

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH ISO 14025:2006 AND ISO 21930:2007

SmartEPD-2025-087-0610-01.1

Vycor® Ice & Water Shield® and Vycor® Ice & Water Shield® HT



Date of Issue:
Sep 30, 2025

Expiration:
Sep 30, 2030

Last updated:
Oct 31, 2025



General Information

CertainTeed Saint-Gobain

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Product Name:	Vycor® Ice & Water Shield® and Vycor® Ice & Water Shield® HT
Declared Unit:	1 m2
Declaration Number:	SmartEPD-2025-087-0610-01.1
Date of Issue:	September 30, 2025
Expiration:	September 30, 2030
Last updated:	October 31, 2025
EPD Scope:	Cradle to gate A1 - A3
Market(s) of Applicability:	North America

General Organization Information

CertainTeed Corporation, a subsidiary of Saint-Gobain, is a leading North American manufacturer of interior building materials including gypsum, ceilings, and insulation as well as exterior building materials which include roofing, vinyl siding, trim, and water protection.

Further information can be found at: <https://www.saint-gobain-northamerica.com/>

Limitations, Liability, and Ownership

This study was conducted following appropriate ISO standards and best practices and is intended for internal use to assist the company with understanding the life cycle impacts of their products, as well as having the results published in an EPD.

All data for the operation of the facility, as well as transportation distances and modes, was collected directly from the involved manufacturing site(s). Efforts were made to check the data for internal consistency and to verify data with plant personnel. Sub-metering of energy use for each critical stage in the manufacturing process would allow for more detailed analysis and is recommended.

The findings in this research are limited by the inherent uncertainty of creating a representative model through LCA. Many assumptions were made in the modeling of the product system with representative processes and datasets.

While quality control was undertaken at each step in building the LCI and conducting the LCIA, uncertainty is present in the results since the data represents only one year of manufacturing information from the manufacturing location(s). Detailed evaluation of more manufacturing plants and time periods would reduce the uncertainty. Some level of uncertainty is inherent in conducting LCA and decision making must reflect this fact

Reference Standards

Standard(s): ISO 14025:2006 and ISO 21930:2007

Core PCR:	NSF Product Category Rules for Water Resistive and Air Barriers Date of issue: September 01, 2017 Valid until: September 30, 2025
Sub-category PCR review panel:	 Contact Smart EPD for more information.
General Program Instructions:	 Smart EPD General Program Instructions v.2.0, March 2025

Verification Information

LCA Author/Creator:	 Saint-Gobain North American ESG Sustainability Group  sustainability@saint-gobain.com
EPD Program Operator:	 Smart EPD  info@smartepd.com  www.smartepd.com  585 Grove St., Ste. 145, Herndon, VA 20170, USA
Verification:	Independent critical review of the LCA and data, according to ISO 14044 and ISO 14071:  Arka Pandit  pandit_arka@outlook.com External Independent external verification of EPD, according to ISO 14025 and reference PCR(s):  Arka Pandit  pandit_arka@outlook.com External

Product Information

Declared Unit:	1 m2
Mass:	1.35 kg
Product Specificity:	 Product Average  Product Specific

Product Description

VYCOR premier, self-adhered roofing underlayments offer several benefits, including sealing around fasteners to prevent leaks due to water backup from ice dams or wind-driven rain. Superior adhesion to the roof deck ensures a firm bond while the proprietary slip-resistant embossed surface enhances traction and safety during installation. VYCOR underlayment membranes form watertight laps with ease, and safeguards under various standard sloped roof coverings. With a proven track record spanning over 45 years, VYCOR underlayments are a trusted name in the industry.

