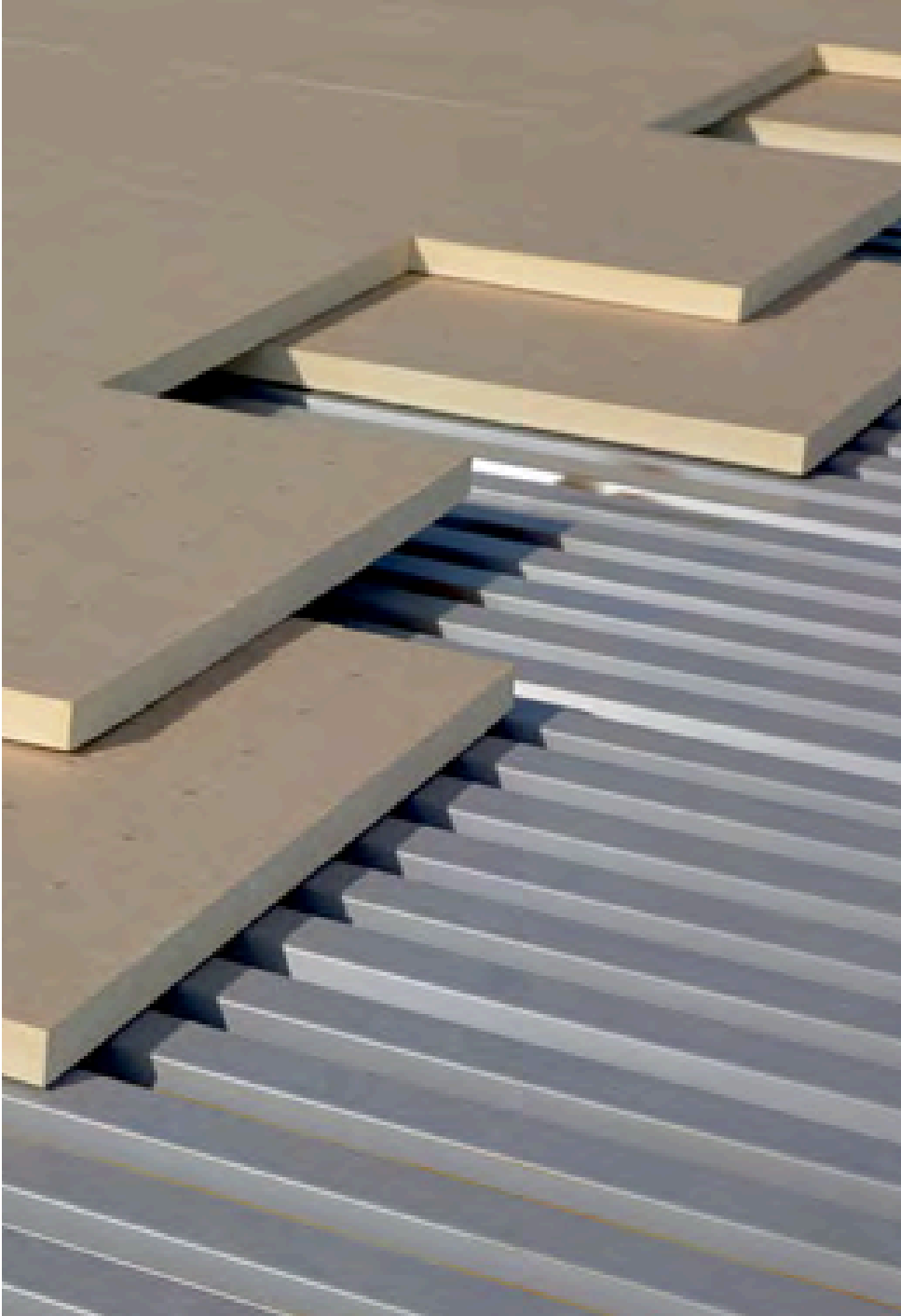


CAROLINAS CONTACTS

CRSMCA - Covering the Carolinas for over 80 years



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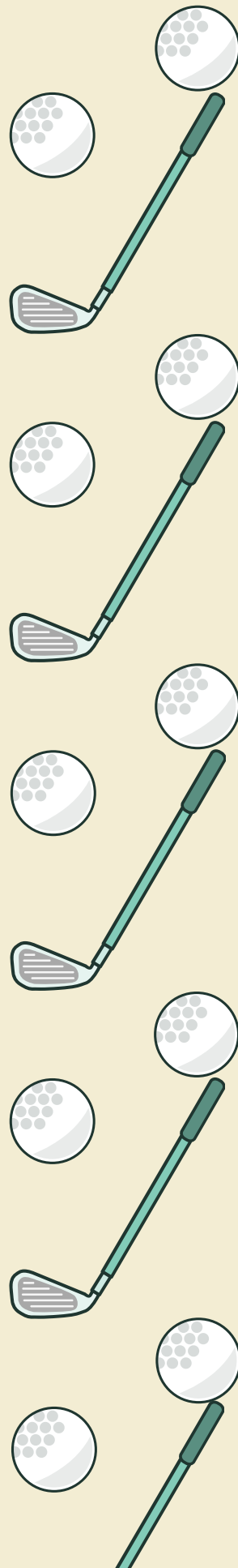


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Executive Director, Carla B. Sims [cbsims@crsmca.org]
Assistant, Karin Barahona [staff@crsmca.org]

THE CRSMCA MISSION STATEMENT

To promote and safeguard the common business interest of its members and to improve conditions by educating all persons concerning the roofing and sheet metal business and industry. To work for the development and progress of the roofing and sheet metal business industry and to work with individuals' organizations and governmental agencies toward the achievement of a stronger profession of the roofing and sheet metal industry.

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Carolinas Contacts address issues and concerns of the roofing industry. Technology, test, and building codes are constantly changing, and such changes may not be reflected herein. All information is presented for the benefit of our readers and does not necessarily reflect the views of CRSMCA. Press releases and product information presented do not reflect all available materials. Before purchasing, installing, using, or recommending any product, system, or method, readers should make independent evaluations.



Message from Executive Director, Carla B. Sims

Something Old ... Something New

With the changes and challenges in the roofing industry over the last two-three years, we are all looking for our place (or our ROI) when it comes to being a part of an organization such as CRSMCA.

Our place in CRSMCA isn't just through paying our membership fee or attending the one "major" event of the year (aka Carolinas Roofing Expo & Annual Meeting), *it is supporting* your fellow members/peers in CRSMCA by attending your local events (District Meetings, Annual Golf Tournament) to network and build relationships; *it is sponsoring* an event to help CRSMCA provide future educational courses (OSHA classes, CERTA training) for members/peers, and *it is sharing* your experience of CRSMCA and its relationships you have built to your clients/customers/roofing industry friends to help grow CRSMCA.

What you think is the "something old" could be "something new" to a person/company that has not attended or had an experience with CRSMCA.

As we head into 2025, may we all take a moment to look at how we can strengthen CRSMCA through relationship building and by supporting our industry peers by giving back within our communities to help each find our place and our ROI in CRSMCA!

CRSMCA 2025 EVENTS

APRIL 10

Sporting Clays Competition

Drake Landing Fuquay-Varina, NC

MARCH-APRIL

Spring District Meetings

Locations TBA

JUNE 25-29

Carolinas Roofing Expo & Annual Meeting

Myrtle Beach Marriott Myrtle Beach, SC

OCTOBER 23

Annual Golf Tournament


Rocky River Golf Club Concord, NC

CHECK OUT CRSMCA'S MEETING PAGE FOR MORE DETAILS AND TO REGISTER!! [www.crsma.org/meetinginfo.php]

CRSMCA Weekly e-Newsletters

CRSMCA's most consistent information of association events and industry updates provided every Tuesday! Do you have an event, education or training seminar that you would like for CRSMCA to share with its members, contact me today. This is a member benefit and free of charge for CRSMCA members only!

BE SURE TO CHECK YOUR EMAIL AND TAKE A MOMENT TO GET UPDATED!

IMPORTANT ANNOUNCEMENT FROM NORTH CAROLINA BUILDING CODE COUNCIL

The North Carolina Building Code Council voted on 9/10/24, the **2023 NFPA 70 (2023 NC Electrical Code, 2024 NC Residential Code and 2024 NC Administrative Code and Policies)** will be **mandatorily effective 1/1/25**.

- The 2017 NFPA 70 (2017 NC Electrical Code) is effective for buildings and structures included within the scope of the 2018 NC Residential Code through 12/31/24.
- The 2020 NFPA 70 (2020 NC Electrical Code) is effective for buildings and structures not included within the scope of the 2018 NC Residential Code through 12/31/24.
- The 2018 NC Administrative Code and Policies is effective through 12/31/24.

The **2024 NC Building Code, NC Existing Building Code, NC Fire Code, NC Mechanical Code, NC Fuel Gas Code and NC Plumbing Code** will be **effective for use on 1/1/25 and mandatorily effective on 7/1/25**. A 6-month overlap period was granted to continue using the 2018 NC Building Code, NC Existing Building Code, NC Fire Code, NC Mechanical Code, NC Fuel Gas Code and NC Plumbing Code is effective until 6/30/25. During the 6-month overlap period, use of the 2018 NC Building Code, NC Existing Building Code, NC Fire Code, NC Mechanical Code, NC Fuel Gas Code and NC Plumbing Code in their entirety for project permits or use of the 2024 NC Building Code, NC Existing Building Code, NC Fire Code, NC Mechanical Code, NC Fuel Gas Code and NC Plumbing Code in their entirety for project permits is permitted.

