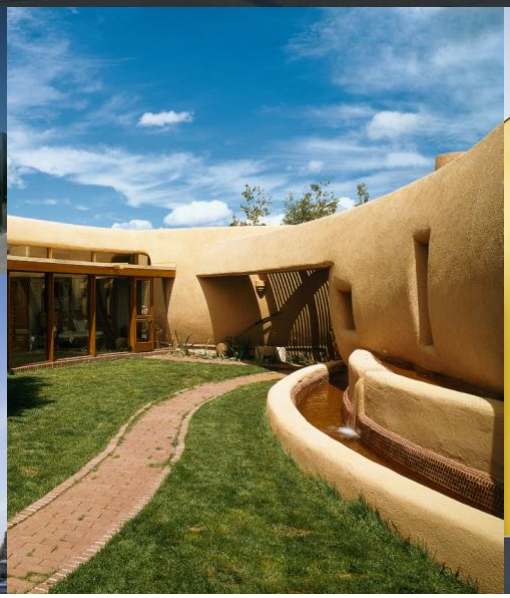
Building with conscience.

EPD for StoVentec Glass Panel

StoVentec Glass Panel is an opaque, glass-faced, pre-fabricated composite panel. As the cladding component of StoVentec Glass open joint, drained, back-ventilated rainscreen wall system, it combines high aesthetic appeal with high end performance.



ASTM INTERNATIONAL

EPD program operator	ASTM International 100 Barr Harbor Drive P.O. Box C700 West Conshohocken, PA 19428-2959, USA https://www.astm.org/
Manufacturer name	Sto Corp. 3800 Camp Creek Parkway SW, Building 1400, Suite 120 Atlanta, GA 30331 www.stocorp.com | (800) 221-2397
Site(s) in which the results of the LCA are representative	Lauingen, Germany, and external suppliers in Europe
Declaration Number	EPD 1092
Declared Product & Declared Unit	StoVentec Glass Panel One square meter (m^2) of manufactured product
PCR Identification	UL Part A: Life cycle Assessment Calculation Rules and Reporting Requirements v4.0 UL Part B: Cladding Product Systems EPD Requirements, UL 10010-25, v2.0
Product's intended application and use	For protection of facades and interior walls/ceilings
Markets of applicability	North America
Date of certification	December 9, 2025
Period of validity	5 years from date of certification
EPD type	Product-specific
EPD scope	Cradle to gate with options (A1-A3, C1-C4)
Year of reported primary data	Calendar year 2023
LCA software and version Number	LCA for Experts (formerly GaBi) 10.9
LCI database and version Number	MLC (formerly GaBi) Database Version 2024.2
LCIA methodology and version number	IPCC AR5, TRACI 2.1 and CML-2016
The sub-category PCR review was conducted by	Jim Mellentine Christopher White, Ph.D Philip S. Moser, P.E. (MA)
This declaration was independently verified in accordance with ISO 21930:2017, ISO 14025: 2006 and reference PCRs: ☐ Internal ☒ External	Timothy S Brooke ASTM International 100 Barr Harbor Drive West Conshohocken, PA 19428 tbrooke@astm.org
This life cycle assessment was independently verified in accordance with ISO 21930:2017, ISO 14044 and reference PCRs by:	Thomas P. Gloria, Ph. D. Industrial Ecology Consultants 35 Bracebridge Rd. Newton, MA 02459-1728 t.gloria@industrial-ecology.com

Limitations

Environmental product declarations from different EPD programs (ISO 14025) may not be comparable.
Comparison of the environmental performance of Cladding Product Systems 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.
Full conformance with the PCR for Cladding Product allows EPD comparability only when all stages of a life cycle have been considered, when they comply with all referenced standards, use the same sub-category Part B PCR, and use equivalent scenarios with respect to construction works. However, variations and deviations are possible. Example of variations: Different LCA software and background LCI datasets may lead to different results for upstream or downstream of the life cycle stages declared.

Building with conscience.

Company

We believe in '**Building with conscience**'.

That means ensuring that all building products are not only safe, effective and easy to install, but also environmentally responsible and sustainable. We know you're always looking for the smartest and newest technology to create energy efficient buildings with superior aesthetics.

That's exactly what our products help you achieve. Products like our wall systems, coatings and finishes are consistent favorites among design professionals, contractors and property owners alike. Whatever your needs or vision may be, we offer products for every type of building project; whether it's new construction, restoration or panelization, commercial or residential work.

