Sunshades
Vert-a-Cade® 301

Vert-a-Cade® products are typically used on the outside of commercial buildings. This horizontal vision barriers, is ideal for rooftop and parking structure applications, providing effective visual screening while maintaining airflow.

Program Operator	NSF Certification LLC 789 N. Dixboro, Ann Arbor, MI 48105 www.nsf.org
General Program instructions and Version Number	NSF Program Operator Rules, NSF International. February 23, 2015
Manufacturer Name and Address	Construction Specialties 3 Werner Way Lebanon, New Jersey, 08833
Declaration Number	EPD11234
Declared Product and Declared Unit	Vert-a-Cade® 301 Sunshades Declared Unit: 1 m^2 of sunshade product
Reference PCR and Version Number	IBU Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report according to EN 15804+A2:2019, Version 1.4 IBU PCR Part B: Requirements on the EPD for Sun Protection Systems V11, January 2024 ISO 21930: Sustainability in building and civil engineering works – Core rules for EPDs of construction products and services, July 2017
Product's intended Application and Use	Providing visual screening and sun protection for buildings
Product RSL	N/A
Markets of Applicability	North America
Date of Issue	May 18, 2026
Period of Validity	5 years from date of issue
EPD Type	Product Specific
Range of Dataset Variability	N/A
EPD Scope	Cradle-to-Gate with options including C1-C4 and Module D
Year of reported manufacturer primary data	2024
LCA Software and Version Number	LCA FE 10.9.4.13
LCI Database and Version Number	MLC Database 2025.2
LCIA Methodology and Version Number	EN15804+A2 (E.F. 3.1) TRACI 2.1 TRACI 2.2 IPCC AR6
The sub-category PCR review was conducted by:	Thomas Gloria, PhD Jack Geibig, P.E. Michael Overcash, PhD
This declaration was independently verified in accordance with ISO 14025: 2006. The UL Environment "Part A: Life Cycle Assessment Calculation Rules and Report Requirements" v3.2 (December 2018), based on CEN Norm EN 15804 (2012) and ISO 21930:2017, serves as the core PCR, with additional considerations from the USGBC/UL Environment Part A Enhancement (2017) **☐ Internal ☒ External**	Joseph Geibig 
This life cycle assessment was conducted in accordance with ISO 14044 and the reference PCR by:	WAP Sustainability
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	Joseph Geibig 

Limitations: 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 level, and therefore EPDs may not be used for comparability purposes when not considering the building energy use phase as instructed under this PCR. The comparability of EPDs is limited to those applying a functional unit.
Comparisons are only possible if all the datasets to be compared were created according to EN 15804 and the building context.
Full conformance with the 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.

Company

Founded in 1948, Construction Specialties (CS) is a family-owned, specialty building products manufacturer. CS provides solutions to challenges that architects, designers, building owners, facility managers, and contractors face every day. Since inventing the first extruded louver, CS has become a global leader in all our product categories: Acrovyn® interior wall protection, impact-resistant doors, entrance flooring, expansion joint solutions, architectural louvers, sun controls, architectural elements and privacy curtains + tracks. Drawing upon our decades of experience, CS provides extensive services resulting in high-quality products found in some of the world's most significant architecture. For more information about CS products and solutions, please visit c-sgroup.com.

Product Description

Figure 1: Vert-a-Cade® 301 Sunshade

Designed for projects requiring a more compact profile, this horizontal screen incorporates a 4-inch-deep blade with a tapered rectilinear design that combines functionality with architectural appeal. As one of our most economical vision barriers, it is ideal for rooftop and parking structure applications, providing effective visual screening while maintaining airflow. The free area shown is based on standard blade spacing. Vert-A-Cade is categorized under Construction Specification Institute (CSI) Masterformat code 10 24 00 and 05 70 10.

