

CEDAR SHAKES AND SHINGLES:

The Living Family Industry

BY MARTY OBANDO

For the most part, the cedar shake and shingle industry is a second, third, and even fourth generation in the logging, manufacturing, wholesale and retail sales arenas, and in some application areas. We are now starting a professional consulting tradition in this industry family. This is what

the article is about. The guidance that we are attempting

to convey will be the facts and some of the

useful knowledge that we in the industry

use daily. This information for roof consultants

is exactly as provided from the manufacturers?

recommendations, grading

rules, and the building

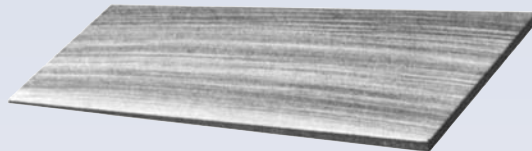
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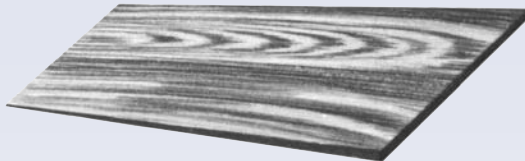
edge that we can trace

from generation to gen

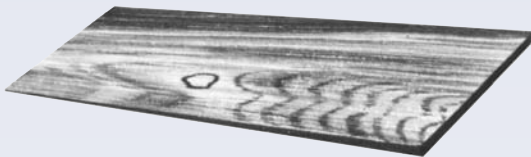
eration that is still being actively u



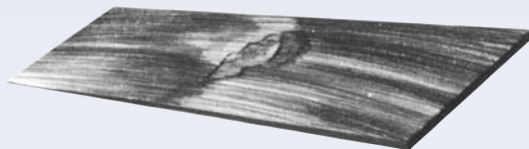
No. 1 BLUE LABEL



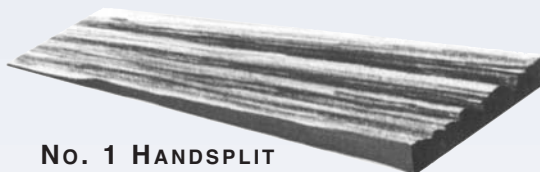
No. 2 RED LABEL



No. 3 BLACK LABEL



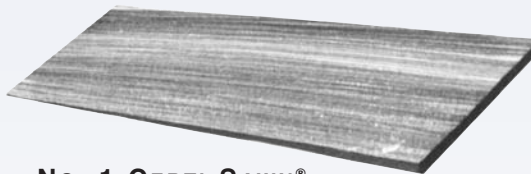
No. 4 UNDERCOURSING



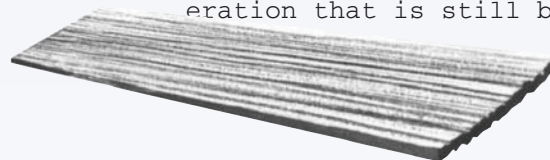
No. 1 HANDSPLIT & RESAWN

Figure 1: No. 1 Blue Label® red cedar shingles are the premium grade of shingles for roofs and sidewalls.

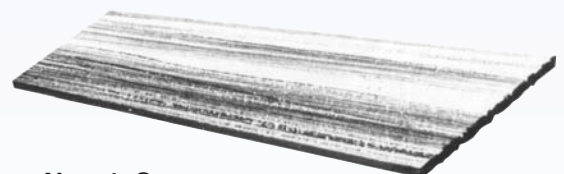
They are 100% heartwood, 100% clear and 100% edge-grain. No. 2 Red Label is a good grade for many applications. Not less than 10" clear on 16" shingles, 14" clear on 18" shingles and 16" clear on 24" shingles. Flat grain and limited sapwood are permitted in this grade. No. 3 Black Label is a utility grade for economy applications and secondary buildings. Not less than 6" clear on 16" and 18" shingles, 10" clear on 24" shingles. No. 4 Undercoursing shingles are a utility grade for starter course undercoursing. No. 1 Handsplit & Resawn red cedar shakes have split faces and sawn backs. Cedar logs are first cut into desired lengths. Blanks or boards of proper thickness are split and then run diagonally through a bandsaw to produce two tapered shakes from each blank. No. 1 Certi-Sawn® shakes are sawn on both sides. No. 2 and 3 are also available. No. 1 Tapersplit are produced largely by hand, using a sharp-bladed steel froe and a mallet. The natural, shingle-like taper is achieved by reversing the block, end-for-end, with each split. No. 1 Straightsplit shakes are produced by machine or in the same manner as tapersplit shakes except that by splitting from the same end of the block, the shakes acquire the same thickness throughout.



