

Environmental Product Declaration



In accordance with ISO 14025 and EN 15804



Planet FR

EcoPlanet FR – EcoPlanet FR SRC

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vertisol
contemporary weavers

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1. General Information

Table 1. General Information.

EPD® PROGRAM HOLDER	The International EPD® System operated by EPD International AB www.environdec.com Valhallavägen 81, 11427 Stockholm, Sweden	
PRODUCT CATEGORY RULES (PCR)	CEN standard EN 15804 served as the core PCR PCR 2012:01 version 2.2 Construction products and construction services. Valid until 2019-03-03. This PCR covers products within the group UN CPC 369: <i>Other plastic products</i> and underlying classes and subclasses for construction products.	
GENERIC PCR REVIEW CONDUCTED BY	Technical committee of the International EPD® System Chair Massimo Morano Contact via info@environdec.com	
INDEPENDENT VERIFICATION	☐ Internal ☒ External	
THIRD PARTY VERIFIER	Patxi Hernández, Email: patxi.hernandez@tecnalia.com Tecnalia R&I Certificación, S. L. www.tecnaliacertificacion.com Accredited by: Accreditation no. 125/C-PR283 by ENAC	
ACCREDITED OR APPROVED BY OWNER OF THE DECLARATION	The International EPD® System PLANET is a product of VERTISOL INTERNACIONAL, SRL Vertisol Internacional S.R.L. C-17, 18, 08403 Granollers (Spain) Phone: +34 93 840 14 44 Email: mkt@vertisol.es Website: http://en.vertisol.es/	
GEOGRAPHICAL SCOPE OF THE EPD® REGISTRATION NUMBER	Global	
ISSUE DATE	2018 – 02 – 14	
VALID TO	2023 – 02 – 04	
PREVIOUS VERSIONS	There is no previous version to this EPD®	

2. Company

Since 1982, Vertisol Internacional SRL engages in the creation and development of window covering solutions. At our facilities, fabrics are produced 100% in-house.

While woven vinyl fabrics are mainly produced at our plant in Galicia, coated and impregnated fabrics are produced at Vertisol's facilities in Barcelona.

Sustainability, performance, design and comfort are the main features of Vertisol fabrics, either for solar protection, wall and floor coverings, upholstery or acoustic solutions.

A circular economy design framework has been used in the development of our **Cradle to Cradle Bronze Certified™** Planet FR, EcoPlanet FR and EcoPlanet FR SRC fabrics.

3. Product

3.1. Product description and application

Planet FR, EcoPlanet FR and EcoPlanet FR SRC are fabrics made from **post-consumer recycled PET bottles**. Their use is intended for the manufacture of roller, panel and vertical blinds.

Recycled polyester yarns are regular quality yarns with identical characteristics to those produced from virgin raw materials.

Planet FR, EcoPlanet FR and EcoPlanet FR SRC combine an eco-friendly fabric with the technical characteristics of fire retardant products. They are plain, semi-transparent fabrics, ideal for matching with every decoration style.

Planet FR, EcoPlanet FR and EcoPlanet FR SRC contribute to earning credits in green and sustainable building programmes such as LEED, BREEAM, DGNB and HQE, as they fulfil the most demanding requirements in terms of indoor air quality, energy saving, visual and acoustic comfort.

EcoPlanet FR SRC also incorporates a reflective aluminium layer disposed facing outwards in order to improve thermal performance and avoid glare and reflection.

This EPD® is valid for the following PLANET ranges:

- PLANET FR: 230 g/m², thickness: 0.41mm
- ECOPLANET FR: 176 g/m², thickness: 0.33mm
- ECOPLANET FR SRC: 220 g/m², thickness: 0.38mm

The environmental impact of A1-A3 stage differs between the three models by more than 10%. Consequently, the results of Planet FR are shown below and the results of EcoPlanet FR and EcoPlanet FR SRC are shown in Appendix I and II, respectively.

3.2. Content of Materials and Chemical substances

Planet FR contains a minimum percentage of post-consumer recycled PET of 65%. Coating products are therefore present in a percentage of up to 35% and include: PVC-free polymers, pigments and flame retardant additives.

The recycled content of EcoPlanet FR and EcoPlanet FR SRC is respectively 70% and 75%.

Planet FR and EcoPlanet FR products are made from the same materials, which differ in thickness (and therefore product surface density).

EcoPlanet FR SRC is metallic on one side, although the percentage of aluminium is not significant over the final product weight.



Figure 1. Planet FR detail.