Table 1: Product names and mass per declared unit

Declared Product	Mass Per Declared Unit (kg)	Conversion Factor to 1 kg	Blade Depth (in)	Blade Spacing (in)	Blade Length (in)	Wind Load (PSF)	CS products included in this product category
Vert-a-Cade 301	3.67E+00	2.72E-01	4	6.75	120	50	Vert-a-Cade Vision Barriers
* For results for additional products within this category please reach out to **LEED@c-sgroup.com**							

Application

Vert-a-Cade® products are typically used on the outside of commercial buildings. This horizontal vision barriers, is ideal for rooftop and parking structure applications, providing effective visual screening while maintaining airflow.

Declaration of Methodological Framework

This LCA is a cradle-to-gate with options study, as represented by the flow diagram below. A summary of the life cycle stages can be found in LCA Calculation Rules. The cut-off criteria are described in the cut-off-Rules section and the allocation procedures are described in the allocation section. No known flows are deliberately excluded from this EPD. Third party verified ISO 14040/44 secondary LCI data sets contribute more than 67% of total impacts in all impact categories required by the PCR.

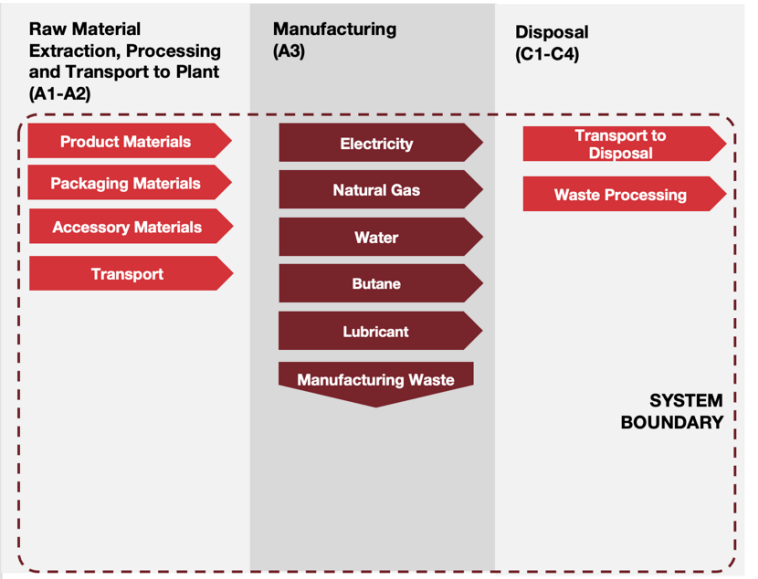

Figure 2: Process Flow Diagram

Technical Requirements

- ASCE 7 – Minimum Design Loads for Buildings and Other Structures
- ASTM B209 – Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- ASTM B221 – Standard Specifications for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

Sunshade products are designed and engineered for individual clients or projects. As such, technical data will vary. For technical data related to your product, see https://www.c-sgroup.com/.

Properties of Declared Product as Delivered

Vert-a-Cade® 301 Sunshades are delivered in sizes specified by the buyer.

Material Composition

Table 2: Material Composition

Material	Mass %
Aluminum	94%
Powder Coat Finish	4%
Stainless Steel Hardware	2%

This product does not contain substances that are required to be disclosed per relevant regulations.

Manufacturing

The raw materials for the product were obtained from the United States and Mexico. The final product is assembled in Acuna, Mexico. The manufacturing process is as follows:

- Fabricated from extruded aluminum
- The blades come in extruded from supplier, and are cut to size for specific segments by project
- Blades are mechanically secured to continuous extruded aluminum supports in the factory
- Support braces and mounting clips to painted standard Kynar to coat black stainless steel or aluminum
- Anodized and solid color powder coating is done in house for blades
- Woodgrain is done by outside vendor for blades
- Material shipped knocked down for field assembly by the installer

Environment & Health During Manufacturing

During the manufacturing of the products covered in the EPD, all legal regulations regarding emissions to air, wastewater discharge, solid waste disposal, and noise emissions are followed. Additionally, all health protection measures as required by the country in which these products are manufactured are adhered to.

Packaging

Depending on the quantity and size dimensions, sunshades are delivered in packaging of different sizes. Packaging materials are included with the values being calculated via direct measurement. The packaging details of the product are provided in Table 4.

