TECHNICAL BULLETIN

EPDM ROOFING ASSOCIATION TECHNICAL BULLETIN #106

Resilience | November 2025

EPDM: The Resilient Roofing Membrane

PROVEN PERFORMANCE WHEN MOTHER NATURE STRIKES

Extreme weather is becoming more common, and buildings need roof systems that can stand up to those conditions without frequent repairs or early replacement. EPDM has shown strong performance for more than 50 years, holding up under high winds, extreme hail, temperature swings, and UV exposure. Its durability makes it a dependable choice for owners looking for a roof that performs well when the weather doesn't.

Built to Withstand Extreme Weather

Global statistics confirm the increasing frequency of extreme weather: intense tornado outbreaks, catastrophic hurricanes, record-setting heat, heavy downpours, and devastating hailstorms. When severe weather threatens your building, your roof is the first line of defense. A resilient roof will absorb and withstand the impact of these extreme weather events and return to normal performance afterward. EPDM (ethylene-propylene-diene terpolymer) roofing membranes deliver exceptional resilience against the elements.

Superior Wind Resistance

- EPDM systems meet rigorous Factory Mutual wind uplift ratings, including 1-60 to 1-120 and higher
- Meets stringent Dade County, Florida, hurricane zone codes
- Adhered systems provide exceptional uplift resistance in hurricane-prone areas

Exceptional Hail Resistance

- Proven to resist hail up to 2 inches in diameter
- Elasticity absorbs hail impact without fracturing
- Decades of empirical field experience confirm EPDM systems fare exceptionally well in hailstorm events

Temperature Extremes

- Remains stable from -40°F to 300°F
- UV and ozone resistant—maintains integrity through blistering summers and frigid winters
- Flexibility prevents stress cracking during extreme temperature swings

Unmatched Long-Term Performance

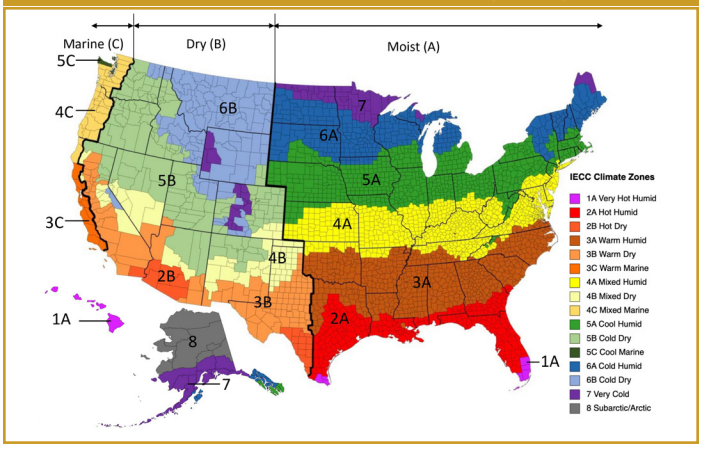
EPDM has an expected Service Life: 38 Years

- Synthetic rubber composition provides exceptional durability
- Dimensionally stable—recovers and returns to the original state after severe weather
- Large sheet sizes reduce seams, minimizing potential leak points

Versatile Solutions for Every Climate

With three different assembly methods and various membrane reflectivity and color choices, there is an EPDM roof for every climate. Established roof system manufacturers produce EPDM roof membranes and offer a variety of tested systems that demonstrate exceptional wind pressure resistance and fire resistance.

IECC 2021 map based on ASHRAE Climate Zones (ACZ)



Installation Flexibility

Adhered Systems: Glued with special adhesives. Lightweight and ideal for limited load-bearing capacity. Highest wind uplift ratings for maximum storm protection.

Resilience is "...the ability to adapt to changing conditions and withstand and rapidly recover from disruption due to emergencies. ... our national preparedness is the shared responsibility of all levels of government, the private and nonprofit sectors, and individual citizens." – U.S. Department of Homeland Security

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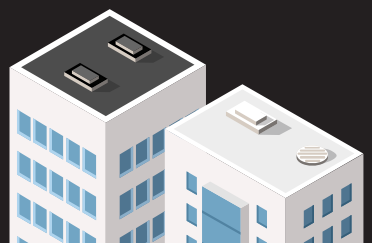

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Mechanically Attached Systems: Secured with fasteners. Fast, affordable installation for wood and steel decks.

Ballasted Systems: Anchored with stones or pavers. Quick installation in almost any weather. No flame required.

Key Benefits for Building Owners

- **Cost-Effective:** Lower material and installation costs compared to many alternatives
- **Low Maintenance:** Requires minimal attention — maintenance is limited to routine inspections and straightforward repairs.
- **Sustainable:** Long service life reduces waste and replacement frequency
- **Safe Installation:** No flame required for installation
- **Over 50 years of field-tested performance**

Real-World Resilience

EPDM membranes installed in 1980 are still performing today after 45+ years of service, including countless freeze-thaw cycles, severe storms, and extreme hail events. Laboratory testing confirms that 28-32-year-old EPDM roof samples, aged an additional 15 years, maintain physical properties that meet or exceed the minimum requirements of a newly manufactured membrane.

What This Means for Building Owners

EPDM's ability to flex, absorb impact, and recover after storms reduces the likelihood of damage and limits operational disruptions. Because EPDM performs reliably in both hot and cold climates, owners benefit from a roof that supports long-term stability, predictable maintenance needs, and consistent performance no matter the region. This dependable performance over decades makes EPDM a practical choice for owners seeking to reduce risk and enhance the overall resilience of their buildings.

White roofs were once considered the go-to option, but newer research and modern insulation levels show that's not always the case. In Climate Zones 4–8, highly reflective white roofs can raise energy use, and there's no published evidence that they reduce urban heat islands. Because the term "cool roofs" overstates their benefits and doesn't reflect how they perform in real climates, we use the accurate term "highly reflective white roofs" (HRWR).

The Bottom Line

When severe weather strikes, EPDM delivers the dependable performance owners need. It stands up to high winds, hail, temperature swings, and UV exposure while continuing to protect the building below. Its long history of real-world success shows that EPDM can withstand tough conditions and recover quickly, supporting building operations and long-term value. In an era of increasing weather extremes, EPDM remains a trusted and proven solution for resilient roof design.

> *EPDM is a tried-and-true roof membrane with a long track record of performance, reliability, sustainability, and ease of installation. I often hear roofing contractors say they would choose EPDM for their own homes and businesses.*
>
> *— Jason P. Wilen, AIA, NCARB, CDT, RRO; Associate Principal, Klein & Hoffman; former Technical Director at the National Roofing Contractors Association*

**An expected service life of 38 years for EPDM membrane is supported by the EPDM Roofing Association based on in-situ testing, laboratory testing, and the opinions of over 550 roofing professionals. The expected service life of thirty-eight years is averaged across various thicknesses and attachment methods, and assumes proper installation and maintenance.*