

EPD - ENVIRONMENTAL PRODUCT DECLARATION

Solar screens for interior and exterior applications
(excluding installation accessories)

In accordance with the standard NF EN 15804+A1 and its national complement NF EN 15804/CN



Warning

The information contained in this declaration is provided under the responsibility of SERGE FERRARI (producer of the FDES) in accordance with NF EN 15804+A1 and the French national supplement NF EN 15804/CN.

Any use, in whole or in part, of the information provided in this document must at least be accompanied by a complete reference to the original EPD and to its producer, who may supply a complete copy.

READING GUIDE

The display of inventory data complies with the requirements of the NF EN 15804+A1.

In the following tables 2.53E-06 should be read: 2.53×10^{-6} (scientific writing).

The units used in the tables are:

- The kilogram "kg",
- The gram "g",
- The liter "L"
- The kilowatt hour "kWh",
- The megajoule "MJ".

LCA: Life Cycle Assessment

DVR: Reference Service Life

FU: Functional Unit

FDES: « Fiche de Déclaration Environnementale et Sanitaire » (Environmental And Health Product Declaration)

PRECAUTION OF USE OF THE FDES FOR THE COMPARISON OF PRODUCTS

The FDES of construction products may not be comparable if they do not comply with the NF EN 15804+A1 standard.

The standard NF EN 15804+A1 defines in § 5.3 Comparability of EPDs for construction products, the conditions under which construction products can be compared, based on the information provided by the EPD:

"A comparison of the environmental performance of construction products using EPD information should be based on the use of the products and their impacts on the building and should consider the entire life cycle (all information modules)."

* Note 1 of the foreword to the National Supplement defines "the literal translation in French of EPD (Environmental Product Declaration) is DEP (Déclaration Environnementale de Produit). However, in French country, the term FDES (Fiche de Déclaration Environnementale et Sanitaire) is commonly used, which includes both the Environmental Declaration and the Health information for the product that is the subject of this FDES.

The FDES is therefore a "EPD" completed by health information.

GENERAL INFORMATION

Name and address of manufacturers	Commercial references of the products
SERGE FERRARI Zone Industrielle – 246 Rue des Sétives 38110 ST JEAN DE SOUDAIN France	SOLTIS 7605 ; SOLTIS 7651 ; SOLTIS 7653 ; SOLTIS 7655
Type of FDES	Distribution market
- "from cradle to grave" - individual	Professionals (BtoB)
Contact information of the declarant's person	Auditor's name
julien.lance@sergeferrari.com	Jean-Baptiste MARTIN (EcoAct)
Date of publication	Validity end date
November 2021	November 2026
Verification Program:	
Programme FDES-INIES http://www.inies.fr/ Association HQE 4, avenue du Recteur Poincaré 75016 PARIS FRANCE	
CEN standard EN 15804 and its national complement NF EN 15804/CN serves as the Product Category Definition Rules (PCR). Independent verification of the declaration, in accordance with EN ISO 14025 and EN 15804 as well as the specific PCR mentioned above: ☐ Internal ☒ External Registration Number: 0288611802022	

DESCRIPTION OF THE FUNCTIONAL UNIT AND PRODUCT

FUNCTIONAL UNIT

"Occult 1 m² of opening area by an interior or exterior blind over a reference life of 15 years"

PRODUCT DESCRIPTION

The products covered by this EDP are woven screens, obtained by weaving sheathed threads, mainly intended for the use of interior or exterior solar protection. They are manufactured by the company SERGE FERRARI on its site in La Tour du Pin.

The reference product covered by the study is an arithmetic average of the range of product.

The commercial references covered by this EDP are mentioned above. All the products of this family are manufactured on the site of La Tour du Pin with the same raw materials, the same manufacturing processes and have the same applications. Only the design of the products differs. The variability is presented below.

All calculations are related to the functional unit, i.e. to 1m² of product.