Table 3: Packaging

Material Type	Amount (kg)	Biogenic Carbon (kg C/Kg)
Adhesive	9.29E-03	-
Staples	2.14E-02	-
Wood	2.20E+00	0.43

Transportation
It is assumed that all the raw materials sourced are distributed by truck. Transportation distances were modeled by material and were calculated using the supplier location and the location of manufacturing. A weighted average distance of 3082 km was used for raw material acquisition. Transportation of product scrap to the end-of-life facility was informed by CS's vendor locations.

Installation
While A5 is not assessed, packaging disposal would be included in A5. Table 4 shows the amount of biogenic carbon released during packaging disposal.

Table 4: Biogenic Carbon Details

	VAC 301
Biogenic carbon released [kg CO2/m^2]	3.47E+00

Re-use Phase & Disposal
Vert-a-Cade® products may be recyclable if local recycling facilities are available. End-of-life LCA modeling is based on the requirements of PCR Part A. Section 2.8.5.

Benefits and Loads Beyond the System Boundary
Module D calculates the net environmental benefits or loads from reusing products, recycling materials, and producing energy from end-of-life options. Only those flows leaving the product system that have not been allocated as co-products and that have passed the end-of-waste state are included within module D. When it comes to material recycling, loads from processing the recycled content are included and credits are calculated based on the amount of useable recycled product that is being sent to the next product system.

LCA CALCULATION RULES

Declared Unit
The declared unit for sunshade products is 1 m^2 of the product.

System Boundary
The type of EPD is cradle-to-gate with options including C1-C4 and Module D. All relevant LCA modules are included and are summarized in Table 5.

Table 5: System Boundary

Module Name	Description	Analysis Period	Summary of Included Elements
A1	Product Stage: Raw Material Supply	2024	Raw Material sourcing and processing as defined by secondary data.
A2	Product Stage: Transport	2024	Shipping from supplier to manufacturing site. Fuel use requirements estimated based on product weights and estimated distance.
A3	Product Stage: Manufacturing	2024	Energy, water and material inputs required for manufacturing products from raw materials. Packaging materials and manufacturing waste are included as well.
C1	EOL: Deconstruction	2024	No inputs required for deconstruction.
C2	EOL: Transport	2024	Shipping from project site to landfill. Fuel use requirements estimated based on product weight and mapped distance.
C3	EOL: Waste Processing	2024	Waste processing not required. All waste can be processed as is.
C4	EOL: Disposal	2024	The disposal process of the product varies with the material type as per Part A Section 2.8.5. The impacts from landfilling are modeled based on secondary data.
D	Benefits beyond system	2024	Credits from energy or material capture. This module is not considered.

Estimates & Assumptions
All estimates and assumptions are within the requirements of ISO 14040/44 and PCR Part A & B. The majority of the estimations are within the primary data. The primary data was collected as annual totals including all utility usage and production information. For the LCA, the consumption information was divided by the production to create an energy and water use-per-kilogram. The manufacturing waste generation quantity was estimated based on the manufacturer's process improvement project.

Cut-off Rules
Minor packaging components (films) were cut-off due their low mass relative to the final packaged product. Material and energy inputs greater than 1% (based on total mass of the final product) were included within the scope of analysis. Material and energy inputs less than 1% were included if sufficient data was available to warrant inclusion, and/or the material or energy input was thought to have significant environmental impact. Cumulative excluded material and energy inputs and environmental impacts are less than 5% based on total weight of the declared unit.

Data Sources
Primary data were collected by facility personnel and was used for all manufacturing processes. Whenever available, supplier data was used for raw materials used in the production process. When primary data did not exist, secondary data for raw material production was utilized from LCA FE Database version 2025.2, Software version 10.9.4.13.

