SEKURIT

GLAZING IN MOTION

ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025 EN

LAMINATED COATED WINDSHIELD 2.1/1.6 MM MANUFACTURED IN FRANCE FOR THE AUTOMOTIVE MARKET

From: Saint-Gobain Sekurit France
Programme: The international EPD System, www.environdec.com
Programme operator: EPD International AB
Date of issue: 2024-03-04
Validity: 5 years
Valid until: 2029-03-03
Version 1
Scope of the EPD®: Global

Registration number: The international EPD® System: S-P-11159

EPD VERIFIED

The environmental impacts of this product have been assessed over its whole life cycle. Its Environmental Product Declaration has been verified by an independent third party.

EPD®

THE INTERNATIONAL EPD® SYSTEM

General Information

Program Operator and EPD Information

EPD® program operator	The International EPD® System EPD International AB Box 210 60 SE-100 31 Stockholm Sweden www.environdec.com info@environdec.com
Product category rules (PCR)	PCR 2023:04 Glass Products Used in Automotive and Transport Industry, V1.0
PCR review was conducted by	The Technical Committee of the International EPD® System. A full list of members is available at www.environdec.com. The review panel may be contacted via info@environdec.com.
EPD® prepared by	Ludovic Pavani – Saint-Gobain Sekurit France (ludovic.pavani@saint-gobain.com)
EPD registration number	S-P-11159
Declaration issued	2024-03-04, valid until: 2029-03-03
Difference versus the previous version of the EPD	This is the first version of the EPD.
Independent verification of the declaration, according to EN ISO 14025:2006	Internal ☐ External ☒
Third party verifier	Marcel Gómez, third-party verifier approved by The International EPD® System info@marcelgomez.com
Procedure for follow-up of data during EPD validity involves third party verifier:	Yes ☒ No ☐

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but from different programmes may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison.

Company and Product Description

Company Information

Owner of the EPD	Saint-Gobain Sekurit France
Description of the organization	Saint-Gobain Sekurit designs and manufactures innovative high-performance glazing systems for Original Equipment Manufacturers (OEMs) worldwide. As a trusted automotive partner, Saint-Gobain Sekurit makes every drive a great experience while providing safety for all and preserving our future. As part of the Saint-Gobain Group, we believe in progress and seek to be a game-changer that improves individual and collective mobility. Our commitment to reach this ambitious objective is guided by our shared purpose “MAKING THE WORLD A BETTER HOME”.
Name and location of production site	Saint-Gobain Sekurit France (Chantereine Plant) 1 Rue du Marechal Joffre 60150 Thourotte France
Plant certification	ISO 9001 (N°2004/22927.5) ISO 14001 (N°2004/22944.6) ISO 45001 (N°2009/34811.5) ISO 50001 (FR22/00000086) IATF 16949 (N°IATF0413043)
Contact	Ludovic Pavani (ludovic.pavani@saint-gobain.com)

Product Description and Use

This Environmental Product Declaration (EPD®) describes the environmental impacts of 1 kg of Laminated Coated Windshield and its packaging manufactured in France and to be used in the automotive market.

It is composed of one coated Saint-Gobain Glass PLANICLEAR® and one Saint-Gobain Glass PLANICLEAR® glass sheets. The two sheets are bonded together using a sheet of standard PVB (Polyvinyl Butyral).

Coated PLANICLEAR® is a basic soda-lime silicate glass produced using the float procedure, on which a magnetron coating has been applied.

PLANICLEAR® is a basic soda-lime silicate glass produced using the float procedure.

COOLCOAT® is a coating applied on glass using magnetron technology. It is the one used in this EPD. This coating is here to improve thermal comfort inside the car.

The UN CPC code of the product is 371.

Main Characteristics of the Product

Light transmission A/2° DIN 5033 (TL)	> 72%
Impact resistance	According ECE R43 Homologation
Safety regulation	According ECE R43 Homologation

Content Declaration

Product Composition

Glass position	Laminated Coated Windshield
Glass 1 color	Coated PLANICLEAR®
Glass 1 thickness	1.6 mm
Glass 1 weight	396 g
Glass 1 manufacturing	Germany
Glass 2 color	PLANICLEAR®
Glass 2 thickness	2.1 mm
Glass weight 2	520 g
Glass 2 manufacturing	Germany
Automotive glazing manufacturing	France
PVB thickness	0.76 mm
PVB weight	80.2 g
Black enamel weight	1.67 g
Mirror-bracket weight	2.11 g

Table 1: Product Main Composition for 1kg of Laminated Coated Windshield for Automotive Market

There is no “Substance of Very High Concern” (SVHC) in concentration above 0.1% by weight, and neither do their packaging, following the European REACH regulation (Registration, Evaluation, Authorization and Restriction of Chemicals).

