DIVERSIFIEDENERGY

Why Choose Closed-Cell Foam Over Fiberglass Wrap for Attic Ductwork in New Orleans

In New Orleans' scorching attics where temperatures routinely exceed 140°F and humidity remains high year-round, closed-cell spray foam provides the only reliable long-term solution for ductwork insulation.

Extreme Temperature Performance in Superheated Attics

New Orleans attics experience some of the most punishing conditions in residential construction. Summer attic temperatures regularly reach 140-160°F[1][2][3], with some poorly ventilated spaces hitting 150°F or higher[3]. These extreme heat conditions cause **fiberglass insulation to break down, compress, and lose R-value**[4] within the first year of installation.

Research from Oak Ridge National Laboratory shows that **loose-fill fiberglass loses 35-50% of its thermal resistance** when exposed to large temperature differences[4][5]. In New Orleans attics, where the **temperature differential between 55°F conditioned air and 130°F+ attic air**[2] creates perfect conditions for convective heat transfer, fiberglass performance degrades dramatically.

Closed-cell foam maintains its structural integrity and full R-value performance even at these extreme temperatures[6]. While fiberglass can lose 15-25% of its insulating value due to thermal degradation and compression from heat cycling[7], closed-cell foam's **R-value of 6.5-7.0 per inch remains constant**[8][9] regardless of temperature extremes.

Superior Moisture Control in Humid Attic Environments

Even in scorching attics, New Orleans' 80%+ humidity creates moisture challenges that destroy fiberglass performance[10]. Hot, humid air infiltrating through roof penetrations and soffit vents carries moisture that condenses on cooler ductwork surfaces, particularly during morning hours when temperatures drop.

Closed-cell foam's vapor barrier properties prevent moisture infiltration[8][6] that causes fiberglass to sag, compress, and harbor mold growth. Research shows that **wet fiberglass**

loses up to 50% of its R-value[11], while closed-cell foam maintains performance regardless of moisture exposure.

Prevents Thermal Bridging and Air Infiltration

Attic ductwork faces the greatest temperature differential in your home—often 75-85°F+ difference between conditioned air inside ducts and surrounding attic air[2]. **Fiberglass wrap allows air infiltration**[12] through gaps and joints, creating thermal bridging that dramatically reduces efficiency.

Closed-cell foam creates a seamless thermal barrier[8][13] that eliminates air infiltration and thermal bridging. This is crucial in New Orleans where **cooling costs represent 60-70% of annual energy bills**[14]. Studies show that properly foam-insulated ductwork can reduce cooling costs by 15-20% compared to fiberglass-wrapped systems[14].

Durability Against Extreme Cycling Conditions

New Orleans attics experience daily temperature swings of 60-80°F[15], causing expansion and contraction that loosens fiberglass wrapping and creates gaps. **Fiberglass becomes brittle in extreme heat**[16] and often falls away from ductwork within 2-3 years[17].

Closed-cell foam maintains adhesion and flexibility[6] through these extreme temperature cycles, providing **80+ years of reliable performance**[8] versus the 2-5 year lifespan of fiberglass in harsh attic conditions[17].

Protection Against Attic-Specific Challenges

Hurricane and storm damage frequently compromises attic insulation[18]. **Wet fiberglass must be completely replaced**[17] after roof leaks, while closed-cell foam can be cleaned and continues performing. Additionally, **rodents and insects cannot penetrate closed-cell foam**[6][19], eliminating the nesting problems common with fiberglass in attics.

The **salt air environment** of New Orleans also accelerates degradation of fiberglass materials[2], while closed-cell foam's plastic polymer composition resists corrosion and environmental breakdown[8].

Energy Efficiency in Extreme Heat

Proper ductwork insulation is critical when attic temperatures exceed 140°F[1][2]. Studies show that **insulated ducts are only R-4 to R-8**[12], insufficient for New Orleans' extreme conditions. **Closed-cell foam provides R-12+ insulation**[20] that maintains performance even during peak summer heat.

The **thermal mass effect** of superheated attics means that poorly insulated ductwork continues reheating conditioned air even after sunset[1]. Closed-cell foam's superior R-value and thermal barrier properties prevent this energy waste.

Conclusion

In New Orleans' extreme attic conditions, fiberglass wrap is destined to fail quickly and repeatedly. The combination of **140°F+ temperatures, high humidity, temperature cycling, and severe weather events** creates an environment where traditional insulation materials cannot perform reliably.

Closed-cell foam provides the **thermal performance, moisture resistance, and durability** necessary to protect your ductwork investment in America's most challenging attic environment. By eliminating thermal bridging, preventing moisture infiltration, and maintaining consistent R-value performance regardless of temperature extremes, closed-cell foam ensures your cooling system operates efficiently throughout New Orleans' extended 7-8 month cooling season.

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