Data Quality
The geographical scope of the manufacturing portion of the life cycle is Mexico. All primary data were collected from the manufacturer. The geographic coverage of primary data is considered very good. The primary data provided by the manufacturer represent all information for calendar year 2024. Using this data meets the PCR requirements. Time coverage of this data is considered very good. Primary data provided by the manufacturer is specific to the technology that Construction Specialties uses in manufacturing their products. It is site-specific and considered of good quality. It is worth noting that the electricity and water used in manufacturing the products includes overhead energy such as lighting, heating and sanitary use of water. Sub-metering would improve the technological coverage of data quality.

Data necessary to model cradle-to-gate unit processes was sourced from MLC datasets. In selecting secondary data (i.e., MLC datasets), priority was given to the accuracy and representativeness of the data. When available and deemed of significant quality, country-specific data were used. However, priority was given to technological relevance and accuracy in selecting secondary data. Overall geographic data quality is considered fair. All datasets rely on at least one 1-year average data. Overall time coverage of the datasets is considered good and meets the requirement of the PCR that all data be updated within a 10- year period. Technological coverage of the datasets is considered good relative to the actual supply chain of the manufacturer. Improved life cycle data from suppliers would improve technological coverage.

Period Under Review
The period under review is calendar year 2024.

Allocation
General principles of allocation were based on ISO 14040/44. Where possible, allocation was avoided. When allocation was necessary, it was done on a physical mass basis. In the study, the annual facility-level electricity, water, and natural gas usages were allocated to products based on the mass of the annual production. Allocation was most prevalent in the secondary MLC datasets used to represent upstream processes. As a default, MLC datasets use a physical mass basis for allocation.

Table 6: Description of the system boundary modules included in the LCA

	Product Stage			Construction Process Stage		Use Stage							End of Life Stage				Benefits and Loads Beyond the System Boundary
	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
	Raw material supply	Transport	Manufacturing	Transport from gate to site	Assembly/Install	Use	Maintenance	Repair	Replacement	Refurbishment	Building Operational Energy Use During Product Use	Building Operational Water Use During Product Use	Deconstruction	Transport	Waste processing	Disposal	Reuse, Recovery, Recycling Potential
Cradle-to-Gate with Options	X			X	X	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X

An X in the table above signifies that a module was included in the life cycle assessment. MND stands for Module Not Declared and signifies that a life cycle stage was not evaluated in the life cycle assessment.

LCA Scenarios and Additional Technical Information

Table 7: End-of-life (C1-C4)

Parameter	Value	Unit
Assumptions for scenario development	The deconstruction of the hardware is manual. The deconstructed product is collected with mixed construction waste. As required by the PCR Part the product was assumed to be 95% recycled and 5% landfilled.	
Collected as mixed construction waste	3.67E+00	kg
Waste to Recycling (95%)	3.49E+00	kg
Waste to Landfill (5%)	1.84E+00	kg
Removals of biogenic carbon (excluding packaging)	0.00E+00	kg CO2

LCA Results

All results are given per declared unit, which is 1 square meter. Environmental Impacts were calculated using the LCA FE software platform. Impact results have been calculated using IPCC AR6, TRACI 2.1, TRACI 2.2, and EN 15804+A2 (EF 3.1) characterization factors. LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.