Packaging

To deliver the Laminated Coated Windshield, some packaging elements are used with purpose of transport and handling:

- Reusable metallic rack: we took the hypothesis of 200000 Laminated Coated Windshields delivered per year for 7 years. The rack will be used a minimum of 362 times.
- Plastic bag
- Metal straps

LCA Calculation Information

Declared unit	1 kg of Laminated Coated Windshield composed of 2.1mm PLANICLEAR® glass combined with 1.6 mm thickness coated PLANICLEAR® glass and 0.76 mm thickness PVB, and its packaging to be used in automotive market. The weight of the packaging is not included in this 1 kg of final product.
Reference service life (RSL)	Not relevant
Time representativeness	Plant data: 2022 Electricity mix: 2022
Inventory geographical coverage	France
EPD Scope	Global
Database (s) and LCA software used	GaBi 2023.1 databases and Ecoinvent 3.8 GaBi software version 10.7.0.183
Calculation methods	Potential environmental impacts are calculated following EN 15804:2012 +A2:2019
Data quality	Data quality assessment made based on the General Program Instructions (GPI 4.0). Mix of primary and secondary data is used. Data quality assessment is fair.
Allocation rules	Physical allocation based on mass has been used. The polluter pays and modularity principle have been followed.
Cut-off rules	A cut-off rule of 1% is applied. It means that 99% of the mass of the product content and 99% of the energy use of the product life cycle are accounted for.
System boundaries	Cradle-to-gate with options (A1-A3, C1-C4 and D)
Excluded lifecycles stages	Life stages A4, A5, and B are excluded

The flat glass conversion factor is 2,5 kg/m2 per mm and the PVB conversion factor is 1.1 kg/m2 per mm. To convert from kg to m², the following formula can be used:

$$m^2 = \frac{weight}{(density_1 \times thickness_1) + (density_2 \times thickness_2) + (density_x \times thickness_x)}$$

