

Alluvia[®], Delta Drop[®], Graphic Perf[®], Particle[®], Trace[®], Vapor[®], VaporHue[®]

Aluminum Ceiling and Interior Wall Panels

Environmental Product Declaration

Date of Issue: 08/14/2023

Date of Expiration: 08/14/2028

PRODUCT CATEGORY RULE

UL Part A: Life Cycle Assessment Calculation Rules and Report Requirements, UL 10010, V3.2

UL Part B: Metal Ceiling and Interior Wall Panel System EPD Requirements, UL 10010-12, V1.0.

DECLARED UNIT

1 m² panel

Program Operator	ASTM International 100 Barr Harbor Dr., West Conshohocken, PA 19428 cert@astm.org						
General Program Instructions and Version Number	ASTM Program Operator Rules. Version: 8.0, Revised 04/29/20						
Manufacturer Name and Address	Arktura LLC 18225 South Figueroa Street, Los Angeles, CA 90248 info@arktura.com						
Declaration Number	ASTM-EPD550						
Declared Product and Functional Unit	Aluminum Ceiling and Interior Wall Panels Declared Unit: 1 m ² of panel (alternative unit of 1 ft ² also declared)						
Reference PCR and Version Number	ISO 21930:2017 UL Part A: Part A: Life Cycle Assessment Calculation Rules and Report Requirements, UL 10010, V3.2. UL Part B: Metal Ceiling and Interior Wall Panel System EPD Requirements, , v1.0						
Product's intended Application and Use	Commercial						
Intended Audience	Business-to-Business						
Product RSL	n/a						
Markets of Applicability	North America						
Date of Issue	08/14/2023						
Period of Validity	5 years from date of issue						
EPD Type	Manufacturer Specific						
EPD Scope	Cradle-to-Gate (A1 to A3 modules)						
Year of reported manufacturer primary data	2021						
LCA Software and Version Number	GaBi 10.7						
LCI Database and Version Number	GaBi Database 2022.2						
LCIA Methodology and Version Number	TRACI 2.1 + IPCC AR5						
LCIA Results Overview per 1ft² (A1 to A3 modules)							
	Alluvia® Group 1	Alluvia® Group 2	Delta Drop® 2x4	Delta Drop® 4x4	Graphic Perf®	Switch 48®	Vapor® Products
GWP [kg CO₂ eq]	24.2	26.9	6.02	4.93	15.05	5.80	3.88
ODP [kg CFC 11 eq]	2.58E-08	2.58E-08	1.28E-10	6.62E-11	1.04E-09	4.31E-09	4.02E-09
AP [kg SO₂ eq]	1.06E-01	1.17E-01	2.62E-02	2.16E-02	6.59E-02	3.28E-02	1.65E-02
EP [kg N eq]	4.52E-03	4.92E-03	1.58E-03	1.19E-03	3.00E-03	1.39E-03	1.03E-03
SFP [kg O₃ eq]	1.02E+00	1.12E+00	2.70E-01	2.08E-01	6.10E-01	3.21E-01	1.62E-01
Resources [MJ]	2.14E+01	2.36E+01	6.05E+00	4.80E+00	1.38E+01	6.68E+00	4.18E+00
The sub-category PCR review was conducted by:	Jack Geibig, P.E. (Chair) Philip S. Moser, P.E. Kristen Rowe, MEM						
Independent verification of the declaration and data, according to ISO 21930:2017, UL Part A, ISO 14025:2006, and UL Part B sub-category.							
<input type="checkbox"/> Internal <input checked="" type="checkbox"/> External	Tim Brooke, ASTM International						
This life cycle assessment was conducted in accordance with ISO 14044 and the reference PCR by:	WAP Sustainability Consulting						
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	Lindita Bushi, Ph.D., Athena Sustainable Materials Institute						
Limitations: <ul style="list-style-type: none"> Environmental declarations from different programs (ISO 14025) may not be comparable. Comparison of the environmental performance of Metal Ceiling and Wall System Products using EPD information shall be based on the product's use and impacts at the building level, and therefore EPDs may not be used for comparability purposes when not considering the building energy use phase as instructed under this PCR. Full conformance with this PCR allows EPD comparability only 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 results for upstream or downstream of the life cycle stages declared. 							

