temperature at night. This construction offers a high probability of condensation occurring. The result is moisture-based decay of the OSB roof deck and wood truss members as well as potential biological growth (mold) on the wood surfaces. Photos 2 and 3 on page 45 show openings into cold roofs with moisture damage and biological growth.

When this situation occurs, the blame game and finger pointing begins among the construction and design teams. Because moisture is involved under the roof membrane, the roofing contractor and roofing manufacturer are often part of the conversation. Note this happens even though there may have been no leaks reported or deficiencies found with the roof membrane. Finally, because of the large monetary amounts required to remediate the issue, lawyers and insurance companies always are next to become involved.

Prevention

Given the propensity of designers and the demands of society, cold roof designs likely will continue. But there is a simple way to prevent this problem: Use a warm roof design. To create a warm roof design for a low-slope roof, a designer needs only to move insulation above the roof deck as rigid insulation. Depending on designer

preferences and local building and energy codes, this amount of continuous above-deck insulation can vary.

Photos 4 and 5 show OSB roof decks in a northern climate that had all insulation above their roof decks (classic warm roof) or rigid board crickets above the roof decks and blown insulation in the interstitial space between the ceiling and the roof deck (more of a hybrid approach). In both situations, the OSB was in good condition with no signs of issues after years of service. This primarily is because the insulation placed above the deck kept the

OSB above the dew point. Temperature- and moisture-based simulations suggest even an R-value between 5 and 10 above a roof deck is sufficient to prevent moisture accumulations in ASHRAE Zone 6. Higher R-value likely may be needed further north.

Advice

Based on the data and information available, the following points should be noted:

- Cold roof assemblies over interstitial spaces with any ductwork in northern climates have proved to be risky.
- Warm roof system designs are far more likely to perform successfully over interstitial spaces with any ductwork in northern climates.
- A minimum of R-5 to R-10 above the roof deck (in addition to code-required insulation) appears to be sufficient to protect a roof deck from moisture accumulation in northern climates (ASHRAE Zone 6).
- Roofing contractors and roofing manufacturers should consider avoiding projects with cold roofs.
- If you find yourself involved with a cold roof project, at a minimum you should alert the construction team, including the designer of record, of the high failure rate of cold roofs in cold climates. I encourage you to forward a copy of this article.
- When in doubt, contact an expert who can provide calculations and/or simulations to justify design choices involving cold or warm roofs. 🌞❄️

MATT DUPUIS, PH.D., P.E., is a principal with SRI Consultants, Middleton, Wis.

CONTRACTOR NEWS

Industry professional passes away

Jeremy McKinnis, president of McKinnis Roofing and Sheet Metal, Blair, Neb., passed away Jan. 9. He was 40.

After graduating from college with a degree in business construction management, McKinnis returned to Blair to work with his father at McKinnis Roofing and Sheet Metal. He became the president of the company in fall 2021. McKinnis was considered an expert in the roofing industry, and he often was asked to share his roofing knowledge with large audiences.



McKinnis

McKinnis is survived by his wife, Nicole; son, Boston; daughter, Claire; father, Dave (Kathy) McKinnis; mother, Kerrie (Bob) Anderson; grandmother, Alice Miller; siblings, Jamie (Orlando) Cueva, Anne (David) Sopke, Bobby (Codi) McKinnis and Bryan McKinnis; in-laws, Rose and Jerry Bostwick; brothers-in-law, Troy, Dominic, Matt, Tony and Luke; sister-in-law, Jennifer; and many nieces, nephews, cousins, extended family and friends. He was preceded in death by his grandparents, Clair and Gwen McKinnis and Bob Miller; uncle, Dan McKinnis; and aunt, Lori Svendgard.

Donations in McKinnis' memory may be directed to St. Francis Borgia Catholic Church at stfrancisborgia.org/give-today or the Blair Fire and Rescue at P.O. Box 402, Blair, NE 68008-0402.