The 2024 NC Energy Conservation Code is under legislative review for review in the NC General Assembly long-session in 2025 and so the 2018 NC Energy Conservation Code will remain effective until further notice.

A letter from the North Carolina Building Code Council will be issued to public as soon as possible outlining this information.

VIEW DETAILS AT: WWW.NCOSFM.GOV/ENGINEERING-NEWSLETTER-OCTOBER-2024

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2nd Annual CRSMCA CLAY SHOOTING COMPETITION



Get ready for an exhilarating experience as we invite you to the prestigious Drake Landing for CRSMCA's Shooting Competition

**THURSDAY
APRIL 10**
AT DRAKE LANDING
FUQUAY-VARINA, NC



REGISTRATION FEE
\$600
PER TEAM

**LOCK & LOAD
FOR A DAY OF
PRECISION &
THRILLS!**



REGISTRATION OPENS OCTOBER 28, 2024
WWW.CRSMCA.ORG

Limited slots available, so don't miss your chance to be part of this shooting extravaganza!



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CRSMCA's Elite Partners



NEWS FROM THE CAROLINAS



LEARN ABOUT THE CRSMC SELF-INSURERS FUND PROGRAM

Carolinas Roofing and Sheet Metal Contractors – Self-Insurers Fund is the oldest worker’s Compensation group funded in the Carolinas and could be saving your company money! Members within the CRSMC-SIF program are not just purchasing their workers compensation but investing into a program that brings additional value to their company through a commitment to ensure the safety of their employees. As a member/customer within the program, you participate in building a fund that is beneficial for all members/customers within the program, you could receive competitive rates within the insurance industry, and you could receive a return of interest determined by the CRSMC-SIF Trustees and other approved returns during the year. In the year 2018, the CRSMC-SIF returned more than **\$1 MILLION DOLLARS** to the CRSMC-SIF members!

Additionally, the CRSMC-SIF is large component of support for the CRSMCA through sponsoring the CRSMCA Annual Meeting/Summer Convention and attendance of Trustees at the event. **HAVE YOU CONSIDERED CRSMC-SIF FOR YOUR WORKERS COMPENSATION NEEDS?**



South Carolina of Labor, Licensing and Regulation

www.llr.sc.gov

Training information, registration and course details can be found at www.osha.llr.sc.gov

SC OSHA Outreach and Education offers FREE on-site training designed to help reduce or eliminate such hazards and address OSHA compliance criteria. The construction industry has one of the highest rates of work-related injuries and fatalities. This is a result of the many serious safety and health hazards workers face, along with an ever changing worksite.

Trainings offered:

- Intro to OSHA
- Permit Required Confined Spaces
- Fall Protection
- Excavation & Trenching
- Silica
- Power Industrial Trucks
- Machine Guarding
- Scaffold Safety
- Electrical Safety



NCDOL
N.C. Department of Labor

www.labor.nc.gov

The NCDOL is pleased to offer **pre-recorded webinars** ready for you and your employees to view at your convenience. To access a webinar visit

www.labor.communications.its.state.nc.us/OSHPublic/ETTA/class_regist/calendar.cfm, double-click on the applicable safety and health topic below and it will automatically start the training session.

Note: Some of the webinars are hosted on a training platform and will require you to log in with your name and email in order to access the training session.

The Department of Labor does not provide certificates for employees viewing our pre-recorded webinars. These webinars were live recordings and contain chat conversations. For this reason, you will not be able to interact with the instructor during the recording. If you prefer to receive a certificate and have interaction with an instructor, please refer to our training schedule above for current live webinar offerings.

Training information, registration and course details can be found at www.labor.nc.gov/safety-and-health/training.



Trump White House likely to abandon OSHA heat safety rule

Written by Zachary Phillips, ConstructionDive

A second Donald Trump presidency will likely spell the death of [OSHA's recently published heat safety rule](#), but it won't necessarily mean no standard will come to pass, experts told Construction Dive.

The agency published the proposed rule and began accepting public comments this summer. That time period will close on Dec. 30. Then it would take several months for OSHA to review all of the input, finalize the rule and put it into effect, Phillip Russell, OSHA and employment lawyer, litigator and advisor for Washington, D.C.-based firm Ogletree Deakins, told Construction Dive.

"But obviously January 20th will come, and I don't think that happens," Russell said.

Ashley Brightwell, partner in Atlanta-based Alston & Bird's labor and employment group, called the finalization of the rule "highly unlikely" before Biden leaves office. The standard would also face congressional and legal challenges, and the Trump administration could abandon the rulemaking process altogether, she said.

The 1,000-page rule requires a Heat Injury and Illness Prevention Plan that employers would need to put into effect for a heat trigger — when temperatures reach 80 degrees F or a wet bulb globe temperature equal to the NIOSH Recommended Alert Limit. Employers would have more requirements to protect workers for a high-heat trigger — when temperatures reach 90 degrees or hotter.

HIIPP mandates would include worker training, access to water and shade,



an assigned heat safety coordinator and clear communication of the plan in every language spoken on the job.

Critics say the specifics of the standard would make it overly burdensome and challenging to implement.

"I think this one was too detailed, too problematic for compliance, I think it set employers up for failure," Russell said.

Nonetheless, the lack of a new rule doesn't mean zero heat safety requirements. OSHA's National Emphasis Program — which reinforces the credo of water, rest and shade and ups inspections around heat — remains on the books until April, Brightwell said. Additionally, the general duties clause mandates employers abate and respond to hazards, so, broadly speaking, contractors would need to ensure workers are protected in extreme conditions, such as high heat.

Brightwell predicted fewer rulemaking measures under Trump's second term. But Russell said the president has more of a populist backing than in his first term, so firms shouldn't expect there to be no rules.

"I'm telling clients don't count on there being no standard, but I do think it's reasonable to assume this standard is DOA," he said.



After Recent Building Failures, IIBEC Recommends Wilmington, NC, Establish a Facade Inspection Program

Written by John Boling, IIBEC

IIBEC sent a letter to the mayor of Wilmington, NC and the city council recommending that they consider establishing a building facade inspection program in light of two recent building failures. The letter was signed by IIBEC Executive Vice President and CEO Brian Pallasch; IIBEC Region II Director Nicholas Tribble, RRO; and IIBEC Carolinas Chapter President Scott Singleton, PE, RRC.

"Thankfully, the two building failures did not result in injuries, but considering the age of Wilmington's buildings in its historic district, a facade inspection program is a logical step," Pallasch stated.

While the average age of buildings in the US is more than 55 years, the 10 oldest buildings in Wilmington were built between the years of 1738 and 1810.

Added Tribble, "We recommend using ASTM E2270, Standard Practice for Periodic Inspection of Building Facades for Unsafe Conditions, which provides a framework for the city to build a program around—one that takes into account the local needs and variances."

Wilmington would be following the footsteps of other US cities like Boston, Chicago, Cincinnati, Cleveland, Columbus, Detroit, Milwaukee, New York, Philadelphia, Pittsburgh, San Francisco, and St. Louis, all of which have ordinances requiring periodic inspections.

The letter concludes by stating, "As fellow residents of the great state of North Carolina, we stand by ready to be of assistance."

If there is a historic district or a general need for a facade inspection program in your city or town, please contact John Boling to discuss a plan of action.

USCIS announces E-Verify+

U.S. Citizenship and Immigration Services recently introduced E-Verify+, which aims to streamline the employment eligibility verification process by combining Form I-9 and E-Verify into one seamless digital process. Under E-Verify+, newly hired employees complete their Form I-9 directly through E-Verify, reducing the burden on employers of completing the existing paperwork. USCIS has been working on E-Verify+ for several years, though it has previously been referred to as E-Verify NextGen. E-Verify+ is completely voluntary and available only to employers who currently use E-Verify; employers must be invited by USCIS to join the program. Employers who are invited to participate will receive the invitation electronically when logging in to their existing account and then must follow the steps to complete enrollment. [View more information about E-Verify+.](#)



NRCA's 138th Annual Convention and International Roofing Expo

Feb. 19-21, 2025 / San Antonio, TX

The International Roofing Expo (IRE) is the largest roofing and exteriors event in North America. With more than 65 years of success, IRE has become the industry's annual hub for products, equipment, hands-on education and networking. We have helped thousands of roofing contractors, expand their network, improve their skills, and keep their business thriving.

For conference details, please visit www.theroofingexpo.com/en/home.html

Fall protection tops list of OSHA's most-cited violations for 2024

A coalition of industry trade associations representing contractors, consultants and manufacturers in the U.S. and Canada completed its latest Quarterly Market Index Survey for Reroofing for the second quarter of 2024. The survey takes the pulse of the reroofing industry on a quarterly basis and serves as a regular barometer of the industry's business conditions. Recent preliminary numbers from the Occupational Safety and Health Administration show dangers from falls at construction sites remain the most frequently cited hazard on OSHA's list of most-cited violations for fiscal year 2024, according to Safety+Health magazine.

