

# Environmental Product Declaration

## VinylShield A & VinylShield C

Acoustic Ceiling Panel



Vinyl-covered mineral fiber acoustic ceiling panels for sanitary applications

**CertainTeed**  
SAINT-GOBAIN

ARCHITECTURAL

CertainTeed Architectural is a leader in the effort to provide design solutions that promote sustainability, health, and safety at every step — from the product raw material content through manufacturing and the entire product life cycle. Meeting the rigorous and comprehensive standards for low emissions of VOCs, our ceilings contribute to the overall indoor air quality and general health of a building space. We incorporate some of the highest concentrations of recycled content in the industry into our product designs. And in our plants, we work continually to minimize waste and implement smarter logistics that reduce transportation needs. All of these efforts help our ceilings products contribute to LEED® points.

For more information, visit:  
[www.certainteed.com/ceilings-and-walls](http://www.certainteed.com/ceilings-and-walls)



# Environmental Product Declaration



## VinylShield A & VinylShield C

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According to  
ISO 14025, EN 15804,  
and ISO 21930:2017

This declaration is an environmental product declaration (EPD) in accordance with ISO 14025. 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. Accuracy of Results: EPDs regularly rely on estimations of impacts, and the level of accuracy in estimation of effect differs for any particular product line and reported impact. Comparability: EPDs are not comparative assertions and are either not comparable, or have limited comparability when they cover different life cycle stages, are based on different product category rules, or are missing relevant environmental impacts. EPDs from different programs may not be comparable.

EPD PROGRAM AND PROGRAM OPERATOR NAME, ADDRESS, LOGO, AND WEBSITE	UL Environment	
GENERAL PROGRAM INSTRUCTIONS AND VERSION NUMBER	Program Operator Rules v2.7 2022	
MANUFACTURER NAME AND ADDRESS	CertainTeed Architectural 20 Moores Road Malvern, PA 19355 USA	
DECLARATION NUMBER	4790373924.101.1	
DECLARED PRODUCT & FUNCTIONAL UNIT OF DECLARED UNIT	VinylShield A & VinylShield C Functional Unit = 0.093 m <sup>2</sup> (1 ft <sup>2</sup> ) over 75 year building lifetime	
REFERENCE PCR AND VERSION NUMBER	Part B: Non-Metal Ceiling and Interior Wall Panel, Version 2.0, UL Environment, Published April 2021.	
DESCRIPTION OF PRODUCT APPLICATION/USE	CertainTeed Architectural products are primarily used in commercial settings.	
PRODUCT RSL DESCRIPTION	30 Years	
MARKETS OF APPLICABILITY	Global	
DATE OF ISSUE	June 27, 2022	
PERIOD OF VALIDITY	5 Years	
EPD TYPE	Product Specific	
RANGE OF DATASET VARIABILITY	N/A	
EPD SCOPE	Cradle-to-Grave	
YEAR(S) OF REPORTED PRIMARY DATA	October 2020 - September 2021	
LCA SOFTWARE & VERSION NUMBER	GaBi 10.0.1	
LCI DATABASE(S) & VERSION NUMBER	GaBi Sphera database, Service Pack 35	
LCIA METHODOLOGY & VERSION NUMBER	TRACI 2.1; CML 4.1	
The sub-category PCR review was conducted by:	UL Environment - PCR Panel - epd@ul.com	
This declaration was independently verified in accordance with ISO 14025: 2006. The UL Environment "Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report," v3.2 (Dec 2018), based on ISO 21930:2017, serves as the core PCR, with additional considerations from CEN Norm EN 15804 (2013) and the USGBC/UL Environment Part A Enhancement (2017)	 Cooper McCollum, UL Environment	
<input type="checkbox"/> INTERNAL <input checked="" type="checkbox"/> EXTERNAL		
This life cycle assessment was conducted in accordance with ISO 14044 and the reference PCR by:	Sustainable Solutions Corp.	
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	 Thomas p. Gloria, Industrial Ecology Consultants	

<sup>1</sup> **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. **Accuracy of Results:** EPDs regularly rely on estimations of impacts, and the level of accuracy in estimation of effect differs for any particular product line and reported impact. **Comparability:** EPDs are not comparative assertions and are either not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. EPDs from different programs may not be comparable.