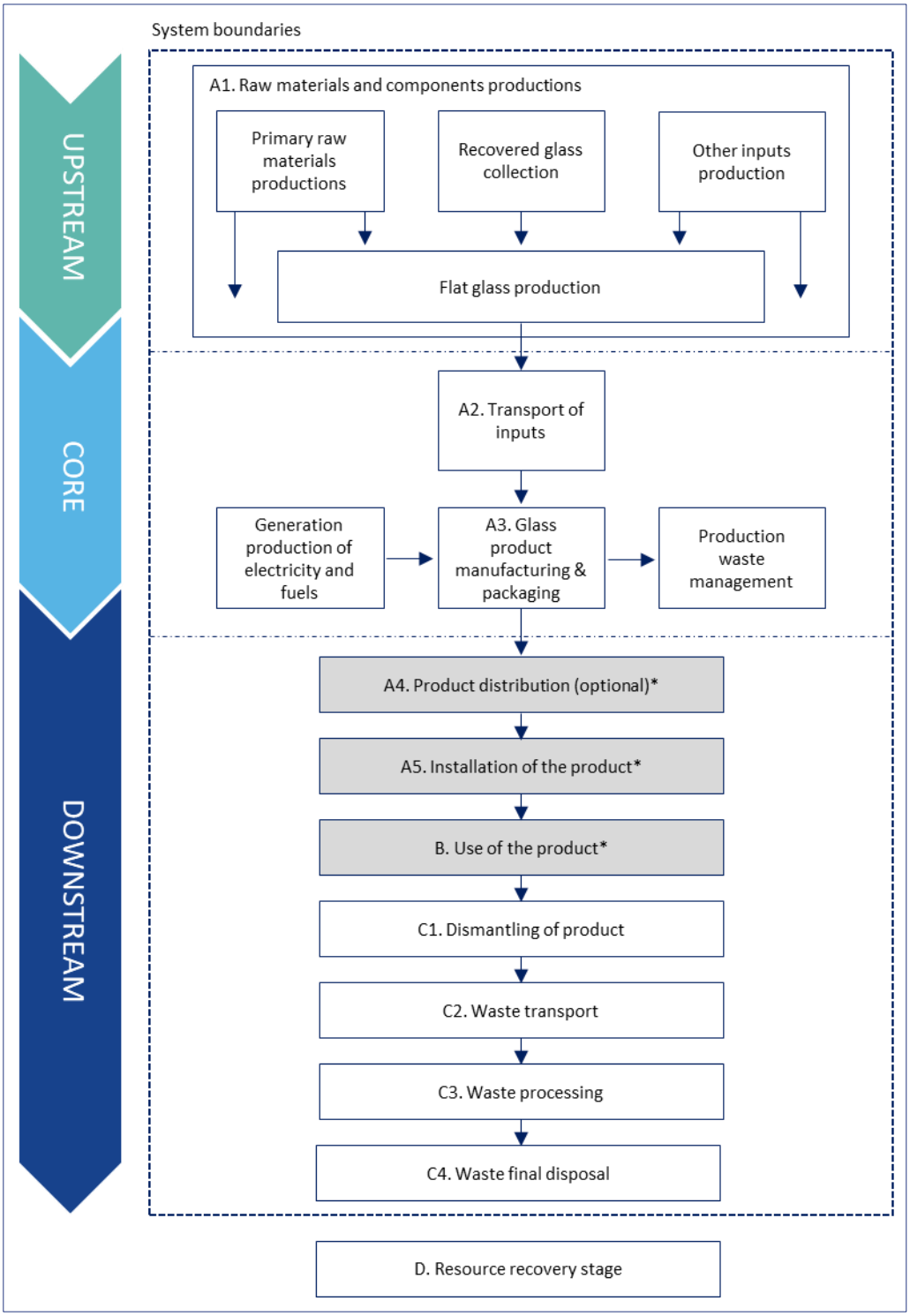

Figure 1: System Boundaries

**Processes excluded from the system boundaries*

Life Cycle Stages

Flow Diagram of the Life Cycle

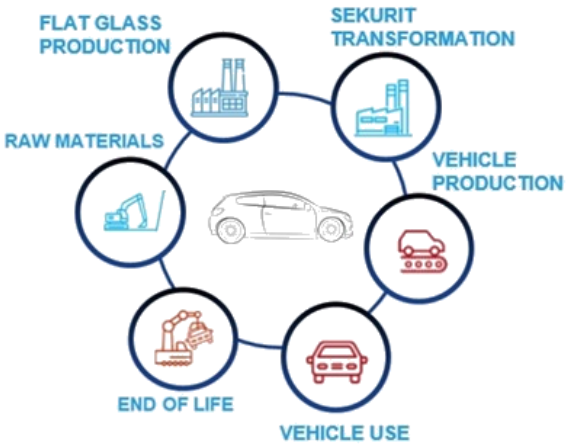

Figure 2: Life Cycle of Automotive Glazing

Product Stage, A1

Description of the stage: For Saint-Gobain Sekurit A1 represents the production of glass in the float.
This product stage includes the extraction and processing of raw materials and energies, transport to the manufacturer, manufacturing and processing of flat glass.

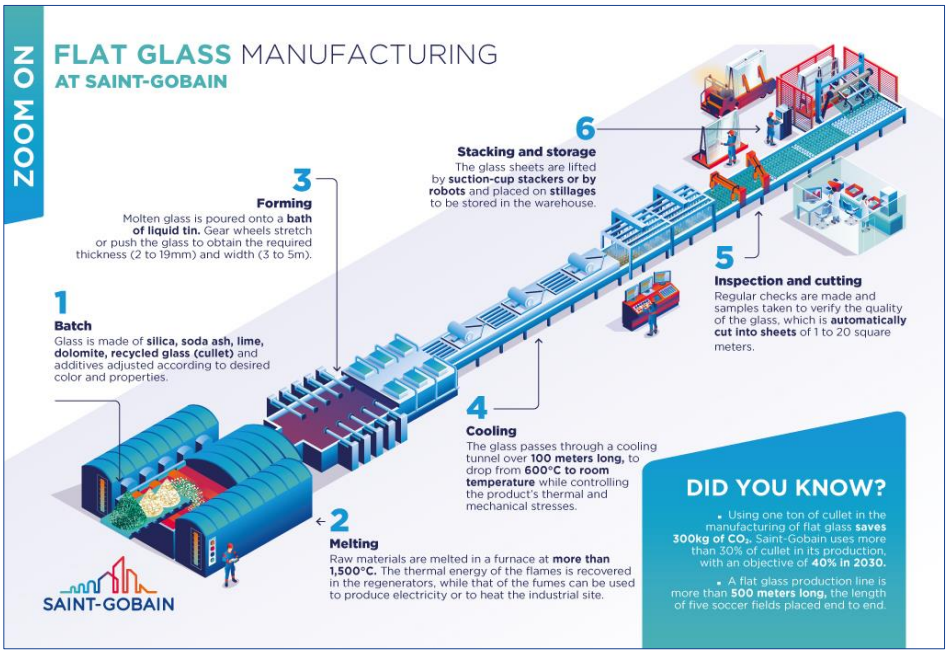

Figure 3: Manufacturing Process of Flat Glass ©Saint-Gobain

This stage also includes the application of a magnetron coating on the glass. It consists in the combination of thin multiple metal oxide layers that are applied on the glass with a magnetically enhanced cathodic sputtering process under vacuum conditions.