PRODUCT USE (FIELD OF APPLICATION)

The products are mainly used in the manufacture of finished products for solar protection

MAIN PERFORMANCE OF THE FUNCTIONAL UNIT

Cover 1m² of interior or exterior **vertical or horizontal surface of 1m²** for 15 years.

TECHNICAL CHARACTERISTICS

Parameter		
Average product mass	0.477	kg
Average mass of the packaging	0.050	kg
Average total mass	0.527	kg

The reference product is a fictitious product, whose values have been calculated from the arithmetic mean of all products in the range.



DESCRIPTION OF THE MAIN COMPONENTS AND/OR MATERIALS OF THE PRODUCT

PVC, PET and acrylic for 7651, 7653, 7655.

PVC, PET for 7605

COMPOSITION / SUBSTANCES REACH

SERGE FERRARI screens comply with REACH regulations. They do not contain any substance from the SHVC list (list updated on 08/07/2021) at a rate greater than 0.1% by weight.

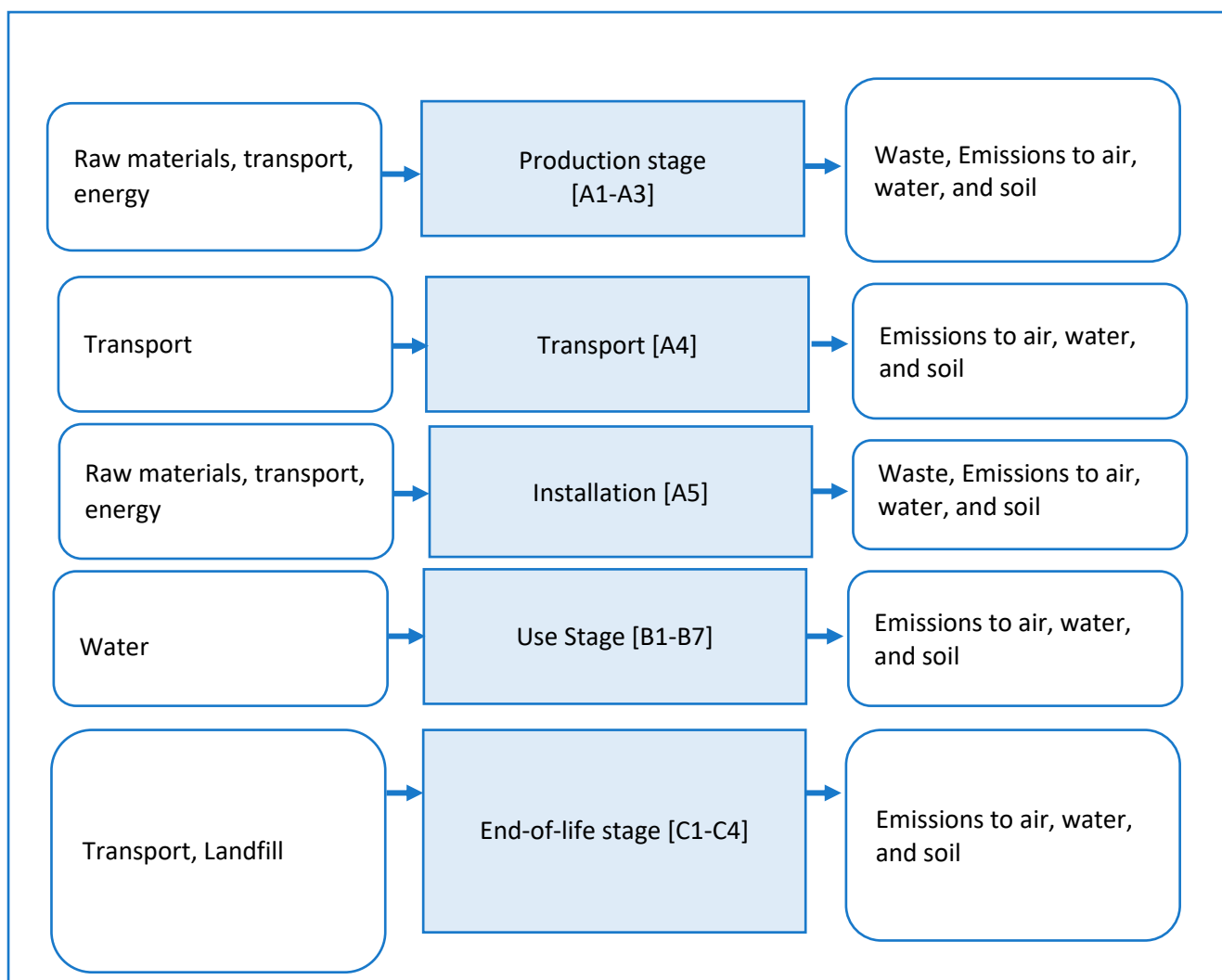
TECHNICAL CHARACTERISTICS

Parameter	Value
Reference service life	15 years See table below.
Declared properties of the product (at the exit of the factory) and finishes, etc.	Screen (stretched) to achieve sun protection or wall inside or outside a building
Theoretical application parameters (if required by the manufacturer), including references to appropriate practices	Screen mounted on fixed or mobile structures, motorized or not
Assumed quality of work when the installation complies with the manufacturer's instructions	Not affected
Outdoor environment (for outdoor applications), e.g. weather, pollutants, UV and wind exposure, building orientation, shading, temperature	Outdoor resistance against weather and UV rays. Resistance to temperatures below 50°C continuously and 70°C punctually. Protects from glare, heat, and weather without depriving yourself of natural light. See data sheet.
Indoor environment (for indoor applications), e.g. temperature, humidity, exposure to chemicals	Resistance to moisture, chlorinated or saline environments.
Conditions of use, e.g. frequency of use, mechanical exposure	Not affected