An architect or specifier focuses on aesthetics and feasibility, a contractor needs products that are easy to work with, and a building owner requires high value and low costs on properties. Sto understands these unique needs, and delivers the smart, innovative materials and solutions that make this all possible. That's why Sto remains the innovative leader in integrated exterior wall systems.

When you combine that commitment to product support and innovation with value-added offerings like consultative design and color services through Sto Studio or training in proper application techniques through the Sto Institute, you get an integrated exterior wall system solution unmatched in the industry.

Manufacturing Site Covered in this EPD

Lauingen, Germany

External suppliers in Europe

Product Identification

StoVentec Glass Panel is offered in various sizes, from 100mm x 100mm to 1500mm x 2800mm, and in two glass thickness options, 6mm and 8mm. The study considers the size of 1500mm x 2800mm with 6mm glass.

The product declared in this EPD is product number 87079-007.

Product Description

StoVentec Glass Panel is an opaque, glass-faced, pre-fabricated composite panel. As the cladding component of StoVentec Glass open joint, drained, back-ventilated rainscreen wall system, it combines high aesthetic appeal with high end performance.

This product falls under CSI division 07 44 00 and UNSPSC code 30151800.

Performance Features

Multiple Panel Size Options	Multiple Color Options	No Visible Panel Attachment	Glass Bonded to Board	Tempered Security Glass
Color Fused on Back	Prefabricated Composite Panels	Built-in Mounting Rails	Easy to Clean	

Technical Details

Table 1: Technical Data for Product

Performance	Test Method	Result	Unit
Tensile Strength	n/a	Not tested	MPa
Modulus of Elasticity	n/a	Not tested	MPa
Water Vapor Permeance	n/a	Not tested	metric perms
Liquid Water Absorption	n/a	Not tested	% of dry weight
Airborne Sound Reduction	n/a	Not tested	dB
Sound Absorption Coefficient	n/a	Not tested	%

Because this product can serve several functions and is an individual component intended for use in Sto's wall systems, not all technical properties specified by the PCR for individual components apply. The technical properties and product performance criteria depend on the combination of products in the wall system. As such, the following table declares the product performance when used in Sto wall systems.

Table 2: Technical Data for Product as a Component of Sto Wall Systems

Meets Requirements of	Evaluation Criteria:	Evaluation Report Reference
2018, 2021 IBC, IRC	ASTM E283, E330, E331, NFPA 285, TAS 202, 203, BS 6206, BS EN 12600	StoVentec™ Glass Rainscreen® System | DrJ Certification

Material Composition

The material compositions of the product are listed below:

Table 3: Material composition for Product

Ingredient*	Mass %
Laminated Glass	59.2%
StoCarrier Board Hydro	38.6%
Silicone Adhesive	1.3%
Aluminum Profile	0.9%

* The product does not contain hazardous substances per the EPA's Resource Conservation and Recovery Act.

Properties of Declared Product as Delivered

Table 4: Properties of declared product

Parameter	Value
Sizes	Size varies. Please refer to product bulletin.
Packaging	The products are packaged in crates on pallets with foam cushioning between and surrounding panels. Packaging configuration varies with the size and the quantity.
Storage	Store on pallets in original shipping crate in a dry location until ready for installation
Product Bulletin and Product Test Results can be found at Sto's website.	

Components related to Life Cycle Assessment

The declared unit for the LCA study was 1 square meter (m^2) of manufactured product. The reference flow required for one declared unit is provided in Table 5.

Table 5: Declared Unit Details

Parameter	Value	Unit
Declared unit	1 m^2 of manufactured cladding products	
Mass	25.3	kg
Thickness to achieve declared unit	21.0 (excluding rail)	mm
Density	N/A	kg/m^3
Length	2.80	m
Width	1.50	m

Scope and Boundaries of the Life Cycle Assessment

The LCA was performed in accordance with ISO 14040 standards. The study is a cradle-to-gate with options LCA and includes the stages A1-A3, C1-C4 as prescribed in the referenced PCRs.

