

# Environmental Product Declaration

USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels  
Westlake, OH, Oakville, ON (Canada), Commerce, CA



## Features and Benefits

- Universal Carrier provides effortless transitions between linear panel types and sizes.
- Flexible mounting arrangements for ceiling or wall applications.
- Acoustical performance utilizing perforations and sound absorbing materials.
- Third party integration of diffusers, lights, speakers, sprinklers, wifi, etc. (independently suspended).
- Available in custom finishes, sizes, perforations, and layouts.
- Class A per ASTM E84 & CAN/ULC S102, Zero Flame Spread, non-combustible aluminum core Fire Classification.
- Low emissions (VOC) CDPH 01350 v1.2-2017 compliance on select finishes. See usg.com for more details and documentation.



This EPD contains life cycle assessment results for the USG Ceilings Plus® Planx™ Universal Linear Metal Panel System in the Deep Box Profile in the following module sizes, finishes and acoustical treatments (see table of contents for results on page 13).

### Module Sizes:

6"x4", 4"x4", 6"x2", 4"x2", 8"x2" and 8"x4"

### Finishes:

Painted on Metal

Anodized Metal

Sarante™ – Standard Wood Finishes

Sarante™ – Premium Wood Finishes

Timbre™ - Printed Wood Grain

### Acoustical Treatments:

Acoustibond® – Black or White

Ultrasorb (1" @ 3 lb.)

Fiberglass in Poly Bag (2" @ 0.75 lb.)

For over a century, sustainable practices have naturally been an inherent part of our business at USG and CGC. Today, they help shape the innovative products that become the homes where we live, the buildings where we work and the arenas where we play. From the product formulations we choose, to the processes we employ, USG and CGC are committed to designing, manufacturing, and distributing products that minimize overall environmental impacts and contribute toward a healthier living space. We believe that transparency of product information is essential for our stakeholders and Environmental Product Declarations (EPDs) are the next step toward an even more transparent USG and CGC. For additional information, visit usg.com, cgcinc.com and usg.ecomedes.com.



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This declaration is an Environmental Product Declaration (EPD) in accordance with ISO 14025 and ISO 21930; 2017. EPDs rely on Life Cycle Assessment (LCA) to provide information on a number of environmental impacts of products over their life cycle. Exclusions: EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g., Type 1 certifications, health assessments and declarations, environmental impact assessments, etc.

USG Corporation has sole ownership, liability, and responsibility for this EPD.

Environmental declarations from different programs (ISO 14025) may not be comparable. Comparison of the environmental performance of products using EPD information shall be based on the product's use and impacts at the building or construction works level, and therefore EPDs may not be used for comparability purposes when not considering the whole building life cycle. EPD comparability is only possible when all stages of a life cycle have been considered. However, variations and deviations are possible. Example of variations: Different LCA software and background LCI datasets may lead to differences in results upstream or downstream of the life cycle stages declared.

DECLARATION NUMBER	EPD 623
EPD TYPE	Product specific EPD
PROGRAM OPERATOR	ASTM International – 100 Barr Harbor Drive, West Conshohocken, PA USA <a href="http://www.astm.org">www.astm.org</a>
DECLARATION HOLDER	USG Corporation - 550 W. Adams St., Chicago, IL USA
EPD Type	Type III Declaration per ISO 14025:2006
DECLARED PRODUCT	USG Ceilings Plus® Planx™ Universal Linear Metal Panel System Deep Box Profile
DATE OF ISSUE	2/5/24
PERIOD OF VALIDITY	5 Years
CORE STANDARD	ISO 21930
CORE PCR	UL Environment: Product Category Rules for Construction Products for Building-Related Product and Services in North America; Part A: Life Cycle Assessment Calculation Rules and Report Requirements. v3.2, December 2018
SUB-CATEGORY PCR	UL Environment: PCR Guidance for Building-Related Products and Services; Part B: Metal Ceiling Panel EPD Requirements; January 15, 2020
ACLCA PCR OPEN STANDARD CONFORMANCE	Transparency
ACLCA PCR OPEN STANDARD VERSION	Version 1.0   May 25, 2022
This declaration was independently verified in accordance with ISO 14025 and ISO 21930:2017 <input type="checkbox"/> INTERNAL <input checked="" type="checkbox"/> EXTERNAL	Tim Brooke, ASTM International
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	Thomas P. Gloria, Industrial Ecology Consultants



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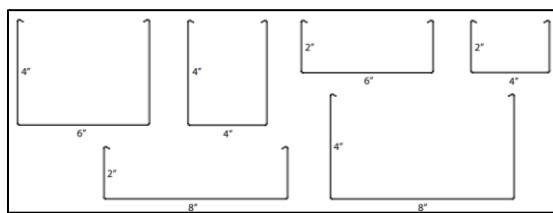


## 1. Product System Documentation

### 1.1 Product Description

USG Ceilings Plus® Planx™ Universal Linear Metal Panel System is an elegant and durable linear metal ceiling system consisting of variable width and length panels attached to a universal carrier. The clip on design offers unlimited access and design options with no plenum depth requirements. It is the ideal system for providing combined visual accents and acoustical control; unconstrained by suspension system in independent suspension applications. It is also available in acoustical or non-acoustical options.

The Deep Box profile is available in 6 module sizes that all connect to a universal carrier (not included in LCA study). Additional information and design options are available at [usg.com](http://usg.com) and [cgcinc.com](http://cgcinc.com).



These products generally fall under ASTM E1264 Section 5.2 designation as Type VII—Perforated aluminum (pan) with mineral or glass fiber base backing. CSI Masterformat number 09 51 33.

### 1.2 Designated Application

The met ceiling products covered by this EPD are designed to be attached to a universal carrier supplied by USG (not included in the EPD per PCR).

### 1.3 Product Technical Data

Table 1.1: Summary of the technical data

Name	Test Method	Planx™ Universal Linear Metal Panel System Deep Box Profile
Noise Reduction Coefficient (NRC)	ASTM C423	0.75 - 0.95 <sup>1</sup>
Light Reflection	ASTM E1477	0.93 <sup>2</sup>
Interzone Attenuation of Open Office Components (AC)	ASTM E1111 and E1110	N/A
Sound Attenuation Between Rooms Sharing A Common Ceiling Plenum (CAC)	ASTM E1414 AND E413	N/A
Surface Burning Characteristics of Building Materials	ASTM E84 (CAN ULc S102)	Flame spread 25 or less Smoke developed; 50 or less

<sup>1</sup> requires Ultrasorb backing and perforations

<sup>2</sup> with painted finish Blanco Mat™

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### 1.4 Placing on the Market/Application Rules

USG Ceilings Plus® Planx™ Universal Linear Metal Panel System in the Deep Box profile must be installed in accordance with all applicable USG installation guidelines. An approved installation guide specific to the Planx™ Universal Linear Metal Ceiling System is available on usg.com and cgcinc.com.

### 1.5 Delivery Status

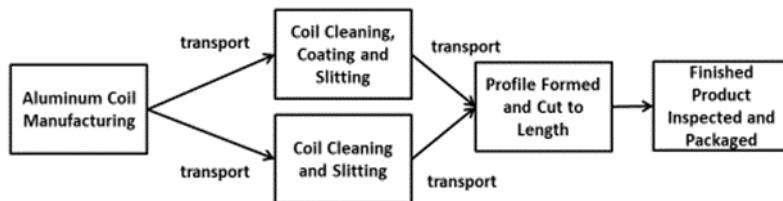
USG Ceilings Plus® Planx™ Universal Linear Metal Panel System components arrive at the jobsite in cardboard boxes, which have been modeled in this study.

### 1.6 Product Composition

Material	Planx™ Universal Linear Metal Panel System Deep Box Profile Paint on Metal Finish	Planx™ Universal Linear Metal Panel System Deep Box Profile Sarante™ Finish
Aluminum coil	74.2%	69.9%
Paint	0.2%	N/A
Sarante™ Laminate	N/A	6.0%
Suspension	25.6%	24.1%
Total	100%	100%

Table 1.2: Product composition

### 1.7 Product Manufacture



During the manufacturing process, a piece of aluminum coil is laminated (as required for the desired Sarante™ finish) and then fabricated into the required profile using a combination of break presses and associated equipment. All process scrap is recycled.

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## 1.8 Environment and Health During Manufacturing

USG and CGC have led the building sector's effort in developing and supplying sustainable construction materials. Today, sustainability is integrated into the design and manufacture of every wall, ceiling, and flooring product. As both a producer and a buyer of raw materials, we have a responsibility to extensively review and select each material we use. Each decision we make is based on careful consideration of environmental and safety effects over time. Raw materials used in our products are carefully selected and go through a screening procedure. This due diligence helps to ensure our products are safe to handle in our manufacturing plants and on job sites while having minimal impact on occupant health and indoor and outdoor environments.

## 1.9 Packaging

USG Ceilings Plus® Planx™ Universal Linear Metal Panel System is packaged in cardboard boxes. USG encourages the proper recycling of these cardboard boxes. Both the production and disposal of these packaging materials were modeled in this study according to the guidelines provided in Part A, Table 3 (Packaging Disposal Assumptions by Region). Box weights per square foot are provided below.

**Table 1.3: Packaging Weights**

<u>Product (assumes 10' length)</u>	<u>No. of Panels per Carton</u>	<u>MSF per Carton</u>	<u>Cardboard Usage Weight (kg/sq. ft.)</u>
6"x4" Deep Box Panel	8	4.00E-02	8.35E-03
4"x4" Deep Box Panel	8	2.67E-02	7.89E-03
6"x2" Deep Box Panel	20	1.00E-01	4.34E-03
4"x2" Deep Box Panel	20	6.67E-02	4.10E-03
8"x2" Deep Box Panel	8	5.33E-02	4.53E-03
8"x4" Deep Box Panel	8	5.33E-02	8.58E-03

## 1.10 Conditions of Use

To ensure the longevity of the product, Planx™ Universal Linear Metal Panel System should not be exposed to moisture, high humidity, or high temperature. Details for conditions of use may be found in the product specifications.

## 1.11 Distribution

The default transport distances per PCR (product transport from the point of manufacture to building site) of 497 miles (800 km) by diesel powered truck/trailer were used in this analysis. Final transportation from the building site to waste processing was defaulted to 124 miles (200 km) by diesel powered truck/trailer.

## 1.12 Product Installation

USG Ceilings Plus® Planx™ Universal Linear Metal Panel System must be installed in accordance with all applicable USG installation guidelines. Approved installation procedures are provided in the installation guide, USG Ceilings Plus® Planx™ Universal Linear Metal Panel System Installation Guide, available at usg.com. Installation of this product is accomplished by manual labor using mostly hand tools. No material or energy inputs are required on the jobsite. Per the



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PCR, a 7% waste factor was used in the LCA study.



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## **1.13 Environment and Health During Use Stage**

This product is not expected to produce any unusual hazards during normal use. Exposure to high dust levels may irritate the skin, eyes, nose, throat, or upper respiratory tract. Proper personal protective gear should be worn by installer for protection.

## **1.14 Reference Service Life**

The USG Ceilings Plus® Planx™ Universal Linear Metal Panel System is a laminated aluminum linear metal ceiling system. Once installed, it should require no maintenance, refurbishment, or replacement. Accordingly, a default RSL of 75 years is assumed for this product. An assumed Estimated Service Life (ESL) of 75 years shall be used for building life.

## **1.15 Re-Use Phase**

With proper care, Planx™ Universal Linear Metal Panel System components may be reused at the end of a building's life.

## **1.16 End-of-Life Disposal**

Planx™ Universal Linear Metal Panel System aluminum components are assumed to be recycled at end of life. Product disposal was modeled according to the guidelines provided in Part A, Table 4 (Product Disposal Assumptions by Region).

## **1.17 – Extraordinary Effects**

### **Fire**

All products covered by this EPD are certified to be Class A (flame spread of 25 or less, smoke developed of 50 or less per ASTM E84 OR CAN ULc S102).

### **1.17.1 – Further Information**

Further information can be found at [usg.com](http://usg.com) and [cginc.com](http://cginc.com).

## **2. LCA Calculation Rules**

### **2.1 EPD Type**

This EPD is a product specific, facility specific EPD.

### **2.2 Functional Unit**

The functional unit is defined as 0.092 square meters with optional reporting of one square foot (12"x12") of installed metal ceiling panels. USG Ceilings Plus® Planx™ Linear Metal Panel System consist of vertically suspended aluminum panels in various widths and depths as shown below. For this study, the functional unit consists of the panel assembly with the stated spacing between adjacent assemblies. This is believed to be typical of an installation for this product.



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Planx Universal Deep Box Module Size	Material	Panel Face Width (inches)	Aluminum Height (inches)	Distance Between Panels (inches)	Finish	Product Mass per Square Foot Including Suspension (kg/SF)
6"x4" Deep Box Panel	Aluminum	6.000	4.000	1.000	Painted	3.76E-01
	Aluminum	6.000	4.000	1.000	Painted with Acoustibond®	3.84E-01
	Aluminum	6.000	4.000	1.000	Painted with Ultrasorb	4.70E-01
	Aluminum	6.000	4.000	1.000	Anodized	3.76E-01
	Aluminum	6.000	4.000	1.000	Anodized with Acoustibond®	3.84E-01
	Aluminum	6.000	4.000	1.000	Anodized with Ultrasorb	4.70E-01
	Aluminum	6.000	4.000	1.000	Sarante™	4.00E-01
	Aluminum	6.000	4.000	1.000	Sarante™ with Acoustibond®	4.08E-01
	Aluminum	6.000	4.000	1.000	Sarante™ with Ultrasorb	4.94E-01
4"x4" Deep Box Panel	Aluminum	4.000	4.000	1.000	Painted	4.11E-01
	Aluminum	4.000	4.000	1.000	Painted with Acoustibond®	4.21E-01
	Aluminum	4.000	4.000	1.000	Painted with Ultrasorb	4.96E-01
	Aluminum	4.000	4.000	1.000	Anodized	4.11E-01
	Aluminum	4.000	4.000	1.000	Anodized with Acoustibond®	4.21E-01
	Aluminum	4.000	4.000	1.000	Anodized with Ultrasorb	4.96E-01
	Aluminum	4.000	4.000	1.000	Sarante™	4.38E-01
	Aluminum	4.000	4.000	1.000	Sarante™ with Acoustibond®	4.48E-01
	Aluminum	4.000	4.000	1.000	Sarante™ with Ultrasorb	5.23E-01
6"x2" Deep Box Panel	Aluminum	6.000	2.000	1.000	Painted	3.21E-01
	Aluminum	6.000	2.000	1.000	Painted with Acoustibond®	3.28E-01
	Aluminum	6.000	2.000	1.000	Painted with Ultrasorb	4.15E-01
	Aluminum	6.000	2.000	1.000	Anodized	3.21E-01
	Aluminum	6.000	2.000	1.000	Anodized with Acoustibond®	3.28E-01
	Aluminum	6.000	2.000	1.000	Anodized with Ultrasorb	4.15E-01
	Aluminum	6.000	2.000	1.000	Sarante™	3.40E-01
	Aluminum	6.000	2.000	1.000	Sarante™ with Acoustibond®	3.47E-01
	Aluminum	6.000	2.000	1.000	Sarante™ with Ultrasorb	4.35E-01
4"x2" Deep Box Panel	Aluminum	4.000	2.000	1.000	Painted	3.34E-01
	Aluminum	4.000	2.000	1.000	Painted with Acoustibond®	3.42E-01
	Aluminum	4.000	2.000	1.000	Painted with Ultrasorb	4.25E-01
	Aluminum	4.000	2.000	1.000	Anodized	3.34E-01
	Aluminum	4.000	2.000	1.000	Anodized with Acoustibond®	3.42E-01
	Aluminum	4.000	2.000	1.000	Anodized with Ultrasorb	4.25E-01
	Aluminum	4.000	2.000	1.000	Sarante™	3.55E-01
	Aluminum	4.000	2.000	1.000	Sarante™ with Acoustibond®	3.62E-01
	Aluminum	4.000	2.000	1.000	Sarante™ with Ultrasorb	4.45E-01
8"x2" Deep Box Panel	Aluminum	8.000	2.000	1.000	Painted	3.13E-01
	Aluminum	8.000	2.000	1.000	Painted with Acoustibond®	3.20E-01
	Aluminum	8.000	2.000	1.000	Painted with Ultrasorb	4.13E-01
	Aluminum	8.000	2.000	1.000	Anodized	3.13E-01
	Aluminum	8.000	2.000	1.000	Anodized with Acoustibond®	3.20E-01
	Aluminum	8.000	2.000	1.000	Anodized with Ultrasorb	4.13E-01
	Aluminum	8.000	2.000	1.000	Sarante™	3.32E-01
	Aluminum	8.000	2.000	1.000	Sarante™ with Acoustibond®	3.39E-01
	Aluminum	8.000	2.000	1.000	Sarante™ with Ultrasorb	4.31E-01
8"x4" Deep Box Panel	Aluminum	8.000	4.000	1.000	Painted	3.56E-01
	Aluminum	8.000	4.000	1.000	Painted with Acoustibond®	3.64E-01
	Aluminum	8.000	4.000	1.000	Painted with Ultrasorb	4.55E-01
	Aluminum	8.000	4.000	1.000	Anodized	3.56E-01
	Aluminum	8.000	4.000	1.000	Anodized with Acoustibond®	3.64E-01
	Aluminum	8.000	4.000	1.000	Anodized with Ultrasorb	4.55E-01
	Aluminum	8.000	4.000	1.000	Sarante™	3.78E-01
	Aluminum	8.000	4.000	1.000	Sarante™ with Acoustibond®	3.86E-01
	Aluminum	8.000	4.000	1.000	Sarante™ with Ultrasorb	4.78E-01

Table 2.1: Functional unit

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### 2.2 System Boundary

This EPD represents a “cradle-to-grave” LCA analysis for USG Ceilings Plus® Planx™ Universal Linear Metal Panel System. It covers all the production steps from raw material extraction (i.e., the cradle) to end of life disposal (grave).

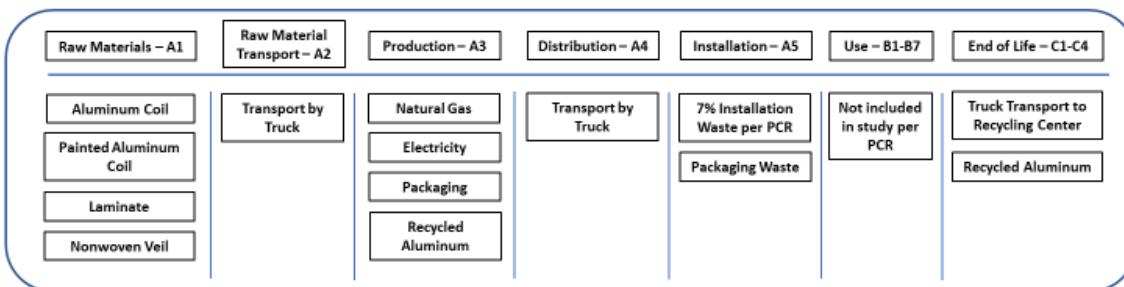


Figure 2.1: Specific processes covered by this EPD by life cycle stage

### 2.3 Estimates and Assumptions

The results are limited by the use of proxy processes rather than actual supplier generated primary data. This would include such processes as the production of the aluminum coil, which is specific to North America and covers the coil thickness used in this product but is specific to the manufacturer used by USG. In addition, the data is limited in that the primary data was collected during 2022 and changes in operations may increase/decrease impacts in the future. Other data limitations include the use of secondary data sets instead of primary data for upstream and downstream processes, local impacts vs. global impacts, possible impacts vs. actual impacts, inherent uncertainty in the data sets, accuracy, and precision of impact assessment methodology, etc. Both human activity and capital equipment were excluded from the system boundary.

### 2.4 Cut-off Criteria

All inputs and outputs to a (unit) process were included in the calculation for which data is available. In case of insufficient input data or data gaps for a unit process, the cut-off criteria was 1% of renewable and non-renewable primary energy usage and 1% of the total mass of that unit process. The total neglected input flows did not exceed 5% of energy usage and mass.

### 2.5 Background Data

All background was sourced from critically reviewed LCA for Experts databases from Sphera.

### 2.6 Data Requirements and Data Sources

The LCA model was created using the LCA for Experts software from Sphera (Version 10.7.1.28; Schema 8007). Specific comments related to data quality requirements cited in ISO 14025 Section 4.2.3.6.2 include the following.

**Temporal:** In the case of production, the LCI data was collected for the 2022 production year.

**Geographical:** Where possible, all processes were chosen as being representative of US manufacturing processes.



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**Technical:** Where possible, the data selected for this study is specific to the technology used in the preparation of the various raw materials.

**Precision:** The raw material usage amounts were derived from plant data.

**Completeness:** Virtually all the significant raw material flows (> 99.9%) have been modeled.

**Representative:** Where possible all the data sets were selected to be representative of US-based production, are less than 10 years in age and are representative of the technology being employed.

