Roof Systems: Shingle Specifications, Styles, Performance, and Warranties 2

YOUR OBJECTIVE:

To learn (1) how asphalt shingles are made, (2) the differences between the various types of asphalt shingles, and (3) the difference between a high quality shingle and a poor quality shingle.

Asphalt shingles have been used on homes in the United States since the early 1900s. Since that time, leading shingle manufacturers, like CertainTeed, have been continually improving asphalt roofing products through their research and manufacturing efforts. As a result, an asphalt shingle roof has become a great value. Today, asphalt shingles can be purchased in a wide variety of colors, designer styles and weights. These products have become so attractive and rugged that 80 percent of the homes in the United States now have an asphalt shingle roof.

HOW ARE ASPHALT SHINGLES MADE?

The manufacturing process for fiber glass asphalt shingles starts with a tough reinforcing "mat". The mat is made of glass fibers and a special binder.

SEVERAL MATERIALS ARE ADDED TO THE REINFORCING MAT AS THE SHINGLES ARE BEING MANUFACTURED

- The first material put on the mat is the asphalt that make the shingle tough and water-resistant.
- The amount of asphalt used gives the shingle its thickness and much of its weight, and adds to its strength.
- Up to a point, the more asphalt used, the longer the shingle will last.
- However, the quality of the asphalt is even more important than the quantity. Low quality asphalt can be brittle and cause the shingle to have a shortened life. High quality asphalt keeps the shingles more flexible.
- Finely pulverized minerals, called stabilizers or filler, are added to the asphalt to give the shingle more "body" and "toughness," which ultimately increase the life of the shingle. When too little stabilizer is used, the shingles become soft and "gooey" and they scuff easily. However, scuffing in high heat is not a sign of a poor shingle. A certain amount of softness at high temperatures is a necessary feature of good quality flexible asphalt. The installer must take precautions to avoid scuffing during mid-day/mid-summer heat when using good quality shingles. Such precautions include early working hours and the use of carpet or foam rubber "sit-upons" and shoe-wraps. If shingle application instructions recommend a "racking" method, that can help keep workers off the shingles, as they can work to the side of the shingle rack.
- Next, small opaque granules are adhered to the asphalt to protect the shingles from the harmful ultraviolet rays of the sun. Made from crushed and screened rock, these granules receive a ceramic color coating which gives the shingle its color. Sometimes, a layer of copper is added for algae resistance.
- A crushed mineral called "backsurfacing" is applied to the back of the shingles. The backsurfacing is added to keep the shingles from sticking to the manufacturing machinery and from sticking to each other when they are stacked and wrapped in bundles. Some manufacturers use a heavy backsurfacing that gives the shingle more weight. **NOTE:** The extra weight created in this way does not make the shingle stronger.
- Solid or broken strips of sealant adhesive may be applied to the face or back of the shingles to seal and hold them down under severe wind conditions.
- Release tape prevents shingles from sticking together while packaged.

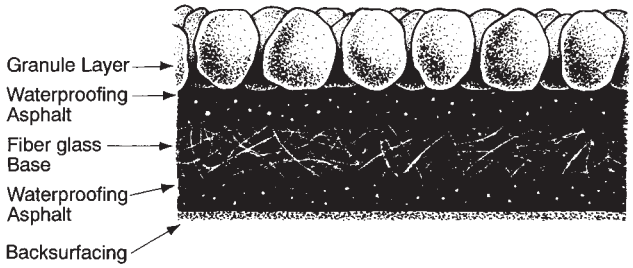

Figure 2-1: Anatomy of a fiber glass shingle.

FREQUENTLY ASKED QUESTIONS

ARE HEAVIER SHINGLES ALWAYS BETTER QUALITY?

Shingles with longer warranties tend to be heavier than shingles with shorter warranties. Weight is not the only measure of shingle quality. Asphalt quality and shingle tear strength are also important indicators of shingle performance.

One of the heaviest asphalt type shingles in the marketplace is Grand Manor™. This is an extremely durable product, with a lifetime warranty, but not simply because of its weight. Its construction, using two full base shingles in each Grand Manor, results in no less than four full layers of shingles over the entire roof. Grand Manor contains more than twice the amount of tough, tear-resistant material compared to standard shingles, plus randomly applied laminated tabs for added dimensionality.

IS VENTILATION REALLY THAT IMPORTANT?

It is important to understand that shingles failing, due to inadequate ventilation, will not be protected by most manufacturer's warranties.

Ventilation can be very beneficial for roofs, especially for those that can be ventilated at both the peak and the soffit. In short, provide adequate ventilation. *(See Chapter 7, "Ventilation.")*

MUST ALL SHINGLE BUNDLES BE OF THE SAME DATE-CODE FOR AN ENTIRE ROOF?

