ENVIRONMENTAL

PRODUCT DECLARATION

In accordance with UNI EN ISO 14025:2010 and UNI EN 15804:2014 for:

LINOLEUM FLOORING

- ***Veneto xf² 2 mm***
- ***Veneto xf² 2.5 mm***
- ***Veneto xf² 3.2 mm***
- ***Veneto Essenza 2.5 mm***
- ***Veneto Silencio xf² 3.8 mm***
- ***Etrusco xf² 2.5 mm***
- ***Style Elle xf² 2.5 mm***
- ***Style Emme xf² 2.5 mm***
- ***Linosport xf² 3.2 mm***
- ***Linosport Classic/Narnidur 4 mm***

Programme:	The International EPD® System www.environdec.com
Programme Operator:	EPD International AB
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Geographical Scope:	*Global*

1. THE COMPANY & THE GOAL

With an international coverage and a wide range of products, Tarkett has over 130 years of experience in providing integrated solutions for floorings to professionals and end users.

Many of the most important architectural firms in the world and building professionals have chosen Tarkett for the value of its products and for its consultation and service abilities. Therefore, Tarkett floorings and sport surfaces are present in several prestigious architectural reference points. Tarkett offers integrated solutions for floorings, able to meet the particular needs of customers. Our wide range of designs, colors and models provides an infinite series of possibilities, contributing to create a positive environment and a better quality of life for people.

Tarkett operates with the utmost respect for the environment towards the realization of eco-friendly products.

Tarkett's commitment to the environment is woven throughout its business. Cradle-to-Cradle principles are, in fact, the basis of the design and production of every solution. Particularly, the lifecycle analysis is used to continuously improve the production process, and so the products until their use stage, disposal and recycling. The commitment to the environment is also proven by the accession to the Circular Economy 100 program, where Tarkett group, with a network of companies, is working to develop a circular economy model based on the reuse of materials and preservation of natural resources. The development of products that can be reused within internal production cycles, or external ones in case of other individuals, has been an integral part of the business strategy aimed at sustainability for many years. The WCM (World Class Manufacturing) management system has been developed in 2009, and it includes the environmental pillar aimed to the elimination of losses and to the growth of process efficiency.

This document has been written in accordance with rules: UNI EN ISO 14025:2010; PCR 2012:01 Construction products and construction services, Version 2.2 (developed by the International EPD® System in accordance with ISO 14025: 2006); UNI EN 15804:2014.

The goal of this study is to highlight the environmental impacts related to 10 different linoleum flooring types that show similar characteristics:

PRODUCT NAME	PRODUCT CODE	PRODUCT NAME	PRODUCT CODE
Veneto xf^2 2 mm	14871	Etrusco xf^2 2.5 mm	14877
Veneto xf^2 2.5 mm	14872	Style Elle xf^2 2.5 mm	14825
Veneto xf^2 3.2 mm	14873	Style Emme xf^2 2.5 mm	14835
Veneto Essenza 2.5 mm	1805	Linosport xf^2 3.2 mm	14849
Veneto Silencio xf^2 3.8 mm	14892	Linosport Classic/Narnidur 4 mm	1844

These products are manufactured in Tarkett S.p.A. Italian plant, located in Narni Scalo (TR), in accordance with rule EN-ISO 24011 (Resilient floor coverings - Specification for plain and decorative linoleum).

In accordance with the International EPD® System, similar products[1] can be included in the same EPD. However, they have to meet the following conditions:

- Similar products where the differences between the mandatory impact indicators are lower than ±10% may be presented in the same EPD only reporting the environmental impacts of a representative product. The criteria for the choice of the representative product shall be presented in the EPD, using, if applicable, statistical parameters;

[1] Products covered by the same PCR and produced by the same company with same core process.

- Similar products where the differences between the mandatory impact indicators are higher than ±10% may be presented in the same EPD, but using separate columns or tables for the presentation of results.

Study data are referred to 2016.

The study is aimed to all Tarkett customers (current and potential), as well as to other parties with an interest in the environmental impacts of linoleum products.

The results of the study will not be used for comparative assertions with other linoleum floors produced by other manufacturers.

EPDs of construction products may not be comparable if they do not comply with UNI EN 15804.

For further information, please visit: www.tarkett.com

2. PRODUCT

2.1. Product Description

Tarkett linoleum, manufactured in accordance with standard ISO 24011, is a high performance, resilient floor covering. Patented in 1863, it is still modern, versatile and eco-friendly flooring, thanks to the employment of natural and sustainable materials, as linseed oil, pine resin, and cork, wood and jute powders. The composition also included recycled materials.

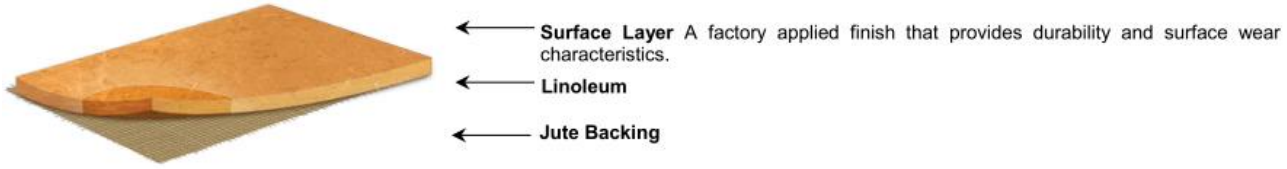
The percentage of natural raw materials can range from 93% to 96% (83% for Veneto Silencio xf^2) and are renewable from 65% to 77% depending on the product.

The wide range of designs, colors and models provides an infinite series of possibilities, satisfying the creative needs of each customer, and improving both the comfort and the wellness of the user.

Furthermore, thanks to the surface protection system used (xf^2), the Tarkett linoleum flooring is strong and durable, and does not require subsequent wax applications throughout its life.

Veneto Essenza and Linosport Classic follow a traditional maintenance.

The figure shows a visual representation of Tarkett homogeneous linoleum:



In accordance with the UN CPC Classification System, linoleum products are identified with code 38930.

2.2. Application

Tarkett linoleum, manufactured in accordance with ISO 24011 and ISO 10874, is designed for high traffic commercial areas, such as schools, hospitals, public offices and shops, where hygiene and endurance high standards are required.

UPEC Classification	U2SP2E1C2	U4P3E1/2C2
Products thickness	2.0 mm	2.5 mm/3.2 mm/4.0 mm
EN685 Classifications	Classes	Classes
Domestic	23	23
Commercial	32	34
Light Industrial	41	43

2.3. Production Methods

Product dimensions depend on consumer needs. Thicknesses can range from 2 mm (Veneto) to 4 mm (Linosport Classic/Narnidur). The finished product is packaged in rolls, width 2 m and length ≤ 32 m.

2.4. Materials

The main elements and the additional materials used in the 10 types of linoleum flooring contemplated can be found in the following tables.

Given the several similarities in the composition, the products are split in three main macro-categories. The percent variability range of each element has been determined thanks to an average solution for the specific different products, using the 2016 production data.

These data are rounded to one decimal place, having fixed the reference range for the approximation at 0.5.

Table 1 – Materials of Veneto xf² 2/2.5/3.2 mm, Veneto Essenza 2.5 mm and Veneto Silencio xf² 3.8 mm products.

VENETO xf² 2/2.5/3.2 mm - VENETO ESSENZA 2.5 mm - VENETO SILENCIO xf² 3.8 mm						
Element	**Material**	**Mass %**	**Availability**			**Origin of Raw Materials**
			Renewable	**Non Renewable**	**Recycled**	
Binder	Linseed Oil	24.0 ÷ 28.5	●			Germany/Belgium/Italy
	Colophony	3.5 ÷ 4.5	●			Brazil/Portugal
Filling	Calcium Carbonate	14.5 ÷ 20.0		●*		Italy
	Powders (Wood and Cork)	22.0 ÷ 30.0			●	Italy/Germany/Portugal
Internal Scraps	Linoleum Powder	7.5 ÷ 9.5				Plant
Pigments	Titanium dioxide and various pigments	3.5 ÷ 6.5		●		Poland/Italy/Switzerland
Support	Jute	6.0 ÷ 10.5	●			India/Bangladesh
Protection	xf² or Acrylic Wax**	0.0 ÷ 1.0		●		Italy
Foam	Foam + Adhesive***	13.0		●		Italy/France
* Abundant Mineral ** For Veneto Essenza product *** For Veneto Silencio product						

Table 2 – Materials for Linosport xf² 3.2 mm, Linosport Classic and Narnidur 4 mm products.

LINOSPORT xf² 3.2 mm - LINOSPORT CLASSIC/NARNIDUR 4 mm						
Element	**Material**	**Mass %**	**Availability**			**Origin of Raw Materials**
			Renewable	**Non Renewable**	**Recycled**	
Binder	Linseed Oil	28.0 ÷ 28.5	●			Germany/Belgium/Italy
	Colophony	4.0 ÷ 4.5	●			Brazil/Portugal
Filling	Calcium Carbonate	11.0 ÷ 14.5		●*		Italy
	Powders (Wood and Cork)	30.0 ÷ 32.0			●	Italy/Germany
Internal Scraps	Linoleum Powder	9.0 ÷ 9.5				Plant
Pigments	Titanium dioxide and various pigments	6.5 ÷ 9.5		●		Poland/Italy/Switzerland
Support	Jute	5.0 ÷ 6.5	●			India/Bangladesh
Protection	xf²	0.0 ÷ 0.5		●		Italy
* Abundant Mineral						

Table 3 – Materials for Style Elle xf² 2.5 mm, Style Emme xf² 2.5 mm and Etrusco xf² 2.5 mm products.

STYLE ELLE xf² 2.5 mm - STYLE EMME xf² 2.5 mm - ETRUSCO xf² 2.5 mm						
Element	**Material**	**Mass %**	**Availability**			**Origin of Raw Materials**
			Renewable	**Non Renewable**	**Recycled**	
Binder	Linseed Oil	29.5 ÷ 31.5	●			Germany/Belgium/Italy
	Colophony	4.5 ÷ 5.0	●			Brazil/Portugal
Filling	Calcium Carbonate	15.0 ÷ 21.5		●*		Italy
	Powders (Wood and Cork)	30.0 ÷ 34.0			●	Italy/Germany/Portugal
Pigments	Titanium dioxide and various pigments	3.0 ÷ 6.5		●		Poland/Italy/Switzerland
Support	Jute	8.0 ÷ 8.5	●			India/Bangladesh
Protection	xf²	0.5 ÷ 1.0		●		Italy
* Abundant Mineral						

These products do not contain substances within the Candidate List of Substances of Very High Concern (SVHCs) for authorization. Particularly, all the materials used for the linoleum production are certified by EPEA, a Cradle-to-Cradle certification body.

2.5. Production of Main Elements

Linseed Oil: it is obtained by squeezing flax seeds. The "crude" oil obtained is then submitted to clarification and filtration treatments.