General Information

Company Description

At Arktura, we make design happen. For over a decade, Arktura has been at the forefront of architectural design and fabrication, delivering groundbreaking, award-winning products and custom projects, working in collaboration with architects and interior designers around the world.

Our architectural systems are devised with flexibility in mind, combining powerful design variables that allow each product to be tailored to a wide range of environments. Our growing line of offerings, including acoustic solutions, ceiling clouds and baffles, interior and exterior panel systems, and building façades set new standards across the A+D community in terms of design aesthetic, adaptability and product quality.

Each of our standardized products is an easy-to-use, highly flexible “tool set.” From overall configuration right down to attachment points, perforations, patterns, and finishes, the variables designed into each core product set can be adjusted to meet your requirements. Explore our products library to see the results—visual impact, simple refinement, and ease of installation.

All products are manufactured at Arktura’s Los Angeles factory.

Product Descriptions



The **Alluvia®** family of products is a preconfigured ceiling system that combines vertical elements to generate unique topographies in space. Each variation makes reference to nature and landscape, offering a refined, textural aesthetic that is full of depth. With changing vantage points, Alluvia® produces shifting views that add energy and movement to the room.

CSI: 05 70 00, 09 50 00, 09 54 05; UNSPSC: 30161601

Delta Drop® uses faceted geometry to transform the visual possibilities for tiled ceiling and wall systems. These preconfigured modules can achieve a variety of looks through variations in pattern, faceting, and panel size.

CSI: 05 70 00, 07 42 13, 09 50 00, 09 54 05; UNSPSC: 30161601



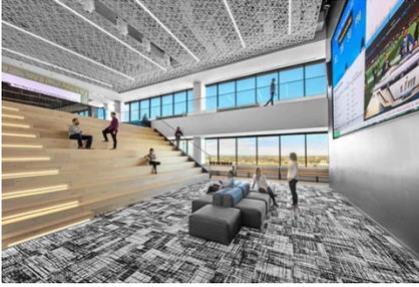
Give your walls personality and function through Arktura’s **Graphic Perf®** Family of products. With Arktura’s Graphic Perf® your design will be broken down into modular segments that come together seamlessly and install with flexible attachments tailored to the specific needs of your space.

CSI: 05 70 00, 09 50 00, 09 54 05; UNSPSC: 30161601

Arktura’s torsion spring panel systems, with finer detail than ever before. Its intricate yet subtle complexity lends visual interest to spaces big and small and will have people looking twice.

CSI: 05 70 00, 07 42 13, 09 50 00, 09 51 00, 09 54 05; UNSPSC: 30161601





Trace® introduces subtle visual interest inspired by the ephemeral beauty of mist or cirrus clouds—continuous strands weave through a grid to yield a truly elegant visual pattern. The quiet simplicity of the design makes it an ideal background for large spans and multiple rooms.

CSI: 05 70 00, 07 42 13, 09 50 00, 09 51 00, 09 54 05; UNSPSC: 30161601, 30161602

Vapor® and **Vapor® Graphic Perf®** wall and ceiling panel systems achieve modern expression through abstract patterns. Its subtle complexity lends visual interest across large spans and multiple spaces.

CSI: 05 70 00, 07 42 13, 09 50 00, 09 51 00, 09 54 05; UNSPSC: 30161601 (Vapor® only), 30161602



VaporHue® is an innovative line of torsion spring wall and ceiling panels that blends printed and perforated patterning to bring a new layer of depth and emotion to projects. It blends the beauty of wallpapers and the performance of perforated metal panels, to enhance aesthetics and functionality like never before.

CSI: 05 70 00, 07 42 13, 09 50 00, 09 51 00, 09 54 05; UNSPSC: 30161602

For Trace® and Vapor® products, add depth and performance with our sound attenuating non-woven acoustic fabric (Soft Sound®) or light-transmitting frosted polycarbonate backers.

All products are intended for use in an interior, commercial setting.

Product Average

Product averages were developed to encompass all products that fall within +/-10% for all environmental impact indicators, excluding ODP. This was done by first grouping based on the mass of raw material and packaging, evaluated for each material. Further refinement was done by running LCA results for each first round grouping and combining results that were similar.