CertainTeed does not require that bundles have the same date codes. In fact, beginning in 1993, we stopped printing date codes on most of our bundles. We were able to eliminate the date-code because of our ability to closely control colors in each production run. However, some manufacturers still require that you match date-codes on bundles in order to assure proper color appearance.

NOTE: The COLOR CODE numbers (representing individual colors) that are still found on each bundle of CertainTeed shingles must match.

It should also be noted that, regardless of the manufacturer, shingles in storage for a long time may become temporarily stained. This is normally eliminated by natural weathering. Please allow at least six months of exposure to sun and rain.

HOW CLOSE SHOULD THE ACTUAL DIMENSIONS OF SHINGLES COME TO THE NOMINAL OR PUBLISHED DIMENSIONS?

CertainTeed assures that the dimensions on all its shingles (except laminated shingles) will be within ± 1/16" of the published dimension. Every other manufacturer assures that the dimension of its shingle will be either ± 1/4" or ± 1/8". When applying three-tab strip shingles, it is extremely important that the dimensional variation be as small as possible so that the shingles and their cutouts line up properly. Laminated shingle dimensions may vary by as much as ± 1/4". This is permitted by CertainTeed specifications because it is not necessary to align cutouts.

SHOULD THE RELEASE TAPE ON THE BACK OF SHINGLES BE REMOVED?

No! This tape does its job of protecting the sealant when the shingles are stacked in the bundle. Once the shingles are applied, the sealant is exposed and can seal properly; the release film is out of the way and will not harm shingle performance (*Figure 2-2*). Also, the tape on CertainTeed shingles contains valuable coded information that should remain with the shingle throughout its life. Printed on the release tape, on every CertainTeed shingle, are the words "DO NOT REMOVE THIS TAPE" and the CertainTeed logo.

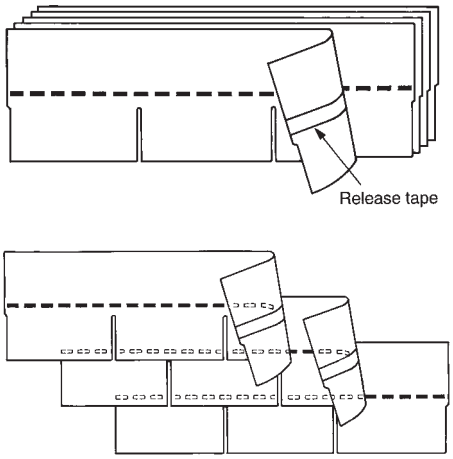

Figure 2-2: Release tape.

SHINGLE TYPES

STARTER-COURSE SHINGLES: Pre-cut starter shingles are designed to be used with the corresponding field shingles. CertainTeed offers a range of labor-saving starter shingles including SwiftStart™ and High-Performance Starter (see specific product chapter for recommended starter course).

THREE-TAB STRIP SHINGLES: The most commonly known type of shingles are the traditional strip shingles.

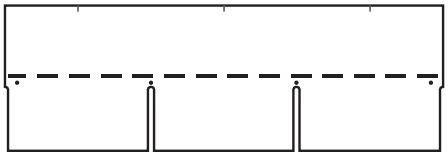

Figure 2-3: Three-tab shingle

LAMINATED SHINGLES: There are many different brands and sizes of laminated shingles. Do not assume common sizes or application procedures when installing these shingles.

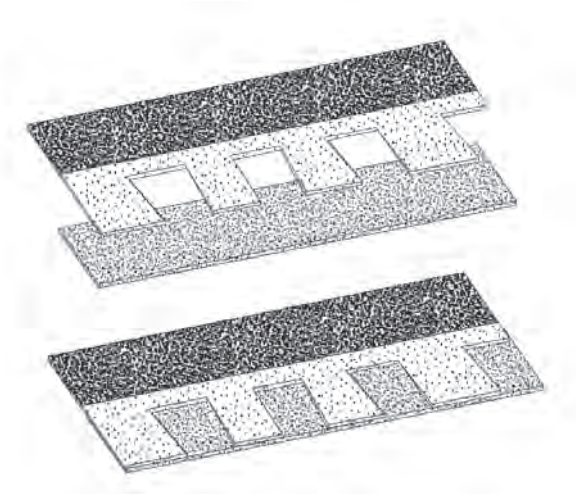

Figure 2-4: Laminated shingle construction

MID-WEIGHT DIMENSIONAL SHINGLES: These shingles offer a more interesting appearance on the roof than three-tab shingles. Typically, they weigh 235-265 lb./sq. Shadow lines and contrasting color blends are common on these shingles.