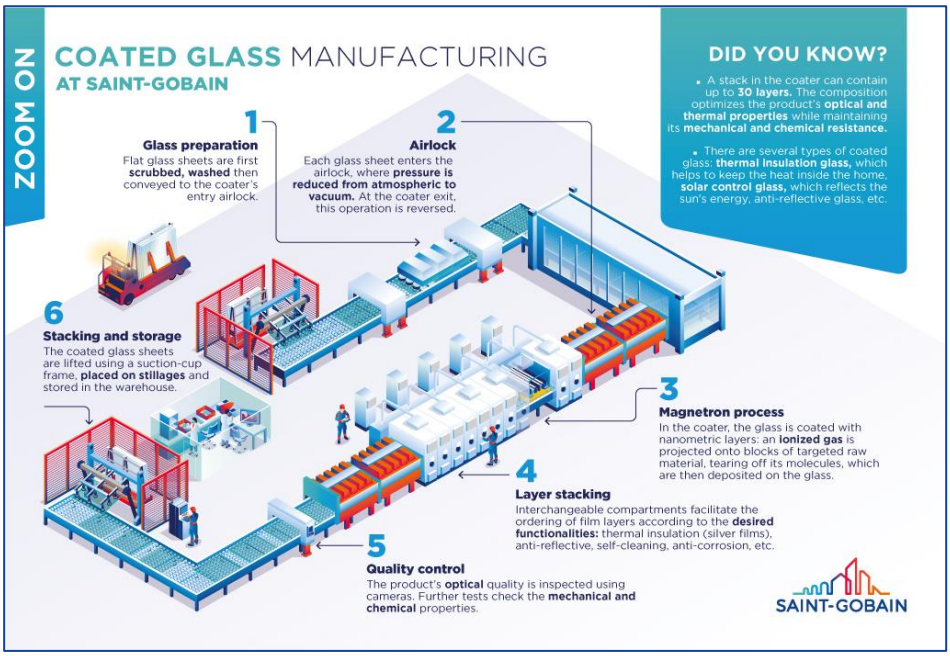

Figure 4: Manufacturing Process of Coated Glass - ©Saint-Gobain

Product Stage, A2 – A3

Description of the stage: For Saint-Gobain Sekurit A2 to A3 represents the transformation of glass in our plants. This product stage includes the glass transportation between Saint-Gobain Glass and Saint-Gobain Sekurit and the processing of the final glass product.

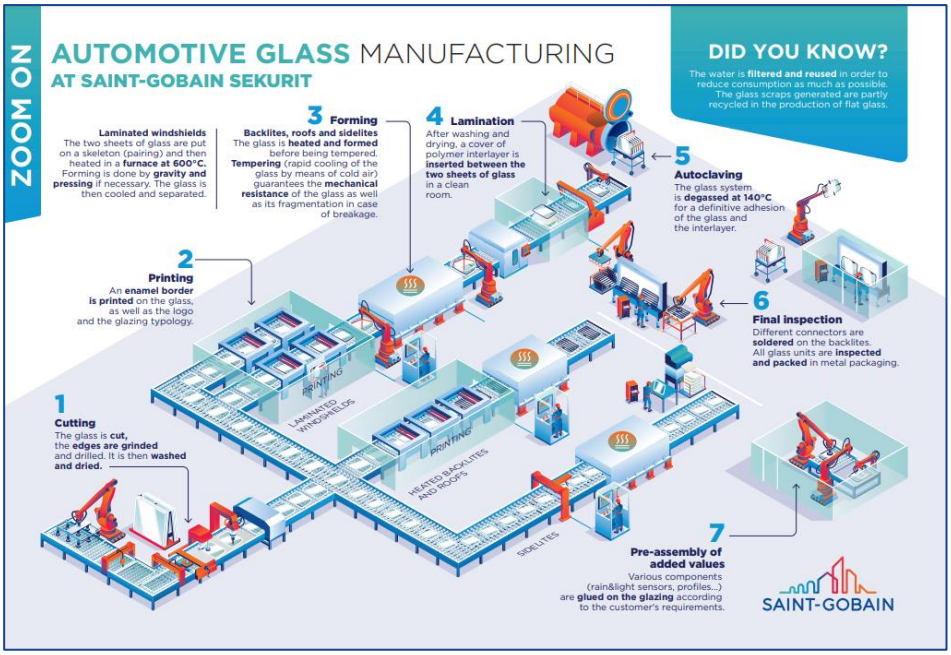

Figure 5: Manufacturing Process of Automotive Glass - ©Saint-Gobain

Product Distribution, A4

This module includes transport from the Sekurit production gate to the vehicle manufacturer plant.
This module is excluded from the system boundaries.

Vehicle Manufacturing, A5

This module includes the manufacturing phase of the vehicle. It is excluded from the system boundaries.