Maintenance, e.g. frequency required, type and quality and replacement of replaceable components	Once installed, the products do not require special maintenance except cleaning every 5 years with soapy water.

Parameter	Outside		Inside	
	Service life		Service life	
SOLTIS 7605;	15	Years	15	Years
SOLTIS 7651 ; SOLTIS 7653 ; SOLTIS 7655	ND	ND	15	Years

STAGES OF THE LIFE CYCLE

LIFE CYCLE DIAGRAM



[A1-A3] PRODUCTION STAGE

Parameters	News
Product	
General information	- All the constituent substances and materials necessary for the manufacture of the product have been considered. - The modules used to model raw materials do not contain secondary material. - Upstream transport was included in the study. It was modeled by a transport via articulated truck of 27 tons loaded at 60% with a 20% empty return rate. - The energy consumption on the production site was modelled by the French electricity mix Source: IEA - 2018 - Waste from the manufacturing stage was considered. The transport to the site was modelled by a transport truck of 17.3 tons loaded at 60% with a 20% empty return rate and for some, by air transport.
Production of yarns, compounds, and pigments	Raw materials come from suppliers. The manufacture of PET yarns is carried out at the Serge Ferrari site in Switzerland (Emmenbrucke).
Manufacture of the finished product	The extrusion, the weaving of the sheathed threads and the heat treatment of the finished product are carried out on the SERGE FERRARI site in La Tour du Pin (France).
Packaging	
Packaging of the finished product	- Plastic film - Cardboard wood box - Wooden pallets - Cardboard tube
Allocation	The quantities required for the manufacture of a product in terms of raw material, energy and waste are based on a year of production and reduced by a cross product to a product (mass allocation).
Special information	Impacts related to the production of manufacturing scraps and wastes were accounted for at the time they were generated. Thus, the losses were modeled in phase A1-A3.