Other rules related to construction falls are among the top 10 violations, including ladders and scaffolds.

Following are the top 10 most-cited violations for fiscal year 2024:

1. Fall protection—general requirements at 6,307 violations
2. Hazard communication at 2,888 violations
3. Ladders at 2,573 violations
4. Respiratory protection at 2,470 violations
5. Lockout/tagout at 2,443 violations
6. Powered industrial trucks at 2,248 violations
7. Fall protection—training requirements at 2,050 violations
8. Scaffolding at 1,873 violations
9. Personal protective and lifesaving equipment—eye and face protection at 1,814 violations
10. Machine guarding at 1,541 violations

Falls are the leading cause of death in the construction industry. Learn how to reduce roofing-related injuries and deaths with NRCA's safety classes, webinars and publications.

Treasury, IRS issue final regulations for the advanced manufacturing production credit

The Department of the Treasury and the IRS issued [final regulations](#) to provide guidance for the Advanced Manufacturing Production Credit established by the Inflation Reduction Act of 2022. The Advanced Manufacturing Production Credit provides a tax credit for the production and sale of specified domestically produced eligible components, including solar and wind energy components and 50 critical minerals, to unrelated persons. Generally, the final regulations define qualifying production activities and eligible components and production costs; define rules related to calculating the credit; provide rules for the sale of eligible components to unrelated persons, as well as special rules that apply to sales between related persons; and provide rules to address contract manufacturing scenarios.

Department of Labor overtime rule is overturned

A U.S. district court in Texas [issued a ruling](#) that invalidates the Department of Labor's final overtime rule, which modified regulations governing employees that are exempt from receiving overtime compensation under the Fair Labor Standards Act. In the ruling, the judge stated the agency has the authority to define the terms of the FLSA overtime exemption within certain parameters but said "that authority is not unbounded" and the agency had exceeded its authority under the law. The final rule issued in April increased the minimum annual salary threshold—previously set at \$35,568—to \$43,888 effective July 1, 2024, and the threshold was scheduled to further increase to \$58,656 Jan. 1, 2025. Considering this court decision invalidates the rule in its entirety, the minimum salary threshold is once again set at \$35,568 and all other provisions of the rule revert to their previous status before the rule took effect July 1. The decision may be appealed by the DOL; however, the agency under the new Trump administration could abandon its defense of the rule. NRCA opposes the [final rule](#) based on member input and is pleased with the court's ruling. Please note several states have their own overtime compensation laws not affected by this ruling and NRCA urges members to check with legal counsel regarding taking action in response to this ruling.

The Biden administration announces additional supplemental visas for H-2B program

The Departments of Homeland Security and Labor [announced](#) the administration will release an additional 64,716 supplemental visas for the H-2B seasonal nonagricultural worker program for fiscal year 2025. The supplemental visas are in addition to the 66,000 visas authorized annually by law, and this year's supplemental allocation is the same as issued for fiscal year 2024. The supplemental visas will be allocated during fiscal year 2025, which began Oct. 1, 2024, with exact amounts for the first and second half of the fiscal year yet to be determined. This supplemental allocation will consist of 44,716 visas available to returning workers who received an H-2B visa or were otherwise granted H-2B status during one of the previous three fiscal years. The remaining 20,000 visas will be reserved for nationals from Columbia, Costa Rica, Ecuador, El Salvador, Guatemala, Haiti and Honduras. In addition, on Nov. 18, the agencies published a [Notice of Proposed Rulemaking](#) modifying the rules for the H-2B seasonal visa program. Given strong workforce demand, NRCA had urged the administration to issue supplemental visas in a timely manner so members that use the program can more effectively meet their peak seasonal needs in 2025.

Understanding the Telephone Consumer Protection Act

Every company relies on communicating with customers to succeed. However, before you make your next call or send your next text, be sure you know the details of the Telephone Consumer Protection Act.

This law protects consumers from unwanted communication by preventing the use of certain technology for making calls and sending text messages without stated levels of consent. It also prohibits making unsolicited marketing calls to phone numbers on the National Do Not Call Registry.

[NRCA General Counsel Trent Cotney shares what you should know about the Telephone Consumer Protection Act in a legal brief.](#)

NRCA's legal team advocates for roofing contractors nationwide. [Learn more about NRCA's legal resources](#)



What are the top risk management concerns for construction?

Construction companies face various risk management challenges, including natural disasters, financial obstacles and restructured insurance programs. A recent Business Insurance article shares the following concerns from risk management experts regarding the construction industry.

- Subcontractor viability. Subcontractors are feeling pressure from inflation, material and labor shortages, and supply chain and logistical challenges, which is creating significant financial challenges and causing some companies to go out of business.

- Severe weather events. Such events are a significant risk for companies working on projects in areas prone to catastrophic weather, which threatens structures being built, materials and construction equipment. There also is concern regarding how insurers will respond to damage claims. Risk managers should understand what is covered by insurance and have a crisis response plan ready.
- Shortage of skilled workers. As the number and size of construction projects increase, the need for hiring, training and retaining skilled and experienced workers is crucial.
- Auto liability. Although construction insurance rates reportedly are fairly stable, auto liability continues to experience rate increases. Auto physical damage claims are being affected by rising labor and parts costs and extended repair times.
- "Mega projects." These massive multiyear and multibillion-dollar construction projects are complicated and expensive. For example, advanced facilities such as data warehouses often require sophisticated fabrication machinery, which can be a potentially costly exposure if not managed correctly.

Experts highlight the importance of technological innovation in improving safety and collecting data that can help combat risks in the industry.

Proper email communication for construction projects



Email often is the most common form of communication during a construction project and can be a great way to document issues that arise during the project. However, communications via email sometimes can become more informal and used less carefully as a project progresses. Whether a project manager is communicating with an owner or a subcontractor is communicating with a supplier, McDonald Hopkins shares simple guidelines you should consider when communicating via email during a construction project.

- Include a clear, direct subject line. The subject line should include the name of the project, which can help you track messages internally if you need them later. It also can contain other identifying words related to the message, such as "Delay Claim" or "Schedule Update."
- Keep it professional. Avoid using foul language, sarcasm or off-color humor. If you would not say it in a letter, do not say it in an email. Additionally, if you would not want to read the contents of your email in a room full of strangers (such as in a courtroom), find another way to make your point.
- Stick to the facts. Providing only the facts in your email communications can help you avoid having your individual feelings or perceptions misconstrued if there is a future dispute. Avoid personal attacks, judgmental comments and using antagonistic language.
- Be direct with your message. Make your point and move on. Vague messages can result in lack of clarity during a dispute and can lead to ineffective notice of a claim, create ambiguity regarding the claim being raised and undermine the purpose of the message you want to send.
- Do not be self-critical in email communications. You also should avoid being critical of your company in emails. Those emails could come back to haunt you if there is a claim that results in arbitration or litigation.
- Keep the email content related to a single project. If you are involved with multiple projects with the recipient, keep an individual email related to an individual project as much as possible to eliminate confusion related to project instructions.
- Be vigilant in maintaining attorney-client privilege. If you are communicating with an attorney representing your company during the project, be careful about who you involve in those conversations. If you bring in a third party, attorney-client privilege can be destroyed.
- If it is important, put it in a letter. If the message you are sending is critical to the project or a claim you are making regarding a project, put the message in a letter. You still can send the letter via email, but a written letter signed by the sender and sent by email will be taken more seriously than an informal email message. Note your contract may require certain notices be provided by means other than email, such as certified mail or personal delivery, so be sure you know what your contract requires before you submit crucial messages via email.

How can your company take hands-on training to the next level?

Convincing roofing industry professionals to do hands-on training is like convincing a kid to eat ice cream—no problem at all. However, there is hands-on training, and then there is excellent hands-on training. What are the hallmarks of excellent hands-on training? NRCA's methodology includes the following: talk, show, do, review.

- **Talk:** Establish a rapport with a trainee. People come into training with various feelings about being there—from nervous to annoyed. Put people at ease and show them you are there to help, not criticize. Then, explain the skill at hand and what you are going to be doing.
- **Show:** Demonstrate the skill, tailored to the trainee's experience. For new trainees, be basic and move at a slower pace, explaining why you are doing what you are doing. For more experienced installers, discuss nuances of why something is done one way and not another. Show respect and appropriately tailor your session by leaning into their experiences and appreciating what they already know.
- **Do:** Let trainees tackle the skill on their own. Do not interrupt or interfere unless there is a physical danger. Stand back and observe. Allow them to work to completion, even if you see mistakes.
- **Review:** Ask trainees how they think they did, provide your assessment and discuss potential improvements. Affirm their efforts.



Then, go back to whatever step seems necessary and repeat the process until you both feel good about the trainee's competency.

Allowing mistakes, explaining nuances and tailoring the training to individuals' experiences will result in excellent hands-on training designed to effectively increase employees' skill levels.



An Updated FM - The insurance conglomerate has rebranded itself and implemented some changes

FM (previously FM Global) and its code-approved testing and certification business unit, FM Approvals, have undergone rebranding and implemented several updates to their services and guidelines. Because the two entities are sometimes referenced in roofing projects' construction documents, these changes could affect you.

