



March 16, 2011

**To: Members of the Florida Building Commission and Roofing TAC**

Please accept as a comment the attached pages that support the FRSA position that elastomeric coating of asphalt shingles is not good roofing practice.

The pages include:

**1. Asphalt Roofing Manufacturers Association Technical Bulletin No. 227**

*ARMA Technical Bulletin 227 is the official position of the following shingle manufacturers -*

1. Certainteed Corp
2. TAMKO Roofing Products
3. Atlas Roofing Corp

**2. GAF-ELK Corp Technical Bulletin No. 151-09**

*GAF owns the largest share of the asphalt shingle market in Florida*

**3. "Blueprint" (a publication of a law firm that practices in the construction area)**

**4. An article published in the December 31, 2010 Miami Herald addressing the issue**

**5. "Myth Busting" – an article published in the April 2010 issue of Professional Roofing**

*Professional Roofing is the official publication of the National Roofing Contractors Association*

We believe the attached documentation is strong evidence supporting the position held in 2010 through Florida Building Code Modifications R3814, R3799, and R3800.

Thank you for taking the time to review the attached.

Regards,

Lisa Pate, CEM

FRSA Executive Director

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FRSA – Florida's Association of Roofing Professionals



# technical bulletin

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## *Field Coating of Installed Asphalt Shingles*

ARMA strongly advises caution when considering the application of any type of field applied coating over installed asphalt shingles. There are many types and formulations of roof coatings so it is important to always consult the shingle manufacturer before proceeding with any type of coating. Be aware that some asphalt shingle manufacturers specifically disallow field coating of their manufactured shingles. Additionally, state or local building codes may not approve this practice as the field applied coatings will drastically change the aesthetics of the roof and may change the performance characteristics of the roof assembly.

Problems reported after asphalt shingle roofs have been field coated include unsightly curling and/or cupping of the shingles which may lead to premature failure and leaks. In addition, non-permeable roof coatings may create a vapor retarding layer; if this occurs, it increases the possibility of rotting of the roof deck caused by moisture accumulation in the attic space.

It has been suggested by some that the use of field applied coatings over existing asphalt shingles will produce overriding benefits to the home owner – such as longer roof life, energy-use reduction (solar reflectant versions), or remediation of small roof leaks. There is little or no available documentation showing the extent to which the field coating of asphalt shingles provides any of these benefits, but the risks and concerns mentioned above remain very real.

When considering coating of installed asphalt roof shingles, be sure to:

- Obtain approval from the asphalt shingle manufacturer before proceeding with a specific roof coating.
- Check with the local building department to determine whether this application is allowed.

**DISCLAIMER OF LIABILITY:** This document was prepared by the Asphalt Roofing Manufacturers Association and is disseminated for informational purposes only. Nothing contained herein is intended to revoke or change the requirements or specifications of the individual roofing material manufacturers or local, state and federal building officials that have jurisdiction in your area. Any question, or inquiry, as to the requirements or specifications of a manufacturer, should be directed to the roofing manufacturer concerned. **THE USER IS RESPONSIBLE FOR ASSURING COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS.**

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# Steep Slope Technical Point

TO: Steep Slope Sales  
Team, GAF-Elk Contractors,  
GAF-Elk Distributors.

