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Leadership Means Being There

CRCA’s long history of leadership comes from a legacy of innovation, long-standing relationships amongst suppliers and contractors, consultants and others as well as a reputation for being there to keep conversations about the industry aimed at solutions for all. CRCA’s leaders participate locally, regionally, nationally and internationally. Why would a local trade association work on national and international issues?

In 1969, CRCA’s leadership worked with the Construction Specifications Institute (CSI) Chicago Chapter to update its specification manual for built-up roofing. The manual included drawings, specs and text about details for a best practice guide. The National Roofing Contractors Association (NRCA) Roofing Manuals eventually replaced the CRCA Documents as CRCA Members participate in the NRCA’s Manual Development Task Force, adding to their knowledge while sharing their own.

CRCA Past-President and Industry Affairs Chair, Tony Roque, stated, “We work nationally to get things done locally and vice versa.” CRCA’s Industry Affairs Committee works with NRCA in partnership to bring the field perspective to the code development process at the International Code Council. “ICC’s voting membership has no idea what we believe or want unless we talk to them directly.” That’s why CRCA is active nationally.

“It also helps to get things done locally by bringing a national perspective to the issues we work together to resolve,” states CRCA President George Patterson.

CRCA’s Vice President and Membership Co-Chair, Troy Wormley adds, “Participating nationally, at the State and local levels means we’re ahead of the issues, trying to work on common sense solutions for the building owner and manager.”

The recent Chicago Code Memorandum is part of that list of solutions CRCA has worked on diligently. “It’s what we get done together that makes CRCA building owner and manager.”

CRCA’s Vice President and Membership Co-Chair, Troy Wormley adds, “Participating nationally, at the State and local levels means we’re ahead of the issues, trying to work on common sense solutions for the building owner and manager.” The recent Chicago Code Memorandum is part of that list of solutions CRCA has worked on diligently. “It’s what we get done together that makes CRCA building owner and manager.”

At the end of the day all agree, “It’s what we get done together that makes CRCA the very best of the best.” Keep an eye on www.CRCA.org to learn more about the resources the Industry Affairs Committee and others have built. There’s a lot there!
The Purpose of Form I-9, What’s Required, and Why It’s Important to Maintain Accurate Records
By Cathy Lindfors

The Form I-9, Employment Eligibility Verification assists employers in verifying individuals who are authorized to work in the United States. Employers must complete a Form I-9 for every new employee hired after November 6, 1986. An individual is deemed as hired upon the commencement of employment. The job applicants need not complete Form I-9. Employers must complete a Form I-9 for all newly hired employees to verify their identity and authorization to work in the United States.

Employee’s Responsibility
New employees must complete Section 1 of a Form I-9 at or before the time of hire, but no later than the close of business on the first day of employment. The employee is held responsible for the accuracy of the information provided via their signature.

Someone may assist the employee if the employee cannot complete Section 1 without assistance or if the employee needs the Form I-9 translated. The preparer or translator must read the form to the employee, assist the employee in completing Section 1, and have the employee sign or mark the form in the appropriate places. The preparer or translator must then complete the Preparer/Translator Certification block on the Form I-9. The employee must be given Form I-9 by the employer and asked to provide either one original document on List A, or one original document on each of Lists B and C (see www.crdca.org for lists) within three business days of the date employment began. The employee can choose which documents they want to present from the List of Acceptable Documents.

Employer’s Responsibility
Employers are responsible for ensuring the completion of the entire Form I-9, including ensuring that the employee completes Section 1 in full when the employee begins to work. The employer should immediately examine all documents establishing each employee’s identity and eligibility to work. Employers must accept any document(s) (from the List of Acceptable Documents) presented by the individual, which reasonably appear to be genuine and to relate to the person presenting them. Employers may not specify which document(s) an employee must present. However, employers who participate in the USCIS E-Verify Program may only accept List B documents that have a photograph.

Employers may also require that employees make any necessary corrections to ensure proper completion of the form. Employers need not receive any documentation to substantiate the employee-provided information in Section 1. Additionally, pursuant to § 7 of the Privacy Act (8 U.S.C.A. § 552a), providing a Social Security number on the Form I-9 is voluntary for all employees unless the employer participates in the E-Verify Program, which requires an employee’s Social Security number for employment eligibility verification.

The employer must complete Section 2 of the form no later than the close of business on the new employee’s third day of employment. If an individual is hired for less than three business days, then Sections 1 and 2 of the Form I-9 must be fully completed at the time of hire, when the employee begins work. To ensure consistency and accuracy, employers should review the information provided in Section 1 against the documents produced by the employee for Section 2. If there is a discrepancy between the two sections, the employee should be given an opportunity to make necessary corrections.

Employers are not required to make copies of the documents that are produced for Section 2. However, employers may attach photocopies of documentation submitted to satisfy Form I-9 requirements to the employee’s Form I-9. This must be consistently applied to every employee, without regard to citizenship or national origin, should employers choose to make and attach photocopies.

In certain circumstances, employers must accept a receipt in lieu of a List A, List B, or a List C document if one is presented by an employee. Examples of receipts and other documents that serve as proof of temporary employment eligibility that employers can accept are the following:

- All employees may provide receipts for the application of a replacement document where the document was lost, stolen, or destroyed, which can be a List A, List B, or List C document. The employee must present the actual document for which the receipt was issued within 90 days from the date of hire, or for revalidation, within 90 days from the date employment authorization expires.
- Lawful permanent residents may provide the arrival portion of a Form I-94 or I-94A containing a temporary I-551 stamp and photograph as a receipt for a List A document. When the stamp expires, or if the stamp has no expiration, one year from date of issue the employee must present the actual Form I-551 (Permanent Resident Card, or green card).
- Refugees may provide the departure portion of Form I-94 or I-94A with an unexpired refugee admission stamp, as a receipt for a List A document. Within 90 days from the date of hire or for revalidation, the employee must present an unexpired Employment Authorization Document (Form I-766), or combination of a valid List B document and an unrestricted Social Security card.

A receipt indicating that an individual has applied for initial work authorization or for an extension of expiring work authorization is not acceptable proof of employment eligibility on the Form I-9. Additionally, receipts are never acceptable if employment lasts less than three business days.

Reconfirming Employment Authorization for Current Employees
Employers must reverify the employment eligibility no later than when an employee’s work authorization expires. For reconfirmation, Section 3 of the Form I-9 may be used; however, if Section 3 has already been used for a previous reconfirmation or update, a new Form I-9 must be used. If a new form is used, the employee’s name should be written in Section 1. Section 3 must be completed, and employers must retain the new form with the original.

Retaining Forms
Employers must retain completed Forms I-9 for all employees for three years from the date of hire or one year after the date employment is terminated, whichever is later. These forms may be retained in paper, microfilm, microfiche, or electronically.

To store Form I-9 electronically, employers may use any electronic recordkeeping, attestation, and retention system that complies with the DHS standards, which includes the most off-the-shelf computer programs and commercial automated data processing systems. However, the system must not be subject to any agreement that would restrict access to and use of it by an agency of the United States.