Rebranding

On July 17, FM announced an update to its brand, including a new name; logo; tagline, "Protect Your Purpose"; and website, fm.com.

FM is the parent brand for its flagship mutual commercial property insurance company and FM Affiliated, FM Approvals, FM Boiler Re, FM Cargo and FM Renewable Energy.

FM Approvals' brand and logo also have been updated, but its FM name and certification mark are not changing. FM Approvals indicated the brand evolution has no effect on its certification mark, existing tested or certified products, or products that successfully complete testing and certification in the future. No action is required on users' part.

Updated RoofNav

On May 6, FM Approvals launched an updated version of its online RoofNav application. This is the first major overhaul since RoofNav was released in 2001. Most notably, RoofNav has a different appearance from the previous version. Icons are provided on the top right-hand side of the home screen for RoofNav number access, assembly search, ratings calculator, product search, help and reference documents and save functions. Also, RoofNav's assembly search capability is substantially improved and includes progressive filtering functionality.

RoofNav is accessible at roofnav.com.

Interior debris protection

In July 2022, FM Approvals published a new standard specific to interior debris barrier systems, FM 4652, "Examination Standard for Debris Barriers." The standard provides criteria for interior fire-exposure testing and evaluating melt-out or drop-out properties of debris barriers around fire sprinklers. Criteria also are provided for manufacturing, installation, maintenance and repair instructions of debris barrier systems; demonstrating quality control programs; and surveillance audits.

To date, two companies and three products have been approved by FM Approvals based on FM 4652. Reportedly, several other manufacturers or suppliers are in the process of obtaining approvals.

The approvals of debris barrier systems are listed in FM Approvals' online approval guide, accessible at approvalguide.com. Approved debris barrier systems are best found by typing "FM 4652-Debris Barriers" in the website's search function. Debris barrier systems are not included in RoofNav.

FM 4652 is not referenced in any model fire or building codes. Reference to FM 4652 has been added to the latest edition of FM's Loss Prevention Data Sheet 1-0, "Safeguards During Construction, Alteration, and Demolition."

FM recommends debris barrier systems be included during construction of FM-insured, highly protected risk, limited combustible loading, HC-1 and HC-2 occupancies. Additional information about FM's building, loading and occupancy categories is included in FM Loss Prevention Data Sheet 3-26, "Fire Protection for Nonstorage Occupancies."

FM Loss Prevention Data Sheets are available at fmglobaldatasheets.com.

Prepared by Mark S. Graham, NRCA Vice President of Technical Services; *Professional Roofing Magazine* October 2024

4 employment actions to expect under a second Trump presidency

Written by Emilie Shumway, ConstructionDive

Employers are likely to see immigration raids, agency chair replacements and a slowing in regulatory activity, experts at Littler predicted.

The last decade has reshaped American life and culture, with a global pandemic, shifting identity concerns and changing work arrangements all lending a new appearance to work and life. With President-elect Donald Trump headed back to the White House and immigration issues front and center in the national consciousness, however, in many ways late 2024 feels like late 2016.

"We do expect that under a Trump administration [...] There will be basically a closing of the border almost immediately," Jorge Lopez, Littler Mendelson shareholder and chair of the law firm's immigration and global mobility practice, told attendees at a pre-election webinar Littler held Oct. 30. An immediate, stricter approach to immigration is likely to affect industries like construction, hospitality and manufacturing, he said.

Lopez — along with Jim Paretti, Littler shareholder and former senior counsel to the acting chair of the U.S. Equal Employment Opportunity Commission, Michael Lotito, co-chair of Littler's [Workplace Policy Institute](#), and Shannon Meade, executive director of the Workplace Policy Institute — shared a range of other predictions for how President-elect Trump might act on employment issues on his first days in office.

1. Immigration enforcement raids will be back on the table.

Immigration reform will be "a priority," Meade said.

At the worksite, a second Trump term will likely turn to "supply-side enforcement" of immigration law at the worksite, Lopez said — meaning raids, in which government officials arrive at a site with the intention of arresting undocumented workers, will likely be used again. The Biden administration, in contrast, used "demand-side enforcement," Lopez said, characterized by focusing concern on "whether or not an employer is intentionally or unintentionally hiring undocumented workers."

On the immigration front, there will likely be a sharp rise in I-9 audits as well, he said. There were roughly 12,000 I-9 audits during Trump's last year in office, compared to around 400 during Biden's last year, Lopez noted.

2. Agency chairs will be replaced.

The White House has limited control over agencies, Paretti noted, with commissioners and board members protected by cause. President Trump will be able to replace the chair, however — an action he is likely to take immediately.

"Plainly, on day one, a Trump administration would designate a new chair of the National Labor Relations Board, and that will almost surely be Marvin Kaplan, because he'll be the only Republican member serving," Paretti said. "Similarly, at the EEOC, they designate, presumably, Commissioner Andrea Lucas, who is the only Republican Commissioner serving on the agency at this time."

While the leadership will likely change hands at several agencies, those chairs may still find themselves minority members on their own commissions, as at the NLRB and EEOC.

3. Regulatory activity will slow considerably.

Between the new overtime rule, the noncompete rule and the independent contractor rule — to name a few — employers have been met with a flurry of activity at the NLRB, EEOC and U.S. Department of Labor over the past year. While not all proposed rules have been successful at the courts, agencies have in some cases continued to push through challenges and court decisions.

"I think the first thing the Trump administration does is dismiss the appeal and withdraw the appeal," Paretti said of pending challenges.

"We've seen that happen in other transitions — notably, and that's why I think it's worth noting for the record, two significant Biden regulations, both the white collar overtime and independent contractor status, sought to repeal and replace rules that the Trump administration itself had issued."

Paretti noted specifically that under an EEOC Chair Lucas, some of the less popular Pregnant Workers Fairness Act regulations could potentially be clawed back. "She was not quiet about her dissatisfaction or concern with the final regulations that the EEOC issued," he said.

4. Limitations on DEI could be put in place.

DEI is an area where there will be a major shift under a second Trump term, Paretti said.

"We saw during the [first] Trump administration an executive order that sought to ban or limit certain concepts in diversity and inclusion trainings. [...] That was repealed by the Biden administration. That executive order was subject to challenge in court," he said. "But I would say in the intervening years, certainly on the Republican side, there has not been a lessening of interest here or anything. It's sort of been drummed up a little bit more."

An EEOC under Trump will likely take a "more narrow view of what's permissible under DEI initiatives," Paretti said, pointing again to public comments from Lucas on how certain programs may run afoul of Title VII of the Civil Rights Act.

"I think DEI in a Republican administration is going to be under a lot more scrutiny, a lot more limitations, by way of the government power of the purse," he said.



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Roofing Alliance Announces 2025 Construction Management Student Competition Teams

Roofing professionals are encouraged to attend the final stage of the competition in San Antonio.

The Roofing Alliance proudly announces the 10 teams competing in its **11th Annual Construction Management Student Competition**. This renowned event will take place on Feb. 20, 2025, at the International Roofing Expo® in San Antonio, Texas, with five finalist teams revealed in January 2025.

The competition project, provided by Beldon Roofing Co., San Antonio, challenges teams to create a comprehensive bid proposal for the Embassy Suites by Hilton San Antonio Airport Hotel. Each team collaborates with a roofing contractor mentor to prepare a bid package and present their project management, estimating and safety expertise.

Participating universities include:

1. Auburn University, Auburn, AL – Mentor: Paige Harvill, Nations Roof
2. Bradley University, Peoria, IL – Mentor: Alex Hernandez, Clark Roofing Co.
3. California Polytechnic State University, San Luis Obispo, CA – Mentor: Rudy Gutierrez, Shell Roofing Solutions
4. **Clemson University, Clemson, SC – Mentor: Will Fort, Bone Dry Roofing**
5. Florida Gulf Coast University Fort Myers, FL – Mentor: Rob Kornahrens, Advanced Roofing, Inc. (first-time participant)
6. Illinois State University, Normal, IL – Mentor: CJ Martin, Showalter Roofing Services
7. Louisiana State University, Baton Rouge, LA – Mentor: Tupac de la Cruz, Roofing Solutions
8. Texas A&M University, College Station, TX – Mentor: Kyle Cahill, King of Texas Roofing Company
9. University of Florida, Gainesville, FL – Mentor: Caleb Stauss, Big D Roofing
10. University of North Florida, Jacksonville, FL – Mentor: Marshall Hall, Childers Roofing & Sheet Metal

Finalists will be invited to a series of events, including a welcome reception, roof visit and NRCA's Industry Awards Ceremony, where winners will be honored. Roofing Alliance President Reed Gooding encourages roofing professionals attending the International Roofing Expo to support the next generation by attending the student competition.

For more information about the Roofing Alliance contact Alison L. LaValley, CAE, executive director, at alavalley@nrca.net or visit roofingalliance.net.

