

WHO
YOU
GONNA
CALL?



NRCA's
most frequently
asked technical
questions are
answered

by Joan P. Crowe, AIA

EVERY DAY, NRCA's Technical Services Section responds to requests for technical assistance. About 20 percent of the requests come from homeowners, and a substantial number of requests come from roofing contractors with concerns about issues homeowners are facing. In many cases, roofing contractors contact NRCA to inquire about NRCA's position on a specific topic, or they are looking for documentation to substantiate their positions. Following is an assortment of NRCA's most frequently asked questions.

What is the best asphalt shingle?

NRCA cannot recommend specific products and/or manufacturers. Asphalt shingle material performance depends on the quality, quantity and compatibility of asphalt, fillers, reinforcements and surface granules. Asphalt shingles should comply with ASTM International standards and applicable building codes. Fiberglass asphalt shingles should meet ASTM D3462, "Standard Specification for Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules."

NRCA often is asked whether there are other third-party organizations that evaluate asphalt shingles. In June 2009, *Consumer Reports* magazine provided ratings for 26 popular asphalt shingle products. Although *Consumer Reports* is recognized for providing useful information to help consumers select products, NRCA is concerned its article addressing asphalt shingles will mislead homeowners.

For example, it is apparent *Consumer Reports* did not use testing and evaluation methods (and likely sampling methods) recognized as appropriate for asphalt shingles before making recommendations. Unlike many other products *Consumer Reports* evaluates, asphalt shingles have well-established test and performance evaluation methods. For additional information regarding NRCA's concerns, see "Concerns with *Consumer Reports*," August 2009 issue, page 21.

I need to reroof a house with a low-slope roof. What is the best roof system in this case?

NRCA divides roof systems into two categories: low-slope and steep-slope.

According to NRCA, low-slope roof systems generally include weatherproof membrane types of roof systems installed on slopes of 3:12 (14 degrees) or less. And steep-slope roof systems generally include water-shedding roof coverings installed on slopes greater than 3:12 (14 degrees).

NRCA cannot recommend low- or steep-slope roof systems. Roof membranes should comply with ASTM International standards and applicable building codes. Following are applicable material standards for some common

low-slope roof membrane products used in residential roof systems:

Built-up roofing products:

- ASTM D1863, "Standard Specification for Mineral Aggregate Used on Built-Up Roofs"
- ASTM D2178, "Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing"
- ASTM D2824, "Standard Specification for Aluminum Pigmented Asphalt Roof Coatings, Nonfibered, Asbestos Fibered, and Fibered without Asbestos"
- ASTM D312, "Standard Specification for Asphalt Used in Roofing"
- ASTM D3909, "Standard Specification for Asphalt Roll Roofing (Glass Felt) Surfaced With Mineral Granules"
- ASTM D450, "Standard Specification for Coal Tar Pitch Used in Roofing, Dampproofing and Waterproofing"
- ASTM D4601, "Standard Specification for Asphalt Coated Glass Fiber Base Sheet Used in Roofing"
- ASTM D4990, "Standard Specification for Coal Tar Glass Felt Used in Roofing and Waterproofing"

EPDM products:

- ASTM D4637, "Standard Specification for EPDM Sheet Used in Single Ply Roof Membrane"

PVC products:

- ASTM D4434, "Standard Specification for Poly (Vinyl Chloride) Sheet Roofing"

SBS polymer-modified bitumen products:

- ASTM D6162, "Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements"
- ASTM D6163, "Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements"
- ASTM D6164, "Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements"
- ASTM D6298, "Standard Specification for Fiberglass Reinforced Styrene Butadiene Styrene (SBS) Modified Bituminous Sheets with a Factory Applied Metal Surface"

TPO products:

- ASTM D6878, "Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing"

My estimates include using a No. 15 underlayment. Some contractors use No. 30 underlayment and claim it's better. Who is right?



Historically, asphalt-saturated organic felt underlayments were classified as Type I, commonly called No. 15, and Type II, commonly called No. 30. In 2002, ASTM D4869, "Standard Specification for Asphalt Saturated Organic Felt Underlayment Used in Steep Slope Roofing," went from two to four classifications, but many roofing contractors still use the old references. ASTM D4869 uses the following classifications: Type I, No. 8 Underlayment; Type II, No. 13 Underlayment (equivalent to No. 15 asphalt felt); Type III, No. 20 Underlayment; and Type IV, No. 26 Underlayment (equivalent to No. 30 asphalt felt).

The other type of asphalt felt underlayment is asphalt-saturated fiberglass felt. The applicable standard is ASTM D6757, "Standard Specification for Underlayment Felt Containing Inorganic Fibers Used in Steep Slope Roofing."

There currently are other underlayment types being used and becoming more common, such as synthetic sheets, polymer-modified bitumen sheets and self-adhering polymer-modified bitumen sheets. NRCA has different recommendations for distinct steep-slope roof covering types.

