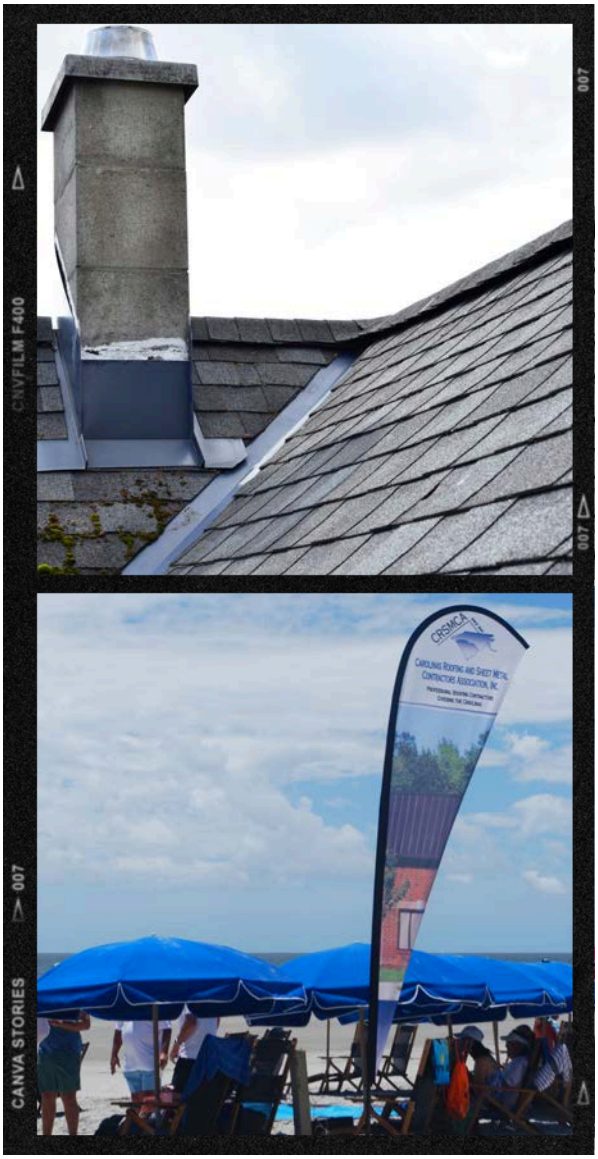
CAROLINAS CONTACTS

CRSMCA - Covering the Carolinas for over 80 years



MARCH-APRIL 2024 ISSUE

SPORTING CLAYS
TOURNAMENT

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Carolinas Roofing and Sheet Metal Contractors Association, Inc.
Professional Roofing Contractors Covering the Carolinas

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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.

CAROLINAS ROOFING & SHEET METAL CONTRACTORS ASSOCIATION, INC.

PO BOX 7643
CHARLOTTE NC, 28241-7643

710 IMPERIAL COURT
CHARLOTTE, NC 28273

704.556.1228
www.crsmca.org

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.

AFFILIATED WITH NATIONAL ROOFING CONTRACTORS ASSOCIATION, INC.

NRCA

Message from Executive Director, Carla B. Sims

Keeping a positive mindset for CRSMCA members!

I hope everyone enjoyed the slow motion for January 2024 with CRSMCA moving the EXPO conference to June 2024 with the Annual Meeting. **IF YOU HAVEN'T HEARD ABOUT… IT'S CALLED - -**

Carolinas Roofing Expo & Annual Meeting [June 26-29]
host location - Marriott Resort & Spa at Grande Dunes (Myrtle Beach, SC)

The first of its kind for CRSMCA that will combine the trade show element of networking with vendors in the roofing industry and learning from the top industry professionals on best practices used in the roofing industry to enhance your work performance ***WITH*** the annual meeting taking your networking with your industry peers and families to the beach social at a beautiful resort! At this conference, CRSMCA will recognize the CRSMCA Board Members, introduce your *NEW* Board Members and recognize the most honorable person of CRSMCA with the Gordon M. Waters Distinguished Service Award! **YOU DON'T WANT TO MISS IT… Booths are already sold out! But you can still attend this event and have a great time! Check out more information online at www.crsmca.org/meetinginfo.php?id=76&ts=1712164708**

CRSMCA Weekly e-Newsletters

CRSMCA's most consistent industry updates each week! CRSMCA provides members and interested peers in the roofing industry a weekly e-Newsletter every Tuesday… from conferences to events to sponsorship opportunities and new publications! *BE SURE TO CHECK YOUR EMAIL AND TAKE A MOMENT TO GET UPDATED!*

HOW ELSE CAN THE CRSMCA BOARD MEMBERS & STAFF HELP YOU?

We want to know what you need. CRSMCA serves to be the voice of the roofing sheet metal industry of the Carolinas. CRSMCA works to promote and safeguard the common business interests of its members through education, public advocacy, programs and services, and providing a forum for networking.

I look forward to speaking with you soon and seeing you at the CRSMCA event!

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

NAWIC in the Carolinas: Celebrating WIC Week 2024

by GroundBreak Carolinas Staff on February 29, 2024

Women in Construction Week is celebrated all over the country and internationally. National Women in Construction (WIC) Week 2024 is scheduled for March 3-9. The National Association of Women in Construction's eight chapters in the Carolinas belong to NAWIC's South Atlantic Region – one of eight national regions for the association.

NAWIC South Atlantic Region Director Rhae Sutphin noted, "The NAWIC South Atlantic Region is so proud to help facilitate WIC Week this year. Our region's chapters have been working so hard to plan some incredible events. This year's WIC week is packed with hard hat tours, panel discussions, supporting local charities, a huge end of week celebration and so much more! It's a great opportunity for women in construction to join forces and celebrate one another, across the region and beyond. We aim to bring awareness to women leaders joining the construction industry and give them the Keys to the Future!"
Rahe Sutphin, Office Manager, Watts & Associates Roofing & Waterproofing, Columbia, SC

staying in the family:

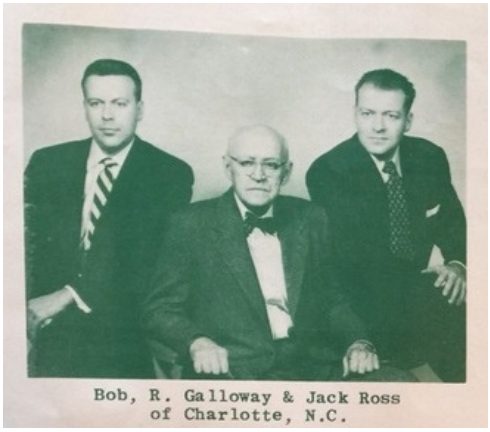
After 47 years in the skylight business, Skip & Celeste Ross have officially retired from **JP Ross & Co.** We want to wish them our sincerest gratitude and congratulations on a job well done.

Over the years, Skip has taught us the value of hard work, dedication, and integrity. He showed us his passion for the business, the employees, and the customers we serve. He grew the family business and adapted to a changing landscape to get us to the full-service Skylight Sales and Installation business that we are today.

Carrie Fennell, our invaluable office manager of almost 30 years and Doug Humphrey, our invaluable installation manager of almost 20 years, and the life-long friendships of many customers and colleagues are a testament to Skip's love and dedication to JP Ross and its people.

It has been a privilege and an honor to have a front row seat.

Ross Sales was started in 1930 by Skip's grandfather, Galloway Ross and we can't imagine the joy it would bring him, as well as his son and Skip's father, Jack Ross to see JP Ross today, now owned and led by the 4th generation.



Bob, R. Galloway & Jack Ross
of Charlotte, N.C.

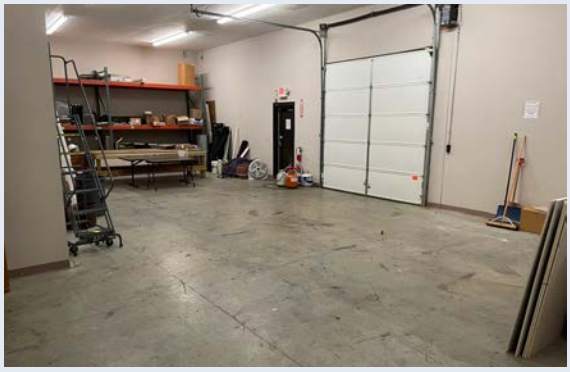
Looking for Training Space in the Charlotte Area?

The CRSMCA headquarters features a conference room and a warehouse demonstration area...perfect for your next training event!

The conference room holds up to 40 people classroom style or set less for an employee or board meeting. The conference room hosts a screen for your projection needs and Wi-Fi.

The warehouse demonstration area is perfect for your set up of products and/or mock-up for the training event. The area is ventilated and can provide shelter in rain or cold weather.

Available for you is your CRSMCA support staff; available to accept shipments and assist with promotional exposure. ***Reserve your space: contact the CRSMCA office at 704.556.1228 or cbsims@crsmca.org.***



The RAY COMPANY INCORPORATED

Since 1904

ROOFING • MAINTENANCE • RENOVATIONS • SHEET METAL

Dear Friends of The Ray Company,

This is a monumental time for The Ray Company as we celebrate 120 years in business. Celebrating our history is important, as shown in our company history brochure. We have been a major part of the expanding construction industry in North and South Carolina and the Southeastern and Mid-Atlantic states since 1904. We are proud of our commitment to providing the highest quality roofing, sheet metal, and other building products and services.

