TRADITIONAL ROOFING

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Although wood roofing in the form of shingles was a common sight in early America, both slate and tile roofing were also used. In this country, wood shingles gave way to slate and tile, especially in densely populated areas, to avoid the fires that devastated London and Boston in the 17th century. By the 19th century, metal roofing had begun to establish itself as a non-flammable roofing option.

Clay

Clay tile roofing is one of the most durable roofing materials. In many parts of the world, centuries old tile roofing is still intact and functioning. Barrel shaped tiles called pantile were the traditional roof covering in Spanish settlements and on "Spanish colonial" style housing. Much of the roofing tile used in the east, however, were flat tiles about 10-12 inches long and 6 inches in width. These were often installed with nails or wooden pegs. Some early tile were fired with short posts or lugs protruding from the back to allow them to simply hang on narrow roof boarding.

Slate

Although there is a large slate belt that stretches from Maine to Virginia, most slate in early America was imported from Wales. It wasn't until the middle of the 19th century, with the establishment of quarries and transportation systems that slate became an economical option on many buildings located near canal or railroad shipping centers.

Slate is an extremely durable material that is second only to the best tile roofing. Slate, however, is available in a number of quality grades. The least expensive slate, such as the Pennsylvania gray, has a lifespan of about 75-100 years. Purple and red slates from New England quarries generally have the longest lifespan. Factors affecting the lifespan of slate roofing material are weather exposure, acid rain, and some installation methods.

Metal

Metal roofing in America began sporadically in the 18th century with the use of lead or copper. By the beginning of the 19th century, sheet metal rolling mills began turning out large sheets of iron that could be painted and installed wherever a lightweight, durable, fireproof, and economical roof is necessary. Sheet iron was often used as replacement roofing and when coated with tin as a rust inhibitor, beginning in the 1820's, was known as tinplate. By the middle of the 19th century, sheet iron (later, steel) was galvanized or coated with a mixture of lead and tin called "terne" to produce terneplate roofing. Stamping and embossing metal roofs in the late 19th and early 20th centuries to emulate wood, slate, or tile roofs was popular, as was embossing metal shingles with geometric or floral designs

Repairs

Extensive roofing repairs are inherently dangerous and should always be performed by professionals. However, with reasonable precautions, certain repairs can be accomplished by the homeowner working from a ladder or scaffold.

Wood shingle repairs

When wooden roofing has weathered and split beyond the point where replacing a single shingle will make a difference, replacement is the most economical option. However, when relatively new wood shingles have been damaged by ice, falling tree limbs or have simply split, individual replacement is a reasonable approach. One of the most important issues faced by homeowners for shingle repairs is the choice of material. Early shingles were cut from a variety of woods from white pine to cypress. Today, western red cedar is the most commonly used material to produce wood shingles. If your roof has been replaced in the past 50 years it is probably cedar, or the less commonly used eastern white cedar or white oak.

Once the wood species is determined, the size of the shingle should match the original in length and width. In addition, the wide or "butt" end of the shingle must match the originals. Finally, the surface finish should be consistent with the surrounding roofing. Although not historically rooted, the term "shake" (a twentieth century invention) has come to mean a shingle that is split and hence has a rough surface. On the other hand, ordinary sawn wood roofing is referred to simply as "shingles."

Slate shingle repairs

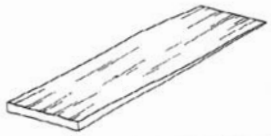
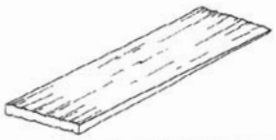
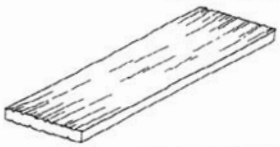
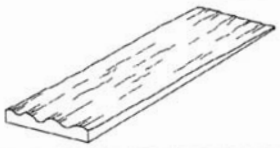
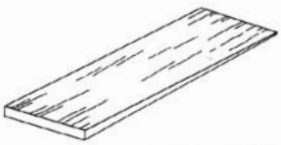
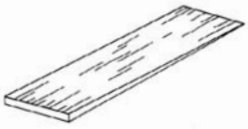
Most slate shingles undergo a gradual weathering and deterioration process. Signs and symptoms include delamination, breakage, efflorescence, and scaling. When the field of shingles has reached this critical point, it is best to consider replacement. However, these shingles can be replaced individually for many of the same reasons that wooden shingles will be replaced. Shingles manufactured from slate are brittle and subject to the same forces that break wooden shingles, i.e. fallen limbs, ice etc. To this list, one can add the occasional defective shingle or poor installation to necessitate the replacement of individual elements.

