Concern with fiberglass shingles

by **Mark S. Graham**

During the past several years, there has been considerable discussion in the roofing industry about the performance of asphalt shingles. Although shingle performance generally has been good, some roofing professionals have reported concerns with asphalt shingles reinforced with glass-fiber mats. These commonly are referred to as fiberglass shingles.



Fiberglass shingle cracking or splitting has been reported to NRCA in isolated instances. Cracking or splitting typically appears as linear horizontal or vertical tears through some fiberglass shingles' tabs. Although this phenomenon does not appear to be widespread, it is troublesome for some building owners and roofing professionals.

ASTM standards

There currently are two material specification standards that apply to fiberglass shingles: ASTM Standard D 3018, "Standard Specification for Class A Asphalt Shingles Surfaced with Mineral Granules," and ASTM Standard D 3462, "Standard Specification for Asphalt Shingles Made from Class Felt and Surfaced with Mineral Granules."

ASTM D 3018 includes tests for volatile loss and granule surface sliding, fire test classification and wind resistance. ASTM D 3462 incorporates these tests and also includes tests for tear strength; asphalt penetration, softening point and compatibility; mass; granule displacement; and fastener pull through resistance. Because of the additional physical requirements, ASTM D 3462 generally is considered more stringent than ASTM D 3018.

Code requirements

In *The BOCA* [Building Officials & Code Administrators] *National Building Code/1996* and *Standard Building Code, 1997 Edition*, ASTM D 3462 is the minimum material requirement for fiberglass shingles.

The *CABO* [Council of American Building Officials] *One- and Two-Family Dwelling Code, 1995 Edition*, and *Uniform Building Code* [UBC], *1997 Edition*, do not contain specific, direct approval criteria for fiberglass shingle materials. Instead, fiberglass shingles may be accepted by building officials using alternative materials and system provisions described in these codes.

ICBO ES

To assist UBC users, ICBO [International Conference of Building Officials] Evaluation Service Inc. (ICBO ES), a subsidiary of ICBO, recently developed AC127, "Acceptance Criteria for Roofing Systems with Asphalt Shingles Made with Glass Felt."

Only 79 of the 122 fiberglass shingle products listed in NRCA's Residential Steep-Slope Roofing Materials Guide *comply with ASTM D 3462.*

Compliance with AC127 specifically requires compliance with ASTM D 3462. In addition, it includes specific requirements for shingle testing by an accredited laboratory, quality-control procedures, shingle bundle package labeling and full-scale wind-uplift testing for high-wind regions.

If its shingles comply with AC127, a roofing manufacturer receives an evaluation report that describes the conditions of acceptance by ICBO ES. A roofing manufacturer then can use the evaluation report number on its packaging.

Marketplace

Although it is a minimum requirement for building code compliance, fiberglass shingles that comply with ASTM D 3462 do not dominate the U.S. fiberglass shingle market.

Review of NRCA's *Residential Steep-Slope Roofing Materials Guide, 1998 Edition*, reveals only 79 of the 122 fiberglass shingle products listed comply with ASTM D 3462. Some shingle manufacturers report that less than 50 percent of their total fiberglass shingle production complies with the standard. Generally, most fiberglass shingles labeled "20-year" and some labeled "25-year" or higher do not comply with ASTM D 3462.

Concern

In areas where the applicable building code requires that fiberglass shingles comply with ASTM D 3462, the sale and use of shingles not complying with the standard are of particular concern.

Compliance with applicable building codes has specific legal implications. For example, if a roof system fails, a roofing professional may face potential liability if his work is not in compliance with the applicable building code's provisions.

Recommendations

NRCA suggests all fiberglass shingles comply with ASTM D 3462. In areas where building codes require compliance with ASTM D 3462 or where AC127 is used, roofing professionals are encouraged to try to verify compliance of fiberglass shingles with the applicable standard.

If compliance cannot be determined from the package labeling or manufacturer's product information, the fiberglass shingle supplier and/or manufacturer should be contacted for specific standard and code compliance assistance. PR

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