For asphalt shingles, NRCA recommends asphalt felt underlayments, polymer-modified bitumen or synthetic sheets. Asphalt felts should comply with ASTM D4869, Type II (No. 15), Type III (No. 20) or Type IV (No. 30) or comply with ASTM D6757. If you are installing a heavier-weight shingle with a projected long service life, using Type IV (No. 30) underlayment instead of Type II (No. 15) would be appropriate.

For clay and concrete tile, NRCA recommends polymer-modified bitumen sheets, and for metal shingles, NRCA recommends polymer-modified bitumen or synthetic sheets.

NRCA recommends polymer-modified bitumen sheets for slate roof systems. In situations where a two-layer system is specified, synthetic sheets may be used as the second layer.

And for wood shakes and shingles, NRCA recommends asphalt felt underlayments that comply with ASTM D4869, Types III (No. 20) or IV (No. 30) or ASTM D6757; polymer-modified bitumen sheets; or synthetic sheets. NRCA recommends asphalt felt interlayments comply with ASTM D4869, Types III (No. 20) or IV (No. 30).

Using alternative underlayments with steep-slope roof coverings should be carefully considered. If using synthetic sheets, refer to "For your consideration," February issue, page 48.

Self-adhering polymer-modified bitumen sheets also

may be used as an underlayment; however, keep in mind they have low permeance values and may perform as vapor retarders when installed as underlayments over an entire roof deck.

After a big storm, storm chasers invaded my area and their pricing estimates are much less than the ones I'm providing potential customers. Homeowners only see the bottom line; they don't realize it's risky hiring these types of contractors. What can I do to help homeowners make good decisions?

Refer homeowners to NRCA's website, www.nrca.net. It features a Consumer section to help homeowners find and select NRCA roofing professionals to repair or replace damaged roof systems at a fair price, including post-storm documents and information. NRCA also offers documents and PowerPoint presentations for you to give your customers after a major storm that explain how to select a professional roofing contractor, what to do before making repairs, how to determine roof system damage, post-storm safety tips and how to handle filing an insurance claim. The documents and presentations are available free to NRCA members in the Members Only section of NRCA's website.

What is the industry standard for a workmanship warranty? I typically offer a one-year warranty.

There is no industry standard for warranty length. Based on an informal NRCA survey, the average term seems to be about one to two years.

I took on too many customers this fall, and I couldn't get to some roofing projects until the middle of winter. Some of my customers are concerned it's too cold. At what temperature is it too cold to install asphalt shingles?

There are no specific temperature guidelines regarding when it is too cold to install asphalt shingles, but asphalt shingles become brittle in cold temperatures. Breakage can be minimized or eliminated if shingles are stored in a warm area and loaded onto the roof a few bundles at a time. Another concern is the self-sealing strips will not seal or bond sufficiently in cold temperatures. Hand-tabbing (the application of quarter-size dabs of adhesive to the underside of shingles) is recommended if a building is located in an area prone to high winds. This will help prevent the shingles from blowing off the roof until warmer weather arrives and the sealing strips can set properly.

Also, in cold weather, asphalt shingles may not lie flat on a roof because of the shape they assumed in a bundle. This may result in an unacceptable appearance initially. The shingles become more flexible as they are exposed to the radiant heat of the sun and typically lie flat after some time has passed.

A rainstorm unexpectedly came through just after I installed underlayment on a customer's house. Now, the underlayment is wrinkled and the customer believes it should be replaced. Should it?

Wrinkled or buckled underlayment should be replaced so the shingles lie flat.

I installed underlayment on a roof more than two weeks ago, but I haven't yet installed the shingles. I was instructed to work on several other houses first, so I can't get to this one for another couple of weeks. The homeowner is concerned about not having shingles on the house for so long. How long can underlayment be exposed?

Time is not the critical issue; the condition of the underlayment is what's important. As previously mentioned, wrinkled or buckled underlayment should be replaced so the shingles lie flat.

I am reroofing a house that has a roof with a 2:12 (11-degree) slope. The homeowner wants me to install asphalt shingles, but I don't believe it's a good idea. I checked with the asphalt shingle manufacturer, and the manufacturer says it's OK. What do you think?

There are some manufacturers (and model building codes) that allow the installation of asphalt shingles on roofs having a 2:12 (11-degree) slope; however, NRCA does not recommend shingles on slopes less than 4:12 (18 degrees). Asphalt shingle roof systems are water-shedding and rely on gravity and roof slope to effectively drain water off roofs.

I installed an asphalt shingle roof. After I completed the work, the homeowner went into the attic and saw the roofing nails sticking out past the roof deck. She wants me to redo the entire roof so she can't see any of the nails! Should I?

Nails should be long enough to penetrate through all layers of roofing materials and achieve secure anchorage into a roof deck. Nails should extend through the underside

of plywood or other acceptable wood panel decks with thicknesses less than $\frac{3}{4}$ of an inch.

I am suggesting to my customer that he put in a ridge vent. There already are two single static vents in the roof, so he doesn't believe he needs a ridge vent. Does he need a ridge vent?