HEAVYWEIGHT DIMENSIONAL SHINGLES: The heavyweights are sometimes called architectural shingles. They typically weigh 265-350 lb./sq. Shadow lines and contrasting color blends give the appearance of a thick shingle.

Independence has applied laminated tabs that look similar to wood shingles or, in other colors, like slate.

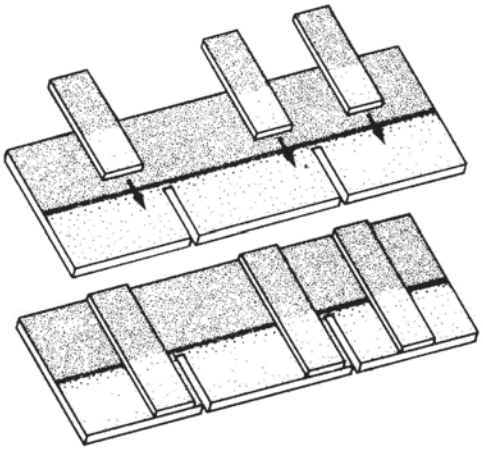

Figure 2-5: Independence construction

TRI-LAMINATES: This is a unique category of products. This innovative tri-laminate design provides a dramatically thick, 3-dimensional appearance of the classic wood shakes. Landmark™ TL and Presidential TL™ Shake are the only products in this class.

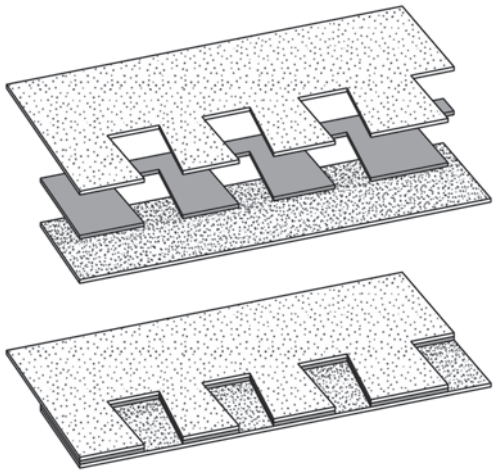

Figure 2-6: Landmark TL construction.

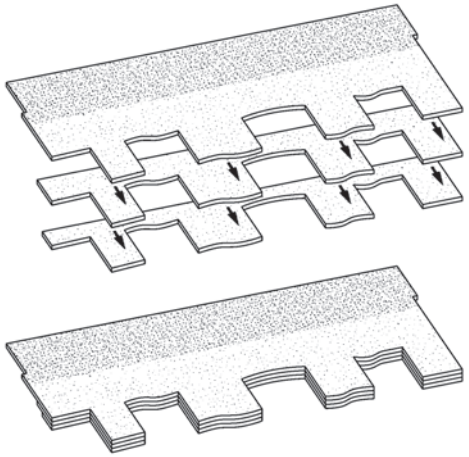

Figure 2-7: Presidential TL construction.

***SUPER* HEAVY-WEIGHTS:** CertainTeed Grand Manor™, and Carriage House™ provide a minimum of quadruple coverage over the entire roof. They measure 18" x 36" and the exposed tabs are 8" deep.

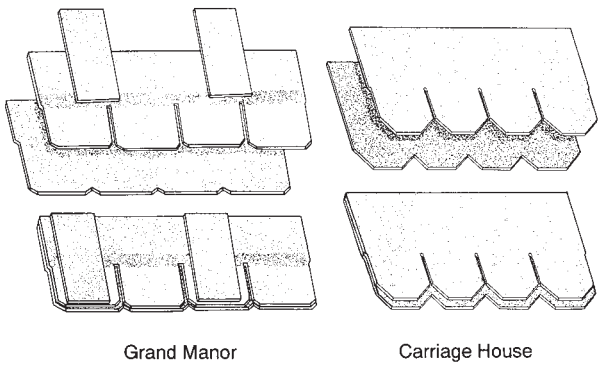

Figure 2-8: How shingle layers form a Super *Heavy-Weight shingle.*

HIP AND RIDGE SHINGLES: Cap shingles are designed to match color blend, dimensionality and depth of the field shingles. There are many options available to compliment the appearance of CertainTeed shingles such as Shadow Ridge™, Cedar Crest™, Shangle Ridge™ and Mountain Ridge™ (see specific product chapter for complimentary cap shingles).

ALGAE-RESISTANT SHINGLES: Although sometimes wrongly called "fungus", the dark stains on roofs are usually caused by blue-green algae.