[A4] TRANSPORT TO THE CONSTRUCTION SITE

Parameter	Unit	Value
Type of fuel and consumption of the vehicle or type of vehicle used for transport, e.g. long-distance truck, boat, etc.		Transport by 27t truck, from the manufacturing plant (La Tour du Pin) to the construction site.
Distance to the construction site	km	259,41
Capacity utilization (including empty returns)	%	60% loaded rate and 20% empty return rate
Bulk density of transported products	kg/m ³	-
Volume utilization coefficient	Coefficient: = 1 or < 1 or ≥ 1 for compressed products or nested	1

[A5] INSTALLATION IN THE BUILDING

Parameter	Unit	Value
Auxiliary inputs for installation (specified by material)	%	5% of losses that is treated as non-hazardous waste and transported over 100 km by truck
Water use	m ³	-
Use of other resources	kg	-
Quantitative description of the type of energy (regional mix) and consumption during the installation process	kWh or MJ	
Waste generated at the construction site prior to the treatment of waste generated by the product installation (specified by type)	kg	
Materials (specified by type) produced by waste treatment at the construction site, e.g. collection for recycling, energy recovery, disposal (specified by lane)	kg	
Direct emissions to ambient air, soil, and water	kg	-

[B1-B7] PRODUCT USE

MAINTENANCE

Parameter	Unit	Value
Maintenance process	The life in operation of the product requires only a punctual cleaning with water.	
Maintenance cycle	1 wash every 5 years	
Auxiliary inputs for maintenance (e.g. cleaning product, specify materials)	L	2L of water for 1m ² , or 6L of water over the entire life cycle
Waste generated during maintenance (specify materials)	kg	-
Net consumption of fresh water during maintenance	L	2L of water for 1m ² , or 6L of water over the entire life cycle
Energy input during maintenance (e.g. suction cleaning), type of energy carrier, e.g. electricity, and quantity, if applicable and relevant	KWh	-

REPAIR

Parameter	Unit	Value
Repair process	The life in work of the product does not require any special action. There is therefore no input and output related to repair.	
Inspection Process	The life in work of the product does not require any special action. As a result, there are no inputs and outputs related to the inspection processes.	
Repair cycle	Number per RSL or year	-
Auxiliary inputs (e.g. lubricant, specify materials)	kg or kg/cycle	-
Waste generated during repair (specify materials)	kg	-
Net consumption of fresh water during repair	m ³	-
Energy input during repair (e.g. crane activity), type of energy carrier, e.g. electricity, and quantity	kWh/RSL, kWh/cycle	-

REPLACEMENT

Parameter	Unit	Value
Replacement cycle	The life in work of the product does not require any special action. There is therefore no input and output related to replacement.	
Energy input during replacement (e.g. crane activity), type of energy carrier (e.g. electricity), and quantity, if applicable and relevant	KWh	-
Exchange of worn parts during the life cycle of the product, specify materials	kg	-

REHABILITATION

Parameter	Unit	Value
Rehabilitation process	The life in work of the product does not require any special action. There is therefore no input and output related to rehabilitation.	
Rehabilitation cycle	Number per RSL or year	-
Material input for rehabilitation (e.g. bricks), including auxiliary inputs for the rehabilitation process (e.g. lubricant, specify materials)	kg or kg/cycle	-
Waste generated during rehabilitation (specify materials)	kg	-
Energy input during rehabilitation (e.g. crane activity), type of energy carrier, e.g. electricity, and quantity, if applicable and relevant	KWh	-
Other assumptions for scenario development (e.g. frequency and duration of use, number of occupants)	Appropriate unity	-

ENERGY AND WATER USE

Parameter	Unit	Value
Auxiliary inputs specified by material	kg or appropriate units	The life in work of the product does not require any special action. There is therefore no input and output related to energy use.
Net consumption of fresh water	m3	The life in work of the product does not require any special action. There is therefore no input and output related to water use.
Type of energy carrier (e.g. electricity, natural gas, district heating)	KWh	-
Output power of the equipment	KWh	-
Characteristic performance (e.g. energy efficiency, emissions, performance variation as a function of capacity utilization, etc.)	appropriate units	-
Other assumptions for scenario development (e.g. frequency and duration of use, number of occupants)	appropriate units	-