Note: The form must be available for inspection by authorized U.S. government officials. Employers will be provided with three business days’ notice prior to an inspection of the employers’ retained Forms I-9.

Paper Retention
The Form I-9 can be signed and stored in paper format. However, employers must reproduce a complete, blank Form I-9 and ensure that the employee receives the instructions for completing the form. When copying or printing the paper Form I-9, employers may reproduce the two-sided form by making either double-sided or single-sided copies. Employers may retain completed paper forms on-site or at an off-site storage facility for the required retention period, as long as the employer is able to present the Form I-9 within three days of an audit request from the DHS, the Office of Special Counsel for Immigration Related Unfair Employment Practices, or the Department of Labor officers.

Retaining Copies of Documentation Provided by Employee
Employers may choose to copy or scan documents presented by an employee, which the employer must retain with the employee’s Form I-9. However, retaining copies of documentation does not relieve the employer from the requirement to fully complete Section 2 of the Form I-9. If an employer chooses to retain copies of employee documentation, the employer may not just do so for employees of certain national origins or citizenship statuses, or the employer may be in violation of antidiscrimination laws.

Penalties
The Department of Homeland Security (DHS) is authorized to enforce the employment eligibility verification requirements. Employers who fail to properly complete, retain, and/or make available for inspections Forms I-9 may incur civil penalties between $216 and $2,156 for each employee for which the form was incorrect.

Knowingly Hire
Employers who knowingly hired unauthorized aliens or knowingly continue to employ aliens who have become unauthorized to work in the United States may be
ordered to cease and desist from such activity and pay the following for each unauthorized alien:

- **First Offense:** Between $539 and $4,313.
- **Second Offense:** Between $4,313 and $10,781.
- **Subsequent Offenses:** Between $6,469 and $21,563.

The DHS will consider an employer to have **knowingly hired** an unauthorized alien if the employer uses a contract, subcontract, or exchange, which is entered into, renegotiated, or extended to obtain the labor of an alien and knows the alien is not authorized to work in the United States.

Liability is also imposed when an employer uses a contract or subcontract — renegotiated or extended — to obtain the labor of an alien and knew the alien was not authorized to work in the United States.

**Criminal Penalties**
Criminal penalties of up to $3,000 in fines and imprisonment for up to six months are possible when a pattern or practice of knowingly employing unauthorized workers is demonstrated. People who use fraudulent identification or employment eligibility documents or documents that were lawfully issued to another person, or those who make a false statement or attestation for purposes of satisfying the employment eligibility verification requirements may be fined, imprisoned for up to five years, or both.

**Document Fraud**
If a DHS investigation reveals that an individual has knowingly committed or participated in acts relating to document fraud, the DHS may take action. The DHS will issue a Notice of Intent to Fine when it intends to impose penalties and persons who receive this notice may request a hearing before an administrative law judge. If the employer has failed to correct the violation within 10 days after notice from the DHS, or the employer is engaging in a pattern or practice of violations.

- **Good Faith Defense**
If an employer can demonstrate that they have, in good faith, complied with the Form I-9 requirements, then the employer has established a good faith defense with respect to a charge of knowingly hiring an unauthorized alien, unless the government can show that the employer had actual knowledge of the unauthorized status of the employee.

A good faith attempt to comply with the paperwork requirements of the law may be adequate notwithstanding a technical or procedural failure to comply, unless the employer has failed to correct the violation within 10 days after notice from the DHS, or the employer is engaging in a pattern or practice of violations.

Cathy Lindfors is a Human Resources Consultant for Connor & Gallagher OneSource. She brings over 25 years of HR experience and an expertise in the areas of labor law, consulting and compliance. Connor & Gallagher OneSource (CGO) as founded in 1997 and serves mid-sized businesses in the Chicago area, assisting with their Risk Management, Employee Benefits, HR Solutions, Payroll and Retirement Planning. Contact Rob Gaylord (rgaylord@cgocom.com) or Cathy Lindfors (infogocgo.com) for more information.

**OSHA**
OSHA reminds all that accounting for 350 of the 937 construction fatalities recorded in 2015. OSHA remind all that fatal falls continue to be a leading cause of death in the workplace, accounting for 350 of the 937 construction fatalities recorded in 2015. OSHA reminds all that fall hazards remain a leading cause of workplace deaths and injuries.

**Suggestions to Prepare for a Successful Stand-Down**

1. **Project to participate in the stand-down.** In past years, participants included commercial construction companies of all sizes, residential construction contractors, sub- and independent contractors, highway construction companies, general industry employers, the U.S. Military, other government participants, unions, employer’s trade associations, institutes, employee interest organizations, and safety equipment manufacturers.

2. **Prepare now for the May 8-12 National Safety Stand-Down.** In past years, participants included commercial construction companies of all sizes, residential construction contractors, sub- and independent contractors, highway construction companies, general industry employers, the U.S. Military, other government participants, unions, employer’s trade associations, institutes, employee interest organizations, and safety equipment manufacturers.

**What is a Safety Stand-Down?**
A Safety Stand-Down is a voluntary event for employers to talk directly to employees about safety. Any workplace can hold a stand-down by taking a break to focus on “Fall Hazards” and reinforcing the importance of “Fall Prevention.” It’s an opportunity for employers to have a conversation with employees about hazards, protective methods, and the company’s safety policies and goals. It can also be an opportunity for employees to talk to management about fall hazards they see.

**Who Can Participate?**
Anyone who wants to prevent falls in the workplace can participate in the Stand-Down. In past years, participants included commercial construction companies of all sizes, residential construction contractors, sub- and independent contractors, highway construction companies, general industry employers, the U.S. Military, other government participants, unions, employer’s trade associations, institutes, employee interest organizations, and safety equipment manufacturers.

**Partners**
OSHA is partnering with key groups to assist with this effort, including the National Institute for Occupational Safety and Health (NIOSH), the National Occupational Research Agenda (NORA), OSHA approved State Plans, State consultation programs, the Center for Construction Research and Training (CPWR), the American Society of Safety Engineers (ASSE), the National Safety Council, the National Construction Safety Executives (NCSE), the U.S. Air Force, and the OSHA Training Institute (OTTI) Education Centers.

**Suggestions to Prepare for a Successful Stand-Down**

1. **Try to start early.** Designate a coordinator to organize the stand-down. If you have multiple work sites, identify the team that will lead the stand-down at each site.

2. **Think about asking your subcontractors, owner, architects, engineers, or others associated with your project to participate in the stand-down.**
3. Consider reviewing your fall prevention program. This will help provide a more effective stand-down.
   a. What types of falls could happen:
      - Falls from ladders
      - Falls from a roof
      - Falls from a scaffold
      - Falls down stairs
      - Falls from a structural steel
      - Falls through a floor or roof opening
      - Falls through a fragile roof surface
   b. What needs improvement? Is your program meeting its goals? Are you experiencing fatalities, injuries, or near misses? Are employees aware of the company’s fall protection procedures?
   c. What training have you provided to your employees? Does it need revision?
   d. What equipment have you provided to your employees? Is better equipment available?