3.3. Use, Environmental & Health information

The proper use of the described products is non-hazardous to water, air and soil. It is inert in its proper use. No damage to health is expected under normal use. Planet FR, EcoPlanet FR and EcoPlanet FR SRC are REACH compliant since they do not contain any substance listed in the “Candidate List of Substances of Very High Concern (SVHC) for authorisation” in a content exceeding 0.1% of the weight of the product). Planet FR, EcoPlanet FR and EcoPlanet FR SRC are also GREENGUARD Certified and contribute to the creation of healthier indoor environments.

A LCA for Planet, EcoPlanet FR and EcoPlanet FR SRC have been conducted according to EN 15804+A1 and supplemented with health and quality information.

Throughout this document, it is our intention to provide accessible, accurate and comparable information on the environmental performance of the finished product, defined by its functional unit. It also determines the contribution of Planet FR, EcoPlanet FR and EcoPlanet FR SRC to controlling health risks and quality of life inside the building.

Table 2. Assessment of health risks and product's contribution to standards of quality of life inside buildings.

ASSESSMENT OF HEALTH RISKS	TVOC	
	Sanitary quality of interior spaces	Planet FR, EcoPlanet FR and EcoPlanet FR SRC are Greenguard and Greenguard Gold certified
		Radioactive emissions Not expected, negligible.
	Sanitary quality of water	This is not applicable, as the product is not in contact with water used for human consumption, or with runoff water, infiltration water, the water table or surface water.
QUALITY OF LIFE	Hygrothermal comfort	Planet FR, EcoPlanet FR and EcoPlanet FR SRC contributes to thermal comfort by filtering incident solar radiation. The low emissivity treatment of EcoPlanet FR SRC acts as a shield that reduces air conditioning in summer and provides insulation in winter.
	Acoustic comfort	Planet FR, EcoPlanet FR and EcoPlanet FR SRC weighted sound absorption coefficient Alpha W is comprised in a range of 0.40- 0.55 according to EN ISO 354
	Visual comfort	Planet FR, EcoPlanet FR and EcoPlanet FR SRC filter light and UV radiation and avoids glare. Aluminum coating in EcoPlanet FR SRC improves visual comfort by reducing light transmission.

Moreover, PLANET holds additional characteristics:

- Cradle to Cradle Bronze certified™
- Greenguard and Greenguard Gold: Planet FR, EcoPlanet FR and EcoPlanet FR SRC are Greenguard and Greenguard Gold certified for indoor air quality which guarantees low emission level of volatile substances.
- REACH Compliance validated with ISO 14001. Also, Health Product Declaration (HPD) is available upon request.
- PVC free composition

3.4. Reference service life (RSL)

PLANET fabrics are very durable products, created to withstand the most demanding environments. The minimum expected life is 10 years. No repair, renovation or replacement is necessary during this lifetime.

4. LCA: Calculation rules

4.1. Declared unit

The declared unit is the manufacturing, transportation to customer, installation, use and end of life of 1 m² of packed Planet FR, EcoPlanet FR or EcoPlanet FR SRC fabric.

4.2. System boundaries

The scope for the EPD® is “cradle-to-gate” with options (A1-A3, A4, A5, B1-B7 and C1-C4 stages included).

- **Product stage (A1-A3):** it includes raw materials manufacturing, its transportation to the manufacturing plant, energy consumption and waste production in the manufacturing plant.
- **Construction stage (A4-A5):**
 - o A4 Transport: once packaged, the product is sent to the user. Planet FR transport is calculated on the basis of a scenario with the parameters described in the following table.

PARAMETER	VALUE/DESCRIPTION
FUEL TYPE AND CONSUMPTION OF VEHICLE OR VEHICLE TYPE USED FOR TRANSPORT E.G. LONG DISTANCE TRUCK, BOAT, ETC.	Average truck trailer with a 24t payload, diesel consumption 38 liters for 100 km
DISTANCE	2175 km
CAPACITY UTILISATION (INCLUDING EMPTY RETURNS)	% assumed in Ecoinvent v 3.3
BULK DENSITY OF TRANSPORTED PRODUCTS	300 g/m ² (packaging included)
VOLUME CAPACITY UTILISATION FACTOR	1

- o A5 Installation: any material is used during the installation. Packaging waste management has been taken into account.