Table 1: Product groupings

Alluvia® Group 1	Alluvia® Direct 12
Alluvia® Group 2	Alluvia® Direct 24
Delta Drop® 2x4	Delta Drop® Full Solid 2x4
	Delta Drop® Half Pattern Circle 2x4
	Delta Drop® Full Pattern Circle 2x4
Delta Drop® 4x4	Delta Drop® Full Solid 4x4
	Delta Drop® Half Pattern Circle 4x4
	Delta Drop® Full Pattern Circle 4x4
Graphic Perf®	Graphic Perf® Standard Pattern
	Graphic Perf® Custom Pattern
Switch 48®	Switch 48®

Vapor®	Particle® Code	Particle® Ion
	Particle® Fuse	Particle® Phase
	Trace® Curved	Trace® Slide
	Trace® Skew	Trace® Straight
	Trace® Slant	
	Vapor® Bloom	Vapor® Shift X
	Vapor® Bond	Vapor® Shift X Drop In
	Vapor® Breeze	Vapor® Shift XB
	Vapor® Byte	Vapor® Shift XB Drop In
	Vapor® Cluster Dense	Vapor® Sky
	Vapor® Cluster Dense Drop In	VaporSoft® Cluster Dense
	Vapor® Cluster Sparse	VaporSoft® Cluster Sparse
	Vapor® Cora	VaporSoft® Cora
	Vapor® Cora Drop In	VaporSoft® Trail
	Vapor® Cumula	Vapor® Solid
	Vapor® Element	Vapor® Syntax
	Vapor® Exterior 2x4 Cluster Dense 0.09	Vapor® Trail
	Vapor® Exterior 2x4 Cluster Dense 0.125	Vapor® Transit
	Vapor® Frequency	Vapor® Verve
	Vapor® Gradients	VaporHue™ Astra
	Vapor® Liana	VaporHue™ Flora
	Vapor® Pixel	VaporHue™ Link
	Vapor® Shift SB Drop In	VaporHue™ Pop
	Vapor® Shift SS Drop In	VaporHue™ Stitch

Product Composition

No substances required to be reported, per RCRA, Subtitle 3, as hazardous are associated with the production of this product.

Table 2: Product compositions

Mass %	Recycled Content %	Alluvia® Group 1	Alluvia® Group 2	Delta Drop® 2x4	Delta Drop® 4x4	Graphic Perf®	Switch 48®	Vapor® Products	Soft Sound® Backer	PC Backer
Aluminum	25%	94.1%	94.8%	98.4%	97.7%	72.8%	97.7%	92.0%	-	-
Steel	22%	5.3%	4.7%	-	-	20.5%	-	-	-	-
Soft Sound® (PET)	60%	-	-	-	-	-	-	5.7%	100%	-
Polycarbonate	25%	-	-	-	-	-	-	-	-	100%
Other	Varies	0.6%	0.5%	1.6%	2.3%	6.7%	2.3%	2.2%	-	-

Technical Requirements

Table 3: Technical requirements

Name and Standard	Unit	Alluvia® Group 1	Alluvia® Group 2	Delta Drop® 2x4	Delta Drop® 4x4	Graphic Perf®	Switch 48®	Vapor® Products	Soft Sound® Backer	PC Backer
Sound absorption coefficient (ASTM C423)	%	Not Relevant	Not Relevant	0.20-0.85	0.20-0.85	Not Relevant	Not Relevant	0.30-0.90	Included in specific panel rating	Not relevant
Standard test methods for surface burning characteristics of building materials (ASTM E84)	Flame spread/ smoke developed	Class A	Class A	Class A	Class A	Class A	Class A	Class A	Class B	Class A

LCA Methodology

Declared Unit

Table 4: Declared unit details

		Alluvia® Group 1	Alluvia® Group 2	Delta Drop® 2x4	Delta Drop® 4x4	Graphic Perf®	Switch 48®	Vapor® Products	Soft Sound® Backer	PC Backer
Declared unit	m ²	1	1	1	1	1	1	1	1	1
Weight	kg	32	35.6	5.96	5.44	25.8	5.27	5.51	3.05	2.44
Conversion to 1 kg	-	0.0312	0.0281	0.168	0.184	0.0387	0.19	0.181	0.328	0.41
Alternate declared unit	ft ²	1	1	1	1	1	1	1	1	1
Alternate declared unit weight	lb	6.56	7.3	1.22	1.11	5.29	1.08	1.13	0.625	0.5
Thickness, average [Range]	cm	120 [80.6-159]	120 [80.6-159]	19.7	19.7	10.8	12.7	10.8	1.2	0.15
Alternate thickness, average [Range]	in	47.25 [31.75-62.75]	47.25 [31.75-62.75]	7.75	7.75	4.25	5	4.25	0.472	0.06