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### General Information

### Production Description

Products are manufactured by CertainTeed Architectural at the manufacturing facility in Plymouth, WI.

CertainTeed Architectural is a leader in the effort to provide design solutions that promote sustainability, health, and safety at every step — from the product raw material content through manufacturing and the entire product life cycle.

### Production Description



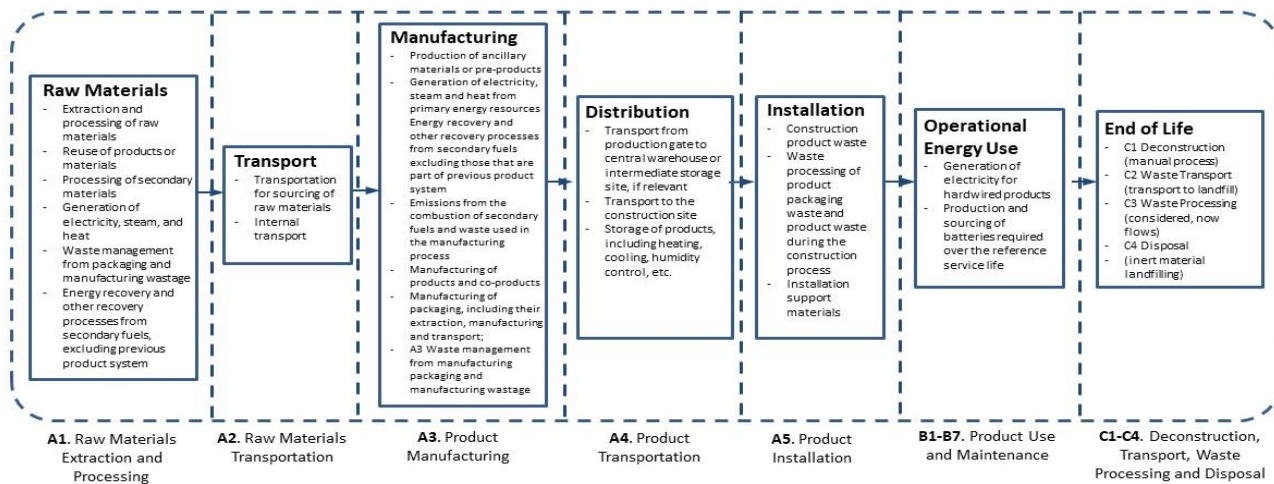
Product names: VinylShield A & VinylShield C

Product characteristic: Mineral fiber ceiling panels for sanitary and low-particulate emission applications

VinylShield A has an unperforated vinyl face. VinylShield C has an unperforated vinyl face and back with sealed edges. Additional features include:

- Each satisfies USDA/FSIS sanitary guidelines
- Each is a class 100 clean room component
- Each is VOC compliant to CDPH v1.2, 2017

### Flow Diagram



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### Manufacturer Specific EPD

This product-specific EPD was developed based on the cradle-to-grave (modules A1-C4) Life Cycle Assessment. The EPD accounts for raw material extraction and processing, transport, product manufacturing, distribution, installation, use, maintenance, and disposal. Manufacturing data were gathered directly from company personnel. For any product group EPDs, an impact assessment was completed for each product and the highest impacts were reported as conservative representations of the product group. Product grouping was considered appropriate if the individual product impacts differed by no more than  $\pm 10\%$  in any impact category.

### Application

Modular installation of acoustic ceiling panels in commercial buildings.

### Material Composition

The composition of the VinylShield A & VinylShield C is as follows:

Component	Percentage in Mass (%)
Laminating Blank	94.04%
Adhesive	1.77%
Laminate	4.10%
Paint	0.09%
Total	100.00%



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### Technical Data

For the declared product, the following technical data in the delivery status must be provided with reference to the test standard:

Category	Value	Unit
Noise Reduction Coefficient - NRC (ASTM C423)	N/A	N/A
Light Reflectance (ASTM E1477)	78	%
Interzone Attenuation of Open Office Components (AC)(ASTM E1111 and ASTM E1110)	N/A	N/A
Sound Transmission Class (STC) (ASTM E413 and ASTM E90)	N/A	dB
Ceiling Attenuation Class - CAC (ASTM E1414)	39-42	dB
Surface Burning Characteristics of Building Materials (ASTME84, ASTM E1264)	Class A per ASTM E1264 and ASTM E84	Flame spread/smoke developed
Low VOC Test Standard - CDPH V1.2	CDPH V1.2, 2017	$\mu\text{g}/\text{m}^3$ & $\text{mg}/\text{m}^3$

### Market Placement / Application Rules

The standards that can be applied for VinylShield A & VinylShield C are:

- ASTM E1264 - Classification for Acoustic Ceilings
- ASTM E84 - Surface Burning Characteristics; pursuant to test certificate
- ASTM C423 - Sound Absorption
- ASTM E1414 - Airborne Sound Attenuation
- ISO 14644-1 - Classification of Air Cleanliness by Particle Concentration
- CDPH v1.2 - California Department of Public Health CDPH/EHLB/Standard Method V1.2-2017
- ASTM D4828 - Standard Test Methods for Practical Washability of Organic Coatings
- ASTM E1477 - Standard Test Method for Luminous Reflectance Factor of Acoustical Materials

### Properties of Declared Product as Delivered

Characteristics		
Product	VinylShield A & VinylShield C	-
Thickness	1.59	cm
Density	5.40E-01	$\text{kg}/0.093 \text{ m}^2$



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### Methodological Framework

#### Functional Unit

The declaration refers to the functional unit of 0.093 m<sup>2</sup> of VinylShield A & VinylShield C.

Name	Value	Unit
Functional Unit	0.093	m <sup>2</sup>
Declared Unit (ceiling)	0.093	m <sup>2</sup>
Declared Thickness	1.59	cm
Surface Weight Per Declared Unit	0.54	kg/0.093 m <sup>2</sup>
Density Per Declared Unit	33.97	kg/0.093 m <sup>3</sup>

#### System Boundary

This is a cradle to grave Environmental Product Declaration. The following life cycle phases were considered:

Product Stage			Construction Process Stage		Use Stage							End of Life Stage*				Benefits and Loads Beyond the System Boundaries	
Raw material supply	Transport	Manufacturing	Transport from gate to the site	Construction/ installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction /demolition	Transport	Waste processing	Disposal	Reuse-Recovery- Recycling potential	
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	MND

Description of the System Boundary Stages Corresponding to the PCR  
(X = Included; MND = Module Not Declared)

\*This includes provision of all materials, products and energy, packaging processing and its transport, as well as waste processing up to the end-of waste state or disposal of final residues.

#### Reference Service Life and Building Estimated Service Life

The Reference Service Life is determined by the guidance from the Product Category Rules and varies by product type. This specific product has a RSL of 30 years. The building Estimated Service Life (ESL) is 75 years.

#### Allocation

The LCI data was collected from the Plymouth, WI manufacturing facility from October 2020 to September 2021. The manufacturing for all products made at this facility have similar energy, waste, and water input requirements. Allocation was done on an area basis.



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### Cut-off Criteria

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Processes whose total contribution to the final result, with respect to their mass and in relation to all considered impact categories, is less than 1% can be neglected. The sum of the neglected processes may not exceed 5% by mass of the considered impact categories. For that a documented assumption is admissible.

For Hazardous Substances - as defined by the U.S. Occupational Health and Safety Act the following requirements apply:

- The Life Cycle Inventory (LCI) of hazardous substances will be included, if the inventory is available.
- If the LCI for a hazardous substance is not available, the substance will appear as an input in the LCI of the product, if its mass represents more than 0.1% of the product composition.
- If the LCI of a hazardous substance is approximated by modeling another substance, documentation will be provided.

This EPD is in compliance with the cut-off criteria. No processes were neglected or excluded. Capital items for the production processes (machine, buildings, etc.) were not taken into consideration.

### Data Sources

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For life cycle modeling, the GaBi v10.0.1 Software System for Life Cycle Engineering, a recognized LCA modeling software program, was used. All background data sets relevant for production and disposal were taken from this software except for the mineral wool model, which was created based on data provided by industry experts and AP-42, Compilation of Air Pollutant Emission Factors.