Use of Vehicle, B

This module includes the usage phase of the vehicle. It is excluded from the system boundaries.

End of Life Stage of Vehicle Glazing, C1 – C4

This stage includes the next three modules:

- C1, dismantling of product: the glass is usually shredded together with other materials, the energy consumption of the process being the main environmental aspect to consider. It is considered that this energy consumption is negligible for the glass, and in comparison, with the energy consumed in the upstream and core processes of this product. This module is then considered equal to zero.
- C2, waste transport: as a default scenario, it is considered that glass waste is transported 100 km by truck to the authorized treatment facility.
- C3, waste processing: as a default scenario, it will be considered that the glass is not processed before recycling/landfilling. This module is then considered equal to zero.
- C4, waste final disposal: as a default scenario, it will be considered that 100% in weight of the waste glass is landfilled.

Reuse/Recovery/Recycling potential, D

Module D quantifies the potential costs and benefits of end-of-life recovery. The end-of-life scenario used is 100% landfill. The declared module D is equal to zero.

LCA Results

The EN 15804 + A2:2019 method has been used as the impact model. Specific data has been supplied by the plant, and generic data come from GaBi 2023 and Ecoinvent 3.8 databases.

All emissions to air, water, and soil, and all materials and energy used have been included.

Raw materials and energy consumption, as well as transport distances have been taken directly from the manufacturing plant (Production data according 2022)

LCA data results are detailed in the following tables and refer to a declared unit of 1kg of Laminated Coated Windshield and its packaging manufactured in France and to be used in the automotive market, composed of 2.1/1.6 mm of flat glass and 0.76 mm of PVB. The weight of the packaging is not included in this 1 kg of final product.

Estimated impact results are only relative statements that do not indicate impact category endpoints, exceeding threshold values, safety margins, or risks.

LIFE CYCLE STAGES	UPSTREAM	CORE		DOWNSTREAM					
Life Cycle modules	A1 – Raw materials and components production	A2 – Transport of inputs	A3 – Glass product manufacturing and packaging	A4 – Product distribution	C1 – Dismantling of product	C2 – Waste transport	C3 – Waste processing	C4 – Waste final disposal	D- Resource recovery stage
Modules declared	X	X	X	ND	X	X	X	X	X
Geography	FR	FR	FR	ND	GLO	GLO	GLO	GLO	GLO
Variation - Sites	0% - Saint-Gobain Sekurit France (Chantereine Plant)			(not applicable)					

Table 2: Reporting Modules, Life Cycle Stages Declared, Geography and Data Variation

Environmental Impacts – 1kg of Laminated Coated Windshield Manufactured in France

Parameters	Upstream	Core			Downstream						Total	D
	A1	A2	A3	Total Core	A4	C1	C2	C3	C4	Total Downstream		
Climate Change (total) [kg CO2 eq.]	1.14E+00	4.77E-02	5.28E-01	5.76E-01	0	0	1.50E-02	0	1.51E-02	3.01E-02	1.75E+00	0
Climate Change (fossil) [kg CO2 eq.]	1.14E+00	4.72E-02	5.28E-01	5.75E-01	0	0	1.49E-02	0	1.50E-02	3.00E-02	1.75E+00	0
Climate Change (biogenic) [kg CO2 eq.]	0	0	0	0	0	0	0	0	0	0	0	0
Climate Change (land use change) [kg CO2 eq.]	3.62E-04	4.32E-04	1.87E-04	6.19E-04	0	0	1.30E-04	0	4.67E-05	1.77E-04	1.16E-03	0
Ozone depletion [kg CFC-11 eq.]	1.54E-09	4.08E-15	5.00E-10	5.00E-10	0	0	1.23E-15	0	3.82E-14	3.94E-14	2.04E-09	0
Acidification terrestrial and freshwater [Mole of H+ eq.]	6.52E-03	5.97E-05	1.17E-03	1.23E-03	0	0	1.89E-05	0	1.06E-04	1.25E-04	7.87E-03	0
Eutrophication freshwater [kg P eq.]	8.52E-07	1.70E-07	2.21E-05	2.23E-05	0	0	5.14E-08	0	3.03E-08	8.17E-08	2.32E-05	0
Eutrophication marine [kg N eq.]	1.32E-03	2.16E-05	1.96E-04	2.18E-04	0	0	7.01E-06	0	2.75E-05	3.45E-05	1.58E-03	0
Eutrophication terrestrial [Mole of N eq.]	1.61E-02	2.53E-04	2.18E-03	2.43E-03	0	0	8.15E-05	0	3.03E-04	3.84E-04	1.89E-02	0
Photochemical ozone formation - human health [kg NMVOC eq.]	3.17E-03	5.22E-05	7.73E-04	8.25E-04	0	0	1.67E-05	0	8.34E-05	1.00E-04	4.10E-03	0
Resource use, mineral and metals [kg Sb eq.]	4.32E-06	3.01E-09	9.12E-06	9.12E-06	0	0	9.12E-10	0	6.95E-10	1.61E-09	1.34E-05	0
Resource use, fossils [MJ]	1.56E+01	6.34E-01	9.97E+00	1.06E+01	0	0	1.91E-01	0	2.00E-01	3.91E-01	2.66E+01	0
Water deprivation potential [m³ world equiv. deprived]*	9.60E-02	5.37E-04	1.87E-01	1.87E-01	0	0	1.62E-04	0	1.65E-03	1.81E-03	2.85E-01	0