FROM: Contractor  
Services

No: 151-09

DATE: 02/06/09

SUBJECT: *Field Coating of Installed GAF-ELK Asphalt Roofing Shingles*

<p><i>Can Coatings Be Applied To Installed Asphalt Shingles?</i></p>	<p><b>Not Recommended...</b> GAF-Elk does not recommend field application of coatings to asphalt roofing shingles and cautions that this type of application can have adverse affects on asphalt shingles.  <b>Not Tested...</b> There are many types and formulations of roof coatings being marketed. GAF-Elk has not evaluated these for use on asphalt roofing shingles and can not accept any responsibility or liability for their use.  <b>Before Coating An Asphalt Shingle, Use Caution...</b> Thoroughly investigate all aspects of this type of application before applying a field coating to asphalt roofing shingles. Consult a qualified design professional to assess potential roof system performance issues, such as ventilation or permeability.</p>
<p><i>Why Would You Field Coat An Asphalt Roofing Shingle?</i></p>	<p><b>Coating Manufacturers' Claims Include:</b></p> <ul style="list-style-type: none"> <li>• <b>Longer Roof Life...</b> Life of a weathered shingle roof can be extended by coating the roof.</li> <li>• <b>Energy Savings...</b> Reflective coatings can reduce roof temperatures that reduces air conditioning load.</li> <li>• <b>Repair of Small Leaks...</b> Small leaks can be repaired by coating the roof.</li> </ul> <p><b>These Claims Are Unsubstantiated by GAF-Elk...</b> GAF-Elk has not evaluated or substantiated these claims.</p>
<p><i>What Are Some Of The Problems Associated With Field Coating Asphalt Shingles?</i></p>	<p><b>Aesthetics...</b> Coatings will drastically change the appearance of the roof.  <b>Fire Rating...</b> GAF-Elk fiberglass asphalt shingles are UL Class A listed for fire resistance. If a coating that is not UL listed is applied to a roof, the roof will no longer be UL Class A listed.  <b>Shingle Performance...</b> Some coatings have been reported to cause asphalt shingles to curl, cup, crack, split or blister that can result in premature failure and leaks.  <b>Compatibility...</b> Some coatings can soften the asphalt in shingles and cause it to slide or drip down the roof.  <b>Moisture Entrapment...</b> Depending on the coating, it can act as a vapor retarder and interfere with moisture vapor flow through the roof system. This can trap moisture in the roof assembly or attic space resulting in deck rot and/or mold growth.  <b>Code Compliance...</b> Some local building codes and homeowners' associations do not approve of coating installed asphalt roofing shingles. Check with local building departments or other authorities having jurisdiction in your community before coating your roof.</p>
<p><i>Is My Warranty Affected If I Field Apply A Coating To My GAF-Elk Asphalt Roofing Shingle?</i></p>	<p>No, the <b>GAF-Elk Limited Warranty for the shingles will remain in effect.</b> However, any damage, such as but not limited to curling, cracking, splitting, or blistering that results from the application of the coating is the responsibility of the owner and is excluded from GAF-Elk's responsibility under the terms of our Limited Warranty.</p>
<p><i>Where Can I Get More Information?</i></p>	<p><b>GAF-Elk Technical Services can assist you...</b> with these and other questions you may have regarding your roof installation. GAF-Elk Technical Services can be contacted at <b>800-ROOF-411 (800-766-3411)</b>. Also, <b>the GAF-Elk website is a great resource</b> for just about any question you may have or for additional information you may require. That site is at: <a href="http://www.gaf.com">www.gaf.com</a>.</p>

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## HOT TOPICS ON THE ROOF

### • FPL SPONSORED PROGRAM GENERATES LAWSUITS:

Five Hialeah homeowners have sued FPL and a local Broward roofing contractor alleging roof failures and leaks following application of reflective paint to their shingled roofs. The paint was applied as part of a FPL painting program aimed at lowering homeowner's electrical bills. As part of a FPL sponsored program, over 400,000 homeowners allegedly contracted with roofing contractors to fit their roofs with reflective paint.

An elastomeric paint, approved for use by FPL, has been blamed for the damage. The particular type of paint at issue in the case has been cited by the Asphalt Roofing Manufacturers Association as problematic. Although never recommended or approved by either the Federal Department of Energy or the Asphalt Roofing Manufacturers Association, FPL began reimbursing Florida contractors which had painted residential shingle roofs with the paint. In their December 30, 2010 article titled "FPL sued over roof painting program," the Sun Sentinel reported that the paint was barred from use by both Broward and Dade building codes. Apparently the paint causes moisture to become trapped, thereby allowing the shingles to rot. The Sun Sentinel also reported that FPL has disclaimed any responsibility for the damages suffered by the homeowners, arguing that it does not hire the contractors but merely reimburses the contractors for their work.

*FPL Sued Over Roof Painting Program,*

SUN SENTINEL, December 31, 2010 at A1.

### LEGAL IMPLICATIONS FOR ROOFING CONTRACTORS:

Did FPL list, as approved for use the particular type of paint used in the case?