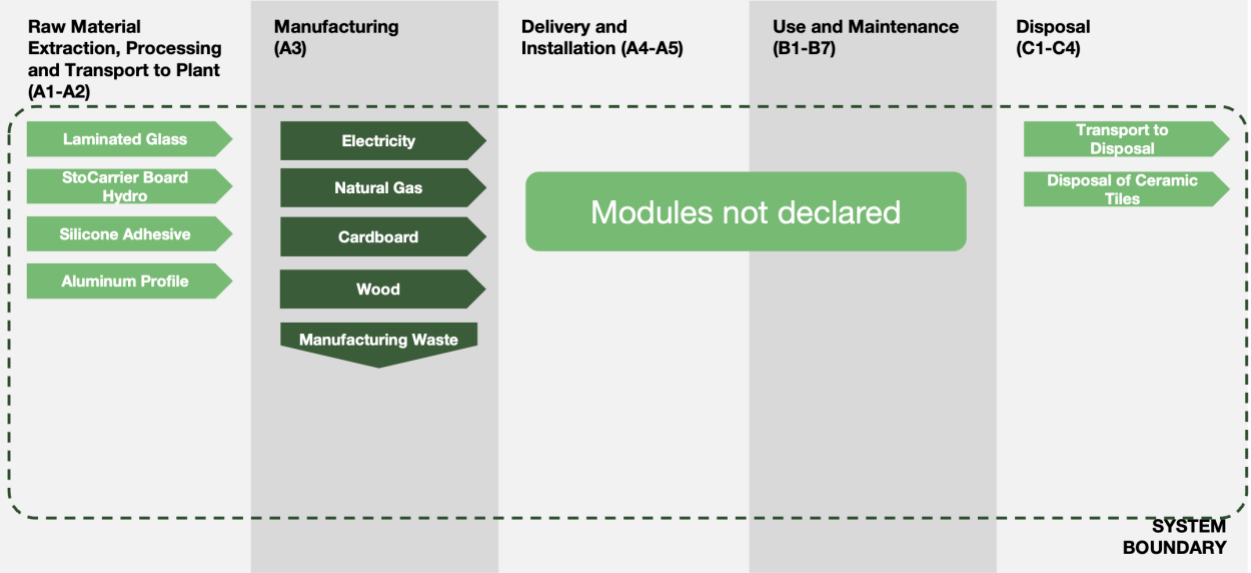


Figure 1: System boundary diagram of the Product

Cut-off Criteria

The utility inputs for the process of adhesive application and metal rail attachment to the panel substrate are excluded. 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.

Data Quality

The overall data quality level was determined to be good. Primary data was collected from the facility producing the StoCarrier Board Hydro component for the 2023 reference year. When primary data did not exist, secondary data were obtained from the MLC Database Service. Overall, both primary and secondary data are considered good quality in terms of geographic, temporal and technological coverage.

Estimates and Assumption

Assumptions were made to represent the cradle-to-grave environmental performance of Sto's products. These assumptions were made in accordance with the referenced PCRs and include the transportation distances, the disposal of packaging material and the product at its end of life and use phase assumptions.

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.

Product Stage (A1-A3)

The product is collaboratively produced in the facility in Lauingen, Germany and the facility Sarajevo, Bosnia & Herzegovina. This stage includes an aggregation of raw material extraction, supplier processing, delivery, manufacturing and packaging by Sto. The product is supplied in crates on pallets with foam cushioning between and surrounding panels.

End-of-Life Stage (C1-C4)

In this stage, the disposal of product waste at its end of life is included. Excavators, cranes, and other heavy machinery may be used for demolishing large sections of cladding or walls. In the study, it is assumed to the products are manually demolished. The disposal pathway the waste stream is modeled per the referenced PCRs.

Table 6: End-of-life Scenario Details

Parameter	Value
Collected as mixed construction waste [kg]	2.53E+01
Waste to Landfill [kg]	2.50E+01
Distance to Landfill [km]	32
Waste to Recycling [kg]	2.19E-01
Distance to Recycling [km]	32

Life Cycle Assessment Results

As prescribed by the referenced PCRs, TRACI 2.1 impact characterization methodology and IPCC 5th assessment report are adopted to calculate the environment impacts. Table 7 provides the acronym key of the impact indicators declared in this EPD.

Table 7: LCIA Impact Category and LCI Indicator Key

Abbreviation	Parameter	Unit
	IPCC AR5	
GWPexcl	Global warming potential (100 years, excludes biogenic CO_2)	kg CO_2 eq
GWPincl	Global warming potential (100 years, includes biogenic CO_2)	kg CO_2 eq
	TRACI 2.1	
AP	Acidification potential of soil and water	kg SO_2 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
	CML 2001-Jan 2016	
ADP_F	Abiotic depletion potential for fossil resources	MJ, net calorific value
	Carbon Emissions and Uptake	
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
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
	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
$NRPR_E$	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
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	
HWD	Disposed-of-hazardous waste	kg
NHWD	Disposed-of non-hazardous waste	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

» StoVentec Glass Panel

The LCIA results presented below are per declared unit: 1 m^2 of manufactured product.

