

Background

This document provides a technical evaluation by the Asphalt Roofing Manufacturers Association (ARMA) regarding the Insurance Institute for Business & Home Safety (IBHS) report, 10-Year Wind Performance of Asphalt Shingles Project, published on September 22, 2026. While IBHS evaluates fourteen products across seven manufacturers weathered at its regional aging farms, the report's sweeping conclusions are fundamentally compromised by non-standard testing protocols, unrepresentative grab-sampling, and incomplete probabilistic modeling. By shifting testing procedures mid-project and omitting positive performance outcomes along with enhanced manufacturer installation guidelines, the study fails to reflect real-world roof system durability. ARMA strongly cautions against relying on the IBHS Aging Farm report for broad market decisions, urging carriers and standards bodies not to use its unrepresentative data to enforce arbitrary age or policy caps.

Key Technical Concerns of the IBHS Report

1. Non-Standard Testing and Lack of Oversight

- Arbitrary Methods vs. Consensus Standards: IBHS utilized ad hoc and constantly shifting internal protocols rather than nationally recognized, consensus-based standards. Notably, the study transitioned mid-project from edge-clamping to a “highly variable” beam procedure that fails to model the aerodynamic peeling effects shingles experience during high-wind events. Although IBHS relied on modified variants of ASTM uplift and wind standards, IBHS has not presented its methodological concerns to the ASTM subcommittee overseeing these standards, effectively bypassing the consensus-based standards process.
- Lack of Independent Oversight: The IBHS facility operates without independent lab calibration, auditing, or public verification records. This lack of third-party oversight creates a clear conflict of interest when research is used to direct consumer behavior on behalf of insurance companies.
- Inconsistent Results and Mechanical Deflection: IBHS’s modified uplift test method (Figure 2) relies on non-standardized, variable beam lengths developed without industry input. Longer wood beams flex under uplift forces, causing premature edge peeling (a “zipper effect”) that artificially alters resistance readings regardless of sealant bond integrity.
- Chemical Contamination: IBHS’s modified beam uplift procedure relied on a polyurethane adhesive applied directly to shingle surfaces. Polyurethane is chemically incompatible with asphalt and contains solvents that can degrade asphalt adhesion and contaminate test samples. While painter's tape was utilized to prevent surface bleeding, direct collaboration with roofing industry experts would have avoided introducing incompatible adhesives into the uplift protocol.

2. Disregard for Modern Roofing Technologies and Proper Installation Practices

- Poor Differentiation of Products: The report fails to clearly distinguish between the performance of 3-tab shingles, which account for less than 4% of today's residential market¹, and modern architectural shingles. Although IBHS’s Hurricane Ian field study found that age-related damage impacts all roofing materials, this aging farm research selectively singles out asphalt shingles while omitting comparative data on competing cover types.
- Misunderstanding Advanced Materials: Although Polymer-Modified Asphalt (PMA) shingles are mentioned, the report discounts modern factory sealant formulations and region-customized seal-down technologies. Additionally, it incorrectly links uplift performance to latitude rather than regional product offerings and material composition.

¹ Source: 2025 ARMA Shipment Report.

- Reliance on Outdated Literature: Conclusions rely on older studies (e.g., Dixon, 2014)² that reflect obsolete installation practices like racking, which shingle manufacturers now explicitly advise against.

3. Flawed Material Science

- Pavement vs. Roofing Asphalt Error: The report improperly applies oxidation models from pavement asphalt mixes to roofing asphalt. Unlike pavement, roofing asphalts differ and are oxidized and modified during manufacturing prior to field applications of the products.
- Ignoring Installation and Structural Artifacts: Performance failures (unsealing and tearing) are attributed strictly to material aging while ignoring installation failures (misaligned nails, nail pops), deck warping, ground moisture from 4-foot elevated test stands, and lack of routine roof maintenance.
- Incomplete Probabilistic Models: The report's failure probability framework is constrained by variable resistance data and oversimplified structural variables. The study shifted mid-project to an uplift procedure that artificially inflated data variance, while relying on static pull-off tests. Rather than probing the physical drivers behind this data scatter, IBHS simply applied a statistical "coefficient of variation (CV)" to absorb the noise. Furthermore, while the model incorporates modern ASCE 7 3-second gust dynamics, it oversimplifies spatial pressure gradients across full roof assemblies and omits enhanced manufacturer installation procedures engineered to mitigate known roof vulnerabilities.