No. 1 CERTI-SAWN®



No. 1 TAPERSPLIT



No. 1 STRAIGHTSPLIT

Eastern white cedar and Alaskan yellow cedar are used for some of the wood shingles in North America. The most common wood used in roofing for both wood shingles and shakes is western red cedar.

The western red cedar used most in cedar shingles and shakes is usually a byproduct of the logging techniques used in the Pacific Northwest of the U.S. and Canada. Many of the blocks called "bolts" that are already cut to size to be sawn or split into the finished products are made in the forest and delivered to the mills. Some of the mills still cut the bolts from logs that, for the most part, are floated in rafts to the mills on a river. Around Vancouver Island in Canada, they do use water-salvaged logs that are called "floaters."

When a roof consultant looks at a roof with perfectly-grained shingles or shakes that are correctly applied, and for no apparent reason there is a problem with splitting, checking, corrugating, cupping, and even curling as much as 90 degrees, what might the answer be? In the industry, it is known that wider-grained, durable, softwood (such as western red cedar that has been completely saturated with water for a long period of time), can react in these ways when manufactured into small units such as cedar shingles and shakes. Commonly, this becomes apparent only after the product is applied and starts to dry. It is hard to identify these logs if care is not taken in the manufacturing and grading procedures. Many logs of other wood species that have been under water for a long time (called "sinkers") or fine-grained softwoods, such as cypress or hardwoods, can be used with good results by the lumber industry if carefully dried.

Before the invention of the shingle machine incorporating the circular saw, all wood shingles and shakes were split with a mallet and froe. The shingles were then finished smooth from the shakes with a drawknife on a shaving bench. With the invention of the shingle machine, not only did an economical, smoothly-finished product become available, but also most of the previously unusable grains of the tree now became the lower grades of shingles. As a roof consultant, one need only learn how to recognize and use the best grade—the blue-labeled No. 1 grade. With the economical, smooth wood shingles becoming available, the rough, slow-to-split shake name became all but forgotten. The name "shakes" for roofing material came back after being forgotten for about a century when, in the early 1950s, the architectural era of "rustic" came into vogue.

Roof consultants should use only the manufacturer's recommendations and local building codes for planning, specifying, inspecting, and consulting.

Cedar shingles are sawn with two smooth faces and are made in three lengths: 16", 18", and 24".

Cedar shake types are: straight-split and taper-split shakes which are split on both faces; hand-split and re-sawn shakes which are split on one face and sawn on the other; taper-sawn shakes which are sawn on both faces. Cedar shakes come in three lengths: 18" and 24" shakes for the field and 15" for the bottom starter course and the top course. Shakes also come in various nominal thicknesses including 3/8", 1/2", 5/8", 3/4" and 1" thick jumbos.

All the Premium Grade and No. 1 Grade cedar roofing products can be pressure-impregnated to have a Class B or C fire-rated product or Class A system. All the Premium Grade and No. 1 Grade cedar roofing products can be CCA pressure-

impregnated, preservative-treated to extend the wood life and carry a long-term warranty from the treatment company. However, you cannot obtain fire-retardant and preservative treatments in the same product.

The traditional spaced board sheathing is best for untreated cedar shingles. Spaced boards on solid sheathing or on a layer of continuous ventilation product work well, too. Cedar shakes which are laid with an interwoven felt system will have water forced to the surface, but this method can block the air flow. Cedar shakes do as well on spaced boards or solid sheets for sheathing, partially because of their uneven surfaces. CCA-treated cedar can be laid on any type of surface.

The correct range of exposures for the various materials, butt thickness, material grades, roof pitches, and desired aesthetics should be followed from the manufacturer's recommendations or the local building code.

The side lap required for the adjacent course joints is a minimum of 1-1/2" for all the wood roofing products. This is by far the most important rule for roof durability. There is a requirement by the manufacturer and the building codes that joints in alternate courses should not be in alignment. This practice was started years ago when more of the lesser grade of wood shingles were allowed on the roof. It prevented the weaker, lesser-grade shingles from being split in line with the existing shingle joints that moved normally in relation to their moisture content. This rule became much less relevant as only the No. 1 vertical grain shingles were allowed on the dwelling roofs. There has never been any requirement by the manufacturer or the building codes that alternate course joints on cedar shakes should not be aligned; there is no problem whatsoever if they are.

The nail placement on all wood roofing is very important. Only two nails should be used, approximately 3/4" from each side, to keep the sides of the shingle/shake from cupping up. A third nail put in the center can cause the product to split. The nails should be placed 1-1/2" above the butt line of the following course to keep the shingle/shake from curling upward. Hot-dipped, galvanized nails or stainless steel fasteners should be used. On fire-treated or CCA-treated material, always ask the treatment company which fasteners are recommended for use with their product. Some fasteners are not compatible with treated material. Nail or staple heads should be driven flush with the surface of the wood. Over driving the fastener head into the wood can cause the wood to spall and is not allowed because it weakens the holding power of the fastener and can cause leaks. Underdriving the fasteners can also cause problems. Nail lengths and types should be those recommended by the manufacturer's recommendations or the local building code.