To fight the algae, some manufacturers make a shingle which has algae-resistant granules on the weather side. Two granules have been used for this purpose: zinc *metal* and copper oxide coated granules. At this time, copper oxide coated granules are the most commonly used and are the granules of choice for CertainTeed.

Copper oxide granules work to prevent the formation of blue-green algae. Copper-pigmented granules are produced with a colored ceramic coating that blends with the other color granules on the surface of the shingle. Copper granules do not produce "blooms" as do zinc granules. CertainTeed offers a wide variety of shingle types that are algae-resistant.

If shingles aren't algae-resistant, it may be possible to at least lighten the discoloration with the use of an algicidal treatment. CertainTeed suggests using Safers Moss and Algae Cleaner, Shingle Shield™ Roof and Deck Cleaner, or a mixture of one part laundry bleach and three parts water, with a pinch of trisodium phosphate (known as TSP, available in hardware stores). When using a bleach solution be sure to cover and protect all of the plants and shrubbery in the vicinity. Keep in mind that most of the solution will be running down the rain spout. Extreme care should also be taken when cleaning shingles. Use a soft-bristled brush and gently clean the shingles so as not to loosen or remove the granules. A word of caution: the cleaning solution will make the roof surface slippery and potentially hazardous to walk on during treatment.

ALGAE STAINING

The appearance of a shingle roof is important to a buyer, and algae staining can cause problems to customer satisfaction. Algae staining consists of those dark streaks creeping down the shingles that can continue to get larger and larger over time. Eventually, sometimes within five years, the algae will cause the entire roof surface to look "muddy."

Algae stains can be prevented for a time, though not permanently in all cases, by introducing a certain minimum zinc- or copper-oxide coating to the granules that adhere to the surface of the shingle. These granules release a wash of metal oxide over the shingles when it rains and prevent the algae from taking hold.

MOSS AND LICHENS:

Keeping moss and lichens in check is more difficult than controlling algae. Cleaning with special formulations can help, but prevention is the best method. Keep the roof clear of debris, such as leaves and pine needles, and keep tree limbs cut back from the roof.

Trees produce sap and will naturally drop some of the sap onto a roof when in very close proximity to a home. Tree sap contains nutrients and sugars that are considered fine dining for algae, moss and lichens. Sap from trees on a shaded roof area can accelerate micro-organism growth versus a roof not influenced by trees. Trees will also shade a roof from the sun, allowing moisture to be retained on a roof surface and, depending on the size and type of trees, may inhibit air flow across the roof. All of this combined with dropped tree leaves and debris make a perfect environment for algae, moss and lichen growth.

SHINGLE STAINING/DISCOLORATION:

In storage, shingles may pick up asphalt oils (yellowish-brown) and/or backsurfacer (grayish/white) from adjacent shingles. Natural weathering eliminates this temporary discoloration.

OTHER CLEANUP PROBLEMS:

Generally, cleaning shingles discolored by rust, cement, or paint is a difficult task. It is usually best to replace the damaged shingles. Rust stains may be reduced by using a diluted water solution of oxalic acid. But, just as with bleach, always remember to protect the plants in the area from the acid solution. Let it sit for a few minutes and then rinse off with plenty of water. Never try to remove cement or mortar from shingles with muriatic acid.

Descriptively named after its color, "Tobacco Juice" is a dry residue that may accumulate on roofs and walls under certain weather conditions. On steep slopes, this water-borne residue may trickle down the roof and stain surfaces that are not properly protected by gutters or rain-diverters. Light-colored shingle roofs may also become discolored. On flat roofs, it usually occurs where puddles form and then dry up. This "Tobacco Juicing" phenomenon is usually limited to the Southwest region of the United States.

The Asphalt Roofing Manufacturers Association (ARMA) explains Tobacco-Juicing as being "…the normal result of the weathering of all asphalt-based products…regardless of their manufacturer. The residue will not affect the performance of the roof and should not be considered a performance problem."[1] The conditions necessary for Tobacco-Juicing are: 1) intensive sun exposure, 2) heavy collection of night moisture, and 3) prolonged lack of rain. Typically, all three conditions must exist. Tobacco-Juicing generally occurs only during the first weathering cycle of the roof, rarely appearing after the first year or rainy season.

Industry research has failed to find any ingredient or procedure that would eliminate the occurrence of Tobacco-Juicing. Although the residue formation cannot be prevented, gently hosing down the roof at regular intervals during long, dry periods of the roof's first summer after installation and installing gutters or rain-diverters can minimize the discoloration associated with Tobacco-Juicing.

[1] Asphalt Roofing Manufacturers Association Technical Bulletin: "Water Soluble Residue from Asphalt Roofing Products ("Tobacco-Juicing")", ARMA, November 1994.