The Ray Company must continue to look ahead and make a positive difference for our many clients. We have excelled during these 120 years in delivering superior service for all those we serve, and we will always strive to improve.

This company history brochure celebrates our journey and the people who made it possible. We thank all who have contributed to our journey.

We hope you enjoy our story and look forward to working with you going forward.

Sincerely,

Wes Wilkinson
President

120 Years of Excellent Service

In the late nineteenth century, a skilled inventor and sheet metal mechanic, Gilbert G. Ray, came to Charlotte and in 1904 founded a business which still bears his name. The company outgrew its original location on 5th Street in downtown Charlotte and expanded to a second location on Lucena Street in north Charlotte. He led the company for over two decades until his son, George Irving, took over leadership as President in 1929.

George I. Ray skillfully operated the company from 1929 through 1946 and established a national reputation for the company and himself in the roofing and sheet metal industry. During his leadership he served as President of the National Association of Sheet Metal Contractors (today's SMACNA) in 1930 and 1931. He was responsible for the publication of the manual, Standard Practice in Sheet Metal Work, for which he prepared the first section himself. He expanded the business into several geographic regions and other skilled trades including plumbing, mechanical, heating, air processing and chemical additives. He sought cooperation with his industry peers throughout the country to establish engineering and standard practices for the benefit of all.

Rudy Barnes first became associated with the company in 1929 while a student at North Carolina State University and later became a full-time employee after service as a Naval Officer in World War II. Mr. Barnes became President and owner in 1946 and proceeded to incorporate the company that same year. He served as President of the Carolinas Roofing and Sheet Metal Contractors Association in 1955 and as President of the National Roofing Contractors Association in 1961. During Mr. Barnes' tenure as President, the company continued its growth in the construction industry as a major commercial, industrial, governmental, and institutional roofing, sheet metal, metal siding, and air processing system contractor in the Mid-Atlantic and Southeastern United States and several foreign countries.

Mike Wilkinson joined the company after earning his degree from North Carolina State University and service as an Army Officer during the Vietnam War period. Mr. Wilkinson became President in 1970. His focus has always been to continue the company's dedication in providing the best service and satisfaction to our commercial, industrial and institutional clients. He grew the company into one of the largest roofing, sheet metal and metal siding contractors in the United States, operating in many Southeastern and Mid-Atlantic states. Today he continues in his position of Chairman, and like Mr. Barnes, he has also served as President of the Carolinas Roofing and Sheet Metal Contractors Association and as a director of the National Roofing Contractors Association.

Wes Wilkinson joined the company upon graduation from North Carolina State University in 1990 and assumed the position of President in 2006. During his tenure as a 5th generation officer and owner, The Ray Company has focused on specializing in the replacement of existing commercial, industrial, and institutional roofing systems along with roof and exterior building repairs and maintenance in North and South Carolina. Wes continues our commitment to the highest quality roofing and exterior building construction services. He also served as President of the Carolinas Roofing and Sheet Metal Contractors Association.

We are the Carolinas oldest roofing and sheet metal contractor and are grateful to all our clients who have supported our company to allow us to continue this proud tradition today.

1958 — G.G. Ray Company, Inc. moves into facility on North Sharon Amity Road in Charlotte, NC

1961 — Rudy Barnes serves as President of the National Roofing Contractors Association.

1970 — Mike Wilkinson, son in-law of Rudy Barnes, becomes President of G.G. Ray Company, Inc.

1972-1975, 1978-1981 — Mike Wilkinson serves on the Board of Directors of the National Roofing Contractors Association.

1975-1976 — Mike Wilkinson serves as President of the Carolinas Roofing and Sheet Metal Contractors Association .

1978-1979 — G.G. Ray Company, Inc. is the 2nd largest commercial roofing and metal siding company in the U.S.

1990 — G.G. Ray Company , Inc. changes its name to The Ray Company, Inc.

1997 — The Ray Company, Inc. moves into office/sheet metal shop on North Tryon Street in Charlotte, NC

2006 — Wes Wilkinson, son of Mike Wilkinson and grandson of Rudy Barnes, becomes President of The Ray Company, Inc.

2013-2014 — Wes Wilkinson serves as President of the Carolinas Roofing and Sheet Metal Contractors Association.

2015 — The Ray Company, Inc. moves into a new facility on Golf Acres Drive in Charlotte, NC

2024 — The Ray Company, Inc. celebrates its 120th anniversary.

NRCA

www.nrca.net

OSHA will hold annual safety stand-down

The Occupational Safety and Health Administration's 11th annual National Safety Stand-Down will be May 6-10 to raise awareness among employers and workers about the hazards of falls in the construction industry.

OSHA, the National Institute for Occupational Safety and Health, the National Occupational Research Agenda and CPWR—The Center for Construction Research and Training, among other groups, 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.

OSHA also encourages people to use #StandDown4Safety to promote the event on social media, share feedback after their events and obtain a personalized certificate of participation.

NRCA once again will be holding webinars in support of the National Safety Stand-Down. Stay tuned for more information.

Results are in from the latest market index survey for reroofing

The complete results of the Quarterly Market Index Survey for Reroofing are available to those who participate in the survey via an online dashboard that enables users to filter results by region and other metrics. Contractors and consultants who want to participate in next quarter's brief survey can sign up for a notification by clicking the link!

National Roofing Week 2024 will be June 2-8!

National Roofing Week 2024 will be held June 2-8 to raise awareness of the significance of roofs to every home and business and share the industry's good deeds.

Organized by NRCA, National Roofing Week traditionally takes place during the first full week of June and promotes the importance of hiring a professional roofing contractor and making informed decisions about maintaining or replacing any roof system.

In celebration of National Roofing Week, NRCA will be sharing its members' stories through its various social media outlets and Professional Roofing magazine. Members throughout the U.S. are encouraged to share their stories of charitable giving, crew and staff appreciation, employee training and signature roofing projects with NRCA.

Want to show support for National Roofing Week? Get your crews National Roofing Week T-shirts! Supplies are limited, so order soon! For more information, visit the National Roofing Week page on NRCA's website.

Study reveals workers had risky body temperatures on moderate summer days

A heat pilot study by New York City-based Turner Construction, in partnership with the University of New Mexico, Indiana University and La Isla Network, examined the effects of working outside in hot weather and found many workers' core body temperatures reached risky levels even on moderate summer days, according to Construction Dive. The study was designed to better understand how increased temperatures affect job-site safety.

The study was conducted for three days during the summer of 2023 with an average peak temperature of 88 F. Before the study, participants swallowed a data collection device, which remained in their bodies for 24 hours and allowed researchers to continuously monitor internal body temperature. Each worker participated for only one day.

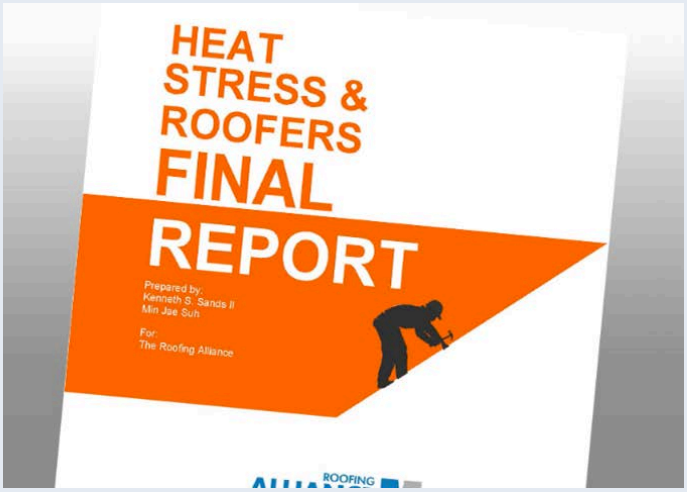
The study found 43% of the 33 workers monitored had core temperatures reaching higher than 100.4 F even in "cooler than typical summer conditions." The Occupational Safety and Health Administration lists 100.4 F as the benchmark for an elevated risk of heat stress.

Researchers said if elevated core temperatures were prolonged, they could result in permanent damage to a worker's health.

"The findings demonstrate that in periods of extreme hot weather, such as during heat waves, construction workers are at substantial risk of heat-related health issues," said Fabiano Amorim, associate professor at University of New Mexico, and Zachary Schlader, associate professor at Indiana University, who were the lead researchers on the study. "This research emphasizes the urgent need for strategies to protect the health and safety of construction workers."

Researchers also found most workers already were dehydrated when they arrived at the job site.

"Knowing that, we have a really clear opportunity to do direct outreach about hydrating outside of work," said Monika Serrano, resilience project manager at Turner Construction.



NRCA releases Heat Stress for Roofers Training Course

The American NRCA recently released the Heat Stress for Roofers Training Course.

The Roofing Alliance, in partnership with Florida Gulf Coast University, created the Heat Stress & Roofers Final Report, which serves as the basis for the training course. The training modules provide important industry heat stress data and its effects on roofing workers, including how to prevent heat-related illnesses, contributing risk factors, policies and regulations surrounding heat stress, and a guide for providing a workplace heat-related illness plan.

As a benefit of membership, the report is available free of charge for all Roofing Alliance members and can be accessed by logging into www.nrca.net, going to "My Account," and clicking on "My Courses."

First standard regarding heat stress in construction is published

The American Society of Safety Professionals has published the first national voluntary consensus standard addressing heat stress for workers in construction and demolition operations, according to the ASSP website. Hundreds of thousands of workers frequently face outdoor hazards such as high heat and humidity.