PARAMETER	VALUE/DESCRIPTION
ANCILLARY MATERIALS FOR INSTALLATION	None
WATER USE	None
OTHER RESOURCE USE	None
QUANTITATIVE DESCRIPTION OF ENERGY TYPE	None
WASTAGE OF MATERIALS ON THE BUILDING SITE BEFORE WASTE PROCESSING, GENERATED BY THE PRODUCT'S INSTALLATION (SPECIFIED BY TYPE)	87 g cardboard
DISTANCE	50 km to landfill by truck
OUTPUT MATERIALS (SPECIFIED BY TYPE) AS RESULTS OF WASTE PROCESSING AT THE	Packaging wastes are 100 % collected and modeled as recycled matter

BUILDING SITE E.G. OF COLLECTION FOR RECYCLING, FOR ENERGY RECOVERING, DISPOSAL (SPECIFIED BY ROUTE)	Any product loss during the installation
DIRECT EMISSIONS TO AMBIENT AIR, SOIL AND WATER	No direct emissions during the installation

- **Use stage (B1-B7):** the product does not need any maintenance or replacement. As a consequence, this stage has not any impact.
- **End of life stage (C1-C4):** this stage includes the next modules:
 - C1 Deconstruction/demolition: any impact occurs during the deconstruction of the product.
 - C2 Transport to waste processing: a transportation distance of 50 km is applied.
 - C3 Waste processing for reuse, recovery and/or recycling: the product is considered to be landfilled without reuse, recovery or recycling.
 - C4 Disposal: the product is assumed to be 100% landfilled.

PARAMETER	VALUE/DESCRIPTION
COLLECTION PROCESS SPECIFIED BY TYPE	The entire product surfacing is collected alongside any mixed construction waste
RECOVERY SYSTEM SPECIFIED BY TYPE	230g of Planet FR (collected with mixed construction waste) There is no recovery, recycling or reuse of the product once it has reached its end of life phase.
DISPOSAL SPECIFIED BY TYPE	230g of Planet FR are landfilled
ASSUMPTIONS FOR SCENARIO DEVELOPMENT (E.G. TRANSPORTATION)	We assume that the waste going to landfill will be transported by truck with 24 tons payload, using diesel as a fuel consuming 38 liters per 100km. Distance: 50 km

The table below describes the scope of the inventory performed in the LCA according to PCR 2012:01 version 2.2 Construction products and construction services.

Table 3. Scope of the inventory according to PCR 2012:01 version 2.2 Construction products and construction services

Product stage			Construction process stage		Use stage								End of stage				Resource recovery stage
Raw materials Transport Manufacturing			Transport Construction installation		Use Maintenance Repair Replacement Refurbishment Operational energy use Operational water use De-construction demolition Transport Waste processing Disposal								Reuse-Recovery-Recycling-potential				
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	MD	