4. Develop presentations or activities that will meet your needs. Decide what information will be best for your workplace and employees. The meeting should provide information to employees about hazards, protective methods, and the company’s safety policies, goals and expectations. Hands-on exercises (a worksite walkaround, equipment checks, etc.) can increase retention.

5. Decide when to hold the stand-down and how long it will last. Decide if the stand-down will take place over a break, a lunch period, or some other time.

6. Promote the stand-down. Try to make it interesting to employees. Some employers find that serving snacks increases participation.

7. Hold your stand-down. Try to make it positive and interactive. Let employees talk about their experiences and encourage them to make suggestions.

8. Follow up. If you learned something that could improve your fall prevention program, consider making changes.

NEW OSHA Silica Rule DELAYED to Sept. 23, 2017
OSHA has a new rule on silica exposures in the construction industry coming in June. The CRCA and Chicagoland Roofing Council both have helped NRCA fund research on Silica exposures for the roofing industry. The research is underway, according to NRCA’s Tom Shanahan.

The new rule from OSHA would require engineering controls to keep workers from breathing silica dust. The rule is comprised of two standards, one for Construction and one for General Industry and Maritime.

OSHA estimates that the rule will save over 600 lives and prevent more than 900 new cases of silicosis each year, once its effects are fully realized. The Final Rule is projected to provide net benefits of about $7.7 billion, annually.

About 2.3 million workers are exposed to respirable crystalline silica in their workplaces. This includes two million construction workers who drill, cut, crush, or grind silica-containing materials such as concrete and stone, and 300,000 workers in general industry operations such as brick manufacturing, foundries, and hydraulic fracturing, also known as fracking. Responsible employers have been protecting workers from harmful exposure to respirable crystalline silica for years, using widely-available equipment that controls dust with water or a vacuum system.

Key Provisions include the reduction in the permissible exposure limit (PEL) for respirable crystalline silica to 50 micrograms per cubic meter of air, averaged over an 8-hour shift.

The new regulation requires employers to: use engineering controls (such as water or ventilation) to limit worker exposure to the PEL; provide respirators when engineering controls cannot adequately limit exposure; limit worker access to high exposure areas; develop a written exposure control plan, offer medical exams to highly exposed workers, and train workers on silica risks and how to limit exposures.

It provides medical exams to monitor highly exposed workers and gives them information about their lung health and flexibility to help employers — especially small businesses — protect workers from silica exposure.

Both standards contained in the final rule took effect on June 23, 2016, after which industries have one to five years to comply with most requirements. Construction effective date was June 23, 2017, one year after the effective date – but was extended to September 23, 2017.

OSHA Issues Recommended Practices for Safety and Health Programs in Construction
On December 1, the Occupational Safety and Health Administration (OSHA) issued Recommended Practices for Safety and Health Programs in Construction to help industry employers develop proactive programs to keep their workplaces safe. The published recommendations are advisory only and do not create any new legal obligations or alter existing obligations created by OSHA standards or regulations.

The publication encourages contractors to create a safety and health program using several simple steps that include:
- Training workers on how to identify and control hazards
- Developing responses to possible emergency scenarios in advance

The recommended practices account for new materials, equipment, and techniques; more diversity among workers; more temporary and contract workers; and an increased risk for occupational musculoskeletal disorders resulting from a sedentary lifestyle and aging workers.

From the extension announcement, “OSHA expects employers in the construction industry to continue to take steps either to come into compliance with the new permissible exposure limit, or to implement specific dust controls for certain operations as provided in Table 1 of the standard.”

According to OSHA, construction employers should also continue to prepare to implement the standard’s other requirements, including exposure assessment, medical surveillance, and employee training.

To learn more, visit www.OSHA.gov.
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CRCA Research in Action – New Concrete Decks and Moisture
By Matt Dupuis, PhD, PE

In the past decade, issues with moisture intrusion into low slope roof systems from concrete roof decks has become a major concern in the roofing industry. The problem we have is that concrete as a construction material arrives at the job site with a large water content (10 – 15 lbs. / ft³). This amount of water is a typical range, and will depend on things like water-to-cement ratio, aggregate type, admixtures and placement method, among others. Of this water, portions of it will either be chemically hydrated into the solid concrete, evaporate from the surface, or remain free moisture to migrate. Our concern in the roofing industry is the free moisture available to migrate. Making this worse, is that this free moisture is almost always latent; remaining hidden below the surface of the concrete roof deck.

Ultimately, the problem comes to a head when someone has to decide when the concrete roof deck is ready to receive a roof system. In typical scenarios, recently, this has been when the General Contractor demands the Roofing Contractor perform. So, what can the roofing contractor do to ensure the concrete is dry enough for a roof?

To check the concrete moisture, historically, a person could use an electronic moisture meter, the mat test (ASTM D4263 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride). All of these methods can and normally will give a false indication that the concrete is dry. The problem is the moisture below the surface of the concrete, even when the surface looks and feels dry.

There is one test method, for determining the moisture inside the concrete roof deck, that has shown some promise. It is the use ASTM F-2170 probes (ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes). These probes are drilled into the concrete deck and assess the moisture inside the slab, not at the surface. The flooring industry has been successfully using these probes for decades now. However, these probes and their returned readings are designed for interior use, basically at room temperature. Adapting them for use on roof decks, outdoors, in all weather, is not a simple task.

So this has left the roofing industry in a conundrum. When is it appropriate to place a roof system on a new concrete roof deck? This situation has led to numerous roof failures and legal actions by any and all involved parties.

With this problem in mind, the roofing industry began a research project in 2016 to begin to answer the question about concrete moisture and roof installation. The project sponsors include The National Roofing Contractors Association, The Chicago Roofing Contractors Association, The Canadian Roofing Contractors Association, GAF Materials Corp and Soprema. The research project is ongoing and will continue through at least 2017. The work that has been done to date can be divided into Phases. These Phases are as follows

Phase 1
Construction of test concrete roof slabs and preparation for instrumentation of temperature and humidity, at depth. These slabs are located at SRI Consultants facility in Wisconsin. The slabs were configured for measuring and examining numerous variables. These variables, were:

1. Aggregate type (Regular weight vs. Light weight)
2. Surface finish (Magnesium float vs Hard steel trowel)
3. Rewetting (Outdoor vs Lab)
4. Drying Capacity (Steel form deck vs Stripped form)
5. Moisture Level in slabs over time
6. Time required for instruments to measure moisture levels

Large scale outdoor slabs were prepared and instrumented for a factorial experiment to evaluate variables 1-5 and compared against slabs prepared and maintained in lab environment. Numerous smaller concrete specimens were prepared for weekly installation of instrumentation to measure variables 5 & 6; these specimens will be both outdoors and in a lab environment. In total, over 200 instruments were utilized with these slabs over the course of this phase. In addition to the temperature and humidity...
measurements of the slabs, an onsite weather station recorded concurrent data during this phase.

