FACT SHEET ABOUT ROOFS AND SLOPE

A commercial roof assembly comprises multiple layers and components selected to meet building performance needs. Decisions regarding roof assemblies are made by building owners, roofing contractors, and roof consultants who must balance project, code, and operational requirements. Properly designed, installed, and maintained low-slope roofs demonstrate reliable performance across hurricane, tornado, hail, fire, heat, and high-wind regions. Low-slope assemblies accommodate many contemporary building systems and cost-efficient construction approaches that are not readily supported by steeper roof designs.

Roof Slope Definition

Roof slope, or pitch, measures vertical rise for every 12 inches of horizontal distance. Low-slope roofs are common on commercial buildings and are defined in the International Building Code (IBC) and the Mississippi Building Code as slopes of 2:12 or less. The minimum slope required for new construction low-slope membrane roofs is ¼:12 or greater. Properly designed, installed, and maintained roofs are key to preventing significant issues, regardless of slope.

Changing the long-standing definition of low-slope roofs and restricting the vast majority of low-slope roofs currently in place in Mississippi will create confusion, impose burdens on the roofing industry, building owners, and taxpayers in Mississippi, and lead to unintended consequences. Mandating a 3:12 roof slope is not supported by any portion of the roofing manufacturing, design, and installation industry.

Mississippi Public Policy

The 2024 Mississippi Building Code and 2024 Mississippi Residential Code already establish minimum slope requirements based on roofing system type rather than a single slope value. Increasing the minimum slope risks conflicts with statutory law and adopted codes and undermines nationally and Mississippi-recognized technical standards. Although the legislation HB 1730 includes exceptions, implementation will burden state agencies overseeing public projects. Because low-slope roofs are so common in nonresidential design, compliance with the legislation will require exemptions for most public projects.

Code Coordination and Design Balance

Roof design must balance multiple code and performance requirements simultaneously. Legislating a 3:12 minimum slope disrupts this balance because many tested roof assemblies and fire classifications are based on current requirements developed through the code adoption process.

Code and performance requirements that must be coordinated include:

- -Fire classification
- -Drainage performance
- -Structural wind resistance
- -Constructability constraints
- -Occupied and vegetative (green) roofs
- - Maintenance access and equipment placement
- - Energy code insulation and roof albedo requirements

Because most membrane assemblies are certified only up to 2:12 slopes, a 3:12 mandate would require new testing or engineered solutions to demonstrate compliance, while limiting the tested systems available for wind and fire approvals. No national model codes prohibit low-slope roofs for public or private buildings, including in hurricane-prone regions.

Roof design and code compliance work best when licensed professionals retain flexibility to determine compliant solutions based on structural systems, mechanical loads, and long-term maintenance needs.

Wind Design and Code Compliance Risks

Roof assemblies must comply with wind uplift requirements established by the IBC and ASCE 7, and compliance is determined by testing complete roof assemblies rather than individual components.

Mandating 3:12 slopes increases wind design and compliance challenges, including:

- More complex roof geometries for field, perimeter, and corner wind pressure with higher load requirements
- Requirements for tested assemblies or engineered solutions to demonstrate compliance
- Reduced availability of tested assemblies meeting wind and fire requirements, forcing reliance on engineered solutions and increasing project risk and cost for owners

Mandating a 3:12 slope introduces compliance uncertainty because most tested assemblies are based on slopes of 2:12 or less.

Unintended Consequences of Mandating 3:12 Roof Slopes

Low-slope roof assemblies across the United States are tested and warranted for slopes between ¼:12 and 2:12. Few assemblies are even tested for extreme weather events or natural hazards at slopes of 3:12 and above; requiring 3:12 slopes will disrupt established roofing practices.

Consequences include:

- Required redesign of standard assemblies and systems
- Possible loss or limitation of manufacturer warranty coverage
- Increased design and construction costs
- Elimination of design flexibility
- Additional components, including insulation, are required to create the mandated slope
- Increased project risk due to 3:12 assemblies lacking an established performance history

Many public buildings, including schools, universities, hospitals, and government facilities, rely on low-slope roof systems that have long been code-compliant and proven to perform when properly designed, installed, and maintained.

Increased Costs of 3:12 Roof Slopes

Requiring a minimum 3:12 roof slope will very likely increase taxpayer costs through:

- Increased structural and framing requirements
- Increased wall heights and exterior construction costs
- Additional ventilation and equipment screening requirements
- Potential reduction in usable interior space
- New roof assembly designs on standardized building types

Again, these added costs occur without demonstrated performance benefits.

Conclusion

Low-slope roof systems, when properly designed, installed, and maintained, have demonstrated reliable performance across Mississippi and the United States in accordance with nationally recognized building codes. Mandating a minimum roof slope of 3:12 would disrupt established design practices, increase costs, and introduce uncertainty without addressing the primary causes of roof failures. Maintaining performance-based design standards allows public facilities to achieve durable, resilient, and cost-effective roofing solutions tailored to each building's needs.

Focusing on drainage design, installation quality, and consistent maintenance practices provides a more effective path to improving roof performance than mandating steeper roof slopes.