



TECH NOTE

Design Wind Speed vs. Warranted Wind Speed

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What is the difference between a design wind speed and a warranted wind speed? The simple answer: Time.

A design wind speed is based on short-term testing, typically lasting only minutes. In contrast, a warranted wind speed must hold for the entire warranty period, which can span decades.

Confusion often arises between these two terms. Design wind speed for a roofing system is commonly required by local building codes, insurance providers, or project designers. While codes do not mandate warranties, they establish minimum design standards. Manufacturers test their products to meet these standards, making testing the foundation for proving performance.

Although requirements often specify a design wind speed, testing usually focuses on uplift pressures. For example, a Factory Mutual 1-90 rating subjects a roof assembly to a static pressure of 90 pounds per square foot for six minutes. When a design wind speed is needed, the equivalent uplift pressure is calculated using factors such as roof height and surrounding terrain. The required pressure is then matched to assemblies that have passed these tests, meaning compliance is based on minutes of testing.

For warranted wind speed, the system is first designed to meet the required wind speed, then reinforced to withstand normal wear and tear throughout the warranty term. These enhancements increase cost but ensure durability.

Normal wear and tear factors include:

- Foot traffic
- Daily wind gusts
- Snow load
- Heavy rainfall
- Hail

In summary, a roof meeting design wind speed is validated by short-term tests. A roof warranted for wind speed is enhanced—through added fasteners, stronger insulation, narrower sheet widths—to endure decades of service.

Complete specifications are available at www.mulehide.com. For assistance, contact Mule-Hide Technical Department at (800) 786-1492.