FIRE RESISTANCE

EXTERNAL FIRE RESISTANCE

The required degree of external fire resistance is usually established by local building codes and/or insurance companies. Asphalt roofing shingles are manufactured to meet either UL Class A or Class C fire ratings. CertainTeed submits its shingles to Underwriters Laboratories, Inc., where the shingles are subjected to testing in accordance with UL 790 Fire Resistance standards. Shingle fire resistance performance is judged on the basis of three tests that determine resistance to flame spread, intermittent flame, and ignition due to burning brands on the top surface of the shingle roof. There are three levels or classes of severity that are used to rate shingles:

- **CLASS A:** Severe exposure to fire. All CertainTeed fiber glass shingles meet Class A fire resistance.
- **CLASS B:** Moderate exposure to fire. This class is not currently used for asphalt shingles.
- **CLASS C:** Light exposure to fire. Organic shingles typically meet Class C fire resistance.

Each CertainTeed shingle bundle carries a UL label indicating the shingle's degree of fire resistance. In addition, UL Certificates of Compliance are available from CertainTeed indicating that the shingles meet their appropriate standards.

REQUIREMENTS BY UNDERWRITERS LABORATORIES (UL) FOR FIRE-RATED PREPARED ROOFING

- UL classified underlayment is required under Class A fire-resistant shingles when plywood or non-veneer (OSB, WB, etc.) APA sheathing is at least $^{3}/_{8}$" thick but less than $^{15}/_{32}$".
- When sheathing thicker than $^{15}/_{32}$" is used under fiber glass-type shingles, shingle underlayment is not required for a UL Class A fire rating.

TEAR RESISTANCE

The best way to compare the "toughness" of shingles is to look at tear resistance. Read manufacturers' shingle audit reports or reports published by independent testing services.

The industry-accepted method used for comparing shingle toughness is tear resistance as defined by the American Society for Testing and Materials (ASTM). This method is part of ASTM D3462 performance standard for fiber glass shingles. It requires that a shingle resist a minimum of 1700 grams of force on a pendulum type tear tester. **ALL** CertainTeed fiber glass shingles sold in North America meet the tough requirements of ASTM D3462. **Underwriters Laboratories certifies that these CertainTeed shingles have been manufactured to pass this test**. This certification is found on each CertainTeed fiber glass shingle bundle (*Figure 2-9*).

UNDERWRITERS LABORATORIES INC.®
LISTED

PREPARED ROOFING MATERIAL
SHINGLES – CLASS A

DEGREE OF RESISTANCE TO EXTERNAL FIRE AND FLAMMABILITY LIMITS
IN ACCORDANCE WITH UL STANDARD 790
DEGREE OF WIND RESISTANCE
IN ACCORDANCE WITH ASTM D3161
WHEN APPLIED IN ACCORDANCE WITH INSTRUCTIONS INCLUDED WITH THIS ROOFING
CLASSIFIED IN ACCORDANCE WITH ASTM D3462, INCLUDING TEAR RESISTANCE

R-684 **ISSUE NO.**

Figure 2-9: UL Listing Mark.

Low budget shingles can, and often do, present a lot of problems. For example, they might have coloring that doesn't quite match from bundle to bundle, a shingle length that is out of "spec," not enough asphalt used when the shingle was made, a weak fiber glass mat, and so on. These types of defects can lead to roofing problems that range from poor appearance and a short life-span, to a high risk of blow-off.

WIND RESISTANCE

Wind is a major threat to a shingle roof system. Shingle sealant, drip edge, the construction of the shingle itself, and using proper fastening techniques are the primary defenses against wind damage.

IMPACT RESISTANCE

Impact-resistant shingles are specially manufactured and reinforced to meet UL 2218 Class 4 impact resistance rating. Available in both 3-tab and laminated shingle styles, impact-resistant shingles must be installed over a clean deck to meet the UL rating. Impact-resistant hip and ridge cap shingles are also available and required by some insurance companies who offer discounts for impact-resistant roof materials.

WEATHER RESISTANCE

Consider the conditions a roof must endure. First there is the intense heat of the sun, which scorches the surface of the roof and raises rooftop temperatures 50° – 75°F above ambient temperature. The sun's rays are relentless, especially during the early afternoon hours. In addition to heat, the sun is the source of ultraviolet radiation, which has been shown to degrade and accelerate the aging of the asphalt layers of the shingle. If not for the protective layer of colored granules, roofing shingles would fail very quickly. Other factors such as moisture, pollution and physical effects (roof traffic, hail, snow loads, tree limbs, etc.) all contribute to the aging and degradation of roofing shingles.