X: Module accounted for MND: Module Not Declared

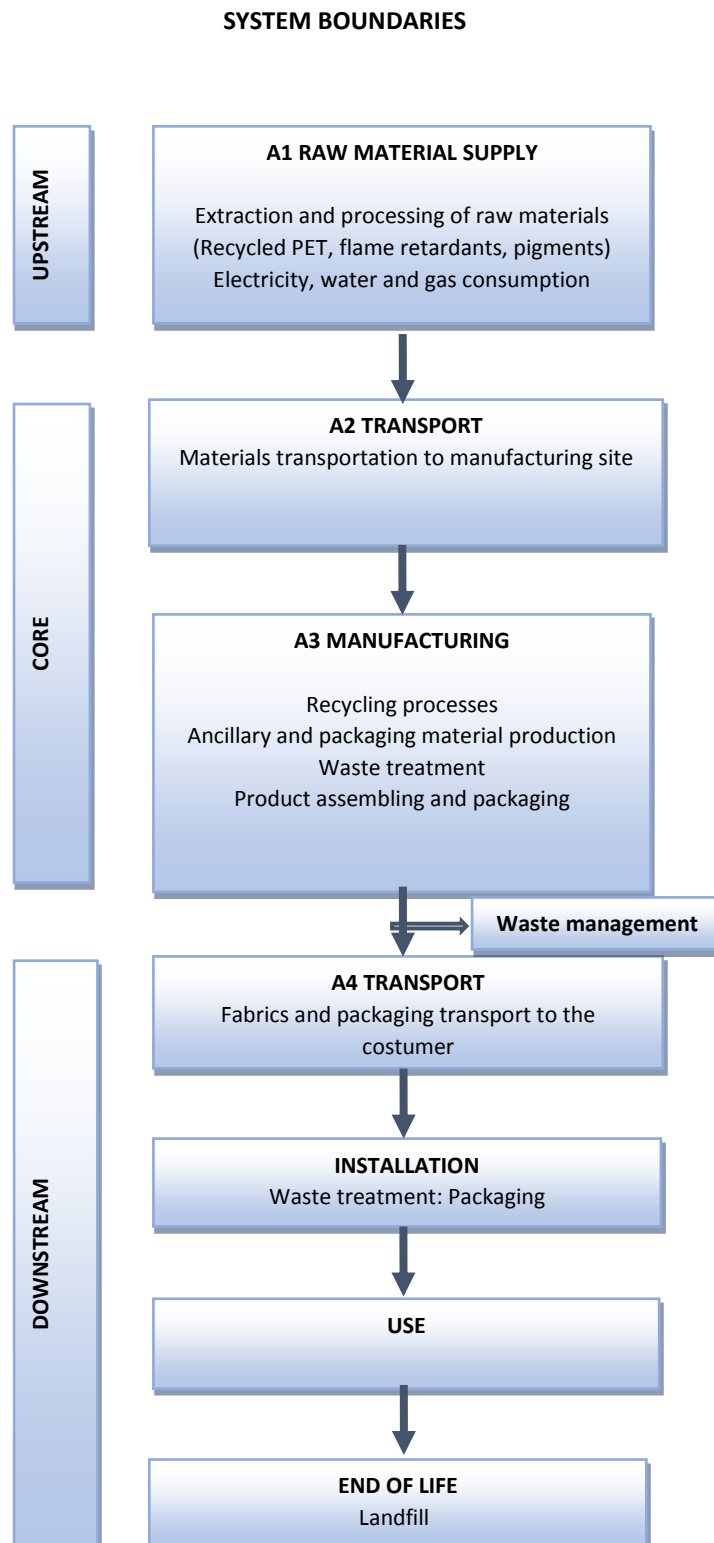


Figure 2. Flow diagram with system boundaries, stages and of the life cycle of 1m² of Planet FR/EcoPlanet FR/EcoPlanet FR SRC.

4.3. Geographical boundaries

Primary inventory data were provided by the manufacturer and are representative of the manufacturing processes of the product.

4.4. Period under review

Data gathered from the factories engaged in the study refer to the production in 2016.

4.5. Data quality

The data quality in the LCA followed the requirements in the referenced PCR document. Primary data collection was provided by the manufacturer, including all relevant foreground processes and flows, and were specific for the production site. Secondary data were selected accordingly for background processes, with technological, geographical and temporary representativeness.

4.6. Secondary data

Secondary data for the environmental analysis have been obtained from the Ecoinvent database v 3.3 (Wernet et al., 2016). The most similar processes to the ones in the production system were selected to model the production system.

The electricity production mix corresponds to Spain (Red Eléctrica Española, 2016). The electricity production mix is presented in Figure 3. Global warming potential for the different electricity production mix is 0.319 kg CO₂ eq./kWh.

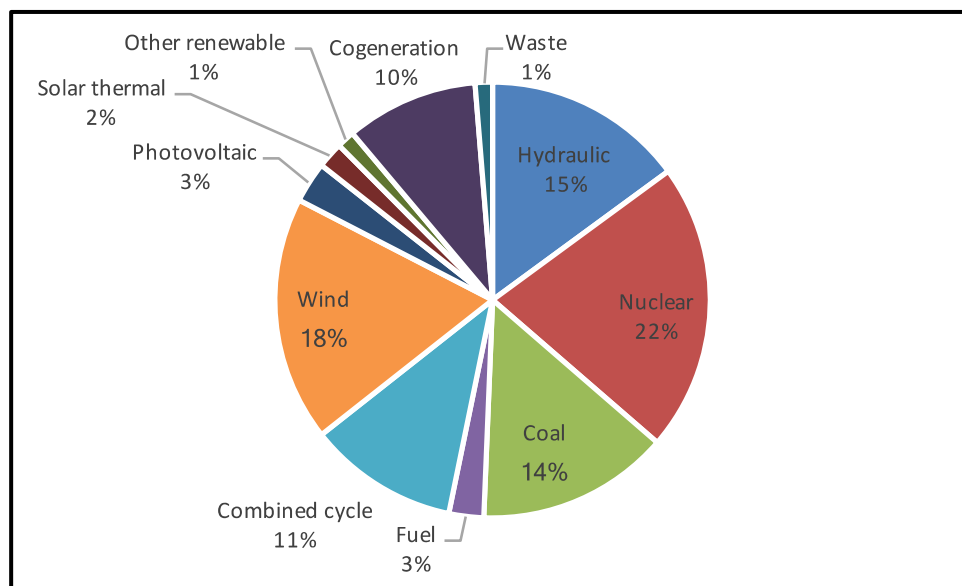


Figure 3. Electricity production mix.