Colophony: Yellow, solid and transparent remains of vegetable resins, produced by various species of pines and conifers.

Calcium Carbonate: Calcium Carbonate ($CaCO_3$) occurs in nature, as an element, in whole or in part, of a wide range of rocks, such as marble, limestone rocks and travertine. Abundant Mineral.

Wood Powder: It is obtained by the pulverization of woodworking scraps.

Cork Powder: Cork is an elastic and light material obtained by the external bark of cork oaks that can be removed without any harm to the plant.

Linoleum Powder: It is obtained by the pulverization of linoleum scraps, reintroduced in the productive cycle as "raw material".

Titanium Dioxide: It is a white crystalline powder whose chemical formula is TiO_2.

Jute: Jute is a vegetal textile fiber obtained by Corchorus species. It can be spinned in large and strong strings thanks to its features. Typically, the length of the fiber can range from 1.2 to 3 m. About the 85% of the global production of jute takes place in Ganges delta.

Surface Protection: It acts as protection of the surface and can be of polyurethane or acrylic type.

Foam: Polyurethane foam that gives sound insulating characteristics to the product.

2.6. Linoleum Production

The linoleum production process starts with the oxidation of linseed oil in the presence of colophony. The obtained semifinished product, called linoleum "cement", is then mixed with wood and cork powders, calcium carbonate, recycled linoleum powder and pigments to produce linoleum paste. The latter is calendered to a jute support.

Then, the product undergoes an additional polymerization until the achievement of the necessary mechanical properties. A surface finishing is applied (Linosport Classic/Narnidur 4 mm is supplied without surface finishing; however, it will applied by the customer at the building site) and the finished product rolls are packaged, ready for the sale.

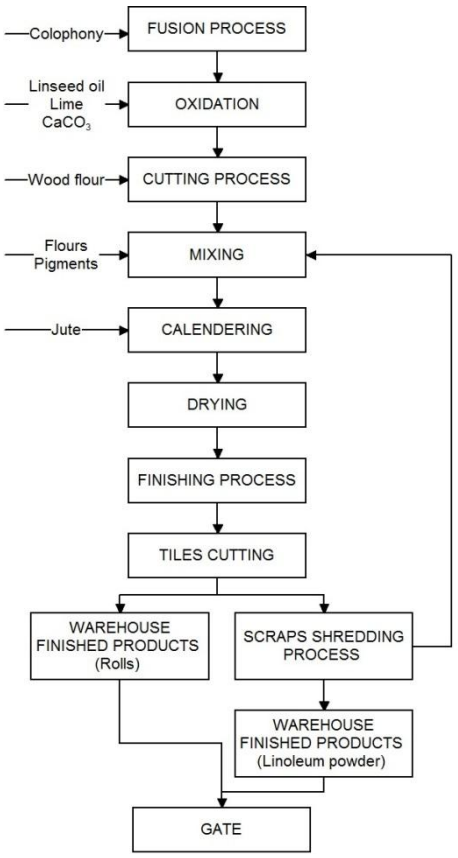


Figure 1 – Linoleum production process

3. ENVIRONMENTAL PERFORMANCE

3.1. Lifecycle Stages and Declared Unit

The declared unit for the following EPD is 1 m^2 of linoleum produced in Tarkett Italian plant of Narni Scalo (TR), following the "From cradle to gate with options" approach. The evaluation of the lifecycle impact has been carried out in accordance with reference rules for studies LCA ISO 14040 and 14044, referring to a RSL of 20 years.

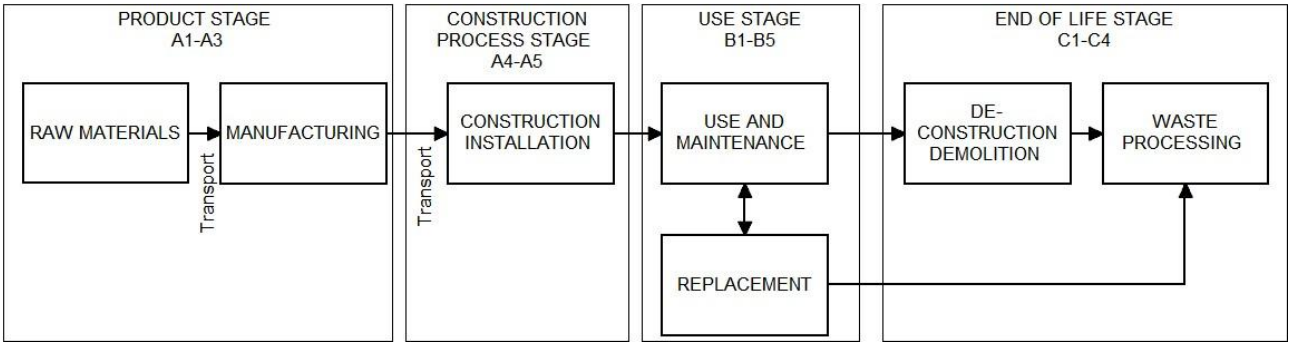
Particularly, this project evaluates the environmental impact of Tarkett products relative to the following lifecycle stages:

Table 4 – System boundaries for 1 m^2 of linoleum produced, RSL 20 years.

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE 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-Recycle 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	NR	X	NR	MND	MND	NR	MND	X	MND		X

When a module is accounted for the box in the last row is then marked with an "X".
When a module is not accounted for the box in the last row is then marked with "MND", not declared.
When a module is not relevant to the environmental performance of a product is then marked with "NR", not relevant.

Figure 2 – System boundaries for 1 m^2 of linoleum produced, RSL 20 years.



This approach considers the lifecycle of the analyzed "From cradle to gate with options" products, starting from the raw materials extraction and ending with the installation stage and the de-construction/disposal.

The analyzed products are manufactured in Italy, at the production site of Narni Scalo, Via S. Anna 6, but they are supplied and sold all over the world.

The following modules have been inserted in the lifecycle taken into consideration:

- Module A1 (UPSTREAM Processes): It includes the extraction of raw materials used in the production chain, as well as the generation of fuel for heat and energy generation, used in the CORE stage.
- Modules A2 and A3 (CORE Processes): These stages include the transportation of raw materials and the production of linoleum flooring within the Narni plant. All the electricity, thermal energy, water and other raw materials consumptions are considered, as well as the packaging and the waste produced.

Modules from A1 to A3, as specified in the reference PCR, are mandatory for all construction products. Furthermore, in accordance with the above mentioned approach, the following modules of DOWNSTREAM stage are considered:

- Module B1: It includes all the emissions released into the environment by the flooring during the Use Stage. Since Tarkett owns the "Indoor Air Quality Platinum" certificate, as evidence of the low emissions of the finished product, this Module has a very low impact on the product lifecycle.

- Module B2: It considers the standard maintenance operations of the flooring and the cleaning of the same. The necessary water, cleansers and electricity consumptions for the execution of this operation are considered.
- Modules B3, B4 and B5: They refer to the repair, replacement and refurbishment of the flooring. For the product considered, however, there are no "repair" or "refurbishment" processes, but only the replacement process in the case of a rare damage of a panel (Module B4).
- Module C1: The de-construction/demolition process is almost entirely realized by hand without the use of specific machineries that could cause potential environmental impacts.
- Module C3: A part of the linoleum, at the end of its lifecycle, is sent to the incinerator with energetic recovery, while a part is sent to composting plants[2]for all products, except the Veneto Silencio that is sent only to the incinerator.

Having considered the Use Stage Modules (B1-B5), a Reference Service Life (RSL) has been defined.

For linoleum floorings, the RSL must be defined in accordance with the function and the technical performances specified for the product.

In this case, it has been considered a RSL of 20 years, also in accordance with literature data and other studies regarding this kind of flooring. As source for the data, it has been considered the table showing the lifecycle of the main building materials, written jointly with the Swiss Tenants' Association (MV) and the Swiss Homeowner Association (HEV Schweiz), also confirmed by the study carried out by Eng. Renzo Mantovani of U.L.S.S. No. 5 Veneto for the European Conference for Hospital Engineering, by means of it is possible to demonstrate that a linoleum flooring installed over 20 years ago is still in optimal conditions thanks to a continuous and correct maintenance over time.

3.2. Cut-off Criteria and Allocation Rules

Criteria for the exclusion of inputs and outputs (cut-off rules) in the LCA, from information modules to any additional information, intend to support an efficient calculation procedure.

Particularly, in accordance with the reference PCR, the selected inventory data represent at least the 95% of the total flows, the mass and energy ones, to UPSTREAM and CORE processes.

In accordance with ISO 14040, the allocation is defined as a "division of the input or output flow in/from a process unit for a product system in study stage".

In the study the input and output data are divided into the different processes, keeping the modularity principle: the materials and energy flows from/to the environment are then assigned to the module where they happen.

According to the same criteria, double counts were not made both for input and output flows.

It has been carried out a first allocation procedure by means of the system produces has been divided in sub-processes, so to clearly identify the inventory data to be considered in the study for the evaluated product. Particularly, the system has been organized into the processes of production, transportation, ecc.

Following this first division, since the identified sub-processes were in common with all the analyzed products, it has been realized another allocation that regarded, this time, the inputs/outputs divided between the different analyzed products. Considering that the manufacturing processes for the several products are the same, the inputs data allocation has been carried out through the physical properties of different products, that is the mass.

[2] American Company, "Linoleum Recycling Process"

Regarding the disposal stage, a part of the linoleum is sent to composting processes and a part is sent to an incinerator with energetic recovery. This stage is valid for all the analyzed products, except the Veneto Silencio that is sent only to the incinerator. The disposal stage is defined according the sale data of 2016, by means of we found the geographical areas where exports mainly take place. Starting from this info, it has been possible to set the allowed disposal procedures mainly used in these countries. The same procedures have also been used to define the reference stage for the study.

The allocation for the incinerator, in accordance with the General Programme Instructions (GPI), considers a division of the impacts: 50% to the waste producer and 50% to the following lifecycle, that is who uses the recovered energy.

For this purpose, it is supposed that linoleum is used in a waste-to-energy plant R1 classified, that is with a performance of about 60%.

3.3. Data Quality

For this LCA study, specific data (primary data) have been used for processes about the internal production stages at Tarkett plant in Narni (Core).

Therefore, we consider as specific data all the used quantities of raw materials, energy consumptions, wastes and emissions that are about the production cycle of linoleum, data directly supplied by the firm.

We consider specific data the distances calculated from the used raw materials suppliers to the transportation means used to transport them to the plant (primary data). In addition, the distribution process is a reference data (primary data), directly supplied by Tarkett based on the sales of the reference year.

Specific data (primary data) have been used for the processes that are about the internal production stages of the Narni Scalo plant. Therefore, the following ones are specific data:

- The quantities of used raw materials, the distances of suppliers from the plant to the transportation means for the transport of materials;
- The consumptions of energy (electric and thermal) and of water during CORE stage;
- The produced wastes;
- The direct emissions of the production cycle;
- The distribution process realized in 2016 based on sales data.