Roofing Alliance Launches Groundbreaking Roofing Industry Center in Collaboration with Clemson University

The center will focus on research and programs to address challenges in the roofing industry. The Roofing Alliance leadership has **approved \$1 million in funding over four years to establish the Roofing Industry Center**, a cutting-edge collaboration between the academic community and the roofing industry. In partnership with Clemson University's Nieri Department of Construction, Development and Planning, the center will focus on driving innovative research and workforce development programs that aim to address critical challenges within the industry.

The Roofing Industry Center's mission is to foster sustainable growth across the roofing supply chain through research initiatives and workforce development programs. It will be overseen by a Steering Committee composed of Roofing Alliance leadership and guided by Clemson faculty members: Dr. Dhaval Gajjar, Associate Department Chair and Associate Professor; Dr. Jason Lucas, Associate Professor; and Dr. Vivek Sharma, Assistant Professor.

The initial funding will support the center's development and implementation phases, laying a strong foundation for its transformative role in the roofing industry. Key areas of focus include creating robust workforce development programs that engage students as early as middle school and extend outreach to high school, community colleges, technical schools, and trade programs. Additionally, the center will establish a specialized education platform for roofing professionals and conduct pioneering research in sustainability, resiliency, technology, and materials.

"Roofing Alliance members are thrilled to partner with Clemson University on this initiative, which we believe will be a game-changer for addressing the industry's workforce challenges," said Alison L. LaValley, CAE, Executive Director of the Roofing Alliance. "Through focused initiatives, we aim to attract, train, and retain the next generation of professionals."

The Roofing Industry Center's research efforts will also tackle key issues like sustainability and technology, providing the groundwork for industry-wide advancements. "Our research will pave the way for groundbreaking innovations that will shape the future of roofing across all sectors," added LaValley.

Dr. Dhaval Gajjar, who will serve as the center's director at Clemson, emphasized the importance of workforce development: "Our top goal is to create training programs that inspire students starting as early as middle school. The roofing industry offers opportunities for careers with a range of skill sets and education levels," he said. "Roofs are a basic necessity, and yet the potential for innovation in the design, materials, and construction of roofs are limitless."

Dr. Vivek Sharma highlighted the collaborative nature of the center: "This center is the culmination of years of vision and effort. It has the potential to become a model of industry-academic partnerships, backed by rigorous data, research, and training, and paving the way for innovation in the roofing sector."



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Insulation Upgrades During Low-Slope Roof Replacement Reap Long-Term Cost Savings

Written by Justin Koscher
 Published by *Roofing Magazine*, January/February 2022

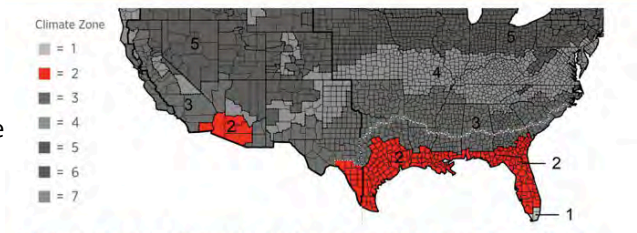
Across North America, countless non-residential buildings are topped with low-slope roofs, many of them with minimal insulation and nearing the end of their useful service lives. Together these hundreds of millions of square feet of roofing produce significant energy loss as the largest thermal envelope surface of their respective buildings. The eventual need to replace low-slope roofing atop the schools, hospitals, retail establishments, and small offices that account for many of these buildings presents a unique opportunity for building owners to incorporate building energy improvements, like above-deck roof insulation installed in staggered layers, that will ultimately offset their added costs through long-term savings. Many current building codes require owners to bring their roofing insulation levels up to modern standards during alterations and roof replacements. Some may balk at the added cost of these energy upgrades on an already capital-intensive project. A recent study conducted by ICF International, a global technology services and consulting firm, should ease these concerns — it reports that upgrading buildings with energy-compliant roof systems substantially reduces whole-building energy use, leading to decreased energy costs and carbon emissions that pay for themselves many times over during their expected service lives. In the study, ICF draws the following general conclusions:

- Roof replacements are life-cycle economical under various conditions even when subjected to higher incremental installation costs and discount rates.
- Roof replacements support the transition to building electrification through a significant reduction in natural gas fossil fuel use and overall improvement in energy efficiency.
- Roof replacements support building performance standards and carbon emissions reduction goals by offering a cost-effective tool to help building owners reduce energy use and lower their carbon footprint.

This study, commissioned by the Polyisocyanurate Insulation Manufacturers Association (PIMA), quantifies the energy and carbon emissions savings from code-compliant roof replacements on common building prototypes established by the U.S. Department of Energy in reference cities representing ASHRAE Climate Zones 2-6 for the United States and Canada. When selecting the proper roof insulation for any building, it is critical to consider the climate zone for its location.

TAMPA, FLORIDA – Climate Zone 2: Cities located in ASHRAE Climate Zone 2 are characterized as hot climates, which is defined as an area that has temperatures that exceed 67 degrees a minimum of 3,000 hours during the warmest six months of the year, and/or exceed 73 degrees for a minimum of 1,500 hours during the warmest six months of the year. In warm climate zones where building energy expenditure is often dominated by cooling processes, an inefficient thermal building envelope can waste electricity and generate unnecessarily high utility bills. Installing an energy-compliant roof replacement in Climate Zone 2 (R-25 for insulation entirely above the roof deck) is estimated to generate whole-building energy savings of 2-3% annually depending on the building type. This translates into cumulative energy cost savings per square foot of \$1.72 to \$2.73 and carbon equivalent emissions reductions per square foot of approximately 18 to 32 lbs.

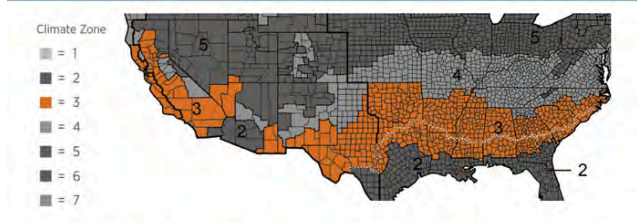
U.S. Climate Zone 2 – Hot Climates | Example City – Tampa, FL



Potential Savings Estimates for Roof Replacements in Climate Zone 2 (R-25)

Building Type	Annual Total Energy Savings	Cumulative Total Energy Cost Savings	Cumulative Energy Cost Savings per SF	Cumulative Total CO ₂ e per SF
Primary School	3%	\$201,921	\$2.73	31.78 lbs.
Retail Store	2%	\$44,088	\$1.77	19.44 lbs.
Strip Mall	3%	\$61,333	\$2.73	29.54 lbs.
Small Office	3%	\$9,456	\$2.73	18.16 lbs.

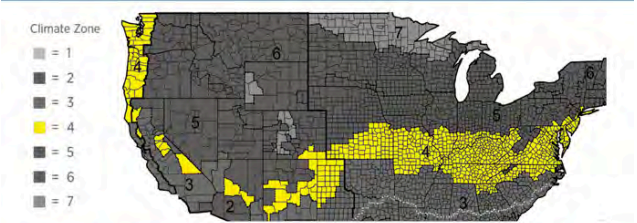
U.S. Climate Zone 3 - Warm Climates | Example City – Atlanta, GA



Potential Savings Estimates for Roof Replacements in Climate Zone 3 (R-25)

Building Type	Annual Total Energy Savings	Cumulative Total Energy Cost Savings	Cumulative Energy Cost Savings per SF	Cumulative Total CO ₂ e per SF
Primary School	6%	\$226,740	\$3.07	44.77 lbs.
Retail Store	4%	\$48,460	\$1.94	25.60 lbs.
Strip Mall	4%	\$63,051	\$2.80	34.27 lbs.
Small Office	3%	\$10,064	\$1.83	19.50 lbs.

U.S. Climate Zone 4 - Mixed Climates | Example City – New York City, NY



Potential Savings Estimates for Roof Replacements in Climate Zone 4 (R-30)

Building Type	Annual Total Energy Savings	Cumulative Total Energy Cost Savings	Cumulative Energy Cost Savings per SF	Cumulative Total CO ₂ e per SF
Primary School	10%	\$362,535	\$4.90	80.89 lbs.
Retail Store	6%	\$63,746	\$2.55	40.20 lbs.
Strip Mall	5%	\$74,803	\$3.32	46.98 lbs.
Small Office	5%	\$16,201	\$2.95	31.99 lbs.

ATLANTA, GEORGIA – Climate Zone 3: Cities located in ASHRAE Climate Zone 3 are characterized as warm climates, which is defined as an area that has approximately 5,400 or fewer heating degree days (at 65 degrees Fahrenheit basis), and where the average monthly outdoor temperature drops below 45 degrees in winter months. In warm climate zones where building energy expenditure is often dominated by cooling processes, an inefficient thermal building envelope wastes electricity resulting in high utility bills and potentially leading to other issues associated with moisture intrusion (such as mold growth and condensation). Installing an energy code-compliant roof replacement in Climate Zone 3 (R-25 for insulation entirely above the roof deck) is estimated to generate whole-building energy savings of 3-6% annually depending on the building type. This translates into cumulative energy cost savings per square foot of \$1.83 to \$3.07 and carbon equivalent emissions reductions per square foot of approximately 20 to 45 lbs.