Seasonal and weather changes also play a role in the aging of asphalt roofing shingles. For example, consider the common situation in which the roof is bathed in the intense heat of the summer sun. On such a day the rooftop may reach temperatures in excess of 160°F. Now imagine a cold front sweeping through the area, bringing with it the violent thunderstorms that are a common occurrence during the sweltering days of summer. Almost instantaneously, the rooftop temperature drops 60° – 100°F as it's pounded with a summer shower. Thermal shocks such as this cause the roof deck beneath to expand and contract, placing a strain on the shingles. Year after year this process is repeated, resulting in cyclic fatigue of the shingles.

In addition to all of the climatic and external variables that can impact the performance of a roof, consider the internal factors that negatively influence the performance of roofing shingles. Research has confirmed that an improperly ventilated air space inhibits air movement and under most circumstances increases moisture content in comparison with properly vented attic air spaces. Heat shortens the shingles' life and moisture causes deck movement and/or deterioration, which ultimately affects the performance of shingles.

As you can see, the roofing environment is a hostile one with many factors influencing the longevity of roofing shingles. The natural aging process begins as soon as the shingles are installed on a roof. Day after day the shingles are exposed to the elements — sun, rain, heat and cold. A roof never has a "good" day.

SOLAR REFLECTIVE

Solar reflectance and thermal emittance are the two radiative properties used to measure the "coolness" of a roof. Although two other manufacturers make solar reflective shingles, CertainTeed was the first to develop a patented technology that produces solar reflective shingles with deep and vibrant color blends. CertainTeed's Landmark Solaris™ shingles have advanced granules that reflect solar energy and radiate heat much more than traditional shingles. Using cool roof technology, Landmark Solaris shingles reduce the roof's temperature in the summer.

SYSTEMS AND WARRANTIES

A Master Shingle Applicator needs to understand how his/her work affects, and is affected by, the entire shingle roof system and the warranties that apply.

BACKGROUND

Roof systems go way back. The asphalt composition shingle is a modern version of a shingle system invented as far back as the Egyptian dynasties, but no one can be sure of its origin.

Wood shingles and shakes were probably the first shingles used in America by the colonists who brought the shingle concept from Europe. Slate remains common throughout Europe and the USA. Thatch is still used in Britain and elsewhere in Europe. Clay barrel tiles and hand-formed roofs made from malleable metal go back to ancient Greece and Rome and remain in common use. Each of these roofing alternatives have cost, appearance, availability and performance characteristics that affect their desirability for a homeowner. Composition asphalt shingles are a modern addition to the roofing material inventory, and widely used in the USA. Overseas, composition shingles are not so widely used.

The principle behind shingling is ancient and proven: to keep water moving down sloping roofs until it runs off and away from the house. It doesn't matter precisely what material is used so long as the slope is adequate. Materials don't even have to be waterproof if you have enough redundancy. Thatched roofing and wood shakes are examples of materials that are not waterproof but nonetheless shed water.

So, the first principle of shingle roofing is: Keep the water running off the roof at the eaves. Anything that interferes with that principle introduces the possibility of a leak. Steep roof slopes are the foundation for an efficient water run-off. The lower the slope, the greater the risk that water can somehow back-up under the shingles. For that reason no modern shingle manufacturer will approve the use of their materials in a shingle roof system on a slope below 2/12. On slopes below 4/12, down to 2/12, the risk of leaks is great, caused by phenomena like wind-driven rain and capillary action that can make water flow uphill, or by the backup of water behind ice dams. To reduce this risk, shingle underlayment is applied beneath the shingles.

SHINGLE UNDERLAYMENT

Not all shingle underlayment is the same. There are two critically different grades: water-resistant and waterproof.

WATER-RESISTANT UNDERLAYMENT also known as tar paper and roofing felt, was invented to keep the roof decking dry until shingles could be applied. Applying this underlayment is called "drying-in the roof." It was also useful as a separation sheet between the roof sheathing boards and the asphalt shingles before OSB and plywood sheets were used as roof decking. This separation was important because direct contact with resin pockets in the pine planks caused the asphalt to degrade prematurely.

Intact water-resistant underlayment sheds most of the water that falls on it, but its water resistance is temporary. As the sun degrades the exposed asphalt, the material begins to dry out, absorb more moisture, lose its strength and eventually tear. The less asphalt used to saturate the underlayment sheet during manufacture, the shorter its life. Since asphalt is the most expensive component of shingle underlayment, lower-priced materials have less asphalt and a shorter life when exposed to the sun and are also subject to severe wrinkling when wet or even just damp.

Water-resistant shingle underlayment is not warranted by the manufacturer. Much of its water resistance is destroyed during the installation of the shingles by driving hundreds of nails through it.