ANSI/ASSP A10.50-2024, Heat Stress Management in Construction and Demolition Operations, offers guidance regarding protecting workers; explains how to acclimate workers to high heat conditions; and provides requirements for training employees and supervisors. The standard includes checklists and flowcharts designed to help companies develop clear, effective heat stress management programs that bridge the regulatory gap.

"This new industry consensus standard is an important development because there is no federal regulation focused on heat stress," said ASSP President Jim Thornton, CSP, CIH, FASSP, FAIHA. "Employers need expert guidance on how to manage heat-related risks. They must have the tools and resources to identify and help prevent work hazards before an incident occurs."

The A10.50 standard identifies engineering and administrative controls a company can implement to ensure workers get proper rest, water breaks and shade while still meeting business needs. Recommendations such as medical monitoring and using a buddy system can reduce risks and help prevent heat-related illnesses in many work environments.

The effects of heat stress can range from mild symptoms such as heat rash and heat cramps to severe conditions such as heat exhaustion and heat stroke, which can be fatal. The standard includes a detailed emergency response plan if a worker has a severe reaction to excessive heat.

NRCA was part of the A10.50 subcommittee that wrote the standard; the subcommittee consisted of 30 safety and health experts from businesses, trade unions, consulting firms, universities and government agencies. The process took three years.

Voluntary consensus standards provide the latest expert guidance and fill gaps where federal standards do not exist.

The Roofing Alliance Announces Clemson Certificate Program *(released March 2024)*

Empower your career with cutting-edge professional development certificates in roofing.

In collaboration with Clemson University, the Roofing Alliance has unveiled three comprehensive roofing courses tailored to offer a robust education to industry professionals of all backgrounds, experiences, and educational levels. The courses serve as excellent onboarding tools for new hires. These courses cater to a broad spectrum of roles, including office personnel, estimators, project administrators, foremen, and salespeople, ensuring inclusivity across all companies.

Each course is entirely self-paced and conveniently accessible online, allowing participants to customize their learning experience to fit their schedule. Upon enrollment, participants have a 60-day window to complete each course. The curriculum delves deep into various facets of the roofing industry, ensuring participants solidify their expertise.

Upon successful completion of each course, which includes a final examination, participants earn a Certificate of Completion. This distinguished certificate is jointly conferred by The Nieri Department of Construction, Development, and Planning at Clemson University and the Roofing Alliance — the philanthropic and educational arm of National Roofing Contractors Association — a testament to the high caliber of their achievements. Completing all three courses earns participants the esteemed "Roofing Professional Management" Certificate, showcasing their comprehensive mastery of the roofing domain.

Roofing professionals are encouraged to enroll in any or all three certificate courses:

- **Course #1: Roofing Fundamentals**

The first course, Roofing Fundamentals, is designed to provide a comprehensive understanding and study of essential elements that are critical to professional roof construction. The key topics covered in this first course include the different types of roofing systems and their assembly, reading roofing blueprints, reading roofing specifications, roofing estimating, roofing safety, roof repair, and maintenance and technology.

- **Course #2: Roofing Management**

The second course, Roofing Management, builds upon the foundational knowledge from the first course and covers concepts at a deeper level within the management aspects of the roofing industry, such as building codes, sustainability, risk management, quality control and quality assurance, field crew management, roof scheduling, site logistics, and roofing equipment.

- **Course #3: Roofing Business Principles and Leadership**

The third course, Roofing Business Principles and Leadership, covers concepts related to being an entrepreneur in the roofing industry such as leadership and organizational culture, negotiation, starting a roofing business, sustaining a roofing business, procurement and resource sourcing, sales and marketing, and innovation in the roofing industry.

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

SPORTING CLAYS TOURNAMENT

Photos Curtesy of Andy Butler, Roofers Supply of Greenville

ADDITIONAL PHOTOS
www.crsmca.org/gallery.php

SPORTING CLAYS TOURNAMENT

March 21, 2024 | Rocky Creek Sporting Clays [Richburg, SC]

SPORTING CLAYS TOURNAMENT

March 21, 2024 | Rocky Creek Sporting Clays [Richburg, SC]

SPORTING CLAYS TOURNAMENT

March 21, 2024 | Rocky Creek Sporting Clays [Richburg, SC]

coming back spring 2025

2024 ANNUAL GOLF TOURNAMENT

CAROLINAS ROOFING AND SHEET METAL CONTRACTORS ASSOCIATION, INC.
PROFESSIONAL ROOFING CONTRACTORS COVERING THE CAROLINAS

Get ready to tee off at CRSMCA's 7th Annual Golf Tournament! Join us for a day of fun and friendly competition on the greens as we raise funds for the Dottie Nagle Scholarship Fund.

THURSDAY 10 OCTOBER

ROCKY RIVER GOLF COURSE
6900 BURTON SMITH BLVD
CONCORD, NC

TOURNAMENT PRIZES - CONTEST PRIZES - RAFFLE PRIZES

REGISTRATION & SPONSORSHIP OPENS JULY 1, 2024

Join with over 20 sponsoring members for the opportunity to market your company and network with players during the tournament.

704-556-1228

www.crsmca.org

CAROLINAS ROOFING EXPO & ANNUAL MEETING

2024
JUNE 26-29

MARRIOTT RESORT & SPA AT GRANDE DUNES
8400 COSTA VERDE DRIVE
MYRTLE BEACH, SC 29572

VISIT WITH EXHIBITORS

Visit with over 75 exhibiting companies in the roofing industry that will provide the latest and top products from materials to technology.

LEARN FROM TOP INDUSTRY PROFESSIONALS

Attend a variety of educational courses offered from roof decks to the strategic marketing. **Portions of the education will apply to NCLBGC Continuing Education*

PARTICIPATE IN BEST COMPETITION PRACTICE

Take what you learned in the educational courses to the trade show floor and participate in friendly BEST PRACTICE COMPETITIONS! **PRIZES WILL BE AWARDED**

BUILD RELATIONSHIPS

Bring your family to the trade show floor and receptions to network with your industry peers and building your industry relationships

CONTACT CRSMCA

Details - Registration - Sponsorships

704.556.1228

cbsims@crsmca.org

www.crsmca.org

CONFERENCE AGENDA

WEDNESDAY, JUNE 26, 2024

8:06AM - 8:33AM	CRSMCA Golf Outing [Grande Dunes Course]
4:00PM - 6:00PM	WELCOME RECEPTION

THURSDAY, JUNE 27, 2024

9:00AM - 4:00PM	REGISTRATION DESK OPEN
9:00AM - 4:00PM	**Master Installers Certification Course**: Roof Decks [provided by A.C.T. Metal Deck Supply]
9:00AM - 3:00PM	Exhibitor Setup
10:00AM - 11:00AM	CRSMCA Executive Committee Meeting
12:00PM - 1:30PM	CRSMCA Board of Directors & Associate Group Liaisons Meeting
3:00PM - 5:00PM	EXHIBITS OPEN & WELCOME RECEPTION [open to all attendees & family]

FRIDAY, JUNE 28, 2024

8:00AM - 4:00PM	REGISTRATION DESK OPEN
8:00AM - 9:00AM	**EDUCATION SESSION #1**: Sentrigard Metal Roofing Systems 101 Metal Roofing [provided by N.B. Handy Company] ... *visit Zone 1 for Hands-on Best Practices*
	EDUCATION SESSION #2: Making Educated Choices Leads to Quality Results in Metal Roofing [provided by Union Corrugating] ... *visit Zone 2 for Hands-on Best Practices*
9:15AM - 10:15AM	**EDUCATION SESSION #3**: Title to be announced [provided by Scott Hinesley, REI Engineers]
10:30AM - 11:30AM	**EDUCATION SESSION #4**: Social Media & Marketing [provided by Splash Omnimedia – CRSMCA's Elite Partners]
11:30AM - 1:00PM	"Grab & Go" Lunch for all attendees & family
12:00PM - 5:00PM	EXHIBITS OPEN for all attendees & family
1:00PM - 4:00PM	**Hands-On Best Practice** Zone 1: sponsored by N.B. Handy Company Zone 2: sponsored by Union Corrugating
4:00PM - 5:00PM	HONORS RECOGNITION RECEPTION [open to all attendees & family]

SATURDAY, JUNE 29, 2024

8:00AM - 11:00AM	Exhibitor Dismantle/Move-Out
9:00AM - 9:45AM	CRSMCA Associate Group Members/Exhibitors Pre-Selection Meeting
9:45AM - 10:30AM	CRSMCA BUSINESS UPDATE & BOARD RECOGNITION
10:30AM- 11:30AM	**EDUCATION SESSION #5**: NRCA Presentation to be announced
12:00PM	Beach Social [open to all attendees & family]
4:00PM - 5:00PM	HAPPY HOUR RECEPTION [open to all attendees & family]

GORDON M. WATERS DISTINGUISHED SERVICE AWARD
2024 NOMINATION FORM

CAROLINAS ROOFING AND SHEET METAL CONTRACTORS ASSOCIATION, INC.
PROFESSIONAL ROOFING CONTRACTORS COVERING THE CAROLINAS
PO Box 7643 | Charlotte, NC 28241-7643
704.556.1228 | cbsims@crsmca.org | www.crsmca.org

The Distinguished Service Award Committee is requesting nominations for the 2024 Gordon M. Waters Distinguished Service Award. CRSMCA has dedicated this as the highest honor awarded to a CRSMCA member for their dedication and service to the CRSMCA, the roofing industry and its community.