VYCOR ICE & WATER SHIELD the original, best-in-class underlayment

VYCOR ICE & WATER SHIELD HT meets the challenges inherent in metal roofs

Further information can be found at: <https://www.certainteed.com/products/residential-roofing-products/vycor-ice-water-shield>

Product Specifications

Product Classification Codes:	UNSPSC - 30141500
Product Density:	1.33 kg/L

Material Composition

Material/Component Category	Origin	% Mass
Printed Film	Undisclosed	5 - 16
Rubberized Asphalt	Undisclosed	74 - 85
Poly-Coated Release Paper	Undisclosed	6 - 16

Packaging Material	Origin	kg Mass
Pallet (Ice and Water Shield)	Undisclosed	3.31E-02
Shrink Wrap (Ice and Water Shield)	Undisclosed	4.83E-02
Corrugated Box (Ice and Water Shield)	Undisclosed	1.21E-01
Pallet (Ice and Water Shield HT)	Undisclosed	3.29E-02
Shrink Wrap (Ice and Water Shield HT)	Undisclosed	0.00E+00
Corrugated Box (Ice and Water Shield HT)	Undisclosed	1.16E-01

Biogenic Carbon Content	kg C per m2
Biogenic carbon content in product	0.0514
Biogenic carbon content in accompanying packaging	0.0743

Hazardous Materials
No substances required to be reported as hazardous are associated with the production of this product

EPD Data Specificity

Primary Data Year:	2024
Manufacturing Specificity:	✗ Industry Average ✓ Manufacturer Average ✗ Facility Specific

Averaging:

Vycor Ice & Water Shield & Vycor Ice & Water Shield: While the Global Warming Potential (GWP) results for both products fall within a 10% margin of the weighted average, not all environmental indicators meet this threshold. In accordance with PCR guidance, the Environmental Product Declaration (EPD) reflects the worse-case scenario between the two products to ensure conservative and transparent reporting.

System Boundary

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

Note:

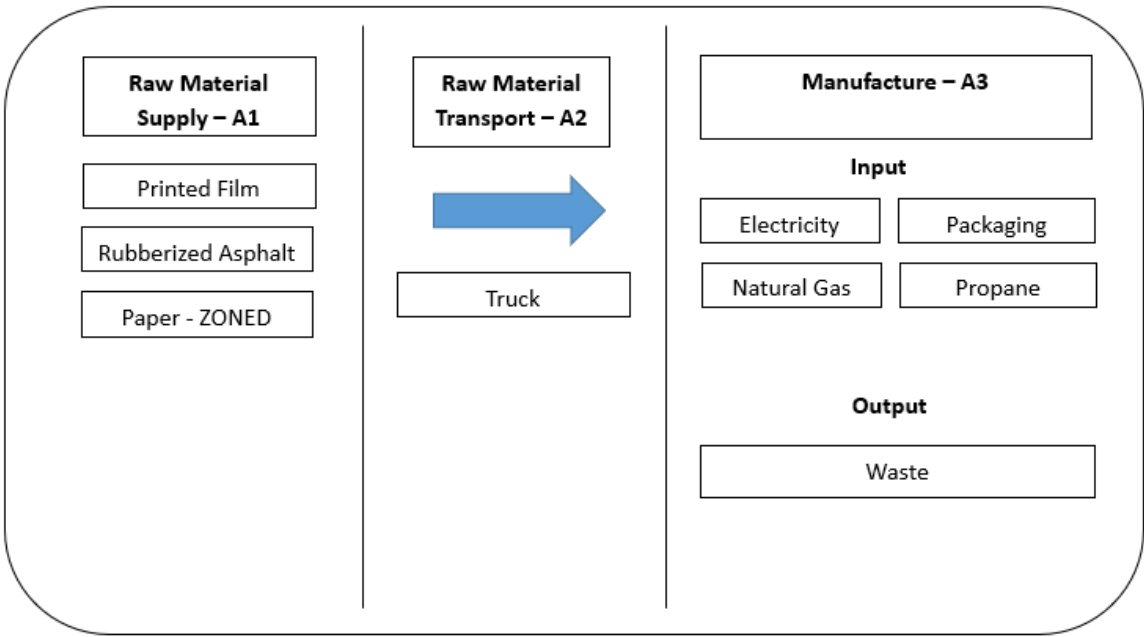
ND = Module not declared

Plants

 CertainTeed
 350 Magnolia Dr, Mt Pleasant, TN 38474, USA

 CertainTeed
 6051 W 65th St, Bedford Park, IL 60638, USA

Product Flow Diagram



Software and Database

- LCA Software:
 - Sphera LCA for Experts (formerly GaBi) v. 10.9
- LCI Foreground Database(s):
 - Ecoinvent v. 3.9.1
- LCI Background Database(s):
 - Sphera Managed LCA Content (formerly GaBi Professional Database) v. 2025.1

A foreground LCI database is the database used to model the primary, site-specific data collected for this EPD. A background LCI database is the database used to model generic or non-specific data.