Table 8: Key of Acronyms Used in the Results Tables

Abbreviation	Parameter	Unit
IPCC AR6		
GWPe	Global warming potential (100 years, excluding biogenic CO_2)	kg CO_2 eq
GWPi	Global warming potential (100 years, including biogenic CO_2)	kg CO_2 eq
TRACI 2.2 / *TRACI 2.1		
AP	Acidification potential of soil and water	kg SO_2 eq
EPfw	Eutrophication Potential - freshwater	kg P eq
EPm	Eutrophication Potential - marine	kg N eq
EP*	Eutrophication Potential	kg N eq
ODP	Depletion of stratospheric ozone layer	kg CFC 11 eq
SFP	Smog Formation Potential	kg O_3 eq
EN 15804+A2 (EF 3.1)		
GWP-total	Global warming potential total	kg CO_2 eq
GWP-fossil	Global warming potential fossil fuels	kg CO_2 eq
GWP-biogenic	Global warming potential biogenic	kg CO_2 eq
GWP-luluc	Global warming potential land use and land use change	kg CO_2 eq
ODP	Depletion potential of the stratospheric ozone layer	kg CFC-11 eq
AP	Acidification potential, Accumulated Exceedance	Mole of H+ eq
EPfw	Eutrophication potential, fraction of nutrients reaching freshwater end compartment	kg P eq
EPm	Eutrophication potential, fraction of nutrients reaching marine end compartment	kg N eq
EPt	Eutrophication potential, Accumulated Exceedance	Mole of N eq
POCP	Formation potential of tropospheric ozone	kg NMVOC eq
ADP-minerals[2]	Abiotic depletion potential for non-fossil resources	kg Sb eq
ADP-fossil[2]	Abiotic depletion potential for fossil resources	MJ
WDP[2]	Water deprivation potential	m^3 world eq
Carbon Emissions and Removals		
BCRP	Biogenic Carbon Removal from Product	kg CO_2
BCEP	Biogenic Carbon Emission from Product	kg CO_2
BCRK	Biogenic Carbon Removal from Packaging	kg CO_2
BCEK	Biogenic Carbon Emission from Packaging	kg CO_2

Abbreviation	Parameter	Unit
BCEW	Biogenic Carbon Emission from Combustion of Waste from Renewable Sources Used in Production Processes	kg CO_2
CCE	Calcination Carbon Emissions	kg CO_2
CCR	Carbonation Carbon Removals	kg CO_2
CWNR	Carbon Emissions from Combustion of Waste from Non- Renewable Sources used in Production Processes	kg CO_2
Additional Impacts According to EN15804+A2		
PM	Particulate Matter Emissions	Disease Incidence
IRP[2]	Ionizing radiation, human health	kBq U235-eq.
ETP-fw[3]	Eco-toxicity - Freshwater	CTUe
HTP-c[3]	Human toxicity, cancer effects	CTUh
HTP-nc[3]	Human toxicity, non-cancer effects	CTUh
SQP[3]	Land use related impacts / soil quality	-
Resource Use Parameters		
RPR_E	Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ, net calorific value (LHV)
RPR_M	Use of renewable primary energy resources used as raw materials	MJ, net calorific value
RPR_T	Total use of renewable primary energy resources	MJ, net calorific value
$NRPR_E$	Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ, net calorific value
$NRPR_M$	Use of non-renewable primary energy resources used as raw materials	MJ, net calorific value
$NRPR_T$	Total use of non-renewable primary energy resources	MJ, net calorific value
SM	Use of secondary materials	kg
RSF	Use of renewable secondary fuels	MJ, net calorific value
NRSF	Use of non-renewable secondary fuels	MJ, net calorific value
RE	Recovered energy	MJ, net calorific value
FW	Net use of fresh water	m^3
Waste Parameters and Output Flows		
HWD	Disposed-of-hazardous waste	kg
NHWD	Disposed-of non-hazardous waste	kg
RWD	Radioactive waste disposed	kg
HLRW	High-level radioactive waste, conditioned, to final repository	kg
ILLRW	Intermediate- and low-level radioactive waste, conditioned, to final repository	kg
CRU	Components for reuse	kg
MR	Materials for recycling	kg
MER	Materials for energy recovery	kg
EEE	Exported electrical energy	MJ
EET	Exported thermal energy	MJ

[1] The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.
[2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.
[3] The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

The results are provided based on a declared unit of 1 m^2 of sunshade product and are given for the representative product Vert-a-Cade® 301.

LCIA Results

Table 9: LCIA Results for Vert-a-Cade® 301 (per 1 m^2)