4.7. Cut-off rules

The inventory was developed considering all available data from the manufacturing processes, covering all raw materials use and energy consumption. Therefore, it can be assumed that neglected data were less than 5% of total mass and energy inflows in the upstream and core processes.

4.8. Allocations

Where necessary, an allocation based in mass has been done.

4.9. Environmental assessment methods

The indicators and impact categories selected for the environmental assessment were those indicated in PCR 2012:01 version 2.2 *PCR 2012:01 version 2.2 Construction products and construction services*, using the environmental assessment methods CML-IA baseline version 4.1 and EDIP (for the calculation of waste production).

The SimaPro program version 8.3 has been used for the environmental assessment with Ecoinvent v3.3 LCA database.

4.10. Comparability

EPD® of construction products may not be comparable if they do not comply with EN 15804.

Environmental product declarations within the same product category from different programs may not be comparable.

The verifier and the program operator do not make any claim nor have any responsibility of the legality of the product.

5. Environmental performance-related information

The environmental performance of the life cycle of 1 m² of Planet FR product is presented in the following tables.

Table 4. Potential environmental impact results of Planet FR.

Impact category	Unit	TOTAL	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				MODULE D
			A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Global warming (GW100a)	kg CO ₂ -eq	2,91E+00	2,85E+00	5,81E-02	6,24E-04	0	0	0	0	0	0	0	0	1,90E-03	0	2,42E-03	MND
Ozone layer depletion	kg CFC 11-eq	3,89E-07	3,76E-07	1,14E-08	1,14E-10	0	0	0	0	0	0	0	0	3,46E-10	0	6,25E-10	MND
Acidification	kg SO ₂ -eq	1,29E-02	1,27E-02	1,61E-04	1,57E-06	0	0	0	0	0	0	0	0	4,77E-06	0	1,66E-05	MND
Eutrophication	kg PO ₄ ³⁻ -eq	2,63E-03	2,59E-03	3,38E-05	3,29E-07	0	0	0	0	0	0	0	0	1,00E-06	0	5,00E-06	MND
Photochemical oxidation	kg C ₂ H ₄ -eq	6,10E-04	6,00E-04	9,49E-06	9,86E-08	0	0	0	0	0	0	0	0	3,00E-07	0	7,76E-07	MND
Abiotic depletion (elements)	kg Sb-eq	2,77E-06	2,65E-06	1,11E-07	1,86E-09	0	0	0	0	0	0	0	0	5,64E-09	0	3,22E-09	MND
Abiotic depletion (fossil fuels)	MJ	4,39E+01	4,28E+01	9,93E-01	9,92E-03	0	0	0	0	0	0	0	0	3,02E-02	0	6,07E-02	MND

Table 6. Use of resources results of Planet FR.

		TOTAL	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				MODULE D
Indicator	Unit		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	8,60E+00	8,59E+00	1,37E-02	1,21E-04	0	0	0	0	0	0	0	0	3,69E-04	0	1,73E-03	MND
Use of renewable primary energy resources used as raw materials	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MND
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	8,60E+00	8,59E+00	1,37E-02	1,21E-04	0	0	0	0	0	0	0	0	3,69E-04	0	1,73E-03	MND
Use of non- renewable primary energy excluding non- renewable primary energy resources used as raw materials	MJ	4,39E+01	4,28E+01	9,93E-01	9,92E-03	0	0	0	0	0	0	0	0	3,02E-02	0	6,07E-02	MND
Use of non- renewable primary energy resources used as raw materials	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MND
Total use of non- renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	4,39E+01	4,28E+01	9,93E-01	9,92E-03	0	0	0	0	0	0	0	0	3,02E-02	0	6,07E-02	MND
Use of secondary material	Kg	0.196	0.1745	0	0.022	0	0	0	0	0	0	0	0	0	0	0	MND
Use of renewable secondary fuels	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MND
Use of non-renewable secondary fuels	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MND
Use of net fresh water	m³	4,46E-02	4,43E-02	2,28E-04	1,84E-06	0	0	0	0	0	0	0	0	5,59E-06	0	6,39E-05	MND
Direct use of water in the core process	m³	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MND

Table 7. Other indicator results of Planet FR.