Data Quality

Wherever secondary data is used, the study adopts critically reviewed data for consistency, precision, and reproducibility to limit uncertainty. Since the inventory flows for the utilized databases are very often accompanied by a series of data quality ratings, a general indication of precision can be inferred. Using these ratings, the data sets used generally have medium-to-high precision.

The Saint-Gobain North American ESG Department has collected specific data on energy and material inputs, wastes, water use, emissions, and transportation impacts for included manufacturing plant(s).

Life Cycle Module Descriptions

This LCA study is characterized as a cradle to gate study, examining the Vycor Ice & Water Shield and Vycor Ice & Water Shield HT, product lines from raw material extraction through to final packaging.

For this life cycle assessment, the Saint-Gobain North America (SGNA) ESG department, with assistance from personnel at the manufacturing locations, collected specific data on energy and material inputs, wastes, water usage, emissions, and transportation impacts for the GCP VYCOR products, in Mt Pleasant, TN and Bedford Park, IL for the calendar year 2024.

- **Raw Materials (Module A1)**

A thorough analysis of the material inputs was completed for the inventory of this study.

- **Transportation of raw materials (Module A2)**

Raw materials are transported to the manufacturing sites by standard freight truck. Unless otherwise noted, transport vehicles are fueled with diesel fuel. The Raw material transportation distance was modeled based on the actual data provided by experts from the plant.

- **Manufacturing (Module A3)**

This EPD includes the waterproofing underlayments manufactured by CertainTeed at two manufacturing locations - Bedford Park and Mount Pleasant. A detailed analysis of the manufacturing process was completed by the Saint-Gobain North American ESG Department. Energy, water, and materials go into the manufacturing process and waste and emissions are outputs from the manufacturing process. To make rubberized asphalt ice and water shield, asphalt is blended and mixed with other additives. Then the mixture, while liquefied, is applied to the paper. The (RA) rubberized asphalt is then cooled quickly, and a protective film is used. Lastly, the material is rolled up for packaging and placed into boxes for shipping.

- **Packaging (Module A3)**

Packaging of the final product after production is included in the life cycle assessment. The products are packaged in corrugated cardboard boxes. Then the products are packaged on a pallet. The weight of each packaging component was provided by GCP facility personnel.

LCA Discussion

Allocation Procedure

Allocation was conducted based on the production mass data provided by the facility as a percentage of the overall production mass. Since the plant does not have submetering, there is no way to determine exact consumption for specific product lines. Mass allocation is the most accurate and representative way to allocate energy and water usage data. No waste flows during production have been allocated as co-products. Emissions associated with land use change were not included in the LCA due to the negligible impacts. Allocation was conducted based on the production mass data provided by the facility.

Cut-off Procedure

All inputs and outputs to a process shall be included in the calculation of results, for which data are available. Any data gaps are filled by conservative assumptions with average, generic, or proxy data.

For hazardous substances, as defined by the U.S. Resource Conservation and Recovery Act (RCRA), 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 LCA is in compliance with the cut-off criteria since no known processes were neglected or excluded from this analysis outside of the specific items outside the system boundary.

Renewable Electricity

Energy Attribute Certificates (EACs) such as Renewable Energy Certificates (RECs) or Power Purchase Agreements (PPAs) are included in the baseline reported results:

✗ No

Results

Environmental Impact Assessment Results

IPCC AR5 GWP 100, TRACI 2.1, CML 2016 v4.8

per 1 m2 of product .

LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.

Impact Category	Method	Unit	A1A2A3
GWP-total	IPCC AR5 GWP 100	kg CO2 eq	2.50e+0
GWP-fossil	IPCC AR5 GWP 100	kg CO2 eq	2.89e+0
ODP	TRACI 2.1	kg CFC 11 eq	1.17e-8
AP	TRACI 2.1	kg SO2 eq	1.10e-2
EP	TRACI 2.1	kg N eq	3.64e-3
POCP	TRACI 2.1	kg O3 eq	1.79e-1
ADP-fossil	CML 2016 v4.8	MJ	9.30e+1

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

GWP = Global Warming Potential, 100 years (may also be denoted as GWP-total, GWP-fossil (fossil fuels), GWP-biogenic (biogenic sources), GWP-luluc (land use and land use change)), ODP = Ozone Depletion Potential, AP = Acidification Potential, EP = Eutrophication Potential, SFP = Smog Formation Potential, POCP = Photochemical oxidant creation potential, ADP-Fossil = Abiotic depletion potential for fossil resources, ADP-Minerals&Metals = Abiotic depletion potential for non-fossil resources, WDP = Water deprivation potential, PM = Particular Matter Emissions, IRP = Ionizing radiation, human health, ETP-fw = Eco-toxicity (freshwater), HTP-c = Human toxicity (cancer), HTP-nc = Human toxicity (non-cancer), SQP = Soil quality index.

Global Warming Potential or Climate Change is an indicator aimed at including in a single value the added effect of all the substances contributing to the greenhouse effect.

Global Warming Potential (GWP-Total) includes biogenic carbon, fossil carbon, land use and land use change. To calculate GWP-Total within the above table, the equation below is used:

$$\text{GWP-total} = \text{GWP-biogenic} + \text{GWP-fossil} + \text{GWP-luluc}$$

- *GWP-total* or *GWPtotal (including biogenic)* is the sum of GWP-biogenic, GWP-fossil and GWP-luluc
- *GWP-biogenic* only includes biogenic carbon which is carbon that is stored in bio-sourced materials, like plants, trees, and soil. This excludes fossil.
- *GWP-fossil* or *GWPtotal (excluding biogenic)* only includes fossil carbon which is the carbon dioxide emitted when fossil fuels like coal, oil, or natural gas are combusted. This excludes biogenic.
- *GWP-luluc* only includes the greenhouse gas emissions that arise in connection with changes in the specified carbon stock as a result of land use and land use change, such as deforestation.

Depending on the required or optional standards, GWP can be reported with different methods and indicators including United States Environmental Tool for Reduction and Assessment of Chemicals and Other Environmental Impacts (TRACI 2.1, etc.), Intergovernmental Panel on Climate Change (IPCC) Assessment Report (AR 5, AR 6, etc.), Environmental Footprint (EF 3.0, 3.1), and/or EN 15804.

GWP can be reported on a time frame such as GWP 100 for 100-year time horizon.

Comparisons cannot be made between product-specific or industry average EPDs at the design stage of a project, before a building has been specified. Comparisons may be made between product-specific or industry average EPDs at the time of product purchase when product 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 comparison can be inaccurate, and could lead to erroneous selection of materials or products which are higher-impact, at least in some impact categories.

Resource Use Indicators

per 1 m2 of product .

Indicator	Unit	A1A2A3
PERE	MJ	0
PERM	MJ	0
PERT	MJ	0
PENRE	MJ	0
PENRM	MJ	0
PENRT	MJ	0
RPRE	MJ	0
RPRM	MJ	0
RPRT	MJ	0
NRPRE	MJ	6.64e+1
NRPRM	MJ	2.68e+1
NRPRT	MJ	9.32e+1
SM	kg	0
RSF	MJ	0
NRSF	MJ	0
FW	m3	1.10e-2
RE	MJ	0

Note:
Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:
RPRE or PERE = Renewable primary resources used as energy carrier (fuel), RPRM or PERM = Renewable primary resources with energy content used as material, RPRT or PERT = Total use of renewable primary resources with energy content, NRPRE or PENRE = Non-renewable primary resources used as an energy carrier (fuel), NRPRM or PENRM = Non-renewable primary resources with energy content used as material, NRPRT or PENRT = Total non-renewable primary resources with energy content, SM = Secondary materials, RSF = Renewable secondary fuels, NRSF = Non-renewable secondary fuels, RE = Recovered energy, ADPF = Abiotic depletion potential, FW = Use of net freshwater resources, VOCs = Volatile Organic Compounds.

Waste and Output Flow Indicators

per 1 m2 of product .

Indicator	Unit	A1A2A3
HWD	kg	1.27e-4
NHWD	kg	1.27e-1
HLRW	kg	7.35e-7
ILLRW	kg	6.39e-4
CRU	kg	0
MFR	kg	0
MER	kg	0
MNER	kg	0
EEE	MJ	0

Note:
Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:
HWD = Hazardous waste disposed, NHWD = Non-hazardous waste disposed, RWD = Radioactive waste disposed, HLRW = High-level radioactive waste, ILLRW = Intermediate- and low-level radioactive waste, CRU = Components for re-use, MFR or MR = Materials for recycling, MER = Materials for energy recovery, MNER = Materials for incineration, no energy recovery, EE or EEE = Recovered energy exported from the product system, EET = Exported thermal energy.

Interpretation

Based on the results from the life cycle assessment, the life cycle impacts are strongly driven by the raw material stage. For all products, the rubberized asphalt had the highest impact within the raw material stage, this is strongly driven by the SBS and asphalt binder that is included in the rubberized asphalt composition. If possible, incorporating more recycled content into the product will help reduce the environmental impacts of the raw materials stage in the life cycle of the product. As recycled content increases, the raw materials driving impacts will decrease, thus improving the overall environmental impacts. It is important to work with R&D to see where action can be taken to reduce the environmental impact of the product, while maintaining integrity. The printed film, composed of polyethylene high density film, is the second highest contributor to the raw material impacts. Increasing recycled content as mentioned above, will help decrease the usage of these larger contributors to the impacts.

References

ASTM International. (2024). Product Category Rules for Preparing an Environmental Product Declaration for Water-Resistive and Air Barriers (Extended version, valid through September 30, 2025). NSF International. <https://www.astm.org>

ISO 14040: 2006 Series Environmental Management-Life Cycle Assessment

ISO 21930:2017 Sustainability in building construction Environmental declaration of building products

Sphera Managed LCA Content Databases. <https://lcadatabase.sphera.com/>

US LCI Database. <https://www.nrel.gov/lci/>

Ecoinvent Database. <http://ecoinvent.org/>

<https://www.certainteed.com/>

American Association of Textile Chemists and Colorists (AATCC) Standards:

TM 127-14 Water Resistance: Hydrostatic Pressure Test

ASTM International Standards:

E96/E96M Standard Test Methods for Water Vapor Transmission of Materials

E2178 Standard Test Method for Air Permeance of Building Materials

E2556 Standard Specification for Vapor Permeable Flexible Sheet Water-Resistive Barriers Intended for Mechanical Attachment

ICC Evaluation Service Acceptance Criteria6

AC212 Acceptance Criteria for Water-resistive Coatings Used as Water-resistive Barriers Over Exterior Sheathing

AC38 Acceptance Criteria for Water-resistive Barriers

ISO Standards:

ISO 6707-1: 2014 Buildings and Civil Engineering WorksVocabularyPart 1: General Terms

ISO 14021:1999 Environmental Labels and DeclarationsSelf-declared Environmental Claims (Type II Environmental Labeling)

ISO 14025:2006 Environmental Labels and DeclarationsType III Environmental DeclarationsPrinciples and Procedures

ISO 14040:2006 Environmental ManagementLife Cycle AssessmentPrinciples and Framework

ISO 14044:2006 Environmental ManagementLife Cycle AssessmentRequirements and Guidelines

ISO 14050:2009 Environmental ManagementVocabulary

ISO 15686-1:2011 Buildings and Constructed AssetsService life planningPart 1: General Principles and Framework

ISO 21930:2007 Sustainability in Building ConstructionEnvironmental Declaration of Building Products

Other References:

BS EN 15804 Sustainability of construction worksEnvironmental product declarationsCore rules for the product category of construction products