*The results of this environmental impact indicator shall be used with care as the uncertainties of the results are high and as there is limited experience with the indicator

Resources Use – 1kg of Laminated Coated Windshield Manufactured in France

Parameters	Upstream	Core			Downstream						Total	D
	A1	A2	A3	Total Core	A4	C1	C2	C3	C4	Total Downstream		
Use of renewable primary energy (PERE) [MJ]	1.46E+00	4.49E-02	2.17E+01	2.18E+01	0	0	1.36E-02	0	3.26E-02	4.61E-02	2.33E+01	0
Primary energy resources used as raw materials (PERM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources (PERT) [MJ]	1.46E+00	4.49E-02	2.17E+01	2.18E+01	0	0	1.36E-02	0	3.26E-02	4.61E-02	2.33E+01	0
Use of non-renewable primary energy (PENRE) [MJ]	1.56E+01	6.34E-01	9.97E+00	1.06E+01	0	0	1.92E-01	0	2.00E-01	3.92E-01	2.66E+01	0
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ]	1.56E+01	6.34E-01	9.97E+00	1.06E+01	0	0	1.92E-01	0	2.00E-01	3.92E-01	2.66E+01	0
Input of secondary material (SM) [kg]	2.44E-01	0	0	0	0	0	0	0	0	0	2.44E-01	0
Use of renewable secondary fuels (RSF) [MJ]	2.85E-19	0	0	0	0	0	0	0	0	0	2.85E-19	0
Use of non-renewable secondary fuels (NRSF) [MJ]	3.35E-18	0	0	0	0	0	0	0	0	0	3.35E-18	0
Use of net fresh water (FW) [m3]	2.42E-03	4.94E-05	6.04E-03	6.09E-03	0	0	1.49E-05	0	5.06E-05	6.55E-05	8.58E-03	0

Waste Category – 1kg of Laminated Coated Windshield Manufactured in France

Parameters	Upstream	Core			Downstream						Total	D
	A1	A2	A3	Total Core	A4	C1	C2	C3	C4	Total Downstream		
Hazardous waste disposed (HWD) [kg]	5.98E-09	2.35E-12	6.16E-07	6.16E-07	0	0	7.13E-13	0	4.36E-12	5.07E-12	6.22E-07	0
Non-hazardous waste disposed (NHWD) [kg]	3.54E-02	9.18E-05	1.35E-02	1.36E-02	0	0	2.77E-05	0	1.00E+00	1.00E+00	1.05E+00	0
Radioactive waste disposed (RWD) [kg]	4.40E-05	8.21E-07	5.51E-05	5.59E-05	0	0	2.48E-07	0	2.3E-06	2.53E-06	1.02E-04	0

Output Flows – 1kg of Laminated Coated Windshield Manufactured in France

Parameters	Upstream	Core			Downstream						Total	D
	A1	A2	A3	Total Core	A4	C1	C2	C3	C4	Total Downstream		
Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0
Materials for Recycling (MFR) [kg]	6.64E-05	0	2.80E-01	2.80E-01	0	0	0	0	0	0	2.80E-01	0
Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0
Exported electrical energy (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0
Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0

Information on Biogenic Carbon Content - 1kg of Laminated Coated Windshield Manufactured in France

Parameters	Upstream	Core			Downstream						Total	D
	A1	A2	A3	Total Core	A4	C1	C2	C3	C4	Total Downstream		
Biogenic carbon content in product [kg]	0	0	0	0	0	0	0	0	0	0	0	0
Biogenic carbon content in packaging [kg]	0	0	0	0	0	0	0	0	0	0	0	0

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO_2.

LCA Results Interpretation for 1k of Laminated Coated Windshield Manufactured in France

The following figure refers to a declared unit 1kg of Laminated Coated Windshield manufactured in France (2.1/1.6mm glass and 0.76 mm PVB).