4. Selective Reporting and Reporting:

- Withholding Raw Data: IBHS withheld raw testing data, annual observation reports, and weather records from industry groups such as ARMA, despite multiple attempts by the industry to engage both at the manufacturer and the association level.
- Omission of Positive Results: Rather than offering a balanced evaluation, the report excludes products that passed wind and uplift testing, focusing selectively on negative outcomes rather than objective science to drive consumer behavior and state and local legislative regulatory responses. A prime example is Table 3, where the model produces a rigid, binary outcome—low-risk materials hover near 0% failure and underperforming materials approach 100% across all wind speeds (90–190 mph)—completely masking mid-tier products whose failure probabilities should naturally escalate with wind speed.

5. Unrepresentative Sampling

- Unrepresentative Sampling: The study evaluated up to 14 products from 7 manufacturers. This represents a fraction of the market, which is comprised of up to approximately 50 distinct product lines with hundreds of regional variations across North America.
- Flawed "Grab Sampling": The study suffered from sampling limitations, relying on isolated 'grab samples' from single production batches and conflating separate material shipments without controlling for run-to-run differences. In statistical science, grab sampling test results apply strictly to the specific batch collected and cannot be generalized to draw sweeping, industry-wide conclusions or justify a 15-year age cap on FORTIFIED designations.
- Discounted and Insufficient Data: Inadequate initial material procurement left over half of the 10-year samples without authentic baseline testing, forcing reliance on separate, unaged

² Dixon, C. R., F. J. Masters, D. O. Prevatt, K. R. Gurley, T. M. Brown, J. A. Peterka, and M. E. Kubena, 2014: The influence of unsealing on the wind resistance of asphalt shingles. *J. Wind Eng. Ind. Aerodyn.*, **130**, 30-40, doi.org/10.1016/j.jweia.2014.03.016.

product shipments. Furthermore, one-third of the 10-year test specimens maintained or increased their wind uplift resistance, yet these positive findings were ignored in the report's conclusions. A comparison between the 2020 (5-year) and 2026 (10-year) IBHS reports reveals that multiple product lines were dropped entirely, exposing significant sample reduction and selective analysis. As IBHS proposes extending this research through 2045, these material shortages, changing protocols, and missing baselines cast serious doubt on whether the study can maintain the data integrity required for long-term reporting.

Guidance for Key Stakeholders

1. For Insurance Carriers and Underwriters

- **Reject Arbitrary Policy Caps:** Refrain from implementing broad underwriting restrictions—such as proposed 15-year age caps on FORTIFIED building designations—based on isolated grab samples that cannot and do not statistically represent multi-year manufacturing runs.
- **Demand Consensus-Based Standards:** Require that policy guidelines and risk models rely on established, nationally recognized consensus standards (such as ASTM D3161, ASTM D7158, or ASTM D6381) tested with independent third-party lab auditing rather than non-standard internal protocols.
- **Evaluate Holistic Roof Assembly Risk:** Account for modern shingle technologies and installation quality rather than attributing wind vulnerability strictly to material age.

2. For Roofing Contractors and Installers

- **Execute Enhanced Installation Procedures:** Adhere strictly to manufacturer-specified installation instructions, particularly enhanced fastening techniques engineered to reinforce known high-vulnerability roof zones like eaves and rakes.
- **Educate Adjusters and Clients:** Help property owners and insurance adjusters distinguish between different types of products, such as 3-tab and architectural shingles.
- **Promote Proper Deck Preparation:** Highlight the importance of proper deck preparation and maintenance, as non-asphalt variables like misaligned nails, deck warping, or unaddressed moisture degrade roof performance regardless of shingle age.

3. For Homeowners and Property Owners

- **Know What's on Your Roof and Request Quality Installation:** Maintain detailed records of your specific shingle material and product class, and ensure your contractor installs the complete roofing system in strict compliance with current manufacturer guidelines.
- **Maintain Routine Roof Inspections:** Perform regular roof maintenance to identify and fix non-material vulnerabilities—such as loose fasteners or structural deck warping—before storm events occur.
- **Push Back on Arbitrary Insurance Denials:** Challenge age-based coverage restrictions or premium penalties by requesting property evaluations grounded in recognized ASTM consensus standards rather than non-standard batch studies.

Conclusion

In summary, broad policy recommendations and restrictive product designations (such as a 15-year age cap on FORTIFIED roofs) cannot be scientifically justified by a study marked by material shortages, shifting test protocols, and unrepresentative batch sampling. Rigorous evaluation of roofing performance demands adherence to established consensus-based standards, independent laboratory calibration, transparent data sharing, and full consideration of modern manufacturing technologies and installation practices. ARMA remains committed to advancing objective material science and calls on IBHS to engage in open, consensus-driven standards development to ensure that consumer guidance and insurance standards reflect accurate, real-world roof resilience.