DISTRIBUTOR NEWS

Gulfeagle Supply acquires R & S Supply

Gulfeagle Supply, Tampa, Fla., has acquired R & S Supply, Redding, Calif., a large roofing supplier serving the western states. The acquisition expands Gulfeagle Supply's footprint to the West Coast with 24 locations in six states: Arizona, California, Idaho, Montana, Nevada and Oregon.

"Gulfeagle Supply has grown over the past 48 years by conscientiously acquiring like-minded companies that value relationships like we do in both their employees and customers," says Brad Resch, president of Gulfeagle Supply. "We look forward to welcoming R & S Supply to the Gulfeagle Supply family and continuing their legacy."

Gulfeagle Supply now has more than 100 locations in the U.S.

ABC Supply opens new Texas location

ABC Supply Co. Inc., Beloit, Wis., has opened a location in New Braunfels, Texas.

The location will offer roofing, siding and other exterior building products to local contractors. ABC Supply now has 45 locations in Texas.

UP THE LADDER

Garland Industries has named **Matthew McDermott** president of The Garland Co.

OMG® Roofing Products has named **Brittany deRonde** product development chemist.

The Scalo Companies has named **John Leuch Jr.** vice president of shared services.

OTHER NEWS

Roofing Alliance releases 25th anniversary eBook

The **Roofing Alliance** has released a special eBook celebrating the top 25 accomplishments of the Roofing Alliance during the organization's 25 years of helping the roofing industry.

The eBook describes the inception of the Roofing Alliance in 1995, including the board of trustees' decision to transform the National Roofing Foundation into a real organization. Then-NRCA President Bennett Hutchison secured commitments from a group of NRCA contractor leaders, and fundraising began in earnest.

The eBook also highlights the \$1 million donation by Firestone Building Products, Nashville, Tenn., that launched the capital campaign for the new foundation. It summarizes the many successful research programs, philanthropy initiatives, and technology and sustainability programs that have defined its mission of promoting the advancement of roofing through research, education, technology and charitable programs.

"This is a succinct and interesting means of really understanding the overwhelming influence of the Roofing Alliance for the betterment of the roofing industry," says Dave Lawlor, president of the Roofing Alliance. "I would encourage every roofing professional to download the eBook and share it with your company and others in the roofing industry. It is an excellent reflection of the outstanding professionalism of our industry."

To download the eBook, go to roofingalliance.net/about/25-anniversary.



NRCA NEW MEMBERS



1 SOCES/CENM, Navarre, Fla.

1845 Commercial Roofing, Hallsville, Texas

4 Seasons Construction & Roofing Inc.,
Chardon, Ohio

All In One Construction Group, Westport, Conn.

Allied Xteriors LLC, Ponchatoula, La.

Capital Coating, Intercourse, Pa.

CVM, King Of Prussia, Pa.

Eddie's Exteriors Inc., Burbank, Ill.

EMC ROOFING LLC, Tampa, Fla.

Farha Roofing LLC, Wichita, Kan.

First Choice Roofing and Construction, Cary, N.C.

Fluid Applied Roofing, Beavercreek, Ohio

Gulf Coast Construction Services,
Cypress, Texas

Hamilton Roofing, Lubbock, Texas

Hixson Consultants, Alabaster, Ala.

Hurricane Roofer, Pensacola, Fla.

IMA Financial Group, Wichita, Kan.

James Vaccaro Architect Inc.,
Pacifica, Calif.

My Contractor's License,
Alpharetta, Ga.

New Frontier Builders,
Scottsbluff, Neb.

North American Roofers
Insurance IC, Burlington, Vt.

Peterson Roofing Co. Inc.,
Modesto, Calif.

Revive Storm Restoration,
Carrollton, Texas

SF Roofing, Phoenix

TeamCraft Roofing Inc.,
Salisbury, N.C.

The Connell Group LLC,
Ocean Springs, Miss.

The Westbrook Co. LLC,
Cedar Falls, Iowa

Westfall Roofing, Tampa, Fla.

Take Airflow Efficiency Through The Roof

It's all in the Curves

**NEW
Deep Drawn Model**



**The Code
Compliant Choice**

Advanced Model 477

Until now, there was no way to use an out-of-the-box roof cap for venting dryers. Code disallows screens and requires a damper. Even when modified, other vents are too airflow restrictive.