It is our hope that you know someone in the CRSMCA organization and the roofing industry community, that you feel is deserving of this award and its highest level of recognition.

The following are guidelines the committee uses to make their decision:

- Has served on the CRSMCA Board and was/currently is an active participant
- Has the respect of the majority of the CRSMCA membership
- Serves as a mentor/developer of the next generation of leaders for the association
- Good business model
- Good moral character
- Community leader
- Proven service and leadership to the association
- Proven service to the industry
- Responds positively when asked to serve
- Shows true passion for the association
- Should be a long-standing member

I PROUDLY NOMINATE:

_____

Name Company

Please provide a brief description as to why you feel this person deserves this award. This information is used to consider your nomination.

_____

_____

_____

_____

_____

Please send your nomination to the association office prior to **MAY 15, 2024** via email to cbsims@crsmca.org. CRSMCA will forward nominations to the committee for review and decision.

THANK YOU FOR YOUR PARTICIPATION AND SUPPORT FOR CRSMCA!

CAROLINAS ROOFING EXPO & ANNUAL MEETING
presents

CRSMCA SINCE 1943
CAROLINAS ROOFING AND SHEET METAL CONTRACTORS ASSOCIATION, INC.
PROFESSIONAL ROOFING CONTRACTORS COVERING THE CAROLINAS

HONORING YOUR
"Most Valued Employee of the Year"

This program is designed to honor one outstanding contractor employee from **North Carolina** and **South Carolina** to be recognized during the Carolinas Roofing Expo & Annual Meeting. The purpose of the award is to recognize excellence within CRSMCA and allow recipients to serve as role models for other employees, as well as increase professionalism and attract additional employees to the roofing industry. *Only one employee per branch office of a company may be nominated for the MVE of the Year Award.*

Judges include CRSMCA Board members. Judges' decisions will be based on evidence of professionalism, uniqueness or significance of a nominee's contribution, and benefit to a nominee's company and co-workers and/or community.

Award recipients will receive a plaque recognizing their significance to the roofing industry, complimentary registration to the Carolinas Roofing Expo & Annual Meeting, and one-night lodging during the Carolinas Roofing Expo & Annual Meeting. Winners will be formally honored and presented with their award during the Honors Recognition Reception on Friday, June 28, 2024 in Myrtle Beach, South Carolina.

Nominations must be received by the CRSMCA office by MAY 30, 2024. For more information or to obtain additional nomination forms contact Carla Sims at CRSMCA, at cbsims@crsmca.org or call 704-556-1228.

Most Valued Employee of the Year Nomination

Name of Nominee

Employer | Title/Position with Employer

Submitted By | Company

Describe below or attach your reason for the nomination. Several issues to consider and discuss, if appropriate, are:

- on-the-job performance
- attracting new employees and helping retain existing employees
- contributions to a team effort
- leadership
- community service and volunteerism
- other noteworthy contributions and activities

PLEASE FORWARD TO cbsims@crsmca.org or PO BOX 7643, Charlotte, NC 28241-7643

2024 CAROLINAS ROOFING EXPO & ANNUAL MEETING

ATTENDEE REGISTRATION FORM

**Please complete this form to the best of your ability and return to Carla Sims (CRSMCA Executive Director) at cbsims@crsmca.org by the date provided below.*
Questions: 704.556.1228 ext 402

CAROLINAS ROOFING AND SHEET METAL CONTRACTORS ASSOCIATION, INC.
PROFESSIONAL ROOFING CONTRACTORS COVERING THE CAROLINAS
PO Box 7643 | Charlotte, NC 28241
www.crsmca.org

CONFERENCE DATE: JUNE 25 - 29, 2024 | **SPECIAL PRICING EXPIRES APRIL 1, 2024**

LOCATION: **Myrtle Beach Marriott Grande Dunes**
8400 Costa Verde Drive | Myrtle Beach, SC 29572

Direct Contact: 843.449.8880

ROOM RESERVATIONS: *Special Rate Ends MAY 26, 2024*
Group Rate $399, plus applicable fees & taxes

Quick Link Available
Phone: 800.228.9290 [Carolinas Roofing Expo & Annual Meeting]

COMPANY CONTACT INFORMATION

Company Name | *Contact Name*

Email [needed for transaction receipt & registration confirmation] | *Phone Number*

PLEASE SELECT MEMBER RATE:

	EARLY BIRD PRICE by MAY 1, 2024	REGULAR PRICE after MAY 1, 2024	*Pricing includes admission to all events provided on the conference agenda*
CONTRACTORS			
☐ PAST PRESIDENT SPONSOR	$800	$800	
ONE complimentary Group of 4 Weekend registration; complimentary business card ad in the *Carolinas Contacts* Magazine; signage at Carolinas Roofing Expo & Annual Meeting; listing in the *Carolinas Contacts* Magazine and on the CRSMCA website			
☐ Group of 4 Weekend	$600	$650	
☐ Individual Weekend	$300	$350	
☐ COMPANY FRIDAY SHOW SPECIAL*	$100	$150	**company can bring unlimited employees*
NON-EXHIBITOR VENDOR **[manufacturer, distributor]**			
☐ Group of 4 Weekend	$600	$650	
☐ Individual Weekend	$300	$350	
☐ FRIDAY SHOW SPECIAL**	$400	$450	***Individual registration only*
ARCHITECT/ENGINEER/CONSULTANT			
☐ FRIDAY SHOW SPECIAL^	$ 50	$100	*^Individual registration only*

PLEASE REGISTER THE FOLLOWING ATTENDEES:

Name | *Name*

Name | *Name*

Name | *Name*

Name | *Name*

PAYMENT MUST ACCOMPANY REGISTRATION — TOTAL FEES TO BE PAID $

☐ check enclosed ☐ credit card **payments will incur 4% convenience fee*

Credit Card No. | *Exp Date* | *CVV Code* | *Billing Zip Code*

TRANSACTION RECEIPT WILL BE EMAILED TO THE CONTACT LISTED ABOVE, UNLESS OTHERWISE NOTED.

CANCELLATION & REFUND POLICY: Registration fees are refundable, less a $25 administrative fee, up until June 1, 75% of registration fees from June 1-8, 50% of registration fees from June 9-15. NO REFUND will be issued for cancellations starting June 15. Registrations are transferable to another person. ALL cancellations and/or transfers must be made in writing via e-mail to cbsims@crsmca.org; expect confirmation within two business days.

CAROLINAS roofing expo & annual meeting

presents

GOLF OUTING

WEDNESDAY JUNE 26, 2024

Designated Team Tee Times
8:06am - 8:33am

GRANDE DUNES RESORT GOLF CLUB

8700 Golf Village Lane
Myrtle Beach, SC 29579

$175 PER GOLFER **$650 PER TEAM**

fees increase $50 after May 1, 2024

REGISTRATION INCLUDES:

Round of golf with cart fees, green fees, (2) complimentary beverage tickets

Limit: 32 players | 8 teams

$2,500 EVENT SPONSOR

DEADLINE MAY 1, 2024

SPONSOR INCLUDES:

(1) Complimentary team, Sponsor sign at course, company logo on scorecard, company logo on conference sponsor signs

REGISTRATION

COMPANY DETAILS:

NAME

CONTACT

EMAIL *(for confirmation)*

PLAYER DETAILS:

Player 1

Player 2

Player 3

Player 4

In order to ensure your spot to play, payment must accompany your registration.

Please check one:

☐ Individual $175 ☐ Event Sponsor $2,500

☐ Team $650

PAYMENT METHOD:

☐ check enclosed ☐ credit card *(incurs 4% fee)*

credit card number

exp date CVV code billing zip code

**receipt will be emailed listed above*

Please complete this form and return to Carla Sims (CRSMCA Executive Director) at cbsims@crsmca.org by JUNE 1, 2024.

www.crsmca.org 704.556.1228

Presented by
CAROLINAS ROOFING AND SHEET METAL CONTRACTORS ASSOCIATION, INC.
PROFESSIONAL ROOFING CONTRACTORS COVERING THE CAROLINAS
PO Box 7643 704.556.1228
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2024 CAROLINAS roofing expo & annual meeting

JUNE 26-29

*details & registration coming in the Fall 2023

MARRIOTT RESORT MYRTLE BEACH GRANDE DUNES
MYRTLE BEACH, SC

Be an Event Sponsor

ELITE EVENT SPONSOR

(2) complimentary booths and qualification of GROUP OF (4) INDIVIDUALS; company logo on conference shirt; company logo on all registration material; complimentary full-page ad in *Carolinas Contacts* Magazine ☐ ***count me in!!***

$8,000
valued at $9,000

PROFESSIONAL EVENT SPONSOR

(2) complimentary booths ; company logo on conference shirt; complimentary half-page ad in *Carolinas Contacts* Magazine ☐ ***count me in!!***

$5,000
valued at $6,000

DIAMOND - LUNCH EVENT SPONSOR

(1) complimentary booth ; company logo on "Free Lunch" ticket; complimentary half-page ad in *Carolinas Contacts* Magazine ☐ ***count me in!!***

$3,000
valued at $3,500

SILVER - BEACH SOCIAL EVENT SPONSOR

(2) complimentary individual registrations; company logo on conference drinkware; complimentary business card ad in *Carolinas Contacts* Magazine ☐ ***count me in!!***

$1,500
valued at $2,300

BRONZE - VENDOR EXHIBITOR GOODWILL SPONSOR

(1) complimentary individual registration; complimentary business card ad in *Carolinas Contacts* Magazine ☐ ***count me in!!***

$800
valued at $1,000

All sponsors will receive an advertisement in the conference program; signage at the Carolinas Roofing Expo & Annual Meeting; listing in the Carolinas Contacts Magazine and on the CRSMCA website.