		TOTAL	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE								END OF LIFE STAGE				MODULE D
Indicator	Unit		A1-A3	A4	A5	B1	B2	B 3	B 4	B 5	B 6	B 7	C1	C2	C3	C4		
Non-hazardous waste	Kg	5,26E-01	2,13E-01	8,03E-02	4,48E-04	0	0	0	0	0	0	0	1,36E-03	0	2,30E-01	MND		
Hazardous waste	Kg	4,67E-05	4,61E-05	5,41E-07	5,81E-09	0	0	0	0	0	0	0	1,77E-08	0	4,59E-08	MND		
Radioactive waste	kg	2,42E-04	2,35E-04	6,50E-06	6,45E-08	0	0	0	0	0	0	0	1,96E-07	0	3,61E-07	MND		
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MND		
Materials for recycling	kg	0.0757	0	0	0.0757	0	0	0	0	0	0	0	0	0	0	MND		
Materials for energy recovery	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MND		
Exported energy (electricity)	MJ	5,26E-01	2,13E-01	8,03E-02	4,48E-04	0	0	0	0	0	0	0	1,36E-03	0	2,30E-01	MND		

6. Interpretation of results

As we can see on the tables 5 to 7 and the following figure, the environmental impact of the life cycle of the product under study is dominated by A1-A3 Product stage. It represents between 96.6% (Abiotic depletion-elements) and 98.6% (Acidification) of the impact of the whole life cycle. Moreover, the stage A1-A3 accumulates 99% and 41% of the hazardous and non-hazardous waste production, respectively.

A4 stage has a low contribution over the life cycle, since it represents between 1.2% (Acidification) and a 4% (Abiotic depletion – elements) of the whole impact.

A5 stage has not significant contribution to the life cycle impact, since its impact is lower than 1% for all the impact categories under study.

C2 and C4 does not have a significant impact (less than 1% of the life cycle impact).

The use phase has not any impact.

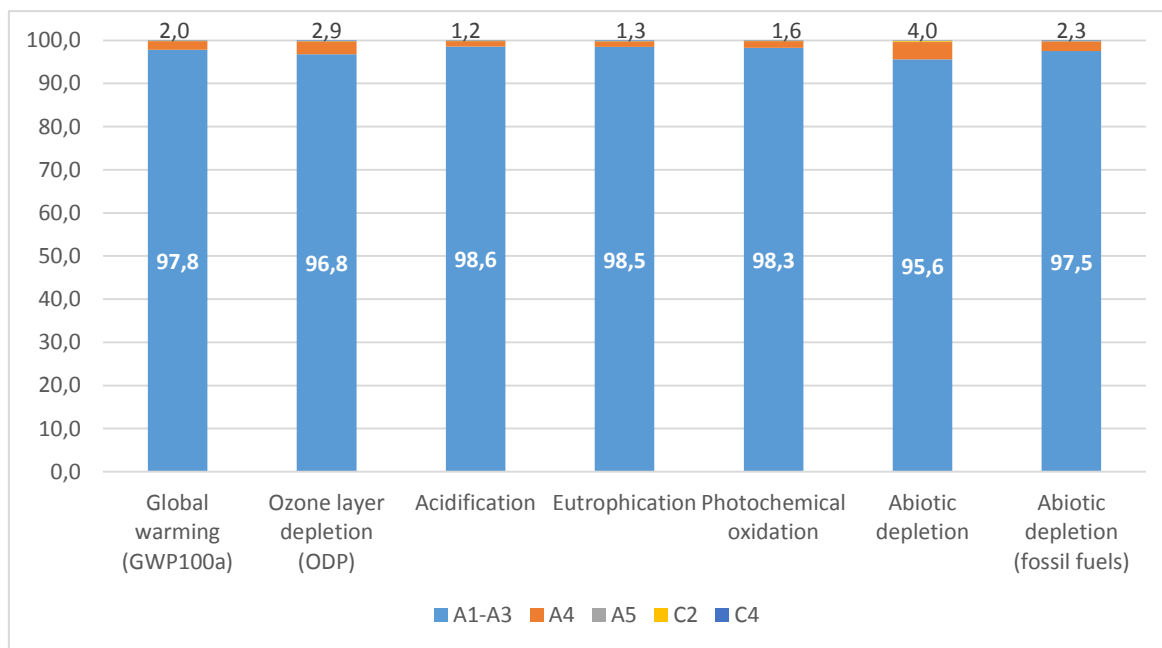


Figure 4. Impact of the life cycle of 1 m² of POLYSCREEN® 351/501, in percentage.

7. References

The underlying LCA

ISO 14040:2006. Environmental management -- Life cycle assessment -- Principles and framework

ISO 14044:2006. Environmental management -- Life cycle assessment -- Requirements and guidelines

ISO 14025:2006. Environmental labels and declarations -- Type III environmental declarations - Principles and procedures

EN 15804:2012+A1:2013 – Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products

Complément national à la NF EN 15804+A1: Contribution des ouvrages de construction au développement durable - Déclarations environnementales sur les produits - Règles régissant les catégories de produits de construction (2016)

PCR 2012:01 version 2.2, Construction products and construction services, valid until 2019-03-03. The International EPD® System.

