

Reducing the industry's carbon footprint with spray foam roofing

By Dani Sheehan.

The switch to HFO-based spray foam roofing offers durability, energy efficiency and improved sustainability for commercial roofing solutions.

Spray polyurethane foam (SPF) roofing is renewable, sustainable and the solution of the future. While many states have already transitioned from HFC (hydrofluorocarbon) blowing agents to HFOs (hydrofluoroolefins), the mandatory transition at the start of 2025 further aligns with environmental regulations and positions spray foam as an eco-friendly, high-performing solution that contractors can confidently offer to building owners.

Why the transition from HFCs to HFOs matter

Historically, SPF roofing has relied on HFCs as a blowing agent, a component of the B side of foam that provides its superior insulation properties. These chemicals, composed of hydrogen, fluorine and carbon, Energy efficiency-, but also come with a high global warming potential (GWP) of approximately 1000. A GWP of 1000 means that HFCs cause about 1000 times more impact to the environment than one molecule of CO₂ being put into the air, making them some of the most potent greenhouse gases when it comes to contributing to climate change.

The newer fifth generation technology utilizes HFOs, containing the same atoms of hydrogen, fluorine and carbon, but in a form with a much shorter atmospheric lifespan, reducing the GWP rating to as low as one to three. This significant reduction helps the industry minimize its carbon footprint while offering more sustainable solutions to building owners.

As of 2025, all states will mandate the use of HFO blowing agents, making them the standard for SPF roofing applications. Many states have already made the transition and manufacturers like [General Coatings Manufacturing Corp](#) have been using and testing this technology over the last four or five years. Products like [Ultra-Thane 230 HFO](#) SPF foam are already available and proven in the industry. This two-component, closed-cell, Class A fire-rated spray foam is ideal for waterproofing and insulation in new roof construction as well as restoration projects.

With the new standard of HFOs, contractors can promote the reduced environmental footprint as a selling point. HFO-based SPF technology delivers a higher R-value, which is a measure of resistance to heat flow. Higher R-values mean better insulation, and this added thermal conductivity improves the system's

performance, allowing for effective heat transfer reduction while improving the building's energy efficiency.

Switching to HFOs requires little to no changes in application. The new foam can be used in standard SPF application equipment, with only minor adjustments in your spraying technique. It rises slightly differently than HFCs but makes the same density, making it a seamless transition without a steep learning curve or increased investment.

Broader benefits of spray foam roofing

SPF roofing is a durable and versatile choice for both new construction and restoration projects. These systems can withstand high-traffic areas and impact from extreme weather, including hail, high winds and heavy rain. Spray foam is also self-flashing and monolithic, meaning it has no seams. This reduces the likelihood of leaks and simplifies maintenance – in the event of damage, repairs are often localized, saving you time and labor while saving your building owner on cost.

The switch to HFOs gives spray foam roofing the competitive advantage for energy-efficient, environmentally friendly roofing solutions. [Learn more about the update and start your transition from closed-cell foams using HFC blowing agents to systems using low GWP HFO blowing agents before 2025.](#)