Company Name _____ Contact Name _____

Email [for receipt and/or confirmation] _____ Phone Number _____

PAYMENT DETAILS: ☐ *check enclosed* ☐ *credit card* *payment will incur 4% convenience fee

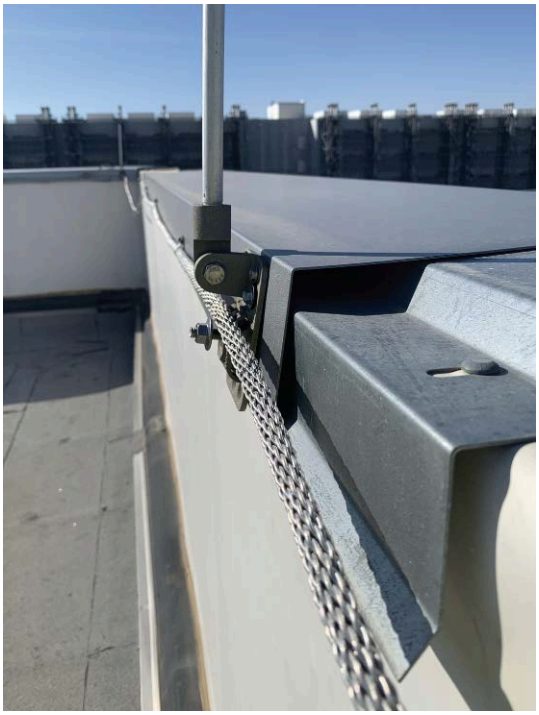
Credit Card No. _____ Exp Date _____ CVV Code _____ Billing Zip Code _____

Please return form with payment to CRSMCA prior to April 1, 2024! *email to cbsims@crsmca.org*

Questions or concerns: 704.556.1228 ext 402 | cbsims@crsmca.org *USPS mail to PO Box 7643 Charlotte, NC 28241-7643*

Lightning Protection: 2024 Building Code Clarifies Integration of Roofing and Lightning Protection Systems

Written by Brad Van Dam & Tim Harger, Roofing Elements Magazine (Fall 2023)



A single bolt of lightning can produce anywhere from 100 million to 1 billion volts and contains billions of watts of power according to National Geographic. According to the Insurance Information Institute, US insurance companies paid over $950 million in lightning-related claims to some 62,000 policy holders in 2022 alone.

"Up to 5% of all commercial insurance claims involve lightning, said Bret Peifer, president of Mr. Lightning of Colorado Springs, Colorado, and member of the board of directors for the Lightning Protection Institute (LPI). "But lightning damage is reliably preventable. A properly designed, installed, inspected, and certified lightning protection and grounding system can virtually mitigate this risk to policyholders and the public."

Lightning Protection Systems and Components

According to the National Fire Protection Association (NFPA), there are five fundamental components of a lightning protection system (LPS), including:

1. Air Terminals or Strike Termination Devices. Formally known as lightning rods, strike termination devices are installed on high points of a structure to intercept lightning before it hits the building and leads the electrical charge to the ground.

2. Cable Conductors. Heavy-duty metal cables used to connect the air terminals to provide a path for the lightning current to follow to the below-grade grounding electrode system.

3. Bonding Connections. Bonding connects the LPS to other internally grounded metallic systems on the roof, such as air conditioning units, vent stacks, and other components, to create a path for the lightning current.

4. Grounding Electrodes. Electrodes are typically 10-foot-long copper-clad steel rods, connected to the conductors and driven into the ground at multiple points around the building.

5. Surge-Protection Devices. Wherever power or signal wires enter a building, surge protection devices specifically configured for lightning are installed.

An LPS should always be installed, inspected, and certified by a certified professional and the installed system should meet the standards outlined in NFPA 780 Standard for the Installation of Lightning Protection Systems or in UL 96A Installation Requirements for Lightning Protection Systems.

Updated Code Language

The International Building Code (IBC) is updated in multiple phases, based on annual review cycles. In 2021, updates were made to Chapter 27, to include language referencing the industry's two standards — NFPA 780 and UL 96A.

Neither the updated language, nor the referenced standards, address how LPS should be specially secured to existing roofing components. This led SPRI, Inc., the trade association representing the manufacturers of single-ply roofing systems and the related component materials, to take action to clarify how LPS components should be secured to edge metal and other roofing components. The specific wording added to Section 2703 for the 2024 IBC, under Lightning Protection Systems, reads as follows:

Section 2703 Lightning Protection Systems

2703.2 Installation. Lightning protection systems shall be installed in accordance with NFPA 780 or UL 96A. UL 96A shall not be utilized for buildings used for the production, handling, or storage of ammunition, explosives, flammable liquids or gases, and other explosive ingredients including dust.

2703.3 Interconnection of systems. All lightning protection systems on a building or structure shall be interconnected in accordance with NFPA 780 or UL 96A, as applicable.

Roofing Industry Concerns & Current Code Language

"The new code specifically references NFPA 780 and UL 96A," said Amanda Hickman, president of The Hickman Group, a code consulting firm based in Plantation, Florida, representing SPRI, Inc. "This is the first time that those two industry standards are specifically mentioned, but neither address the impact that attaching lightning protection systems to the roof system may have on the tested components of the roof assembly, including the edge metal, roof membrane, and more."

In low slope commercial roofing, the edge metal system also serves as the roof's first line of defense when it comes to severe weather. Estimates from insurance carriers including Factory Mutual (FM) indicate that the failure of roof perimeters represents nearly 59% of roofing system failures in high wind events. Furthermore, edge metal components are required by code to be tested to resist specific wind loads. As such, there is a concern in the roofing community that an LPS may alter the wind load or system performance of the edge metal system.

"It is important that when lightning protection systems are used, they are installed with guidance from the roofing system or edge system manufacturer, to preserve the building envelope in a wind or weather event," said Hickman. "It's critical that these components maintain their integrity when lightning protection systems are installed.

"Furthermore, the new wording is focused on installing lightning protection, but there was nothing about maintaining or protecting the integrity of the roofing system, which is covered in Chapter 15 and a critical consideration in the process," said Hickman.

Code updates go through a series of review steps, including a Committee Action Hearing. Approval of a proposed change during a Committee Action Hearing is based on a simple majority vote by the Technical Committee.

At a hearing in April 2022, and to the surprise of the SPRI representatives there, several from the lightning industry spoke out against the proposed new language from SPRI. In the end, the ICC Technical Committee disapproved the proposed language in a resounding 13 to 1 vote.

There were several problems with the proposed language from the lightning industry's perspective. According to UL and NFPA standards, lightning protection must be installed around the outmost perimeter of a structure, fastened every 3 feet, and installed within 2 feet of the building's perimeter. The wording from the updated language was in direct conflict with the standards:

1. Lightning Rods are required to be within 2 feet of the outside corner. Not allowing the Lightning Protection industry to attach to the coping, would make this impossible.
2. Lightning Rods are required to be installed around the perimeter at 20-foot intervals, not just the corners. Depending on the coping width, every lightning rod could be affected.
3. Lightning Protection conductors are required to be fastened every 3 feet maximum. Fastening below the coping, puts a ton of holes in the membrane. If we use brackets, that is a ton of brackets which could be problematic when coordinating the exact layout, timing, warranty, etc.

"We were surprised by that hearing," said Hickman. "We had worked with several from the lightning industry and believed that everyone was on the same page, perhaps without recognizing the potential negative impact that the new wording would have on their industry."

Consensus Building

The next step was to develop new language and submit it for 'public comment.' During the next several months, SPRI reached out to several organizations including UL Solutions, LPI, the United Lightning Protection Association (ULPA), the Asphalt Roofing Manufacturers Association (ARMA), the National Roofing Contractors Association (NRCA), the National Electrical Manufacturers Association (NEMA), the Roof Coating Manufacturers Association (RCMA), and others to build consensus for acceptable new language.

Eventually, new language was submitted for public comment, and in the Fall of 2022, ICC held Public Comment Hearings and that language was approved by two-thirds of the ICC Governmental Voting Membership and ratified via a subsequent online vote.

"This is a significant update to the code," said Hickman. "We worked very hard with both the roofing and lightning protection industries to develop language that everyone could agree on. A key part of the language allows registered design professionals to direct the installation of lightning protection equipment when the roofing or edge system manufacture cannot be identified."

2024 Code Language

The new language, which will be added as new sub-sections in Section 1511 'Rooftop Structures,' reads as follows:

1511.7.6.1 Installation on metal edge systems or gutters. Lightning protection system components attached to ANSI/SPRI/FM 4435/ES-1 or ANSI/SPRI GT-1 tested metal edge systems or gutters shall be installed with compatible brackets, fasteners, or adhesives, in accordance with the metal edge systems or gutter manufacturer's installation instructions. When metal edge system or gutter manufacturer is unknown, installation shall be directed by a registered design professional.

1511.7.6.2 Installation of roof coverings. Lightning protection system components directly attached to or through the roof covering shall be installed in accordance with this chapter and the roof covering manufacturer's installation instructions. Flashing shall be installed in accordance with the roof assembly manufacturer's installation instructions and Sections 1503.2 and 1507 where the lightning protection system installation results in a penetration through the roof covering. When the roof covering manufacturer is unknown, installation shall be as directed by a registered design professional.