System Boundary

Table 5. Description of the system boundary modules

Production			Construction		Use							End of Life				Benefits & Loads Beyond System Boundary
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Raw Material Supply	Transport	Manufacturing	Transport to Site	Assembly/Install	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	Deconstruction	Transport	Waste Processing	Disposal	Reuse, Recovery, Recycling Potential
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

*MND = not declared

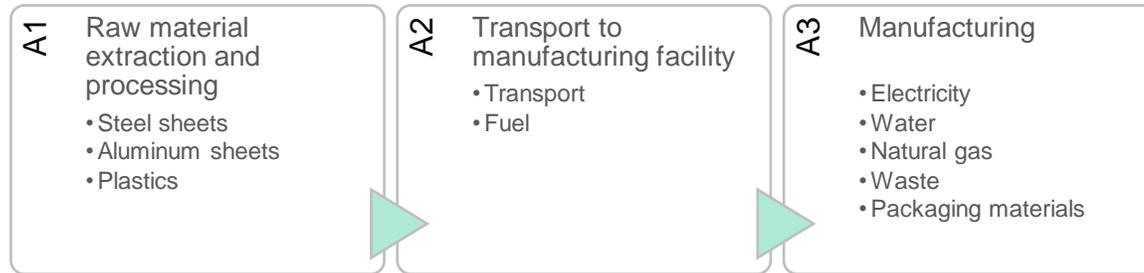


Figure 1: System boundary diagram

Note that hanger wires, molding, and/or attachment/hold down clips are excluded from the system boundary.

Allocation

General principles of allocation were based on ISO 14040/44. To derive a per-unit value for manufacturing inputs such as electricity, thermal energy and water, allocation based on total production by area was adopted, as this is the basis on which products are processed and sold, regardless of product weight. As a default, secondary GaBi datasets use a physical basis for allocation.

Cut-off Rules

Material inputs greater than 1% (based on total mass of the final product) were included within the scope of analysis. Material inputs less than 1% were included if sufficient data was available to warrant inclusion and/or the material input was thought to have significant environmental impact. Cumulative excluded material inputs and environmental impacts are less than 5% based on total weight of the functional unit. No known flows are deliberately excluded from this EPD.

Period Under Review

Data were obtained from Arktura for calendar year 2021.

Technical Information and Scenarios

Manufacturing

Arktura's Alluvia[®], Delta Drop[®], Particle[®], Graphic Perf[®], Vapor[®] Graphic Perf[®], Trace[®], Vapor[®], and VaporHue[®] ceilings are manufactured primarily from a combination of sheet metal, and up to 60% recycled PET (Polyethylene) acoustical boards. Metal sheets are cut, labeled, and bent into shape for the structural or framing components. These metal components are powder coated and in some cases, assembled together with the PET acoustical boards which are labeled and cut to shape. The products are packaged and then shipped and installed.

Packaging

Packaging requirements are presented in Table 5, per functional unit. The Soft Sound[®] and PC backers would be packaged with the panel, not shipped separately.

Table 6: Packaging per m²

kg/m ²	Alluvia [®] Group 1	Alluvia [®] Group 2	Delta Drop [®] 2x4	Delta Drop [®] 4x4	Graphic Perf [®]	Switch 48 [®]	Vapor [®] Products
Packaging Lumber	8.61	8.61	7.90	3.95	2.78	2.62	1.32
Packaging Cardboard	4.05	4.05	0.02	0.01	0.16	0.58	0.63
Packaging Plywood					2.33	0.91	0.49
Packaging Polystyrene			0.20	0.10		0.58	
Packaging LDPE Foam			0.02	0.01		0.05	
Packaging LDPE Film						0.18	0.02

Results

Environmental impacts were calculated using the GaBi software platform. Impact results have been calculated using IPCC AR5 and TRACI 2.1 characterization factors. Results presented in this report are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins, or risks.