Matching the color and texture of slate shingles is as important as it is with wooden shingles. Be aware that even though the color may be right, some slate is manufactured in shingles that are nearly an inch thick. These require special orders and equally special handling. Fortunately, there is a very active market for used shingles (and tiles) that can be ordered so that they match your originals in all aspects, including aging.

Tile

These can be far more varied than Slate and wood shingles. Many of the oldest tiles are hand packed and vary slightly. Once again, damage to tile is often the result of the forces of nature. Replacement of individual tiles should be the first option, even for aging material. Most well crafted tiles will last for at least 100 years before any replacement is necessary. Unfortunately, replacement is often a result of fastener failure rather than tile deterioration. Tile can be carefully removed and replaced when fasteners and flashings are in need of replacement.

AVAILABLE WOODEN SHINGLES AND SHAKES FOR RE-ROOFING

TYPE	SIZE	DESCRIPTION	NOTES
Custom split & dressed 	Made to match historic shingles	Handsplit the traditional way with froe & mallet. Tapered. Surfaces dressed for smoothness	Appropriate if: • Worked to match uniformly dressed original shingles
Tapersplit* 	Typically: L = 15", 18", 24" W = 4"–14" Butts vary 1/2"–3/4"	Commercially available. Handsplit the traditional way with froe & mallet. Tapered. Bundles contain varying widths & butt thicknesses. Surfaces may be irregular along grain.	Appropriate if: • irregular surfaces are dressed • butt thicknesses ordered uniform • wide shingles are split
Straightsplit 	Typically: L = 15", 18", 24" W = 4"–14" Butts vary mediums = 3/8–3/4" heavies = 3/4–1¼"	Commercially available. Hand or machine split without taper. Bundles contain varying butt thicknesses; often very wide shingles. Surface may be irregular along the grain. Thick shingles not historic.	*Not* appropriate for most preservation projects • Limited use of thin, even straightsplits on some cabins, barns, etc.
Handsplit* resawn 	Typically: L = 15", 18", 24" W = 4"–14" Butts vary mediums = 3/8–3/4" heavies = 3/4–1¼"	Commercially available. Machine split and sawn on the backs to taper. Split faces often irregular, even corrugated in appearance. Butt thickness vary and may be too wide.	*Not* appropriate for preservation projects
Tapersawn* 	Typically: L = 15", 18", 24" W = 4"–14" Butts vary 1/2"–3/4"	Commercially available. Made from split products with sawn surfaces. Tapered. Butt thicknesses vary and shingles may be too wide. Saw marks may be pronounced.	Appropriate if: • butt thicknesses ordered uniform • wide shingles are split • pronounced saw marks sanded
Sawn-straight butt 	Typically: L = 16"–.40 (<3/8") 18"–.45 24"–.50 (1/2") W = Varies by order	Custom or commercially available. Tapered. Sawn by circular saw.	Appropriate to reproduce historic sawn shingles
Sawn-fancy butt 	Typically: L = 16"–.40 (<3/8") 18"–.45 24"–.50 (1/2") W = Varies by order	Custom or commercially available. Tapered. Sawn by circular saw. A variety of fancy butts available	Appropriate to reproduce historic fancy butts
Steam-bent 	Varies by order to match, "Thatch" roofs	Custom or commercially available. Tapered. Thin sawn shingles are steamed and bent into rounded forms.	Appropriate to reproduce "thatch" shingles

source: Preservation Brief #19