"In the end, working with SPRI, UL and others was critically important. We all had different perspectives and concerns that had to be addressed," said Peifer. "In true consensus building, no one is ever 100% happy with the outcome, and I think that's what happened here. But we worked together to get to wording that everyone can live with."

The 2024 IBC will be published in late 2023 and will be available for adoption by individual jurisdictions beginning in 2024. Moving forward, manufacturers of edge metal systems and roofing materials will need to work with the lightning protection industry to provide clear installation instructions for this equipment, in conjunction with the roofing system.

Getting closer to gutters

NRCA tests metal roof edge gutters and maintains certification programs

Written by Mark S. Graham, NRCA vice president of technical services, Professional Roofing (April 2023)

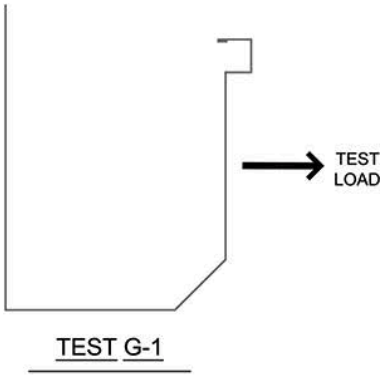
NRCA has conducted testing of metal roof edge gutters according to ANSI/SPRI GT-1-2016, "Test Standard for Gutter Systems." If you design, shop fabricate and/or install gutters for low-slope membrane roof systems, you should be aware of ANSI/SPRI GT-1, the building code requirement that requires gutter testing, and NRCA's gutter testing and certification programs.

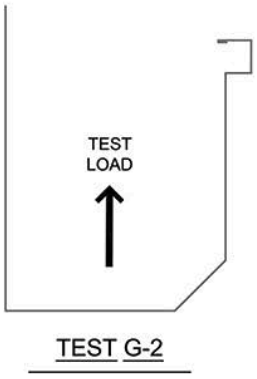
ANSI/SPRI GT-1 provides a methodology for testing static load resistances of exterior hanging gutters used with low-slope roof systems. Gutter resistances are tested in three directions as shown in the figure.

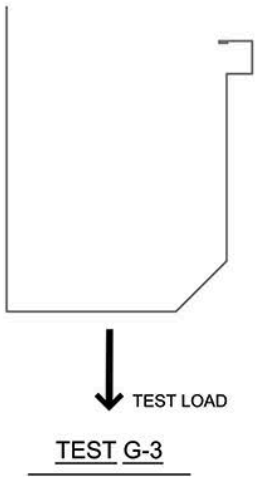
Test G-1 tests a gutter's resistance to a horizontal outward load, such as an outward wind load. Test G-2 tests a gutter's resistance to a vertical upward load, such as an upward wind load. Test G-3 tests a gutter's resistance to a downward load, such as the weight of water, snow and ice.

The test method does not assess a gutter's water-carrying capacity or water removal.

ANSI/SPRI GT-1 was developed and is promulgated as a national consensus standard by SPRI Inc. The test standard can be downloaded for free from spri.org







Code requirement

The International Building Code,® 2021 Edition, includes the following requirement specific to gutters: "**1504.6.1 Gutter securement for low-slope roofs**. Gutters that are used to secure the perimeter edge of the roof membrane on low-slope (less than 2:12 slope) built-up, modified bitumen, and single-ply roofs, shall be designed, constructed and installed to resist wind loads in accordance with Section 1609 and shall be tested in accordance with Test Methods G-1 and G-2 of SPRI GT-1."

The code requires gutters' tested resistances to be greater than their buildings' design wind loads, which typically are determined using ASCE 7-16, "Minimum Design Loads and Associated Criteria for Buildings and Other Structures." The code doesn't specifically require a safety factor be applied to tested resistances; however, use of a safety factor of 2.0 is good practice when using the allowable stress design method.

The code's gutter testing requirement is more limiting than ANSI/SPRI GT-1's scope and specifically applies to exterior perimeter edge gutters used with built-up, polymer-modified bitumen or single-ply membrane roof systems installed at less than 2:12 slope. Also, ANSI/SPRI GT-1's GT-3 downward resistance test does not apply to the code's requirement.

NRCA testing and certification

NRCA has tested a limited number of gutter profiles and materials using ANSI/SPRI GT-1.

NRCA tested five, Style D exterior 6- and 8-inch-wide gutter profiles fabricated from galvanized steel and aluminum using exterior gutter brackets or internal stiffeners depending on gutter size and material.

The results of NRCA's testing are provided in the shop-fabricated edge metal flashings section of nrca.net.

NRCA also has obtained and maintains third-party certifications for compliance with ANSI/SPRI GT-1 by UL Solutions and Intertek Testing Services based on this testing. Additional information about these certifications is available in UL's Product iQ® and Intertek Testing Services' SpecDIRECT™ applications, respectively.

Closing thoughts

NRCA is conducting additional testing and maintains its UL and Intertek Testing Services certifications to provide roof system designers with baseline data and fabricators and installers a means of complying with IBC 2021's requirements for gutters.

Additional information about shop-fabricated architectural metal flashings, including gutters, is provided in the Architectural Metal Flashing Section of The NRCA Roofing Manual: Architectural Metal Flashing and Condensation and Air Leakage Control—2022, which can be purchased or is available as a free member download at shop.nrca.net.

SHINGLES - TIPS & CODES [PART 1]

Flashing Best Practices - Tips on Installing Roll, Step and Roof-to-Wall Flashing

Written by Paul Casseri, Roofing Magazine, November-December 2023

Flashing plays a critical role in shielding a roof from water damage. Essential for leak-proof performance, flashing protects intersections of the roof plane and penetrations through the roof surface.

Installation methods and materials can vary based on region and weather. For example, some roofers may use aluminum instead of steel or copper. And some may use caulk on nail holes while others use tar. The most important rule of any roof installation is to follow ARMA guidelines.

Atlas Roofing partnered with professional contractor Mic Barringer, owner of Barringer Brothers Roofing in O'Fallon, Illinois, and asked him to share some of his best practices for flashing installation.

Roll Flashing

Installed along headwalls, roll flashing prevents water from penetrating a roof deck.

Roll flashing comes in a variety of metals, including steel and copper. These durable materials are typically used in Northern states, where roofs are prone to ice dams, and the Southeast, where roofs must withstand high winds and wind-blown rain.

Where Barringer lives in Illinois, the weather doesn't get worse than an occasional downpour, so he uses aluminum roll flashing.

"Where we are, we get down-directional rain — we don't get storms here," he explains. "We even tape our flashing, and people will criticize if it's not the way they do it — everybody does it differently. But here, this is 100 percent standard."

How To Install:

- Pull out the length of roll flashing needed for the headwall and extend it at least 4 inches past the sidewall.

Tip: Pull roll flashing from the center so it doesn't uncoil and can easily be reused.

- Adjust roll flashing so the center of the metal meets the bottom of the headwall, then nail it to the roof.

Tip: Push a hammer into the roll flashing as far as you can and slide it across the metal to create a 90-degree angle.

- If necessary, nail roll flashing to the headwall to help smooth out wrinkles.

Note: Barringer acknowledges that nailing is not a preferred practice, but it gets the length of roll flashing as flush to the headwall as possible. To keep water from shedding behind flashing, he uses Zip System Tape, although he points out that others may use Tyvek. Starting the overlap from the bottom up, he adheres flashing to the oriented strand board (OSB).

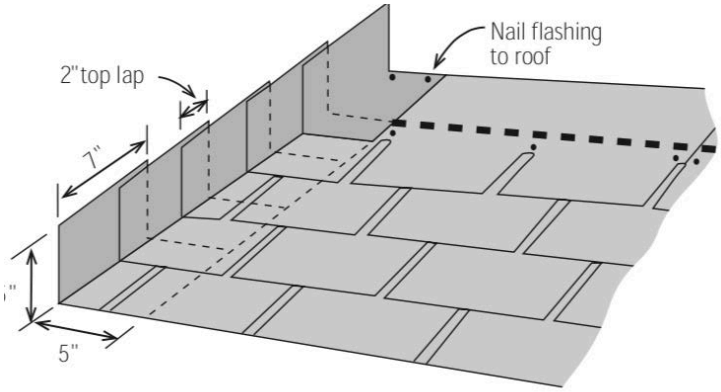
- Cut the extended section of roll flashing straight down, even with the sidewall and nail it to the roof deck, giving step flashing an area to drain off.

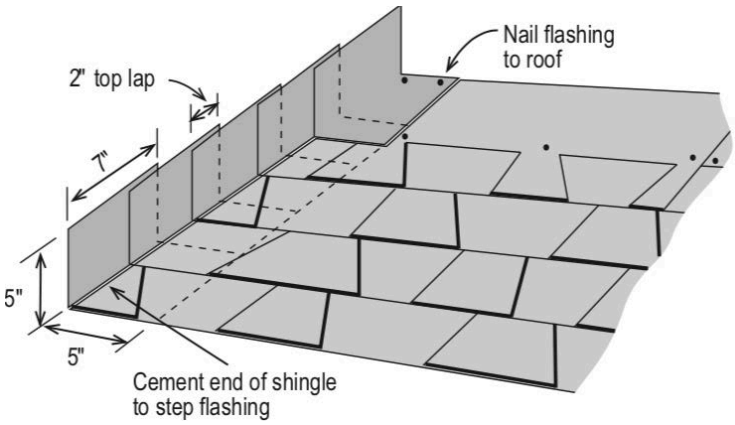
Tip: This method takes the place of pre-bents, which can be difficult to fit to the corner. If you end up with a pinhole, simply cover it up later with caulk.