Acronym [Unit]	Environmental Indicators	Methodology
GWP [kg CO ₂ eq]	Global Warming Potential, excl biogenic carbon	IPCC AR5
ODP [kg CFC-11 eq]	Ozone Depletion Potential	TRACI 2.1
AP [kg SO ₂ eq]	Acidification Potential	TRACI 2.1
EP [kg N eq]	Eutrophication Potential	TRACI 2.1
SFP [kg O ₃ eq]	Smog Formation Potential	TRACI 2.1
Resources [MJ, Surplus Energy]	Resources, Fossil fuels [MJ surplus energy]	TRACI 2.1
Resource Use Indicators		
RPRE [MJ]	Use of renewable primary energy	
RPRM [MJ]	Renewable primary energy resources used as raw materials	
RPRT [MJ]	Total use of renewable primary energy resources	
NRPRE [MJ]	Use of non-renewable primary energy	
NRPRM [MJ]	Non-renewable primary energy resources used as raw materials	
NRPRT [MJ]	Total use of non-renewable primary energy resources	
SM [kg]	Input of secondary material	
RSF [MJ]	Use of renewable secondary fuels	
NRSF [MJ]	Use of non renewable secondary fuels	
RE [MJ]	Recovered energy	
FW [m ³]	Use of net fresh water	
Output Flows and Waste Categories		
HWD [kg]	Hazardous waste disposed	
NHWD [kg]	Non-hazardous waste disposed	
HLRW [kg]	High-level radioactive waste, conditioned, to final repository	
ILLRW [kg]	Intermediate- and low-level radioactive waste, conditioned, to final repository	
CRU [kg]	Components for re-use	
MR [kg]	Materials for Recycling	
MER [kg]	Material for Energy Recovery	
EEE [MJ]	Exported electrical energy	
EET [MJ]	Exported thermal energy	

LCA Results
Table 7: LCA Results, per 1 m² aluminum panel (A1 to A3)

Impact Categories	Alluvia[®] Group 1	Alluvia[®] Group 2	Delta Drop[®] 2x4	Delta Drop[®] 4x4	Graphic Perf[®]	Switch 48[®]	Vapor[®] Products
<i>GWP [kg CO₂ eq]</i>	261	289	64.8	53.1	162	62.4	41.8
<i>ODP [kg CFC 11 eq]</i>	2.77E-07	2.77E-07	1.38E-09	7.13E-10	1.12E-08	4.63E-08	4.33E-08
<i>AP [kg SO₂ eq]</i>	1.14E+00	1.26E+00	2.82E-01	2.32E-01	7.09E-01	3.53E-01	1.78E-01
<i>EP [kg N eq]</i>	4.87E-02	5.30E-02	1.70E-02	1.28E-02	3.23E-02	1.49E-02	1.11E-02
<i>SFP [kg O₃ eq]</i>	1.10E+01	1.21E+01	2.90E+00	2.24E+00	6.56E+00	3.46E+00	1.74E+00
<i>Resources [MJ]</i>	2.30E+02	2.54E+02	6.51E+01	5.16E+01	1.49E+02	7.19E+01	4.50E+01
Resource Use Indicators							
<i>RPRE [MJ]</i>	1.57E+03	1.73E+03	4.84E+02	3.60E+02	8.52E+02	2.88E+02	2.32E+02
<i>RPRM [MJ]</i>	1.36E+02	1.36E+02	1.24E+02	6.22E+01	8.81E+01	5.85E+01	3.00E+01
<i>RPRT [MJ]</i>	1.70E+03	1.86E+03	6.09E+02	4.23E+02	9.40E+02	3.47E+02	2.62E+02
<i>NRPRE [MJ]</i>	2.73E+03	3.02E+03	7.49E+02	5.95E+02	1.75E+03	7.57E+02	4.56E+02
<i>NRPRM [MJ]</i>	5.96E-01	0.00E+00	9.04E+00	4.52E+00	1.54E+01	3.36E+01	4.44E+01
<i>NRPRT [MJ]</i>	2.70E+03	2.98E+03	7.58E+02	5.99E+02	1.76E+03	7.85E+02	4.95E+02
<i>SM [kg]</i>	8.59E+00	9.54E+00	1.55E+00	1.40E+00	7.31E+00	0.00E+00	2.36E+00
<i>RSF [MJ]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>NRSF [MJ]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>RE [MJ]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>FW [m³]</i>	4.45E+00	4.97E+00	9.52E-01	8.27E-01	2.49E+00	8.69E-01	5.99E-01
Output Flows and Waste Categories							
<i>HWD [kg]</i>	5.61E-04	5.61E-04	2.86E-06	1.54E-06	3.00E-05	4.49E-03	9.99E-03
<i>NHWD [kg]</i>	8.62E+01	9.65E+01	1.72E+01	1.55E+01	4.96E+01	1.18E+01	1.12E+01
<i>HLRW [kg]</i>	6.46E-05	6.97E-05	2.87E-05	1.91E-05	4.26E-05	2.54E-05	1.34E-05
<i>ILLRW [kg]</i>	5.04E-02	5.43E-02	2.35E-02	1.55E-02	3.42E-02	2.13E-02	1.10E-02
<i>CRU [kg]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>MR [kg]</i>	1.48E+00	1.64E+00	2.75E-01	2.51E-01	1.19E+00	5.63E-03	2.54E-01
<i>MER [kg]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>EEE [MJ]</i>	1.12E+00	1.25E+00	2.08E-01	1.90E-01	9.04E-01	4.26E-03	1.93E-01
<i>EET [MJ]</i>	5.27E-01	5.87E-01	9.81E-02	8.95E-02	4.25E-01	2.01E-03	9.07E-02