### Data Quality

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For the data used in this LCA, the data quality is considered to be good to high quality. The data and data sets cover all relevant process steps and technologies over the supply chain of the represented ceiling panel products. The majority of secondary data sets are from the GaBi v10.0.1 database and wherever secondary data are used, the study adopts critically reviewed data wherever possible for consistency, precision, and reducibility to limit uncertainty. The data used are complete and representative of North America in terms of the geographic and technological coverage and is of a recent vintage, i.e. less than ten years old.

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### Period Under Review

The data used for the Life Cycle Assessment refer to the production processes from October 2020 to September 2021. The quantities of raw materials, energies, auxiliary materials, and supplies used have been ascertained as average annual values.

### Comparability

A comparison or an evaluation of EPD data is only possible if all data sets to be compared were created according to ISO 21930 and the building context, respectively the product-specific characteristics of performance, are taken into account. Environmental declarations from different programs may not be comparable. Full conformance with the PCR for Non-Metal Ceiling and Interior Wall Panel products allows EPD comparability only when all stages of a Non-Metal Ceiling and Interior Wall Panel product's life cycle have been considered. However, variations and deviations are possible.

### Estimates and Assumptions

A significant majority of sales of the panel products in this LCA occur within North America, specifically within the continental USA and Canada. As such, the assumptions below follow the guidance for the Part B: Non-Metal Ceiling and Wall Panel PCR.

Product transport from point of manufacture to building site	Mode: Diesel-powered truck/trailer Distance: 800 km
Product transport from building site to waste processing	Mode: Diesel-powered truck/trailer Distance: 35 km
Installation & deconstruction procedures	Manual (no operational energy use)





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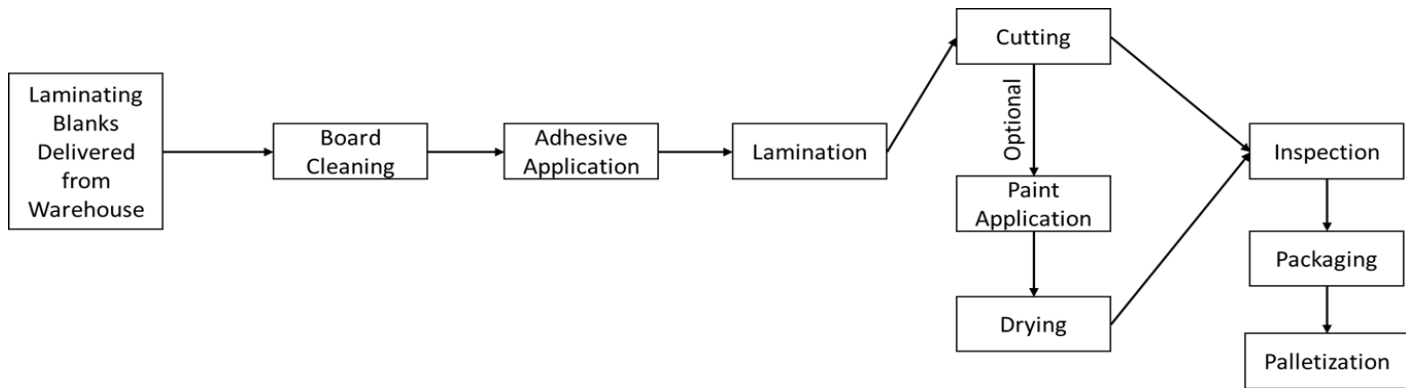
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## Technical Information and Scenarios

### Manufacturing

Laminating blanks are unloaded and cleaned through automated machinery. After cleaning, an adhesive is applied, and the blank is laminated with polyvinyl chloride (PVC) on one side and manually run back through lamination, if two-sided lamination is required for the final board product. Next the boards are cut and trimmed to the desired dimensions of the final product. Following sizing, products that are sold with a paint applied are manually sent to the paint booth where they are painted with spray guns and dried prior to being manually returned to the process. These final boards are inspected, packaged, and palletized, prior to being warehoused.

Manufacturing Location: Plymouth, WI



### Packaging

These products are packaged with cardboard, wood, plastic, and paper.