[C1-C4] END-OF-LIFE PHASE

Parameter	Unit	Value
Collection process specified by type	kg collected individually kg collected with mixed construction waste	0.477
Recovery system specified by type	kg for reuse	-
	kg for recycling	-
	kg for energy recovery	-
Specified elimination by type	kg of product or material intended for final disposal	0.477 (landfill)
Assumptions for scenario development (e.g. transport)	km	100 km by truck 17.3t

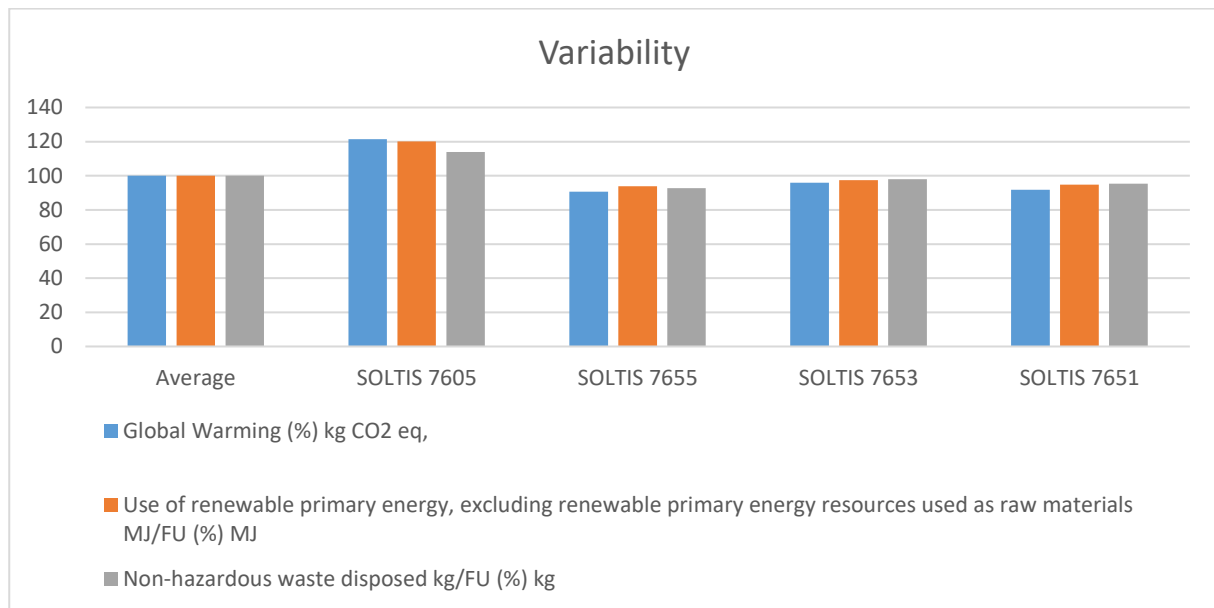
[D] RECYCLING/REUSE/RECOVERY POTENTIAL, D

Module D is not considered.

INFORMATION FOR THE CALCULATION OF THE LIFE CYCLE ASSESSMENT

Used PCR	NF EN 15804+A1 - April 2014, NF EN 15804/CN – June 2016
System Boundaries	The boundaries of the system respect the limits imposed by the standard NF EN 15804+A1 and its national complement NF EN 15804/CN.
Allowances	The quantities required for the manufacture of a product in terms of raw material, energy and waste are based on a year of production and reduced by a cross product to a product (mass allocation).
Geographical and temporal representativeness of primary data	The data were collected in relation to the annual production of the SERGE FERRARI plant. The collection was launched in January 2021. It is representative of the technologies used for the year 2020. The database used is the BDD database CODDE-2020-11 (updated November 2020) and ELCD version 3.2. EIME software, version 5.9. Database version: December 2020
Variability of results	A variability analysis was carried out between the products covered by the FDES of the range. The results show that the impacts are homogeneous within the product family. The environmental impacts reported in the FDES are therefore based on an average between all the products in the range.