**Consistency:** All the manufacturing processes were modeled in a consistent manner throughout this study in accordance with the goal and scope definitions.

**Reproducibility:** The information contained in this study, including raw material, energy and transportation distance inputs, have been fully documented in the LCA report.

**Sources of Data:** The sources for the processes used in this study have been fully provided in the LCA report and are representative of the material and energy sources used in actual production.

**Uncertainty:** The relative uncertainty associated with this study has been minimized. No significant assumptions have been made.

### 2.7 Period Under Review

All raw material and energy inputs are for the 2022 calendar year.

### 2.8 Allocation

No allocation was required in this study. The LCI data was collected for the 2022 production year.

## 3. LCA: Scenarios and additional technical information

Table 3.1. Transport to the building site (A4)

Name	PLANX™ UNIVERSAL LINEAR METAL PANEL SYSTEM IN THE DEEP BOX PROFILE	Unit
Fuel type	Diesel	-
Liters of fuel (including packaging)	1.22E-03 - 1.82E-03	l/100km
Vehicle type	US Truck	-
Transport distance	800	km
Capacity	0.67	
Gross density of products transported (assembly only)	2,710	kg/m³

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**Table 3.1. Installation into the building (A5)**

NAME	VALUE	UNIT
Ancillary materials	0	Kg/sf
Net freshwater consumption specified by water source and fate	0	m³
Other resources	0	kg
Electricity consumption	0	kWh
Other energy carriers	0	MJ
Material loss	7	%
Mounting System (CPMS)	6.32E-02	kg/SF
Output substances following waste treatment on site	0	%
Dust in the air	~ 0	kg
VOC content	< 9	µg/m³

**Table 3.2. Use or application of the installed product (B1)**

NAME	VALUE	UNIT
RSL	75	years
VOC	< 9	µg/m³

**Table 3.3. Maintenance (B2)**

NAME	VALUE	UNIT
Maintenance process information	As required by the PCR, a standard Life expectancy for ceiling panels based on historic practices of 75 years shall be used. No maintenance is required.	
Maintenance cycle	0	Number/ RSL
Maintenance cycle	0	Number/ ESL
Water consumption	0	m³
Auxiliary	0	kg
Other resources	0	kg
Electricity consumption	0	kWh
Other energy carriers	0	MJ
Material loss	0	kg

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**Table 3.4. End of Life (C1-C4)**

Name		Planx™ Universal Linear Metal Panel System in the Deep Box Profile	Unit
Collection process (specified by type)	Collected	0	kg
	Collected with mixed construction	0	kg/SF
Recovery (specified by type)	Reuse	0	kg
	Recycling	0.196 – 0.203	kg
	Landfill	0	kg/SF
	Incineration	0	kg
	Incineration with	0	kg
	Energy conversion	0	-
Disposal	Product or material for final deposition	0	kg/SF
Removals of biogenic carbon (excluding		0	0

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## 4. Environmental Indicators Derived from LCA

### 4.1 Life Cycle Assessment Results

Product stage		Construction process stage		Use stage		End of life stage									
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Figure 2: System Boundary

USG Ceilings Plus® Planx™ Universal Linear Metal Panel System in the Deep Box profile is a system of suspended vertical metal panels available in various module widths and depths. These metal panels are typically placed side-by-side with a 1" spacing between panels as shown in the photo on the first page and a spacing of 1" between panels was chosen for this LCA study. The LCA results presented in the document can be applied to any panel spacing by multiplying the reported results by the following factor.

$$4'' \text{ Wide Panel:} \quad \text{Environmental Impact} = \frac{\text{Reported results} \times 5}{(4 + Sp)}$$

$$6'' \text{ Wide Panel:} \quad \text{Environmental Impact} = \frac{\text{Reported results} \times 7}{(6 + Sp)}$$

$$8'' \text{ Wide Panel:} \quad \text{Environmental Impact} = \frac{\text{Reported results} \times 9}{(8 + Sp)}$$

Where Sp = spacing distance in inches between panels



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<u>Module Size</u>	<u>Finish</u>	<u>Acoustical Treatment</u>	<u>Results Page #</u>
6"x4"	Painted on Metal	None	15
6"x4"	Painted on Metal	Acoustibond®	16
6"x4"	Painted on Metal	Ultrasorb (1" @ 3 lb.)	17
6"x4"	Anodized Metal	None	18
6"x4"	Anodized Metal	Acoustibond®	19
6"x4"	Anodized Metal	Ultrasorb (1" @ 3 lb.)	20
6"x4"	Sarante™ Finish	None	21
6"x4"	Sarante™ Finish	Acoustibond®	22
6"x4"	Sarante™ Finish	Ultrasorb (1" @ 3 lb.)	23
4"x4"	Painted on Metal	None	24
4"x4"	Painted on Metal	Acoustibond®	25
4"x4"	Painted on Metal	Ultrasorb (1" @ 3 lb.)	26
4"x4"	Anodized Metal	None	27
4"x4"	Anodized Metal	Acoustibond®	28
4"x4"	Anodized Metal	Ultrasorb (1" @ 3 lb.)	29
4"x4"	Sarante™ Finish	None	30
4"x4"	Sarante™ Finish	Acoustibond®	31
4"x4"	Sarante™ Finish	Ultrasorb (1" @ 3 lb.)	32
6"x2"	Painted on Metal	None	33
6"x2"	Painted on Metal	Acoustibond®	34
6"x2"	Painted on Metal	Ultrasorb (1" @ 3 lb.)	35
6"x2"	Anodized Metal	None	36
6"x2"	Anodized Metal	Acoustibond®	37
6"x2"	Anodized Metal	Ultrasorb (1" @ 3 lb.)	38
6"x2"	Sarante™ Finish	None	39
6"x2"	Sarante™ Finish	Acoustibond®	40
6"x2"	Sarante™ Finish	Ultrasorb (1" @ 3 lb.)	41
4"x2"	Painted on Metal	None	42
4"x2"	Painted on Metal	Acoustibond®	43
4"x2"	Painted on Metal	Ultrasorb (1" @ 3 lb.)	44
4"x2"	Anodized Metal	None	45
4"x2"	Anodized Metal	Acoustibond®	46
4"x2"	Anodized Metal	Ultrasorb (1" @ 3 lb.)	47
4"x2"	Sarante™ Finish	None	48
4"x2"	Sarante™ Finish	Acoustibond®	49
4"x2"	Sarante™ Finish	Ultrasorb (1" @ 3 lb.)	50

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## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



<u>Module Size</u>	<u>Finish</u>	<u>Acoustical Treatment</u>	<u>Results Page #</u>
8"x2"	Painted on Metal	None	51
8"x2"	Painted on Metal	Acoustibond®	52
8"x2"	Painted on Metal	Ultrasorb (1" @ 3 lb.)	53
8"x2"	Anodized Metal	None	54
8"x2"	Anodized Metal	Acoustibond®	55
8"x2"	Anodized Metal	Ultrasorb (1" @ 3 lb.)	56
8"x2"	Sarante™ Finish	None	57
8"x2"	Sarante™ Finish	Acoustibond®	58
8"x2"	Sarante™ Finish	Ultrasorb (1" @ 3 lb.)	59
8"x4"	Painted on Metal	None	60
8"x4"	Painted on Metal	Acoustibond®	61
8"x4"	Painted on Metal	Ultrasorb (1" @ 3 lb.)	62
8"x4"	Anodized Metal	None	63
8"x4"	Anodized Metal	Acoustibond®	64
8"x4"	Anodized Metal	Ultrasorb (1" @ 3 lb.)	65
8"x4"	Sarante™ Finish	None	66
8"x4"	Sarante™ Finish	Acoustibond®	67
8"x4"	Sarante™ Finish	Ultrasorb (1" @ 3 lb.)	68
--	--	Fiberglass in Poly Bag (2" @ 0.75 lb.)	69

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## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.1a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 4" Deep Box Profile - Painted or Timbre™ Finish**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.15E+00	2.00E-02	9.46E-02	0.00E+00	4.85E-03	0.00E+00	8.18E-04	1.27E+00	-4.03E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.87E-09	5.18E-17	4.42E-10	0.00E+00	1.26E-17	0.00E+00	4.01E-17	6.31E-09	3.40E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	6.77E-03	8.01E-05	5.54E-04	0.00E+00	1.19E-05	0.00E+00	4.34E-06	7.42E-03	-1.09E-03
Eutrophication Potential (EP)	kg N eq.	1.78E-04	7.41E-06	2.66E-05	0.00E+00	1.32E-06	0.00E+00	1.91E-07	2.14E-04	-4.05E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.87E-02	1.85E-03	4.69E-03	0.00E+00	2.71E-04	0.00E+00	7.94E-05	6.56E-02	-1.22E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.58E+00	3.74E-02	1.23E-01	0.00E+00	9.09E-03	0.00E+00	1.64E-03	1.75E+00	-4.16E-01

**Table 4.1b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 4" Deep Box Profile - Painted or Timbre™ Finish**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	5.76E-01	1.13E-02	4.51E-02	0.00E+00	2.74E-03	0.00E+00	1.53E-03	6.37E-01	-8.95E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.78E+01	2.83E-01	1.37E+00	0.00E+00	6.87E-02	0.00E+00	1.30E-02	1.96E+01	-4.96E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	4.09E-01	0.00E+00	3.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.40E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	1.88E-03	3.86E-05	1.48E-04	0.00E+00	9.39E-06	0.00E+00	1.88E-06	2.08E-03	-1.64E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.71E-02	0.00E+00	5.71E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	9.61E-05	2.28E-05	9.28E-06	0.00E+00	5.55E-06	0.00E+00	3.08E-07	1.34E-04	-5.14E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	1.35E-06	8.12E-13	1.01E-07	0.00E+00	1.98E-13	0.00E+00	3.26E-13	1.45E-06	-1.16E-08
Non-hazardous waste disposed	kg	3.72E-02	2.46E-05	2.05E-02	0.00E+00	5.98E-06	0.00E+00	3.89E-02	9.66E-02	-4.17E-02
High-level radioactive waste	kg	2.93E-04	8.10E-07	2.22E-05	0.00E+00	1.97E-07	0.00E+00	1.46E-07	3.17E-04	-4.10E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.2a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 4" Deep Box Profile - Painted or Timbre™ Finish with Acoustibond®**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.19E+00	2.04E-02	9.76E-02	0.00E+00	4.95E-03	0.00E+00	3.65E-03	1.31E+00	-4.03E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.87E-09	5.29E-17	4.42E-10	0.00E+00	1.29E-17	0.00E+00	4.88E-17	6.31E-09	3.40E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	6.85E-03	8.18E-05	5.62E-04	0.00E+00	1.22E-05	0.00E+00	2.30E-05	7.53E-03	-1.09E-03
Eutrophication Potential (EP)	kg N eq.	1.86E-04	7.56E-06	2.77E-05	0.00E+00	1.34E-06	0.00E+00	6.84E-06	2.29E-04	-4.05E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.97E-02	1.89E-03	4.77E-03	0.00E+00	2.77E-04	0.00E+00	1.28E-04	6.68E-02	-1.22E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.70E+00	3.82E-02	1.32E-01	0.00E+00	9.29E-03	0.00E+00	2.00E-03	1.88E+00	-4.16E-01

**Table 4.2b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 4" Deep Box Profile - Painted or Timbre™ Finish with Acoustibond®**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	6.44E-01	1.15E-02	5.03E-02	0.00E+00	2.80E-03	0.00E+00	1.86E-03	7.11E-01	-8.95E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.87E+01	2.89E-01	1.44E+00	0.00E+00	7.02E-02	0.00E+00	1.59E-02	2.06E+01	-4.96E+00
Non-renewable primary resources with energy content used as material (NPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	4.09E-01	0.00E+00	3.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.40E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	2.05E-03	3.94E-05	1.61E-04	0.00E+00	9.59E-06	0.00E+00	2.65E-06	2.27E-03	-1.64E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.71E-02	0.00E+00	5.71E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	9.88E-05	2.33E-05	9.52E-06	0.00E+00	5.67E-06	0.00E+00	3.76E-07	1.38E-04	-5.14E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	1.35E-06	8.30E-13	1.01E-07	0.00E+00	2.02E-13	0.00E+00	3.97E-13	1.45E-06	-1.16E-08
Non-hazardous waste disposed	kg	4.23E-02	2.51E-05	2.14E-02	0.00E+00	6.11E-06	0.00E+00	4.63E-02	1.10E-01	-4.17E-02
High-level radioactive waste	kg	3.11E-04	8.27E-07	2.36E-05	0.00E+00	2.01E-07	0.00E+00	1.77E-07	3.36E-04	-4.10E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.3a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 4" Deep Box Profile - Painted or Timbre™ Finish with Ultrasorb**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.30E+00	2.47E-02	1.09E-01	0.00E+00	6.02E-03	0.00E+00	3.21E-02	1.47E+00	-4.03E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.87E-09	6.41E-17	4.42E-10	0.00E+00	1.57E-17	0.00E+00	1.37E-16	6.31E-09	3.40E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	6.96E-03	9.91E-05	5.86E-04	0.00E+00	1.48E-05	0.00E+00	2.11E-04	7.87E-03	-1.09E-03
Eutrophication Potential (EP)	kg N eq.	2.02E-04	9.16E-06	3.41E-05	0.00E+00	1.63E-06	0.00E+00	7.38E-05	3.21E-04	-4.05E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	6.22E-02	2.29E-03	5.03E-03	0.00E+00	3.37E-04	0.00E+00	6.13E-04	7.05E-02	-1.22E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.97E+00	4.62E-02	1.53E-01	0.00E+00	1.13E-02	0.00E+00	5.62E-03	2.19E+00	-4.16E-01

**Table 4.3b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 4" Deep Box Profile - Painted or Timbre™ Finish with Ultrasorb**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	8.55E-01	1.39E-02	6.66E-02	0.00E+00	3.40E-03	0.00E+00	5.23E-03	9.44E-01	-8.95E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	2.10E+01	3.49E-01	1.62E+00	0.00E+00	8.54E-02	0.00E+00	4.47E-02	2.31E+01	-4.96E+00
Non-renewable primary resources with energy content used as material (NPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	4.09E-01	0.00E+00	3.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.40E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	2.50E-03	4.77E-05	1.95E-04	0.00E+00	1.17E-05	0.00E+00	1.04E-05	2.77E-03	-1.64E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.71E-02	0.00E+00	5.71E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.08E-04	2.82E-05	1.06E-05	0.00E+00	6.89E-06	0.00E+00	1.06E-06	1.55E-04	-5.14E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	1.35E-06	1.00E-12	1.01E-07	0.00E+00	2.45E-13	0.00E+00	1.11E-12	1.45E-06	-1.16E-08
Non-hazardous waste disposed	kg	5.21E-02	3.04E-05	2.78E-02	0.00E+00	7.43E-06	0.00E+00	1.21E-01	2.01E-01	-4.17E-02
High-level radioactive waste	kg	3.75E-04	1.00E-06	2.84E-05	0.00E+00	2.45E-07	0.00E+00	4.96E-07	4.05E-04	-4.10E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.4a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 4" Deep Box Profile - Anodized Finish**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	8.16E+00	2.00E-02	6.22E-01	0.00E+00	4.85E-03	0.00E+00	8.18E-04	8.81E+00	-4.03E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	1.50E-08	5.18E-17	1.13E-09	0.00E+00	1.26E-17	0.00E+00	4.01E-17	1.62E-08	3.40E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	5.60E-02	8.01E-05	4.26E-03	0.00E+00	1.19E-05	0.00E+00	4.34E-06	6.03E-02	-1.09E-03
Eutrophication Potential (EP)	kg N eq.	1.14E-03	7.41E-06	9.88E-05	0.00E+00	1.32E-06	0.00E+00	1.91E-07	1.25E-03	-4.05E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	4.71E-01	1.85E-03	3.58E-02	0.00E+00	2.71E-04	0.00E+00	7.94E-05	5.09E-01	-1.22E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	5.80E+00	3.74E-02	4.40E-01	0.00E+00	9.09E-03	0.00E+00	1.64E-03	6.28E+00	-4.16E-01

**Table 4.4b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 4" Deep Box Profile - Anodized Finish**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	1.04E+00	1.13E-02	7.98E-02	0.00E+00	2.74E-03	0.00E+00	1.53E-03	1.13E+00	-8.95E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	9.55E+01	2.83E-01	7.22E+00	0.00E+00	6.87E-02	0.00E+00	1.30E-02	1.03E+02	-4.96E+00
Non-renewable primary resources with energy content used as material (NPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	1.42E-01	0.00E+00	1.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	5.18E-03	3.86E-05	3.96E-04	0.00E+00	9.39E-06	0.00E+00	1.88E-06	5.62E-03	-1.64E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.71E-02	0.00E+00	5.71E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.59E-03	2.28E-05	1.22E-04	0.00E+00	5.55E-06	0.00E+00	3.08E-07	1.74E-03	-5.14E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	2.88E-05	8.12E-13	2.17E-06	0.00E+00	1.98E-13	0.00E+00	3.26E-13	3.10E-05	-1.16E-08
Non-hazardous waste disposed	kg	1.25E-01	2.46E-05	2.71E-02	0.00E+00	5.98E-06	0.00E+00	3.89E-02	1.91E-01	-4.17E-02
High-level radioactive waste	kg	5.34E-04	8.10E-07	4.03E-05	0.00E+00	1.97E-07	0.00E+00	1.46E-07	5.75E-04	-4.10E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.5a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 4" Deep Box Profile - Anodized Finish with Acoustibond®**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	8.20E+00	2.04E-02	6.25E-01	0.00E+00	4.95E-03	0.00E+00	3.65E-03	8.85E+00	-4.03E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	1.50E-08	5.29E-17	1.13E-09	0.00E+00	1.29E-17	0.00E+00	4.88E-17	1.62E-08	3.40E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	5.60E-02	8.18E-05	4.26E-03	0.00E+00	1.22E-05	0.00E+00	2.30E-05	6.04E-02	-1.09E-03
Eutrophication Potential (EP)	kg N eq.	1.15E-03	7.56E-06	9.99E-05	0.00E+00	1.34E-06	0.00E+00	6.84E-06	1.26E-03	-4.05E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	4.72E-01	1.89E-03	3.58E-02	0.00E+00	2.77E-04	0.00E+00	1.28E-04	5.11E-01	-1.22E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	5.91E+00	3.82E-02	4.49E-01	0.00E+00	9.29E-03	0.00E+00	2.00E-03	6.41E+00	-4.16E-01

**Table 4.5b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 4" Deep Box Profile - Anodized Finish with Acoustibond®**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	1.11E+00	1.15E-02	8.50E-02	0.00E+00	2.80E-03	0.00E+00	1.86E-03	1.21E+00	-8.95E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	9.63E+01	2.89E-01	7.28E+00	0.00E+00	7.02E-02	0.00E+00	1.59E-02	1.04E+02	-4.96E+00
Non-renewable primary resources with energy content used as material (NPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	1.42E-01	0.00E+00	1.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	5.35E-03	3.94E-05	4.08E-04	0.00E+00	9.59E-06	0.00E+00	2.65E-06	5.81E-03	-1.64E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.71E-02	0.00E+00	5.71E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.59E-03	2.33E-05	1.22E-04	0.00E+00	5.67E-06	0.00E+00	3.76E-07	1.74E-03	-5.14E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	2.88E-05	8.30E-13	2.17E-06	0.00E+00	2.02E-13	0.00E+00	3.97E-13	3.10E-05	-1.16E-08
Non-hazardous waste disposed	kg	1.30E-01	2.51E-05	2.80E-02	0.00E+00	6.11E-06	0.00E+00	4.63E-02	2.04E-01	-4.17E-02
High-level radioactive waste	kg	5.52E-04	8.27E-07	4.17E-05	0.00E+00	2.01E-07	0.00E+00	1.77E-07	5.94E-04	-4.10E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.6a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 4" Deep Box Profile - Anodized Finish with Ultrasorb**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	8.31E+00	2.47E-02	6.36E-01	0.00E+00	6.02E-03	0.00E+00	3.21E-02	9.01E+00	-4.03E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	1.50E-08	6.41E-17	1.13E-09	0.00E+00	1.57E-17	0.00E+00	1.37E-16	1.62E-08	3.40E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	5.62E-02	9.91E-05	4.29E-03	0.00E+00	1.48E-05	0.00E+00	2.11E-04	6.08E-02	-1.09E-03
Eutrophication Potential (EP)	kg N eq.	1.16E-03	9.16E-06	1.06E-04	0.00E+00	1.63E-06	0.00E+00	7.38E-05	1.35E-03	-4.05E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	4.75E-01	2.29E-03	3.61E-02	0.00E+00	3.37E-04	0.00E+00	6.13E-04	5.14E-01	-1.22E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	6.19E+00	4.62E-02	4.71E-01	0.00E+00	1.13E-02	0.00E+00	5.62E-03	6.72E+00	-4.16E-01