NEW YORK CITY, NEW YORK – Climate Zone 4: Cities located in ASHRAE Climate Zone 4 are characterized as mixed climates, which is defined as an area that has approximately 5,400 or fewer heating degree days (at 65 degrees Fahrenheit basis), and where the average monthly outdoor temperature drops below 45 degrees in winter months. In mixed climate zones where building energy expenditure fluctuates between cooling and heating processes, an inefficient thermal building envelope can waste gas and electricity, which results in excessive emissions of greenhouse gasses related to energy use. Installing an energy code-compliant roof replacement in Climate Zone 4 (R-30 for insulation entirely above the roof deck) is estimated to generate whole-building energy savings of 5-10% annually depending on the building type. This translates into cumulative energy cost savings per square foot of \$2.55 to \$4.90 and carbon equivalent emissions reductions per square foot of approximately 32 to 81 lbs.

BUFFALO, NEW YORK – Climate Zone 5: Cities located in ASHRAE Climate Zone 5 are characterized as cold climates, which is defined as an area with between 5,400 and 9,000 heating degree days on a 65 degrees Fahrenheit basis. In cold climate zones where building energy expenditure is often dominated by heating processes, an inefficient thermal building envelope wastes gas and electricity by allowing conditioned air to escape the building through its leaky and under insulated exterior in the winter months. Installing an energy code-compliant roof replacement in Climate Zone 5 (R-30 for insulation entirely above the roof deck) is estimated to generate whole-building energy savings of 6-10% annually depending on the building type. This translates into cumulative energy cost savings per square foot of \$2.56 to \$4.78 and carbon equivalent emissions reductions per square foot of approximately 39 to 82 lbs.

CHICAGO, ILLINOIS – Climate Zone 5: Cities located in ASHRAE Climate Zone 5 are characterized as cold climates, which is defined as an area with between 5,400 and 9,000 heating degree days on a 65 degrees Fahrenheit basis. In cold climate zones where building energy expenditure is often dominated by heating processes, an inefficient thermal building envelope can waste gas and electricity, generating unnecessarily high utility bills. Installing an energy code-compliant roof replacement in Climate Zone 5 (R-30 for insulation entirely above the roof deck) is estimated to generate whole-building energy savings of 6-9% annually depending on the building type. This translates into cumulative energy cost savings per square foot of \$2.97 to \$4.58 and carbon equivalent emissions reductions per square foot of approximately 43 to 75 lbs.

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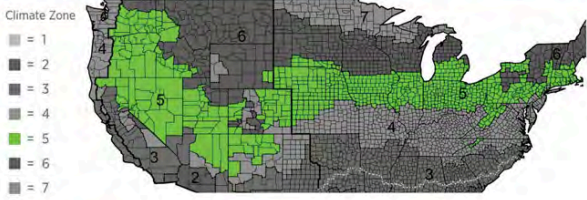
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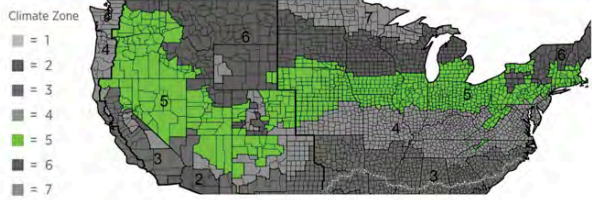
U.S. Climate Zone 5 - Cold Climates | Example City – Buffalo, NY



Potential Savings Estimates for Roof Replacements in Climate Zone 5 (R-30)

Building Type	Annual Total Energy Savings	Cumulative Total Energy Cost Savings	Cumulative Energy Cost Savings per SF	Cumulative Total CO ₂ e per SF
Primary School	10%	\$354,078	\$4.78	81.62 lbs.
Retail Store	6%	\$63,871	\$2.56	44.79 lbs.
Strip Mall	6%	\$78,192	\$3.47	53.60 lbs.
Small Office	6%	\$18,991	\$3.45	38.60 lbs.

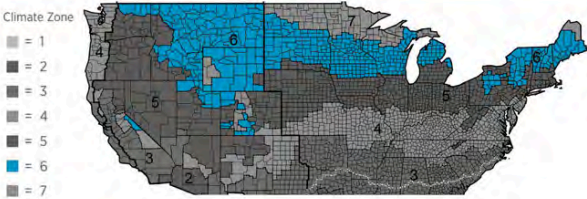
U.S. Climate Zone 5 - Cold Climates | Example City – Chicago, IL



Potential Savings Estimates for Roof Replacements in Climate Zone 5 (R-30)

Building Type	Annual Total Energy Savings	Cumulative Total Energy Cost Savings	Cumulative Energy Cost Savings per SF	Cumulative Total CO ₂ e per SF
Primary School	9%	\$339,153	\$4.58	74.95 lbs.
Retail Store	7%	\$74,178	\$2.97	48.48 lbs.
Strip Mall	6%	\$86,876	\$3.86	57.27 lbs.
Small Office	7%	\$20,507	\$3.73	42.72 lbs.

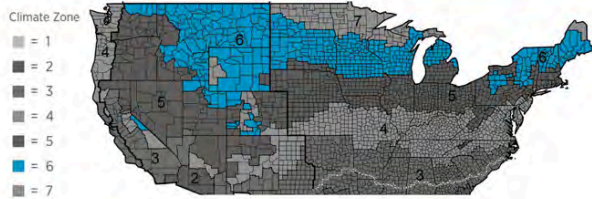
U.S. Climate Zone 6 - Cold Climates | Example City – Montréal Canada



Potential Savings Estimates for Roof Replacements in Climate Zone 6 (R-30)

Building Type	Annual Total Energy Savings	Cumulative Total Energy Cost Savings	Cumulative Energy Cost Savings per SF	Cumulative Total CO ₂ e per SF
Primary School	12%	\$444,636	\$6.01	107.12 lbs.
Retail Store	7%	\$79,890	\$3.20	56.87 lbs.
Strip Mall	6%	\$89,447	\$3.97	64.01 lbs.
Small Office	8%	\$23,518	\$4.27	53.61 lbs.

U.S. Climate Zone 6 - Cold Climates | Example City – Rochester, MN



Potential Savings Estimates for Roof Replacements in Climate Zone 6 (R-30)

Building Type	Annual Total Energy Savings	Cumulative Total Energy Cost Savings	Cumulative Energy Cost Savings per SF	Cumulative Total CO ₂ e per SF
Primary School	11%	\$435,335	\$5.88	102.50 lbs.
Retail Store	7%	\$83,481	\$3.34	58.83 lbs.
Strip Mall	6%	\$94,758	\$4.21	67.23 lbs.
Small Office	7%	\$20,523	\$3.73	42.88 lbs.

MONTREAL, CANADA – Climate Zone 6: Cities located in ASHRAE Climate Zone 6 are characterized as cold climates, which is defined as an area with between 5,400 and 9,000 heating degree days on a 65 degrees Fahrenheit basis. In cold climate zones where building energy expenditure is often dominated by heating processes, an inefficient thermal building envelope generates excessive utility bills by driving up the amount of natural gas used to heat buildings during the winter months. Installing an energy code-compliant roof replacement in Climate Zone 6 (R-30 for insulation entirely above the roof deck) is estimated to generate whole-building energy savings of 6-12% annually depending on the building type. This translates into cumulative energy cost savings per square foot of \$3.20 to \$6.01 (USD) and carbon equivalent emissions reductions per square foot of approximately 54 to 107 lbs.

ROCHESTER, MINNESOTA – Climate Zone 6: Cities located in ASHRAE Climate Zone 6 are characterized as cold climates, which is defined as an area with between 5,400 and 9,000 heating degree days on a 65 degrees Fahrenheit basis. In cold climate zones where building energy expenditure is often dominated by heating processes, an inefficient thermal building envelope not only wastes energy and money, but can lead to increased occupant discomfort generated by air movement (i.e., air leaks) through the building's exterior. Installing an energy code-compliant roof replacement in Climate Zone 6 (R-30 for insulation entirely above the roof deck) is estimate to generate whole-building energy savings of 6-11% annually depending on the building type. This translates into energy cost savings per square foot of \$3.34 to \$5.88 and carbon equivalent emissions reductions per square foot of approximately 43 to 103 lbs.

To read the full report of the study and download Climate Zone-specific fact sheets, visit www.polyiso.org/page/EnergyCarbonSavingsAnalysis.

ABOUT THE AUTHOR: Justin Koscher is President of the Polyisocyanurate Insulation Manufacturer's Association.

Rainwater Management

Tapered Insulation Can Prevent Ponding on Low-Slope Roofs

Written by Marcin Pazera, Ph.D.

Published by *Roofing Magazine*, September/October 2019

The primary and most important function of a roof membrane in a low-slope roof system is to provide weatherproofing by keeping the rainwater from entering the roof assembly. Ponding water poses the greatest risk to a roofing membrane, since it not only shortens its service life, but can lead to more serious life safety concerns when loads and deflections exceed the designed conditions. This could lead to a roof collapse. From an aesthetics standpoint, areas on roofs with a prevalence for ponding are susceptible to unsightly bacterial and algae growth as well as accumulation of dirt. Given the large footprint of low-slope roofs on typical commercial buildings, managing rainwater timely and effectively is an important design consideration in new roof design as well as roof replacements on existing buildings. In addition, the model building codes include requirements for minimum drainage slope and identify ponding instability as a design consideration for rain loads.