VARIABILITY



LIFE CYCLE ASSESSMENT RESULTS

Impact indicators	Production stage	Construction stage			Use stage								End-of-life stage					Total Life Cycle	D Profits and costs beyond the system's boundaries
	Total A1-A3	A4 Transport	A5 Installation	Total A4-A5	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Rehabilitation	B6 Use of energy	B7 Water consumption	Total B1-B7	C1 Deconstruction/demolition	C2 Transport	C3 Waste treatment	C4 Discharge	Total C1-C4		
Global warming kg CO2 eq/FU	2.28E+00	1.13E-02	1.82E-01	1.93E-01	0.00E+00	1.75E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.75E-01	0.00E+00	5.23E-03	0.00E+00	4.29E-01	4.35E-01	3.08E+00	ND
Ozone depletion kg CFC 11 eq/FU	3.55E-07	2.30E-11	2.96E-08	2.96E-08	0.00E+00	1.14E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E-09	0.00E+00	1.06E-11	0.00E+00	1.42E-09	1.43E-09	3.88E-07	ND
Acidification of soil and water kg SO2 eq/FU	4.34E-03	5.10E-05	3.06E-04	3.57E-04	0.00E+00	3.81E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.81E-04	0.00E+00	2.47E-05	0.00E+00	1.82E-04	2.07E-04	5.28E-03	ND
Eutrophication (PO4)3- eq/FU	1.07E-03	1.17E-05	1.47E-04	1.59E-04	0.00E+00	1.20E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.20E-04	0.00E+00	5.73E-06	0.00E+00	1.30E-03	1.31E-03	2.65E-03	ND
Photochemical ozone creation Ethene eq/FU	4.24E-04	3.62E-06	3.56E-05	3.92E-05	0.00E+00	2.05E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.05E-05	0.00E+00	1.78E-06	0.00E+00	9.52E-05	9.70E-05	5.81E-04	ND
Depletion of abiotic resources (elements) kg Sb eq/FU	6.15E-02	4.54E-10	3.07E-03	3.07E-03	0.00E+00	6.09E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.09E-09	0.00E+00	2.09E-10	0.00E+00	2.74E-09	2.95E-09	6.45E-02	ND
Depletion of abiotic (fossil) resources MJ/FU	4.39E+01	1.59E-01	2.99E+00	3.15E+00	0.00E+00	4.93E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.93E-01	0.00E+00	7.35E-02	0.00E+00	4.84E-01	5.58E-01	4.81E+01	ND
Water pollution m3/FU	3.25E+02	1.87E+00	2.61E+01	2.79E+01	0.00E+00	1.75E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.75E+00	0.00E+00	8.60E-01	0.00E+00	2.14E+00	3.00E+00	3.58E+02	ND
Air pollution m3/FU	3.07E+02	4.65E-01	1.74E+01	1.79E+01	0.00E+00	2.12E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.12E+00	0.00E+00	2.41E-01	0.00E+00	1.15E+01	1.18E+01	3.38E+02	ND