Impact Category	A1-A3	C1	C2	C3	C4
IPCC AR5					
GWPexcl [kg CO_2 eq]	7.38E+01	0.00E+00	2.08E-03	0.00E+00	5.55E-01
GWPincl [kg CO_2 eq]	5.86E+01	0.00E+00	2.08E-03	0.00E+00	5.52E-01
TRACI LCIA Impacts (North America)					
AP [kg SO_2 eq]	3.88E-01	0.00E+00	5.84E-06	0.00E+00	2.80E-03
EP [kg N eq]	3.04E-02	0.00E+00	6.11E-07	0.00E+00	1.21E-04
ODP [kg CFC 11 eq]	6.69E-09	0.00E+00	6.07E-18	0.00E+00	2.59E-14
SFP [kg O_3 eq]	6.62E+00	0.00E+00	1.32E-04	0.00E+00	5.01E-02
CML 2001-Jan 2016					
ADP_F [MJ]	1.01E+03	0.00E+00	2.70E-02	0.00E+00	7.96E+00
Carbon Emissions and Uptake					
BCRP [kg CO_2]	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
BCRK [kg CO_2]	1.08E+01	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
BCEW [kg CO_2]	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
CCR [kg CO_2]	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

The LCI results presented below are per declared unit: 1 m^2 of manufactured product.

Impact Category	A1-A3	C1	C2	C3	C4
Resource Use Indicators					
RPR_E [MJ]	3.00E+02	0.00E+00	1.20E-03	0.00E+00	1.02E+00
RPR_M [MJ]	7.12E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
$NRPR_E$ [MJ]	1.08E+03	0.00E+00	2.72E-02	0.00E+00	8.20E+00
$NRPR_M$ [MJ]	1.94E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SM [kg]	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
NRSF [MJ]	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
FW [m^3]	2.85E-01	0.00E+00	4.00E-06	0.00E+00	1.06E-03
Output Flows and Waste Categories					
HWD [kg]	1.82E-01	0.00E+00	3.67E-12	0.00E+00	2.03E-09
NHWD [kg]	4.85E+00	0.00E+00	2.71E-06	0.00E+00	2.51E+01
HLRW [kg]	3.66E-05	0.00E+00	9.72E-11	0.00E+00	9.75E-08
ILLRW [kg]	2.92E-02	0.00E+00	8.19E-08	0.00E+00	8.71E-05
CRU [kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MR [kg]	0.00E+00	0.00E+00	0.00E+00	3.74E-01	0.00E+00
MER [kg]	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
EET [MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Interpretation

For the product in study, the majority of the environmental impacts come from the Product Stage (A1-A3) which includes the impacts derived from the raw materials, raw material transportation, and manufacturing of the product. For GWP, the main driver is the laminated glass.

Reference

- ASTM, General Program Instructions, v8.0, April 29, 2020.
- IPCC. (2013). Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press.
- ISO. (2006). ISO 14025: Environmental labels and declarations - Type III environmental declarations - Principles and procedures. Geneva: International Organization for Standardization.
- ISO. (2006). ISO 14040/Amd 1:2020: Environmental management - Life cycle assessment - Principles and framework. Geneva: International Organization for Standardization.
- ISO. (2006). ISO 14044/Amd 1:2017/Amd 2:2020: Environmental Management - Life cycle assessment - Requirements and Guidelines. Geneva: International Organization for Standardization.
- ISO. (2017). ISO 21930: Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products and services. Geneva: International Organization for Standardization.
- UL Environment. (2021). Product Category Rules for Building-Related Products and Services Part B: Cladding Product Systems EPD Requirements, UL 10010–25. UL Environment.
- UL Environment. (2022). Part A: Life Cycle Assessment Calculation Rules and Report Requirements, UL 10010, V4.0.
- US EPA. (2012). TRACI: The Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts. Version 2.1 - User Guide. Retrieved from https://nepis.epa.gov/Adobe/PDF/P100HN53.pdf
- WAP Sustainability (August 2025).Life Cycle Assessment report for Sto Corp StoVentec Rainscreen System Components.