Until recently, only two grades of water-resistant underlayment have been available: Number 15 (standard) and Number 30 (heavy-duty). CertainTeed offers ShingleFelt™ 15 and 30, as well as RoofWrap™ 15 and 30. ShingleFelt is a basic underlayment that meets ASTM D4869 standards. RoofWrap is a heavy-duty underlayment that is UL classified for fire-rated shingle systems and meets both ASTM D226 and ASTM D4869 standards. In recent years new categories have appeared known as premium and high-performance shingle underlayment. These materials are less likely to wrinkle when dampened. CertainTeed makes a product in this class called Roofers' Select™, which is a fiber glass reinforced felt manufactured to meet the performance requirements of ASTM D226 and ASTM D4869. It is classified by UL for fire-rated shingle systems and complies with ASTM D6757 standards.

WATERPROOF UNDERLAYMENT is an entirely different product that's used in locations such as eaves and valleys that are most likely to leak under extreme conditions such as high winds, heavy rains and ice dams. This material is known as Waterproofing Shingle Underlayment (WSU). The cost is much higher than standard water-resistant underlayment because of its high asphalt content and polymer modifier. WSU comes with a warranty against leaks and is not destroyed when nails are driven through it. CertainTeed's product is called **WinterGuard.™** It is self-stick modified asphalt on a glass mat reinforcement, available in sand or granular surface.

WinterGuard HT is film surfaced, and specially formulated with a more aggresive sealant and designed for high-temperature applications such as underneath metal or tile roofs.

On low slopes where the risk is water running uphill, or in valleys where blockage from storm debris or ice dams can cause trouble, WSU is reliable insurance against leaks when used according to the manufacturers' instructions.

FLASHING

The roof deck is most vulnerable to leaks where it meets a vertical wall, at penetration sites such as a soil pipe or chimney, or at changes in slope such as at a valley, saddle, mansard, hip, or ridge. This vulnerability is due to:

1. Deferential movements, (e.g. the roof deck moves but the chimney does not).
2. An accumulation of turbulent water (e.g., in valleys and on the high side of chimneys).
3. An accumulation of melting snow or ice (e.g., in valleys and on the high side of chimneys).
4. Breaks in overlapped shingles (e.g. at hips and ridges).

Flashing is installed at these locations to bridge adjoining structures and prevent water penetration. Flashing materials include sheet metal; cements, caulks, and sealants; and flexible sheets such as waterproofing shingle underlayment. At hips and ridges the cap shingles, not normally called flashing, serve the same function.

Leaks are most likely to originate at a flashing that has failed or was improperly installed.

VENTILATION

Proper attic ventilation that meets building code requirements is a critical roof system component and a requirement of most shingle manufacturers.

CERTAINTEED SHINGLE WARRANTIES

For complete details of terms and conditions concerning all CertainTeed warranty coverage, read the actual warranty.

WARRANTED AGAINST MANUFACTURING DEFECTS

Standard shingle warranties cover manufacturer defects. Thus, if a new roof leaks the shingle manufacturer is only liable for the cost of the shingle, and only if it proves to be defective. If the shingle is not defective the shingle manufacturer has no responsibility. On the other hand, the contractor often appears to the homeowner to be fully responsible for the roof system he or she installed. Contractors can and should clarify the limits of their responsibility regarding contractor workmanship versus the manufacturer shingle warranty.

SURESTART™ PROTECTION

SureStart™ protection, a feature of all CertainTeed Roofing warranties, provides a period of non-prorated coverage for manufacturer defects. Should the shingle be proven to be defective during the SureStart period, CertainTeed will pay for the labor and materials to replace or repair at current labor rates, without prorating the cost from the time of installation.

SURESTART™ PLUS

SureStart PLUS extends the basic SureStart protection period, and offers three levels of extra protection to choose from:
3STAR, 4STAR and 5STAR Coverage. CertainTeed only offers SureStart PLUS through registered ShingleMaster™ and SELECT ShingleMaster℠ companies.
NOTE: Only SELECT ShingleMasters can offer 5STAR Coverage.

ALGAE RESISTANT WARRANTY COVERAGE

Certain shingles, specifically labeled by the manufacturer, are warranted against the appearance of algae staining for a limited time period. At the time of this writing, the warranties range from 10 years to 15 years. Should staining appear during that period, the remedy is determined by the terms and conditions of the warranty. These can vary from brand to brand. Most common is the cleaning or replacement at the option of the manufacturer.