Impact indicators	Production stage	Construction stage			Use stage								End-of-life stage					Total Life Cycle	D Profits and costs beyond the system's boundaries
	Total A1-A3	A4 Transport	A5 Installation	Total A4-A5	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Rehabilitation	B6 Use of energy	B7 Water consumption	Total B1-B7	C1 Deconstruction/demolition	C2 Transport	C3 Waste treatment	C4 Discharge	Total C1-C4		
Use of renewable primary energy, excluding renewable primary energy resources used as MJ/FU	3.68E+00	2.14E-04	2.22E-01	2.23E-01	0.00E+00	5.68E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.68E-03	0.00E+00	9.85E-05	0.00E+00	1.53E-02	1.54E-02	3.93E+00	ND
Use of renewable primary energy resources used as raw materials MJ/FU	5.68E-01	0.00E+00	2.84E-02	2.84E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.96E-01	ND
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) MJ/FU	4.25E+00	2.14E-04	2.51E-01	2.51E-01	0.00E+00	5.68E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.68E-03	0.00E+00	9.85E-05	0.00E+00	1.53E-02	1.54E-02	4.52E+00	ND
Use of non-renewable primary energy, excluding non-renewable primary energy resources used as raw materials MJ/FU	4.82E+01	1.60E-01	3.00E+00	3.16E+00	0.00E+00	5.33E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.33E-01	0.00E+00	7.38E-02	0.00E+00	5.34E-01	6.07E-01	5.25E+01	ND
Use of non-renewable primary energy resources as raw materials MJ/FU	1.25E+01	0.00E+00	8.75E-01	8.75E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.34E+01	ND
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) MJ/FU	6.07E+01	1.60E-01	3.87E+00	4.03E+00	0.00E+00	5.33E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.33E-01	0.00E+00	7.38E-02	0.00E+00	5.34E-01	6.07E-01	6.59E+01	ND
Use of secondary material kg/FU	2.46E-02	0.00E+00	1.23E-03	1.23E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.58E-02	ND
Use of renewable fuels MJ/FU	3.53E-01	0.00E+00	1.77E-02	1.77E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.71E-01	ND
Use of non-renewable secondary fuels MJ/FU	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND
Net use of fresh water m3/FU	1.03E-01	1.02E-06	5.93E-03	5.93E-03	0.00E+00	6.27E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.27E-04	0.00E+00	4.68E-07	0.00E+00	1.42E-04	1.43E-04	1.09E-01	ND

Impact indicators		Production stage	Construction stage			Use stage								End-of-life stage					Total Life Cycle	D Profits and costs beyond the system's boundaries
		Total A1-A3	A4 Transport	A5 Installation	Total A4-A5	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Rehabilitation	B6 Use of energy	B7 Water consumption	Total B1-B7	C1 Deconstruction/demolition	C2 Transport	C3 Waste treatment	C4 Discharge	Total C1-C4		
Hazardous waste disposed kg/FU		1.05E-01	0.00E+00	5.38E-03	5.38E-03	0.00E+00	2.11E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.11E-05	0.00E+00	0.00E+00	0.00E+00	2.54E-04	2.54E-04	1.11E-01	ND
Non-hazardous waste disposed kg/FU		5.50E-01	4.03E-04	8.45E-02	8.49E-02	0.00E+00	4.38E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.38E-02	0.00E+00	1.86E-04	0.00E+00	5.33E-01	5.33E-01	1.21E+00	ND
Radioactive waste disposed kg/FU		1.17E-04	2.87E-07	7.86E-06	8.15E-06	0.00E+00	1.34E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.34E-05	0.00E+00	1.32E-07	0.00E+00	1.77E-05	1.78E-05	1.57E-04	ND

Impact indicators		Production stage	Construction stage			Use stage								End-of-life stage					Total Life Cycle	D Profits and costs beyond the system's boundaries
		Total A1-A3	A4 Transport	A5 Installation	Total A4-A5	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Rehabilitation	B6 Use of energy	B7 Water consumption	Total B1-B7	C1 Deconstruction/demolition	C2 Transport	C3 Waste treatment	C4 Discharge	Total C1-C4		
Components for reuse kg/FU		6.65E-04	0.00E+00	3.33E-05	3.33E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.98E-04	ND
Materials for recycling kg/FU		2.90E-02	0.00E+00	3.40E-02	3.40E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.30E-02	ND
Materials for energy recovery kg/FU		1.23E-03	0.00E+00	5.57E-03	5.57E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.79E-03	ND
Energy supplied externally (by vector) J/FU	Electricity	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND
	Steam	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND
	Gas and process	0.00E+00	2.76E-02	2.76E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.81E-01	2.81E-01	3.73E-01	ND	ND