**Table 4.6b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 4" Deep Box Profile - Anodized Finish with Ultrasorb**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	1.32E+00	1.39E-02	1.01E-01	0.00E+00	3.40E-03	0.00E+00	5.23E-03	1.44E+00	-8.95E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	9.86E+01	3.49E-01	7.46E+00	0.00E+00	8.54E-02	0.00E+00	4.47E-02	1.07E+02	-4.96E+00
Non-renewable primary resources with energy content used as material (NPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	1.42E-01	0.00E+00	1.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	5.79E-03	4.77E-05	4.43E-04	0.00E+00	1.17E-05	0.00E+00	1.04E-05	6.31E-03	-1.64E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.71E-02	0.00E+00	5.71E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.60E-03	2.82E-05	1.23E-04	0.00E+00	6.89E-06	0.00E+00	1.06E-06	1.76E-03	-5.14E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	2.88E-05	1.00E-12	2.17E-06	0.00E+00	2.45E-13	0.00E+00	1.11E-12	3.10E-05	-1.16E-08
Non-hazardous waste disposed	kg	1.40E-01	3.04E-05	3.44E-02	0.00E+00	7.43E-06	0.00E+00	1.21E-01	2.95E-01	-4.17E-02
High-level radioactive waste	kg	6.16E-04	1.00E-06	4.65E-05	0.00E+00	2.45E-07	0.00E+00	4.96E-07	6.64E-04	-4.10E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.7a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 4" Deep Box Profile - Sarante™ Finish**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.25E+00	2.12E-02	1.03E-01	0.00E+00	5.15E-03	0.00E+00	8.77E-03	1.38E+00	-4.03E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.83E-09	5.49E-17	4.39E-10	0.00E+00	1.34E-17	0.00E+00	6.47E-17	6.27E-09	3.40E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	6.95E-03	8.49E-05	5.73E-04	0.00E+00	1.26E-05	0.00E+00	5.67E-05	7.68E-03	-1.09E-03
Eutrophication Potential (EP)	kg N eq.	2.03E-04	7.85E-06	2.99E-05	0.00E+00	1.40E-06	0.00E+00	1.89E-05	2.61E-04	-4.05E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	6.21E-02	1.96E-03	4.97E-03	0.00E+00	2.88E-04	0.00E+00	2.15E-04	6.96E-02	-1.22E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.99E+00	3.96E-02	1.54E-01	0.00E+00	9.65E-03	0.00E+00	2.65E-03	2.19E+00	-4.16E-01

**Table 4.7b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 4" Deep Box Profile - Sarante™ Finish**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	6.90E-01	1.19E-02	5.38E-02	0.00E+00	2.91E-03	0.00E+00	2.47E-03	7.81E-01	-8.95E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	2.06E+01	2.99E-01	1.58E+00	0.00E+00	7.29E-02	0.00E+00	2.11E-02	2.26E+01	-4.96E+00
Non-renewable primary resources with energy content used as material (NPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	4.09E-01	0.00E+00	3.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.40E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	2.41E-03	4.09E-05	1.87E-04	0.00E+00	9.96E-06	0.00E+00	4.05E-06	2.65E-03	-1.64E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.71E-02	0.00E+00	5.71E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.05E-04	2.42E-05	1.01E-05	0.00E+00	5.89E-06	0.00E+00	4.99E-07	1.46E-04	-5.14E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	1.36E-06	8.61E-13	1.03E-07	0.00E+00	2.10E-13	0.00E+00	5.26E-13	1.47E-06	-1.16E-08
Non-hazardous waste disposed	kg	4.32E-02	2.61E-05	2.25E-02	0.00E+00	6.35E-06	0.00E+00	5.97E-02	1.25E-01	-4.17E-02
High-level radioactive waste	kg	2.76E-04	8.59E-07	2.10E-05	0.00E+00	2.09E-07	0.00E+00	2.34E-07	2.99E-04	-4.10E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.8a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 4" Deep Box Profile - Sarante™ Finish with Acoustibond®**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.28E+00	2.16E-02	1.05E-01	0.00E+00	5.25E-03	0.00E+00	1.16E-02	1.43E+00	-4.03E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.83E-09	5.60E-17	4.39E-10	0.00E+00	1.37E-17	0.00E+00	7.35E-17	6.27E-09	3.40E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	7.04E-03	8.67E-05	5.81E-04	0.00E+00	1.29E-05	0.00E+00	7.54E-05	7.79E-03	-1.09E-03
Eutrophication Potential (EP)	kg N eq.	2.11E-04	8.01E-06	3.10E-05	0.00E+00	1.42E-06	0.00E+00	2.55E-05	2.76E-04	-4.05E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	6.31E-02	2.00E-03	5.05E-03	0.00E+00	2.94E-04	0.00E+00	2.63E-04	7.07E-02	-1.22E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	2.10E+00	4.04E-02	1.62E-01	0.00E+00	9.85E-03	0.00E+00	3.01E-03	2.32E+00	-4.16E-01

**Table 4.8b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 4" Deep Box Profile - Sarante™ Finish with Acoustibond®**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	7.58E-01	1.22E-02	5.90E-02	0.00E+00	2.97E-03	0.00E+00	2.80E-03	8.35E-01	-8.95E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	2.15E+01	3.06E-01	1.65E+00	0.00E+00	7.44E-02	0.00E+00	2.39E-02	2.35E+01	-4.96E+00
Non-renewable primary resources with energy content used as material (NPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	4.09E-01	0.00E+00	3.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.40E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	2.58E-03	4.17E-05	2.00E-04	0.00E+00	1.02E-05	0.00E+00	4.82E-06	2.83E-03	-1.64E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.71E-02	0.00E+00	5.71E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.08E-04	2.47E-05	1.03E-05	0.00E+00	6.01E-06	0.00E+00	5.66E-07	1.50E-04	-5.14E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	1.36E-06	8.79E-13	1.03E-07	0.00E+00	2.14E-13	0.00E+00	5.97E-13	1.47E-06	-1.16E-08
Non-hazardous waste disposed	kg	4.83E-02	2.66E-05	2.35E-02	0.00E+00	6.48E-06	0.00E+00	6.72E-02	1.39E-01	-4.17E-02
High-level radioactive waste	kg	2.94E-04	8.76E-07	2.23E-05	0.00E+00	2.13E-07	0.00E+00	2.66E-07	3.18E-04	-4.10E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.9a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 4" Deep Box Profile - Sarante™ Finish with Ultrasorb**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.40E+00	2.59E-02	1.17E-01	0.00E+00	6.32E-03	0.00E+00	4.01E-02	1.59E+00	-4.03E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.83E-09	6.72E-17	4.39E-10	0.00E+00	1.64E-17	0.00E+00	1.62E-16	6.27E-09	3.40E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	7.15E-03	1.04E-04	6.05E-04	0.00E+00	1.55E-05	0.00E+00	2.63E-04	8.14E-03	-1.09E-03
Eutrophication Potential (EP)	kg N eq.	2.27E-04	9.60E-06	3.74E-05	0.00E+00	1.71E-06	0.00E+00	9.24E-05	3.68E-04	-4.05E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	6.56E-02	2.40E-03	5.31E-03	0.00E+00	3.54E-04	0.00E+00	7.48E-04	7.44E-02	-1.22E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	2.38E+00	4.85E-02	1.84E-01	0.00E+00	1.19E-02	0.00E+00	6.63E-03	2.63E+00	-4.16E-01

**Table 4.9b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 4" Deep Box Profile - Sarante™ Finish with Ultrasorb**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	9.69E-01	1.46E-02	7.53E-02	0.00E+00	3.57E-03	0.00E+00	6.17E-03	1.07E+00	-8.95E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	2.38E+01	3.66E-01	1.83E+00	0.00E+00	8.96E-02	0.00E+00	5.27E-02	2.61E+01	-4.96E+00
Non-renewable primary resources with energy content used as material (NPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	4.09E-01	0.00E+00	3.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.40E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	3.02E-03	5.00E-05	2.35E-04	0.00E+00	1.22E-05	0.00E+00	1.26E-05	3.33E-03	-1.64E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.71E-02	0.00E+00	5.71E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.17E-04	2.96E-05	1.14E-05	0.00E+00	7.23E-06	0.00E+00	1.25E-06	1.67E-04	-5.14E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	1.37E-06	1.05E-12	1.03E-07	0.00E+00	2.58E-13	0.00E+00	1.31E-12	1.47E-06	-1.16E-08
Non-hazardous waste disposed	kg	5.80E-02	3.19E-05	2.98E-02	0.00E+00	7.80E-06	0.00E+00	1.42E-01	2.30E-01	-4.17E-02
High-level radioactive waste	kg	3.58E-04	1.05E-06	2.72E-05	0.00E+00	2.57E-07	0.00E+00	5.85E-07	3.87E-04	-4.10E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.10a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 4" Deep Box Profile - Painted or Timbre™ Finish**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.25E+00	2.18E-02	1.03E-01	0.00E+00	5.29E-03	0.00E+00	8.55E-04	1.38E+00	-4.38E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.89E-09	5.66E-17	4.43E-10	0.00E+00	1.37E-17	0.00E+00	4.19E-17	6.33E-09	3.38E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	7.42E-03	8.75E-05	6.08E-04	0.00E+00	1.30E-05	0.00E+00	4.54E-06	8.13E-03	-1.19E-03
Eutrophication Potential (EP)	kg N eq.	1.86E-04	8.08E-06	2.86E-05	0.00E+00	1.43E-06	0.00E+00	2.00E-07	2.25E-04	-4.37E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	6.32E-02	2.02E-03	5.06E-03	0.00E+00	2.96E-04	0.00E+00	8.30E-05	7.07E-02	-1.33E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.71E+00	4.08E-02	1.33E-01	0.00E+00	9.91E-03	0.00E+00	1.72E-03	1.90E+00	-4.68E-01

**Table 4.10b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 4" Deep Box Profile - Painted or Timbre™ Finish**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	6.03E-01	1.23E-02	4.72E-02	0.00E+00	2.99E-03	0.00E+00	1.60E-03	6.67E-01	-1.01E+00
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.94E+01	3.08E-01	1.49E+00	0.00E+00	7.49E-02	0.00E+00	1.36E-02	2.12E+01	-5.41E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	4.43E-01	0.00E+00	3.34E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.76E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	1.94E-03	4.21E-05	1.52E-04	0.00E+00	1.02E-05	0.00E+00	1.95E-06	2.14E-03	-1.68E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.55E-02	0.00E+00	5.55E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.01E-04	2.49E-05	9.82E-06	0.00E+00	6.05E-06	0.00E+00	3.22E-07	1.42E-04	-5.57E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	1.28E-06	8.87E-13	9.66E-08	0.00E+00	2.15E-13	0.00E+00	3.40E-13	1.38E-06	-1.18E-08
Non-hazardous waste disposed	kg	3.55E-02	2.68E-05	2.20E-02	0.00E+00	6.52E-06	0.00E+00	4.07E-02	9.82E-02	-4.90E-02
High-level radioactive waste	kg	3.14E-04	8.84E-07	2.38E-05	0.00E+00	2.15E-07	0.00E+00	1.52E-07	3.39E-04	-4.62E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.11a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 4" Deep Box Profile - Painted or Timbre™ Finish with Acoustibond®**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.28E+00	2.23E-02	1.05E-01	0.00E+00	5.41E-03	0.00E+00	4.04E-03	1.42E+00	-4.38E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.89E-09	5.78E-17	4.43E-10	0.00E+00	1.41E-17	0.00E+00	5.18E-17	6.33E-09	3.38E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	7.48E-03	8.94E-05	6.14E-04	0.00E+00	1.33E-05	0.00E+00	2.55E-05	8.23E-03	-1.19E-03
Eutrophication Potential (EP)	kg N eq.	1.91E-04	8.26E-06	2.95E-05	0.00E+00	1.47E-06	0.00E+00	7.69E-06	2.38E-04	-4.37E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	6.41E-02	2.07E-03	5.13E-03	0.00E+00	3.03E-04	0.00E+00	1.37E-04	7.17E-02	-1.33E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.81E+00	4.17E-02	1.41E-01	0.00E+00	1.01E-02	0.00E+00	2.12E-03	2.00E+00	-4.68E-01

**Table 4.11b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 4" Deep Box Profile - Painted or Timbre™ Finish with Acoustibond®**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	6.60E-01	1.26E-02	5.16E-02	0.00E+00	3.05E-03	0.00E+00	1.97E-03	7.30E-01	-1.01E+00
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	2.01E+01	3.15E-01	1.55E+00	0.00E+00	7.66E-02	0.00E+00	1.69E-02	2.21E+01	-5.41E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	4.43E-01	0.00E+00	3.34E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.76E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	2.08E-03	4.31E-05	1.63E-04	0.00E+00	1.05E-05	0.00E+00	2.82E-06	2.30E-03	-1.68E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.55E-02	0.00E+00	5.55E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.03E-04	2.54E-05	1.00E-05	0.00E+00	6.19E-06	0.00E+00	3.99E-07	1.45E-04	-5.57E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	1.28E-06	9.06E-13	9.66E-08	0.00E+00	2.20E-13	0.00E+00	4.21E-13	1.38E-06	-1.18E-08
Non-hazardous waste disposed	kg	3.79E-02	2.74E-05	2.28E-02	0.00E+00	6.67E-06	0.00E+00	4.90E-02	1.10E-01	-4.90E-02
High-level radioactive waste	kg	3.29E-04	9.04E-07	2.49E-05	0.00E+00	2.20E-07	0.00E+00	1.88E-07	3.55E-04	-4.62E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.12a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 4" Deep Box Profile - Painted or Timbre™ Finish with Ultrasorb**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.39E+00	2.61E-02	1.15E-01	0.00E+00	6.34E-03	0.00E+00	2.91E-02	1.56E+00	-4.38E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.89E-09	6.76E-17	4.43E-10	0.00E+00	1.65E-17	0.00E+00	1.29E-16	6.33E-09	3.38E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	7.60E-03	1.05E-04	6.37E-04	0.00E+00	1.56E-05	0.00E+00	1.90E-04	8.54E-03	-1.19E-03
Eutrophication Potential (EP)	kg N eq.	2.08E-04	9.66E-06	3.54E-05	0.00E+00	1.72E-06	0.00E+00	6.64E-05	3.22E-04	-4.37E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	6.64E-02	2.42E-03	5.36E-03	0.00E+00	3.55E-04	0.00E+00	5.63E-04	7.51E-02	-1.33E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	2.06E+00	4.87E-02	1.60E-01	0.00E+00	1.19E-02	0.00E+00	5.30E-03	2.29E+00	-4.68E-01

**Table 4.12b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 4" Deep Box Profile - Painted or Timbre™ Finish with Ultrasorb**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	8.53E-01	1.47E-02	6.65E-02	0.00E+00	3.58E-03	0.00E+00	4.93E-03	9.43E-01	-1.01E+00
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	2.22E+01	3.68E-01	1.71E+00	0.00E+00	8.99E-02	0.00E+00	4.21E-02	2.44E+01	-5.41E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	4.43E-01	0.00E+00	3.34E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.76E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	2.49E-03	5.03E-05	1.95E-04	0.00E+00	1.23E-05	0.00E+00	9.64E-06	2.76E-03	-1.68E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.55E-02	0.00E+00	5.55E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.12E-04	2.97E-05	1.10E-05	0.00E+00	7.26E-06	0.00E+00	9.96E-07	1.61E-04	-5.57E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	1.28E-06	1.06E-12	9.66E-08	0.00E+00	2.59E-13	0.00E+00	1.05E-12	1.38E-06	-1.18E-08
Non-hazardous waste disposed	kg	4.93E-02	3.21E-05	2.86E-02	0.00E+00	7.83E-06	0.00E+00	1.15E-01	1.92E-01	-4.90E-02
High-level radioactive waste	kg	3.87E-04	1.06E-06	2.94E-05	0.00E+00	2.58E-07	0.00E+00	4.67E-07	4.19E-04	-4.62E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.13a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 4" Deep Box Profile - Anodized Finish**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	9.14E+00	2.18E-02	6.97E-01	0.00E+00	5.29E-03	0.00E+00	8.55E-04	9.87E+00	-4.38E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	1.62E-08	5.66E-17	1.22E-09	0.00E+00	1.37E-17	0.00E+00	4.19E-17	1.74E-08	3.38E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	6.28E-02	8.75E-05	4.78E-03	0.00E+00	1.30E-05	0.00E+00	4.54E-06	6.77E-02	-1.19E-03
Eutrophication Potential (EP)	kg N eq.	1.27E-03	8.08E-06	1.10E-04	0.00E+00	1.43E-06	0.00E+00	2.00E-07	1.39E-03	-4.37E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.28E-01	2.02E-03	4.00E-02	0.00E+00	2.96E-04	0.00E+00	8.30E-05	5.70E-01	-1.33E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	6.46E+00	4.08E-02	4.90E-01	0.00E+00	9.91E-03	0.00E+00	1.72E-03	7.00E+00	-4.68E-01

**Table 4.13b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 4" Deep Box Profile - Anodized Finish**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D	
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	1.12E+00	1.23E-02	8.63E-02	0.00E+00	2.99E-03	0.00E+00	1.60E-03	1.22E+00	-1.01E+00	
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.07E+02	3.08E-01	8.07E+00	0.00E+00	7.49E-02	0.00E+00	1.36E-02	1.15E+02	-5.41E+00	
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D	
Secondary Material (SM)	kg	1.42E-01	0.00E+00	1.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Consumption of Fresh Water	m <sup>3</sup>	5.64E-03	4.21E-05	4.31E-04	0.00E+00	1.02E-05	0.00E+00	1.95E-06	6.13E-03	-1.68E-02	
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D	
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.55E-02	0.00E+00	5.55E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.78E-03	2.49E-05	1.36E-04	0.00E+00	6.05E-06	0.00E+00	3.22E-07	1.95E-03	-5.57E-05	
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D	
Hazardous waste disposed	kg	3.22E-05	8.87E-13	2.42E-06	0.00E+00	2.15E-13	0.00E+00	3.40E-13	3.46E-05	-1.18E-08	
Non-hazardous waste disposed	kg	1.34E-01	2.68E-05	2.94E-02	0.00E+00	6.52E-06	0.00E+00	4.07E-02	2.04E-01	-4.90E-02	
High-level radioactive waste	kg	5.85E-04	8.84E-07	4.42E-05	0.00E+00	2.15E-07	0.00E+00	1.52E-07	6.30E-04	-4.62E-05	
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D	
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.14a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 4" Deep Box Profile - Anodized Finish with Acoustibond®**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	9.17E+00	2.23E-02	6.99E-01	0.00E+00	5.41E-03	0.00E+00	4.04E-03	9.90E+00	-4.38E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	1.62E-08	5.78E-17	1.22E-09	0.00E+00	1.41E-17	0.00E+00	5.18E-17	1.74E-08	3.38E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	6.29E-02	8.94E-05	4.78E-03	0.00E+00	1.33E-05	0.00E+00	2.55E-05	6.78E-02	-1.19E-03
Eutrophication Potential (EP)	kg N eq.	1.27E-03	8.26E-06	1.11E-04	0.00E+00	1.47E-06	0.00E+00	7.69E-06	1.40E-03	-4.37E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.29E-01	2.07E-03	4.01E-02	0.00E+00	3.03E-04	0.00E+00	1.37E-04	5.71E-01	-1.33E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	6.56E+00	4.17E-02	4.98E-01	0.00E+00	1.01E-02	0.00E+00	2.12E-03	7.11E+00	-4.68E-01

**Table 4.14b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 4" Deep Box Profile - Anodized Finish with Acoustibond®**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	1.18E+00	1.26E-02	9.07E-02	0.00E+00	3.05E-03	0.00E+00	1.97E-03	1.29E+00	-1.01E+00
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.08E+02	3.15E-01	8.13E+00	0.00E+00	7.66E-02	0.00E+00	1.69E-02	1.16E+02	-5.41E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	1.42E-01	0.00E+00	1.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	5.79E-03	4.31E-05	4.42E-04	0.00E+00	1.05E-05	0.00E+00	2.82E-06	6.29E-03	-1.68E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.55E-02	0.00E+00	5.55E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.78E-03	2.54E-05	1.37E-04	0.00E+00	6.19E-06	0.00E+00	3.99E-07	1.95E-03	-5.57E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	3.22E-05	9.06E-13	2.42E-06	0.00E+00	2.20E-13	0.00E+00	4.21E-13	3.46E-05	-1.18E-08
Non-hazardous waste disposed	kg	1.37E-01	2.74E-05	3.02E-02	0.00E+00	6.67E-06	0.00E+00	4.90E-02	2.16E-01	-4.90E-02
High-level radioactive waste	kg	6.00E-04	9.04E-07	4.53E-05	0.00E+00	2.20E-07	0.00E+00	1.88E-07	6.46E-04	-4.62E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.15a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 4" Deep Box Profile - Anodized Finish with Ultrasorb**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	9.28E+00	2.61E-02	7.09E-01	0.00E+00	6.34E-03	0.00E+00	2.91E-02	1.00E+01	-4.38E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	1.62E-08	6.76E-17	1.22E-09	0.00E+00	1.65E-17	0.00E+00	1.29E-16	1.74E-08	3.38E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	6.30E-02	1.05E-04	4.81E-03	0.00E+00	1.56E-05	0.00E+00	1.90E-04	6.81E-02	-1.19E-03
Eutrophication Potential (EP)	kg N eq.	1.29E-03	9.66E-06	1.17E-04	0.00E+00	1.72E-06	0.00E+00	6.64E-05	1.48E-03	-4.37E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.31E-01	2.42E-03	4.03E-02	0.00E+00	3.55E-04	0.00E+00	5.63E-04	5.75E-01	-1.33E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	6.81E+00	4.87E-02	5.18E-01	0.00E+00	1.19E-02	0.00E+00	5.30E-03	7.39E+00	-4.68E-01

**Table 4.15b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 4" Deep Box Profile - Anodized Finish with Ultrasorb**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	1.37E+00	1.47E-02	1.06E-01	0.00E+00	3.58E-03	0.00E+00	4.93E-03	1.50E+00	-1.01E+00
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.10E+02	3.68E-01	8.29E+00	0.00E+00	8.99E-02	0.00E+00	4.21E-02	1.18E+02	-5.41E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	1.42E-01	0.00E+00	1.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	6.20E-03	5.03E-05	4.74E-04	0.00E+00	1.23E-05	0.00E+00	9.64E-06	6.75E-03	-1.68E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.55E-02	0.00E+00	5.55E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.79E-03	2.97E-05	1.38E-04	0.00E+00	7.26E-06	0.00E+00	9.96E-07	1.97E-03	-5.57E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	3.22E-05	1.06E-12	2.42E-06	0.00E+00	2.59E-13	0.00E+00	1.05E-12	3.46E-05	-1.18E-08
Non-hazardous waste disposed	kg	1.48E-01	3.21E-05	3.60E-02	0.00E+00	7.83E-06	0.00E+00	1.15E-01	2.98E-01	-4.90E-02
High-level radioactive waste	kg	6.58E-04	1.06E-06	4.97E-05	0.00E+00	2.58E-07	0.00E+00	4.67E-07	7.10E-04	-4.62E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.16a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 4" Deep Box Profile - Sarante™ Finish**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.32E+00	2.32E-02	1.09E-01	0.00E+00	5.62E-03	0.00E+00	9.81E-03	1.47E+00	-4.38E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.84E-09	6.01E-17	4.40E-10	0.00E+00	1.46E-17	0.00E+00	6.97E-17	6.28E-09	3.38E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	7.56E-03	9.29E-05	6.23E-04	0.00E+00	1.38E-05	0.00E+00	6.35E-05	8.35E-03	-1.19E-03
Eutrophication Potential (EP)	kg N eq.	2.02E-04	8.58E-06	3.14E-05	0.00E+00	1.53E-06	0.00E+00	2.12E-05	2.65E-04	-4.37E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	6.59E-02	2.15E-03	5.28E-03	0.00E+00	3.15E-04	0.00E+00	2.35E-04	7.39E-02	-1.33E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	2.05E+00	4.33E-02	1.59E-01	0.00E+00	1.05E-02	0.00E+00	2.85E-03	2.27E+00	-4.68E-01

**Table 4.16b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 4" Deep Box Profile - Sarante™ Finish**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	6.84E-01	1.30E-02	5.35E-02	0.00E+00	3.18E-03	0.00E+00	2.66E-03	7.56E-01	-1.01E+00
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	2.15E+01	3.27E-01	1.66E+00	0.00E+00	7.97E-02	0.00E+00	2.27E-02	2.36E+01	-5.41E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	4.43E-01	0.00E+00	3.34E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.76E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	2.34E-03	4.47E-05	1.83E-04	0.00E+00	1.09E-05	0.00E+00	4.40E-06	2.58E-03	-1.68E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.55E-02	0.00E+00	5.55E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.08E-04	2.64E-05	1.05E-05	0.00E+00	6.44E-06	0.00E+00	5.37E-07	1.52E-04	-5.57E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	1.30E-06	9.42E-13	9.78E-08	0.00E+00	2.29E-13	0.00E+00	5.66E-13	1.40E-06	-1.18E-08
Non-hazardous waste disposed	kg	3.43E-02	2.85E-05	2.36E-02	0.00E+00	6.94E-06	0.00E+00	6.41E-02	1.22E-01	-4.90E-02
High-level radioactive waste	kg	2.80E-04	9.39E-07	2.12E-05	0.00E+00	2.29E-07	0.00E+00	2.52E-07	3.02E-04	-4.62E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.17a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 4" Deep Box Profile - Sarante™ Finish with Acoustibond®**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.35E+00	2.36E-02	1.11E-01	0.00E+00	5.74E-03	0.00E+00	1.30E-02	1.50E+00	-4.38E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.84E-09	6.13E-17	4.40E-10	0.00E+00	1.49E-17	0.00E+00	7.96E-17	6.28E-09	3.38E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	7.62E-03	9.48E-05	6.30E-04	0.00E+00	1.41E-05	0.00E+00	8.45E-05	8.45E-03	-1.19E-03
Eutrophication Potential (EP)	kg N eq.	2.07E-04	8.76E-06	3.24E-05	0.00E+00	1.56E-06	0.00E+00	2.87E-05	2.79E-04	-4.37E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	6.67E-02	2.19E-03	5.35E-03	0.00E+00	3.21E-04	0.00E+00	2.90E-04	7.49E-02	-1.33E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	2.15E+00	4.42E-02	1.66E-01	0.00E+00	1.08E-02	0.00E+00	3.26E-03	2.37E+00	-4.68E-01

**Table 4.17b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 4" Deep Box Profile - Sarante™ Finish with Acoustibond®**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	7.42E-01	1.33E-02	5.79E-02	0.00E+00	3.24E-03	0.00E+00	3.03E-03	8.19E-01	-1.01E+00
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	2.23E+01	3.34E-01	1.71E+00	0.00E+00	8.14E-02	0.00E+00	2.59E-02	2.45E+01	-5.41E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	4.43E-01	0.00E+00	3.34E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.76E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	2.48E-03	4.57E-05	1.94E-04	0.00E+00	1.11E-05	0.00E+00	5.27E-06	2.74E-03	-1.68E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.55E-02	0.00E+00	5.55E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.10E-04	2.70E-05	1.07E-05	0.00E+00	6.57E-06	0.00E+00	6.13E-07	1.55E-04	-5.57E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	1.30E-06	9.61E-13	9.78E-08	0.00E+00	2.34E-13	0.00E+00	6.46E-13	1.40E-06	-1.18E-08
Non-hazardous waste disposed	kg	3.67E-02	2.91E-05	2.45E-02	0.00E+00	7.08E-06	0.00E+00	7.25E-02	1.34E-01	-4.90E-02
High-level radioactive waste	kg	2.95E-04	9.58E-07	2.24E-05	0.00E+00	2.33E-07	0.00E+00	2.88E-07	3.19E-04	-4.62E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.18a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 4" Deep Box Profile - Sarante™ Finish with Ultrasorb**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.46E+00	2.74E-02	1.22E-01	0.00E+00	6.68E-03	0.00E+00	3.80E-02	1.65E+00	-4.38E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.84E-09	7.11E-17	4.40E-10	0.00E+00	1.74E-17	0.00E+00	1.57E-16	6.28E-09	3.38E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	7.74E-03	1.10E-04	6.52E-04	0.00E+00	1.64E-05	0.00E+00	2.49E-04	8.76E-03	-1.19E-03
Eutrophication Potential (EP)	kg N eq.	2.24E-04	1.02E-05	3.82E-05	0.00E+00	1.81E-06	0.00E+00	8.74E-05	3.62E-04	-4.37E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	6.90E-02	2.54E-03	5.59E-03	0.00E+00	3.74E-04	0.00E+00	7.15E-04	7.83E-02	-1.33E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	2.40E+00	5.13E-02	1.86E-01	0.00E+00	1.25E-02	0.00E+00	6.44E-03	2.66E+00	-4.68E-01

**Table 4.18b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 4" Deep Box Profile - Sarante™ Finish with Ultrasorb**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	9.35E-01	1.54E-02	7.28E-02	0.00E+00	3.77E-03	0.00E+00	5.99E-03	1.03E+00	-1.01E+00
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	2.44E+01	3.88E-01	1.88E+00	0.00E+00	9.47E-02	0.00E+00	5.12E-02	2.68E+01	-5.41E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	4.43E-01	0.00E+00	3.34E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.76E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	2.90E-03	5.29E-05	2.26E-04	0.00E+00	1.29E-05	0.00E+00	1.21E-05	3.20E-03	-1.68E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.55E-02	0.00E+00	5.55E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.19E-04	3.13E-05	1.17E-05	0.00E+00	7.65E-06	0.00E+00	1.21E-06	1.70E-04	-5.57E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	1.30E-06	1.11E-12	9.78E-08	0.00E+00	2.72E-13	0.00E+00	1.28E-12	1.40E-06	-1.18E-08
Non-hazardous waste disposed	kg	4.82E-02	3.37E-05	3.03E-02	0.00E+00	8.24E-06	0.00E+00	1.38E-01	2.16E-01	-4.90E-02
High-level radioactive waste	kg	3.53E-04	1.11E-06	2.68E-05	0.00E+00	2.72E-07	0.00E+00	5.68E-07	3.82E-04	-4.62E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.19a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 2" Deep Box Profile - Painted or Timbre™ Finish**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	9.64E-01	1.69E-02	7.88E-02	0.00E+00	4.16E-03	0.00E+00	7.60E-04	1.07E+00	-3.50E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.51E-09	4.39E-17	4.15E-10	0.00E+00	1.08E-17	0.00E+00	3.72E-17	5.93E-09	3.43E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	5.64E-03	6.78E-05	4.60E-04	0.00E+00	1.02E-05	0.00E+00	4.04E-06	6.19E-03	-9.23E-04
Eutrophication Potential (EP)	kg N eq.	1.51E-04	6.27E-06	2.17E-05	0.00E+00	1.13E-06	0.00E+00	1.78E-07	1.80E-04	-3.56E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.03E-02	1.57E-03	4.01E-03	0.00E+00	2.33E-04	0.00E+00	7.38E-05	5.62E-02	-1.03E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.29E+00	3.16E-02	1.01E-01	0.00E+00	7.81E-03	0.00E+00	1.53E-03	1.44E+00	-3.34E-01

**Table 4.19b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 2" Deep Box Profile - Painted or Timbre™ Finish**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	4.90E-01	9.52E-03	3.83E-02	0.00E+00	2.35E-03	0.00E+00	1.42E-03	5.42E-01	-7.10E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.49E+01	2.39E-01	1.14E+00	0.00E+00	5.90E-02	0.00E+00	1.21E-02	1.63E+01	-4.24E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.57E-01	0.00E+00	2.69E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.84E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	1.64E-03	3.27E-05	1.28E-04	0.00E+00	8.06E-06	0.00E+00	1.77E-06	1.81E-03	-1.58E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.29E-02	0.00E+00	4.29E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	7.73E-05	1.93E-05	7.55E-06	0.00E+00	4.77E-06	0.00E+00	2.87E-07	1.09E-04	-4.48E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	8.13E-07	6.87E-13	6.12E-08	0.00E+00	1.70E-13	0.00E+00	3.03E-13	8.75E-07	-1.12E-08
Non-hazardous waste disposed	kg	3.10E-02	2.08E-05	1.65E-02	0.00E+00	5.14E-06	0.00E+00	3.61E-02	8.36E-02	-3.05E-02
High-level radioactive waste	kg	2.47E-04	6.85E-07	1.87E-05	0.00E+00	1.69E-07	0.00E+00	1.35E-07	2.67E-04	-3.29E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.20a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 2" Deep Box Profile - Painted or Timbre™ Finish with Acoustibond®**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	9.92E-01	1.72E-02	8.11E-02	0.00E+00	4.25E-03	0.00E+00	3.04E-03	1.10E+00	-3.50E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.51E-09	4.47E-17	4.15E-10	0.00E+00	1.11E-17	0.00E+00	4.43E-17	5.93E-09	3.43E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	5.71E-03	6.92E-05	4.66E-04	0.00E+00	1.04E-05	0.00E+00	1.90E-05	6.27E-03	-9.23E-04
Eutrophication Potential (EP)	kg N eq.	1.56E-04	6.39E-06	2.25E-05	0.00E+00	1.15E-06	0.00E+00	5.53E-06	1.92E-04	-3.56E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.11E-02	1.60E-03	4.07E-03	0.00E+00	2.38E-04	0.00E+00	1.13E-04	5.71E-02	-1.03E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.38E+00	3.23E-02	1.07E-01	0.00E+00	7.97E-03	0.00E+00	1.81E-03	1.53E+00	-3.34E-01

**Table 4.20b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 2" Deep Box Profile - Painted or Timbre™ Finish with Acoustibond®**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	5.42E-01	9.72E-03	4.22E-02	0.00E+00	2.40E-03	0.00E+00	1.69E-03	5.98E-01	-7.10E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.55E+01	2.44E-01	1.19E+00	0.00E+00	6.02E-02	0.00E+00	1.44E-02	1.70E+01	-4.24E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.57E-01	0.00E+00	2.69E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.84E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	1.77E-03	3.33E-05	1.38E-04	0.00E+00	8.23E-06	0.00E+00	2.39E-06	1.95E-03	-1.58E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.29E-02	0.00E+00	4.29E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	7.93E-05	1.97E-05	7.74E-06	0.00E+00	4.86E-06	0.00E+00	3.41E-07	1.12E-04	-4.48E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	8.13E-07	7.01E-13	6.12E-08	0.00E+00	1.73E-13	0.00E+00	3.60E-13	8.75E-07	-1.12E-08
Non-hazardous waste disposed	kg	3.46E-02	2.12E-05	1.72E-02	0.00E+00	5.24E-06	0.00E+00	4.21E-02	9.39E-02	-3.05E-02
High-level radioactive waste	kg	2.61E-04	6.99E-07	1.97E-05	0.00E+00	1.73E-07	0.00E+00	1.61E-07	2.81E-04	-3.29E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.21a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 2" Deep Box Profile - Painted or Timbre™ Finish with Ultrasorb**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.11E+00	2.16E-02	9.29E-02	0.00E+00	5.34E-03	0.00E+00	3.21E-02	1.27E+00	-3.50E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.51E-09	5.61E-17	4.15E-10	0.00E+00	1.39E-17	0.00E+00	1.34E-16	5.93E-09	3.43E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	5.84E-03	8.68E-05	4.92E-04	0.00E+00	1.31E-05	0.00E+00	2.10E-04	6.64E-03	-9.23E-04
Eutrophication Potential (EP)	kg N eq.	1.75E-04	8.02E-06	2.92E-05	0.00E+00	1.45E-06	0.00E+00	7.37E-05	2.87E-04	-3.56E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.38E-02	2.01E-03	4.35E-03	0.00E+00	2.99E-04	0.00E+00	6.07E-04	6.11E-02	-1.03E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.68E+00	4.05E-02	1.31E-01	0.00E+00	1.00E-02	0.00E+00	5.51E-03	1.87E+00	-3.34E-01

**Table 4.21b Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 2" Deep Box Profile - Painted or Timbre™ Finish with Ultrasorb**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	7.68E-01	1.22E-02	5.97E-02	0.00E+00	3.02E-03	0.00E+00	5.12E-03	8.49E-01	-7.10E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.80E+01	3.06E-01	1.39E+00	0.00E+00	5.75E-02	0.00E+00	4.38E-02	1.98E+01	-4.24E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.57E-01	0.00E+00	2.69E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.84E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	2.25E-03	4.18E-05	1.76E-04	0.00E+00	1.03E-05	0.00E+00	1.03E-05	2.49E-03	-1.58E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.29E-02	0.00E+00	4.29E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	8.91E-05	2.47E-05	8.90E-06	0.00E+00	6.11E-06	0.00E+00	1.04E-06	1.30E-04	-4.48E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	8.13E-07	8.79E-13	6.12E-08	0.00E+00	2.18E-13	0.00E+00	1.09E-12	8.75E-07	-1.12E-08
Non-hazardous waste disposed	kg	4.59E-02	2.66E-05	2.38E-02	0.00E+00	6.59E-06	0.00E+00	1.18E-01	1.88E-01	-3.05E-02
High-level radioactive waste	kg	3.29E-04	8.77E-07	2.49E-05	0.00E+00	2.17E-07	0.00E+00	4.86E-07	3.56E-04	-3.29E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.22a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 2" Deep Box Profile - Anodized Finish**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	6.60E+00	1.69E-02	5.03E-01	0.00E+00	4.16E-03	0.00E+00	7.60E-04	7.13E+00	-3.50E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	1.29E-08	4.39E-17	9.70E-10	0.00E+00	1.08E-17	0.00E+00	3.72E-17	1.39E-08	3.43E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	4.52E-02	6.78E-05	3.44E-03	0.00E+00	1.02E-05	0.00E+00	4.04E-06	4.87E-02	-9.23E-04
Eutrophication Potential (EP)	kg N eq.	9.23E-04	6.27E-06	7.98E-05	0.00E+00	1.13E-06	0.00E+00	1.78E-07	1.01E-03	-3.56E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	3.82E-01	1.57E-03	2.90E-02	0.00E+00	2.33E-04	0.00E+00	7.38E-05	4.13E-01	-1.03E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	4.68E+00	3.16E-02	3.56E-01	0.00E+00	7.81E-03	0.00E+00	1.53E-03	5.08E+00	-3.34E-01

**Table 4.22b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 2" Deep Box Profile - Anodized Finish**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	8.61E-01	9.52E-03	6.62E-02	0.00E+00	2.35E-03	0.00E+00	1.42E-03	9.40E-01	-7.10E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	7.73E+01	2.39E-01	5.84E+00	0.00E+00	5.90E-02	0.00E+00	1.21E-02	8.34E+01	-4.24E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	1.42E-01	0.00E+00	1.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	4.29E-03	3.27E-05	3.27E-04	0.00E+00	8.06E-06	0.00E+00	1.77E-06	4.66E-03	-1.58E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.29E-02	0.00E+00	4.29E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.28E-03	1.93E-05	9.79E-05	0.00E+00	4.77E-06	0.00E+00	2.87E-07	1.40E-03	-4.48E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	2.29E-05	6.87E-13	1.72E-06	0.00E+00	1.70E-13	0.00E+00	3.03E-13	2.46E-05	-1.12E-08
Non-hazardous waste disposed	kg	1.02E-01	2.08E-05	2.18E-02	0.00E+00	5.14E-06	0.00E+00	3.61E-02	1.59E-01	-3.05E-02
High-level radioactive waste	kg	4.41E-04	6.85E-07	3.33E-05	0.00E+00	1.69E-07	0.00E+00	1.35E-07	4.75E-04	-3.29E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.23a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 2" Deep Box Profile - Anodized Finish with Acoustibond®**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	6.63E+00	1.72E-02	5.05E-01	0.00E+00	4.25E-03	0.00E+00	3.04E-03	7.16E+00	-3.50E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	1.29E-08	4.47E-17	9.70E-10	0.00E+00	1.11E-17	0.00E+00	4.43E-17	1.39E-08	3.43E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	4.53E-02	6.92E-05	3.44E-03	0.00E+00	1.04E-05	0.00E+00	1.90E-05	4.88E-02	-9.23E-04
Eutrophication Potential (EP)	kg N eq.	9.29E-04	6.39E-06	8.06E-05	0.00E+00	1.15E-06	0.00E+00	5.53E-06	1.02E-03	-3.56E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	3.83E-01	1.60E-03	2.91E-02	0.00E+00	2.38E-04	0.00E+00	1.13E-04	4.14E-01	-1.03E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	4.77E+00	3.23E-02	3.63E-01	0.00E+00	7.97E-03	0.00E+00	1.81E-03	5.18E+00	-3.34E-01

**Table 4.23b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 2" Deep Box Profile - Anodized Finish with Acoustibond®**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	9.12E-01	9.72E-03	7.01E-02	0.00E+00	2.40E-03	0.00E+00	1.69E-03	9.96E-01	-7.10E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	7.79E+01	2.44E-01	5.89E+00	0.00E+00	6.02E-02	0.00E+00	1.44E-02	8.42E+01	-4.24E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	1.42E-01	0.00E+00	1.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	4.41E-03	3.33E-05	3.37E-04	0.00E+00	8.23E-06	0.00E+00	2.39E-06	4.80E-03	-1.58E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.29E-02	0.00E+00	4.29E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.28E-03	1.97E-05	9.81E-05	0.00E+00	4.86E-06	0.00E+00	3.41E-07	1.40E-03	-4.48E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	2.29E-05	7.01E-13	1.72E-06	0.00E+00	1.73E-13	0.00E+00	3.60E-13	2.46E-05	-1.12E-08
Non-hazardous waste disposed	kg	1.05E-01	2.12E-05	2.25E-02	0.00E+00	5.24E-06	0.00E+00	4.21E-02	1.70E-01	-3.05E-02
High-level radioactive waste	kg	4.54E-04	6.99E-07	3.43E-05	0.00E+00	1.73E-07	0.00E+00	1.61E-07	4.90E-04	-3.29E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.24a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 2" Deep Box Profile - Anodized Finish with Ultrasorb**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	6.75E+00	2.16E-02	5.17E-01	0.00E+00	5.34E-03	0.00E+00	3.21E-02	7.33E+00	-3.50E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	1.29E-08	5.61E-17	9.70E-10	0.00E+00	1.39E-17	0.00E+00	1.34E-16	1.39E-08	3.43E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	4.54E-02	8.68E-05	3.47E-03	0.00E+00	1.31E-05	0.00E+00	2.10E-04	4.92E-02	-9.23E-04
Eutrophication Potential (EP)	kg N eq.	9.47E-04	8.02E-06	8.73E-05	0.00E+00	1.45E-06	0.00E+00	7.37E-05	1.12E-03	-3.56E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	3.86E-01	2.01E-03	2.93E-02	0.00E+00	2.99E-04	0.00E+00	6.07E-04	4.18E-01	-1.03E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	5.07E+00	4.05E-02	3.86E-01	0.00E+00	1.00E-02	0.00E+00	5.51E-03	5.52E+00	-3.34E-01

**Table 4.24b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 2" Deep Box Profile - Anodized Finish with Ultrasorb**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	1.14E+00	1.22E-02	8.77E-02	0.00E+00	3.02E-03	0.00E+00	5.12E-03	1.25E+00	-7.10E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	8.04E+01	3.06E-01	6.09E+00	0.00E+00	7.57E-02	0.00E+00	4.38E-02	8.69E+01	-4.24E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	1.42E-01	0.00E+00	1.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	4.90E-03	4.18E-05	3.75E-04	0.00E+00	1.03E-05	0.00E+00	1.03E-05	5.34E-03	-1.58E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.29E-02	0.00E+00	4.29E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.29E-03	2.47E-05	9.92E-05	0.00E+00	6.11E-06	0.00E+00	1.04E-06	1.42E-03	-4.48E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	2.29E-05	8.79E-13	1.72E-06	0.00E+00	2.18E-13	0.00E+00	1.09E-12	2.46E-05	-1.12E-08
Non-hazardous waste disposed	kg	1.16E-01	2.66E-05	2.91E-02	0.00E+00	6.59E-06	0.00E+00	1.18E-01	2.64E-01	-3.05E-02
High-level radioactive waste	kg	5.23E-04	8.77E-07	3.95E-05	0.00E+00	2.17E-07	0.00E+00	4.86E-07	5.64E-04	-3.29E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.25a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 2" Deep Box Profile - Sarante™ Finish**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.04E+00	1.79E-02	8.47E-02	0.00E+00	4.40E-03	0.00E+00	7.16E-03	1.15E+00	-3.50E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.48E-09	4.64E-17	4.12E-10	0.00E+00	1.15E-17	0.00E+00	5.71E-17	5.89E-09	3.43E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	5.78E-03	7.17E-05	4.74E-04	0.00E+00	1.08E-05	0.00E+00	4.62E-05	6.39E-03	-9.23E-04
Eutrophication Potential (EP)	kg N eq.	1.69E-04	6.62E-06	2.42E-05	0.00E+00	1.19E-06	0.00E+00	1.52E-05	2.16E-04	-3.56E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.29E-02	1.66E-03	4.22E-03	0.00E+00	2.46E-04	0.00E+00	1.83E-04	5.92E-02	-1.03E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.60E+00	3.34E-02	1.24E-01	0.00E+00	8.26E-03	0.00E+00	2.34E-03	1.77E+00	-3.34E-01

**Table 4.25b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 2" Deep Box Profile - Sarante™ Finish**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	5.74E-01	1.01E-02	4.47E-02	0.00E+00	2.49E-03	0.00E+00	2.18E-03	6.34E-01	-7.10E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.69E+01	2.53E-01	1.30E+00	0.00E+00	6.24E-02	0.00E+00	1.86E-02	1.86E+01	-4.24E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.57E-01	0.00E+00	2.69E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.84E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	2.03E-03	3.45E-05	1.58E-04	0.00E+00	8.53E-06	0.00E+00	3.51E-06	2.23E-03	-1.58E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.29E-02	0.00E+00	4.29E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	8.42E-05	2.04E-05	8.16E-06	0.00E+00	5.04E-06	0.00E+00	4.40E-07	1.18E-04	-4.48E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	8.28E-07	7.27E-13	6.23E-08	0.00E+00	1.80E-13	0.00E+00	4.64E-13	8.90E-07	-1.12E-08
Non-hazardous waste disposed	kg	3.48E-02	2.20E-05	1.80E-02	0.00E+00	5.43E-06	0.00E+00	5.29E-02	1.06E-01	-3.05E-02
High-level radioactive waste	kg	2.31E-04	7.25E-07	1.75E-05	0.00E+00	1.79E-07	0.00E+00	2.07E-07	2.50E-04	-3.29E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.26a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 2" Deep Box Profile - Sarante™ Finish with Acoustibond®**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.06E+00	1.82E-02	8.70E-02	0.00E+00	4.49E-03	0.00E+00	9.44E-03	1.18E+00	-3.50E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.48E-09	4.72E-17	4.12E-10	0.00E+00	1.17E-17	0.00E+00	6.41E-17	5.89E-09	3.43E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	5.85E-03	7.31E-05	4.80E-04	0.00E+00	1.10E-05	0.00E+00	6.12E-05	6.47E-03	-9.23E-04
Eutrophication Potential (EP)	kg N eq.	1.74E-04	6.75E-06	2.50E-05	0.00E+00	1.22E-06	0.00E+00	2.05E-05	2.28E-04	-3.56E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.36E-02	1.69E-03	4.28E-03	0.00E+00	2.51E-04	0.00E+00	2.21E-04	6.01E-02	-1.03E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.69E+00	3.41E-02	1.31E-01	0.00E+00	8.42E-03	0.00E+00	2.63E-03	1.86E+00	-3.34E-01

**Table 4.26b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 2" Deep Box Profile - Sarante™ Finish with Acoustibond®**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	6.26E-01	1.03E-02	4.86E-02	0.00E+00	2.54E-03	0.00E+00	2.45E-03	6.89E-01	-7.10E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.76E+01	2.58E-01	1.35E+00	0.00E+00	6.36E-02	0.00E+00	2.09E-02	1.93E+01	-4.24E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.57E-01	0.00E+00	2.69E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.84E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	2.16E-03	3.52E-05	1.67E-04	0.00E+00	8.69E-06	0.00E+00	4.13E-06	2.37E-03	-1.58E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.29E-02	0.00E+00	4.29E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	8.62E-05	2.08E-05	8.35E-06	0.00E+00	5.14E-06	0.00E+00	4.94E-07	1.21E-04	-4.48E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	8.28E-07	7.41E-13	6.23E-08	0.00E+00	1.83E-13	0.00E+00	5.21E-13	8.90E-07	-1.12E-08
Non-hazardous waste disposed	kg	3.84E-02	2.24E-05	1.87E-02	0.00E+00	5.54E-06	0.00E+00	5.89E-02	1.16E-01	-3.05E-02
High-level radioactive waste	kg	2.45E-04	7.38E-07	1.85E-05	0.00E+00	1.82E-07	0.00E+00	2.32E-07	2.64E-04	-3.29E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.27a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 2" Deep Box Profile - Sarante™ Finish with Ultrasorb**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.19E+00	2.26E-02	9.88E-02	0.00E+00	5.58E-03	0.00E+00	3.85E-02	1.35E+00	-3.50E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.48E-09	5.86E-17	4.12E-10	0.00E+00	1.45E-17	0.00E+00	1.54E-16	5.89E-09	3.43E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	5.98E-03	9.06E-05	5.06E-04	0.00E+00	1.37E-05	0.00E+00	2.52E-04	6.84E-03	-9.23E-04
Eutrophication Potential (EP)	kg N eq.	1.93E-04	8.37E-06	3.17E-05	0.00E+00	1.51E-06	0.00E+00	8.88E-05	3.23E-04	-3.56E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.64E-02	2.10E-03	4.56E-03	0.00E+00	3.12E-04	0.00E+00	7.16E-04	6.41E-02	-1.03E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.99E+00	4.23E-02	1.54E-01	0.00E+00	1.05E-02	0.00E+00	6.32E-03	2.20E+00	-3.34E-01

**Table 4.27b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 6" x 2" Deep Box Profile - Sarante™ Finish with Ultrasorb**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	8.53E-01	1.27E-02	6.62E-02	0.00E+00	3.15E-03	0.00E+00	5.88E-03	9.40E-01	-7.10E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	2.01E+01	3.20E-01	1.55E+00	0.00E+00	7.91E-02	0.00E+00	5.02E-02	2.21E+01	-4.24E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.57E-01	0.00E+00	2.69E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.84E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	2.64E-03	4.36E-05	2.05E-04	0.00E+00	1.08E-05	0.00E+00	1.21E-05	2.92E-03	-1.58E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.29E-02	0.00E+00	4.29E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	9.60E-05	2.58E-05	9.51E-06	0.00E+00	6.39E-06	0.00E+00	1.19E-06	1.39E-04	-4.48E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	8.28E-07	9.19E-13	6.23E-08	0.00E+00	2.27E-13	0.00E+00	1.25E-12	8.90E-07	-1.12E-08
Non-hazardous waste disposed	kg	4.97E-02	2.78E-05	2.53E-02	0.00E+00	6.88E-06	0.00E+00	1.35E-01	2.10E-01	-3.05E-02
High-level radioactive waste	kg	3.13E-04	9.16E-07	2.37E-05	0.00E+00	2.27E-07	0.00E+00	5.57E-07	3.38E-04	-3.29E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.28a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 2" Deep Box Profile - Painted or Timbre™ Finish**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.01E+00	1.76E-02	8.21E-02	0.00E+00	4.33E-03	0.00E+00	7.74E-04	1.11E+00	-3.63E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.52E-09	4.56E-17	4.15E-10	0.00E+00	1.13E-17	0.00E+00	3.79E-17	5.93E-09	3.42E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	5.90E-03	7.06E-05	4.81E-04	0.00E+00	1.06E-05	0.00E+00	4.11E-06	6.46E-03	-9.63E-04
Eutrophication Potential (EP)	kg N eq.	1.55E-04	6.52E-06	2.25E-05	0.00E+00	1.18E-06	0.00E+00	1.81E-07	1.85E-04	-3.68E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.21E-02	1.63E-03	4.15E-03	0.00E+00	2.42E-04	0.00E+00	7.52E-05	5.82E-02	-1.08E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.35E+00	3.29E-02	1.05E-01	0.00E+00	8.12E-03	0.00E+00	1.55E-03	1.50E+00	-3.54E-01

**Table 4.28b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 2" Deep Box Profile - Painted or Timbre™ Finish**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	5.05E-01	9.91E-03	3.95E-02	0.00E+00	2.45E-03	0.00E+00	1.45E-03	5.58E-01	-7.55E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.55E+01	2.49E-01	1.19E+00	0.00E+00	6.14E-02	0.00E+00	1.23E-02	1.70E+01	-4.42E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.70E-01	0.00E+00	2.78E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.98E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	1.67E-03	3.40E-05	1.31E-04	0.00E+00	8.39E-06	0.00E+00	1.79E-06	1.85E-03	-1.60E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.20E-02	0.00E+00	4.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	8.04E-05	2.01E-05	7.85E-06	0.00E+00	4.96E-06	0.00E+00	2.92E-07	1.14E-04	-4.64E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	7.83E-07	7.15E-13	5.89E-08	0.00E+00	1.77E-13	0.00E+00	3.08E-13	8.42E-07	-1.13E-08
Non-hazardous waste disposed	kg	3.15E-02	2.17E-05	1.71E-02	0.00E+00	5.34E-06	0.00E+00	3.68E-02	8.54E-02	-3.32E-02
High-level radioactive waste	kg	2.57E-04	7.13E-07	1.95E-05	0.00E+00	1.76E-07	0.00E+00	1.38E-07	2.77E-04	-3.49E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.29a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 2" Deep Box Profile - Painted or Timbre™ Finish with Acoustibond®**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.03E+00	1.80E-02	8.44E-02	0.00E+00	4.42E-03	0.00E+00	3.19E-03	1.14E+00	-3.63E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.52E-09	4.66E-17	4.15E-10	0.00E+00	1.15E-17	0.00E+00	4.54E-17	5.93E-09	3.42E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	5.96E-03	7.20E-05	4.87E-04	0.00E+00	1.09E-05	0.00E+00	2.00E-05	6.55E-03	-9.63E-04
Eutrophication Potential (EP)	kg N eq.	1.60E-04	6.66E-06	2.33E-05	0.00E+00	1.20E-06	0.00E+00	5.85E-06	1.97E-04	-3.68E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.29E-02	1.67E-03	4.22E-03	0.00E+00	2.47E-04	0.00E+00	1.16E-04	5.91E-02	-1.08E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.44E+00	3.36E-02	1.12E-01	0.00E+00	8.29E-03	0.00E+00	1.86E-03	1.60E+00	-3.54E-01

**Table 4.29b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 2" Deep Box Profile - Painted or Timbre™ Finish with Acoustibond®**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	5.56E-01	1.01E-02	4.34E-02	0.00E+00	2.50E-03	0.00E+00	1.73E-03	6.14E-01	-7.55E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.62E+01	2.54E-01	1.24E+00	0.00E+00	6.27E-02	0.00E+00	1.48E-02	1.78E+01	-4.42E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.70E-01	0.00E+00	2.78E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.98E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	1.80E-03	3.47E-05	1.41E-04	0.00E+00	8.56E-06	0.00E+00	2.45E-06	1.99E-03	-1.60E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.20E-02	0.00E+00	4.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	8.24E-05	2.05E-05	8.04E-06	0.00E+00	5.06E-06	0.00E+00	3.50E-07	1.16E-04	-4.64E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	7.83E-07	7.30E-13	5.89E-08	0.00E+00	1.80E-13	0.00E+00	3.69E-13	8.42E-07	-1.13E-08
Non-hazardous waste disposed	kg	3.47E-02	2.21E-05	1.78E-02	0.00E+00	5.45E-06	0.00E+00	4.31E-02	9.57E-02	-3.32E-02
High-level radioactive waste	kg	2.70E-04	7.28E-07	2.05E-05	0.00E+00	1.80E-07	0.00E+00	1.65E-07	2.92E-04	-3.49E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.30a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 2" Deep Box Profile - Painted or Timbre™ Finish with Ultrasorb**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.15E+00	2.21E-02	9.57E-02	0.00E+00	5.46E-03	0.00E+00	3.08E-02	1.30E+00	-3.63E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.52E-09	5.74E-17	4.15E-10	0.00E+00	1.42E-17	0.00E+00	1.31E-16	5.93E-09	3.42E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	6.09E-03	8.88E-05	5.11E-04	0.00E+00	1.34E-05	0.00E+00	2.02E-04	6.90E-03	-9.63E-04
Eutrophication Potential (EP)	kg N eq.	1.78E-04	8.20E-06	2.97E-05	0.00E+00	1.48E-06	0.00E+00	7.08E-05	2.89E-04	-3.68E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.55E-02	2.05E-03	4.48E-03	0.00E+00	3.05E-04	0.00E+00	5.87E-04	6.29E-02	-1.08E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.73E+00	4.14E-02	1.34E-01	0.00E+00	1.02E-02	0.00E+00	5.38E-03	1.92E+00	-3.54E-01

**Table 4.30b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 2" Deep Box Profile - Painted or Timbre™ Finish with Ultrasorb**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	7.72E-01	1.25E-02	6.01E-02	0.00E+00	3.08E-03	0.00E+00	5.00E-03	8.53E-01	-7.55E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.85E+01	3.13E-01	1.43E+00	0.00E+00	7.74E-02	0.00E+00	4.27E-02	2.04E+01	-4.42E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.70E-01	0.00E+00	2.78E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.98E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	2.26E-03	4.27E-05	1.77E-04	0.00E+00	1.06E-05	0.00E+00	1.00E-05	2.50E-03	-1.60E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.20E-02	0.00E+00	4.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	9.17E-05	2.53E-05	9.14E-06	0.00E+00	6.25E-06	0.00E+00	1.01E-06	1.33E-04	-4.64E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	7.83E-07	9.00E-13	5.89E-08	0.00E+00	2.23E-13	0.00E+00	1.07E-12	8.42E-07	-1.13E-08
Non-hazardous waste disposed	kg	4.59E-02	2.72E-05	2.41E-02	0.00E+00	6.73E-06	0.00E+00	1.16E-01	1.86E-01	-3.32E-02
High-level radioactive waste	kg	3.35E-04	8.97E-07	2.54E-05	0.00E+00	2.22E-07	0.00E+00	4.74E-07	3.63E-04	-3.49E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.31a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 2" Deep Box Profile - Anodized Finish**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	6.98E+00	1.76E-02	5.32E-01	0.00E+00	4.33E-03	0.00E+00	7.74E-04	7.53E+00	-3.63E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	1.33E-08	4.56E-17	1.00E-09	0.00E+00	1.13E-17	0.00E+00	3.79E-17	1.43E-08	3.42E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	4.78E-02	7.06E-05	3.64E-03	0.00E+00	1.06E-05	0.00E+00	4.11E-06	5.15E-02	-9.63E-04
Eutrophication Potential (EP)	kg N eq.	9.73E-04	6.52E-06	8.41E-05	0.00E+00	1.18E-06	0.00E+00	1.81E-07	1.07E-03	-3.68E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	4.04E-01	1.63E-03	3.06E-02	0.00E+00	2.42E-04	0.00E+00	7.52E-05	4.36E-01	-1.08E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	4.94E+00	3.29E-02	3.76E-01	0.00E+00	8.12E-03	0.00E+00	1.55E-03	5.36E+00	-3.54E-01

**Table 4.31b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 2" Deep Box Profile - Anodized Finish**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	8.97E-01	9.91E-03	6.90E-02	0.00E+00	2.45E-03	0.00E+00	1.45E-03	9.80E-01	-7.55E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	8.16E+01	2.49E-01	6.17E+00	0.00E+00	6.14E-02	0.00E+00	1.23E-02	8.81E+01	-4.42E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	1.42E-01	0.00E+00	1.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	4.48E-03	3.40E-05	3.42E-04	0.00E+00	8.39E-06	0.00E+00	1.79E-06	4.86E-03	-1.60E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.20E-02	0.00E+00	4.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.35E-03	2.01E-05	1.04E-04	0.00E+00	4.96E-06	0.00E+00	2.92E-07	1.48E-03	-4.64E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	2.42E-05	7.15E-13	1.82E-06	0.00E+00	1.77E-13	0.00E+00	3.08E-13	2.60E-05	-1.13E-08
Non-hazardous waste disposed	kg	1.06E-01	2.17E-05	2.27E-02	0.00E+00	5.34E-06	0.00E+00	3.68E-02	1.66E-01	-3.32E-02
High-level radioactive waste	kg	4.62E-04	7.13E-07	3.49E-05	0.00E+00	1.76E-07	0.00E+00	1.38E-07	4.98E-04	-3.49E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.32a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 2" Deep Box Profile - Anodized Finish with Acoustibond®**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	7.00E+00	1.80E-02	5.34E-01	0.00E+00	4.42E-03	0.00E+00	3.19E-03	7.56E+00	-3.63E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	1.33E-08	4.66E-17	1.00E-09	0.00E+00	1.15E-17	0.00E+00	4.54E-17	1.43E-08	3.42E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	4.79E-02	7.20E-05	3.64E-03	0.00E+00	1.09E-05	0.00E+00	2.00E-05	5.16E-02	-9.63E-04
Eutrophication Potential (EP)	kg N eq.	9.79E-04	6.66E-06	8.49E-05	0.00E+00	1.20E-06	0.00E+00	5.85E-06	1.08E-03	-3.68E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	4.05E-01	1.67E-03	3.07E-02	0.00E+00	2.47E-04	0.00E+00	1.16E-04	4.37E-01	-1.08E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	5.03E+00	3.36E-02	3.82E-01	0.00E+00	8.29E-03	0.00E+00	1.86E-03	5.46E+00	-3.54E-01

**Table 4.32b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 2" Deep Box Profile - Anodized Finish with Acoustibond®**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	9.49E-01	1.01E-02	7.30E-02	0.00E+00	2.50E-03	0.00E+00	1.73E-03	1.04E+00	-7.55E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	8.23E+01	2.54E-01	6.22E+00	0.00E+00	6.27E-02	0.00E+00	1.48E-02	8.89E+01	-4.42E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	1.42E-01	0.00E+00	1.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	4.61E-03	3.47E-05	3.52E-04	0.00E+00	8.56E-06	0.00E+00	2.45E-06	5.01E-03	-1.60E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.20E-02	0.00E+00	4.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.35E-03	2.05E-05	1.04E-04	0.00E+00	5.06E-06	0.00E+00	3.50E-07	1.48E-03	-4.64E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	2.42E-05	7.30E-13	1.82E-06	0.00E+00	1.80E-13	0.00E+00	3.69E-13	2.60E-05	-1.13E-08
Non-hazardous waste disposed	kg	1.09E-01	2.21E-05	2.34E-02	0.00E+00	5.45E-06	0.00E+00	4.31E-02	1.76E-01	-3.32E-02
High-level radioactive waste	kg	4.75E-04	7.28E-07	3.59E-05	0.00E+00	1.80E-07	0.00E+00	1.65E-07	5.12E-04	-3.49E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.33a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 2" Deep Box Profile - Anodized Finish with Ultrasorb**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	7.12E+00	2.21E-02	5.45E-01	0.00E+00	5.46E-03	0.00E+00	3.08E-02	7.73E+00	-3.63E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	1.33E-08	5.74E-17	1.00E-09	0.00E+00	1.42E-17	0.00E+00	1.31E-16	1.43E-08	3.42E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	4.80E-02	8.88E-05	3.67E-03	0.00E+00	1.34E-05	0.00E+00	2.02E-04	5.20E-02	-9.63E-04
Eutrophication Potential (EP)	kg N eq.	9.97E-04	8.20E-06	9.13E-05	0.00E+00	1.48E-06	0.00E+00	7.08E-05	1.17E-03	-3.68E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	4.07E-01	2.05E-03	3.10E-02	0.00E+00	3.05E-04	0.00E+00	5.87E-04	4.41E-01	-1.08E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	5.32E+00	4.14E-02	4.05E-01	0.00E+00	1.02E-02	0.00E+00	5.38E-03	5.78E+00	-3.54E-01

**Table 4.33b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 2" Deep Box Profile - Anodized Finish with Ultrasorb**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	1.16E+00	1.25E-02	8.96E-02	0.00E+00	3.08E-03	0.00E+00	5.00E-03	1.28E+00	-7.55E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	8.47E+01	3.13E-01	6.41E+00	0.00E+00	7.74E-02	0.00E+00	4.27E-02	9.15E+01	-4.42E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	1.42E-01	0.00E+00	1.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	5.07E-03	4.27E-05	3.88E-04	0.00E+00	1.06E-05	0.00E+00	1.00E-05	5.52E-03	-1.60E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.20E-02	0.00E+00	4.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.36E-03	2.53E-05	1.05E-04	0.00E+00	6.25E-06	0.00E+00	1.01E-06	1.50E-03	-4.64E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	2.42E-05	9.00E-13	1.82E-06	0.00E+00	2.23E-13	0.00E+00	1.07E-12	2.60E-05	-1.13E-08
Non-hazardous waste disposed	kg	1.21E-01	2.72E-05	2.97E-02	0.00E+00	6.73E-06	0.00E+00	1.16E-01	2.66E-01	-3.32E-02
High-level radioactive waste	kg	5.40E-04	8.97E-07	4.08E-05	0.00E+00	2.22E-07	0.00E+00	4.74E-07	5.83E-04	-3.49E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.34a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 2" Deep Box Profile - Sarante™ Finish**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.08E+00	1.86E-02	8.80E-02	0.00E+00	4.59E-03	0.00E+00	7.55E-03	1.19E+00	-3.63E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.48E-09	4.83E-17	4.12E-10	0.00E+00	1.19E-17	0.00E+00	5.89E-17	5.89E-09	3.42E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	6.04E-03	7.47E-05	4.95E-04	0.00E+00	1.13E-05	0.00E+00	4.87E-05	6.67E-03	-9.63E-04
Eutrophication Potential (EP)	kg N eq.	1.73E-04	6.90E-06	2.51E-05	0.00E+00	1.24E-06	0.00E+00	1.61E-05	2.22E-04	-3.68E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.47E-02	1.73E-03	4.36E-03	0.00E+00	2.57E-04	0.00E+00	1.91E-04	6.12E-02	-1.08E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.66E+00	3.48E-02	1.29E-01	0.00E+00	8.60E-03	0.00E+00	2.41E-03	1.84E+00	-3.54E-01

**Table 4.34b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 2" Deep Box Profile - Sarante™ Finish**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	5.86E-01	1.05E-02	4.57E-02	0.00E+00	2.59E-03	0.00E+00	2.25E-03	6.47E-01	-7.55E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.76E+01	2.63E-01	1.35E+00	0.00E+00	6.50E-02	0.00E+00	1.92E-02	1.93E+01	-4.42E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.70E-01	0.00E+00	2.78E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.98E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	2.06E-03	3.60E-05	1.60E-04	0.00E+00	8.88E-06	0.00E+00	3.64E-06	2.27E-03	-1.60E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.20E-02	0.00E+00	4.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	8.72E-05	2.13E-05	8.46E-06	0.00E+00	5.25E-06	0.00E+00	4.54E-07	1.23E-04	-4.64E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	7.97E-07	7.57E-13	6.00E-08	0.00E+00	1.87E-13	0.00E+00	4.79E-13	8.57E-07	-1.13E-08
Non-hazardous waste disposed	kg	3.45E-02	2.29E-05	1.86E-02	0.00E+00	5.66E-06	0.00E+00	5.46E-02	1.08E-01	-3.32E-02
High-level radioactive waste	kg	2.38E-04	7.55E-07	1.80E-05	0.00E+00	1.86E-07	0.00E+00	2.14E-07	2.57E-04	-3.49E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.35a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 2" Deep Box Profile - Sarante™ Finish with Acoustibond®**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.10E+00	1.90E-02	9.03E-02	0.00E+00	4.68E-03	0.00E+00	9.96E-03	1.23E+00	-3.63E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.48E-09	4.92E-17	4.12E-10	0.00E+00	1.22E-17	0.00E+00	6.64E-17	5.89E-09	3.42E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	6.10E-03	7.61E-05	5.01E-04	0.00E+00	1.15E-05	0.00E+00	6.46E-05	6.75E-03	-9.63E-04
Eutrophication Potential (EP)	kg N eq.	1.78E-04	7.04E-06	2.59E-05	0.00E+00	1.27E-06	0.00E+00	2.18E-05	2.34E-04	-3.68E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.54E-02	1.76E-03	4.42E-03	0.00E+00	2.62E-04	0.00E+00	2.32E-04	6.21E-02	-1.08E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.75E+00	3.55E-02	1.35E-01	0.00E+00	8.77E-03	0.00E+00	2.72E-03	1.93E+00	-3.54E-01

**Table 4.35b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 2" Deep Box Profile - Sarante™ Finish with Acoustibond®**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	6.38E-01	1.07E-02	4.97E-02	0.00E+00	2.64E-03	0.00E+00	2.53E-03	7.04E-01	-7.55E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.82E+01	2.68E-01	1.40E+00	0.00E+00	6.63E-02	0.00E+00	2.16E-02	2.00E+01	-4.42E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.70E-01	0.00E+00	2.78E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.98E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	2.19E-03	3.67E-05	1.70E-04	0.00E+00	9.05E-06	0.00E+00	4.30E-06	2.41E-03	-1.60E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.20E-02	0.00E+00	4.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	8.92E-05	2.17E-05	8.65E-06	0.00E+00	5.35E-06	0.00E+00	5.12E-07	1.25E-04	-4.64E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	7.97E-07	7.72E-13	6.00E-08	0.00E+00	1.91E-13	0.00E+00	5.40E-13	8.57E-07	-1.13E-08
Non-hazardous waste disposed	kg	3.77E-02	2.34E-05	1.94E-02	0.00E+00	5.77E-06	0.00E+00	6.09E-02	1.18E-01	-3.32E-02
High-level radioactive waste	kg	2.51E-04	7.70E-07	1.90E-05	0.00E+00	1.90E-07	0.00E+00	2.41E-07	2.71E-04	-3.49E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.36a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 2" Deep Box Profile - Sarante™ Finish with Ultrasorb**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.22E+00	2.31E-02	1.02E-01	0.00E+00	5.71E-03	0.00E+00	3.76E-02	1.39E+00	-3.63E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.48E-09	6.01E-17	4.13E-10	0.00E+00	1.49E-17	0.00E+00	1.52E-16	5.89E-09	3.42E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	6.22E-03	9.29E-05	5.26E-04	0.00E+00	1.40E-05	0.00E+00	2.47E-04	7.10E-03	-9.63E-04
Eutrophication Potential (EP)	kg N eq.	1.96E-04	8.58E-06	3.23E-05	0.00E+00	1.55E-06	0.00E+00	8.67E-05	3.25E-04	-3.68E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.80E-02	2.15E-03	4.69E-03	0.00E+00	3.20E-04	0.00E+00	7.02E-04	6.59E-02	-1.08E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	2.03E+00	4.33E-02	1.58E-01	0.00E+00	1.07E-02	0.00E+00	6.24E-03	2.25E+00	-3.54E-01

**Table 4.36b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 4" x 2" Deep Box Profile - Sarante™ Finish with Ultrasorb**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	8.54E-01	1.30E-02	6.63E-02	0.00E+00	3.23E-03	0.00E+00	5.80E-03	9.42E-01	-7.55E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	2.06E+01	3.27E-01	1.59E+00	0.00E+00	8.10E-02	0.00E+00	4.96E-02	2.26E+01	-4.42E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.70E-01	0.00E+00	2.78E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.98E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	2.65E-03	4.47E-05	2.06E-04	0.00E+00	1.11E-05	0.00E+00	1.18E-05	2.93E-03	-1.60E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.20E-02	0.00E+00	4.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	9.85E-05	2.64E-05	9.76E-06	0.00E+00	6.54E-06	0.00E+00	1.17E-06	1.42E-04	-4.64E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	7.97E-07	9.41E-13	6.00E-08	0.00E+00	2.33E-13	0.00E+00	1.24E-12	8.57E-07	-1.13E-08
Non-hazardous waste disposed	kg	4.89E-02	2.85E-05	2.57E-02	0.00E+00	7.05E-06	0.00E+00	1.33E-01	2.08E-01	-3.32E-02
High-level radioactive waste	kg	3.16E-04	9.39E-07	2.40E-05	0.00E+00	2.32E-07	0.00E+00	5.50E-07	3.42E-04	-3.49E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.37a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 2" Deep Box Profile - Painted or Timbre™ Finish**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	9.32E-01	1.65E-02	7.62E-02	0.00E+00	4.07E-03	0.00E+00	7.52E-04	1.03E+00	-3.43E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.51E-09	4.29E-17	4.15E-10	0.00E+00	1.06E-17	0.00E+00	3.69E-17	5.93E-09	3.43E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	5.48E-03	6.63E-05	4.47E-04	0.00E+00	9.99E-06	0.00E+00	4.00E-06	6.01E-03	-9.02E-04
Eutrophication Potential (EP)	kg N eq.	1.44E-04	6.13E-06	2.09E-05	0.00E+00	1.10E-06	0.00E+00	1.76E-07	1.73E-04	-3.50E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	4.90E-02	1.53E-03	3.91E-03	0.00E+00	2.28E-04	0.00E+00	7.31E-05	5.48E-02	-1.01E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.23E+00	3.09E-02	9.61E-02	0.00E+00	7.64E-03	0.00E+00	1.51E-03	1.37E+00	-3.23E-01

**Table 4.37b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 2" Deep Box Profile - Painted or Timbre™ Finish**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	4.69E-01	9.31E-03	3.67E-02	0.00E+00	2.30E-03	0.00E+00	1.40E-03	5.19E-01	-6.85E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.43E+01	2.34E-01	1.10E+00	0.00E+00	5.77E-02	0.00E+00	1.20E-02	1.57E+01	-4.15E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.50E-01	0.00E+00	2.63E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.76E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	1.57E-03	3.19E-05	1.23E-04	0.00E+00	7.88E-06	0.00E+00	1.75E-06	1.74E-03	-1.57E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.37E-02	0.00E+00	4.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	7.20E-05	1.89E-05	7.11E-06	0.00E+00	4.66E-06	0.00E+00	2.84E-07	1.03E-04	-4.39E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	8.34E-07	6.72E-13	6.28E-08	0.00E+00	1.66E-13	0.00E+00	3.00E-13	8.97E-07	-1.12E-08
Non-hazardous waste disposed	kg	2.76E-02	2.03E-05	1.59E-02	0.00E+00	5.02E-06	0.00E+00	3.58E-02	7.93E-02	-2.89E-02
High-level radioactive waste	kg	2.37E-04	6.70E-07	1.79E-05	0.00E+00	1.65E-07	0.00E+00	1.34E-07	2.56E-04	-3.19E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.38a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 2" Deep Box Profile - Painted or Timbre™ Finish with Acoustibond®**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	9.53E-01	1.69E-02	7.80E-02	0.00E+00	4.15E-03	0.00E+00	2.96E-03	1.05E+00	-3.43E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.51E-09	4.37E-17	4.15E-10	0.00E+00	1.08E-17	0.00E+00	4.37E-17	5.93E-09	3.43E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	5.53E-03	6.76E-05	4.52E-04	0.00E+00	1.02E-05	0.00E+00	1.85E-05	6.08E-03	-9.02E-04
Eutrophication Potential (EP)	kg N eq.	1.48E-04	6.25E-06	2.16E-05	0.00E+00	1.13E-06	0.00E+00	5.35E-06	1.82E-04	-3.50E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	4.96E-02	1.56E-03	3.95E-03	0.00E+00	2.32E-04	0.00E+00	1.11E-04	5.55E-02	-1.01E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.30E+00	3.15E-02	1.01E-01	0.00E+00	7.79E-03	0.00E+00	1.79E-03	1.44E+00	-3.23E-01

**Table 4.38b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 2" Deep Box Profile - Painted or Timbre™ Finish with Acoustibond®**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	5.09E-01	9.50E-03	3.97E-02	0.00E+00	2.35E-03	0.00E+00	1.67E-03	5.62E-01	-6.85E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.48E+01	2.38E-01	1.14E+00	0.00E+00	5.89E-02	0.00E+00	1.42E-02	1.63E+01	-4.15E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.50E-01	0.00E+00	2.63E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.76E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	1.67E-03	3.26E-05	1.31E-04	0.00E+00	8.05E-06	0.00E+00	2.35E-06	1.84E-03	-1.57E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.37E-02	0.00E+00	4.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	7.35E-05	1.92E-05	7.26E-06	0.00E+00	4.75E-06	0.00E+00	3.36E-07	1.05E-04	-4.39E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	8.34E-07	6.85E-13	6.28E-08	0.00E+00	1.69E-13	0.00E+00	3.55E-13	8.97E-07	-1.12E-08
Non-hazardous waste disposed	kg	2.93E-02	2.07E-05	1.64E-02	0.00E+00	5.12E-06	0.00E+00	4.15E-02	8.73E-02	-2.89E-02
High-level radioactive waste	kg	2.47E-04	6.83E-07	1.87E-05	0.00E+00	1.69E-07	0.00E+00	1.59E-07	2.67E-04	-3.19E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.39a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 2" Deep Box Profile - Painted or Timbre™ Finish with Ultrasorb**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.09E+00	2.15E-02	9.10E-02	0.00E+00	5.31E-03	0.00E+00	3.36E-02	1.24E+00	-3.43E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.51E-09	5.57E-17	4.15E-10	0.00E+00	1.38E-17	0.00E+00	1.39E-16	5.93E-09	3.43E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	5.69E-03	8.62E-05	4.81E-04	0.00E+00	1.30E-05	0.00E+00	2.21E-04	6.49E-03	-9.02E-04
Eutrophication Potential (EP)	kg N eq.	1.70E-04	7.96E-06	2.88E-05	0.00E+00	1.44E-06	0.00E+00	7.74E-05	2.85E-04	-3.50E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.27E-02	1.99E-03	4.27E-03	0.00E+00	2.97E-04	0.00E+00	6.33E-04	5.99E-02	-1.01E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.64E+00	4.02E-02	1.28E-01	0.00E+00	9.95E-03	0.00E+00	5.69E-03	1.83E+00	-3.23E-01

**Table 4.39b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 2" Deep Box Profile - Painted or Timbre™ Finish with Ultrasorb**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	7.62E-01	1.21E-02	5.92E-02	0.00E+00	3.00E-03	0.00E+00	5.29E-03	8.41E-01	-6.85E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.76E+01	3.04E-01	1.36E+00	0.00E+00	7.52E-02	0.00E+00	4.52E-02	1.94E+01	-4.15E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.50E-01	0.00E+00	2.63E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.76E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	2.22E-03	4.15E-05	1.73E-04	0.00E+00	1.03E-05	0.00E+00	1.07E-05	2.45E-03	-1.57E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.37E-02	0.00E+00	4.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	8.44E-05	2.45E-05	8.53E-06	0.00E+00	6.07E-06	0.00E+00	1.07E-06	1.25E-04	-4.39E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	8.34E-07	8.74E-13	6.28E-08	0.00E+00	2.16E-13	0.00E+00	1.13E-12	8.97E-07	-1.12E-08
Non-hazardous waste disposed	kg	4.30E-02	2.64E-05	2.35E-02	0.00E+00	6.55E-06	0.00E+00	1.22E-01	1.89E-01	-2.89E-02
High-level radioactive waste	kg	3.23E-04	8.71E-07	2.45E-05	0.00E+00	2.16E-07	0.00E+00	5.02E-07	3.49E-04	-3.19E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.40a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 2" Deep Box Profile - Anodized Finish**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	6.38E+00	1.65E-02	4.87E-01	0.00E+00	4.21E-03	0.00E+00	7.52E-04	6.89E+00	-3.50E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	1.27E-08	4.29E-17	9.52E-10	0.00E+00	1.09E-17	0.00E+00	3.69E-17	1.36E-08	3.43E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	4.37E-02	6.63E-05	3.33E-03	0.00E+00	1.03E-05	0.00E+00	4.00E-06	4.71E-02	-9.25E-04
Eutrophication Potential (EP)	kg N eq.	8.91E-04	6.13E-06	7.71E-05	0.00E+00	1.14E-06	0.00E+00	1.76E-07	9.76E-04	-3.57E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	3.70E-01	1.53E-03	2.81E-02	0.00E+00	2.35E-04	0.00E+00	7.31E-05	4.00E-01	-1.03E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	4.51E+00	3.09E-02	3.43E-01	0.00E+00	7.89E-03	0.00E+00	1.51E-03	4.90E+00	-3.35E-01

**Table 4.40b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 2" Deep Box Profile - Anodized Finish**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	8.27E-01	9.31E-03	6.37E-02	0.00E+00	2.38E-03	0.00E+00	1.40E-03	9.04E-01	-7.11E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	7.46E+01	2.34E-01	5.64E+00	0.00E+00	5.96E-02	0.00E+00	1.20E-02	8.06E+01	-4.25E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	1.42E-01	0.00E+00	1.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	4.13E-03	3.19E-05	3.16E-04	0.00E+00	8.15E-06	0.00E+00	1.75E-06	4.49E-03	-1.58E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.37E-02	0.00E+00	4.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.23E-03	1.89E-05	9.45E-05	0.00E+00	4.82E-06	0.00E+00	2.84E-07	1.35E-03	-4.49E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	2.22E-05	6.72E-13	1.67E-06	0.00E+00	1.72E-13	0.00E+00	3.00E-13	2.38E-05	-1.12E-08
Non-hazardous waste disposed	kg	9.58E-02	2.03E-05	2.10E-02	0.00E+00	5.19E-06	0.00E+00	3.58E-02	1.53E-01	-3.05E-02
High-level radioactive waste	kg	4.24E-04	6.70E-07	3.20E-05	0.00E+00	1.71E-07	0.00E+00	1.34E-07	4.57E-04	-3.30E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.41a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 2" Deep Box Profile - Anodized Finish with Acoustibond®**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	6.40E+00	1.69E-02	4.88E-01	0.00E+00	4.15E-03	0.00E+00	2.96E-03	6.92E+00	-3.43E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	1.27E-08	4.37E-17	9.52E-10	0.00E+00	1.08E-17	0.00E+00	4.37E-17	1.36E-08	3.43E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	4.38E-02	6.76E-05	3.33E-03	0.00E+00	1.02E-05	0.00E+00	1.85E-05	4.72E-02	-9.02E-04
Eutrophication Potential (EP)	kg N eq.	8.95E-04	6.25E-06	7.78E-05	0.00E+00	1.13E-06	0.00E+00	5.35E-06	9.85E-04	-3.50E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	3.71E-01	1.56E-03	2.81E-02	0.00E+00	2.32E-04	0.00E+00	1.11E-04	4.01E-01	-1.01E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	4.58E+00	3.15E-02	3.48E-01	0.00E+00	7.79E-03	0.00E+00	1.79E-03	4.97E+00	-3.23E-01

**Table 4.41b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 2" Deep Box Profile - Anodized Finish with Acoustibond®**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	8.67E-01	9.50E-03	6.67E-02	0.00E+00	2.35E-03	0.00E+00	1.67E-03	9.48E-01	-6.85E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	7.52E+01	2.38E-01	5.68E+00	0.00E+00	5.89E-02	0.00E+00	1.42E-02	8.12E+01	-4.15E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	1.42E-01	0.00E+00	1.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	4.23E-03	3.26E-05	3.23E-04	0.00E+00	8.05E-06	0.00E+00	2.35E-06	4.60E-03	-1.57E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.37E-02	0.00E+00	4.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.23E-03	1.92E-05	9.46E-05	0.00E+00	4.75E-06	0.00E+00	3.36E-07	1.35E-03	-4.39E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	2.22E-05	6.85E-13	1.67E-06	0.00E+00	1.69E-13	0.00E+00	3.55E-13	2.38E-05	-1.12E-08
Non-hazardous waste disposed	kg	9.74E-02	2.07E-05	2.16E-02	0.00E+00	5.12E-06	0.00E+00	4.15E-02	1.61E-01	-2.89E-02
High-level radioactive waste	kg	4.34E-04	6.83E-07	3.28E-05	0.00E+00	1.69E-07	0.00E+00	1.59E-07	4.68E-04	-3.19E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.42a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 2" Deep Box Profile - Anodized Finish with Ultrasorb**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	6.54E+00	2.15E-02	5.01E-01	0.00E+00	5.31E-03	0.00E+00	3.36E-02	7.10E+00	-3.43E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	1.27E-08	5.57E-17	9.52E-10	0.00E+00	1.38E-17	0.00E+00	1.39E-16	1.36E-08	3.43E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	4.39E-02	8.62E-05	3.36E-03	0.00E+00	1.30E-05	0.00E+00	2.21E-04	4.76E-02	-9.02E-04
Eutrophication Potential (EP)	kg N eq.	9.17E-04	7.96E-06	8.50E-05	0.00E+00	1.44E-06	0.00E+00	7.74E-05	1.09E-03	-3.50E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	3.74E-01	1.99E-03	2.84E-02	0.00E+00	2.97E-04	0.00E+00	6.33E-04	4.05E-01	-1.01E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	4.92E+00	4.02E-02	3.75E-01	0.00E+00	9.95E-03	0.00E+00	5.69E-03	5.35E+00	-3.23E-01

**Table 4.42b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 2" Deep Box Profile - Anodized Finish with Ultrasorb**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	1.12E+00	1.21E-02	8.62E-02	0.00E+00	3.00E-03	0.00E+00	5.29E-03	1.23E+00	-6.85E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	7.80E+01	3.04E-01	5.90E+00	0.00E+00	7.52E-02	0.00E+00	4.52E-02	8.43E+01	-4.15E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	1.42E-01	0.00E+00	1.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-01
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	4.78E-03	4.15E-05	3.66E-04	0.00E+00	1.03E-05	0.00E+00	1.07E-05	5.21E-03	-1.57E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.37E-02	0.00E+00	4.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.25E-03	2.45E-05	9.59E-05	0.00E+00	6.07E-06	0.00E+00	1.07E-06	1.37E-03	-4.39E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	2.22E-05	8.74E-13	1.67E-06	0.00E+00	2.16E-13	0.00E+00	1.13E-12	2.38E-05	-1.12E-08
Non-hazardous waste disposed	kg	1.11E-01	2.64E-05	2.87E-02	0.00E+00	6.55E-06	0.00E+00	1.22E-01	2.62E-01	-2.89E-02
High-level radioactive waste	kg	5.10E-04	8.71E-07	3.85E-05	0.00E+00	2.16E-07	0.00E+00	5.02E-07	5.50E-04	-3.19E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.43a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 2" Deep Box Profile - Sarante™ Finish**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	9.81E-01	1.75E-02	8.04E-02	0.00E+00	4.30E-03	0.00E+00	6.94E-03	1.09E+00	-3.43E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.48E-09	4.53E-17	4.12E-10	0.00E+00	1.12E-17	0.00E+00	5.60E-17	5.89E-09	3.43E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	5.58E-03	7.00E-05	4.58E-04	0.00E+00	1.06E-05	0.00E+00	4.47E-05	6.16E-03	-9.02E-04
Eutrophication Potential (EP)	kg N eq.	1.55E-04	6.47E-06	2.29E-05	0.00E+00	1.17E-06	0.00E+00	1.47E-05	2.01E-04	-3.50E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.08E-02	1.62E-03	4.06E-03	0.00E+00	2.41E-04	0.00E+00	1.78E-04	5.69E-02	-1.01E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.47E+00	3.27E-02	1.14E-01	0.00E+00	8.07E-03	0.00E+00	2.30E-03	1.62E+00	-3.23E-01

**Table 4.43b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 2" Deep Box Profile - Sarante™ Finish**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	5.25E-01	9.84E-03	4.10E-02	0.00E+00	2.43E-03	0.00E+00	2.14E-03	5.80E-01	-6.85E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.58E+01	2.47E-01	1.21E+00	0.00E+00	6.10E-02	0.00E+00	1.82E-02	1.73E+01	-4.15E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.50E-01	0.00E+00	2.63E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.76E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	1.85E-03	3.37E-05	1.44E-04	0.00E+00	8.33E-06	0.00E+00	3.44E-06	2.04E-03	-1.57E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.37E-02	0.00E+00	4.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	7.68E-05	1.99E-05	7.57E-06	0.00E+00	4.93E-06	0.00E+00	4.32E-07	1.10E-04	-4.39E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	8.45E-07	7.10E-13	6.36E-08	0.00E+00	1.75E-13	0.00E+00	4.55E-13	9.09E-07	-1.12E-08
Non-hazardous waste disposed	kg	2.67E-02	2.15E-05	1.70E-02	0.00E+00	5.31E-06	0.00E+00	5.20E-02	9.57E-02	-2.89E-02
High-level radioactive waste	kg	2.13E-04	7.08E-07	1.62E-05	0.00E+00	1.75E-07	0.00E+00	2.03E-07	2.31E-04	-3.19E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.44a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 2" Deep Box Profile - Sarante™ Finish with Acoustibond®**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.00E+00	1.78E-02	8.22E-02	0.00E+00	4.39E-03	0.00E+00	9.14E-03	1.11E+00	-3.43E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.48E-09	4.62E-17	4.12E-10	0.00E+00	1.14E-17	0.00E+00	6.29E-17	5.89E-09	3.43E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	5.62E-03	7.14E-05	4.62E-04	0.00E+00	1.08E-05	0.00E+00	5.92E-05	6.23E-03	-9.02E-04
Eutrophication Potential (EP)	kg N eq.	1.59E-04	6.59E-06	2.35E-05	0.00E+00	1.19E-06	0.00E+00	1.99E-05	2.10E-04	-3.50E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.14E-02	1.65E-03	4.11E-03	0.00E+00	2.45E-04	0.00E+00	2.16E-04	5.76E-02	-1.01E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.53E+00	3.33E-02	1.19E-01	0.00E+00	8.23E-03	0.00E+00	2.58E-03	1.70E+00	-3.23E-01

**Table 4.44b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 2" Deep Box Profile - Sarante™ Finish with Acoustibond®**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	5.65E-01	1.00E-02	4.41E-02	0.00E+00	2.48E-03	0.00E+00	2.40E-03	6.24E-01	-6.85E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.63E+01	2.52E-01	1.25E+00	0.00E+00	6.22E-02	0.00E+00	2.05E-02	1.79E+01	-4.15E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.50E-01	0.00E+00	2.63E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.76E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	1.95E-03	3.44E-05	1.52E-04	0.00E+00	8.49E-06	0.00E+00	4.04E-06	2.15E-03	-1.57E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.37E-02	0.00E+00	4.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	7.84E-05	2.03E-05	7.72E-06	0.00E+00	5.02E-06	0.00E+00	4.84E-07	1.12E-04	-4.39E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	8.45E-07	7.23E-13	6.36E-08	0.00E+00	1.79E-13	0.00E+00	5.11E-13	9.09E-07	-1.12E-08
Non-hazardous waste disposed	kg	2.83E-02	2.19E-05	1.76E-02	0.00E+00	5.41E-06	0.00E+00	5.77E-02	1.04E-01	-2.89E-02
High-level radioactive waste	kg	2.24E-04	7.21E-07	1.70E-05	0.00E+00	1.78E-07	0.00E+00	2.28E-07	2.42E-04	-3.19E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.45a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 2" Deep Box Profile - Sarante™ Finish with Ultrasorb**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.14E+00	2.24E-02	9.52E-02	0.00E+00	5.54E-03	0.00E+00	3.98E-02	1.30E+00	-3.43E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.48E-09	5.82E-17	4.13E-10	0.00E+00	1.44E-17	0.00E+00	1.58E-16	5.89E-09	3.43E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	5.78E-03	8.99E-05	4.91E-04	0.00E+00	1.36E-05	0.00E+00	2.61E-04	6.64E-03	-9.02E-04
Eutrophication Potential (EP)	kg N eq.	1.81E-04	8.31E-06	3.07E-05	0.00E+00	1.50E-06	0.00E+00	9.19E-05	3.13E-04	-3.50E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.45E-02	2.08E-03	4.42E-03	0.00E+00	3.10E-04	0.00E+00	7.38E-04	6.21E-02	-1.01E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.88E+00	4.19E-02	1.46E-01	0.00E+00	1.04E-02	0.00E+00	6.48E-03	2.08E+00	-3.23E-01

**Table 4.45b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 2" Deep Box Profile - Sarante™ Finish with Ultrasorb**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	8.18E-01	1.26E-02	6.36E-02	0.00E+00	3.13E-03	0.00E+00	6.03E-03	9.03E-01	-6.85E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.91E+01	3.17E-01	1.47E+00	0.00E+00	7.85E-02	0.00E+00	5.15E-02	2.10E+01	-4.15E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.50E-01	0.00E+00	2.63E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.76E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	2.50E-03	4.33E-05	1.94E-04	0.00E+00	1.07E-05	0.00E+00	1.24E-05	2.76E-03	-1.57E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-4.37E-02	0.00E+00	4.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	8.93E-05	2.56E-05	8.99E-06	0.00E+00	6.34E-06	0.00E+00	1.22E-06	1.31E-04	-4.39E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	8.45E-07	9.12E-13	6.36E-08	0.00E+00	2.26E-13	0.00E+00	1.28E-12	9.09E-07	-1.12E-08
Non-hazardous waste disposed	kg	4.21E-02	2.76E-05	2.47E-02	0.00E+00	6.83E-06	0.00E+00	1.38E-01	2.05E-01	-2.89E-02
High-level radioactive waste	kg	2.99E-04	9.09E-07	2.27E-05	0.00E+00	2.25E-07	0.00E+00	5.71E-07	3.24E-04	-3.19E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.46a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 4" Deep Box Profile - Painted or Timbre™ Finish**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.07E+00	1.90E-02	8.84E-02	0.00E+00	4.60E-03	0.00E+00	7.97E-04	1.19E+00	-3.84E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.85E-09	4.92E-17	4.41E-10	0.00E+00	1.20E-17	0.00E+00	3.90E-17	6.29E-09	3.41E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	6.36E-03	7.61E-05	5.21E-04	0.00E+00	1.13E-05	0.00E+00	4.23E-06	6.97E-03	-1.03E-03
Eutrophication Potential (EP)	kg N eq.	1.65E-04	7.03E-06	2.48E-05	0.00E+00	1.25E-06	0.00E+00	1.86E-07	1.98E-04	-3.88E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.55E-02	1.76E-03	4.44E-03	0.00E+00	2.58E-04	0.00E+00	7.74E-05	6.21E-02	-1.15E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.45E+00	3.55E-02	1.13E-01	0.00E+00	8.63E-03	0.00E+00	1.60E-03	1.61E+00	-3.87E-01

**Table 4.46b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 4" Deep Box Profile - Painted or Timbre™ Finish**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	5.32E-01	1.07E-02	4.17E-02	0.00E+00	2.60E-03	0.00E+00	1.49E-03	5.89E-01	-8.29E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.65E+01	2.68E-01	1.27E+00	0.00E+00	6.52E-02	0.00E+00	1.27E-02	1.81E+01	-4.70E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.91E-01	0.00E+00	2.94E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.20E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	1.75E-03	3.66E-05	1.38E-04	0.00E+00	8.91E-06	0.00E+00	1.84E-06	1.94E-03	-1.62E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.79E-02	0.00E+00	5.79E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	8.53E-05	2.16E-05	8.37E-06	0.00E+00	5.27E-06	0.00E+00	3.01E-07	1.21E-04	-4.91E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	1.37E-06	7.71E-13	1.03E-07	0.00E+00	1.88E-13	0.00E+00	3.17E-13	1.47E-06	-1.14E-08
Non-hazardous waste disposed	kg	3.11E-02	2.33E-05	1.92E-02	0.00E+00	5.68E-06	0.00E+00	3.79E-02	8.82E-02	-3.77E-02
High-level radioactive waste	kg	2.70E-04	7.69E-07	2.05E-05	0.00E+00	1.87E-07	0.00E+00	1.42E-07	2.92E-04	-3.81E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.47a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 4" Deep Box Profile - Painted or Timbre™ Finish with Acoustibond®**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.10E+00	1.93E-02	9.05E-02	0.00E+00	4.70E-03	0.00E+00	3.35E-03	1.22E+00	-3.84E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.85E-09	5.02E-17	4.41E-10	0.00E+00	1.22E-17	0.00E+00	4.70E-17	6.29E-09	3.41E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	6.41E-03	7.76E-05	5.27E-04	0.00E+00	1.15E-05	0.00E+00	2.10E-05	7.05E-03	-1.03E-03
Eutrophication Potential (EP)	kg N eq.	1.69E-04	7.17E-06	2.56E-05	0.00E+00	1.27E-06	0.00E+00	6.18E-06	2.09E-04	-3.88E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.62E-02	1.79E-03	4.50E-03	0.00E+00	2.63E-04	0.00E+00	1.21E-04	6.29E-02	-1.15E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.53E+00	3.62E-02	1.19E-01	0.00E+00	8.81E-03	0.00E+00	1.92E-03	1.69E+00	-3.87E-01

**Table 4.47b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 4" Deep Box Profile - Painted or Timbre™ Finish with Acoustibond®**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	5.78E-01	1.09E-02	4.52E-02	0.00E+00	2.65E-03	0.00E+00	1.79E-03	6.39E-01	-8.29E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.71E+01	2.74E-01	1.32E+00	0.00E+00	6.66E-02	0.00E+00	1.53E-02	1.88E+01	-4.70E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.91E-01	0.00E+00	2.94E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.20E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	1.87E-03	3.74E-05	1.47E-04	0.00E+00	9.10E-06	0.00E+00	2.54E-06	2.06E-03	-1.62E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.79E-02	0.00E+00	5.79E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	8.71E-05	2.21E-05	8.54E-06	0.00E+00	5.38E-06	0.00E+00	3.62E-07	1.23E-04	-4.91E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	1.37E-06	7.87E-13	1.03E-07	0.00E+00	1.92E-13	0.00E+00	3.82E-13	1.47E-06	-1.14E-08
Non-hazardous waste disposed	kg	3.30E-02	2.38E-05	1.98E-02	0.00E+00	5.80E-06	0.00E+00	4.46E-02	9.74E-02	-3.77E-02
High-level radioactive waste	kg	2.82E-04	7.84E-07	2.14E-05	0.00E+00	1.91E-07	0.00E+00	1.70E-07	3.05E-04	-3.81E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.48a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 4" Deep Box Profile - Painted or Timbre™ Finish with Ultrasorb**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.23E+00	2.39E-02	1.03E-01	0.00E+00	5.84E-03	0.00E+00	3.37E-02	1.40E+00	-3.84E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.85E-09	6.21E-17	4.41E-10	0.00E+00	1.52E-17	0.00E+00	1.41E-16	6.30E-09	3.41E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	6.56E-03	9.60E-05	5.55E-04	0.00E+00	1.43E-05	0.00E+00	2.21E-04	7.45E-03	-1.03E-03
Eutrophication Potential (EP)	kg N eq.	1.90E-04	8.87E-06	3.27E-05	0.00E+00	1.58E-06	0.00E+00	7.74E-05	3.11E-04	-3.88E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.92E-02	2.22E-03	4.80E-03	0.00E+00	3.27E-04	0.00E+00	6.37E-04	6.72E-02	-1.15E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.86E+00	4.48E-02	1.45E-01	0.00E+00	1.09E-02	0.00E+00	5.78E-03	2.06E+00	-3.87E-01

**Table 4.48b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 4" Deep Box Profile - Painted or Timbre™ Finish with Ultrasorb**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	8.25E-01	1.35E-02	6.43E-02	0.00E+00	3.30E-03	0.00E+00	5.38E-03	9.11E-01	-8.29E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.98E+01	3.38E-01	1.53E+00	0.00E+00	8.27E-02	0.00E+00	4.59E-02	2.18E+01	-4.70E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.91E-01	0.00E+00	2.94E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.20E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	2.40E-03	4.62E-05	1.88E-04	0.00E+00	1.13E-05	0.00E+00	1.08E-05	2.66E-03	-1.62E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.79E-02	0.00E+00	5.79E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	9.77E-05	2.73E-05	9.79E-06	0.00E+00	6.68E-06	0.00E+00	1.09E-06	1.43E-04	-4.91E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	1.37E-06	9.73E-13	1.03E-07	0.00E+00	2.38E-13	0.00E+00	1.15E-12	1.47E-06	-1.14E-08
Non-hazardous waste disposed	kg	4.65E-02	2.94E-05	2.68E-02	0.00E+00	7.20E-06	0.00E+00	1.24E-01	1.97E-01	-3.77E-02
High-level radioactive waste	kg	3.56E-04	9.70E-07	2.70E-05	0.00E+00	2.37E-07	0.00E+00	5.10E-07	3.85E-04	-3.81E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.49a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 4" Deep Box Profile - Anodized Finish**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	7.59E+00	1.90E-02	5.79E-01	0.00E+00	4.60E-03	0.00E+00	7.97E-04	8.20E+00	-3.84E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	1.44E-08	4.92E-17	1.08E-09	0.00E+00	1.20E-17	0.00E+00	3.90E-17	1.55E-08	3.41E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	5.21E-02	7.61E-05	3.96E-03	0.00E+00	1.13E-05	0.00E+00	4.23E-06	5.62E-02	-1.03E-03
Eutrophication Potential (EP)	kg N eq.	1.06E-03	7.03E-06	9.20E-05	0.00E+00	1.25E-06	0.00E+00	1.86E-07	1.16E-03	-3.88E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	4.39E-01	1.76E-03	3.33E-02	0.00E+00	2.58E-04	0.00E+00	7.74E-05	4.75E-01	-1.15E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	5.37E+00	3.55E-02	4.08E-01	0.00E+00	8.63E-03	0.00E+00	1.60E-03	5.82E+00	-3.87E-01

**Table 4.49b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 4" Deep Box Profile - Anodized Finish**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	9.61E-01	1.07E-02	7.40E-02	0.00E+00	2.60E-03	0.00E+00	1.49E-03	1.05E+00	-8.29E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	8.87E+01	2.68E-01	6.70E+00	0.00E+00	6.52E-02	0.00E+00	1.27E-02	9.57E+01	-4.70E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	1.42E-01	0.00E+00	1.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-01
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	4.81E-03	3.66E-05	3.68E-04	0.00E+00	8.91E-06	0.00E+00	1.84E-06	5.23E-03	-1.62E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.79E-02	0.00E+00	5.79E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.47E-03	2.16E-05	1.13E-04	0.00E+00	5.27E-06	0.00E+00	3.01E-07	1.61E-03	-4.91E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	2.69E-05	7.71E-13	2.02E-06	0.00E+00	1.88E-13	0.00E+00	3.17E-13	2.89E-05	-1.14E-08
Non-hazardous waste disposed	kg	1.13E-01	2.33E-05	2.53E-02	0.00E+00	5.68E-06	0.00E+00	3.79E-02	1.76E-01	-3.77E-02
High-level radioactive waste	kg	4.94E-04	7.69E-07	3.73E-05	0.00E+00	1.87E-07	0.00E+00	1.42E-07	5.32E-04	-3.81E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.50a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 4" Deep Box Profile - Anodized Finish with Acoustibond®**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	7.62E+00	1.93E-02	5.81E-01	0.00E+00	4.70E-03	0.00E+00	3.35E-03	8.22E+00	-3.84E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	1.44E-08	5.02E-17	1.08E-09	0.00E+00	1.22E-17	0.00E+00	4.70E-17	1.55E-08	3.41E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	5.22E-02	7.76E-05	3.97E-03	0.00E+00	1.15E-05	0.00E+00	2.10E-05	5.62E-02	-1.03E-03
Eutrophication Potential (EP)	kg N eq.	1.06E-03	7.17E-06	9.27E-05	0.00E+00	1.27E-06	0.00E+00	6.18E-06	1.17E-03	-3.88E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	4.40E-01	1.79E-03	3.34E-02	0.00E+00	2.63E-04	0.00E+00	1.21E-04	4.76E-01	-1.15E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	5.45E+00	3.62E-02	4.14E-01	0.00E+00	8.81E-03	0.00E+00	1.92E-03	5.91E+00	-3.87E-01

**Table 4.50b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 4" Deep Box Profile - Anodized Finish with Acoustibond®**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	1.01E+00	1.09E-02	7.75E-02	0.00E+00	2.65E-03	0.00E+00	1.79E-03	1.10E+00	-8.29E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	8.93E+01	2.74E-01	6.75E+00	0.00E+00	6.66E-02	0.00E+00	1.53E-02	9.64E+01	-4.70E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	2.01E-01	0.00E+00	1.51E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.16E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	4.93E-03	3.74E-05	3.77E-04	0.00E+00	9.10E-06	0.00E+00	2.54E-06	5.35E-03	-1.62E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.79E-02	0.00E+00	5.79E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.47E-03	2.21E-05	1.13E-04	0.00E+00	5.38E-06	0.00E+00	3.62E-07	1.62E-03	-4.91E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	2.69E-05	7.87E-13	2.02E-06	0.00E+00	1.92E-13	0.00E+00	3.82E-13	2.89E-05	-1.14E-08
Non-hazardous waste disposed	kg	1.14E-01	2.38E-05	2.58E-02	0.00E+00	5.80E-06	0.00E+00	4.46E-02	1.85E-01	-3.77E-02
High-level radioactive waste	kg	5.06E-04	7.84E-07	3.82E-05	0.00E+00	1.91E-07	0.00E+00	1.70E-07	5.46E-04	-3.81E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.51a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 4" Deep Box Profile - Anodized Finish with Ultrasorb**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	7.75E+00	2.39E-02	5.94E-01	0.00E+00	5.84E-03	0.00E+00	3.37E-02	8.41E+00	-3.84E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	1.44E-08	6.21E-17	1.08E-09	0.00E+00	1.52E-17	0.00E+00	1.41E-16	1.55E-08	3.41E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	5.23E-02	9.60E-05	4.00E-03	0.00E+00	1.43E-05	0.00E+00	2.21E-04	5.66E-02	-1.03E-03
Eutrophication Potential (EP)	kg N eq.	1.08E-03	8.87E-06	9.99E-05	0.00E+00	1.58E-06	0.00E+00	7.74E-05	1.27E-03	-3.88E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	4.43E-01	2.22E-03	3.37E-02	0.00E+00	3.27E-04	0.00E+00	6.37E-04	4.80E-01	-1.15E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	5.78E+00	4.48E-02	4.40E-01	0.00E+00	1.09E-02	0.00E+00	5.78E-03	6.28E+00	-3.87E-01

**Table 4.51b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 4" Deep Box Profile - Anodized Finish with Ultrasorb**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	1.25E+00	1.35E-02	9.65E-02	0.00E+00	3.30E-03	0.00E+00	5.38E-03	1.37E+00	-8.29E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	9.20E+01	3.38E-01	6.96E+00	0.00E+00	8.27E-02	0.00E+00	4.59E-02	9.94E+01	-4.70E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	1.42E-01	0.00E+00	1.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-01
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	5.46E-03	4.62E-05	4.19E-04	0.00E+00	1.13E-05	0.00E+00	1.08E-05	5.95E-03	-1.62E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.79E-02	0.00E+00	5.79E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.49E-03	2.73E-05	1.14E-04	0.00E+00	6.68E-06	0.00E+00	1.09E-06	1.63E-03	-4.91E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	2.69E-05	9.73E-13	2.02E-06	0.00E+00	2.38E-13	0.00E+00	1.15E-12	2.89E-05	-1.14E-08
Non-hazardous waste disposed	kg	1.28E-01	2.94E-05	3.29E-02	0.00E+00	7.20E-06	0.00E+00	1.24E-01	2.85E-01	-3.77E-02
High-level radioactive waste	kg	5.80E-04	9.70E-07	4.39E-05	0.00E+00	2.37E-07	0.00E+00	5.10E-07	6.26E-04	-3.81E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.52a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 4" Deep Box Profile - Sarante™ Finish**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.13E+00	2.01E-02	9.35E-02	0.00E+00	4.88E-03	0.00E+00	8.19E-03	1.26E+00	-3.84E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.81E-09	5.21E-17	4.38E-10	0.00E+00	1.27E-17	0.00E+00	6.20E-17	6.25E-09	3.41E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	6.47E-03	8.05E-05	5.34E-04	0.00E+00	1.20E-05	0.00E+00	5.29E-05	7.15E-03	-1.03E-03
Eutrophication Potential (EP)	kg N eq.	1.78E-04	7.44E-06	2.71E-05	0.00E+00	1.32E-06	0.00E+00	1.76E-05	2.31E-04	-3.88E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.77E-02	1.86E-03	4.62E-03	0.00E+00	2.73E-04	0.00E+00	2.03E-04	6.47E-02	-1.15E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.73E+00	3.76E-02	1.34E-01	0.00E+00	9.15E-03	0.00E+00	2.54E-03	1.91E+00	-3.87E-01

**Table 4.52b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 4" Deep Box Profile - Sarante™ Finish**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	5.99E-01	1.13E-02	4.69E-02	0.00E+00	2.76E-03	0.00E+00	2.36E-03	6.63E-01	-8.29E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.83E+01	2.84E-01	1.41E+00	0.00E+00	6.92E-02	0.00E+00	2.02E-02	2.01E+01	-4.70E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.91E-01	0.00E+00	2.94E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.20E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	2.08E-03	3.88E-05	1.63E-04	0.00E+00	9.45E-06	0.00E+00	3.86E-06	2.30E-03	-1.62E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.79E-02	0.00E+00	5.79E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	9.11E-05	2.29E-05	8.92E-06	0.00E+00	5.59E-06	0.00E+00	4.77E-07	1.29E-04	-4.91E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	1.38E-06	8.16E-13	1.04E-07	0.00E+00	1.99E-13	0.00E+00	5.04E-13	1.49E-06	-1.14E-08
Non-hazardous waste disposed	kg	2.98E-02	2.47E-05	2.05E-02	0.00E+00	6.02E-06	0.00E+00	5.73E-02	1.08E-01	-3.77E-02
High-level radioactive waste	kg	2.42E-04	8.14E-07	1.84E-05	0.00E+00	1.98E-07	0.00E+00	2.25E-07	2.62E-04	-3.81E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.53a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 4" Deep Box Profile - Sarante™ Finish with Acoustibond®**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.16E+00	2.05E-02	9.55E-02	0.00E+00	4.98E-03	0.00E+00	1.07E-02	1.29E+00	-3.84E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.81E-09	5.31E-17	4.38E-10	0.00E+00	1.29E-17	0.00E+00	6.99E-17	6.25E-09	3.41E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	6.53E-03	8.21E-05	5.39E-04	0.00E+00	1.22E-05	0.00E+00	6.98E-05	7.23E-03	-1.03E-03
Eutrophication Potential (EP)	kg N eq.	1.82E-04	7.58E-06	2.79E-05	0.00E+00	1.35E-06	0.00E+00	2.36E-05	2.42E-04	-3.88E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	5.84E-02	1.90E-03	4.68E-03	0.00E+00	2.78E-04	0.00E+00	2.47E-04	6.55E-02	-1.15E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	1.80E+00	3.83E-02	1.40E-01	0.00E+00	9.33E-03	0.00E+00	2.86E-03	1.99E+00	-3.87E-01

**Table 4.53b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 4" Deep Box Profile - Sarante™ Finish with Acoustibond®**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	6.45E-01	1.15E-02	5.04E-02	0.00E+00	2.81E-03	0.00E+00	2.66E-03	7.13E-01	-8.29E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.89E+01	2.89E-01	1.46E+00	0.00E+00	7.05E-02	0.00E+00	2.28E-02	2.08E+01	-4.70E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.91E-01	0.00E+00	2.94E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.20E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	2.20E-03	3.95E-05	1.72E-04	0.00E+00	9.64E-06	0.00E+00	4.55E-06	2.43E-03	-1.62E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.79E-02	0.00E+00	5.79E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	9.29E-05	2.34E-05	9.09E-06	0.00E+00	5.69E-06	0.00E+00	5.38E-07	1.32E-04	-4.91E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	1.38E-06	8.32E-13	1.04E-07	0.00E+00	2.03E-13	0.00E+00	5.68E-13	1.49E-06	-1.14E-08
Non-hazardous waste disposed	kg	3.17E-02	2.52E-05	2.12E-02	0.00E+00	6.14E-06	0.00E+00	6.40E-02	1.17E-01	-3.77E-02
High-level radioactive waste	kg	2.54E-04	8.30E-07	1.93E-05	0.00E+00	2.02E-07	0.00E+00	2.53E-07	2.75E-04	-3.81E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.54a: North American LCA Environmental Impacts - 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 4" Deep Box Profile - Sarante™ Finish with Ultrasorb**

Impact Assessment Method: TRACI 2.1		A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Environmental Impact Category	Units	Impact								
Global Warming Potential (GWP)	kg CO <sub>2</sub> eq.	1.29E+00	2.50E-02	1.08E-01	0.00E+00	6.11E-03	0.00E+00	4.11E-02	1.47E+00	-3.84E-01
Ozone Depletion Potential (ODP)	kg CFC 11-eq.	5.81E-09	6.49E-17	4.38E-10	0.00E+00	1.59E-17	0.00E+00	1.64E-16	6.25E-09	3.41E-15
Acidification Potential (AP)	kg SO <sub>2</sub> eq.	6.68E-03	1.00E-04	5.68E-04	0.00E+00	1.50E-05	0.00E+00	2.70E-04	7.63E-03	-1.03E-03
Eutrophication Potential (EP)	kg N eq.	2.03E-04	9.28E-06	3.50E-05	0.00E+00	1.66E-06	0.00E+00	9.48E-05	3.44E-04	-3.88E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> -Equiv.	6.14E-02	2.32E-03	4.98E-03	0.00E+00	3.42E-04	0.00E+00	7.63E-04	6.98E-02	-1.15E-02
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	2.14E+00	4.68E-02	1.66E-01	0.00E+00	1.15E-02	0.00E+00	6.72E-03	2.37E+00	-3.87E-01

**Table 4.54b: Resource and Waste Flows for 1 Square Foot of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System 8" x 4" Deep Box Profile - Sarante™ Finish with Ultrasorb**

Use of Primary Resources	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	8.92E-01	1.41E-02	6.94E-02	0.00E+00	3.45E-03	0.00E+00	6.25E-03	9.85E-01	-8.29E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	2.17E+01	3.54E-01	1.67E+00	0.00E+00	8.67E-02	0.00E+00	5.34E-02	2.38E+01	-4.70E+00
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Secondary material, secondary fuel and recovered energy	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Secondary Material (SM)	kg	3.91E-01	0.00E+00	2.94E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.20E-01	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable Energy (RE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of Fresh Water	m <sup>3</sup>	2.73E-03	4.84E-05	2.14E-04	0.00E+00	1.18E-05	0.00E+00	1.28E-05	3.02E-03	-1.62E-02
Additional inventory parameters for transparency	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-5.79E-02	0.00E+00	5.79E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	1.04E-04	2.86E-05	1.03E-05	0.00E+00	7.00E-06	0.00E+00	1.26E-06	1.51E-04	-4.91E-05
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indicators describing waste	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Hazardous waste disposed	kg	1.38E-06	1.02E-12	1.04E-07	0.00E+00	2.49E-13	0.00E+00	1.33E-12	1.49E-06	-1.14E-08
Non-hazardous waste disposed	kg	4.52E-02	3.08E-05	2.82E-02	0.00E+00	7.54E-06	0.00E+00	1.43E-01	2.17E-01	-3.77E-02
High-level radioactive waste	kg	3.28E-04	1.02E-06	2.49E-05	0.00E+00	2.49E-07	0.00E+00	5.92E-07	3.55E-04	-3.81E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life	Units	A1-A3	A4	A5	C1	C2	C3	C4	A1-C4	D
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MR)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy exported (EE)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

# Environmental Product Declaration

## USG Ceilings Plus® Planx™ Universal Linear Metal Panel System – Deep Box Panels

Westlake, OH, Oakville, ON (Canada), Commerce, CA



**Table 4.55a: Life Cycle Environmental Impact Results for 1 Square Foot of 2" Thick 0.75 PCF Shadow-Coustic Pad (A1-C4)**

### North American LCA Environmental Impact Results

Impact Assessment Method: TRACI 2.1	Units	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4
Environmental Impact Category		Impact								
Global warming	kg CO <sub>2</sub> eq.	7.86E-02	2.51E-03	1.17E-02	0.00E+00	0.00E+00	1.47E-04	0.00E+00	1.03E-03	9.39E-02
Ozone Depletion Potential (ODP)	kg CFC 11 eq.	1.38E-15	6.50E-18	1.16E-16	0.00E+00	0.00E+00	3.82E-19	0.00E+00	5.67E-17	1.56E-15
Acidification Potential	kg SO <sub>2</sub> eq.	3.34E-04	1.01E-05	1.04E-04	0.00E+00	0.00E+00	3.61E-07	0.00E+00	6.39E-06	4.55E-04
Eutrophication Potential (EP)	kg N eq.	4.41E-05	9.29E-07	1.83E-05	0.00E+00	0.00E+00	3.99E-08	0.00E+00	2.83E-07	6.37E-05
Photochemical Ozone Creation Potential (POCP)	kg O <sub>3</sub> eq.	3.40E-03	2.32E-04	1.44E-03	0.00E+00	0.00E+00	8.23E-06	0.00E+00	1.21E-04	5.21E-03
Abiotic Depletion Potential (ADP) fossil fuels	MJ surplus energy	7.50E-02	4.69E-03	9.18E-03	0.00E+00	0.00E+00	2.76E-04	0.00E+00	1.77E-03	9.09E-02

**Table 4.55b: Resource and Waste Flows for 1 Square Foot of 2" Thick 0.75 PCF Shadow-Coustic Pad (A1-C4)**

### Use of Primary Resources

		A1-A3	A4	A5	B1-B7	C2	C4	Total A1-C4
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	7.09E-02	1.41E-03	6.24E-03	0.00E+00	8.30E-05	2.28E-03	8.09E-02
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00						
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	7.55E-01	3.54E-02	8.29E-02	0.00E+00	2.08E-03	1.40E-02	8.89E-01
Non-renewable primary resources with energy content used as material (NRPBM)	MJ, NCV	4.38E-04	0.00E+00	3.30E-05	0.00E+00	0.00E+00	0.00E+00	4.72E-04

### Secondary material, secondary fuel and recovered energy

		A1-A3	A4	A5	B1-B7	C2	C4	Total A1-C4
Secondary Material (SM)	kg	3.10E-05	0.00E+00	2.34E-06	0.00E+00	0.00E+00	0.00E+00	3.34E-05
Renewable Secondary Fuel (RSF)	MJ, NCV	0.00E+00						
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	0.00E+00						
Renewable Energy (RE)	MJ, NCV	0.00E+00						
Consumption of Fresh Water	m <sup>3</sup>	8.69E-07	4.84E-06	2.55E-06	0.00E+00	2.85E-07	3.52E-06	1.21E-05

### Additional inventory parameters for transparency

		A1-A3	A4	A5	B1-B7	C2	C4	Total A1-C4
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emission from calcination and uptake from carbonation	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO <sub>2</sub> -eq.	-1.61E-04	0.00E+00	1.61E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO <sub>2</sub> -eq.	-1.61E-04	2.86E-06	-1.08E-05	0.00E+00	1.68E-07	3.26E-06	-1.66E-04
Emissions from combustion of waste from renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO <sub>2</sub> -eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

### Indicators describing waste

		A1-A3	A4	A5	B1-B7	C2	C4	Total A1-C4
Hazardous waste disposed	kg	-2.57E-12	1.02E-13	1.61E-13	0.00E+00	5.99E-15	3.01E-13	-2.00E-12
Non-hazardous waste disposed	kg	1.04E-04	3.08E-06	4.06E-03	0.00E+00	1.81E-07	6.98E-02	7.40E-02
High-level radioactive waste	kg	2.23E-05	1.02E-07	1.76E-06	0.00E+00	5.98E-09	1.57E-07	2.43E-05
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A

### Assignments of output flows at the end-of-life

		A1-A3	A4	A5	B1-B7	C2	C4	Total A1-C4
Components for re-use (CRU)	kg	0.00E+00						
Materials for recycling (MR)	kg	0.00E+00						
Materials for energy recovery (MER)	kg	0.00E+00						
Recovered energy exported (EE)	MJ, NCV	0.00E+00						

# Environmental Product Declaration

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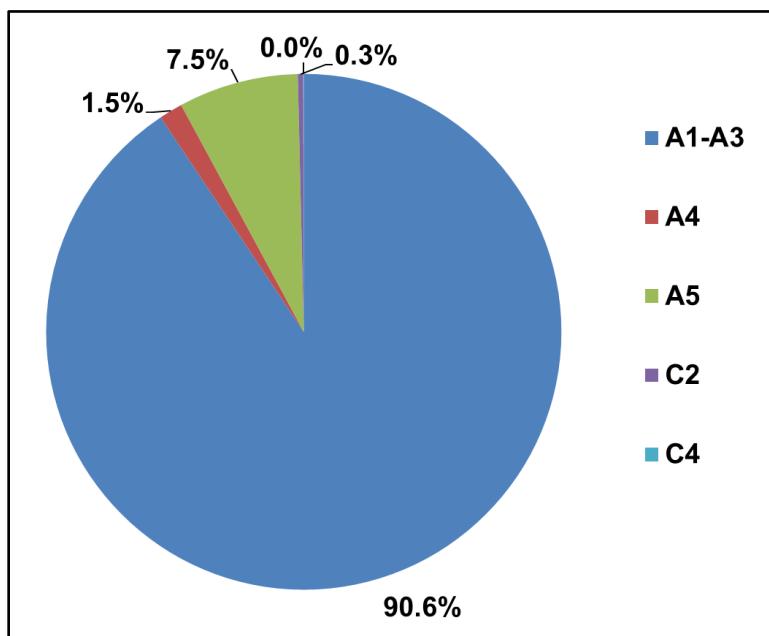


Comparisons cannot be made between product-specific or industry average EPDs at the design stage of a project, before a building or construction works has been specified. Comparisons may be made between product-specific or industry average EPDs at the time of product purchase only when product or construction works performance and specifications have been established and serve as a functional unit for comparison. Environmental impact results shall be converted to a functional unit basis before any comparison is attempted. Any comparison of EPDs shall be subject to the requirements of ISO 21930 or EN 15804. EPDs are not comparative assertions and are either not comparable or have limited comparability when they have different system boundaries, are based on different product category rules or. are missing relevant environmental impacts. Such comparisons can be inaccurate and could lead to erroneous selection of materials or products that are higher-impact, at least in some impact categories.

## 5. LCA Interpretation

The A1-C4 LCA results for the USG Ceilings Plus® Planx™ Universal Linear Metal Panel System in a Deep Box profile were dominated by product manufacturing; specifically the production of the aluminum coil.

**Figure 3: Process Dominance Analysis for GWP for the Production of  
USG Ceilings Plus® Planx™ Universal Linear Metal Panel System  
6" x 4" Deep Box Profile – Painted Finish**



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## 6. References

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### LCA Report

A Cradle-to-Grave Life Cycle Assessment of USG Ceilings Plus® Planx™ Universal Linear Metal Panel System, 12/8/23. USG (Confidential)

### Product PCR

UL Environment: Product Category Rules for Construction Products for Building-Related Product and Services in North America; Part A: Life Cycle Assessment Calculation Rules and Report Requirements. v3.2, December 2018

UL Environment: Product Category Rules for Building-Related Products and Services Part B: Metal Ceiling and Wall System EPD Requirements, January 15, 2020

### Sustainability Reporting Standards

EN 15804:2012-04 - Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction product

ISO 14025:2006 - Environmental labels and declarations — Type III environmental declarations — Principles and procedures

ISO 14040:2006/Amended 1:2020 - Environmental management – Life cycle assessment – Principles and framework

ISO 14044:2006/amended 2: 2020 - Environmental management – Life cycle assessment – Requirements and guidelines

ISO 14046:2013 - Environmental management- Water footprint- Principles, requirements and guidelines

ISO 15392:2008 - Sustainability in building construction- General principles

ISO 15686-1:2011 - Buildings and constructed assets- Service life planning- Part 1: General principles

ISO 15686-2:2008 - Buildings and constructed assets- Service life planning Part 2: Service life prediction procedures

ISO 15686-7:2008 - Buildings and constructed assets- Service life planning Part 7: Performance evaluation for feedback of service life data from practice

ISO 15686-8:2008 - Buildings and constructed assets- Service life planning Part 8: Reference service life and service life estimation

ISO 21930:2017 - Sustainability in buildings and civil engineering works — Core rules for environmental product declarations of construction products and services

### Product Testing Standards

ASTM C423-22 (2022), Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method

ASTM E84-22 (2022), Standard Test Method for Surface Burning Characteristics of Building Materials