General Programme Instructions for the International EPD® System, version 2.5.

Central Product Classification (CPC) v 2.1 of the UN's Statistical Division. 2015. <http://unstats.un.org/unsd/cr/registry/cpc-21.asp>

REE. Red Eléctrica de España. <http://www.ree.es/es/>

Wernet, G., Bauer, C., Steubing, B., Reinhard, J., Moreno-Ruiz, E., and Weidema, B., 2016. The ecoinvent database version 3 (part I): overview and methodology. The International Journal of Life Cycle Assessment, [online] 21(9), pp.1218–1230. Available at: <<http://link.springer.com/10.1007/s11367-016-1087-8>> [Accessed 23 03 2017].

ANNEX I Environmental results of EcoPlanet FR

Weight of the product per m²: 176 g/m²

Table 1. Potential environmental impact results of EcoPlanet FR

Impact category	Unit	TOTAL	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				MODULE D
			A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Global warming (GW100a)	kg CO ₂ -eq	2,60E+00	2,53E+00	4,81E-02	6,24E-04	0	0	0	0	0	0	0	0	1,45E-03	0	1,85E-03	MND
Ozone layer depletion	kg CFC 11-eq	3,50E-07	3,40E-07	9,47E-09	1,14E-10	0	0	0	0	0	0	0	0	2,65E-10	0	4,78E-10	MND
Acidification	kg SO ₂ -eq	1,09E-02	1,08E-02	1,33E-04	1,57E-06	0	0	0	0	0	0	0	0	3,65E-06	0	1,27E-05	MND
Eutrophication	kg PO ₄ ³⁻ -eq	2,24E-03	2,21E-03	2,80E-05	3,29E-07	0	0	0	0	0	0	0	0	7,66E-07	0	3,83E-06	MND
Photochemical oxidation	kg C ₂ H ₄ -eq	5,23E-04	5,15E-04	7,86E-06	9,86E-08	0	0	0	0	0	0	0	0	2,30E-07	0	5,94E-07	MND
Abiotic depletion (elements)	kg Sb-eq	2,28E-06	2,18E-06	9,24E-08	1,86E-09	0	0	0	0	0	0	0	0	4,32E-09	0	2,47E-09	MND
Abiotic depletion (fossil fuels)	MJ	3,92E+01	3,83E+01	8,23E-01	9,92E-03	0	0	0	0	0	0	0	0	2,31E-02	0	4,65E-02	MND

Table 2. Use of resources results of EcoPlanet FR

		TOTAL	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				MODULE D
Indicator	Unit		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	7,33E+00	7,32E+00	1,13E-02	1,21E-04	0	0	0	0	0	0	0	0	2,82E-04	0	1,32E-03	MND
Use of renewable primary energy resources used as raw materials	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MND
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	7,33E+00	7,32E+00	1,13E-02	1,21E-04	0	0	0	0	0	0	0	0	2,82E-04	0	1,32E-03	MND
Use of non- renewable primary energy excluding non- renewable primary energy resources used as raw materials	MJ	3,92E+01	3,83E+01	8,23E-01	9,92E-03	0	0	0	0	0	0	0	0	2,31E-02	0	4,65E-02	MND
Use of non- renewable primary energy resources used as raw materials	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MND
Total use of non- renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	3,92E+01	3,83E+01	8,23E-01	9,92E-03	0	0	0	0	0	0	0	0	2,31E-02	0	4,65E-02	MND
Use of secondary material	Kg	0.147	0.13	0.0174													MND
Use of renewable secondary fuels	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MND
Use of non-renewable secondary fuels	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MND
Use of net fresh water	m³	2,65E-02	2,62E-02	1,89E-04	1,84E-06									4,27E-06		4,89E-05	MND
Direct use of water in the core process	m³	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MND

Table 3. Other indicators describing waste categories of EcoPlanet FR

Indicator	Unit	TOTAL	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				MODULE D
			A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Non-hazardous waste	Kg	4,18E-01	1,74E-01	6,65E-02	4,48E-04	0	0	0	0	0	0	0	0	1,04E-03		1,76E-01	MND
Hazardous waste	Kg	4,17E-05	4,12E-05	4,48E-07	5,81E-09	0	0	0	0	0	0	0	0	1,35E-08		3,51E-08	MND
Radioactive waste	kg	2,05E-04	1,99E-04	5,39E-06	6,45E-08	0	0	0	0	0	0	0	0	1,50E-07		2,76E-07	MND
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MND
Materials for recycling	kg	0.0757	0	0	0.0757	0	0	0	0	0	0	0	0	0	0	0	MND
Materials for energy recovery	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MND