The electricity used during the production cycle originates from the trigeneration plant for users and from a supplier with 100% green origin warranty. The electricity used in stage A3 does not exceed the 30% of the total energy used in stages A1-A3.

For electricity during the installation stage, we have considered a general electrical mix to take into account the variability of use destinations.

Where generic data have been used (e.g. for the outline of production processes related to the various input materials), they have been chosen as a reference for the geographic area and the technology.

The installation stage has been defined using secondary data, taken from the technical sheets of used materials and equipment. For the disposal stage, we have made some hypothesis starting from specific settings deemed valid for the typology of the analyzed product (secondary data).

Specific data (primary data) are accurate and traceable, since they are supplied directly by Tarkett and documented through the internal management system.

Generic data used for the count, i.e. the model of the several products/processes included in the software database, are referring to updated databases during the last 10 years, as required by PCR.

3.4. Environmental Performance

The following tables show the environmental impacts for the products considered in accordance with CML method (September 2016, version 3.04). The count has been carried out through SimaPro software, using 2016 data.

Since the information regarding the processing method of waste produced during the installation stage was not certain, the output flow in Module A5 has not been defined.

VENETO xf² 2.5 mm

Table 5 – Environmental Impact Categories

VENETO xf² 2.5 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
ADPE	kg Sb-eq	4.97E-05	2.03E-08	8.80E-07	<0.001	1.05E-06	0	3.69E-06	0	-	-	0	-	9.27E-07	-
ADPF	MJ	7.23E+01	1.39E+01	6.56E+00	<0.001	4.50E+01	0	6.30E+00	0	-	-	0	-	1.13E+00	-
GWP	kg CO_2-eq	6.51E+00	8.80E-01	4.48E-01	<0.001	4.15E+00	0	2.39E+00	0	-	-	0	-	1.96E+00	-
ODP	kg CFC11-eq	5.73E-07	1.68E-07	4.20E-08	<0.001	3.46E-07	0	5.57E-08	0	-	-	0	-	1.18E-08	-
POCP	kg etilene-eq	2.56E-03	1.25E-04	2.32E-04	<0.001	1.44E-03	0	2.78E-04	0	-	-	0	-	1.17E-04	-
AP	kg SO_2-eq	4.46E-02	2.27E-03	3.04E-03	<0.001	2.09E-02	0	6.14E-03	0	-	-	0	-	3.38E-03	-
EP	kg $(PO_4)^{3-}$-eq	1.08E-02	2.52E-04	2.51E-04	<0.001	5.79E-03	0	1.55E-03	0	-	-	0	-	9.29E-04	-
LEGEND	ADPE=Abiotic depletion potential for non fossil resources; ADPF=Abiotic depletion potential for fossil resources; GWP=Global Warming Potential; ODP=Depletion potential of the stratospheric ozone layer; POCP=Photochemical oxidant creation potential; AP=Acidification potential; EP=Eutrophication potential.														

Table 6 – Use of Resources

VENETO xf² 2.5 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
PERE	MJ	5.73E+01	6.65E-02	3.99E-01	0	2.11E+01	0	3.20E+00	0	-	-	0	-	4.21E-02	-
PERM	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
PERT	MJ	5.73E+01	6.65E-02	3.99E-01	0	2.11E+01	0	3.20E+00	0	-	-	0	-	4.21E-02	-
PENRE	MJ	9.13E+01	1.31E+01	7.90E+00	0	5.53E+01	0	7.48E+00	0	-	-	0	-	1.24E+00	-
PENRM	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
PENRT	MJ	9.13E+01	1.31E+01	7.90E+00	0	5.53E+01	0	7.48E+00	0	-	-	0	-	1.24E+00	-
SM	kg	2.25E-01	0	0	0	0	0	1.35E-02	0	-	-	0	-	0	-
RSF	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
NRSF	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
FW	m^3	1.40E+01	2.25E-01	1.33E+00	0	4.28E+01	0	1.06E+00	0	-	-	0	-	2.05E-01	-
LEGEND	PERE=Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM=Use of renewable primary energy resources used as raw materials; PERT=Total use of renewable primary energy resources; PENRE=Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM=Use of non renewable primary energy resources used as raw materials; PENRT=Total use of non renewable primary energy resources; SM=Use of secondary material; RSF=Use of renewable secondary fuel; NRSF=Use of non renewable secondary fuels; FW=Use of net fresh water														

Table 7 – Waste Production

VENETO xf² 2.5 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
HWD	kg	1.55E-02	0	0	0	0	0	9.30E-04	0	-	-	0	-	0	-
NHWD	Kg	1.90E-01	0	5.80E-01	0	0	0	1.14E-02	0	-	-	0	-	0	-
RWD	kg	0	0	0	0	0	0	0	0	-	-	0	-	0	-
LEGEND	HWD=Hazardous waste disposed; NHWD=Non-hazardous waste disposed; RWD=Radioactive waste disposed														

VENETO xf² 2 mm

Table 8 – Environmental Impact Categories

VENETO xf² 2 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
ADPE	kg Sb-eq	4.66E-05	1.61E-08	8.80E-07	<0.001	1.05E-06	0	3.34E-06	0	-	-	0	-	7.43E-07	-
ADPF	MJ	6.49E+01	1.09E+01	6.57E+00	<0.001	4.50E+01	0	5.49E+00	0	-	-	0	-	9.02E-01	-
GWP	kg CO_2-eq	5.73E+00	6.88E-01	4.49E-01	<0.001	4.15E+00	0	1.95E+00	0	-	-	0	-	1.57E+00	-
ODP	kg CFC11-eq	4.92E-07	1.31E-07	4.22E-08	<0.001	3.46E-07	0	4.67E-08	0	-	-	0	-	9.49E-09	-
POCP	kg etilene-eq	2.24E-03	9.27E-05	2.32E-04	<0.001	1.44E-03	0	2.35E-04	0	-	-	0	-	9.39E-05	-
AP	kg SO_2-eq	3.82E-02	1.60E-03	3.04E-03	<0.001	2.09E-02	0	5.07E-03	0	-	-	0	-	2.71E-03	-
EP	kg $(PO_4)^{3-}$-eq	9.00E-03	1.83E-04	2.52E-04	<0.001	5.79E-03	0	1.26E-03	0	-	-	0	-	7.44E-04	-
LEGEND	ADPE=Abiotic depletion potential for non fossil resources; ADPF=Abiotic depletion potential for fossil resources; GWP=Global Warming Potential; ODP=Depletion potential of the stratospheric ozone layer; POCP=Photochemical oxidant creation potential; AP=Acidification potential; EP=Eutrophication potential.														

Table 9 – Use of Resources

VENETO xf² 2 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
PERE	MJ	4.89E+01	5.24E-02	3.99E-01	0	2.11E+01	0	2.73E+00	0	-	-	0	-	3.37E-02	-
PERM	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
PERT	MJ	4.89E+01	5.24E-02	3.99E-01	0	2.11E+01	0	2.73E+00	0	-	-	0	-	3.37E-02	-
PENRE	MJ	8.17E+01	1.02E+01	7.91E+00	0	5.53E+01	0	6.53E+00	0	-	-	0	-	9.93E-01	-
PENRM	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
PENRT	MJ	8.17E+01	1.02E+01	7.91E+00	0	5.53E+01	0	6.53E+00	0	-	-	0	-	9.93E-01	-
SM	kg	1.75E-01	0	0	0	0	0	1.05E-02	0	-	-	0	-	0	-
RSF	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
NRSF	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
FW	m^3	1.18E+01	1.77E-01	1.33E+00	0	4.28E+01	0	8.99E-01	0	-	-	0	-	1.64E-01	-
LEGEND	PERE=Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM=Use of renewable primary energy resources used as raw materials; PERT=Total use of renewable primary energy resources; PENRE=Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM=Use of non renewable primary energy resources used as raw materials; PENRT=Total use of non renewable primary energy resources; SM=Use of secondary material; RSF=Use of renewable secondary fuel; NRSF=Use of non renewable secondary fuels; FW=Use of net fresh water														

Table 10 – Waste Production

VENETO xf² 2 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
HWD	kg	1.55E-02	0	0	0	0	0	9.30E-04	0	-	-	0	-	0	-
NHWD	kg	1.90E-01	0	5.80E-01	0	0	0	1.14E-02	0	-	-	0	-	0	-
RWD	kg	0	0	0	0	0	0	0	0	-	-	0	-	0	-
LEGEND	HWD=Hazardous waste disposed; NHWD=Non hazardous waste disposed; RWD=Radioactive waste disposed.														

VENETO xf² 3.2 mm

Table 11 – Environmental Impact Categories

VENETO xf² 3.2 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
ADPE	kg Sb-eq	6.36E-05	1.37E-08	8.80E-07	<0.001	1.05E-06	0	4.72E-06	0	-	-	0	-	1.20E-06	-
ADPF	MJ	8.94E+01	1.06E+01	6.57E+00	<0.001	4.50E+01	0	7.37E+00	0	-	-	0	-	1.46E+00	-
GWP	kg CO_2-eq	8.19E+00	6.75E-01	4.49E-01	<0.001	4.15E+00	0	3.06E+00	0	-	-	0	-	2.54E+00	-
ODP	kg CFC11-eq	7.59E-07	1.29E-07	4.22E-08	<0.001	3.46E-07	0	6.70E-08	0	-	-	0	-	1.54E-08	-
POCP	kg etilene-eq	3.49E-03	1.58E-04	2.32E-04	<0.001	1.44E-03	0	3.66E-04	0	-	-	0	-	1.52E-04	-
AP	kg SO_2-eq	6.25E-02	3.91E-03	3.04E-03	<0.001	2.09E-02	0	8.21E-03	0	-	-	0	-	4.39E-03	-
EP	kg $(PO_4)^{3-}$-eq	1.36E-02	3.72E-04	2.52E-04	<0.001	5.79E-03	0	1.98E-03	0	-	-	0	-	1.20E-03	-
LEGEND	ADPE=Abiotic depletion potential for non fossil resources; ADPF=Abiotic depletion potential for fossil resources; GWP=Global Warming Potential; ODP=Depletion potential of the stratospheric ozone layer; POCP=Photochemical oxidant creation potential; AP=Acidification potential; EP=Eutrophication potential.														