Photo 1. A large general contractor was utilized to provide concrete slab assembly, placement and finishing. These slabs are the exterior slabs, exposed to the full weather at SRI Consultants facility in Wisconsin. SRI Photo

Phase 2
R&D Services Inc. in Tennessee, provided laboratory measurement of hygrothermal material properties for the concrete utilized in Phase 1. The measured concrete values were made specifically at 28 and 60 days. Hygrothermal numbers for such “green” concrete, to our knowledge, has not been done by others. These hygrothermal material numbers were utilized in Phase 3 of the work.

Phase 3
This material data was entered into the commercially available WUFI Pro software. WUFI Pro is a finite element heat and moisture transport modeling program. This type of software can simulate the moisture movement to, from and within our concrete roof decks, and then after we roof over it. If properly used and calibrated, these models are very powerful tools to analyze the moisture problems we are seeing in industry.

Using the WUFI software, SRI Consultants, with the assistance of justSmartSolutions, the software vendor’s United States partner, prepared and calibrated hygrothermal simulations. These simulations were expanded to a matrix of roof systems and locations in North America. To date hundreds of WUFI simulations of moisture levels of concrete decks and roofs exposed to simulated weather have been completed. The simulations answered several questions and even raised new ones.

This research effort is ongoing and continues. The work that will be done in 2017 will involve validation of the modeling by utilization of more full scale concrete decks, with actual roofs installed over them and appropriate instrumentation, at SRI’s research facility.
Based on the results of these hundreds of simulations, it became apparent that the use of a vapor retarder in northern climates kept the roofing materials at reasonable moisture levels year round. This occurred with both regular weight concrete decks and light weight structural concrete decks. Therefore, given the currently available research data and observations from it, this researcher is recommending that: Unless the Designer of Record approves in writing that the use of a vapor retarder may not meet this level.

Matt Dupuis, PE, PhD, is a principal at SRI, Inc., Middleton WI. Matt can be reached at MDupuis@sri-engineering.com

IEC 2018 and Technical Issue Update
Presented by Mark Graham, NRCA
Written by CRCA Staff

Mark Graham, NRCA’s Vice President, Technical Services, presented at the 2017 CRCA Trade Show & Seminars on the changes to the 2015 version that results in the 2018 International Energy Conservation Code (IECC) and various technical issues in the roofing industry.

IECC & IBC 2018
Graham mentioned that the NRCA and other groups including CRCA participated in the 2015 Group A Code Development Cycle. In Group A are the International Building Code (IBC) Fire Safety (F1S), IBC-General (G), the International Existing Building Code (EBIC), the International Plumbing Code (IPC), and the International Mechanical Code, (IMC). The hearings took place:

- Committee Hearings - Memphis, TN – April 2015
- Public Comment Hearing - Long Beach, CA – September 2015
- Online Governmental Consensus Vote – Fall, 2015

Then, during 2016, the Group B Code Development cycle took place. In the Group B were the IECC, IBC- Structural (S) chapters, the International Residential Code (IRC), and the International Fire Code (IFC). The schedule for Cycle B was:

- Committee Hearings - Louisville, KY – April 2016
- Public Comment Hearing - Kansas City, MO – October 2016
- Online Governmental Consensus Vote
- Publications is estimated to be Fall of 2017
- Adoptions likely beginning in 2018

The roofing related changes in the 2018 International Energy Code include:

- No changes in air barrier requirements
- No changes in R-Values requirements
- No changes in roof reflectivity requirements

In the ASHRAE 90.1-13 to ASHRAE 90.1-16, a change took place that allowed single-ply membrane roof systems to be a deemed-to-comply air retarder.

In the IBC Structural section, the ASCE 7-16 was adopted into the 2018 version of the Building Code, Chapter 16. In the ASCE 7-16, public review draft, the following items change:

- Revised basic wind speed map
- Changes (and new) pressure coefficients
- Revised perimeter and corner zones

As a result of the new ASCE 7-16 standard in the IBC, expect higher field, perimeter and corner uplift pressures to come as the IBC 2018 is adopted.

As a result, the fastening pattern for roof heights ≤ 60, gable roofs ≤ 7 degrees, will change the fastening pattern as shown below.

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IECC 2018 and Technical Issue Update
Presented by Mark Graham, NRCA
Written by CRCA Staff

IECC & IBC 2018
Graham mentioned that the NRCA and other groups including CRCA participated in the 2015 Group A Code Development Cycle. In Group A are the International Building Code (IBC) Fire Safety (F1S), IBC-General (G), the International Existing Building Code (EBIC), the International Plumbing Code (IPC), and the International Mechanical Code, (IMC). The hearings took place:

- Committee Hearings - Memphis, TN – April 2015
- Public Comment Hearing - Long Beach, CA – September 2015
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Then, during 2016, the Group B Code Development cycle took place. In the Group B were the IECC, IBC- Structural (S) chapters, the International Residential Code (IRC), and the International Fire Code (IFC). The schedule for Cycle B was:

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Using the WUFI software, SRI Consultants, with the assistance of justSmartSolutions, the software vendor’s United States partner, prepared and calibrated hygrothermal simulations. These simulations were expanded to a matrix of roof systems and locations in North America. To date hundreds of WUFI simulations of moisture levels of concrete decks and roofs exposed to simulated weather have been completed. The simulations answered several questions and even raised new ones.

This research effort is ongoing and continues. The work that will be done in 2017 will involve validation of the modeling by utilization of more full scale concrete decks, with actual roofs installed over them and appropriate instrumentation, at SRI’s research facility.
Based on the results of these hundreds of simulations, it became apparent that the use of a vapor retarder in northern climates kept the roofing materials at reasonable moisture levels year round. This occurred with both regular weight concrete decks and light weight structural concrete decks. Therefore, given the currently available research data and observations from it, this researcher is recommending that: Unless the Designer of Record approves in writing that the use of a vapor retarder may not meet this level.

Matt Dupuis, PE, PhD, is a principal at SRI, Inc., Middleton WI. Matt can be reached at MDupuis@sri-engineering.com

IEC 2018 and Technical Issue Update
Presented by Mark Graham, NRCA
Written by CRCA Staff

IECC & IBC 2018
Graham mentioned that the NRCA and other groups including CRCA participated in the 2015 Group A Code Development Cycle. In Group A are the International Building Code (IBC) Fire Safety (F1S), IBC-General (G), the International Existing Building Code (EBIC), the International Plumbing Code (IPC), and the International Mechanical Code, (IMC). The hearings took place:

- Committee Hearings - Memphis, TN – April 2015
- Public Comment Hearing - Long Beach, CA – September 2015
- Online Governmental Consensus Vote – Fall, 2015

Then, during 2016, the Group B Code Development cycle took place. In the Group B were the IECC, IBC- Structural (S) chapters, the International Residential Code (IRC), and the International Fire Code (IFC). The schedule for Cycle B was:

- Committee Hearings - Louisville, KY – April 2016
- Public Comment Hearing - Kansas City, MO – October 2016
- Online Governmental Consensus Vote
- Publications is estimated to be Fall of 2017
- Adoptions likely beginning in 2018

The roofing related changes in the 2018 International Energy Code include:

- No changes in air barrier requirements
- No changes in R-Values requirements
- No changes in roof reflectivity requirements

In the ASHRAE 90.1-13 to ASHRAE 90.1-16, a change took place that allowed single-ply membrane roof systems to be a deemed-to-comply air retarder.