Impact	Unit	A1-A3	C1	C2	C3	C4	D
EN15804+A2							
GWP-total	kg CO_2 eq	1.91E+01	0.00E+00	3.02E-04	0.00E+00	4.06E-03	-1.31E+01
GWP-fossil	kg CO_2 eq	2.17E+01	0.00E+00	3.00E-04	0.00E+00	4.06E-03	-1.31E+01
GWP-biogenic	kg CO_2 eq	-2.62E+00	0.00E+00	1.73E-06	0.00E+00	-4.52E-06	2.02E-03
GWP-luluc	kg CO_2 eq	7.42E-03	0.00E+00	1.59E-07	0.00E+00	2.68E-06	-1.77E-03
ODP	kg CFC-11 eq.	4.71E-11	0.00E+00	7.11E-17	0.00E+00	1.04E-14	-3.33E-15
AP	Mole of H^+ eq.	1.13E-01	0.00E+00	9.29E-07	0.00E+00	2.41E-05	-7.54E-02
EPfw	kg P eq.	1.66E-05	0.00E+00	5.45E-10	0.00E+00	3.85E-09	-2.96E-06
EPm	kg N eq.	1.43E-02	0.00E+00	4.51E-07	0.00E+00	8.12E-06	-8.07E-03
EPt	Mole of N eq.	1.57E-01	0.00E+00	4.93E-06	0.00E+00	6.55E-05	-8.77E-02
POCP	kg NMVOC eq.	4.43E-02	0.00E+00	8.91E-07	0.00E+00	1.83E-05	-2.51E-02
ADPm	kg Sb eq.	1.76E-05	0.00E+00	4.63E-11	0.00E+00	4.80E-10	-2.19E-06
ADPf	MJ	2.60E+02	0.00E+00	3.88E-03	0.00E+00	6.14E-02	-1.21E+02
WDP	m^3 world equiv.	3.87E+00	0.00E+00	4.25E-06	0.00E+00	1.78E-04	-2.82E+00
IPCC AR6							
GWPe	kg CO_2 eq	2.17E+01	0.00E+00	3.00E-04	0.00E+00	4.07E-03	-1.31E+01
GWPi	kg CO_2 eq	1.91E+01	0.00E+00	3.02E-04	0.00E+00	4.05E-03	-1.31E+01
TRACI 2.2							
AP	kg SO_2 eq	9.31E-02	0.00E+00	8.55E-07	0.00E+00	2.08E-05	-6.13E-02
EPfw	kg P eq	7.39E-06	0.00E+00	2.46E-10	0.00E+00	1.74E-09	-1.32E-06
EPm	kg N eq	2.47E-02	0.00E+00	7.72E-07	0.00E+00	1.04E-05	-1.39E-02
EP	kg N eq	2.67E-03	0.00E+00	7.31E-08	0.00E+00	3.00E-06	-1.37E-03
ODP	kg CFC-11 eq	5.40E-11	0.00E+00	8.52E-17	0.00E+00	1.24E-14	-4.44E-15
SFP	kg O_3 eq	8.83E-01	0.00E+00	1.92E-05	0.00E+00	3.72E-04	-5.06E-01

Resource Use, Output Flows, and Waste Results

Table 10: Resource Use, Output Flows, and Waste Results for Vert-a-Cade® 301 (per 1 m^2)

Impact	Unit	A1-A3	C1	C2	C3	C4	D
Resource Use							
PERE	MJ	1.09E+02	0.00E+00	1.61E-04	0.00E+00	8.73E-03	-8.52E+01
PERM	MJ	2.29E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	1.32E+02	0.00E+00	1.61E-04	0.00E+00	8.73E-03	-8.52E+01
PENRE	MJ	2.59E+02	0.00E+00	3.88E-03	0.00E+00	6.14E-02	-1.21E+02
PENRM	MJ	9.70E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	2.60E+02	0.00E+00	3.88E-03	0.00E+00	6.14E-02	-1.21E+02
SM	kg	2.48E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	3.19E-01	0.00E+00	1.74E-07	0.00E+00	6.69E-06	-2.83E-01
Output Flows and Waste							
HWD	kg	1.36E-07	0.00E+00	6.43E-13	0.00E+00	1.47E-11	-7.32E-08
NHWD	kg	5.48E+00	0.00E+00	3.97E-07	0.00E+00	1.84E-01	-5.16E+00
RWD	kg	5.67E-03	0.00E+00A	1.33E-08	0.00E+00	6.76E-07	-8.34E-04
HLRW	kg	5.37E-06	0.00E+00	1.58E-11	0.00E+00	7.68E-10	-1.04E-06
ILLRW	kg	5.66E-03	0.00E+00	1.33E-08	0.00E+00	6.75E-07	-8.33E-04
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	5.70E-01	0.00E+00	0.00E+00	3.49E+00	0.00E+00	0.00E+00
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Carbon Emissions and Removals