Seamless Galvalume® Hood

The DryerJack® is the choice specifically designed to meet the demanding needs of clothes dryers. Visit DryerJack.com to learn how the patented curved damper delivers superior efficiency and helps minimize a very serious fire risk.

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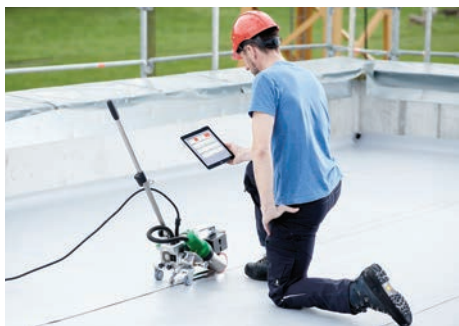
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DryerJack.com**

Maintenance and repair roof flashing



Offering exceptional strength and elasticity, **Mule-Hide Products'** Seal-Fast Repair Hero roof flashing is an all-system, all-weather maintenance and repair

product. A universal solution, the solvent-based, fiber-reinforced terpolymer sealant adheres to all roof substrates, including asphalt, polymer-modified bitumen, metal, TPO, EPDM, PVC, Kynar,[®] concrete, Elvaloy[®]/PVC, Hypalon[®] (CSPE) and polyisobutylene (PIB). Contact Mule-Hide Products at (800) 786-1492 or mulehide@mulehide.com, or visit mulehide.com for more information.



UNIROOF 700: Setting a new standard

The **UNIROOF 700** automatic welding machine welds thermoplastic membranes on low- and steep-slope roofs (up to 30 degrees). It's equipped with the Leister Quality

System to monitor important welding parameters (temperature, air volume and speed) and provide documented weld quality verification. Lastly, UNIROOF 700's Monitored Welding Assistant increases quality assurance in real time: The electronic assistant instantaneously issues an acoustic warning sound, and the digital display flashes red if the actual welding parameters deviate from the set welding parameters.

SpeedStand speeds up jobs



Quicksilver Engineering's SpeedStand for metal roofs makes protecting workers from falls quick and easy. One-piece stands set up instantly and feature rubber pads that bridge standing seams and ribs and protect the metal finish. The

welded-steel stands are spaced 40 feet apart, meet OSHA requirements and can be used on flat roofs, too! They're engineered to save labor job after job. To see why SpeedStand has been the industry standard for 18 years, call (800) 460-7579 or visit qe-1.com.

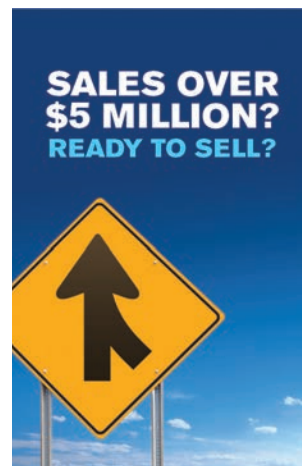
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What is your true value? Would you just like to know what's out there? Do you have estimating software experience? Don't make a career change until you speak with **Dave Peterson**. Dave has helped hundreds of roofing professionals obtain better jobs, get the pay they deserve, get better working conditions and move up the career ladder. If you are considering a change, contact Dave at dave@onlinepcg.com or (800) 269-7319, or visit onlinepcg.com. All information is confidential; fees are paid by the employer.



Are you considering selling your roofing, sheet metal and/or HVAC business?

Join us. With a solid financial base, available capital and an appreciation for what's already working in your business, our group has a solid track record of creating successful alliances. We can tailor the sale to meet your needs. If you have an interest, please email acquisition.pr@gmail.com. All responses will be kept confidential.