Table 8: LCA Results, per 1 m² panel backer (A1 to A3)

Impact Categories	Soft Sound® Backer	PC Backer
<i>GWP [kg CO₂ eq]</i>	17.4	10.9
<i>ODP [kg CFC 11 eq]</i>	2.91E-12	1.04E-12
<i>AP [kg SO₂ eq]</i>	3.27E-02	2.81E-02
<i>EP [kg N eq]</i>	3.70E-03	3.26E-03
<i>SFP [kg O₃ eq]</i>	6.05E-01	4.82E-01
<i>Resources [MJ]</i>	4.14E+01	1.80E+01
Resource Use Indicators		
<i>RPRE [MJ]</i>	6.54E+01	2.80E+01
<i>RPRM [MJ]</i>	0.00E+00	0.00E+00
<i>RPRT [MJ]</i>	6.54E+01	2.80E+01
<i>NRPRE [MJ]</i>	2.28E+02	1.08E+02
<i>NRPRM [MJ]</i>	1.25E+02	7.31E+01
<i>NRPRT [MJ]</i>	3.52E+02	1.81E+02
<i>SM [kg]</i>	1.22E+00	2.37E+00
<i>RSF [MJ]</i>	0.00E+00	0.00E+00
<i>NRSF [MJ]</i>	0.00E+00	0.00E+00
<i>RE [MJ]</i>	0.00E+00	0.00E+00
<i>FW [m³]</i>	1.08E-01	8.39E-02
Output Flows and Waste Categories		
<i>HWD [kg]</i>	1.77E-08	1.66E-02
<i>NHWD [kg]</i>	1.10E+00	1.03E+00
<i>HLRW [kg]</i>	1.17E-05	4.83E-06
<i>ILLRW [kg]</i>	9.75E-03	4.03E-03
<i>CRU [kg]</i>	0.00E+00	0.00E+00
<i>MR [kg]</i>	9.65E-01	7.72E-01
<i>MER [kg]</i>	0.00E+00	0.00E+00
<i>EEE [MJ]</i>	1.07E-01	8.54E-02
<i>EET [MJ]</i>	5.02E-02	4.02E-02

Table 9: LCA Results, per 1 ft² aluminum panels (A1 to A3)

