

# SPRAYFOAM

*PROFESSIONAL*



## Why Company Leaders Must Address Mental Health Now



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# SPRAY FOAM, TAKE YOUR RIGHTFUL PLACE

## THE IMPORTANCE OF LIFE CYCLE ANALYSIS

BY TOM HARRIS, TOM HARRIS PUR CONSULTING, LLC

Since the dawn of time, we’ve sought information, truth and knowledge in order to make more accurate decisions. Through time, the scientific method evolved; question, conduct research, establish a hypothesis, test the hypothesis through experiment, observe, analyze, report. And with reporting comes the opportunity to leverage the knowledge. It’s been observed that when more emotional issues are in play, the process is corrupted, and knowledge is replaced with desire.

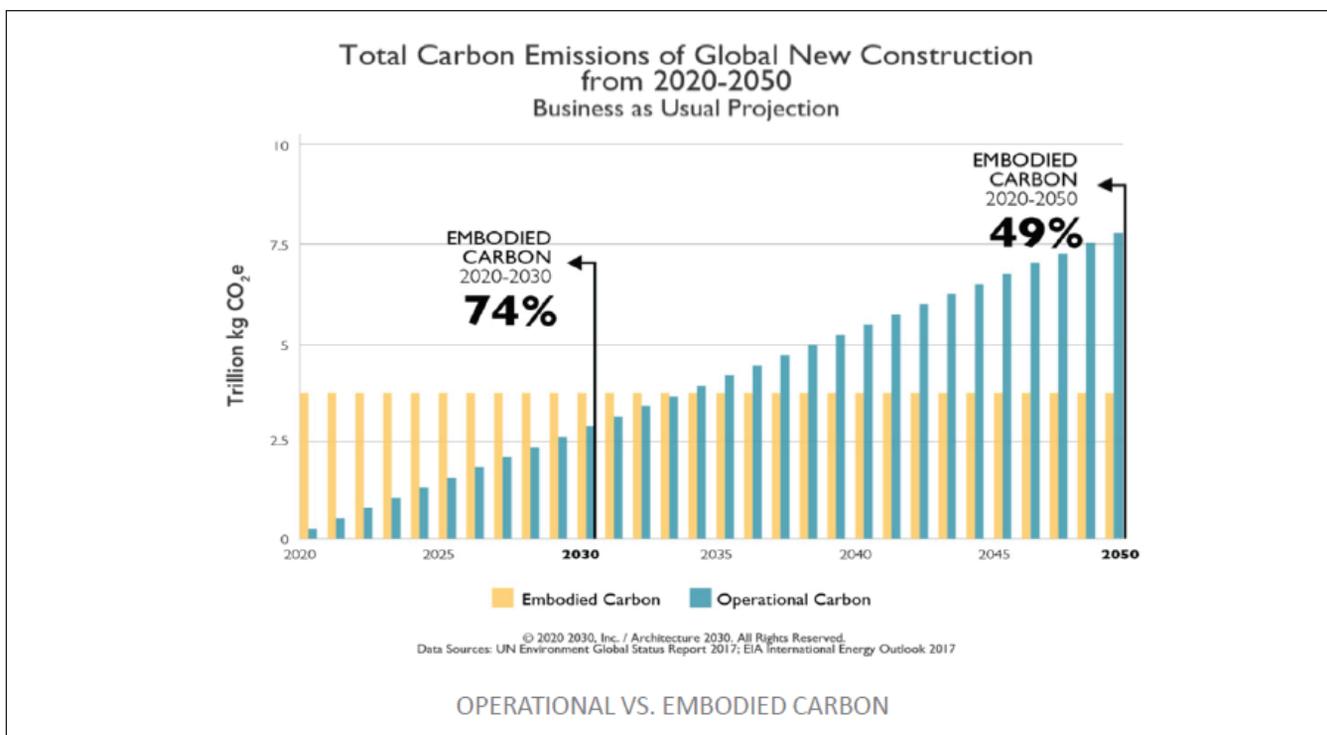
One such topic is near and dear to this audience – the Environmental Impact of Construction Materials. Buildings account for 40% of the Global energy-related CO<sup>2</sup> emissions according to the *2018 Global Status Report*

published by the Global Alliance for Building and Construction. In the US, existing building operations account for nearly 40% of US energy consumption. We need to understand and implement strategies that address two basic forms of carbon in the life cycle of a building: Embodied Carbon and Operational Carbon. At our current pace of construction, a surface the size of Paris is built, every five days. The operational carbon loads these buildings will impart on our planet’s atmosphere is staggering and simply *not sustainable*.

The Life Cycle Analysis has been defined by the EPA as a way to “evaluate the environmental effects associated with any given industrial activity from the initial gathering of raw materials from the earth until the point at which

all residuals are returned to the earth” or “cradle-to-grave”.

The concept was thought to be elegant at the time but was quickly optimized and used as a marketing tool to single-out certain positive product attributes while excluding other more damaging facts. Specific negative product aspects were held up in contrast to positive marketing spin (greenwash) and the battlelines were drawn. The idea of “cradle-to-grave” was replaced with a more circular concept of “cradle-to-cradle.” C2C mandated the inclusion of raw material harvesting and looked closely at waste by-products through the entire product life continuum. We now consider the Carbon Footprint and Life Cycle Analysis together in order to establish a more accurate picture of



the products contribution to the built environment.

Today, the Carbon Footprint is the *key metric* or *base unit of measure* or *currency* of environmental impact throughout the life cycle, but more closely during the in-use or use phase (to address operational carbon) of the product. Some will argue, it's this use-phase that is most critical when determining the contribution, a product makes. This can be represented by the simple equation;

$$\text{Environmental Value} = \frac{\text{Positive Contribution} - \text{Negative Contribution}}{\text{Time}}$$

This concept is especially true for insulation materials. Let's look at Spray Applied Polyurethane Foam Insulation (SPF) in general and, closed cell spray foam (ccSPF) more specifically.

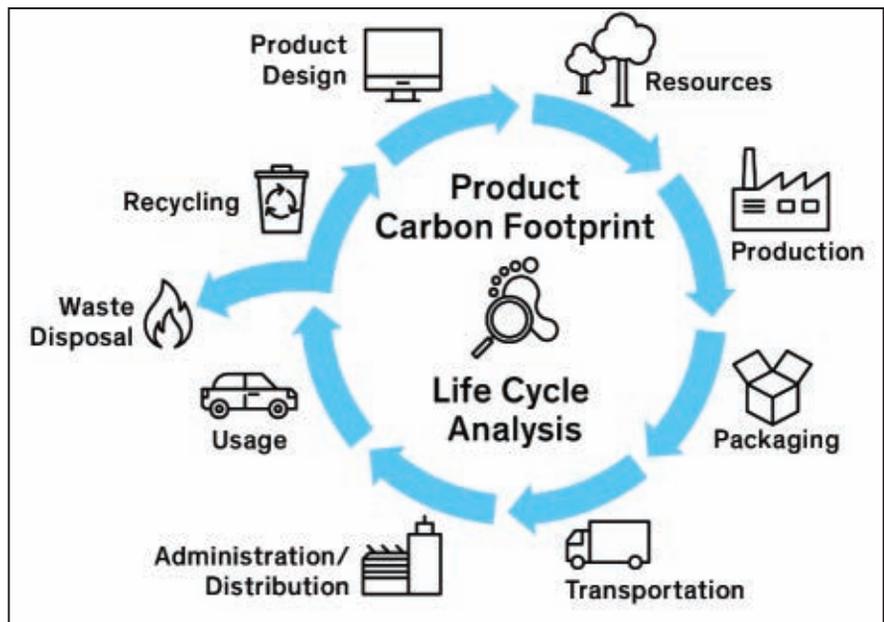
In March of this year, the Spray Polyurethane Foam Alliance (SPFA) released the results of an independent study conducted by Sustainable Solutions Corporation entitled "SPF Residential Energy Modeling Analysis June 2020" which compared the environmental impacts and life cycle contribution to carbon reduction of Glass fiber insulation with SPF insulation. Current Environmental Product Declaration (EPD) data was used for both products and three single family residences compared – Houston, Texas, Richmond, Va., and Minneapolis, Minn.

There are common conclusions that can be drawn from all locations.

- 1) There is a greater initial environmental impact to be paid with SPF.
- 2) Because of the lower initial environmental impact investment of fiberglass, the Environmental Recovery Period (Environmental Breakeven point) is shorter with fiberglass.
- 3) Over the life of the building, Spray Foam will save more carbon emissions than the equivalent R-value (IECC compliant) of fiberglass.

The full report and other summary pages are available from the SPFA upon request.

But is anyone listening, and do they care? According to a recent study conducted by the National Association of Realtors, 62% of home buying are



interested in sustainability. EPD's are now required submittals for all concrete and steel used in new construction. Earlier this year, the AIA launched LEED v4.1 which provides a full 1.5 credits under the MR (Materials and Resources) section for products, which have a third party EPD document. In 2020 alone, a year substantially impacted by COVID-19, there were 4,740 Commercial LEED projects, 2,326 Residential LEED projects, and over 3,850 projects elevated from LEED 4 to LEED 4.1.

Here are some 2020 sustainability trends provided by the AIA.

- 60% of architects consider sustainability during product specification;

- 81% of architects consider the sustainability of a product related to its use and installation;
- 79% of architects (97% of Millennials) want to specify more sustainable products than they do today;
- 1 in 3 architects feels they are adequately meeting their responsibility to design sustainably.

Quoting from a recent AIA publication entitled "Research reveals the role of specifications in sustainable design", "Manufacturers should be equipped to educate designers and product specifiers about the broader scope of a sustainable

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(see sidebar on page 18)*

## HUNTSMAN BUILDING SOLUTIONS PROVIDES ENVIRONMENTAL PRODUCT DECLARATION FOR HEATLOK HFO AND HEATLOK SOYA HFO

Huntsman Building Solutions recently released a Environmental Product Declaration, or EPD, for the company's HEATLOK HFO and HEATLOK Soya HFO closed cell spray foam systems. The independent, third-party document, completed by Sphera and certified by UL, provides objective and comparable information about the life cycle impacts and emissions of the two spray foam products. Completed in accordance with strict ISO standards, including ISO 14044, ISO 14040, ISO 14025, ISO 21930, and EN 15804, the new EPD is based on the spray foam system's Life Cycle Assessment (LCA), which evaluates the products' impacts in six key Environmental Impact Categories, one of which is Global Warming Potential, or GWP. As demonstrated by the EPD, HEATLOK HFO and HEATLOK Soya HFO GWP performance comparative to other insulation options is: 39% lower than the spray foam industry average; up

to 96% lower than HFO extruded polystyrene; 77% lower than heavy density mineral wool; 52% lower than light density mineral wool; and 55% lower than unbonded loose fill and blown-in mineral wool. These comparisons account for embodied carbon before consideration of additional building energy savings and the resulting operation carbon emission saving made possible with spray foam.

HBS also developed a summary that evaluates different insulation products' EPDs to assess and compare GWP of a wall assembly insulated solely with HEATLOK HFO/HEATLOK Soya HFO to assemblies insulated with mineral wool, HFO extruded polystyrene board stock and fiberglass insulation. The EPD comparison results show that by simply replacing all insulation types and membranes in assemblies A and B with the single product HEATLOK HFO/HEATLOK Soya HFO at an equivalent R-value, the

assembly's GWP is cut nearly in half (45% reduction in GWP).

Notably, embodied carbon emissions from building materials and construction represent 10% of global carbon emissions and building operations account for 28%.<sup>[i]</sup>

"When you consider that building construction and building operations account for almost 40% of global annual greenhouse gas emissions,<sup>[ii]</sup> it becomes crystal clear that the industry needs to build with better materials that reduce these figures," says Doug Brady, vice president of global innovation and product management. "Climate change can no longer be ignored. High-performance insulations such as HEATLOK HFO are one key means to helping meet the global warming reduction goals outlined in the Paris Agreement. If designers, specifiers and builders can make informed decisions through the use of this EPD, then we believe it was well worth the effort." **O**

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## HOSE SCUFF GUARD & PROTECTIVE COVER