Table 12 – Use of Resources

VENETO xf² 3.2 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
PERE	MJ	7.09E+01	4.65E-02	3.99E-01	0	2.11E+01	0	3.95E+00	0	-	-	0	-	5.45E-02	-
PERM	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
PERT	MJ	7.09E+01	4.65E-02	3.99E-01	0	2.11E+01	0	3.95E+00	0	-	-	0	-	5.45E-02	-
PENRE	MJ	1.14E+02	9.96E+00	7.91E+00	0	5.53E+01	0	8.88E+00	0	-	-	0	-	1.61E+00	-
PENRM	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
PENRT	MJ	1.14E+02	9.96E+00	7.91E+00	0	5.53E+01	0	8.88E+00	0	-	-	0	-	1.61E+00	-
SM	kg	5.79E-01	0	0	0	0	0	3.47E-02	0	-	-	0	-	0	-
RSF	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
NRSF	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
FW	m^3	1.85E+01	1.59E-01	1.33E+00	0	4.28E+01	0	1.37E+00	0	-	-	0	-	2.65E-01	-
LEGEND	PERE=Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM=Use of renewable primary energy resources used as raw materials; PERT=Total use of renewable primary energy resources; PENRE=Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM=Use of non renewable primary energy resources used as raw materials; PENRT=Total use of non renewable primary energy resources; SM=Use of secondary material; RSF=Use of renewable secondary fuel; NRSF=Use of non renewable secondary fuels; FW=Use of net fresh water														

Table 13 – Waste Production

VENETO xf2 3.2 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
HWD	kg	1.55E-02	0	0	0	0	0	9.30E-04	0	-	-	0	-	0	-
NHWD	kg	1.90E-01	0	5.80E-01	0	0	0	1.14E-02	0	-	-	0	-	0	-
RWD	kg	0	0	0	0	0	0	0	0	-	-	0	-	0	-
LEGEND	HWD=Hazardous waste disposed; NHWD=Non hazardous waste disposed; RWD=Radioactive waste disposed.														

ETRUSCO xf² 2.5 mm

Table 14 – Environmental Impact Categories

ETRUSCO xf² 2.5 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
ADPE	kg Sb-eq	5.72E-05	1.58E-08	8.80E-07	<0.001	1.05E-06	0	4.19E-06	0	-	-	0	-	1.02E-06	-
ADPF	MJ	8.03E+01	1.07E+01	6.56E+00	<0.001	4.50E+01	0	6.65E+00	0	-	-	0	-	1.23E+00	-
GWP	kg CO_2-eq	7.23E+00	6.74E-01	4.48E-01	<0.001	4.15E+00	0	2.61E+00	0	-	-	0	-	2.15E+00	-
ODP	kg CFC11-eq	6.60E-07	1.29E-07	4.20E-08	<0.001	3.46E-07	0	5.92E-08	0	-	-	0	-	1.30E-08	-
POCP	kg etilene-eq	3.02E-03	8.75E-05	2.32E-04	<0.001	1.44E-03	0	3.12E-04	0	-	-	0	-	1.28E-04	-
AP	kg SO_2-eq	5.33E-02	1.46E-03	3.04E-03	<0.001	2.09E-02	0	6.88E-03	0	-	-	0	-	3.71E-03	-
EP	kg $(PO_4)^{3-}$-eq	1.16E-02	1.70E-04	2.51E-04	<0.001	5.79E-03	0	1.67E-03	0	-	-	0	-	1.02E-03	-
LEGEND	ADPE=Abiotic depletion potential for non fossil resources; ADPF=Abiotic depletion potential for fossil resources; GWP=Global Warming Potential; ODP=Depletion potential of the stratospheric ozone layer; POCP=Photochemical oxidant creation potential; AP=Acidification potential; EP=Eutrophication potential.														

Table 15 – Use of Resources

ETRUSCO xf² 2.5 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
PERE	MJ	6.20E+01	5.15E-02	3.99E-01	0	2.11E+01	0	3.46E+00	0	-	-	0	-	4.61E-02	-
PERM	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
PERT	MJ	6.20E+01	5.15E-02	3.99E-01	0	2.11E+01	0	3.46E+00	0	-	-	0	-	4.61E-02	-
PENRE	MJ	1.02E+02	1.00E+01	7.90E+00	0	5.53E+01	0	7.97E+00	0	-	-	0	-	1.36E+00	-
PENRM	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
PENRT	MJ	1.02E+02	1.00E+01	7.90E+00	0	5.53E+01	0	7.97E+00	0	-	-	0	-	1.36E+00	-
SM	kg	4.81E-01	0	0	0	0	0	2.89E-02	0	-	-	0	-	0	-
RSF	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
NRSF	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
FW	m^3	1.57E+01	1.74E-01	1.33E+00	0	4.28E+01	0	1.18E+00	0	-	-	0	-	2.24E-01	-
LEGEND	PERE=Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM=Use of renewable primary energy resources used as raw materials; PERT=Total use of renewable primary energy resources; PENRE=Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM=Use of non renewable primary energy resources used as raw materials; PENRT=Total use of non renewable primary energy resources; SM=Use of secondary material; RSF=Use of renewable secondary fuel; NRSF=Use of non renewable secondary fuels; FW=Use of net fresh water														

Table 16 – Waste Production

ETRUSCO xf² 2.5 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
HWD	kg	1.55E-02	0	0	0	0	0	9.30E-04	0	-	-	0	-	0	-
NHWD	kg	1.90E-01	0	5.80E-01	0	0	0	1.14E-02	0	-	-	0	-	0	-
RWD	kg	0	0	0	0	0	0	0	0	-	-	0	-	0	-
LEGEND	HWD=Hazardous waste disposed; NHWD=Non hazardous waste disposed; RWD=Radioactive waste disposed.														

LINOSPORT xf² 3.2 mm

Table 17 – Environmental Impact Categories

LINOSPORT xf² 3.2 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
ADPE	kg Sb-eq	6.36E-05	1.49E-08	8.80E-07	<0.001	1.05E-06	0	4.72E-06	0	-	-	0	-	1.20E-06	-
ADPF	MJ	8.94E+01	9.99E+00	6.56E+00	<0.001	4.50E+01	0	7.33E+00	0	-	-	0	-	1.46E+00	-
GWP	kg CO_2-eq	8.20E+00	6.31E-01	4.48E-01	<0.001	4.15E+00	0	3.05E+00	0	-	-	0	-	2.54E+00	-
ODP	kg CFC11-eq	7.59E-07	1.20E-07	4.20E-08	<0.001	3.46E-07	0	6.65E-08	0	-	-	0	-	1.54E-08	-
POCP	kg etilene-eq	3.49E-03	7.87E-05	2.32E-04	<0.001	1.44E-03	0	3.61E-04	0	-	-	0	-	1.52E-04	-
AP	kg SO_2-eq	6.25E-02	1.25E-03	3.04E-03	<0.001	2.09E-02	0	8.05E-03	0	-	-	0	-	4.39E-03	-
EP	kg $(PO_4)^{3-}$-eq	1.36E-02	1.50E-04	2.51E-04	<0.001	5.79E-03	0	1.97E-03	0	-	-	0	-	1.21E-03	-
LEGEND	ADPE = Abiotic Depletion Potential – Elements; ADPF = Abiotic Depletion Potential – Fossil Fuels; GWP = Global Warming Potential (Climate Change); ODP = Ozone Depletion Potential; POCP = Photochemical Ozone Creation; AP = Acidification Potential for Soil and Water; EP = Eutrophication Potential.														

Table 18 – Use of Resources

LINOSPORT xf² 3.2 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
PERE	MJ	7.09E+01	4.84E-02	3.99E-01	0	2.11E+01	0	3.95E+00	0	-	-	0	-	5.46E-02	-
PERM	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
PERT	MJ	7.09E+01	4.84E-02	3.99E-01	0	2.11E+01	0	3.95E+00	0	-	-	0	-	5.46E-02	-
PENRE	MJ	1.14E+02	9.37E+00	7.90E+00	0	5.53E+01	0	8.84E+00	0	-	-	0	-	1.61E+00	-
PENRM	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
PENRT	MJ	1.14E+02	9.37E+00	7.90E+00	0	5.53E+01	0	8.84E+00	0	-	-	0	-	1.61E+00	-
SM	kg	5.79E-01	0	0	0	0	0	3.47E-02	0	-	-	0	-	0	-
RSF	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
NRSF	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
FW	m^3	1.85E+01	1.64E-01	1.33E+00	0	4.28E+01	0	1.37E+00	0	-	-	0	-	2.66E-01	-
LEGEND	PERE=Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM=Use of renewable primary energy resources used as raw materials; PERT=Total use of renewable primary energy resources; PENRE=Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM=Use of non renewable primary energy resources used as raw materials; PENRT=Total use of non renewable primary energy resources; SM=Use of secondary material; RSF=Use of renewable secondary fuel; NRSF=Use of non renewable secondary fuels; FW=Use of net fresh water														

Table 19 – Waste Production

LINOSPORT xf² 3.2 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
HWD	kg	1.55E-02	0	0	0	0	0	9.30E-04	0	-	-	0	-	0	-
NHWD	Kg	1.90E-01	0	5.80E-01	0	0	0	1.14E-02	0	-	-	0	-	0	-
RWD	kg	0	0	0	0	0	0	0	0	-	-	0	-	0	-
LEGEND	HWD=Hazardous waste disposed; NHWD=Non hazardous waste disposed; RWD=Radioactive waste disposed.														

LINOSPORT CLASSIC/NARNIDUR 4 mm

Table 20 – Environmental Impact Categories

LINOSPORT CLASSIC/NARNIDUR 4 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
ADPE	kg Sb-eq	7.28E-05	1.96E-08	8.80E-07	<0.001	1.05E-06	0	5.45E-06	0	-	-	0	-	1.42E-06	-
ADPF	MJ	1.07E+02	1.31E+01	6.56E+00	<0.001	4.50E+01	0	8.75E+00	0	-	-	0	-	1.72E+00	-
GWP	kg CO_2-eq	9.93E+00	8.29E-01	4.48E-01	<0.001	4.15E+00	0	3.62E+00	0	-	-	0	-	3.00E+00	-
ODP	kg CFC11-eq	9.60E-07	1.58E-07	4.20E-08	<0.001	3.46E-07	0	8.25E-08	0	-	-	0	-	1.81E-08	-
POCP	kg etilene-eq	4.66E-03	1.03E-04	2.32E-04	<0.001	1.44E-03	0	4.53E-04	0	-	-	0	-	1.79E-04	-
AP	kg SO_2-eq	8.46E-02	1.65E-03	3.04E-03	<0.001	2.09E-02	0	1.01E-02	0	-	-	0	-	5.18E-03	-
EP	kg $(PO_4)^{3-}$-eq	1.62E-02	1.97E-04	2.51E-04	<0.001	5.79E-03	0	2.33E-03	0	-	-	0	-	1.42E-03	-
LEGEND	ADPE=Abiotic depletion potential for non fossil resources; ADPF=Abiotic depletion potential for fossil resources; GWP=Global Warming Potential; ODP=Depletion potential of the stratospheric ozone layer; POCP=Photochemical oxidant creation potential; AP=Acidification potential; EP=Eutrophication potential.														