Component	Percentage in Mass (%)
Wood Pallets	46.78%
Plastic	14.62%
Paper	12.87%
Cardboard	25.73%
Total	100.00%

### Transportation

Transport to Building Site (A4)		
Name	Value	Unit
Fuel Type	Diesel	-
Liters of Fuel	38	l/100km
Vehicle Type	-	-
Transport Distance	800	km
Capacity Utilization (including empty runs, volume based)	90	%
Gross Density of Products Transported	33.97	kg/m <sup>3</sup>
Capacity Utilization Volume Factor	1	-



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### Product Installation

The ceiling panels must be installed in accordance with all applicable CertainTeed installation guidelines at the time of installation. Approved installation procedures described in the Ceilings Systems Handbook published by the Ceilings & Interior Systems Construction Association must be followed.

Installation is accomplished by manual labor and typically does not require any additional materials. If necessary, cutting is done by hand using handheld cutting tools.

There are no apparent risks involved with the installation of ceiling panels since no additional coating or finishing is required. The installer should wear safety glasses while installing the panels to avoid debris from falling into the eyes as well as approved gloves.

Installation into the Building (A5)		
Name	Value	Unit
Auxiliary materials	-	kg
Water consumption	-	m <sup>3</sup>
Other resources	-	kg
Electricity consumption	-	kWh
Other energy carriers	-	MJ
Product loss per functional unit	6.00E-03	kg
Waste materials at construction site	6.00E-03	kg
Output substance (landfill)	8.57E-02	kg
Output substance (incineration)	-	kg
Output substance (recycling)	-	kg
Packaging substance (landfill)	5.60E-04	kg
Packaging substance (incineration)	1.40E-04	kg
Packaging substance (recycling)	1.20E-03	kg
Biogenic carbon contained in packaging	2.79E-03	kg CO <sub>2</sub>
Direct emissions to ambient air*, soil, and water	2.79E-03	kg CO <sub>2</sub>
VOC emissions	-	µg/m <sup>3</sup>

\* CO<sub>2</sub> emissions to air from disposal of packaging

### Use

The Estimated Service Life (ESL) of a building is assumed to 75 years. With a Reference Service Life (RSL) of 30 years the number of product replacements is 1.5, according to the PCR.

#### Cleaning and Maintenance:

Once installed, panels typically require no cleaning or maintenance. Maintenance personnel should wear white, clean cotton gloves when handling panels so oils and dirt from hands do not transfer to panels.

#### Prevention of Structural Damage:

To ensure longevity of the product, make sure panels are not exposed to high humidity or high temperatures.



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### Disposal

End-of-Life (C1 - C4)			
Name		Value	Unit
Assumptions for scenario development	Final product disposal is modeled as 100% to inert material landfill		
Collection process (specified by type)	Collected separately	-	kg
	Collected as mixed construction waste	8.57E-02	kg
Recovery (specified by type)	Reuse	-	kg
	Recycling	-	kg
	Incineration	-	kg
	Incineration with energy recovery	-	kg
Disposal (specified by type)	Landfilling	8.57E-02	kg
Removals of biogenic carbon (excluding packaging)		-	kg CO <sub>2</sub>

### Re-use Phase

At this time, there are no re-use scenarios available for ceiling panel products.

Re-Use, Recovery, and/or Recycling Potential (D)		
Name	Value	Unit
Net energy benefit from energy recovery from waste treatment declared as exported energy in C3 (R>0.6)	-	MJ
Net energy benefit from thermal energy due to treatment of waste declared as exported energy in C4 (R<0.6)	-	MJ
Net energy benefit from material flow declared in C3 for energy recovery	-	MJ
Process and conversion efficiencies		
Further assumptions for scenario development (e.g. further processing technologies, assumptions on correction factors)		



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### LCA Results

Results shown below were calculated using TRACI 2.1 Methodology.