Tapered insulation systems are an integral part of roof system design and can help reduce or eliminate the amount of ponding water on the roof when the roof deck does not provide adequate slope to drain. The popularity of tapered insulation has grown as more designers and roofing professionals understand the importance of positive drainage in good roofing practice. Because of its wide use in low-slope roofing application, tapered polyiso insulation systems offer a number of benefits in addition to providing positive drainage: high R-value, versatility and customization to accommodate project-by-project complexity as well as ease of installation. This article highlights the key considerations for tapered insulation systems.

Slope and Drainage Requirements in Building Codes

The model building codes require that commercial roofs be sloped to achieve a positive drainage of rainwater to drains, scuppers, and gutters. The term “positive roof drainage” is defined in the 2018 International Building Code (IBC) as “the drainage condition in which consideration has been made for all loading deflection of the roof deck, and additional slope has been provided to ensure drainage of the roof within 48 hours of precipitation.” The 2018 IBC indicates a minimum design 1/4:12 units slope requirement for membrane roof systems, and minimum slope of 1/8 inch per foot for coal tar pitch roofs. New construction must comply with the minimum slope requirements in IBC Section 1507. Roof replacement or roof re-cover applications of existing low-slope roof coverings that provide positive roof drainage are exempt from the minimum prescriptive 1/4:12 units slope requirement.

Roof drains are part of an approved storm drainage system and function to divert water off and away from the building. Roof drainage systems in new construction must comply with provisions in Section 1502 of the 2018 IBC and Section 1106 and 1108 of the International Plumbing Code (IPC) for primary and secondary (emergency overflow) drains or scuppers. Roof replacement and re-cover applications on existing low-slope roofs that provide positive roof drainage are exempt from requirements for secondary drains or scuppers. It is important to note that secondary drainage systems or scuppers in place on existing buildings cannot be removed unless they are replaced by secondary drains or scuppers designed and installed in accordance with the IBC.

When reviewing the options available for achieving the required slope in a roof system, designers have a number of choices. According to the National Roofing Contractors Association (NRCA) (see “The NRCA Roofing Manual: Membrane Roof Systems: 2019”) the slope can be achieved by: sloping the structural framing or deck; designing a tapered insulation system; using an insulating fill that can be sloped to drain; properly designing the location of roof drains, scuppers and gutters; or a combination of the above.

Design Considerations For Tapered Insulation Systems

Proper design and installation are critical to the effective performance of tapered polyiso insulation systems, and this is true for any product or system. Tapered polyiso is manufactured in 4-foot-by-4-foot or 4-foot-by-8-foot panels that change thicknesses over the 4-foot distance from the low edge to the high edge on the opposing sides of the panel. The standard slopes for tapered insulation are 1/8 inch, 1/4 inch and 1/2 inch per foot to accommodate specific project requirements. However, tapered insulation panels with slopes as low as 1/16 inch and other alternative slopes (3/16 inch and 3/8 inch per foot) can be specially ordered to accommodate unique field conditions. The minimum manufactured thickness of tapered polyiso insulation board at its low edge is 1/2 inch and the maximum thickness at the high edge is 4-1/2 inches.

The design of the tapered insulation system will be governed by the footprint and complexity of the roof under consideration, slope of the roof deck, presence and configuration of roof drains (primary and secondary), scuppers, gutter or drip edges. In addition, roof structures, height of parapet walls, expansion joints, curbs and through-wall flashings and any other elements that may obstruct water management also needs to be considered in the design phase. The tapered insulation system will be lowest at internal drains, scuppers, gutters and drip edges, and will slope upwards away from these features.

Keeping in mind that the primary goal of a tapered insulation system is to most effectively move water to the specified drainage points. A two-way (two directional slope) or four-way (four directional slope) system are the most common designs. A two-way tapered insulation system is commonly used on roofs where multiple drains are in straight lines. In this scenario, there is a continuous low-point between the drains and it often extends to the parapet walls. Crickets are installed in between the drains and between the building or parapet walls and the drains.

A four-way tapered insulation system is the most effective way to move water off the roof, and this approach is highly recommended by industry professionals. In this scenario with a drain located in the center, water is drained from the higher perimeter edges on all four sides. Variations of two-way and four-way systems exist to accommodate complexities in the field. In addition to two-way and four-way systems, one directional slope and three directional slope tapered systems can be used to effectively move water to gutters, drip edges and scuppers.

continued on next page

Keeping in mind that a tapered system is more expensive than a roof system constructed with standard flat insulation only, the tapered design is often a target for “value engineering.” Value engineering can compromise the drainage intent of the design professional, architect or roof consultant for the purpose of lowering the installed cost of the roof system. Value engineering may change the specified slope or redesign the configuration of the tapered panels. In the end, the building owner may pay for a tapered insulation system that does not effectively drain water from the roof as intended by the original design. This will likely result in higher long-term costs for roof maintenance and premature roof system failure.

A typical tapered insulation system will incorporate flat polyiso board stock (referred to as “fill panels” or “tapered fill panels”) beneath continuing, repeating tapered panels. The tapered panels can be a single panel (or “one panel repeat”) system, meaning that the taper is provided by a single repeating panel in conjunction with fill panels. Non-typical designs can feature up to an eight-panel (or “eight panel repeat”) system with eight tapered panels making up the sloped section prior to incorporating the first fill panels.

Finally, crickets are an integral part of a tapered insulation system and are commonly used in two-way systems. Crickets can divert water toward drains and away from curbs, perimeter walls, and roof valleys. The two factors that must be considered in the design and installation of crickets are slope and configuration. The general “rule of thumb” is that for a full diamond cricket the total width should be between 1/3 to 1/2 of the total width. The wider the design of the cricket, the more you utilize the slope in the field of the roof, which improves the drainage efficiency.

Crickets typically have diamond or half-diamond shapes. However, kite-shaped and snub nose crickets can also be configured to accommodate specific roof designs. To keep water from remaining on the cricket surface, the design needs to have a sufficient slope (generally, twice the slope in the adjacent field of the roof). NRCA provides guidance regarding cricket geometry (see “The NRCA Roofing Manual: Membrane Roof Systems: 2019”).

Tapered insulation systems offer a cost-effective solution to achieving positive slope and improved drainage in new roof systems and roof replacement applications. An adequate rainwater management strategy that includes both proper drainage and elimination of ponding water is critical to the long-term performance and durability of a roof system. In addition, proper design, detailing, and installation of products must be an integral part of a tapered roof system design. For more information, consult with a polyiso insulation manufacturer who provide guidance, design assistance, and technical information regarding tapered insulation systems. In addition, the Polyisocyanurate Insulation Manufacturers Association (PIMA) publishes technical bulletins to help navigate the process of designing a tapered system.

About the author: Marcin Pazera, Ph.D., is the Technical Director for Polyisocyanurate Insulation Manufacturers Association (PIMA). He coordinates all technical-related activities at PIMA and serves as the primary technical liaison to organizations involved in the development of building standards.

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Quantifying the impacts of energy-efficient roof replacements

Written by Justin Koscher

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As commitments to sustainability initiatives continue to gain momentum at the state and national level, there is a growing focus on improving the energy-efficiency performance of the built environment. After all, the existing building stock in the United States consumes approximately 40 percent of the total energy use and produces roughly 30 percent of total greenhouse gas emissions. Faced with the challenge of reducing these significant impacts, the building industry is asking: How much energy and associated greenhouse gas emissions can we save with today's technology?

To help answer this question, a coalition of insulation trade associations commissioned a third-party facilitated study that quantified the lifetime energy savings and carbon emission reductions that could accrue by completing simple, cost-effective insulation retrofit projects in homes, commercial buildings and industrial facilities. The total savings figures released by ICF, an international consulting firm with expertise in the energy and efficiency sectors, are impressive. For example, the impact of investing in the studied insulation retrofit projects is equivalent to increasing current wind production by 135 percent or offsetting the emissions associated with 40 percent of all natural gas fired generation in the United States.

Energy Savings With Insulation Retrofits

The study was completed in three sections to assess the energy and emissions impacts from insulation improvements to residential, commercial and industrial buildings. Most applicable to the roofing industry, the commercial building study looked at the impact of code-compliant roof upgrades (at time of a roof replacement) and pipe insulation upgrades. The buildings analyzed in the commercial report represent both public and private structures, and include the following building types: primary and secondary schools, stand-alone retail, small and medium office buildings, and mid-rise apartments (based on U.S. Department of Energy (DOE) prototype buildings).

The latest Commercial Buildings Energy Consumption Survey from the U.S. Energy Information Administration (EIA) reports that together, these buildings account for approximately 25 percent of existing building floor space in the United States.

The total energy savings of the studied insulation retrofits (looking at both roof replacement and pipe insulation upgrades) are summarized in the table below. These numbers summarize energy savings across all climate zones and scenarios.