Table 21 – Use of Resources

LINOSPORT CLASSIC/NARNIDUR 4 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
PERE	MJ	8.27E+01	6.37E-02	3.99E-01	0	2.11E+01	0	4.60E+00	0	-	-	0	-	6.44E-02	-
PERM	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
PERT	MJ	8.27E+01	6.37E-02	3.99E-01	0	2.11E+01	0	4.60E+00	0	-	-	0	-	6.44E-02	-
PENRE	MJ	1.37E+02	1.23E+01	7.90E+00	0	5.53E+01	0	1.06E+01	0	-	-	0	-	1.90E+00	-
PENRM	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
PENRT	MJ	1.37E+02	1.23E+01	7.90E+00	0	5.53E+01	0	1.06E+01	0	-	-	0	-	1.90E+00	-
SM	kg	7.89E-01	0	0	0	0	0	4.74E-02	0	-	-	0	-	0	-
RSF	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
NRSF	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
FW	m^3	2.33E+01	2.15E-01	1.33E+00	0	4.28E+01	0	1.68E+00	0	-	-	0	-	3.13E-01	-
LEGEND	PERE=Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM=Use of renewable primary energy resources used as raw materials; PERT=Total use of renewable primary energy resources; PENRE=Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM=Use of non renewable primary energy resources used as raw materials; PENRT=Total use of non renewable primary energy resources; SM=Use of secondary material; RSF=Use of renewable secondary fuel; NRSF=Use of non renewable secondary fuels; FW=Use of net fresh water														

Table 22 – Waste Production

LINOSPORT CLASSIC/NARNIDUR 4 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
HWD	kg	1.55E-02	0	0	0	0	0	9.30E-04	0	-	-	0	-	0	-
NHWD	kg	1.90E-01	0	5.80E-01	0	0	0	1.14E-02	0	-	-	0	-	0	-
RWD	kg	0	0	0	0	0	0	0	0	-	-	0	-	0	-
LEGEND	HWD=Hazardous waste disposed; NHWD=Non hazardous waste disposed; RWD=Radioactive waste disposed.														

STYLE ELLE xf² 2.5 mm

Table 23 – Environmental Impact Categories

STYLE ELLE xf² 2.5 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
ADPE	kg Sb-eq	5.17E-05	1.23E-08	8.80E-07	<0.001	1.05E-06	0	4.91E-06	0	-	-	0	-	1.02E-06	-
ADPF	MJ	7.38E+01	9.34E+00	6.56E+00	<0.001	4.50E+01	0	6.24E+00	0	-	-	0	-	1.24E+00	-
GWP	kg CO_2-eq	6.72E+00	5.92E-01	4.48E-01	<0.001	4.15E+00	0	3.49E+00	0	-	-	0	-	2.15E+00	-
ODP	kg CFC11-eq	5.89E-07	1.13E-07	4.20E-08	<0.001	3.46E-07	0	5.53E-08	0	-	-	0	-	1.30E-08	-
POCP	kg etilene-eq	2.49E-03	1.30E-04	2.32E-04	<0.001	1.44E-03	0	1.94E-04	0	-	-	0	-	1.29E-04	-
AP	kg SO_2-eq	4.40E-02	3.14E-03	3.04E-03	<0.001	2.09E-02	0	4.08E-03	0	-	-	0	-	3.72E-03	-
EP	kg $(PO_4)^{3-}$-eq	1.16E-02	3.02E-04	2.51E-04	<0.001	5.79E-03	0	1.09E-03	0	-	-	0	-	1.02E-03	-
LEGEND	ADPE=Abiotic depletion potential for non fossil resources; ADPF=Abiotic depletion potential for fossil resources; GWP=Global Warming Potential; ODP=Depletion potential of the stratospheric ozone layer; POCP=Photochemical oxidant creation potential; AP=Acidification potential; EP=Eutrophication potential.														

Table 24 – Use of Resources

STYLE ELLE xf² 2.5 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
PERE	MJ	6.17E+01	4.14E-02	3.99E-01	0	2.11E+01	0	3.44E+00	0	-	-	0	-	4.62E-02	-
PERM	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
PERT	MJ	6.17E+01	4.14E-02	3.99E-01	0	2.11E+01	0	3.44E+00	0	-	-	0	-	4.62E-02	-
PENRE	MJ	9.30E+01	8.75E+00	7.90E+00	0	5.53E+01	0	7.43E+00	0	-	-	0	-	1.36E+00	-
PENRM	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
PENRT	MJ	9.30E+01	8.75E+00	7.90E+00	0	5.53E+01	0	7.43E+00	0	-	-	0	-	1.36E+00	-
SM	kg	3.00E-01	0	0	0	0	0	1.80E-02	0	-	-	0	-	0	-
RSF	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
NRSF	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
FW	m^3	1.46E+01	1.42E-01	1.33E+00	0	4.28E+01	0	1.12E+00	0	-	-	0	-	2.25E-01	-
LEGEND	PERE=Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM=Use of renewable primary energy resources used as raw materials; PERT=Total use of renewable primary energy resources; PENRE=Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM=Use of non renewable primary energy resources used as raw materials; PENRT=Total use of non renewable primary energy resources; SM=Use of secondary material; RSF=Use of renewable secondary fuel; NRSF=Use of non renewable secondary fuels; FW=Use of net fresh water														

Table 25 – Waste Production

STYLE ELLE xf² 2.5 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
HWD	kg	1.55E-02	0	0	0	0	0	9.30E-04	0	-	-	0	-	0	-
NHWD	kg	1.90E-01	0	5.80E-01	0	0	0	1.14E-02	0	-	-	0	-	0	-
RWD	kg	0	0	0	0	0	0	0	0	-	-	0	-	0	-
LEGEND	HWD=Hazardous waste disposed; NHWD=Non hazardous waste disposed; RWD=Radioactive waste disposed.														

STYLE EMME xf² 2.5 mm

Table 26 – Environmental Impact Categories

STYLE EMME xf² 2.5 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
ADPE	kg Sb-eq	4.97E-05	1.32E-08	8.80E-07	<0.001	1.05E-06	0	3.78E-06	0	-	-	0	-	1.02E-06	-
ADPF	MJ	7.41E+01	9.45E+00	6.56E+00	<0.001	4.50E+01	0	6.24E+00	0	-	-	0	-	1.24E+00	-
GWP	kg CO_2-eq	6.75E+00	5.98E-01	4.48E-01	<0.001	4.15E+00	0	2.58E+00	0	-	-	0	-	2.15E+00	-
ODP	kg CFC11-eq	5.93E-07	1.14E-07	4.20E-08	<0.001	3.46E-07	0	5.47E-08	0	-	-	0	-	1.30E-08	-
POCP	kg etilene-eq	2.55E-03	1.04E-04	2.32E-04	<0.001	1.44E-03	0	2.88E-04	0	-	-	0	-	1.29E-04	-
AP	kg SO_2-eq	4.48E-02	2.22E-03	3.04E-03	<0.001	2.09E-02	0	6.47E-03	0	-	-	0	-	3.71E-03	-
EP	kg $(PO_4)^{3-}$-eq	1.16E-02	2.27E-04	2.51E-04	<0.001	5.79E-03	0	1.68E-03	0	-	-	0	-	1.02E-03	-
LEGEND	ADPE=Abiotic depletion potential for non fossil resources; ADPF=Abiotic depletion potential for fossil resources; GWP=Global Warming Potential; ODP=Depletion potential of the stratospheric ozone layer; POCP=Photochemical oxidant creation potential; AP=Acidification potential; EP=Eutrophication potential.														

Table 27 – Use of Resources

STYLE EMME xf² 2.5 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
PERE	MJ	6.18E+01	4.38E-02	3.99E-01	0	2.11E+01	0	3.44E+00	0	-	-	0	-	4.62E-02	-
PERM	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
PERT	MJ	6.18E+01	4.38E-02	3.99E-01	0	2.11E+01	0	3.44E+00	0	-	-	0	-	4.62E-02	-
PENRE	MJ	9.36E+01	8.86E+00	7.90E+00	0	5.53E+01	0	7.47E+00	0	-	-	0	-	1.36E+00	-
PENRM	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
PENRT	MJ	9.36E+01	8.86E+00	7.90E+00	0	5.53E+01	0	7.47E+00	0	-	-	0	-	1.36E+00	-
SM	kg	3.00E-01	0	0	0	0	0	1.80E-02	0	-	-	0	-	0	-
RSF	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
NRSF	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
FW	m^3	1.47E+01	1.49E-01	1.33E+00	0	4.28E+01	0	1.12E+00	0	-	-	0	-	2.25E-01	-
LEGEND	PERE=Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM=Use of renewable primary energy resources used as raw materials; PERT=Total use of renewable primary energy resources; PENRE=Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM=Use of non renewable primary energy resources used as raw materials; PENRT=Total use of non renewable primary energy resources; SM=Use of secondary material; RSF=Use of renewable secondary fuel; RSF=Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water.														

Table 28 – Waste Production

STYLE EMME xf² 2.5 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
HWD	kg	1.55E-02	0	0	0	0	0	9.30E-04	0	-	-	0	-	0	-
NHWD	kg	1.90E-01	0	5.80E-01	0	0	0	1.14E-02	0	-	-	0	-	0	-
RWD	kg	0	0	0	0	0	0	0	0	-	-	0	-	0	-
LEGEND	HWD=Hazardous waste disposed; NHWD=Non hazardous waste disposed; RWD=Radioactive waste disposed.														

VENETO ESSENZA 2.5 mm

Table 29 – Environmental Impact Categories

VENETO ESSENZA 2.5 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
ADPE	kg Sb-eq	5.02E-05	3.16E-08	8.80E-07	<0.001	1.05E-06	0	4.65E-06	0	-	-	0	-	9.27E-07	-
ADPF	MJ	7.21E+01	2.12E+01	6.56E+00	<0.001	4.50E+01	0	6.74E+00	0	-	-	0	-	1.12E+00	-
GWP	kg CO_2-eq	6.52E+00	1.34E+00	4.48E-01	<0.001	4.15E+00	0	3.25E+00	0	-	-	0	-	1.96E+00	-
ODP	kg CFC11-eq	5.74E-07	2.55E-07	4.20E-08	<0.001	3.46E-07	0	6.18E-08	0	-	-	0	-	1.18E-08	-
POCP	kg etilene-eq	2.56E-03	1.67E-04	2.32E-04	<0.001	1.44E-03	0	1.97E-04	0	-	-	0	-	1.17E-04	-
AP	kg SO_2-eq	4.48E-02	2.65E-03	3.04E-03	<0.001	2.09E-02	0	3.98E-03	0	-	-	0	-	3.38E-03	-
EP	kg $(PO_4)^{3-}$-eq	1.08E-02	3.18E-04	2.51E-04	<0.001	5.79E-03	0	1.01E-03	0	-	-	0	-	9.29E-04	-
LEGEND	ADPE=Abiotic depletion potential for non fossil resources; ADPF=Abiotic depletion potential for fossil resources; GWP=Global Warming Potential; ODP=Depletion potential of the stratospheric ozone layer; POCP=Photochemical oxidant creation potential; AP=Acidification potential; EP=Eutrophication potential.														