If so, a contractor in a similar situation may seek indemnification and damages from FPL for liabilities it has incurred by using the paint. In such a scenario, FPL may be liable for negligently misrepresenting the quality and appropriateness of the paint used.

Did Contractor comply with building codes?

Under Florida law, a violation of the building code is evidence of negligence and could make defending a lawsuit brought by an owner more difficult. Furthermore, a code violation could lead to civil penalties.

What role does the manufacturer/seller have in all this?

Under the UCC of Florida, where a seller of goods knows the intended use for which the goods will be applied or utilized, they are held to impliedly warrant that the product will be suitable for the intended purpose. So, if it turns out that the product has failed at no fault of the contractor, the contractor may be able to bring suit against the seller and/or the manufacturer of the product.

What about my insurance policy?

If you were involved in similar FPL programs you may be sued for up to 10 years from the date the work was performed. Plaintiff's lawyer will in all likelihood assert claims for negligence as they may claim damages to the roof, structure and contents over which the paint was applied. If you receive such a claim, immediately report it to your GL insurance carrier/broker as these types of claims may be covered by your insurance policy or at a minimum trigger the duty to defend by the insurer.

### LEGAL INFORMATION FOR THE ROOFING INDUSTRY

*Inside This Issue:*

- FPL Sponsored Program Generates Lawsuits
- Chicago Green Roof Collapses
- Utah Public School Install Solar Panels

### • CHICAGO GREEN ROOF COLLAPSES:

ENR reports that the "largest sloping green roof [grass covered] in North America" suffered a partial failure/collapse due to an ice dam that prevented water from draining off the roof. Chicago is home to more than 600 green roofs. The collapse is being investigated by structural engineers to determine if loads applied by plants, soil, grass and heavy snows exceeded the roof's performance criteria.

### • UTAH PUBLIC SCHOOL INSTALL SOLAR PANELS:

Utah School Districts have installed the first of approximately 70 solar panels using Federal Stimulus monies as part of a green energy education program. Johnson Controls is identified as the design builder. Roofers for purely business purposes must stay current on solar roof trends and opportunity at all levels.

See School Construction News Vol. 17, No. 1, 2011

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# The Miami Herald

Posted on Fri, Dec. 31, 2010

## HOMEOWNERS SUE FPL

BY JULIE PATEL  
Sun Sentinel

Florida Power & Light reimbursed contractors to paint thousands of homeowners' asphalt shingle roofs white to reflect sunlight -- against the advice of the federal government and major roofing manufacturers, according to lawsuits filed against the state's largest utility.

For years, FPL has provided the rebates as one of its programs designed to lower customers' electricity use and bills. FPL customers pay for the programs with proceeds from conservation charges on their electricity bills, and they've paid millions of dollars to have more than 4,000 asphalt shingle roofs coated.

About a dozen FPL customers have complained to state regulators that their roofs started to deteriorate or leak after they were coated. And five others in South Florida filed a lawsuit against FPL and the contractor who did the work. Others have complained directly to the utility or contractor, according to court records.

FPL spokeswoman Jackie Anderson said the utility is not responsible for its contractors' work. Customers hire the contractors and the utility then provides a rebate to the contractor, who then takes the rebate off the total price of the job for the homeowner.

"FPL has been conducting a thorough investigation of these claims. However, as a matter of policy, we cannot comment further on ongoing litigation," Anderson wrote in an e-mail.

Like all Florida utilities, FPL is under pressure from state regulators to encourage homeowners to conserve energy. Each year, FPL is allowed to charge its customers to pay for conservation measures, one of which has been roof painting.

Yet, painting shingle roofs has never been recommended or approved by the federal Department of Energy, which also promotes energy conservation. The Asphalt Roofing Manufacturers Association warns against applying a stretchy, reflective paint called elastomeric to asphalt shingles.

"Problems reported after asphalt shingle roofs have been field coated include unsightly curling and/or cupping of the shingles, which may lead to premature failure and leaks," the group wrote in a technical bulletin. The paint can trap moisture and make the shingles rot, the association said.

Elastomeric paint is on FPL's list of approved products, according to a deposition filed in a lawsuit by homeowners in Hialeah.

However, state building codes bar contractors from using elastometric on asphalt shingle roofs, said Andrew Traylor, an attorney representing the Hialeah homeowners.