In the IBC Structural section, the ASCE 7-16 was adopted into the 2018 version of the Building Code, Chapter 16. In the ASCE 7-16, public review draft, the following items change:

- Revised basic wind speed map
- Changes (and new) pressure coefficients
- Revised perimeter and corner zones

As a result of the new ASCE 7-16 standard in the IBC, expect higher field, perimeter and corner uplift pressures to come as the IBC 2018 is adopted.

As a result, the fastening pattern for roof heights ≤ 60, gable roofs ≤ 7 degrees, will change the fastening pattern as shown below.

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The point about this is that proper wind design – which is oftentimes avoided – is getting even more complicated. Check out NRCA’s Roof Wind Designer Program at NRCA.net for help.

Polyisocyanurate (Polyiso) Insulation

Polyiso discussions included the issues with knit lines, thickness and dimensional stability concerns. As to knit lines in the insulation, it has been noticed that there seems to be variability appearing in the insulation thicknesses. The ASTM Standard for Polyiso currently allows a 1/8” variance in thickness.

NRCA’s interim recommendations for handling Polyiso knit line, thickness and dimensional stability concerns are:

• Measure polyiso thickness upon delivery
• Look for knit lines and board unevenness
• Contact manufacturer and NRCA if you see any issues

Shingles

NRCA has been testing products for compliance with the test standard results as listed on product data sheets. At times, shingles manufactured to meet certain specs as outlined in standards such as ASTM D3462 may or may not meet the required values. In Sept., 2016, NRCA recommended that users of asphalt shingles should consult with manufacturers and suppliers regarding specific products’ compliance with ASTM D3462.

Manufacturers Installation Instructions

Section 1506, Materials, of the 2015 International Building Code states:

1506.1 Scope. The requirements set forth in this section shall apply to the application of roof-covering materials specified herein. Roof coverings shall be applied in accordance with this chapter and the manufacturers’ installation instructions. Installation of roof coverings shall comply with the applicable provisions of Section 1507. (IBC 1506.1, 2015)

What this means is that it is basically the law, where this code is adopted, to install roofing products to the manufacturers’ installation instructions.

The manufacturers have invested heavily in research and development to invent many products. While many advertisements may say, “this product is easy to install”, it’s not that simple. Some manufacturers’ installation instructions for roofing systems can be 200+ pages. That’s a lot to know.

As a result of the new code language stating that the manufacturer’s installation instructions shall be used, NRCA has formed a Manufacturers Spec Review Task Force. The task force will review the manufacturers’ installation instructions.

In the meantime, NRCA’s interim recommendations are:

• Access and file the manufacturers’ application instructions
• Review the instructions
• Exclude not applicable information
• Manufacturers’ instructions should be the basis for quality assurance and quality control
• Contact NRCA with any questions

Mark S. Graham is the Vice President, Technical Services for the National Roofing Contractors Association (NRCA) in Rosemont, IL, 60018

Email: mgraham@nrca.net

Mark holds a Bachelor of Science degree in Architectural Engineering from the Milwaukee School of Engineering. Graham joined the NRCA in 1993. His responsibilities include developing and implementing the association’s technical positions, responding to inquiries for technical assistance, serving as the association’s liaison with outside organizations, and developing and maintaining the association’s technical publications, including The NRCA Roofing Manual. Graham is also a contributing editor for NRCA’s Professional Roofing magazine.

He is a recipient of ASTM International’s William C. Cullen Award for distinguished contributions and leadership to the field of roofing and waterproofing. He is also a recipient of the Midwest Roofing Contractor Association’s James Q. McCawley Award for outstanding service and dedication to the roofing industry. Also, he is a recipient of the NorthEast Roofing Contractor Association’s Clarence J. Carr Roofing Industry Award for his service, contribution, and dedication to the roofing industry.

Graham is an active member of ASTM International and serves on the executive committee of Committee D08-Roofing and Waterproofing. He is also an active member of the American Society of Heating, Refrigerating and Air-Conditioning Engineers Inc., International Code Council, and National Fire Protection Association.
Overview of Building Envelope Projects at ORNL

Presented by Andre Desjarlais, Oak Ridge National Laboratory's Director of Building Envelope Programs

Compiled by CRCA Staff

Andre Desjarlais has presented at the Chicago Roofing Contractors Association’s Trade Show & Seminars for over 10 years. Rod Petrick, CRCA’s Event Co-Chairman states “We have been very pleased to have attracted such talent to CRCA each January. This year, we ordered weather suitable for a person from Knoxville, TN!” Desjarlais shared what’s going on at the USA’s basic research facility, the Oak Ridge National Laboratory (ORNL) and the Building Envelope Research Laboratory (ORNL) and the Building Envelope Research

Research Projects

The ORNL is currently researching:

- Web-Based Tools that estimates energy savings associated with air tightness
- Cost savings with cool roofs in northern climates
- Online Tools that defines the hygrothermal risk associated with a building envelope selection

Air Leakage Calculator

The objective of the project is to create an easy-to-use online tool using the simulation results of the best-in-class building energy simulation tool, EnergyPlus, and the whole building airflow simulation tool CONTAM. The Online calculator estimates the potential energy and cost savings from improvements in airtightness of buildings with a goal of further increasing market penetration of air barriers.

CONTAM (1) is a project of the National Institute of Standards and Technology, (NIST). The CONTAM program is a multizone indoor air quality and ventilation analysis computer program designed to help determine:

- (a) Airflows: infiltration, exfiltration, and room-to-room airflows in building systems driven by mechanical means, wind pressures acting on the exterior of the building, and buoyancy effects induced by the indoor and outdoor air temperature difference.
- (b) Contaminant concentrations: the dispersal of airborne contaminants transported by these airflows; transformed by a variety of processes including chemical and radio-chemical transformation, absorption and desorption to building materials, filtration, and deposition to building surfaces, etc.; and generated by a variety of source mechanisms, and/or
- (c) Personal exposure: the predictions of exposure of occupants to airborne contaminants for eventual risk assessment.

CONTAM can be useful in a variety of applications. Its ability to calculate building airflow rates and relative pressures between zones of the building is useful for assessing the adequacy of ventilation rates in a building, for determining the variation in ventilation rates over time, for determining the distribution of ventilation air within a building, and for estimating the impact of envelope air-tightening efforts on infiltration rates and associated energy implications. The program has also been used extensively for the design and analysis of smoke management systems. The prediction of contaminant concentrations can be used to determine the indoor air quality performance of buildings before they are constructed and occupied, to investigate the impacts of various design decisions related to ventilation systems and building material selection, to evaluate indoor air quality control technologies, and to assess the indoor air quality performance of existing buildings. Predicted contaminant concentrations can also be used to estimate personal exposure based on occupancy patterns.