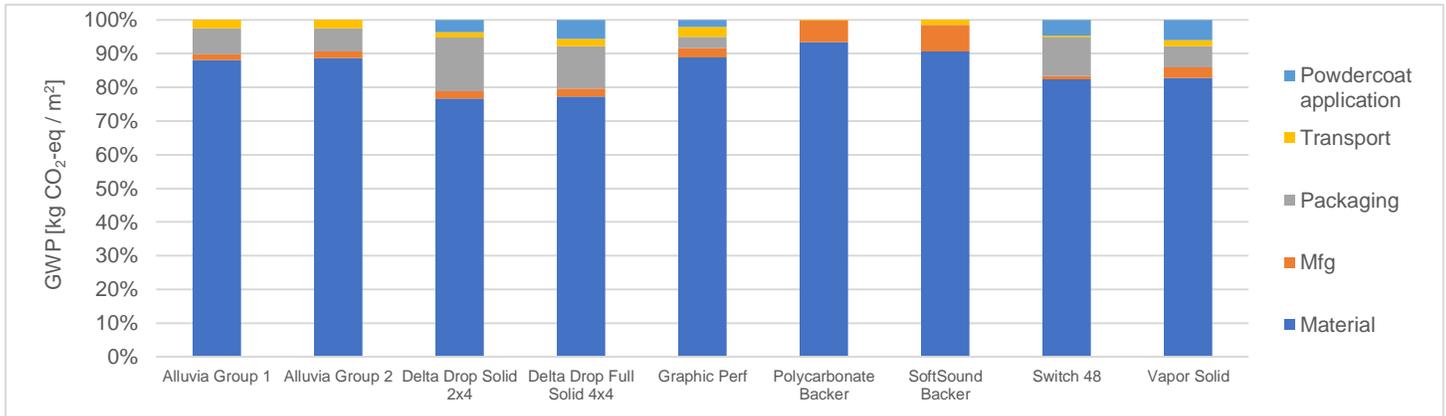
Impact Categories	Alluvia® Group 1	Alluvia® Group 2	Delta Drop® 2x4	Delta Drop® 4x4	Graphic Perf®	Switch 48®	Vapor® Products
<i>GWP [kg CO₂ eq]</i>	24.2	26.9	6.02	4.93	15.05	5.80	3.88
<i>ODP [kg CFC 11 eq]</i>	2.58E-08	2.58E-08	1.28E-10	6.62E-11	1.04E-09	4.31E-09	4.02E-09
<i>AP [kg SO₂ eq]</i>	1.06E-01	1.17E-01	2.62E-02	2.16E-02	6.59E-02	3.28E-02	1.65E-02
<i>EP [kg N eq]</i>	4.52E-03	4.92E-03	1.58E-03	1.19E-03	3.00E-03	1.39E-03	1.03E-03
<i>SFP [kg O₃ eq]</i>	1.02E+00	1.12E+00	2.70E-01	2.08E-01	6.10E-01	3.21E-01	1.62E-01
<i>Resources [MJ]</i>	2.14E+01	2.36E+01	6.05E+00	4.80E+00	1.38E+01	6.68E+00	4.18E+00
Resource Use Indicators							
<i>RPRE [MJ]</i>	1.45E+02	1.60E+02	4.50E+01	3.35E+01	7.91E+01	2.68E+01	2.15E+01
<i>RPRM [MJ]</i>	1.26E+01	1.26E+01	1.16E+01	5.78E+00	8.19E+00	5.44E+00	2.78E+00
<i>RPRT [MJ]</i>	1.58E+02	1.73E+02	5.66E+01	3.93E+01	8.73E+01	3.22E+01	2.43E+01
<i>NRPRE [MJ]</i>	2.54E+02	2.80E+02	6.96E+01	5.53E+01	1.62E+02	7.03E+01	4.24E+01
<i>NRPRM [MJ]</i>	5.53E-02	0.00E+00	8.40E-01	4.20E-01	1.43E+00	3.12E+00	4.12E+00
<i>NRPRT [MJ]</i>	2.51E+02	2.77E+02	7.04E+01	5.57E+01	1.64E+02	7.30E+01	4.60E+01
<i>SM [kg]</i>	7.98E-01	8.86E-01	1.44E-01	1.30E-01	6.79E-01	0.00E+00	2.19E-01
<i>RSF [MJ]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>NRSF [MJ]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>RE [MJ]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>FW [m³]</i>	4.14E-01	4.62E-01	8.84E-02	7.68E-02	2.32E-01	8.07E-02	5.57E-02
Output Flows and Waste Categories							
<i>HWD [kg]</i>	5.21E-05	5.21E-05	2.65E-07	1.43E-07	2.79E-06	4.18E-04	9.28E-04
<i>NHWD [kg]</i>	8.01E+00	8.96E+00	1.60E+00	1.44E+00	4.61E+00	1.10E+00	1.04E+00
<i>HLRW [kg]</i>	6.00E-06	6.48E-06	2.67E-06	1.78E-06	3.95E-06	2.36E-06	1.24E-06
<i>ILLRW [kg]</i>	4.68E-03	5.04E-03	2.19E-03	1.44E-03	3.18E-03	1.98E-03	1.02E-03
<i>CRU [kg]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>MR [kg]</i>	1.37E-01	1.53E-01	2.56E-02	2.33E-02	1.11E-01	5.23E-04	2.36E-02
<i>MER [kg]</i>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<i>EEE [MJ]</i>	1.04E-01	1.16E-01	1.94E-02	1.77E-02	8.40E-02	3.96E-04	1.79E-02
<i>EET [MJ]</i>	4.90E-02	5.45E-02	9.11E-03	8.32E-03	3.95E-02	1.86E-04	8.43E-03