Table 11: Carbon Emissions and Removal Results for Vert-a-Cade® 301 (per 1 m^2)

Impact	Unit	A1-A3	C1	C2	C3	C4	D
BCRP	kg CO_2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BCEP	kg CO_2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BCRK	kg CO_2	3.47E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BCEK	kg CO_2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BCEW	kg CO_2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CCE	kg CO_2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CCR	kg CO_2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CWNR	kg CO_2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Additional Impacts

Table 12: Additional Impacts Results for Vert-a-Cade® 301 (per 1 m^2)

Impact	Unit	A1-A3	C1	C2	C3	C4	D
PM	Disease Incidence	1.93E-06	0.00E+00	1.03E-11	0.00E+00	2.73E-10	-1.21E-06
IRP	kBq U235-eq.	7.85E-01	0.00E+00	1.12E-06	0.00E+00	6.24E-05	-7.92E-02
ETP-fw	CTUe	2.28E+02	0.00E+00	2.80E-03	0.00E+00	4.57E-02	-1.96E+02
HTP-c	CTUh	5.99E-08	0.00E+00	5.16E-14	0.00E+00	1.42E-12	-7.82E-09
HTP-nc	CTUh	3.83E-07	0.00E+00	1.41E-12	0.00E+00	1.71E-11	-3.42E-07
SQP	-	4.78E+01	0.00E+00	5.74E-04	0.00E+00	4.49E-03	-2.44E+00

LCA Interpretation

Over the Vert-a-Cade® 301 Series product life cycle A1-A3 accounts for nearly 100% of impacts across impact categories. This is illustrated in Figure 3.

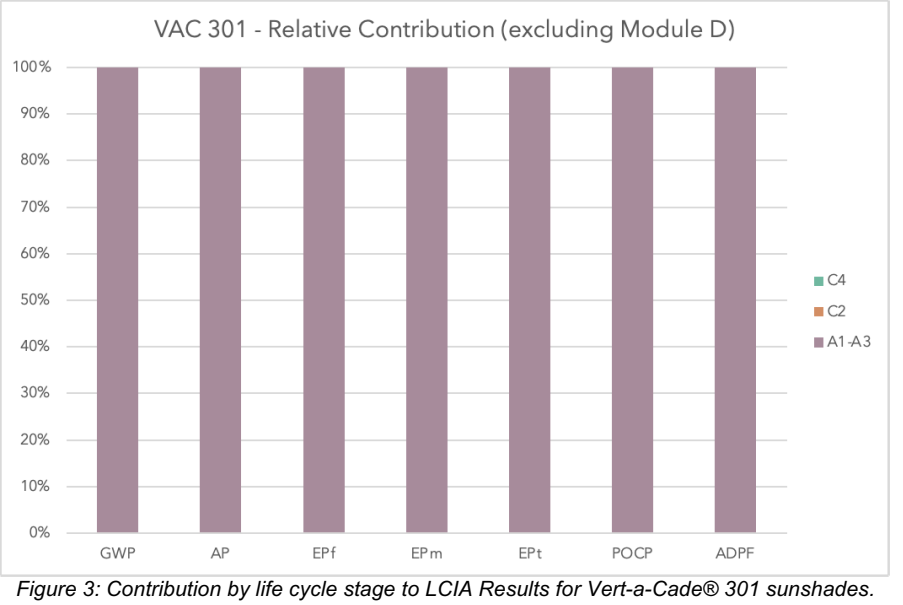

Figure 3: Contribution by life cycle stage to LCIA Results for Vert-a-Cade® 301 sunshades.

Environmental Activities & Certifications

All general information about the environmental certifications of Construction Specialties' products can be found on Construction Specialties' Sustainability website and Ecomedes website.

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