TRACI 2.1 Impact Assessment										
Parameter	Parameter	Unit	A1-A3	A4	A5	B4	C1	C2	C3	C4
GWP	Global warming potential	kg CO <sub>2</sub> -Eq.	2.03E+00	4.29E-02	1.71E-02	3.17E+00	0.00E+00	1.75E-03	0.00E+00	2.25E-02
ODP	Depletion potential of the stratospheric ozone layer	kg CFC-11 Eq.	9.84E-11	1.62E-12	4.73E-15	1.50E-10	0.00E+00	6.63E-14	0.00E+00	7.28E-16
AP Air	Acidification potential for air emissions	kg SO <sub>2</sub> -Eq.	1.80E-02	2.57E-04	1.22E-04	2.78E-02	0.00E+00	1.05E-05	0.00E+00	9.89E-05
EP	Eutrophication potential	kg N-Eq.	1.11E-03	1.43E-05	3.05E-05	1.73E-03	0.00E+00	5.83E-07	0.00E+00	5.51E-06
SP	Smog formation potential	kg O <sub>3</sub> -Eq.	1.20E-01	7.09E-03	4.30E-04	1.94E-01	0.00E+00	2.90E-04	0.00E+00	1.74E-03
FFD	Fossil fuel depletion	MJ-surplus	6.60E+00	7.58E-02	5.52E-03	1.01E+01	0.00E+00	3.10E-03	0.00E+00	4.38E-02

\*All use phase stages have been considered and only those with non-zero values have been reported

Results shown below were calculated using CML 2001 - April 2013 Methodology.

CML 4.1 Impact Assessment										
Parameter	Parameter	Unit	A1-A3	A4	A5	B4	C1	C2	C3	C4
GWP	Global warming potential	kg CO <sub>2</sub> -Eq.	2.06E+00	4.30E-02	1.90E-02	3.22E+00	0.00E+00	1.76E-03	0.00E+00	2.27E-02
ODP	Depletion potential of the stratospheric ozone layer	kg CFC-11 Eq.	8.03E-11	1.62E-12	9.76E-15	1.23E-10	0.00E+00	6.62E-14	0.00E+00	4.24E-14
AP Air	Acidification potential for air emissions	kg SO <sub>2</sub> -Eq.	1.97E-02	2.11E-04	5.47E-05	3.01E-02	0.00E+00	8.65E-06	0.00E+00	9.13E-05
EP	Eutrophication potential	kg(PO <sub>4</sub> ) <sup>3</sup> -Eq.	1.14E-03	3.77E-05	3.68E-05	1.84E-03	0.00E+00	1.54E-06	0.00E+00	1.22E-05
POCP	Formation potential of tropospheric ozone photochemical oxidants	kg ethane-Eq.	1.25E-03	2.47E-05	1.30E-05	1.93E-03	0.00E+00	1.01E-06	0.00E+00	8.37E-07
ADPE	Abiotic depletion potential for non-fossil resources	kg Sb-Eq.	1.10E-06	1.78E-11	1.24E-09	1.66E-06	0.00E+00	7.28E-13	0.00E+00	1.02E-08
ADPF	Abiotic depletion potential for fossil resources	MJ	5.07E+01	5.42E-01	4.25E-02	7.74E+01	0.00E+00	2.22E-02	0.00E+00	3.38E-01

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Results below contain the resource use throughout the life cycle of the product.

### Resource Use

Parameter	Parameter	Unit	A1-A3	A4	A5	B4	C1	C2	C3	C4
RPR <sub>E</sub>	Renewable primary energy as energy carrier	MJ, lower calorific value	5.71E+00	0.00E+00	3.93E-03	8.62E+00	0.00E+00	0.00E+00	0.00E+00	3.25E-02
RPR <sub>M</sub>	Renewable primary energy resources as material utilization	MJ, lower calorific value	1.10E+00	0.00E+00	0.00E+00	1.65E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRPR <sub>E</sub>	Nonrenewable primary energy as energy carrier	MJ, lower calorific value	5.43E+01	5.47E-01	4.34E-02	8.29E+01	0.00E+00	2.24E-02	0.00E+00	3.46E-01
NRPR <sub>M</sub>	Nonrenewable primary energy as material utilization	MJ, lower calorific value	1.01E+00	0.00E+00	0.00E+00	1.51E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SM	Use of secondary material	MJ, lower calorific value	3.65E-02	0.00E+00	0.00E+00	5.48E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	Use of renewable secondary fuels	MJ, lower calorific value	1.90E+00	0.00E+00	0.00E+00	2.85E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	Use of nonrenewable secondary fuels	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RE	Energy recovered from disposed waste	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	Use of net fresh water									

\*All use phase stages have been considered and only those with non-zero values have been reported

Results below contain the output flows and wastes throughout the life cycle of the product.

### Output Flows and Waste Categories

Parameter	Parameter	Unit	A1-A3	A4	A5	B4	C1	C2	C3	C4
HWD	Hazardous waste disposed	kg	1.83E-06	0.00E+00	1.57E-12	2.75E-06	0.00E+00	0.00E+00	0.00E+00	1.30E-11
NHWD	Non-hazardous waste disposed	kg	6.89E-02	0.00E+00	5.84E-02	1.00E+00	0.00E+00	0.00E+00	0.00E+00	5.41E-01
HLRW	High-level radioactive waste	kg or m <sup>3</sup>	1.32E-03	0.00E+00	3.68E-07	1.99E-03	0.00E+00	0.00E+00	0.00E+00	3.04E-06
ILLRW	Intermediate- and low-level radioactive waste	kg or m <sup>3</sup>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CRU	Components for re-use	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
MR	Materials for recycling	kg	0.00E+00	0.00E+00	2.81E-02	4.22E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	Materials for energy recovery	kg	0.00E+00	0.00E+00	2.57E-03	3.86E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	Recovered energy exported from system	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

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# Environmental Product Declaration

## VinylShield A & VinylShield C

Acoustic Ceiling Panel



According to  
ISO 14025, EN 15804,  
and ISO 21930:2017

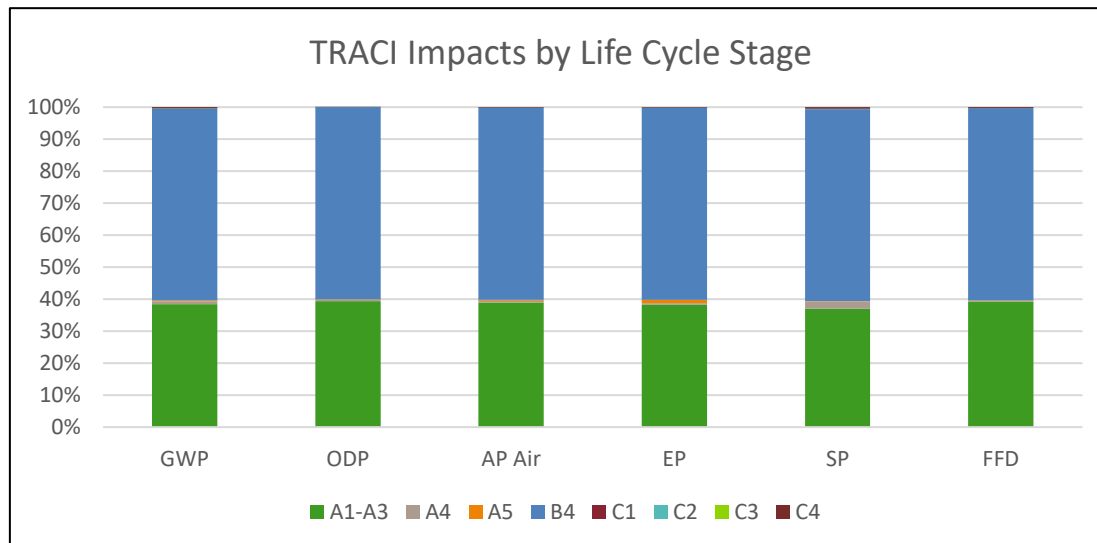
Results below contain direct greenhouse gas emissions and removals throughout the life cycle of the product.

Greenhouse Gas Emissions and Removals										
Parameter	Parameter	Unit	A1-A3	A4	A5	B4	C1	C2	C3	C4
BCRP	Biogenic Carbon Removal from Product	MJ, lower calorific value	7.22E-02	0.00E+00	0.00E+00	1.08E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BCEP	Biogenic Carbon Emissions from Product	MJ, lower calorific value	0.00E+00	0.00E+00	4.73E-03	1.08E-01	0.00E+00	0.00E+00	0.00E+00	6.75E-02
BCRK	Biogenic Carbon Removal from Packaging	MJ, lower calorific value	1.11E-01	0.00E+00	0.00E+00	1.67E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BCEK	Biogenic Carbon Emissions from Packaging	MJ, lower calorific value	0.00E+00	0.00E+00	1.11E-01	1.67E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BCEW	Biogenic Carbon Emissions from Combustion of Waste from Renewable Sources Used in Production Process	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CCE	Calcination Carbon Emissions	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CCR	Carbonation Carbon Removal	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CWNR	Carbon Emissions from Combustion of Waste from Non-renewable Sources Used in Production Process	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

\*All use phase stages have been considered and only those with non-zero values have been reported

### Interpretation

The production life cycle stage (A1-A3) dominates the impacts across all impact categories. This is due to the upstream production of laminating blanks used in the product, along with electricity use in the manufacturing of the product. Construction and installation of this product has a notable impact on global warming, acidification potential for air emissions, and eutrophication. With two replacements over the Buildings Estimated Service life, the replacement stage (B4) dominated the impacts.



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### Additional Environmental Information

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#### Environment and Health During Manufacturing

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CertainTeed has well-established Environmental, Health, and Safety (EHS) and product stewardship programs, which help to enforce proper evaluation and monitoring of chemicals that are chosen to manufacture products. Their programs ensure that all environmental and OSHA requirements are met or exceeded to ensure the health and safety of all employees and contractors.

#### Environmental and Health During Use

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Ceiling panels are stationary during typical use and do not emit harmful emissions.

#### Extraordinary Effects

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##### Fire

ASTM E84 - Flame spread of 25 or less, smoke development of 50 or less.

##### Water

The surface of the product can be cleaned with damp soft cloth or sponge, but it is still subject to water damage from sources including, but not limited to, condensation, leaking pipes and/or ducts, or steam must come in contact with the acoustic panels.

##### Mechanical Destruction

There are no adverse environmental effects anticipated from the mechanical destruction of the product.

#### Delayed Emissions

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Global warming potential is calculated using the TRACI 2.1 and CML 4.1 impact assessment methodologies. Delayed emissions are not considered.

#### Environmental Activities and Certifications

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CertainTeed Architectural is a leader in the effort to provide design solutions that promote sustainability, health, and safety at every step — from the product raw material content through manufacturing and the entire product life cycle. Meeting the rigorous and comprehensive standards for low emissions of VOCs, our ceilings contribute to the overall indoor air quality and general health of a building space. We incorporate some of the highest concentrations of recycled content in the industry into our product designs. And in our plants, we work continually to minimize waste and implement smarter logistics that reduce transportation needs. All of these efforts help our ceilings products contribute to LEED® points.

#### Further Information

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### References

- PCR Part A UL Environment: Product Category Rules for Building-Related Products and Services in North America, Part A: Life Cycle Assessment Calculation Rules and Report Requirements, v.3.2, December 2018.
- PCR Part B UL Environment: Product Category Rules Part B: Requirements on the Environmental Product Declaration for Builders Hardware: Non-Metal Ceiling and Interior Wall Panel, v.2.0, April 2021.
- ISO 14025 ISO 14025:2011-10, Environmental labels and declarations — Type III environmental declarations — Principles and procedures.
- ISO 14040 ISO 14044 Amd 1:2017/amd 2:2020 Environmental management — Life cycle assessment — Requirements and guidelines
- ISO 14044 ISO 14044:2006-10, Environmental management — Life cycle assessment — Requirements and guidelines.
- ISO 21930 ISO 21930:2017, Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products and services.
- EN 15804 EN 15804:2012-04: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction product.
- TRACI 2.1 US EPA, Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts (TRACI).
- CML 2001 CertainTeed Architectural Products, Acoustic Panel Life Cycle Assessment, Sustainable Solutions Corporation, October 2018
- Life Cycle Assessment CertainTeed Architectural Ceiling Panels Life Cycle Assessment, Sustainable Solutions Corporation, May 2022.





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## Contact Information

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### Study Commisioner

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### LCA Practitioner

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