



## WIND SPEED VS WIND PRESSURE THE TRUTH BEHIND EDGE METAL

November 7, 2024

PRC ROOFING ES-1 EDGE METAL

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***Many people misunderstand wind dynamics and incorrectly claim that a product is rated for a specific wind speed. This is misleading and inaccurate.***

***There is no standard designation of “Rated to ### MPH Wind.”***

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- The formula used to convert wind velocity into wind pressure involves numerous variables, each influencing the resulting pressure for a given wind speed. For example, a wind speed of 100 mph can generate pressures ranging from 15 psf to 60 psf and beyond. Factors that impact these pressures include the height of the building, its specific location on the structure, the surrounding terrain, whether the building is positioned near a hill, the slope of the roof, and the size of the area being considered, among others.

- Additionally, there are two types of wind speeds and pressures that complicate matters: Allowable Stress Design and Load Factored Design.
- Adhering to the various wind codes that shape our building standards, including ASCE 7-10, ASCE 7-16, and the most current ASCE 7-22, is crucial. These codes are designed to enhance safety and resilience against wind forces. Design Professionals treat wind pressure as a universal standard when designing structures, establishing a consistent benchmark for the force that a product (Edge Metal) can withstand.
- Chapter 16 of the International Building Code, Section 1609 states that building structures (i.e. Roofs) shall be designed to withstand minimum wind uplift pressures.
- Low-slope roof systems uplift pressure resistance classifications generally are based on testing performed according to Factory Mutual or Underwriters Laboratories (UL) Inc. guidelines. Using FM Approvals' classification, the numeric values represent the tested design uplift resistances for field roof areas while taking into account a safety factor of 2.0 or more. For example, an FM I-90 classification designates a tested design uplift resistance of 45 psf of the roofing system. Therefore, the values in a roof systems' uplift resistance is based on pounds per square foot (psf), not design wind speeds.
- The design wind speed or basic wind speed is used to calculate the design uplift pressure itself. It is important to remember that meeting a building code requirement is not a warranty requirement and should not be part of the warranty language.
- During natural disasters, wind speeds can easily exceed 100 mph. Regardless of the wind speed rating, warranties typically do **not** cover "acts of God," such as hurricanes, tornadoes, and severe storms. Additionally, they do **not** cover damage from flying debris (frequently encountered during severe storms), fire, or problems related to a compromised building envelope. Building Owners in areas prone to hurricanes and extreme weather must obtain additional building insurance to protect against these risks, as the manufacturer's warranty will **not** provide coverage. Each manufacturer establishes its own warranty provisions, independent of local building codes or design requirements. If excessive wind speed is a concern, owners should enhance the attachment of the roof's edge metal and consult a knowledgeable commercial roofing contractor.

- **PRC Roofing has been providing commercial roofing and sheet metal services for 45 years. As a certified ANSI/SPRI/FM 4435/ES-1 fabricator and installer, we have successfully installed ES-1 certified edge metal systems throughout the greater Houston area. PRC Roofing offers more than 70 different ES-1 tested edge metal designs made from copper, stainless steel, aluminum, Galvalume steel, and galvanized steel.**
- **Kynar PVDF Colors can be chosen for your project from all major Manufacturers, including Micas/Metallics/Custom Colors/Coastal Coatings and Solid Color Choices.**
- **PRC Roofing uses continuous cleats on all edge metal designs to enhance the lifespan of your roof's edge system. This method outperforms pre-manufactured edge metal that relies on clips with weaker wind pressure testing.**