Step Flashing

The small "steps" created by step flashing allow water to flow down the sidewall of a roof.

Like roll flashing, step flashing also comes in a variety of metals, with aluminum and copper being the most commonly used. Barringer uses pre-milled aluminum step flashing because it already has a perfect 90-degree angle bent into it. And because each shingle is going to drain off, he installs one piece of step flashing per shingle, based on ARMA guidelines.





In states such as Minnesota, Florida and the Carolinas, roofers typically use steel or copper step flashing and bend it themselves and may also solder pieces together to protect a roof from ice dams and rain, Barringer says.

Ice and water underlayment is commonly installed behind step flashing in states with heavy storms and snow. In O'Fallon, Barringer says they use ice and water on eaves and valleys, but they're not required to use it on protrusions because they don't get the type of weather that would warrant it.

How To Install:

- Start at the outside corner of the sidewall and align the first piece of step flashing with the bottom of the wall, folding the excess portion around the headwall.

Tip: If using aluminum, be gentle when handling it. Because it's a soft metal, it rips easily.

- Working up from the bottom of the sidewall, install step flashing below each shingle, coming down at least one-half inch to three-quarter inch over the previous piece to cover nail holes.
- For the inside corner, cut step flashing down the middle of one side (from the longest edge toward the fold), then fold one of the cut pieces behind the other to form another 90-degree angle. Trim bottom edge of step flashing so that it extends just past the exposure (to prevent it from sticking out beneath the roof-to-wall flashing — see the next section for details).
- Use Zip System Tape (or Tyvek) to secure the step flashing to the OSB, creating a watertight seal.

Roof-To-Wall Flashing

After roll flashing and step flashing are installed, roof-to-wall flashing can be added to give a roof a beautifully finished look.

Roof-to-wall flashing is almost always going to be steel because it's tough, Barringer says.

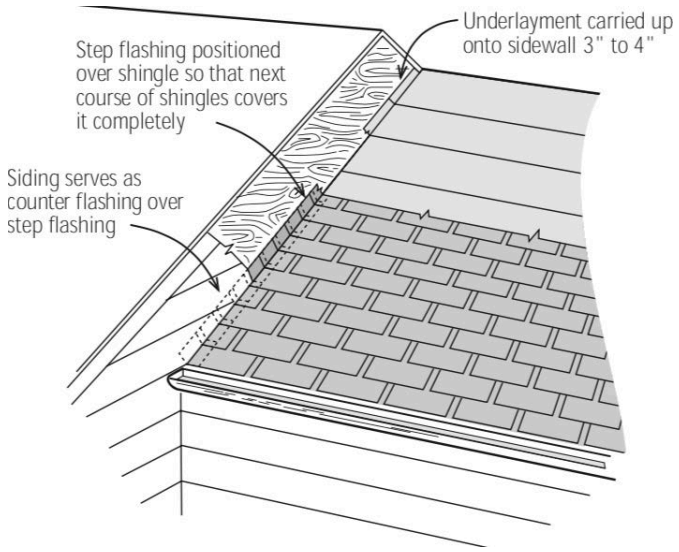
"The roof-to-wall that we do, it's got a double-bolted bead at the bottom of it, so it sticks up a little bit, but that's what reinforces it from the wind bending and denting it."

Barringer says roof-to-wall flashing is pretty hard to mess up. The only thing you don't want to do is anchor it to the roof instead of the wall because that would leave holes in the roof-to-wall flashing, which defeats its purpose, he explains.

How To Install:

- Cut roof-to-wall flashing to length and nail it to the headwall.

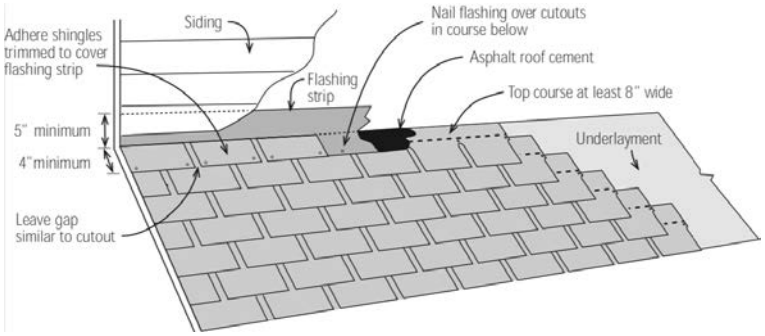
Tip: Barringer says you can seal nail holes if you like, but it's not necessary. The Zip System Tape (or Tyvek) and roll flashing are behind the roof-to-wall flashing, so water should easily flow out beneath it.



Proper Installation

When flashing is installed properly, it maintains the integrity of a roof, protecting against water damage. But what if the flashing isn't done right? Would a faulty install void a shingle manufacturer's warranty?

Barringer says manufacturers can't guarantee anything when you're using another company's product.



"If you have bad flashing job, it's not the shingles' fault that it failed, it's the bad flashing," he says.

For more information about proper flashing installation, refer to pages 69-77 of ARMA's Residential Asphalt Roofing Manual, 2014 Edition.

About the author: Paul Casseri is the product manager of the Roofing Shingles and Underlayment Division for Atlas Roofing Corporation. For more information, visit www.atlasroofing.com.

Understanding underlayment

Did you know I-Codes require enhanced underlayment in high-wind regions?

Written by Mark S. Graham, NRCA vice president of technical services, Professional Roofing (May 2023)

The *International Building Code,® 2021 Edition and International Residential Code,® 2021 Edition* require enhanced underlayment materials and application methods for asphalt shingle roof systems in certain situations, such as when installing them in low-slope applications or high-wind regions. Asphalt shingle roof system designers and installers should be aware of these enhancement requirements; highlights follow.

Low-slope applications

For asphalt shingle roofs with slopes between 2:12 and 4:14, IBC 2021 and IRC 2021 require a two-layer underlayment application. The underlayment is required to be applied as a 19-inch-wide starter parallel to and starting along the eaves. Next, full-width underlayment rolls must be applied shingle fashion starting at the eaves, overlapping successive sheets by 19 inches. End laps must be a minimum of 4 inches and offset by a minimum of 6 feet.

High-wind regions

IBC 2021 considers high-wind regions to be areas where the basic design wind speed is 140 mph or more. These areas include the Gulf of Mexico coastline; along the Atlantic coastline for Risk Categories II, III and IV buildings from Massachusetts to Florida; along the Alaskan coastline; and along portions of the Hawaiian coastline.

IRC 2021 considers residential buildings to be in a high-wind region when high-wind design, not IRC 2021's prescriptive design, applies. IRC 2021's high-wind design applies when the ultimate design wind speed is 140 mph or more.

When asphalt shingle roof systems are installed in high-wind regions, IBC 2021 and IRC 2021 require underlayment to be applied in two layers and comply with ASTM D226, "Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing," Type II (No. 30); ASTM D4869, "Standard Specification for Asphalt-Saturated Organic Felt Underlayment Used in Steep Slope Roofing," Type IV (No. 30); or ASTM D6757, "Standard Specification for Underlayment Felt Containing Inorganic Fibers Used in Steep-Slope Roofing."

Underlayment must be applied as a 19-inch-wide starter parallel to and starting along the eaves. Next, full-width underlayment rolls must be applied shingle fashion starting at the eaves, overlapping successive sheets by 19 inches. End laps must be a minimum of 4 inches and offset by a minimum of 6 feet.

Underlayment also must be attached with corrosion-resistant, minimum 0.083-inch-diameter, annular ring- or deformed-shank cap nails in a grid pattern of 12 inches between side laps and 6-inch on-center spacing at side and end laps. Metal caps must be a minimum 1-inch diameter and have a thickness of no less than 32 gauge. Power-driven metal caps must be at least 0.010 inch thick. Plastic cap nails must be a minimum 1-inch diameter and have a minimum outside edge thickness of at least 0.035 of an inch. Cap nails must be long enough to penetrate not less than ¾ of an inch into roof sheathing.

As an alternative to the high-wind region, two-layer underlayment requirement, IRC 2021 permits a self-adhering polymer-modified bitumen underlayment complying with ASTM D1970, "Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection," to be applied according to the manufacturer's installation instructions.

An additional alternative permits the use of minimum 4-inch-wide strips of self-adhering, polymer-modified bitumen underlayment to be applied over all joints in the roof deck sheathing followed by a single layer of underlayment. Attachment of the underlayment must comply with the code's attachment requirements for high-wind regions.

Synthetic roof underlayments do not specifically comply with IBC 2021 and IRC 2021. However, NRCA's code change proposals have been approved by the International Code Council,® so synthetic roof underlayments complying with ASTM D8257, "Standard Specification for Mechanically Attached Polymeric Roof Underlayment Used in Steep Slope Roofing," will comply with the upcoming IBC 2024 and IRC 2024.

Closing thoughts

Specialized, enhanced underlayment requirements apply to asphalt shingle roof systems used in low-slope applications and high-wind regions. If you design or install asphalt shingle roof systems in these conditions, you should be aware of these required underlayment enhancements.

You should consult IBC 2021 and IRC 2021 for the specific code requirements applicable to asphalt shingle roof systems and other roof system types. Online versions of IBC and IRC are accessible at codes.iccsafe.org, and IBC 2021, IRC 2021 and previous editions can be purchased from shop.iccsafe.org.