Table 10: LCA Results, per 1 ft² panel backer (A1 to A3)

Impact Categories	Soft Sound [®] Backer	PC Backer
<i>GWP [kg CO₂ eq]</i>	1.61	1.02
<i>ODP [kg CFC 11 eq]</i>	2.70E-13	9.66E-14
<i>AP [kg SO₂ eq]</i>	3.04E-03	2.61E-03
<i>EP [kg N eq]</i>	3.44E-04	3.03E-04
<i>SFP [kg O₃ eq]</i>	5.62E-02	4.47E-02
<i>Resources [MJ]</i>	3.85E+00	1.67E+00
Resource Use Indicators		
<i>RPRE [MJ]</i>	6.07E+00	2.60E+00
<i>RPRM [MJ]</i>	0.00E+00	0.00E+00
<i>RPRT [MJ]</i>	6.07E+00	2.60E+00
<i>NRPRE [MJ]</i>	2.12E+01	1.00E+01
<i>NRPRM [MJ]</i>	1.16E+01	6.80E+00
<i>NRPRT [MJ]</i>	3.27E+01	1.68E+01
<i>SM [kg]</i>	1.13E-01	2.20E-01
<i>RSF [MJ]</i>	0.00E+00	0.00E+00
<i>NRSF [MJ]</i>	0.00E+00	0.00E+00
<i>RE [MJ]</i>	0.00E+00	0.00E+00
<i>FW [m³]</i>	1.01E-02	7.79E-03
Output Flows and Waste Categories		
<i>HWD [kg]</i>	1.64E-09	1.54E-03
<i>NHWD [kg]</i>	1.02E-01	9.60E-02
<i>HLRW [kg]</i>	1.08E-06	4.48E-07
<i>ILLRW [kg]</i>	9.06E-04	3.74E-04
<i>CRU [kg]</i>	0.00E+00	0.00E+00
<i>MR [kg]</i>	8.96E-02	7.17E-02
<i>MER [kg]</i>	0.00E+00	0.00E+00
<i>EEE [MJ]</i>	9.92E-03	7.93E-03
<i>EET [MJ]</i>	4.67E-03	3.73E-03

Interpretation

A dominance analysis for Global Warming Potential was conducted for all products. Upstream raw material extraction and processing was found to be the largest contributor, followed by packaging. As manufacturing utilities were allocated on a per m² basis, products with overall lower impacts show a higher contribution from manufacturing.



Additional Environmental Information

Environment and Health During Manufacturing

Arktura prioritizes environmental sustainability, health, and safety throughout its manufacturing processes. From product design to waste reduction initiatives, Arktura integrates responsible practices to minimize environmental impact. The company is committed to ensuring a safe working environment for its employees and strives to optimize energy and water usage while promoting recycling and responsible disposal practices.

Environment and Health During Installation

All recommendations shall be utilized as indicated by SDS and installation guidelines. Specific product SDS and installation instructions can be requested directly from Arktura.

Environmental Activities and Certifications

Additional environmental certifications for Arktura’s products such as Declare Labels, HPD, SDS, VOC Testing, acoustical performance and light reflectance can be requested directly from Arktura.

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