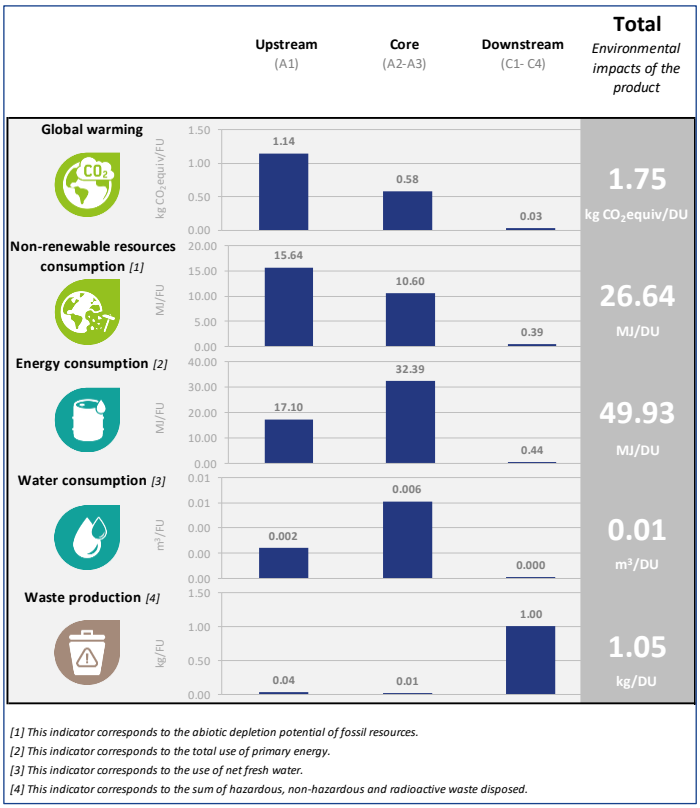

Figure 6: Indicators referring to 1kg of Laminated Coated Windshield Manufactured in France

Global Warming Potential (Climate Change Total) (GWP)

When analyzing the above figure for GWP, it can clearly be seen that most of the contribution to this environmental impact is from the upstream module (A1). In this step CO2 is generated upstream from the production of electricity and is also released on site by the combustion of natural gas. It is also generated by the float process itself during the melting stage of raw materials. The second main contribution is linked to the core module (A2-A3). This is primarily because of the impact of added components on the Windshield. We can see that the downstream module also contributes to the GWP, however, the upstream module alone contributes to 65% of the total contribution.

Non-Renewable Resources Consumptions

We can see that the consumption of non–renewable resources is once more found to have the highest value in the upstream module (A1). This is because a large quantity of natural gas is consumed within the Saint-Glass float plants.
The contribution from the core module is due to a consumption of natural gas to heat the Saint-Gobain Sekurit plant. We can see that the downstream module also contributes to this indicator, however, the upstream module alone contributes to 59% of the total contribution.

Energy Consumptions

As we can see, the core module (A2-A3) has the highest contribution to total energy consumption. Energy in the form of electricity is consumed in vast quantity during the manufacturing process of Laminated Coated Windshield. The upstream module (A1) has the second highest contribution to this impact. Energy, this time, in the form of electricity and natural gas is consumed in a vast quantity during the manufacture of glass.

Water Consumption

As we don't use water in any of the downstream processes, we can see that there is no contribution to water consumption. For the upstream and core modules, water is used within the manufacturing facilities (Saint-Gobain Glass and Saint-Gobain Sekurit) and therefore we see the highest contribution here. However, we recycle a lot of the water on site, so the contribution is still relatively low.

Waste Production

As we can see, waste production does not follow the same trend as the above environmental impacts. The largest contributor is the downstream module. This is because 100% of the product is sent to landfill. However, there is still an impact associated within the upstream and core modules since we do generate waste on both manufacturing facilities (Saint-Gobain Glass and Saint-Gobain Sekurit).

Additional Information

Saint-Gobain's Sustainability Engagements

Saint-Gobain's environmental vision is to ensure the sustainable development of its Activities, while preserving the environment from the impacts of its processes and services throughout their life cycle. The Group thus seeks to ensure the preservation of resources, meet the expectations of its relevant stakeholders, and offer its customers the highest added value with the lowest environmental impact.

The Group has set two long-term objectives: zero environmental accidents and a minimum impact of its activities on the environment. Short and medium-term goals are set to address these two ambitions. They concern five environmental areas identified by the Group: raw materials and waste; energy, atmospheric emissions and climate; water; biodiversity; and environmental accidents and nuisance.

Since September 2019, Saint-Gobain has made a very clear commitment to Paris Climate Agreement for 2050 latest. Sustainability indicators (KPI) are part of our official annual report and we are declaring our CSR approach on CDP platform. Saint-Gobain 2030 CO2 reduction roadmap objectives were validated by the SBTi.