The US Department of Energy (DOE) Commercial Prototype Building is run through a ‘calculations flow’. Maximum HVAC/ventilation airflow rates based on EnergyPlus, to show building envelope airtightness, while understanding its building details and weather expected where the structure is located. The CONTAM adds the HVAC/ventilation airflow rates. Then, the EnergyPlus simulation puts in the hourly infiltration rates from CONTAM to build the energy use and cost as a function of the building’s air tightness. The user specifies the city, building type, size, before and after retrofit airtightness, and energy rates in the area to result in the potential energy cost savings of a tight building envelope.

Why build a tool to research air infiltration?

Research has shown that in 2010, infiltration was responsible for four quads of space conditions primary energy use in both the commercial and residential occupancies. Infiltration accounted for greater energy losses than any other component of the building envelope including fenestration/windows. Infiltration is responsible for over 4% of all the energy used in USA. The research shows that the payback for the addition of air barrier systems would have a payback that is much less than five years.

The calculator uses inputs that are straight forward. The user specifies the city, building type, size, before and after retrofit airtightness, and energy rates in the area to result in the potential energy cost savings of a tight building envelope.

The tool will interpolate between the baseline air leakage rates 6.2 L/s/m²(1.22 CFM/ft²) and 0.25 L/s/m²(0.049 CFM/ft²) at 75 Pa. No extrapolation is allowed.

The chart below illustrates preliminary results of a building where the calculator has been used to demonstrate HVAC energy cost for a prototype standalone retail building in Chicago.

Cool Roofs and Cost Savings in Northern Cities

The purpose of this study is to see if lighter colored roofs in northern climates bring quantifiable energy savings to buildings. One way to analyze this concept is by looking at peak energy demand. In some cities, peak energy demand times mean a premium price for the energy. Not all cities have peak energy demand surcharges.

In some cities, peak demand surcharges can be over half of the typical commercial electric bill. It makes sense, for those who live in cities that have such charges, to try and drive their demand for energy into time periods where there is not so much demand for energy.

Part of this discussion is whether or not it makes sense to have a cool roof in a northern climate. The peak demand concept means customers are charged a premium for energy used during times when everyone is using energy.
According to ORNL, peak demand happens in both Phoenix and Minneapolis during the summer months.

The study used two construction conditions and insulation levels at International Energy Conservation Code (IECC) 2012 mandated levels. For Minneapolis, that zone 6. When installed on a commercial occupancy, low sloped roofs, that translates into about 8:30. A roof solar reflectance level of 0.60 with a thermal emittance of 0.90 was set. The savings generated from the pure science experiment for roofs with new insulation is shown below.

Using the BSA, subject matter experts input moisture-durable design guidelines based on field data and simulations. The simulations allow probabilistic wall assembly evaluations by considering all possible parameter variations. The BSA then analyzes the builders’ proposed design to yield the most robust assembly.

The program asks the user for the location geography of the structure type of wall. The BSA tool results in a better informed decision regarding energy efficient and moisture durable building envelope solutions. The tool provides analysis for the wall assembly and gives suggestions about the wall components.

A wall that has been properly engineered with respect to insulation, cladding, climate, air space and more will provide a ‘green light’ with the ORNL program tool. The values from these tools can provide guidance to the user on wall design. Wall designs have become much more critical as the drive to save energy builds tighter buildings.


This article was compiled by CRCA Staff from Andre Desjarlais’ presentation at the 2017 CRCA Trade Show & Seminars. Desjarlais is Program Manager of the Building Envelope Systems Research at Oak Ridge National Laboratory, in eastern Tennessee.

1. NIST.gov, Energy and Environment Division, The Energy and Environment Division develops measurement science, predictive models, and performance metrics to improve the energy efficiency of building components and systems, reduce building related CO2 emissions, enhance the quality of the indoor environment, and improve the building design and construction process through the integration of information, communications, sensing, and automation technologies.

Another activity taking place at ORNL is the high-performance moisture-managed envelope systems and the new research on a “Building Science Advisor” (BSA). The idea behind the Building Science Advisor is to provide a tool that helps the building designer assemble a structure that is air tight while avoiding the formation of a sick building along the way.

ORNL and the Building America team are developing an online decision-making tool to mitigate market uncertainty regarding the durability of high-performing building envelope systems.
CRCA Helps Save Illinois Roofing Contractor Licensing in Illinois

CRCA and its members have promoted legislation to recognize professionalism within the roofing industry. A proposal was brought forward in February to repeal the roofing industry licensing act. Through CRCA Legislative Consultant Margaret Vaughn and CRCA members’ actions, CRCA helped prevent the repeal of the Illinois Roofing Contractor Licensing Act as proposed this spring.

CRCA Members along with Margaret Vaughn, CRCA’s legislative consultant, attended a fundraiser for Senator Iris Martinez, IL Senate Licensing Chair, in March. Senator Martinez recognized CRCA members at the fundraiser and shared her negative experience with a contractor that was not licensed.

CRCA Chicagoland Women in Roofing Active

The CWIR Committee gives a big thank you to CRCA Member Manufacturers, Karnak and Hunter Panels, for the plant tours. In addition to plant tours, they packaged food for African Children through the “Feed My Starving Children” Charity, participated in a fundraising gala at WINGS, held roundtable discussions and had a booth in the lobby at the CRCA Trade Show & Seminars. They visited Bennett & Brousseau Roofing, Inc. to learn about various components of the roofing system from CRCA President, George Patterson in April. This CRCA CWIR Committee continues to make a difference in the roofing industry. Interested in joining them? Contact Alyssa@crca.org, for more information.

CRCA Emerging Leaders

The CRCA Emerging Leaders group had a great reception to kick off the New Year at Drury Lane Hilton Suites in January. At the March event, CRCA Member companies, Carlisle Waterproofing and Velux, sponsored the event and gave presentations to the group about what’s new and coming in the roofing industry.

Visit www.CRCA.org to get a full calendar of all the Emerging Leaders upcoming events. All generations welcome! To get on the Emerging Leaders email list, contact alyssa@crca.org.

CRCA Membership Meeting – February, March, and April

CRCA’s Industry Affairs Committee presented the 2015 International Energy Conservation Code and Chicago Code Memorandum to the 130+ members attending the February session. In March, Greg Scannell, from CRCA Member Firm Safety Check Inc., presented a Safety Update. Scannell’s report included the Top 10 OSHA Citations issued by the three Chicago Area OSHA Offices as well as Milwaukee. For the 476 violations issued, Residential Construction Fall Protection was the most common cited, with over $1,147,601 in penalties issued. He also cited an industry publication chart that reminded attendees that almost 20% of all fall fatalities occur from a height of less than 15 feet.