Table 30 – Use of Resources

VENETO ESSENZA 2.5 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
PERE	MJ	5.74E+01	1.03E-01	3.99E-01	0	2.11E+01	0	3.20E+00	0	-	-	0	-	4.20E-0	-
PERM	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
PERT	MJ	5.74E+01	1.03E-01	3.99E-01	0	2.11E+01	0	3.20E+00	0	-	-	0	-	4.20E-0	-
PENRE	MJ	9.11E+01	1.99E+01	7.90E+00	0	5.53E+01	0	7.87E+00	0	-	-	0	-	1.24E+00	-
PENRM	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
PENRT	MJ	9.11E+01	1.99E+01	7.90E+00	0	5.53E+01	0	7.87E+00	0	-	-	0	-	1.24E+00	-
SM	kg	2.24E-01	0	0	0	0	0	1.35E-02	0	-	-	0	-	0	-
RSF	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
NRSF	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
FW	m^3	1.41E+01	3.47E-01	1.33E+00	0	4.28E+01	0	1.08E+00	0	-	-	0	-	2.05E-01	-
LEGEND	PERE=Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM=Use of renewable primary energy resources used as raw materials; PERT=Total use of renewable primary energy resources; PENRE=Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM=Use of non renewable primary energy resources used as raw materials; PENRT=Total use of non renewable primary energy resources; SM=Use of secondary material; RSF=Use of renewable secondary fuel; NRSF=Use of non renewable secondary fuels; FW=Use of net fresh water														

Table 31 – Waste Production

VENETO ESSENZA 2.5 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
HWD	kg	1.55E-02	0	0	0	0	0	9.30E-04	0	-	-	0	-	0	-
NHWD	kg	1.90E-01	0	5.80E-01	0	0	0	1.14E-02	0	-	-	0	-	0	-
RWD	kg	0	0	0	0	0	0	0	0	-	-	0	-	0	-
LEGEND	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for reuse.														

VENETO SILENCIO xf² 3.8 mm

Table 32 – Environmental Impact Categories

VENETO SILENCIO xf² 3.8 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
ADPE	kg Sb-eq	7.30E-05	1.85E-08	6.29E-07	<0.001	1.05E-06	-	4.89E-06	-	-	-	-	-	1.20E-06	-
ADPF	MJ	1.53E+02	1.26E+01	4.68E+00	<0.001	4.50E+01	-	9.42E+00	-	-	-	-	-	7.46E-01	-
GWP	kg CO_2-eq	1.22E+01	7.97E-01	3.20E-01	<0.001	4.15E+00	-	2.49E+00	-	-	-	-	-	1.81E+00	-
ODP	kg CFC11-eq	9.48E-07	1.52E-07	2.99E-08	<0.001	3.46E-07	-	6.65E-08	-	-	-	-	-	8.20E-09	-
POCP	kg etilene-eq	5.56E-03	1.09E-04	1.65E-04	<0.001	1.44E-03	-	3.16E-04	-	-	-	-	-	2.17E-05	-
AP	kg SO_2-eq	1.00E-01	1.92E-03	2.17E-03	<0.001	2.09E-02	-	6.03E-03	-	-	-	-	-	7.77E-04	-
EP	kg $(PO_4)^{3-}$-eq	1.55E-02	2.17E-04	1.79E-04	<0.001	5.79E-03	-	1.05E-03	-	-	-	-	-	2.51E-04	-
LEGEND	ADPE=Abiotic depletion potential for non fossil resources; ADPF=Abiotic depletion potential for fossil resources; GWP=Global Warming Potential; ODP=Depletion potential of the stratospheric ozone layer; POCP=Photochemical oxidant creation potential; AP=Acidification potential; EP=Eutrophication potential.														

Table 33 – Use of Resources

VENETO SILENCIO xf² 3.8 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
PERE	MJ	6.80E+01	6.05E-02	2.88E-01	0	2.11E+01	0	3.45E+00	0	-	-	0	-	2.69E-02	-
PERM	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
PERT	MJ	6.80E+01	6.05E-02	2.88E-01	0	2.11E+01	0	3.45E+00	0	-	-	0	-	2.69E-02	-
PENRE	MJ	1.84E+02	1.18E+01	5.64E+00	0	5.53E+01	0	1.10E+01	0	-	-	0	-	8.01E-01	-
PENRM	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
PENRT	MJ	1.84E+02	1.18E+01	5.64E+00	0	5.53E+01	0	1.10E+01	0	-	-	0	-	8.01E-01	-
SM	kg	2.46E-01	0	0	0	0	0	1.47E-02	0	-	-	0	-	0	-
RSF	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
NRSF	MJ	0	0	0	0	0	0	0	0	-	-	0	-	0	-
FW	m^3	2.30E+01	2.05E-01	9.63E-01	0	4.28E+01	0	1.36E+00	0	-	-	0	-	1.40E-01	-
LEGEND	PERE=Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM=Use of renewable primary energy resources used as raw materials; PERT=Total use of renewable primary energy resources; PENRE=Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM=Use of non renewable primary energy resources used as raw materials; PENRT=Total use of non renewable primary energy resources; SM=Use of secondary material; RSF=Use of renewable secondary fuel; NRSF=Use of non renewable secondary fuels; FW=Use of net fresh water														

Table 34 – Waste Production

VENETO SILENCIO xf² 3.8 mm															
		PRODUCT STAGE	CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE			
Parameter	**U/M**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**
HWD	kg	1.55E-02	0	0	0	0	0	9.30E-04	0	-	-	0	-	0	-
NHWD	kg	1.90E-01	0	5.80E-01	0	0	0	1.14E-02	0	-	-	0	-	0	-
RWD	kg	0	0	0	0	0	0	0	0	-	-	0	-	0	-
LEGEND	HWD=Hazardous waste disposed; NHWD=Non hazardous waste disposed; RWD=Radioactive waste disposed.														

Other output flows

Based on the end of lifecycle setting, as defined in 3.1, according to the fact that a part of linoleum is sent to the incinerator with energetic recovery and a part is sent to composting processes, except the Veneto Silencio that is sent only to the incinerator, we have the following output flows:

Table 35 – Other output flows for products Veneto xf² 2 / 2.5 / 3.2 mm; Veneto Essenza 2.5 mm; Veneto Silencio xf² 3.8 mm

		VENETO xf² 2.5 mm					VENETO xf² 2 mm					VENETO xf² 3.2 mm					VENETO ESSENZA 2,5 mm					VENETO SILENCIO xf² 3,8 mm				
Parameter	**U/M**	**A3**	**C1**	**C2**	**C3**	**C4**	**A3**	**C1**	**C2**	**C3**	**C4**	**A3**	**C1**	**C2**	**C3**	**C4**	**A3**	**C1**	**C2**	**C3**	**C4**	**A3**	**C1**	**C2**	**C3**	**C4**
CRU	Kg	0	0	-	0.90 E+00	-	0	0	-	0.72 E+00	-	0	0	-	1.17 E+00	-	0	0	-	0.90 E+00	-	0	0	-	0	-
MFR	Kg	5.50 E-02	0	-	0	-	5.50 E-02	0	-	0	-	5.50 E-02	0	-	0	-	5.50 E-02	0	-	0	-	6.00 E-02	0	-	0	-
MER	Kg	0	0	-	2.10 E+00	-	0	0	-	1.68 E+00	-	0	0	-	2.73 E+00	-	0	0	-	2.10 E+00	-	0	0	-	3.45 E+00	-
EEE	MJ	0	0	-	3.78 E+01	-	0	0	-	3.02 E+01	-	0	0	-	4.91 E+01	-	0	0	-	3.78 E+01	-	0	0	-	4.35 E+01	-
EET	MJ	0	0	-	0	-	0	0	-	0	-	0	0	-	0	-	0	0	-	0	-	0	0	-	0	-
LEGEND	CRU = Components for reuse; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy..																									

Table 36 – Other output flows for products Linosport xf² 3.2 mm; Linosport Classic/Narnidur 4 mm

		LINOSPORT xf² 3.2 mm					LINOSPORT CLASSIC/NARNIDUR 4 mm				
Parameter	**U/M**	**A3**	**C1**	**C2**	**C3**	**C4**	**A3**	**C1**	**C2**	**C3**	**C4**
CRU	Kg		0	-	1.17E+00	-		0	-	0.72E+00	-
MFR	Kg	5.50E-02	0	-	0	-	5.50E-02	0	-	0	-
MER	Kg		0	-	2.73E+00	-		0	-	3.22E+00	-
EEE	MJ		0	-	4.91E+01	-		0	-	5.80E+01	-
EET	MJ		0	-	0	-		0	-	0	-
LEGEND	CRU=Components for re-use; MFR=Materials for recycling; MER=Materials for energy recovery; EEE = Exported electrical energy; EET = Exported-										

Table 37 – Other output flows for products Style Elle xf² 2.5 mm; Style Emme xf² 2.5 mm; Etrusco xf² 2.5 mm

		STYLE ELLE xf² 2.5 mm					STYLE EMME xf² 2.5 mm					ETRUSCO xf² 2.5 mm				
Parameter	**U/M**	**A3**	**C1**	**C2**	**C3**	**C4**	**A3**	**C1**	**C2**	**C3**	**C4**	**A3**	**C1**	**C2**	**C3**	**C4**
CRU	Kg		0	-	0.90E+00	-		0	-	0,90E+00	-		0	-	1.38E+00	-
MFR	Kg	5.50E-02	0	-	0	-	5.50E-02	0	-	0	-	5.50E-02	0	-	0	-
MER	Kg		0	-	2.10E+00	-		0	-	2.10E+00	-		0	-	2.10E+00	-
EEE	MJ		0	-	3.78E+01	-		0	-	3.78E+01	-		0	-	3.78E+01	-
EET	MJ		0	-	0	-		0	-	0	-		0	-	0	-
LEGEND	CRU=Components for re-use; MFR=Materials for recycling; MER=Materials for energy recovery; EEE = Exported electrical energy; EET = Exported-															

3.5. Sensitivity Analysis

In order to study the answer of the built model when one or more input factors change, several sensitivity analysis have been developed so to highlight what parameters mainly influence the study results. Particularly:

- During stage A1, Raw Materials Supply, in order to consider the wide range of colors and graduations obtained by changing the content of some pigments and of other raw materials as the calcium carbonate and the titanium dioxide, two colors corresponding to a very light and a very dark color have been selected, and for those colors a new analysis has been made for each product. The results show how the variability of the different impact categories is higher than 10%. The following tables show the different impact categories for the products evaluated.

Table 38 – Variability of indicators for light and dark colors.