For each commercial building type, the roof replacement was responsible for most of the potential energy savings due to the relative size of the project. For example, the polyisocyanurate Insulation Manufacturers Association (PIMA) published a summary of the study findings, which shows that over a 30-year period, upgrading roof insulation on existing commercial buildings can save building owners more than \$65 billion dollars in energy costs. Similarly, it could also eliminate nearly 338 million metric tons of carbon emissions, which is equivalent to 2.4 million gas-powered cars annually.

That said, projects across all states and for all modeled building types (save the medium office building type) that combine roof and pipe insulation measures are cost-effective, with cumulative energy cost savings greater than the project capital investment costs. The benefit-cost ratio (BCR) for the combined roof and pipe insulation measures averaged 1.42 across all building types and scenarios, indicating the measures' life-cycle benefits exceed their costs. Generally, savings are greater in colder climates or those locations where buildings are heated more frequently than cooled. Furthermore, savings are greater for building types that have both larger total floor areas and a higher roof-to-floor area ratio. Primary and secondary school buildings are a strong example of this trend. As a result of the building configuration (one- or two-story), large total floor space and occupancy assumptions, school buildings can significantly reduce energy loads by completing the studied insulation improvements. The average whole-building annual energy savings is 8.7 percent for primary schools and 7.1 percent for secondary schools, with higher savings rates available to schools located in colder climates.

Addressing Existing Building Performance

Historically, the federal government and state and local municipalities have relied on voluntary actions to achieve better energy performance and reduced emissions in existing buildings. But the growing focus on the nation's decarbonization goals, combined with the fact that the U.S. building stock consumes approximately 40 percent of the total energy use and produces roughly 30 percent of total greenhouse gas emissions, has challenged policymakers to take timely action.

Recent legislation passed by Congress, including the Infrastructure Investment and Jobs Act of 2021 and the Inflation Reduction Act of 2022, make substantial investments in upgrading the performance of buildings through projects that include insulation retrofits. Under this legislation, the DOE will offer various funding programs to support the needed policy implementation and building retrofit efforts, including a \$500 million grant program for schools that encourages applicants to focus on high-impact projects like building envelope retrofits (roof

continued on next page



replacements being the most common envelope retrofits for existing commercial buildings). Billions of dollars in funding have also been allocated to state and local jurisdictions for the adoption of modern building energy codes and the development of policies that target opportunities to reduce energy use in existing buildings. One such policy tool, building performance standards, requires underperforming buildings to make improvements that meet specific performance targets over time.

The commercial building portion of the report released by ICF is one more tool that underlines the importance of addressing existing buildings as part of energy and climate policy. Its findings help raise the profile of building envelope improvements, like roof replacements, with policymakers that will shape and implement relevant funding programs.

Key Considerations

Across the United States, roof replacements on commercial buildings will become a valuable compliance option as stringent building performance standards and other new policies are adopted to achieve the aggressive energy savings and emissions reductions that are now necessary. For the roofing professional, the commercial building insulation study helps quantify the macro benefits of roof replacements, making the case that insulation upgrades are a cost-effective way for building owners to reduce their carbon footprint. In doing so, they can quickly and reliably meet corporate carbon reduction goals and building performance standards. While improving existing buildings can be a challenge, building and roofing industry professionals are well equipped and positioned to play critical roles in decarbonizing the built environment. To learn more about the opportunities and benefits of energy-efficient roof replacement projects, visit www.polyiso.org/page/InsulationSavingsExistingBuildings.

ABOUT THE AUTHOR: Justin Koscher is President of the Polyisocyanurate Insulation Manufacturer's Association.

Commercial Subsector	Building Type	Relative Energy Savings (%)	Roof-To-Floor Area Ratio
Educational	Primary School	8.7%	1.00
	Secondary School	7.1%	0.50
Federal	Medium Office	1.6%	0.33
	Small Office	5.7%	1.00
Private	Medium Office	1.6%	0.33
	Midrise Apartment	3.6%	0.25
	Stand-alone Retail	5.6%	1.00
	Small Office	5.7%	1.00



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SAFETY TALKS

Roof Loading: A Critical Safety Issue

Have you ever heard the term “roof loading?” It is the practice of storing items on roofs before installation is complete. Many roofing workers are unaware of the risks associated with this practice, leading to dangerous situations where individuals fall through the roof due to excessive weight.

Sometimes materials like tiles, shingles, or equipment are stored on the roof, assuming it can bear the weight. However, without proper load distribution and adequate support, structural stress can be placed in the roof that it simply cannot handle. This can lead to partial or complete collapse, posing a severe risk to anyone working on or around the roof. Additionally, weather conditions like rain or snow can add unexpected weight, exacerbating the problem.

To prevent accidents, it's crucial to adhere to the following safety guidelines.

1. Adhere to Load Limits: Understanding and respecting the load limits set by engineers and architects is vital. These limits are calculated based on the structural capacity of the roof in its current state. Ignoring these guidelines can lead to catastrophic failures.
2. Distribute Weight Evenly: When storing materials on the roof, ensure that the weight is spread out evenly. Concentrated loads in one area can create stress points that the roof may not be able to support. Using pallets or platforms can help distribute the load more evenly.
3. Monitor Weather Conditions: Weather can significantly impact roof loading. Rain, snow, and ice can add unexpected weight to the roof, increasing the risk of failure. Ensure that stored materials are covered and consider the additional weight of precipitation when planning roof loading.
4. Conduct Regular Inspections: Regular inspections by a qualified professional can help identify potential weak points in the roof structure. These inspections should be carried out before, during, and after loading to ensure that the roof remains safe and stable.
5. Limit Dynamic Loading: The dynamic load added by walking or working on a roof can significantly increase the stress on the structure, particularly in areas already burdened with stored materials. Therefore be mindful of movements and activities on the roof.



Discuss with Your Crew

Here are 3 practical tips that each of us can commit to following to help prevent roof failure due to roof loading.

- Strategically place materials near structural supports or load-bearing walls to minimize stress on weaker sections of the roof.
- Minimize the number of workers and the amount of movement on the roof when it is heavily loaded. This can help reduce dynamic loads and prevent accidents.
- Whenever possible, use lightweight materials or equipment to reduce the overall load on the roof.

SAFETY TALK ATTENDEES:

CHARLAS DE SEGURIDAD

Carga en el techo: un problema crítico de seguridad

¿Alguna vez ha escuchado el término "carga en el techo"? Es la práctica de almacenar artículos en los techos antes de que se complete la instalación. Muchos trabajadores de techos no son conscientes de los riesgos asociados con esta práctica, lo que lleva a situaciones peligrosas en las que las personas caen a través del techo debido al peso excesivo.

A veces, materiales como tejas, tejas o equipos se almacenan en el techo, suponiendo que pueda soportar el peso. Sin embargo, sin una distribución adecuada de la carga y un soporte adecuado, se puede colocar una tensión estructural en el techo que simplemente no puede manejar. Esto puede provocar un colapso parcial o completo, lo que representa un riesgo grave para cualquier persona que trabaje en el techo o alrededor de él. Además, las condiciones climáticas como la lluvia o la nieve pueden agregar un peso inesperado, exacerbando el problema.



Para evitar accidentes, es crucial seguir las siguientes pautas de seguridad.

1. Cumplir con los límites de carga: Comprender y respetar los límites de carga establecidos por ingenieros y arquitectos es vital. Estos límites se calculan en función de la capacidad estructural de la cubierta en su estado actual. Ignorar estas pautas puede conducir a fallas catastróficas.
2. Distribuya el peso de manera uniforme: Cuando almacene materiales en el techo, asegúrese de que el peso se distribuya de manera uniforme. Las cargas concentradas en un área pueden crear puntos de tensión que el techo puede no ser capaz de soportar. El uso de paletas o plataformas puede ayudar a distribuir la carga de manera más uniforme.
3. Monitoree las condiciones climáticas: El clima puede afectar significativamente la carga del techo. La lluvia, la nieve y el hielo pueden agregar un peso inesperado al techo, lo que aumenta el riesgo de fallas. Asegúrese de que los materiales almacenados estén cubiertos y tenga en cuenta el peso adicional de la precipitación al planificar la carga del techo.
4. Realice inspecciones periódicas: Las inspecciones periódicas realizadas por un profesional calificado pueden ayudar a identificar posibles puntos débiles en la estructura del techo. Estas inspecciones deben llevarse a cabo antes, durante y después de la carga para garantizar que el techo permanezca seguro y estable.
5. Limite la carga dinámica: La carga dinámica agregada al caminar o trabajar en un techo puede aumentar significativamente la tensión en la estructura, particularmente en áreas ya cargadas con materiales almacenados. Por lo tanto, tenga en cuenta los movimientos y actividades en el techo.

Habla con tu tripulación

Aquí hay 3 consejos prácticos que cada uno de nosotros puede comprometerse a seguir para ayudar a prevenir fallas en el techo debido a la carga del techo.

- Coloque estratégicamente los materiales cerca de los soportes estructurales o los muros de carga para minimizar la tensión en las secciones más débiles del techo.
- Minimice el número de trabajadores y la cantidad de movimiento en el techo cuando está muy cargado. Esto puede ayudar a reducir las cargas dinámicas y prevenir accidentes.
- Siempre que sea posible, use materiales o equipos livianos para reducir la carga total en el techo.

ASISTENTES DE LA CHARLA DE SEGURIDAD:
