

ROOFING FOR HISTORIC BUILDINGS

Asphalt Shingles

Asphalt shingles have three major components: asphalt, felts and colored mineral or ceramic granules. Asphalt is a byproduct of petroleum distillation and also occurs in natural deposits. This dense mixture of hydrocarbons provides the waterproofing for the shingle. The felt fibers reinforce and stabilize the asphalt,

while the granule aggregates protect the assembly from sun, wind, rain and minor foot traffic.

The roots of asphalt shingles can be found in composition roofing that developed in the United States in the mid-19th century. In the last quarter of the 19th century the site-layered components of built up roofing were adapted to produce a factory assembled product of long strips.

Packaged in rolls this material, once called "ready roofing," is now commonly known as "roll roofing." Though naturally occurring asphalt was used early as a waterproof coating, most built-up roofing systems relied on the more abundant coal tar. Asphalt, however, could be processed to be more solid than coal tar, and this solidity was necessary to facilitate the transition from a site fabricated system to a preassembled product. Despite the abundant and affordable asphalt from a growing petroleum industry, the use of natural asphalt was a point of product promotion at least as late as 1930.

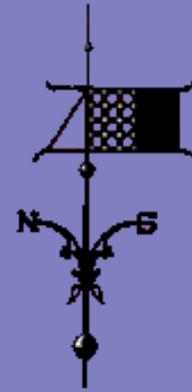


The Barber Asphalt Co. featured their use of natural asphalt mined from Trinidad Lake in the promotion of their shingles. [click image for larger view]

The first asphalt shingles were produced in 1903 by a roofing contractor and manufacturer of prepared asphalt roofing. Herbert M. Reynolds of Grand Rapids, Michigan, hand cut rolls of "stone surfaced" roll roofing into individual shingles. Early shingles were typically rectangular or hexagonal. The colors, usually red, green or black, were limited by the natural materials used for the granular surface.

The popularity of this product led to the proliferation of shapes and sizes and attachment systems, some of which were patented. The multi-tab strip shingle was a significant development that quickly emerged. It offered the traditional effect of a small shingle with lower installation costs. By 1906 Bird and Son was marketing a notched shingle that had the appearance of two shingles when installed.

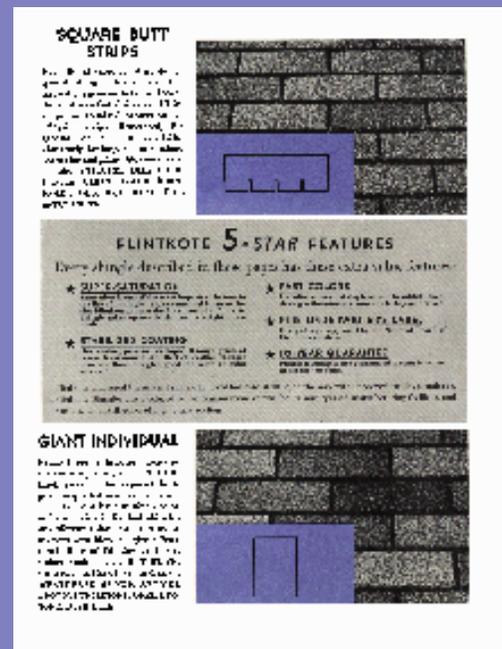
Numerous factors contributed to the increased use of asphalt shingles in the 20th century. Made of non-strategic materials and easier to transport than wood or slate, they met the constraints imposed during World War I. More flame resistant than wood, they were promoted in response to a 1916 publication of the National Board of Fire Underwriters urging the



Shapes

Shapes manufactured by the Flintkote Company during the 1940s.

[click images for larger views]



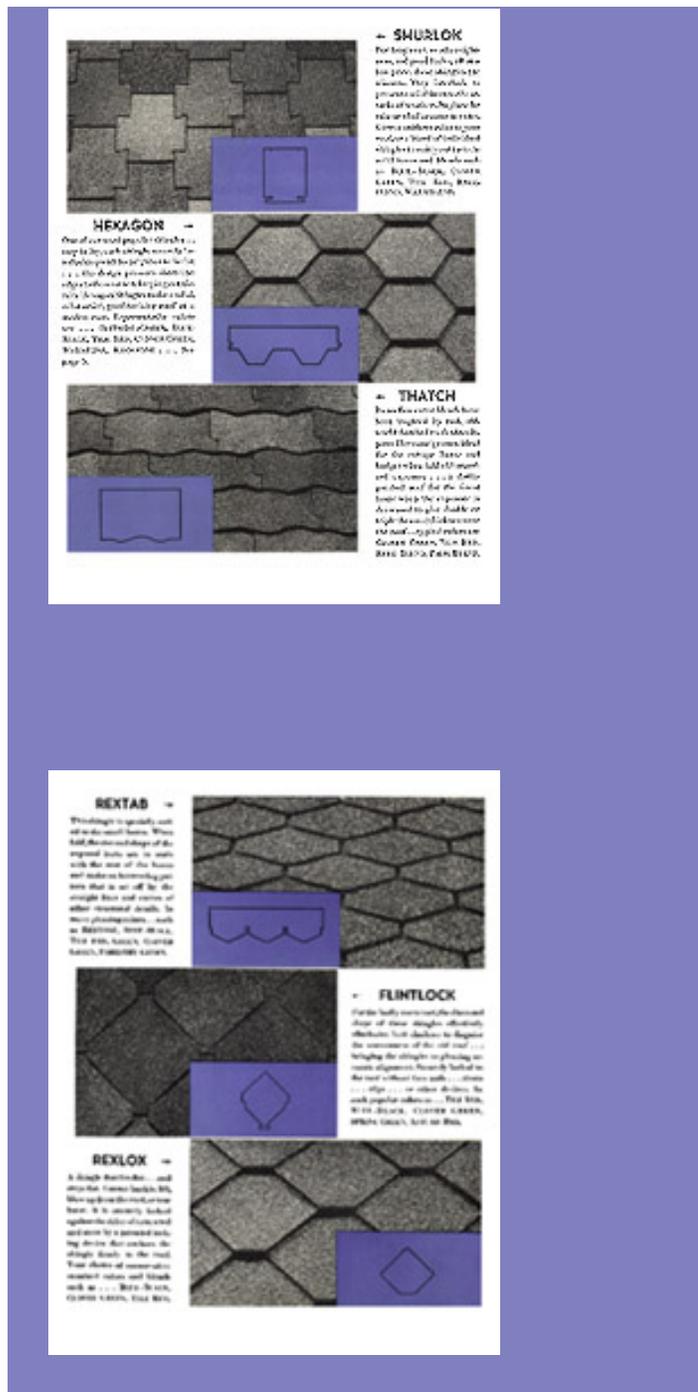
Slate used for the surface aggregate determined the colors of early shingles. [click image for larger view]



elimination of wood shingles as a fire hazard. Additionally, asphalt shingles gained a cost advantage over other materials. As improvements in manufacturing processes made asphalt shingles cheaper, increased labor costs made installation of traditional materials more expensive.

The variety of shingle shapes and sizes peaked by 1930, and by 1935 all major manufacturers were offering a 12 by 36 inch multiple tab shingle that is the standard today. At the same time the introduction of ceramic granules

allowed a wider range of color choices that were often mixed to produce a blended shingle. The most significant recent change in the product itself is the replacement of organic felts with fiberglass mats resulting in a stronger, more durable shingle.



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