NRCA suggests the amount of attic ventilation be balanced between the eaves and ridge. The intent of a balanced ventilation system is to provide nearly equivalent amounts of ventilation area at the eave and soffit and at or near the ridge. For a balanced ventilation system to function properly, about half the ventilation area must be at or near the ridge. A continuous ridge vent is one of the most effective ways to vent a ridge.

If you end up installing a continuous ridge vent, eliminate the two static vents. If you install the ridge vent but keep the static vents, you might end up creating a "short circuit" of the ventilation or airflow in the attic. Air will enter the attic through the static vents instead of the eave vents, rendering them ineffective.

Proper attic ventilation is one of the least understood concepts in residential roofing. To learn more, read "Principles of attic ventilation," January 2001 issue, page 53.

I am installing a water and ice-dam protection membrane on an extremely low-slope roof. I plan to apply two rows of membrane. Will this installation extend up the roof enough?

A water and ice-dam protection membrane should be applied starting at a roof system's eave and extend up-slope to a point corresponding to a 24-inch minimum—determined in the level plane—inside the building's exterior wall line.

A homeowner asked me to recommend melting pellets to melt the snow on her roof. Will this harm the asphalt shingles?

Generally, chemical melting compounds do not reduce the overall expected service life span of asphalt shingles. Staining may occur until all the residue is washed away. Calcium or magnesium chloride pellets are less harsh and stain less than sodium chloride. But keep in mind chloride-based compounds are corrosive and could be detrimental to metal flashings and gutters.

I'd like to start a maintenance program in my company. One of the new services I'd like to offer is



cleaning asphalt shingles. How do I properly clean algae and moss from asphalt shingles?

Gently apply a mild detergent or mild solution of chlorine bleach and water with a sponge or hand-held sprayer, and rinse thoroughly. Do not use a power washer or high concentrations of bleach, and do not scrub the shingle surface. The Asphalt Roofing Manufacturers Association also offers cleaning recommendations in its “Algae Discoloration of Roofs” technical bulletin available at www.asphaltroofing.org.

I receive a lot of requests to install gutter covers to keep leaves out, but do they really work? And there are so many products available; which ones are best?

NRCA does not have adequate performance information regarding gutter covers and cannot recommend specific manufacturers. Some contractors claim they make ice-damming conditions worse.

My company was asked to look at a roof that another roofing company installed. It looks like it was an awful job. The homeowner would like to receive a third party's opinion, such as a consultant. Can you recommend anyone?

A roof consultant can be quite expensive for a consumer. In addition, the roofing contractor who is in a dispute with the homeowner may not (and most likely will not) take the roof consultant's findings into consideration. So the homeowner may be wasting time and money.

However, if the homeowner insists on hiring a consultant, NRCA provides an online listing of its members on NRCA's website in the NRCA Membership Directory. Consumers can search the database by member type, ZIP code and mileage radius to find NRCA consultant members.

I am bidding on a roof that was severely damaged by a hurricane. A majority of the roof deck was blown off, and the insurance company agreed the entire deck should be replaced. I indicated plywood in my proposal, and another contractor included oriented strand board (OSB). The homeowner wants to know which one is better. Which does NRCA prefer?

NRCA has concerns about the long-term performance of OSB panels. Experience has shown OSB panels are subject to dimensional changes, ridging and fastener backout resulting from changing moisture conditions normally

encountered by roof decks. NRCA prefers plywood complying with U.S. Product Standard PS 1, “Construction and Industrial Plywood.” For tile and slate roof systems, NRCA does not recommend OSB panels because of the long-term life expectancy of these roof system types.

Some asphalt shingle products offer a lifetime warranty, so my customers think their roofs will last forever. Consumers need to realize they will eventually need to replace their roofs, correct?

It is competition in the marketplace, rather than technological advances, that is the primary driving force for the industry-wide change regarding asphalt shingle warranties. NRCA believes documented in-place performance is the primary indicator of a roof system's service life. Consumers of asphalt shingle products should be aware the shift to lifetime warranties is a marketing decision and not technologically based. For additional information about asphalt shingle warranties, see “30 years to life,” June 2011 issue, page 34.

I inspected a home for a potential reroofing project and found two layers of asphalt shingles. I explained to the homeowner that all the layers needed to be removed before installing the new roof system, but the homeowner only wants me to install the shingles over the existing layers and doesn't want to pay the extra money for removing the old layers. Should I honor the homeowner's request?

Most building codes only allow two roof layers, but verify what is allowed with the authority having jurisdiction. Once you determine which building code is applicable, in most cases, NRCA can provide assistance with obtaining code language for you to show the homeowner.

HERE TO HELP

Whether you face questions regarding roof system installation, design, repair or maintenance; need information about roofing products; or want to know proper application, inspection, maintenance and repair techniques for any roofing job, NRCA's dedicated technical staff and extensive library of publications can give you the information you need. When you're looking for technical roofing industry expertise, NRCA's Technical Services Section is here to help. ☎️📖

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