An attorney for the contractor, Douglass Roofing in Hollywood, which folded this year, said the complaints make up a small fraction of the thousands of roofs that have been painted, and there is no evidence that the paint was responsible for the roof damage.

FPL promoted the program to customers online, and some of the contractors distributed handouts about the program. It's one of more than eight FPL programs designed to lower homeowners' electricity use and bills.

Contractors coated 4,711 asphalt shingle roofs, including 1,004 in Broward County and 1,948 in Miami-Dade County, from 2007 to 2009, according to court documents. An FPL spokeswoman said she does not know how much the utility spent to coat the roofs the past few years.

In 2009, the utility went from paying the full cost of coating to rebating 50 cents per square foot of roof, not including parts over rooms that are not air conditioned. Based on that figure, FPL would have spent \$2.4 million on the 4,700 roofs if they were 1,000 square feet on average.

Guy Giberson, one of the attorneys representing the contractor who painted the five roofs, said the building code applies to elastomeric coating ``systems" which are not just the paint but other layers of material. He said the code applies to new roofs, not existing roofs.

Several homeowners, who learned of FPL's ``reflective roof" program from a Douglass sales representative who came to their homes, said their roofs started leaking about eight months after they were painted. All but one were replaced after Hurricane Wilma in October 2005.

Serrano said in his home, the paint trapped water in the shingles, causing the nails to rust and water to seep in. Brown and yellow water marks stretch across the ceiling, with ridges of peeling popcorn paint over cracked drywall. Coffee-colored blotches stain the ceiling in another room.

Serrano, a retired airline mechanic, was surprised because his roof was about 2 years old when the shingles were painted. The roof was supposed to last at least 20 years.

A can of tar sits in his backyard, ready in case he needs to make quick fixes after a storm. ``All the time people say, 'Your house is beautiful.' One day it started leaking and it's [ruined]. You feel so bad," Serrano said.

Serrano said the contractor who installed his roof helped fix parts of it the first few times it leaked.

``The problem is the paint. It's not my fault," Serrano recalled the contractor saying.

One of his neighbors, Maria Elena Rivera, has a five-foot hole in her ceiling where the plaster fell after a leak. Another neighbor, Rosa Perez, has a two-foot hole by the entrance of her home where the insulation became wet and fell through the ceiling. She has yellow water marks in her kitchen, foyer, bedroom closet and bathroom.

Perez, a retired clothing factory worker who lives with her mother, said when it rains she has to move furniture to keep it from getting wet.

``I can't do anything" about it, she said. ``It's very difficult."

Michael Douglass from Douglass Roofing said during a deposition for the case in September that his representatives checked to ensure the roofs weren't damaged before painting them.

“We required the salesman . . . to go inside the house and walk around and look at the ceiling” to check for leaks, Douglass said. “That was the first step in trying not to coat crap roofs.”

About a dozen homeowners, mostly in Volusia County, complained to the state's Public Service Commission about roof damage they say was caused by the reflective paint from the FPL program.

Regulators said it's “a civil matter and the PSC has no jurisdiction and no position.”

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**Myth  
Busting**





# The risks and unverified benefits of field coating asphalt shingles

by Maciek Rupa

The North American roofing industry is witnessing increasing popularity of numerous technologies aligned with the sustainability movement. Among these, roof coatings are receiving significant publicity from different groups capable of influencing consumer sentiment, including government policymakers, conservationists and coatings manufacturers.

For example, sustainability advocates identify reflective roof coatings' use as a cost-effective way to reduce building energy consumption in hot climates and control the heat island effect.

Roofing professionals long have recognized the viability and advantages of roof coatings for surfacing bituminous weatherproof roof membranes used as part of low-slope roof systems and possess a great deal of experience with coating applications over roof membranes. This is not the case with field coating steep-slope roof coverings. The fact is the most widely used steep-slope roof covering—*asphalt shingles*—is not designed to accept or require field-applied surfacings.

Coating products and paints advertised as suitable for application to asphalt shingle roof systems currently are available and marketed primarily to do-it-yourself homeowners. Promotional materials for most of the products position field coating as a cost-effective way to extend asphalt shingle roof system life. Language suggesting leak repair and energy-cost savings resulting from the use of reflective coatings also commonly is used.