Additional information about asphalt shingle roof systems is provided in the Asphalt Shingle Section of *The NRCA Roofing Manual: Steep-slope Roof Systems—2021*. This manual is available electronically to NRCA members free of charge; hard copies can be purchased from shop.nrca.net.

Asphalt shingle guidance

ARMA's latest manual provides additional information for roofing contractors

Written by Mark S. Graham (NRCA Vice President of Technical Resources), Professional Roofing, October 2022

The Asphalt Roofing Manufacturers Association updated its residential asphalt shingle manual in 2022. If you design, procure or install asphalt shingles, you should be aware of ARMA's guidelines.

ARMA manual

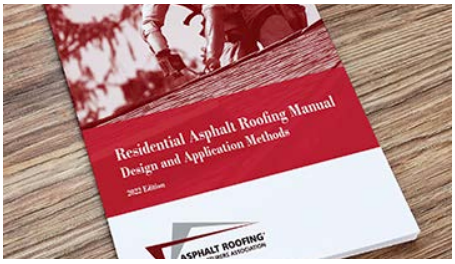
ARMA's Residential Asphalt Roofing Manual—Design and Application Methods, 2022 Edition updates and supersedes the previous edition of the manual published in 2014. Earlier editions were published in 2006, 1997, 1993, 1988 and 1984.

The manual primarily is intended to provide practical information for those who sell and install residential asphalt roofing products. For those who specify and distribute residential asphalt roofing products, it serves as a dependable reference for product selection and application.

The manual specifically states it represents manufacturers' views about recommended application procedures. However, individual asphalt roofing product manufacturers may have differing instructions for specific products. For example, the manual recommends asphalt strip shingles be applied across and diagonally up a roof's surface and cautions against straight-up, or "racked," application. However, it also indicates some asphalt shingle products are specifically designed to be installed in a racked fashion, so you should consult manufacturers for instructions specific to their products.

The manual provides general information about residential asphalt roofing, including how products are manufactured, design considerations, measuring and estimating how much material will be required, job preparation and roof deck preparation. For example, the manual indicates most asphalt shingle roof system installations will require anywhere from 2% to 10% excess shingles because of trim waste. The amount of trim waste depends on a roof's configuration, including the number of valleys, dormers, hips and ridges, and roof system penetrations.

New to the manual is a cautionary statement addressing sealed roof decks where strips of self-adhering membrane material are applied



over deck panel joints before underlayment application. The manual indicates sealing roof decks can affect ventilation performance of underlying attic space.

Separate chapters address the application of laminated shingles in new construction, three-tab strip shingles in new construction and shingles in reroofing. For example, the manual recommends that if a roof surface is broken by a dormer or valley, shingle application should start from a rake and work toward the break. If a roof surface is unbroken with no dormers or valleys, starting at the rake most visible from street level is recommended. For hip roofs and where both rakes are equally visible, starting from the center of the roof area and working toward both sides is recommended.

Additional chapters address flashings at walls, chimneys and penetrations, and hips and ridges. New to this edition are basic guidelines for rooftop solar mounts. The manual recommends flashing flanges be incorporated into rooftop solar mount penetrations that can be shingled in; caulks and sealants should not be relied upon to prevent water infiltration; and flashing penetration designs should withstand freeze-thaw cycling and prevent water infiltration resulting from ice dams. Also, wherever possible, rooftop solar mount-related wiring or piping penetrations through a roof surface should be avoided; routing wiring or piping over a roof edge is preferred. The manual also indicates manufacturers should be consulted for more detailed instructions.

Also, separate chapters provide information about nonadhered and self-adhering roll roofing, inspection of completed jobs, and roof system care and maintenance.

Closing thoughts

The updated ARMA manual represents manufacturers' consensus opinions of good roofing practices applicable to asphalt shingles and asphalt roll roofing. However, the manual notes it does not address the only possible methods to obtain satisfactory roof system performance.

During my review of the manual, I noticed it makes no mention of synthetic underlayment products, which some ARMA members supply and are in widespread use in the residential asphalt shingle market. When speaking with ARMA representatives about this omission, they acknowledged asphalt shingle manufacturers' opinions about synthetic underlayment products vary, so you should seek guidance from specific asphalt shingle manufacturers.

The manual can be purchased by accessing ARMA's website, asphaltroofing.org.

ARMA also publishes a series of technical bulletins addressing specific residential, polymer-modified bitumen and built-up roofing issues. These can be accessed at asphaltroofing.org/resources.

SAFETY TALKS

A Firm Foundation

Juan was a roofer and was climbing an extension ladder to access a 2-story roof of an elementary school building. However, the ladder had been set on a gravel surface and when Juan got approximately half-way up the ladder, the base of the ladder kicked-out, causing him to fall approximately 10 feet. The ladder was secured at the roof level, but when the base of the ladder kicked-out, the roof brackets that the ladder was attached to, pulled loose.

This incident caused me to reflect upon the parable in the Bible of the wise and the foolish builders. That parable illustrates that we are wise if we build our lives on a solid foundation. The same can be said for the foundation on which we place our ladders.

In the incident described above, the ladder was placed on a gravel surface. Whenever possible, you should place the ladder base on a firm, level, dry surface (i.e. a firm foundation). This may mean that the ladder needs to be placed in a less convenient location. However, it is better to take the extra time and effort to locate the best place for the ladder than to place it on an unstable surface. With that said, placing the base of the ladder on a firm, level, dry surface isn't always possible.

When the ladder must be placed on an unstable surface, such as gravel, secure the base of the ladder in addition to securing the top. This can be done by tying a rope or strap from the side-rails to a fixed object at about the height of the fifth rung from the bottom. Securing the base can also be accomplished by tying the base of the ladder to stakes in the ground. Either of these methods will help guard against the ladder slipping. If it's impossible for some reason to secure the ladder, get another employee to 'foot' it, by standing with one foot on the bottom rung and holding a side-rail in each hand.

In addition to unstable surfaces, sometimes the ground is simply too soft to provide a firm foundation for a ladder. Use the "heel test" to determine if the ground is hard enough. Stomp your heel on the ground. If it goes in more than one inch, the ground is too soft for a ladder. If the ground is not hard enough, you can use a piece of plywood or particleboard to make a firm, level base for the ladder. It also provides a place where workers can wipe the mud off their feet before climbing. However, when doing this, ALWAYS secure the base of the ladder to a fixed object or stakes in the ground, as described above.

Discuss with your Crew

Are any of the ladders on this job placed on an unstable or soft surface?

What methods are the most effective for securing the base of a ladder?

SAFETY TALK ATTENDEES:

CHARLAS DE SEGURIDAD

Una base firme

Juan era techador y estaba subiendo una escalera de extensión para acceder a un techo de 2 pisos del edificio de una escuela primaria. Sin embargo, la escalera había sido colocada sobre una superficie de grava y cuando Juan llegó aproximadamente a la mitad de la escalera, la base de la escalera se desprendió, lo que provocó que cayera aproximadamente 10 pies. La escalera estaba asegurada al nivel del techo, pero cuando la base de la escalera se salió, los soportes del techo a los que estaba unida la escalera se soltaron.

Este incidente me hizo reflexionar sobre la parábola de la Biblia de los constructores sabios y los insensatos. Esa parábola ilustra que somos sabios si edificamos nuestra vida sobre una base sólida. Lo mismo puede decirse de los cimientos sobre los que colocamos nuestras escaleras.

En el incidente descrito anteriormente, la escalera se colocó sobre una superficie de grava. Siempre que sea posible, debe colocar la base de la escalera sobre una superficie firme, nivelada y seca (es decir, una base firme). Esto puede significar que la escalera debe colocarse en un lugar menos conveniente. Sin embargo, es mejor tomarse el tiempo y el esfuerzo adicionales para ubicar el mejor lugar para la escalera que colocarla sobre una superficie inestable. Dicho esto, no siempre es posible colocar la base de la escalera sobre una superficie firme, nivelada y seca.

Cuando la escalera deba colocarse sobre una superficie inestable, como grava, asegure la base de la escalera además de asegurar la parte superior. Esto se puede hacer atando una cuerda o correa de los rieles laterales a un objeto fijo aproximadamente a la altura del quinto peldaño desde la parte inferior. Asegurar la base también se puede lograr atando la base de la escalera a estacas en el suelo. Cualquiera de estos métodos ayudará a evitar que la escalera se resbale. Si por alguna razón es imposible asegurar la escalera, pídale a otro empleado que la "pise", parándose con un pie en el peldaño inferior y sosteniendo una barandilla lateral en cada mano.

Además de las superficies inestables, a veces el suelo es simplemente demasiado blando para proporcionar una base firme para una escalera. Use la "prueba del talón" para determinar si el suelo es lo suficientemente duro. Pisa el suelo con el talón. Si entra más de una pulgada, el suelo es demasiado blando para una escalera. Si el suelo no es lo suficientemente duro, puedes usar un pedazo de madera contrachapada o un tablero de partículas para hacer una base firme y nivelada para la escalera. También proporciona un lugar donde los trabajadores pueden limpiarse el barro de los pies antes de escalar. Sin embargo, al hacer esto, SIEMPRE asegure la base de la escalera a un objeto fijo o estacas en el suelo, como se describió anteriormente.

Habla con tu tripulación

¿Alguna de las escaleras de este trabajo está colocada sobre una superficie inestable o blanda?

¿Qué métodos son los más efectivos para asegurar la base de una escalera?

ASISTENTES DE LA CHARLA DE SEGURIDAD: