METL SPAN®

a NUCOR® company

METL-SPAN AND ENVIRONMENTAL GOVERNANCE

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Metl-Span: All-In-One Performance

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It has come to our attention that old information contained in the Metl-Span EPD has been used in the marketplace to portray Metl-Span in a negative way regarding our environmental governance. The EPD that is currently available on the Metl-Span website references data from the past blowing agent and therefore fails to represent a significant improvement in embodied carbon as a direct result of our foam system changeover.

What is an EPD?

An Environmental Product Declaration, or EPD, is a document prepared by a third party which describes the potential impact that product has on the environment in a similar fashion that a nutritional label describes the potential impact a food has on your body. Instead of calories, fat, or cholesterol, an EPD lists Global Warming Potential (GWP), Ozone Depleting Potential (ODP), Acidification Potential (AP), Eutrophication Potential (EP), Smog Formation Potential (SFP) and Abiotic Depletion Potential (ADP). Lately, there has been some focus on one item, GWP, because to many, it directly relates to climate change. GWP is measured in kilograms of carbon dioxide (kgCO2). From this unit, the term "embodied carbon" is derived.

For an EPD, a life cycle assessment of every significant component of a product is studied through stages of production, installation, use, end-of-life, and reuse. From all this data, the greatest interest is in the production stage of the product life cycle. Three operations are studied in production: raw material supply, transport to manufacturer, and manufacturing. These operations or modules are designated A1, A2 and A3 respectively. These A1-A3 modules are considered the cradle-to-gate of a product. What lies beyond, the "gate-to-cradle", so to speak of the cradle-to-cradle analysis is optional for this Product Category Rule (PCR). Many manufactures conform to the required portion, the A1-A3 modules, or cradle-to-gate, and exclude the use, end-of-life and reuse stages from their study. The Metl-Span EPD includes more than the required stages and modules. It includes the installation stage (modules A4 and A5), as well as some modules in the end-of-life stage (C2 and C4),

and the reuse stage (module D) in their study. These added modules do not positively or negatively impact the story in the marketplace, therefore, the GWP figures located in modules A1-A3 will be the focus of this paper.

	PRODUCT STAGE			CONSTRUCT-ION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY
	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
	Raw material supply	Transport	Manufacturing	Transport from gate to site	Assembly/Install	Use	Maintenance	Repair	Replacement	Refurbishment	Building Operational Energy Use During Product Use	Building Operational Water Use During Product Use	Deconstruction	Transport	Waste processing	Disposal	Reuse, Recovery, Recycling Potential
EPD Type: Cradle-to-gate with options	X	X	X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	X	MND	X	X

Current State Environmental Impacts

Prior to the foam formulation changeover at Metl-Span, the HFC-134a blowing agent had a significant potential impact in terms of GWP. The study indicated that 26.5% of HFC-134a may be released during the panel manufacturing process. This potentially embodied 14.7 kgCO2/sq-ft of a carbon burden on the CF 42 wall product. Beginning as a high-priority project in 2018, Metl-Span has worked to solve this problem, and has since completed conversion of all facilities to eliminate this high GWP component. The impact of this conversion on embodied carbon is significant. With an equivalent GWP from HFC-134a of 1430 (compared to competitive blowing agents such as pentane at 10), any studied release of this material during the production process would contribute significantly to the overall embodied carbon figure; in fact, the impact of HFC-134a to the A1-A3 production process is calculated as 66% of the total production carbon emissions. Presently, Metl-Span is working to revise their EPD to reflect the change to alternate, lower GWP blowing agents such as HFC-152a and HFO. The specified use of HFO should reduce the old A1-A3 figure from 14.7 kgCO2/sq-ft to 5.1 kgCO2/sq-ft.

Another significant factor in the embodied carbon figure is the raw material sourcing of the painted steel coil. We are looking at alternate GWP values that may be available from sources that utilize a higher percentage of recycled steel and receive a greater than average mix of renewable wind, water or solar energy. In a similar

way, the manufacturing process can be studied to see if the energy used in the manufacture of the insulated panel can benefit from renewable energy sources.

In conclusion, with regard to the manufacture of insulated metal panels in North America, the Metl-Span insulated metal panel manufactured with HFO, at a similar thickness and with similar gauge of steel skins, with open market sourced raw steel material, will have nearly identical embodied carbon as any other insulated metal panel using a different low GWP blowing agent and foam system.

Committed to Continuously Improve

Insulated metal panel manufactures across the spectrum are reacting to global and North American market forces to improve their impact on the environment, including Nucor brands. Metl-Span and CENTRIA have taken several steps forward and will continue to improve their innovative approach to environmental governance across the wide range of products. As the first to offer insulated metal panels with a life-cycle assessment (LCA) and with the lowest possible tested smoke emissions from combustion, and remain the only manufacturer of insulated metal panels free of halogenated flame retardants. At Metl-Span, we serve a broad cross section of consumers. For those consumers who desire a reduced environmental impact, we have tested and listed an alternate foam formulation utilizing HFO as the blowing agent. Our goals to improve the environment through reduction of harmful components, reduced production scrap and packaging continue to be achieved.

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In summary, Metl-Span insulated metal panel manufactured with either HFC-152a or HFO, has a significantly lower GWP output which aligns with other insulated metal panel manufactures.

If specific information regarding our products or the environmental impacts is required, please reach out.