U-Factor Performance: An Alternative to Prescriptive R-Value Requirements

Submitted by Janet Thome
President, Tiny House Alliance USA

The U.S. Department of Energy has requested comments on alternative methods for evaluating building energy codes. I respectfully recommend expanding the use of U-factor-based compliance as an alternative to prescriptive R-value requirements, particularly for smaller homes, including tiny houses.

A prescriptive R-value approach requires builders to install specific insulation levels in individual building components such as walls, roofs, and floors. While this method is straightforward, it can unintentionally limit design flexibility and increase construction costs, particularly for smaller homes where wall thickness, framing methods, and space utilization are critical design considerations.

A U-factor approach evaluates the thermal performance of the completed building assembly rather than prescribing the insulation value of individual materials. This allows builders to achieve equivalent or superior energy performance through a variety of construction methods and materials while maintaining the same overall energy objective.

This performance-based approach encourages innovation by allowing builders to utilize different wall assemblies, structural insulated panels (SIPs), cold-formed steel framing, advanced framing techniques, hybrid construction systems, or other emerging technologies that achieve the required thermal performance.

The flexibility provided through U-factor compliance is particularly important for tiny houses and other smaller homes. Every inch of wall thickness affects interior living space, material costs, transportation considerations, and overall affordability. Allowing builders to meet a thermal performance target rather than prescribing a single insulation method provides greater opportunity to balance energy efficiency with affordability.

Tiny houses on wheels represent one of the nation's most affordable housing options, yet they have largely been overlooked in discussions regarding building energy codes. Alternative compliance methods such as U-factor performance standards can help preserve affordability while maintaining high levels of energy efficiency.

I encourage DOE to consider broader use of U-factor-based compliance as an alternative methodology when evaluating future building energy codes. This approach supports innovation, consumer choice, construction flexibility, and housing affordability while continuing to achieve meaningful energy performance objectives.