In March, Chris Thomas, from Ogletree Deakins provided 19 Compliance Education for attendees, including who is required to complete the forms, how to address corrections and the frequent severe penalties for non-compliance.


day 3 of the show was dominated by the narrowing of the New Form I-9 Required as of January 22, 2017

Further, in Section 2, employers will find a new “Citizenship/Immigration Status” field in the first line with numbers one through four, which correlate to the employee’s selected citizenship or immigration status entered in Section 1. For further information, see the article in the issue of CRCA Today or download Thomas’ presentation as well as all CRCA Membership Meeting presentations in the Members Only section on www.crca.org. Not a member? Join CRCA for this and many other member benefits.

CRCA Scholarship Dinner

CRCA’s Scholarship Committee receives applications for CRCA’s Scholarships presented each year at the May CRCA Membership Meeting. Don’t miss the presenter, Michael T. Good, a NASA Astronaut, brother of CRCA Member, Dave Good, (S.J. Mallein/Firestone Building Products).

IRE Sets Records

The International Roofing Expo (IRE), Las Vegas, attendance and booth count was very well attended this year. This year’s educational sessions from NRCA’s Mark Graham and SRI’s Matt Dupuis, built upon programs presented at the CRCA Trade Show & Seminars this January. Don’t miss 2018’s IRE in New Orleans. Watch www.TheRoofingExpo.com for details.

CRCA Thanks Legislators

CRCA’s work at the State of Illinois Legislature does not come all by itself. CRCA thanks the many legislators who have helped build professionalism and protected roofing consumers in Illinois through the Illinois Roofing Contractor Licensing Act. The Hon. Dan Burke was recognized recently by CRCA’s Industry Affairs Committee for his 20+ year’s support of professionalism in roofing through this legislation. Thanks to Burke and many others who support CRCA.

CRCA Covers the State of Illinois

CRCA Leaders traveled to Springfield on April 4th to provide an Illinois Roofing Symposium to Central Illinois Roofing Contractors, Architects and Code Officials. Presenters included Frank Marino, CSP (Safety Check, Inc.), Bill McHugh, CRCA Executive Director, Rod Petrick, CRCA Past President and member of the State of Illinois Licensing Board and Margaret Vaughn, IL Roofing Legislative Consultant. They spoke on Roof Safety, Energy Code and Licensing. These leaders also met with Illinois Legislators for a reception following the symposium, to create and continue dialogue on Illinois Roofing issues.
National Green Building Standard™ Update Process Underway
The 2018 National Green Building Standard (ICC/ ASHRAE-700) development process is now underway. The first meeting of the Consensus Committee will be held April 18-19, 2017, in Washington, D.C.


U.S. District Court Ruling – Codes and Standards & Copyright Infringement
The United States District Court for the District of Columbia (Hon. Tanya S. Chutkan) granted a motion for summary judgment filed by a number of standard development organizations (SDOs), including the National Fire Protection Association (NFPA), ASTM International and ASHRAE.

The court’s ruling permanently enjoins Public.Resource.org from its previous systematic infringement of numerous SDO copyrighted codes and standards. The Public.Resource.org website took the codes and standards that are normally purchased and simply published them online, where the infringement took place.

The ruling vindicates the long-standing public-private partnership pursuant to which government entities may, if they choose, incorporate, by reference, high quality safety codes and standards.

The history of not-for-profit SDOs developing voluntary consensus standards goes back more than a century. SDOs, not resource-constrained governmental agencies, underwrite the substantial costs of developing standards. SDOs pay for the standard development process and invest in new standards with the money earned selling and licensing their copyrighted works.

OSHA’s Anti-Retaliation Rule Became Effective on December 1, 2016
OSHA’s electronic injury submission rule titled, “Tracking of Workplace Injuries and Illnesses,” includes an anti-retaliation provision which was to become effective on August 1, 2016.

OSHA announced it would delay implementation of this portion of the rule until November 1, 2016, in order to allow it more time to conduct additional research and provide education to employers.

The new deadline was published by OSHA in response to a request from a federal judge who is presiding over a lawsuit challenging the rule. Significantly, on November 28, 2016, the federal judge presiding over the lawsuit denied the request for the preliminary injunction. Consequently, the anti-retaliatory provisions of the new rule became effective on December 1, 2016.

Contractors should carefully review their policies concerning postaccident drug and alcohol testing policy and the reporting of accidents, as well as their safety incentive programs, to ensure compliance with the new rule.

Firestone Acquires Gaco
Firestone Building Products Company, LLC ("Firestone") announced that it has reached a definitive agreement to acquire Gaco Western ("Gaco"), a silicone roofing systems and provider of waterproofing and spray foam insulation solutions for a variety of commercial and residential applications.

The acquisition strengthens Firestone’s industry leadership in commercial roofing and offers positions in residential and commercial building products.

Founded in 1955, Gaco is privately-owned and headquartered in Seattle, Wash. With brands including GacoFlex, GacoRoofFoam and GacoWallFoam, the Company produces silicone polyurethanes, epoxies and acrylics for liquid coating of roofs, decks and waterproofing products that protect pedestrian surfaces, concrete, metal and plywood, and open and closed-cell foam products which protect and insulate buildings. All Gaco products are made at its manufacturing, research and development facility in Waukesha, Wl.

For more information, visit www.firestoncoco.com.

New ASTM President
Katharine “Kathie” Morgan has begun serving as president of ASTM International. Morgan leads a team that supports thousands of members, customers, partners, and other stakeholders worldwide. She succeeds James A. Thomas, who served in the role for 25 years.

Morgan is a 33-year veteran of ASTM International. She served as executive vice president for the past two years. Prior to that, she was vice president of Technical Committee Operations.

Morgan is a board member of the American National Standards Institute’s Board of Directors, the Council of Engineering and Scientific Executives, the International Consumer Product Health and Safety Organization, the Society for Standards Professionals (SES), the American...
A new ASTM International Standard will help reduce the amount of used roofing materials that go to landfills. ASTM’s Committee on Roofing and Waterproofing (D08) developed the standard, which is available as D8013-16, “Standard Guide for Establishing a Recycle Program for Roof Coverings Roofing Membrane and Shingle Materials”.

According to ASTM member, Joseph Schwartz of Canton, MA, the new guide will help building owners who want to minimize their environmental impact by eliminating waste during roof replacement. The standard will help them and their contractors compare the costs for disposal versus recycling.

In addition, manufacturers will use the standard to determine whether recycled roofing materials could be a cost-effective ingredient in creating new roofing products. Visit www.ASTM.org to buy the new standard.

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For All Your Mounted Cranes & Equipment Needs

Society of Association Executives, and a former member of the Standards Council of Canada’s Standards Development Organization Advisory Committee.

NEW ASTM Standard
A new ASTM International Standard will help reduce the amount of used roofing materials that go to landfills. ASTM’s Committee on Roofing and Waterproofing (D08) developed the standard, which is available as D8013-16, “Standard Guide for Establishing a Recycle Program for Roof Coverings Roofing Membrane and Shingle Materials”.