Extend your roofing season into the colder months

Polyglass' Elastoflex SA V Polar Base[®] and Elastoflex SA P Polar Cap[®] allow for roof system installation in temperatures between

25 F and 60 F. The products have unique qualities that improve efficiency and are designed for long-term performance. Polar Base is fiberglass-reinforced for excellent dimensional stability and finished with lay lines for ease of application. Polar Cap has an ultraviolet-stabilized granule surface and is polyester-reinforced for exceptional puncture and tear resistance. It also features patent-pending SEAL-Lap[®] Ultra and patented FASTLap[®] for immediate, more effective bonding of side and end lap seams, saving time and labor costs.



MATT STEINROCK

WHAT IS YOUR POSITION WITHIN YOUR COMPANY? I am service department director and part owner of American Roofing & Metal Co. Inc., Louisville, Ky.

WHAT IS THE MOST UNUSUAL PROJECT OF WHICH YOU HAVE BEEN A PART? Installing an EPDM roof system on a large steamboat named the Belle of Louisville

WHY DID YOU BECOME INVOLVED IN THE ROOFING INDUSTRY? I am a fourth-generation roofing professional, so roofing is in my blood. My great-grandfather moved to the U.S. from Germany in 1914, and our family has worked in the roofing industry ever since.

WHAT WAS YOUR FIRST ROOFING EXPERIENCE? Watching my grandpa and dad solder in our workshop when I was 4 years old

WHAT IS YOUR ROOFING INDUSTRY INVOLVEMENT? I currently am enrolled in NRCA University's Future Executives Institute—Class 10. I also stay up to date with new roof systems and products.

WHAT WAS YOUR FIRST JOB? Cleaning up the yard at the office when I was in middle school



PEOPLE WOULD BE SURPRISED TO KNOW ... I smashed both of my thumbs in our metal fabrication brake when I was in high school.

WHAT QUALITY DO YOU MOST ADMIRE IN A PERSON? Honesty



IF YOU COULD TRAVEL ANYWHERE IN THE WORLD, WHERE WOULD YOU GO? WHY?

I would like to go to Cambodia, Thailand and Vietnam. I admire and am fascinated

with that part of the world and those countries' architecture, culture and geography.

WHAT DO YOU CONSIDER A WASTE OF TIME? Having a big birthday celebration for a 1-year-old (I have three kids so it's not that I don't like kids.)

WHAT IS YOUR FAVORITE FOOD? Meat

WHAT'S THE MOST EXCITING/ADVENTUROUS THING YOU'VE DONE? Sailing in the British Virgin Islands for eight days of island hopping, fishing, scuba diving and exploring

WHAT IS YOUR FAVORITE STRESS RELIEVER? Being in nature with no electronics

WHEN YOU WERE A CHILD, WHAT DID YOU WANT TO BE WHEN YOU GREW UP? A music producer

BIG CITY OR SMALL TOWN? Outside the city with land

WHAT SONG ARE YOU LISTENING TO OVER AND OVER? Any Dirty Heads song



WHAT'S YOUR FAVORITE ROOFING MATERIAL TO WORK WITH? WHY? Copper because it takes great skill and craftsmanship to make it functional

WHAT IS THE MOST HIGH-TECH ITEM IN YOUR HOUSE? My TV or computer

IF YOU COULD MEET ANY HISTORICAL FIGURE, WHOM WOULD YOU MEET? WHY? The pharaohs who built the pyramids so I could ask how they did it

WHAT DO YOU CONSIDER YOUR MOST REWARDING EXPERIENCE? Having children

MY FAVORITE PART ABOUT WORKING IN THE ROOFING INDUSTRY IS ... Being able to affect peoples' lives in a real and positive way by protecting their homes and businesses

COMPLETE MORE PROJECTS PER YEAR WITHOUT THE ADDITIONAL MANPOWER AND IN LESS TIME

Regardless if you choose EPDM or TPO,
we have a Quick-Applied solution for you!



QA EPDM available in reinforced and non-reinforced membranes
Excellent weatherability and hail resistance



QA TPO available in White, Gray and Tan
Excellent lay-flat performance with highly reflective color choices

Versico's Quick-Applied EPDM and TPO membranes install over 4 times faster than traditional adhered systems. The lack of solvents and odors from bonding adhesives make QA installations ideal for occupied buildings.

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