During the 1975 oil shortage, the type 30 felt required for cedar shake application system was not manufactured. The recommendations were changed to temporarily allow type 15 felt to be used. Type 15 felt has persisted in recommendations and building codes. As a competent roof consultant, specify type 30 felt on all applications with cedar shakes. Type 30 felt, not type 15, is the product that the felted cedar shake system was designed to use.

The type 30 felt interwoven with the cedar shakes in the application system forces the water to the surface of the shakes. This can be seen quite clearly in the various diagrams in the new *Cedar Shake and Shingle Bureau Design and Application Manual for New*

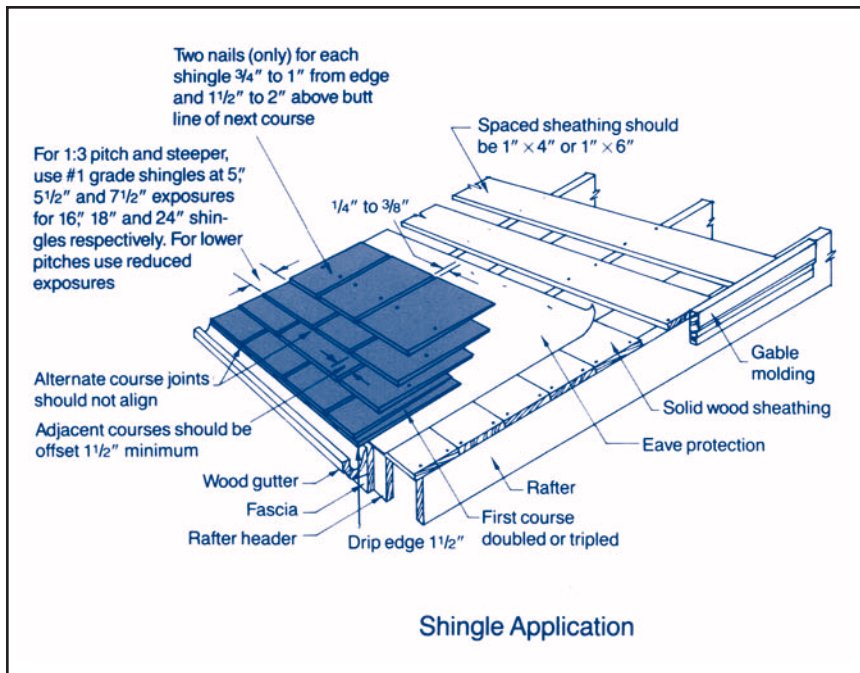


Figure 2: Shingle Application

Roof Construction. The diagrams also show quite clearly how the interwoven type 30 felt system is placed in relation to the shakes to force the water to the surface and still allow the shakes to be ventilated. The felt is held 20" up from the butt and only about 4" of the shake tip is covered with felt. This allows the water to flow over the shakes below. The most common error in the application of the shakes is putting the felt only 10" above the butt. The exposed felt can be seen between the shake joints where the sun will burn it away. Applying the felt too low is called "rot felting" because the shake, fastener, and felt cannot dry out properly, retaining moisture and shortening longevity.

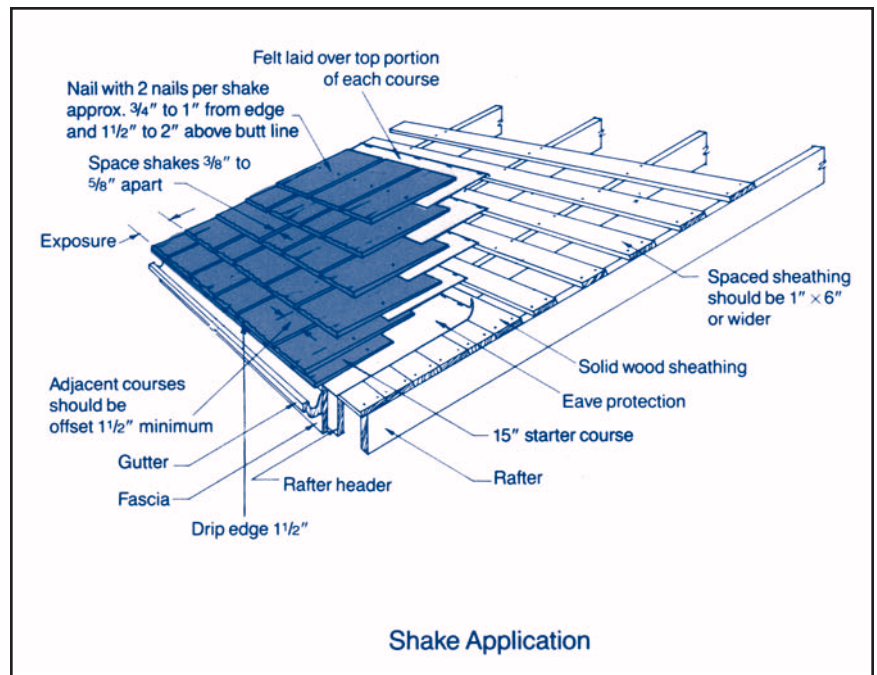
Cedar shake and shingle roofs applied in the long-term warm or cold, dry area of North America have functioned with long life spans and were not affected by any roof growth. In the last decade, CCA treatment of cedar shakes and shingles has

had such effective results in the world's hot and humid areas that a long-term warranty can be obtained from the wood treaters. If a roof consultant observes an older cedar roof that is in need of repair and the shakes or shingles have moss and are turning green, these roofs should be repaired and treated to extend their life. Contact the Cedar Shake and Shingle Bureau for additional information on roof maintenance.

The Red Cedar Shingle Bureau was founded in 1915. In 1963, it merged with the Red Cedar Hand-Split Shake Association and became the Red Cedar Shingle & Hand-Split Shake Bureau. In 1988, the name was changed to the Cedar Shake and Shingle Bureau. The name "Red" on any of the literature means it is dated.

In spite of this author's assistance in writing some of the roofing aspects for two different home repair and construction book series, an illustration

Figure 3: Shake Application



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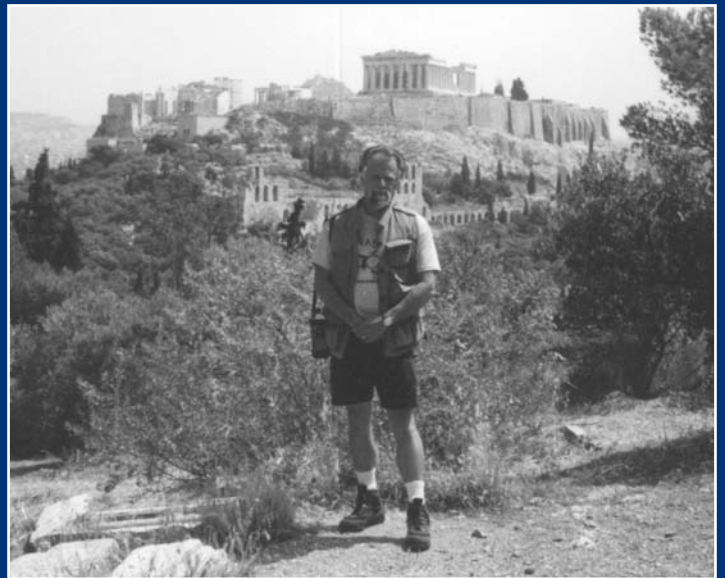


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of cedar shakes applied in the incorrect "rot felted" manner was mistakenly promoted in the books, published in 1989. Another respected industry manual also was published that year in which an illustration showed the same "rot felted" application method. People in the know in the industry shudder to think of the number of experts who have picked up this incorrect information and repeated it as the "correct" method. Use only the official manufacturer's recommendations and the local building codes as the sole sources for specifications. As can be seen, even with the best of intentions, very destructive application instruction errors can be passed on.

The Cedar Shake and Shingle Bureau would like to thank RCI roof consultants with first-hand knowledge in the use of cedar shakes and shingles who took the time to provide their comments on the specification pages of the new *Cedar Shake and Shingle Bureau Design and Application Manual for New Roof Construction*. Input from roof consultants savvy about cedar roofing is a must, since they will be those most likely to benefit from the most correct and user-friendly specification pages published. To receive a free copy of the new manual, RCI members need only call and request a copy from the Cedar Shake and Shingle Bureau at 206-453-1323. ■

ABOUT THE AUTHOR



Captain Martin L. Obando, shown here studying roof archeology in the Mediterranean, began his career with wood roofing in 1953 in a shingle mill following school in Oregon. In California, he became a journeyman carpenter, roofer, and sheet metal worker. In 1962, Obando earned his C-39 California Roofing Contractors License. The Cedar Shake and Shingle Bureau retained him in 1967, where he is presently Director of Application Specifications and Quality Control Auditor (an inspector of mill inspectors). Obando has been a member of RCI for 11 years and is past chairman of the Codes and Standards Committee. He is director of logistics for the RICOWI Wind Investigation Team sponsored by the Department of Energy. Marty consults on roof project management internationally.