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The Contractor Members of the Chicago Roofing Contractor Association install all types of roofs, including reflective single ply, modified bitumen, built-up, gravel, reflective coatings, shingle, slope, slates and tile, vegetative garden or photovoltaic coverings. From formation following the Great Chicago Fire of 1871, CRCA Members have moved with the times and technology, yet continue to maintain some of the same goals set forth over 140 years ago. To find a CRCA Professional Contractor, visit www.CRCA.org.

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CRCA Contractor Members

- Solaris Roofing Solutions, Inc. (630) 659-5400
- Star-Dry Roofing (773) 849-0079
- Star's Roofing & Siding (708) 448-4100
- Star Roofing & Siding Co. Inc. (773) 588-6550
- Sterling Commercial Roofing (815) 626-7744
- Stewart Roofing Company (773) 264-1754
- Style by Carden Exteriors Inc. (847) 859-2019
- Style Construction Inc. (847) 934-9810
- Sullivan Roofing Inc. (847) 908-1000
- Tiweed Roofing & Sheet Metal (847) 437-2710
- Total Roofing & Construction (708) 201-7550
- Trels Roofing & Reroofing (708) 422-7204
- Trinity Roofing Service, Inc. (708) 385-7830
- Unified Roof Restoration Inc. (708) 788-2019
- Union Roof Co., Inc. (815) 945-2141
- Van Doren Roofing Inc. (847) 228-5800
- W.B.R. Roofing Company, Inc. (847) 407-6787
- Waukegan Roofing Company, Inc. (847) 623-1625
- Weatherguard Roofing Company (847) 888-3008
- Windward Roofing & Construction Inc. (773) 638-6580
- Zero Construction, Inc. (847) 964-8100

CRCA Associate Members

- A & D Products (630) 921-2022
- A.C.T. Metal Deck Supply (312) 978-7000
- ABC Supply Company, Inc. (847) 396-1414
- Acorn (847) 844-1700
- Acme (708) 723-9800
- Acme Roofing, Inc. (847) 924-4550
- Acme Cage Co., LLC (847) 514-0479
- Admit Marketing, Inc. (847) 605-5447
- Advanced Architectural Sheet Metal & Supply (231) 861-0530
- Advanced Polymer Technology Corporation (724) 452-1330
- ALCOS Products, LLC (312) 823-7500, x102
- All-Craft Building Products Corp. (312) 357-0433
- Arlington Hi (773) 873-2900
- Arlington Heights (847) 772-6560
- Aquifer (802) 602-6173
- Aircast, Inc. (847) 599-9770
- Aircast, Inc. (847) 513-0505
- APOC (773) 484-6364
- Architectural Building Solutions (630) 402-9188
- Armant Laminates, LP (913) 317-7800
- ATAS International, Inc. (610) 702-8445
- Atlas Roofing Corporation (800) 677-1476
- Barge Terminal Trucking, Inc. (630) 499-5565
- Bear Creek Corp (847) 927-3481
- Beridge Mfg. Co. (847) 808-7415
- Big Rock Supply (312) 350-2300
- Bizc, Inc. (501) 354-0595
- Bizc, Inc. (847) 610-9593
- Blue Ridge Fiberboard, Inc. (847) 806-8810
- Bone Roofing Supply, Inc. (847) 628-8170
- BMP Insurance (816) 695-1308
- Carlisle Syn-Teg (800) 477-6832
- Castle Metal Products (847) 806-4540
- Cedar Shake & Shingles Bureau (203) 822-7700
- Certainteed Roofing Products (800) 628-5611
- CHEM LINK INC. (800) 824-1681, x204
- Chicago Metal Supply & Fabrication (773) 227-4200
- ChicagoLand Roofing Supply, LLC (630) 697-6285
- Chris Architectural Metals (847) 729-9229
- Classic Gutter Systems LLC (269) 665-2700
- CLEANWRAP Interior Protection Systems (888) 597-3334
- CNB Insurance Lombard/Chicago (312) 719-3006
- Columbia Green Technologies (503) 964-2718
- Comprehensive Roofing Solutions Inc. (857) 499-9485
- Construct Sales, LLC (630) 922-3920
- Connor & Gallagher Inc. (708) 712-4793
- Cordex (269) 807-3000
- Crsirn Insurance Group (847) 294-0665
- DC Construction Co., Inc. (847) 920-3020
- DFO Roofing (708) 338-3534
- D-MAC Industries (800) 879-3622
- DA Sales & Marketing, Inc. (630) 370-2747
- Duraform, Inc (847) 735-1992
- DVi Architects, Inc. (913) 599-0876
- DECRA Roofing Systems (800) 258-9740, x189
- DERRIGIUM Americas, Inc. (708) 390-5045
- Disposal Alternatives (630) 973-3300
- Division 2-23 Contractors, Inc. (630) 659-0800
- DSI Insurance Services, Inc. (847) 934-0100
- Duraplan (847) 599-9797
- Duratek Roofing (312) 289-4080
- Duratek Roofing (847) 296-4141
- Education-Picnometry (866) 659-0439, x5561
- ECO-Roofs, LLC (215) 477-7408
- EcoStar LLC (847) 211-7170
- Emergency Safety Supply (847) 409-9660
- Eagleyn (312) 320-6300
- EBSys (847) 808-7876
- Everest Systems (773) 733-4383
- Everroof Products (702) 864-9961
- FCS Central (312) 233-6330
- FirstClean Building Products (815) 345-4292
- FlashX Manufacturing Inc. (706) 794-5036
- FleetMetics (606) 848-2235
- Franklin International/Tristead (614) 445-1885
- Guac Western (724) 51-0527
- GAF Material Corporation (312) 779-1669
- Garlock Chicago (847) 321-9465
- Gart Roofing Products & Services Corp. (708) 757-6733
- GCP Applied Technologies (617) 498-6075
- General Roofing & Building Supply (758) 544-1444
- Geoval / Kael Seal (800) 348-7415
- Georgia-Pacific Gypsum LLC (404) 655-2992
- Giffre Brothers Cronae (773) 506-7200
- Gulliflage Supply (708) 759-0977
- Hico Inc. (312) 145-3933
- Hurt & Cooley Roof Products-Panels (414) 629-6462
- IAC Research (512) 300-1662
- Henry Company (736) 300-2463
- Hines Supply (847) 357-7700
- Housesworth Daylighting Solutions, LLC (847) 729-0235
- Hub International (815) 65-4100
- Hunter Panels (888) 744-1128
- ICP Group (792) 220-9300, x118
- IRO (724) 804-9995
- Illinois Custom Copper Install Copper & Sheet Metal Fabrication (615) 609-8741
- Industrial Cork Company, Inc. (630) 349-2093
- Inland Coverings (515) 993-4251
- Insplays Roofing Products (404) 952-7004
- Insulation Solutions, Inc. (686) 498-6562
- INSULFOAM (404) 212-6461
- Interior Protection Inc (630) 330-4270
- International Hildib, Inc. (603) 47-2543
- International Leak Detection, LLC (606) 202-6E32
- JJ Superior Metal, Inc. (708) 544-3375

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