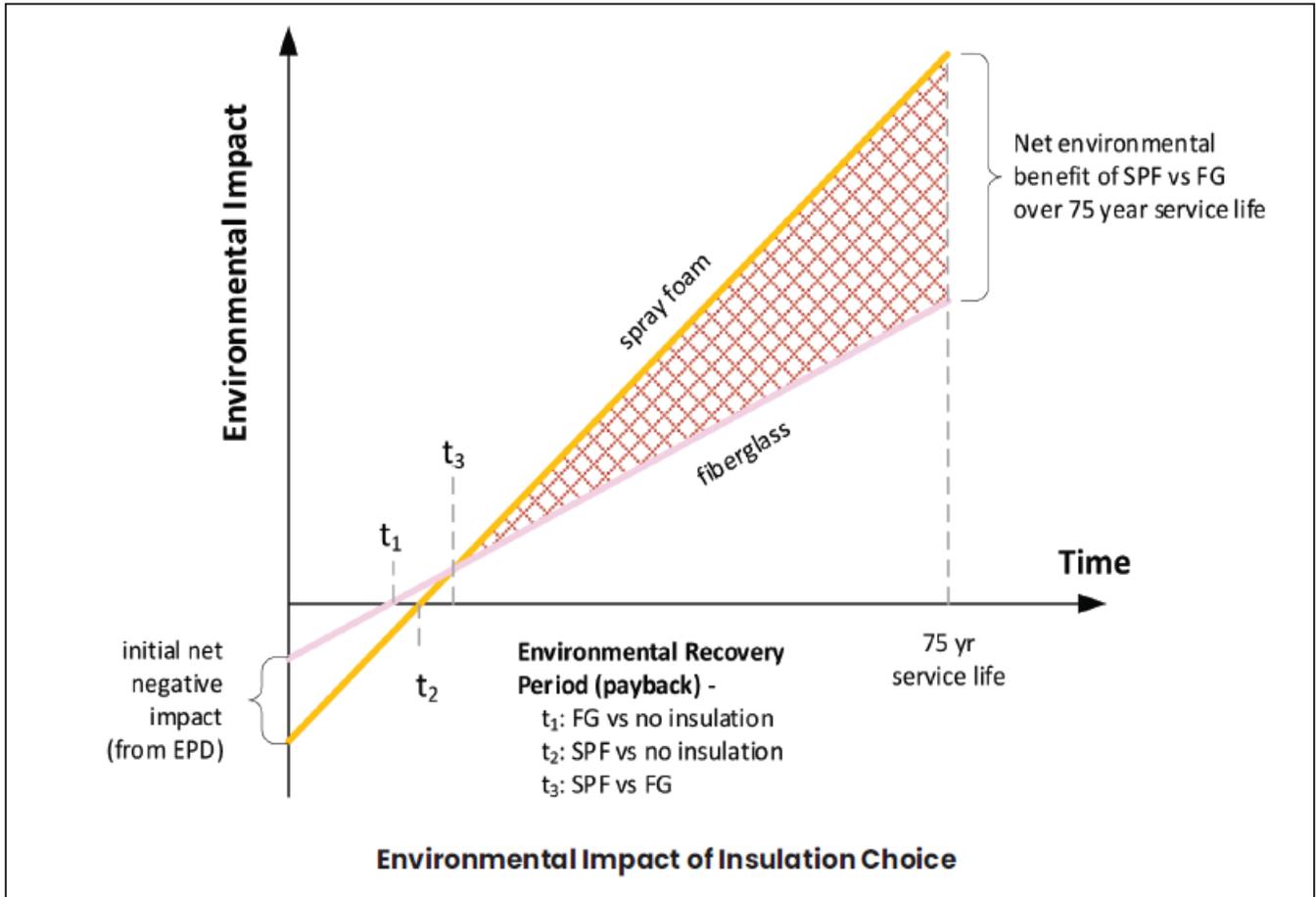
**Time to replace your old and worn out scuff guard?**

Your Spray Foam hose takes a lot of abuse, but installing the new **SIDEWINDER SLEEVE** by PYTHON is the "go-to" solution for protection from heavy abrasion, cold & wet weather, and other extreme environments.

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product. This includes how the product or material was sourced and manufactured, the supply chain and shipping implications, and, finally, the shelf life of the product and options for recycling or safe disposal.

Architects and manufacturers who work together to consider the circular economy of product selection will be better prepared to inform and enable clients and contractors to implement the materials and installation requirements. Clear product specifications that consider these end-to-end sustainable implications will naturally be more resistant to value engineering.”

EPD’s are a valuable differentiator between NIK materials and individual manufacturers. There are strong drivers in use today and coming soon (IECC, IRC, IBC), which will require every critical product provide an EPD before they can be specified. Preference is being given to those materials and manufacturers who can provide a product EPD. The spray foam industry now has independently verified proof that its products

outperform historical insulation favorites when it comes to energy conservation and carbon emission reduction. It’s time all stakeholders commit to conducting Environmental Product Declarations for all products on the selling range. o



**Tom Harris** has over 40 years of experience in the Polyurethane Foam industry holding several positions from Chemist and Product Development to Marketing and Business Management. Tom’s most recent post before becoming an independent consultant, was Vice President of Building Science for Demilec, now Huntsman Corporation. He has developed product and installation standards for the Canadian and U.S. Industry, and is a founding member of the Air Barrier Association of America and the Net Zero Energy Coalition. You can reach him at [tom@letstalkpur.com](mailto:tom@letstalkpur.com) or [www.letstalkpur.com](http://www.letstalkpur.com).

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