

Roofing Systems and Coverings

Riddles of the Roof

Remember Maslow's hierarchy of needs? Maslow proposed his theory of psychology in his 1943 paper "A Theory of Human Motivation," in which he published the five phases of human development, starting with basic physiological needs and peaking with self-actualization.

Although we most assuredly will not do justice to his theory in this brief reference, Maslow's classic pyramid is a reminder that our basic physiological needs include water, food, clothing, sex, sleep...and a roof over our heads.



Unlike food, clothing and...umm...sleep, most of us think about our roof when it begins to leak or a roofer tells us we need a new one. JFK was quoted as having said that "The time to repair the roof is when the sun is shining." In other words, waiting to see God's *celestial* roof through the hole in *your* roof is not a recommended strategy.

If I were a Rich Man

We hope you don't fiddle and dance on your roof because if you've ever had the pleasure of replacing your roof, you'll recall the giant sucking sound of digital greenbacks disappearing from your bank account.

According to Remodeling magazine (www.remodeling.hw.net), the average cost to replace a roof in 2013 was \$18,488 (and we marvel at how they could be so darn precise!). Regardless of how you slice it, that's a ton of bacon.

Which is why our objectives are to provide you with some information about different types of roofs, how to recognize the telltale signs that a roof is at or near the end of its useful life, and how to properly maintain a roof to maximize its useful life.

Asphalt Shingle Roofing

Asphalt shingles are the most common type of roofing material used in North America; according to US Inspect's data from 1999 to 2013, asphalt shingles comprise 76% of all houses inspected.

Asphalt shingles come in many different colors, shades, and designs which make them very popular. Although there is a wide variety of asphalt shingle roofing materials, asphalt shingle roofs generally have a life expectancy of 15 to 30 years. Life expectancy is dependent upon weight/thickness of shingles (thicker is better), slope of roof (steep is good for pretty much everything except for walking upon), and exposure to the sun, color of tiles, and weather and climate conditions.

Asphalt shingles are created using petroleum (tar) and a composition fiber base or base “mat,” which is covered with stone granules to protect the material from over-exposure. Shingles deteriorate as the tar and base mat begin to dry out.

When exposed to sun and high heat, asphalt shingles will expand and contract depending upon the time of day that the sun hits the roof and when temperatures are at their highest. In southern climates (FL), it’s not unusual for asphalt shingles to fail in 12 to 14 years. In colder northern climates (MA, NY), higher sloped roofs with eastern and/or northern exposures can last up to 30 years.

Vendors sell shingles by length of warranty in terms of years (e.g., 20, 25, 30, 40, 50). However, caveat emptor – a 30 year warranty is not necessarily indicative of how long asphalt shingles will last. Like any type of manufacturer’s warranty, there are guidelines and conditions which must be achieved for the manufacturer to consider replacement of the roofing materials; warranty fulfillment is always subject to an inspection by the manufacturer to ensure that the roof was installed according to the manufacturer’s specifications and that normal maintenance has been performed.



So how do you know when asphalt shingles start to become long in the tooth? The first signs of wear n’ tear include the loss of the granular top layer. Check your gutters...see lots of detritus? When granules begin to fall away, the shingle’s tar mat is exposed to weather, which leads to more rapid deterioration. Wear n’ tear also is often evidenced by cupping, curling and lifting of shingles. These types of conditions make the roof prone to leaking.

Catching an issue early is critical – if you have *any* question or concern about your roof’s condition, consult a roofing professional, who can help to give you the straight skinny. We’re sure you’ll agree that fixing a few shingles is preferable to a roofing system failure and water ingress.

Clay and Terracotta Tile Roofing

The second most popular roofing material is tile roofing, which comprises approximately 9% of total roofs, according to the US Inspect roofing database.

Clay tile is produced by baking molded clay into tiles; density of clay is determined by the length of time and temperature at which the clay is heated. Tiles may be glazed and also may have surface texture treatments applied; as a result, there is a wide variety of tile profiles, styles, finishes and colors.