Saint-Gobain Sekurit Sustainability Engagements

At Saint-Gobain Sekurit we engineer solutions for a better, safer and greener journey with a clear vision to make every drive a great experience. Faced with the challenge of climate change and the risks associated with rising temperatures, our ambition is to promote the emergence of a low-carbon economy.

Our strategy and our results must be integrated into a scenario that will make it possible to keep the rise in temperatures below 1.5°C. Our contribution includes reducing our own emissions and those of our suppliers, as well as offering products and solutions that promote energy efficiency and the transition to a low-carbon economy.

Our approach:

- Develop with our customers and partner innovative products and solutions with objective to reduce the CO2 emission of a vehicle. As an example, with our coating solutions the full glass vehicle set can be optimized to maximize the thermal comfort of passengers and minimize the CO2 emission. Using these solutions, the energy consumption of the vehicle is reduced (e.g.: ClimaCoat®, ComfortSky®, Thermo-Control®Venus solutions). They keep the heat inside the car during the winter and avoid the heat entrance during the summer period.

- Reducing the carbon footprint of the production of our products and solutions is an absolute imperative that must integrate our value chain (our suppliers and customers). Saint-Gobain Sekurit target is to reduce -100% of our carbon emission in Scope 1 and 2 latest in 2030. The objective for CO2e scope 3 is to achieve -30% vs 2019 by 2030.

- Collaborate with all stakeholders: States, companies, civil society... around a demanding international framework. We work on projects including the creation of a circular economy loop for materials and recycle content. To develop the awareness of our collaborators, we also lead in house sustainability training using the Climate Change fresk and Circular Economy collage.

- Not all countries, regions and cities are exposed to climate risks with the same urgency. Acting as close as possible to the territories makes it possible to identify local solutions that facilitate resilience and promote the low-carbon economy. Our ability to initiate local partnerships is an asset in risk management

Recycled Content in our Products

Here some definitions:

- Recycled content: proportion, by mass, of recycled material in a product or packaging. Only pre-consumer and post-consumer materials shall be considered as recycled content.

- Post-consumer material: material generated by households or commercial, industrial and institutional facilities in their role as end-users of the product which can no longer be used for its intended purpose. In practice, in the case of flat glass, all material coming from glass recycling collection schemes falls under this category, i.e. glass waste from end-of-life vehicles, construction and demolition waste, etc.

- Pre-consumer material: material diverted from the waste stream during a manufacturing process. Excluded is reutilization of materials such as rework, regrind, or scrap generated in a process and capable of being reclaimed within the same process that generated it**.**

In the case of flat glass, this waste originates from the processing or re-processing of glass that takes place before the final product reaches the consumer market. Pre-consumer waste flat glass is made of cut-offs, losses during laminating, bending and other processing, including the manufacture of insulating glass units or automotive glazing.

Cullet generated in the furnace plant and which is reintroduced into the furnace cannot be considered as pre-consumer recycled content, since there was never an intent to discard it and therefore it would never have entered the solid waste stream.

Recycle content per cullet type	Glass color
	Planiclear®
Pre-consumer cullet	~ 22%
Post-consumer cullet	<1%
Total external cullet	22%

Table 3: 2023 European Average Recycle Content per Cullet Type and Glass Colour according to ISO 14021

In the future, Saint-Gobain Glass intends to continue the increase of recycled material in its products, especially when recycling building, automotive and transport industry post-consumer cullet glass dismantling and recycling networks will be available in every country.

Electricity Mix Description

The electricity production module considered for modelling the Saint-Gobain Sekurit plant is the following:

Year	Electricity
2022	FR: Electricity from Wind (100%)

Table 4: Electricity Mix Used for Modelling Saint-Gobain Sekurit Plant in France

The electricity production module considered for modelling the Saint-Gobain Glass floats are the following:

Float location	Year	Electricity
Stolberg (DE)	2022	EU-28: Electricity from Hydro (100%)

Table 5: Electricity Mix Used for Modelling Saint-Gobain Glass Floats

References

1. General Program Instructions for the International EPD® System version 4.0, dated 2021-03-29 (link)
2. The International EPD® System PCR 2023:04 “Glass products used in automotive and transport industry”, version 1, dated 2023-05-16 (link)
3. ISO 14020:2022 Environmental statements and programmes for products
4. ISO 14021:2016 Environmental labels and declarations - Self-declared environmental claims (Type II environmental labelling)
5. ISO 14025:2006 Environmental labels and declarations – Type III environmental declarations – Principles and procedures
6. ISO 14040:2006 Environmental management. Life cycle assessment. Principles and framework
7. ISO 14044:2006 Environmental management. Life cycle assessment. Requirements and guidelines
8. ISO 15804 +A2:2019 Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
9. LCA report Lam coated WS France V4, dated Mars 2024