ANNEX II Environmental results of EcoPlanet FR SRC

Weight of the product per m²: 220 g/m²

Table 1. Potential environmental impact results of EcoPlanet FR SRC

Impact category	Unit	TOTAL	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				MODULE D
			A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Global warming (GW100a)	kg CO ₂ -eq	3,57E+00	3,51E+00	5,67E-02	6,28E-04	0	0	0	0	0	0	0	0	1,82E-03	0	2,31E-03	MND
Ozone layer depletion	kg CFC 11-eq	4,75E-07	4,63E-07	1,12E-08	1,15E-10	0	0	0	0	0	0	0	0	3,31E-10	0	5,98E-10	MND
Acidification	kg SO ₂ -eq	1,34E-02	1,32E-02	1,57E-04	1,58E-06	0	0	0	0	0	0	0	0	4,56E-06	0	1,59E-05	MND
Eutrophication	kg PO ₄ ³⁻ -eq	4,53E-03	4,49E-03	3,30E-05	3,31E-07	0	0	0	0	0	0	0	0	9,58E-07	0	4,78E-06	MND
Photochemical oxidation	kg C ₂ H ₄ -eq	4,75E-07	4,63E-07	1,12E-08	1,15E-10	0	0	0	0	0	0	0	0	3,31E-10	0	5,98E-10	MND
Abiotic depletion (elements)	kg Sb-eq	3,94E-06	3,82E-06	1,09E-07	1,87E-09	0	0	0	0	0	0	0	0	5,40E-09	0	3,08E-09	MND
Abiotic depletion (fossil fuels)	MJ	5,26E+01	5,15E+01	9,69E-01	9,99E-03	0	0	0	0	0	0	0	0	2,89E-02	0	5,81E-02	MND

Table 2. Use of resources results of EcoPlanet FR SRC

Indicator	Unit	TOTAL	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				MODULE D
			A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	9,34E+00	9,32E+00	1,33E-02	1,22E-04	0	0	0	0	0	0	0	0	3,53E-04	0	1,65E-03	MND
Use of renewable primary energy resources used as raw materials	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MND
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	9,34E+00	9,32E+00	1,33E-02	1,22E-04	0	0	0	0	0	0	0	0	3,53E-04	0	1,65E-03	MND
Use of non- renewable primary energy excluding non- renewable primary energy resources used as raw materials	MJ	5,26E+01	5,15E+01	9,69E-01	9,99E-03	0	0	0	0	0	0	0	0	2,89E-02	0	5,81E-02	MND
Use of non- renewable primary energy resources used as raw materials	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MND
Total use of non- renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	5,26E+01	5,15E+01	9,69E-01	9,99E-03	0	0	0	0	0	0	0	0	2,89E-02	0	5,81E-02	MND
Use of secondary material	Kg	0.22	0.19	0.025	0	0	0	0	0	0	0	0	0	0	0	0	MND
Use of renewable secondary fuels	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MND
Use of non-renewable secondary fuels	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MND
Use of net fresh water	m ³	4,85E-02	4,82E-02	2,31E-04	1,99E-06	0	0	0	0	0	0	0	0	5,74E-06		6,14E-05	MND

Planet FR, EcoPlanet FR and EcoPlanet FR SRC



Direct use of water in the core process	m ³	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MND
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Table 3. Other indicators describing waste categories of EcoPlanet FR SRC

		TOTAL	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE								END OF LIFE STAGE				MODULE D
Indicator	Unit		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4		
Non-hazardous waste	Kg	6,31E-01	3,31E-01	7,83E-02	4,51E-04	0	0	0	0	0	0	0	0	1,30E-03	0	2,20E-01	MND	
Hazardous waste	Kg	7,35E-05	7,29E-05	5,28E-07	5,85E-09	0	0	0	0	0	0	0	0	1,69E-08	0	4,39E-08	MND	
Radioactive waste	kg	2,81E-04	2,74E-04	6,35E-06	6,50E-08	0	0	0	0	0	0	0	0	1,88E-07	0	3,45E-07	MND	
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MND	
Materials for recycling	kg	0.0761	0	0	0.0761	0	0	0	0	0	0	0	0	0	0	0	MND	
Materials for energy recovery	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MND	