Terracotta tile roofs give a home a warm, earthy, rustic look. Although terracotta roofs are installed all over the US, they're most common in the southeast and the southwest. Terracotta roofing has been used for thousands of years, including by Greek, Roman, Chinese and Middle Eastern cultures.

The good – Tiles are hard and, therefore, last longer. Tile doesn't rot or burn and it cannot be harmed by insects unless they have really, really sharp teeth. Tile roofs, therefore, have very long projected useful lives.

The bad – Tiles are hard and, therefore, break more easily. Over time, tiles can also become loose; in areas of high winds and stormy weather, tile roofing is often mechanically attached to the roof decking to prevent slipping of the tiles. Weight also can be an issue; depending on materials, tile can be very heavy, to the point at which extra roofing support is required.

Wood Shingle/Shake

Wood comprises only about 3% of total roofing installations, according to the US Inspect roofing database. Wood roofing is available as shakes or shingles, both of which have an estimated life expectancy of 15 to 20 years. Quality of shingles, length of shingles or shakes, exposure to sun, maintenance, and roof slope impact life expectancy. Wood shingles are typically installed on spaced or skipped sheathing.



When wood is exposed to the effects of sunlight and precipitation, its surface changes. The first noticeable change is color; the initial red-brown colors tend to fade, and the woods eventually turns gray.

When it rains, wood swells; after the rain, wood shrinks; repeated wet-dry cycling causes compression and tension stresses which, in turn, cause microscopic cracks to develop. Over time, debris collects and

plant life begins to take root; most of us love tending to house plants but not when they're literally *on* the house. As more splits develop, cupping and curling also develop and then...the leaks begin.

To help prevent premature failure of wood roofing, proper care must be taken to remove all debris that collects on the roof. Keeping the roof free of any and all obstructions encourages proper rain water run-off and helps to limit moisture from infiltrating the wood. In most cases, anyone who is willing to climb on a roof can wash off most of the material with a garden hose; a stiff broom can be used for removing any leaf and pine needle debris.

Rolled Roofing

Rolled roofing is only about 2% of total roofing installations, according to the US Inspect roofing database, perhaps because the adage that "you get what you pay for" applies to rolled roofing. Even though rolled roofing is inexpensive, it generally has average life expectancy of only 10 years.

Because rolled roofing is unrolled and stuck together at the seams, there often are problems at the joined sections, which increases the need for repairs and maintenance over the life of the product.



Issues with rolled roofing relate to exposure to the weather; because rolled roofs are installed on flat and low-slope roofs, avoiding harsh weather is unavoidable.

The Ticket to a Long Run on Broadway

You know the drill by now, right? The key to extending the useful life of anything, including yourself, by the way, depends on proper maintenance.

Roofs are no different. No matter the type of roofing material, roof maintenance such as clearing the roof of debris, trimming trees that may be close to or in contact with roofing material, washing and clearing the roof of any moss or fungus, and addressing roof issues quickly and thoroughly will delay the costly expense of replacing the roof materials.

Without being so close that you're accused of voyeurism, keep your eyes on other homes in your neighborhood; if they're getting their roofs inspected, repaired or replaced, chances are you'll be in the market for a similar treatment.

The National Association of Home Builders advises homeowners to get their roofs inspected every three years. If your roof is young and in great shape, you could probably wait five years for an inspection. However, there are catastrophic events which may accelerate your need to request a qualified roofing professional to review your roof. For example, if your house is attacked by hail, windstorms or other extreme weather, get the roof inspected – damage detected early can be addressed early. Do not wait for a roofing leak or system failure.

US Inspect recommends that roofs that are at or beyond their estimated design life be evaluated by a specialist to alleviate any unforeseen costs when the home is brought into inventory. Over the last 25 years, US Inspect has constructed a network of 400+ roofing specialists across the nation who are experts in the field. If it's been a couple of years since you last had your roof inspected, think about requesting a roofing inspection and we'll connect you with some of our pre-approved roofing professionals.

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