Product	Color	Impact Categories						
		ADPE	ADPF	GWP	ODP	POCP	AP	EP
		Δ%						
VENETO xf² 2.5 mm	Light Color	5%	4%	3%	5%	11%	11%	2%
	Dark Color	-2%	-4%	-3%	-5%	-10%	-11%	-2%
VENETO xf² 2mm	Light Color	4%	4%	3%	5%	11%	12%	2%
	Dark Color	-2%	-3%	-2%	-4%	-9%	-10%	-1%
VENETO xf² 3.2mm	Light Color	-9%	1%	1%	2%	4%	4%	1%
	Dark Color	-16%	-8%	-6%	-10%	-19%	-20%	-3%
ETRUSCO xf² 2.5 mm	Light Color	10%	6%	5%	8%	15%	16%	3%
	Dark Color	-14%	-8%	-6%	-11%	-21%	-22%	-3%
LINOSPORT xf² 3.2mm	Light Color	-9%	1%	1%	2%	4%	4%	1%
	Dark Color	-9%	-9%	-6%	-11%	-22%	-23%	-4%
LINOSPORT CLASSIC/NARNIDUR 4mm	Light Color	-13%	-2%	-2%	-3%	-5%	-5%	-1%
	Dark Color	3%	-7%	-5%	-9%	-18%	-18%	-3%
STYLE ELLE xf² 2.5 mm	Light Color	9%	9%	7%	13%	27%	29%	4%
	Dark Color	3%	-3%	-2%	-5%	-10%	-11%	-1%
STYLE EMME xf² 2.5 mm	Light Color	13%	9%	7%	12%	25%	26%	4%
	Dark Color	7%	-4%	-3%	-5%	-11%	-12%	-2%
VENETO ESSENZA 2.5 mm	Light Color	0%	2%	1%	2%	6%	6%	1%
	Dark Color	-3%	-4%	-3%	-5%	-11%	-12%	-2%
VENETO SILENCIO xf² 3.8 mm	Light Color	-20%	-9%	-10%	-14%	-23%	-24%	-5%
	Dark Color	-26%	-14%	-14%	-22%	-37%	-39%	-8%
LEGEND	ADPE=Abiotic depletion potential for non fossil resources; ADPF=Abiotic depletion potential for fossil resources; GWP=Global Warming Potential; ODP=Depletion potential of the stratospheric ozone layer; POCP=Photochemical oxidant creation potential; AP=Acidification potential; EP=Eutrophication potential.							

- During stage A1, Raw Materials Supply, since the used pigments are both organic and inorganic, an analysis has been carried out to highlight how the impacts change if we use only organic pigments or inorganic ones. Following this analysis, we have observed variability higher than 10% only for ADPE indicator, with a range of variability between -3 and -12%, contrary to the case where only non-organic pigments are used. However, these variations happen for indicators with impacts of 10^{-6} or 10^{-7}, and so of lower significance.
- During the lifecycle end, Module C4, Disposal, has been added to Module C3 already considered. Based on the sale data, it has been determined the product percentage that could be sent to the dump, verifying the variation produced on the total impact. The analysis shows a reduced variation, if not null, for almost every indicator, except the GWP one, where, however, the Δ% is a little higher than 10%.

Table 39 – Variability for indicators for dump disposal.

Product	Impact Categories						
	ADPE	ADPF	GWP	ODP	POCP	AP	EP
	Δ%						
VENETO xf² 2.5 mm	0%	0%	10%	0%	8%	0%	8%
VENETO xf² 2mm	0%	0%	9%	0%	7%	0%	7%
VENETO xf² 3.2mm	0%	0%	11%	0%	8%	0%	9%
ETRUSCO xf² 2.5 mm	0%	0%	11%	0%	8%	0%	9%
LINOSPORT xf² 3.2mm	0%	-1%	11%	0%	7%	0%	9%
LINOSPORT CLASSIC/NARNIDUR 4mm	0%	0%	12%	0%	8%	0%	9%
STYLE ELLE xf² 2,5 mm	0%	0%	11%	0%	9%	0%	9%
STYLE EMME xf² 2,5 mm	0%	0%	11%	0%	8%	0%	8%
VENETO ESSENZA 2.5 mm	0%	0%	10%	0%	8%	0%	8%
VENETO SILENCIO xf² 3.8 mm	0%	0%	9%	0%	5%	0%	9%
LEGEND	ADPE=Abiotic depletion potential for non fossil resources; ADPF=Abiotic depletion potential for fossil resources; GWP=Global Warming Potential; ODP=Depletion potential of the stratospheric ozone layer; POCP=Photochemical oxidant creation potential; AP=Acidification potential; EP=Eutrophication potential.						

4. OTHER ENVIRONMENTAL INFO

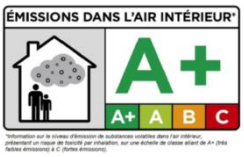
4.1. Certifications

The Tarkett plant of Narni owns the following certifications:

Tarkett ISO 14001 ENVIRONMENTAL MANAGEMENT SYSTEM	ISO 14001 for the environmental management system.
Tarkett ISO 9001 QUALITY SYSTEM	ISO 9001 for the quality management system.
Tarkett ISO 50001 ENERGY MANAGEMENT SYSTEM	ISO 50001 for the energy management system.
Tarkett OHSAS 18001 HEALTH AND SAFETY MANAGEMENT SYSTEM	OHSAS 18001 for the health and work safety management system.
Tarkett SA 8000 SOCIAL ACCOUNTABILITY	SA8000 for the business social responsibility.

Other achivements showing the company continuous commitment towards the environment are:

CERTIFIED cradle to cradle SILVER	C2C (“Cradle to Cradle” Certification) Silver level, for products: Veneto xf², Etrusco xf², Style Elle/Lenza xf², Style Emme/Tonali xf², Linosport xf², Linosport Classic / Narnidur.
CERTIFIED cradle to cradle GOLD	C2C (“Cradle to Cradle” Certification) Gold level, for product: Veneto Essenza 100% linen.

	C2C (“Cradle to Cradle” Certification) Bronze level, for product: Veneto Silencio.
	Declare (Efficient and Healthy Materials Certification), for products: Harmonium xf^2 (Veneto xf^2, Etrusco xf^2, Style Elle/Lenza xf^2, Style Emme/Tonali xf^2).
	Umweltzeichen (Austrian Ecologic Brand), for products: all products evaluated for this EPD.
	EPD (Product Environmental Certification) for products: Harmonium xf^2 (Veneto xf^2, Etrusco xf^2, Style Elle/Lenza xf^2, Style Emme/Tonali xf^2, Linosport xf^2, Veneto Silencio xf^2).
	FloorScore (American Certification of VOC emissions for resilient floorings), for products: all products evaluated for this EPD.
	Blaue Engel (German Product Ecologic Certification), for products: Veneto xf^2, Etrusco xf^2, Style Elle/Lenza xf^2, Style Emme/Tonali xf^2, Linosport xf^2, Veneto Silencio xf^2, Veneto Essenza.
	NSF 332 (Certification for the sustainability of resilient floorings) Platinum level, for products: Harmonium xf^2 (Veneto xf^2, Etrusco xf^2, Style Elle/Lenza xf^2, Style Emme/Tonali xf^2, Veneto Silencio xf^2).
	Tarkett Indoor Air Quality (TVOCs Certification after 28 days from installation), Platinum level, for products: all products evaluated for this EPD.
	Linoleum is classified as A+ by the guidelines “Green Guide to Specification” written by BRE Global.
	Tests carried out by Eurofins have verified that linoleum products by Tarkett are compliant to: French VOC regulations (A+, Regulation of March and April 2011 DEVL1101903D and DEVL1104875A); AgBB (ABG, Anforderungen an bauliche Anlagen bezüglich des Gesundheitsschutzes, Entwurf 29.08.2016 - draft); Belgium regulation (Royal decree of May 2015 - C-2014/24239).

NORDIC ECOLABEL 3029 0008	Swan (Environmental Certifications of Scandinavian countries) for products: all products evaluated for this EPD.
Tarkett ISO 14067 GREENHOUSE GASES - CARBON FOOTPRINT OF PRODUCTS	ISO 14067 (Certification for Products Carbon Footprint), for products: all products evaluated for this EPD.

4.2. Module D – Recycling Potential

Module D has been considered for this study in order to evaluate the possible environmental benefits obtainable through the re-use of secondary materials in other production cycles. Particularly, the module clearly describes the benefits and the environmental charges deriving from reusable products exiting from the system, such as secondary materials or secondary fuels. Particularly, we have carried out two analysis:

- D1: Linoleum of Post-consumer stage is sent to a waste-to-energy process for electricity production.

- D2: Linoleum of Post-consumer stage is sent, as linoleum powder obtained after a grinding process at the plant of Narni, in a second producing process. Particularly, the linoleum powder is recovered by an Italian company producing caps for reels. The caps produces use linoleum powder at 2%, already mixed inside the polypropylene grain, in order to guarantee a homogeneous dispersion inside the same[3].

These are the obtained results.

[3] Italian Company, “Info about caps production process”

Table 40 – Categories of environmental impact for products Veneto xf² 2 / 2.5 / 3.2 mm; Veneto Essenza 2.5 mm; Veneto Silencio xf² 3.8 mm

		VENETO xf² 2.5 mm		VENETO xf² 2.0 mm		VENETO xf² 3.2 mm		VENETO ESSENZA 2.5 mm		VENETO SILENCIO xf² 3.8 mm	
Parameter	**U/M**	**D1**	**D2**	**D1**	**D2**	**D1**	**D2**	**D1**	**D2**	**D1**	**D2**
ADPE	kg Sb-eq	8.62E-07	-1.56E-07	6.91E-07	-1.02E-07	1.09E-06	-1.93E-07	8.62E-07	-1.22E-07	1.13E-06	-1.62E-07
ADPF	MJ	-4.26E+01	-2.00E+02	-3.40E+01	-1.53E+02	-9.94E+01	-2.61E+02	-4.26E+01	-1.86E+02	-4.89E+01	-2.27E+02
GWP	kg CO_2-eq	-2.44E+00	-5.41E+00	-1.95E+00	-3.71E+00	-5.66E+00	-6.87E+00	-2.44E+00	-4.32E+00	-2.61E+00	-5.80E+00
ODP	kg CFC11-eq	-1.91E-07	1.30E-07	-1.53E-07	1.33E-07	-7.66E-07	1.11E-07	-1.91E-07	2.49E-07	-2.19E-07	1.40E-07
POCP	kg etilene-eq	-7.86E-04	-1.19E-03	-6.28E-04	-8.32E-04	-1.55E-03	-1.43E-03	-7.86E-04	-1.02E-03	-9.01E-04	-1.28E-03
AP	kg SO_2-eq	-1.92E-02	-1.76E-02	-1.53E-02	-1.10E-02	-3.20E-02	-1.86E-02	-1.92E-02	-1.40E-02	-2.20E-02	-1.77E-02
EP	kg $(PO_4)^{3-}$-eq	-1.57E-03	-1.68E-03	-1.26E-03	-1.07E-03	-1.97E-03	-1.85E-03	-1.57E-03	-1.32E-03	-1.78E-03	-1.71E-03
LEGEND	ADPE=Abiotic depletion potential for non fossil resources; ADPF=Abiotic depletion potential for fossil resources; GWP=Global Warming Potential; ODP=Depletion potential of the stratospheric ozone layer; POCP=Photochemical oxidant creation potential; AP=Acidification potential; EP=Eutrophication potential										

