



Asphalt shingle guidance

ARMA's latest manual provides additional information for roofing contractors

by Mark S. Graham

Earlier this year, the Asphalt Roofing Manufacturers Association updated its residential asphalt shingle manual. 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

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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. 🌐📄🔍

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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.





Businesses should prepare for cybersecurity threats

Cybersecurity threats are a concern for all businesses, but small companies especially are vulnerable, according to uschamber.com.

Following are three cybersecurity threats companies should prepare for now.

1. **Ransomware attacks.** These attacks are a top threat most small businesses face. In a ransomware attack, hackers access a company's data and hold it hostage until a ransom is paid. WannaCry ransomware is well-known and typically is delivered through phishing emails that appear legitimate. The Small Business Administration recommends individuals verify web addresses before downloading email attachments; avoid giving out personal information about a company to unsolicited callers; and avoid giving out financial information via email.

2. **Man-in-the-middle attacks.** This type of attack happens when hackers intercept and possibly alter incoming traffic. The hacker sends the traffic on to the intended recipient, who does not realize someone has read or altered their traffic; hackers can redirect the victim's browser to a malicious website where they can steal and even change sensitive information. Public Wi-Fi networks often are used for man-in-the-middle attacks because the router does not verify its identity. Individuals can combat these attacks by using endpoint authentication such as two-factor authentication to make it more difficult for hackers to intercept traffic.

3. **Lack of awareness.** The biggest threat most businesses face is their lack of awareness regarding cybersecurity. Ninety percent of all cyber attacks result from human error, so hackers count on employees to make mistakes and allow access to sensitive information. Business owners should train employees regarding selecting strong passwords and how often these passwords should be changed; knowing they never should install unauthorized software; methods to stay safe online and on social media; strategies for responsible email usage; keeping their devices secure while they are at the office and away; and knowing what to do when a cyberattack occurs.

NRCA now offers a comprehensive cyber liability insurance program. For information, contact NRCA Vice President of Enterprise Risk Management and Executive Education Tom Shanahan at tshanahan@nrca.net.

ASTM International approves standard for below-grade waterproofing systems

ASTM International's Committee D08 on Roofing and Waterproofing has approved a new standard that provides guidelines and limitations for below-grade foundation waterproofing systems.

Standard D8425 specifically covers applications of needle-punched sodium bentonite geotextile waterproofing systems.

According to ASTM International member Stacy Byrd, the standard provides general installation instructions for architects and consulting engineers to consider when developing project drawings and specifications. Until now, there have been no ASTM International standards covering these types of below-ground waterproofing systems.

"It has been important to draft and finalize a standard for needle-punched sodium bentonite geotextile waterproofing systems because they have been in commercial use for 30 years and there are now multiple manufacturers that produce and market this material type of waterproofing," Byrd says. "The new standard will aid users with general installation, application, material limitations and site conditions to consider when specifying this type of waterproofing."

Standard D8425 is available at astm.org/d8425-22.html.

PIMA issues new and updated polyisocyanurate technical resources

The Polyisocyanurate Insulation Manufacturers Association has issued several new technical and performance bulletins, as well as updated versions of previously issued bulletins. PIMA publishes bulletins to increase the building industry's understanding of polyisocyanurate insulation, its applications and benefits.

One new resource, Technical Bulletin 204, Comparing Fire Performance of Polyiso and Competitive Board Insulation Products, compares certain fire performance advantages for polyisocyanurate, mineral wool board, XPS and EPS insulations. A new performance bulletin, Comparing the GWP of Common Exterior Wall Insulation Materials: An Overview of Global Warming Potential, assesses the global warming potential effect of polyisocyanurate wall insulation versus other common insulation products used for exterior walls across the products' full life cycles.

Technical Bulletin 112, Moisture Generated During Construction, and Technical Bulletin 108, Tapered Insulation Systems, have been updated. Technical Bulletin 112 highlights how moisture generated during construction can affect roof systems and construction practices that can be implemented to reduce problems associated with

moisture in systems. Technical Bulletin 108 offers performance details about polyisocyanurate tapered roof insulation products and systems, why tapered insulation is used and design considerations for installing tapered insulation systems.

"PIMA strives to be a go-to resource for the roofing, building envelope and general construction industries for technical information on the performance of polyisocyanurate insulation products," says PIMA Technical Director Marcin Pazera. "Maintaining a current library of bulletins is a key part of our strategy to serve the industry and its stakeholders."



To access more than 40 PIMA technical and performance bulletins, go to professionalroofing.net.