Homeowners may consider field coating asphalt shingle roof systems more appealing than reroofing and seek information from roofing professionals. The following information is intended to assist roofing professionals who may be in a position to answer consumer questions related to field application of coatings over asphalt shingle roof systems.

## Advertised benefits

Marketers of coatings for application over asphalt shingles claim their products offer a range of benefits though specific claims vary depending on the product. To learn about products' advertised benefits and evidence used to validate those benefits, I collected information from 10 Web sites promoting coating products for application over asphalt shingles.

The most common claim states field-applied coatings extend asphalt shingles' service lives. Other advertised advantages differ depending on product and range from simply "improves a roof's appearance" or "ultraviolet-resistant" to more specific claims, such as "rejuvenates shingles" or "fixes granules in place," to more radical claims, such as "repairs leaks," "forms a waterproofing membrane" or "reduces energy costs."

Arguments used to support the marketing claims are based on before and after photographs of roof systems, consumer testimonials and additional reassuring language published on coating suppliers' Web sites. Searches for test or laboratory evaluations of natural or accelerated weathering studies turned up no independently prepared test or laboratory reports that could validate many of the claims made in the online marketing materials.

## Coating composition

A majority of coatings advertised for use on asphalt shingle roof systems share a

common binder system. Information I collected from supplier Web sites indicates most of the coatings use a water-dispersed acrylic polymer binder commonly called latex or acrylic emulsion.

Many acrylic binder systems have proven performance in low-slope roof coating applications. Various acrylic binders are used in a range of successful elastomeric roof coatings, which display various degrees of elasticity, hardness, durability and permeability. Regrettably, physical property information is not consistently provided for the acrylic coatings I investigated. Notably, the promotional language in almost all cases claims products are vapor-permeable.

Acrylic-based products are available in a range of colors. Many suppliers promise their coatings perform as weather- and mold-resistant protective layers. White coatings typically are advertised as reflective. In some cases, it is implied coatings help realize energy savings by reducing the amount of heat absorbed by roof surfaces.

A few acrylic-based products are said to add thermal insulating value to roof surfaces. Marketing materials for these products claim their formulas contain technologically advanced components described as "ceramic microspheres" or "nanotechnology materials" characterized by extremely low thermal conductivities.

Some suppliers offer primers marketed for asphalt shingle surfaces for use with acrylic water-based coatings. These primers are composed primarily of petroleum

distillates or contain acrylic resins and hydrocarbon solvents.

I found few examples of nonacrylic-based coatings marketed for application over asphalt shingles. Those I did find contain SEBS or similar thermoplastic rubber binders and hydrocarbon solvents.

Cured coatings are characterized as sealants for joints between dissimilar materials or as waterproofing membranes for surfaces depending on application type. They are said to be clear in color, have rubber-like flexibility and accept paint finish. Products using this formulation appear to function as effective vapor retarders when applied as continuous film according to application instructions.

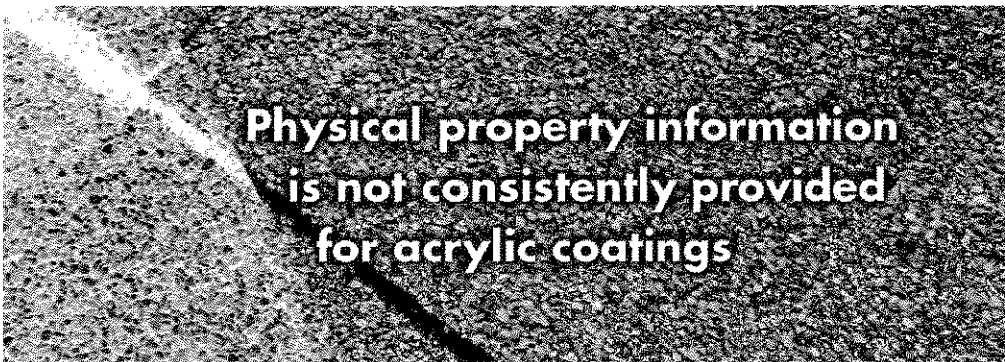
## Application

Because coatings for field application over asphalt shingles are marketed primarily to homeowners, ease of use is emphasized. Application instructions are designed for the average home-improvement enthusiast. Application by paint roller and brush commonly is recommended. Some products, typically primers, are intended for application with airless spray equipment.

Typical application instructions require shingles to be clean and dry before application begins though language for thermoplastic rubber-based coatings claims surface dampness will not interfere with adhesion. Dirt, debris and biological growth are to be removed. One of two options for cleaning typically is recommended: washing with water and detergent and then rinsing or pressure washing. A diluted bleach solution or proprietary cleaning agent may be recommended for eliminating algae, lichens and mildew.

NRCA and the Asphalt Roofing Manufacturers Association (ARMA) do not recommend pressure washing asphalt shingle roof systems because doing so may damage shingles.

Weather conditions appropriate for coating application typically are described



as temperatures greater than 50 F and no precipitation for a period necessary to achieve moisture-resistant cure levels. Recommendations for coatings using hydrocarbon solvents generally are less restrictive. The initial cure time varies depending on product and/or number of coats and ranges from 12 to 72 hours. The upper temperature limit for application also varies depending on product or may not be provided. One supplier recommends application temperatures no higher than 95 F.

Asphalt shingles typically are subject to service conditions that make it impractical to fully abide by some of the recommendations described. The language used in the application instructions is consistent with the fact that water-borne acrylic coatings typically are sensitive to moisture and temperature until they cure.

### Evaluation tools

ASTM D6083, "Standard Specification for Liquid Applied Acrylic Coating Used in Roofing," is the standard material specification for water-dispersed acrylic coatings used as field-applied surfacing in roofing applications. No ASTM International standard material specifications are available for sealants or field-applied roof coatings using thermoplastic rubber binders.

Two standard test methods for measuring roof coatings' solar reflectance are available. ASTM C1549, "Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer," provides a procedure for using a portable measuring device with an integral light source suitable for laboratory and field readings from small-area samples. ASTM E1918, "Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surfaces in the Field," is intended for use on low-slope roof surfaces, samples a large area for measurement, can be used for



readings from roughly textured surfaces and requires clear midday weather to perform measurements.

Roof coatings' thermal emittance may be measured according to ASTM E408, "Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques," or ASTM C1371, "Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers."

Thermal insulating properties are not associated with roof coatings; therefore, no standard test methods for evaluating thermal insulating performance of coatings in roofing applications are available. Consequently, it may not be practical to validate statements made about thermal insulating performance of field-applied roof coatings.

It may be difficult or impractical to objectively evaluate the physical properties and performance characteristics of coatings marketed for application over asphalt shingles. Compliance with ASTM D6083 was not indicated for any of the investigated products. Documentation for some of the products references standard test methods and standard material specifications; however, they are not standards used in roofing applications. Overall, the level of technical information presented is below par compared with that available for established low-slope roof system coatings.

Physical property information typically available includes density, solids content,

volatile organic compound content, wet and dry film thickness, coverage rate, application temperature range and cure time. Some suppliers publish test values for additional cured film properties; however, test method designations are not always provided.

### Concerns abound

The roofing industry is aware of a number of issues that could have negative consequences for field application of coatings over asphalt shingle roof systems. Anyone considering this type of application should be aware of the concerns so they can weigh them against the benefits claimed in coating product promotional materials.

### Manufacturer recommendations

There are two sources available to those interested in learning asphalt shingle manufacturers' recommendations.

ARMA Technical Bulletin No. 227, "Field Coating of Installed Asphalt Shingles," strongly advises caution when considering field applying any coating over installed asphalt shingles. The bulletin discusses problems reported after field coating asphalt shingles and advises homeowners to contact shingle manufacturers for approval before field coating asphalt shingles. To access the bulletin, visit ARMA's Web site at [www.asphaltroofing.org](http://www.asphaltroofing.org), click on All About Roofing, scroll to Publications and click on Technical Bulletins.

GAF-Elk Contractor Services published

Steep Slope Technical Point No. 151-09, "Field Coating of Installed GAF-Elk Asphalt Roofing Shingles," which does not recommend field application of coatings over asphalt shingles. The document addresses several questions likely to be asked by roofing consumers interested in field coating asphalt shingles. It is available from GAF-Elk's Web site at [www.gaf.com/Document-Library/DocList.aspx](http://www.gaf.com/Document-Library/DocList.aspx).

The ARMA and GAF-Elk documents caution that the claims made about benefits of field coating asphalt shingles have not been well-documented or evaluated.

Other asphalt shingle manufacturers either take ARMA's position, do not publish recommendations addressing field coating or take the position that field coating has negligible effects on asphalt shingles provided water-based latex paints are used. Hydrocarbon solvent-based coatings are not recommended for use on asphalt shingles because the solvent may soften the asphalt coating.

#### Warranties

Language in two manufacturers' shingle warranties specifically excludes coverage for damage to their products caused by coating or painting. It is reasonable to expect other manufacturers that do not include field coating-specific language in their product warranties would claim the exclusion applies to their products based on their warranties' more generally defined exclusions.

#### Drainage and permeance

Field coating asphalt shingles is at odds with one of the fundamental working principles of shingled roofing.

Shingled roof coverings shed water. In other words, shingles rely on gravity to do most of the work of keeping out water. Sometimes, water travels underneath shingles via capillary action, wind force or when large volumes drain down valleys. When this occurs, shingles allow water

to run down and to the outside surface of a roof.

When a coating is applied over roof coverings installed shingle-fashion, especially when it is intended to seal shingles at edges or form a continuous membrane, drainage paths for water trapped under the roof's outer surface may be cut off. Although wind-driven rain or water entry because of capillary action may be controlled or eliminated, the most common water entry locations where dissimilar materials meet at flashing elements can remain problematic. The potential for damage to underlayment and deck sheathing, as well as leaks from water infiltrating at flashing locations, is increased.

Additionally, depending on the coating type, field application over asphalt shingles may lower an asphalt shingle roof system's vapor permeability.

Asphalt shingle roof systems are vapor-permeable because joints between individual shingles allow vapor to pass through. Some coating formulations are effective vapor retarders. Applying a vapor-retardant coating to an asphalt shingle roof system's surface likely will compromise a roof assembly's self-drying characteristics.

Some roof assemblies may accommodate this with existing or additional ventilation. For other roof assemblies, the change in moisture transport resulting from coatings may be too much to maintain a non-condensing environment in attic or ventilation spaces.

#### Code restrictions

Local building codes may prohibit field applying coatings over asphalt shingle roof systems.

For example, 2007 Florida Building Code: Residential, Chapter 44—High-Velocity Hurricane Zones contains the following language applicable to reroofing residential buildings no more than three stories in height in Broward and Miami-Dade counties: "R4402.10.18.1 No sprayed polyurethane foam (PUF) and/or

elastomeric coating systems shall be applied over existing composition shingles."

Also, 2007 Florida Building Code: Building, Chapter 15—Roof Assemblies and Rooftop Structures contains the following similar language: "1521.18.1 No PUF and/or elastomeric coating systems shall be applied over existing composition shingles."

#### Fire-resistance ratings

A field-coated asphalt shingle roof system likely does not have an external fire-resistance rating. A coating is given a fire-resistance rating as a component of a specific roof assembly based on testing at a specific roof slope. Coatings marketed for application on asphalt shingle roof systems often do not possess fire-resistance ratings.

Roof coatings rated for fire resistance as part of low-slope bituminous roof systems are not suitable for application over asphalt shingle roof systems. Fire-resistance ratings for roof coatings and roof coating systems designed for application directly over bituminous membrane roof systems are limited to roof slopes less than the 2-in-12 (9-degree) minimum prescribed by building codes for asphalt shingle system applications. Additionally, some coatings manufacturers state their products are not appropriate for application over asphalt shingles.

#### Summing it up

No evidence currently is available to correlate marketing claims with actual performance of field-applied coatings over asphalt shingle roof systems, and such an application subjects a roof system and its owner to specific risks the owner should understand before making a decision to field coat an asphalt shingle roof system. A thorough cost-benefit analysis may prove that known concerns within the roofing industry outweigh the potential benefits. ☹ ☹ ☹

Maciek Rupar is an NRCA director of technical services.