Table 41 – Categories of environmental impact for products Linosport xf² 3.2 mm; Linosport Classic/Narnidur 4 mm

		LINOSPORT xf² 3.2 mm		LINOSPORT CLASSIC/NARNIDUR 4 mm	
Parameter	**U/M**	**D1**	**D2**	**D1**	**D2**
ADPE	kg Sb-eq	1.12E-06	-1.92E-07	1.32E-06	-2.28E-07
ADPF	MJ	-5.54E+01	-2.61E+02	-6.53E+01	-3.08E+02
GWP	kg CO_2-eq	-3.18E+00	-6.91E+00	-3.75E+00	-8.18E+00
ODP	kg CFC11-eq	-2.48E-07	1.03E-07	-2.93E-07	1.32E-07
POCP	kg etilene-eq	-1.02E-03	-1.51E-03	-1.20E-03	-1.79E-03
AP	kg SO_2-eq	-2.49E-02	-2.13E-02	-2.94E-02	-2.55E-02
EP	kg $(PO_4)^{3-}$-eq	-2.05E-03	-2.07E-03	-2.41E-03	-2.47E-03
LEGEND	ADPE=Abiotic depletion potential for non fossil resources; ADPF=Abiotic depletion potential for fossil resources; GWP=Global Warming Potential; ODP=Depletion potential of the stratospheric ozone layer; POCP=Photochemical oxidant creation potential; AP=Acidification potential; EP=Eutrophication potential				

Table 42 – Categories of impact for products Style Elle xf² 2.5 mm; Style Emme xf² 2.5 mm; Etrusco xf² 2.5 mm

		STYLE ELLE xf² 2.5 mm		STYLE EMME xf² 2.5 mm		ETRUSCO xf² 2.5 mm	
Parameter	**U/M**	**D1**	**D2**	**D1**	**D2**	**D1**	**D2**
ADPE	kg Sb-eq	9.54E-07	-1.41E-07	9.53E-07	-1.40E-07	9.51E-07	-1.38E-07
ADPF	MJ	-4.25E+01	-1.98E+02	-4.25E+01	-1.98E+02	-4.25E+01	-1.97E+02
GWP	kg CO_2-eq	-2.31E+00	-5.07E+00	-2.31E+00	-5.06E+00	-2.31E+00	-4.98E+00
ODP	kg CFC11-eq	-1.90E-07	1.06E-07	-1.90E-07	1.08E-07	-1.90E-07	1.23E-07
POCP	kg etilene-eq	-7.84E-04	-1.06E-03	-7.84E-04	-1.08E-03	-7.84E-04	-1.10E-03
AP	kg SO_2-eq	-1.91E-02	-1.35E-02	-1.91E-02	-1.44E-02	-1.91E-02	-1.52E-02
EP	kg $(PO_4)^{3-}$-eq	-1.55E-03	-1.34E-03	-1.55E-03	-1.41E-03	-1.55E-03	-1.47E-03
LEGEND	ADPE=Abiotic depletion potential for non fossil resources; ADPF=Abiotic depletion potential for fossil resources; GWP=Global Warming Potential; ODP=Depletion potential of the stratospheric ozone layer; POCP=Photochemical oxidant creation potential; AP=Acidification potential; EP=Eutrophication potential						

Table 43 – Consumption of resources for products Veneto xf² 2 / 2.5 / 3.2 mm; Veneto Essenza 2.5 mm; Veneto Silencio xf² 3.8 mm

		VENETO xf² 2.5 mm		VENETO xf² 2.0 mm		VENETO xf² 3.2 mm		VENETO ESSENZA 2.5 mm		VENETO SILENCIO xf² 3.8 mm	
Parameter	**U/M**	**D1**	**D2**	**D1**	**D2**	**D1**	**D2**	**D1**	**D2**	**D1**	**D2**
PERE	MJ	-5.68E+00	-1.41E+00	-4.54E+00	-2.26E-01	-1.56E+01	-9.72E-01	-5.68E+00	-4.72E-01	-6.53E+00	-7.36E-01
PERM	MJ	0	0	0	0	0	0	0	0	0	0
PERT	MJ	-5.68E+00	-1.41E+00	-4.54E+00	-2.26E-01	-1.56E+01	-9.72E-01	-5.68E+00	-4.72E-01	-6.53E+00	-7.36E-01
PENRE	MJ	-2.42E+01	-9.44E+01	-1.24E+01	-5.91E+01	-3.04E+01	-1.30E+02	-2.42E+01	-7.81E+01	-3.30E+01	-1.07E+02
PENRM	MJ	0	0	0	0	0	0	0	0	0	0
PENRT	MJ	-2.42E+01	-9.44E+01	-1.24E+01	-5.91E+01	-3.04E+01	-1.30E+02	-2.42E+01	-7.81E+01	-3.30E+01	-1.07E+02
SM	kg	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0
FW	m^3	-5.39E+01	-1.59E-01	-2.16E+01	4.22E+00	-3.91E+01	3.99E+00	-2.66E+01	4.25E+00	-3.05E+01	4.08E+00
LEGEND	PERE=Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM=Use of renewable primary energy resources used as raw materials; PERT=Total use of renewable primary energy resources; PENRE=Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM=Use of non renewable primary energy resources used as raw materials; PENRT=Total use of non renewable primary energy resources; SM=Use of secondary material; RSF=Use of renewable secondary fuel; NRSF=Use of non renewable secondary fuels; FW=Use of net fresh water										

Table 44 – Consumption of resources for products Linosport xf² 3.2 mm; Linosport Classic/Narnidur 4 mm

		LINOSPORT xf² 3.2 mm		LINOSPORT CLASSIC/NARNIDUR 4 mm	
Parameter	**U/M**	**D1**	**D2**	**D1**	**D2**
PERE	MJ	-7.39E+00	-9.70E-01	-8.71E+00	-1.30E+00
PERM	MJ	0	0	0	0
PERT	MJ	-7.39E+00	-9.70E-01	-8.71E+00	-1.30E+00
PENRE	MJ	-4.19E+01	-1.31E+02	-5.55E+01	-1.61E+02
PENRM	MJ	0	0	0	0
PENRT	MJ	-4.19E+01	-1.31E+02	-5.55E+01	-1.61E+02
SM	kg	0	0	0	0
RSF	MJ	0	0	0	0
NRSF	MJ	0	0	0	0
FW	m^3	-3.46E+01	3.99E+00	-4.07E+01	3.97E+00
LEGEND	PERE=Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM=Use of renewable primary energy resources used as raw materials; PERT=Total use of renewable primary energy resources; PENRE=Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM=Use of non renewable primary energy resources used as raw materials; PENRT=Total use of non renewable primary energy resources; SM=Use of secondary material; RSF=Use of renewable secondary fuel; NRSF=Use of non renewable secondary fuels; FW=Use of net fresh water				

Table 45 – Consumption of resources for products Style Elle xf² 2.5 mm; Style Emme xf² 2.5 mm; Etrusco xf² 2.5 mm

		STYLE ELLE xf² 2.5 mm		STYLE EMME xf² 2.5 mm		ETRUSCO xf² 2.5 mm	
Parameter	**U/M**	**D1**	**D2**	**D1**	**D2**	**D1**	**D2**
PERE	MJ	-5.68E+00	-5.33E-01	-5.68E+00	-5.31E-01	-5.68E+00	-5.23E-01
PERM	MJ	0	0	0	0	0	0
PERT	MJ	-5.68E+00	-5.33E-01	-5.68E+00	-5.31E-01	-5.68E+00	-5.23E-01
PENRE	MJ	-2.41E+01	-8.88E+01	-2.41E+01	-8.87E+01	-2.42E+01	-8.76E+01
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	-2.41E+01	-8.88E+01	-2.41E+01	-8.87E+01	-2.42E+01	-8.76E+01
SM	kg	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m^3	-2.66E+01	4.06E+00	-2.66E+01	4.07E+00	-2.66E+01	4.09E+00
LEGEND	PERE=Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM=Use of renewable primary energy resources used as raw materials; PERT=Total use of renewable primary energy resources; PENRE=Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM=Use of non renewable primary energy resources used as raw materials; PENRT=Total use of non renewable primary energy resources; SM=Use of secondary material; RSF=Use of renewable secondary fuel; NRSF=Use of non renewable secondary fuels; FW=Use of net fresh water						

Since the definition of flows of produced waste in Module D1 and D2 is not certain, these ones have not been considered for the analysis.

5. PROGRAMME-RELATED INFORMATION AND VERIFICATION

Programme:	The International EPD® System EPD International AB Box 210 60 SE-100 31 Stockholm Sweden www.environdec.com
EPD Registration Number:	S-P-01210
Issue Date:	2018-02-01
Validity Date:	2023-01-24
Product Category Rules (PCRs):	PCR 2012:01 Construction products and construction services, Version 2.2
Product Classification:	UN CPC 38930
Study Reference Year:	2016
Geographical scope:	Global

Product category rules (PCR):

Name: Construction products and construction services.
Registration Number: PCR 2012:01 Version 2.2.
Date of Publication: 30-05-2017 (Version 2.2).

The PCR review has been performed by:

The Technical Committee of the International EPD® System. Chair: Massimo Marino.
Contact via info@environdec.com

Independent verification of the declaration and data, according to ISO 14025:2006:

☐ EPD Process Certification (internal)	■ EPD Verification (external)

Review Authority

SGS Italia S.p.A.

Accredited by:

Accredia

6. CONTACT INFORMATION

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Program operator:	EPD®	EPD International AB info@environdec.com

7. REFERENCES

- General Programme Instructions of the International EPD® System. Version 2.5.
- PCR 2012:01 Construction products and construction services, Version 2.2
- ISO 14040:2006, "Environmental management - Life cycle assessment - Principles and framework"
- ISO 14044:2006, "Environmental management - Life cycle assessment - Requirements and guidelines"
- ISO/TS 14067:2013, "Greenhouse gases - Carbon footprint of products - Requirements and guidelines for quantification and communication"
- UNI EN 15804:2014, "Dichiarazioni ambientali di prodotto - Regole quadro di sviluppo per categoria di prodotto"
- UNI EN ISO 14025:2010, "Environmental labels and declarations - Type III environmental declarations - Principles and procedures"
- Ecoinvent data v3
- Tarkett, "Life Cycle Cost"
- http://www.asi-infoalloggio.ch/wp-content/uploads/2016/06/g-tabella-della-durata-di-vita.pdf
- "Vent'anni dopo ovvero un lavoro ben eseguito", Ing. Renzo Mantovani - Regione Veneto U.L.S.S. N. 5
- ISPRA, "Rapporto rifiuti urbani (edizione 2016)"
- https://www.amchamchile.cl/en/2012/07/gestion-de-residuos-en-chile/
- https://www.epa.gov/sites/production/files/2016-11/documents/2014_smmfactsheet_508.pdf
- http://www.coresponsibility.com/shanghai-landfills-closures/
- http://factsanddetails.com/china/cat10/sub66/item1111.html