WIND WARRANTY

All shingles are warranted against blow-off. This coverage is shorter than the nominal warranty duration. In most cases it is limited to five years. One very common warranty limitation is the requirement that the shingle must be sealed for the wind warranty to be in effect. Another is that all wind damage coverage is limited to the product's maximum wind velocity in miles-per-hour. CertainTeed's Hatteras® and top-of-the-line shingles carry a 10-year warranty coverage for winds up to 110 miles-per-hour – a category 2 hurricane (Soffin-Simpson Scale).

When special application methods are used, Certainteed offers upgraded wind warranties up to 130 MPH on several different shingles.

SHINGLE ROOF SYSTEM WARRANTIES

Because of the complex nature of the shingle roof system, the many component and brand choices available, and the lack of a standardized approach to workmanship, each shingle roof system is a custom-built, one-of-a-kind product. This lack of predictability has meant that no manufacturer can warrant the entire roof system. Nor can the contractor provide such a warranty because he does not manufacture the materials used, although it may often seem to the homeowner that his contractor does provide such coverage.

To standardize the roof system and bring a larger portion of the components under the same warranty, CertainTeed offers the Integrity Roof System™ specification and SureStart™ PLUS extended warranty coverages.

THE INTEGRITY ROOF SYSTEM™

CertainTeed introduced the Integrity Roof System™ in 1998.
The "System" was created to:

- Help specify an ideal steep-roof system.
- Establish minimum standards for SureStart™ PLUS.

SPECIFICATIONS FOR THE INTEGRITY ROOF SYSTEM™ INCLUDE THE FOLLOWING:

- Clean roof deck installation. No "roof-overs" are permitted.
- CertainTeed shingle underlayment or, if a CertainTeed product is not available, an ASTM-rated underlayment.
- CertainTeed Starter Shingles.
- CertainTeed WinterGuard™ Waterproofing Shingle Underlayment must be installed along the eaves if required by local building code or when the roof system is in a snow zone, or north of the following states: North Carolina, Tennessee, Arkansas, Oklahoma, New Mexico and Arizona.
- WinterGuard must be used at roof penetrations and as a liner in closed-cut and woven valleys.
- A CertainTeed shingle with a warranty duration of 30 years or more.
- CertainTeed Hip and Ridge Cap Shingles.
- Approved CertainTeed flat roofing system components, (up to 10 squares) if flat roofs are part of the warranted job.
- Attic ventilation is installed to meet applicable model code requirements, or building code standards. Ridge vents with external baffle must be used **IF** installing a ridge vent.
- Workmanship must be in conformance with the **CertainTeed Shingle Applicator's Manual** required procedures.
- For 5STAR Coverage, workmanship must be in conformance with the **CertainTeed Shingle Applicator's Manual** required **and** recommended procedures.

Here's a Tip... *Take a clean copy of the MSA/SAM Manual with you when making sales calls. Show it to the customer to impress them with your professionalism. (Thanks to Ed Kerr of Dearborn Heights, Michigan.)*

SOME FREQUENTLY ASKED QUESTIONS ABOUT THE INTEGRITY ROOF SYSTEM

WHY IS A ROOF-OVER NOT PERMITTED?

From our many discussions with contractors over the years, we've learned that a roof-over installation introduces an increased risk of workmanship errors. Moreover, a tear-off will reveal defects in decking that might otherwise go undetected. A growing number of contractors recommend a tear-off to their customers.

Of course there are arguments in favor of doing a roof-over as well. For example, two layers of roofing provide redundant protection against leaks. Also, by allowing the original layer of roofing to remain, the cost of the job and the burden on landfills is reduced.

On balance, we are convinced that the argument for tear-offs and clean roof installations is persuasive for ensuring the highest possible quality finished roof system.

WHY DO WE REQUIRE CERTAINTEED BRAND PRODUCTS?

There are varying specifications and standards among the different manufacturers and these can be changed at any time. We audit competitive products on an on-going basis but not frequently enough to keep up with all the changes as they take place. Consequently, the only specifications and standards we can count on are our own. By requiring CertainTeed brand products we are better able to predict the final quality of the roof system.

Finally, we are in the business of manufacturing and selling CertainTeed products. The sale of these products paid the bill for this manual.

WHY IS SHINGLE UNDERLAYMENT REQUIRED?

CertainTeed does not require that shingle underlayment be used under their shingles for the standard shingle warranty coverage to be in effect on slopes of 4/12 and more. However, when we look at the performance of the roof system as a whole, underlayment has a legitimate role to play.

Underlayment is an important component in the UL (Underwriters Laboratories Inc.®) fire resistance classification. It can provide back-up protection in case of a shingle blow-off, and during the installation of the shingles it can keep the unshingled decking dry. For these reasons, and also because many contractors tell us they and their customers believe it is an important part of the roof system, we require its use in the Integrity Roof System™.