ADDITIONAL INFORMATION ON THE RELEASE OF HAZARDOUS SUBSTANCES INTO INDOOR AIR, SOIL AND WATER DURING THE USE STAGE

Sanitary characteristics	
VOCs and formaldehyde	 Greenguard Gold for: SOLTIS 7605 / SOLTIS 7651 / SOLTIS 7653 / SOLTIS 7655
Emissions of hazardous substances into indoor air	SERGE FERRARI membranes comply with REACH regulations. They do not contain any substance from the SHVC list (list updated on 19/01/2021) at a rate greater than 0.1% by weight.
Behavior towards micro-organisms	No test performed Contact the Serge Ferrari commercial teams for more information
Odors	No test performed
Radioactive emissions	No test performed / Not applicable
Water quality characteristics	Not applicable because this product is not in contact with water intended for human consumption, runoff water, infiltration water, groundwater, or surface water.

CONTRIBUTION OF THE PRODUCT TO THE QUALITY-OF-LIFE INSIDE BUILDINGS

Comfort features	
Hygrothermal comfort	When used as solar protection screens, <u>the</u> Soltis contribute to the hygrothermal comfort in the building by: * Filtering heat in summer to maintain a stable temperature inside buildings * Allowing solar gains in winter. The thermal properties of the Soltis screens, evaluated according to the EN14500 standard, vary according to the opening coefficients and colours. The best references make it possible to achieve the highest levels of performance (Class 4* = Very good effect) according to the EN14501 standard. The solar factor of Soltis screens is involved in the calculation of the solar factor of the bay block (glazing + carpentry + sun protection) and therefore impacts the final thermal performance of the system. A high-performance sun protection screen contributes to meeting the requirements of the RT2012 / RE2020. As a result, the use of these Soltis screens can contribute to obtaining credits in the HQE building certification program. (*source: internal laboratory test – internal report)
Acoustic comfort	Soltis 7653, 7651 and 7655 fabrics absorb between 40% and 45% of the sound (with a 100 mm air gap). They make it possible to reduce the reverberation time of a space, which, if it is too long, generates an effect of sound confusion where all the sounds are superimposed and entangled until they become incomprehensible. The Soltis 7651, 7653 and 7655 thus contribute to the improvement of acoustic comfort in a space, which, according to studies, shows a direct positive impact on well-being (reduction of fatigue and stress) and productivity at work. (Rapport CTTM – A180298_02_A Soltis Touch 3%/7653 et A200044_01_A Soltis Touch 1%/7651) The screens with higher openness factor (Soltis 7655 and Soltis 7605) are transparent to sound. This may be of interest in wall or ceiling applications In this case, the screen is used in combination with traditional absorbents such as wool or absorbent foam. The sound transparency of the screen makes it possible to dress the wall without affecting the absorption potential of the wool or foam located at the back. (CTTM Report No A190289_02_A)
Visual comfort	When used as solar protection screens the Soltis screens contribute to visual comfort in buildings. Their performance is evaluated according to EN 14500 and EN 14501 and allows to achieve the "good effect" level for the main criteria of visual comfort, namely the glare control and visual contact with the outside. Detail available on request These screens filter the light to reduce glare while letting in natural light and preserving the view <u>to</u> the outside. The wide choice of opening coefficients (1%, 3%, 5%) and colors will allow the user to find the ideal answer according to his needs. Screens with 1% openness factor will offer the best protection against glare while the 5% openness factor will allow excellent visibility on the outside, also promoting natural light inputs.
Olfactory comfort	The products do not claim any olfactory performance.

POSITIVE ENVIRONMENTAL CONTRIBUTION

No recycling sector or energy avoidance calculation is considered.