

Statement of Verification

BREG EN EPD No.: 000167

Issue 1

This is to verify that the
Environmental Product Declaration
provided by:
2tec2



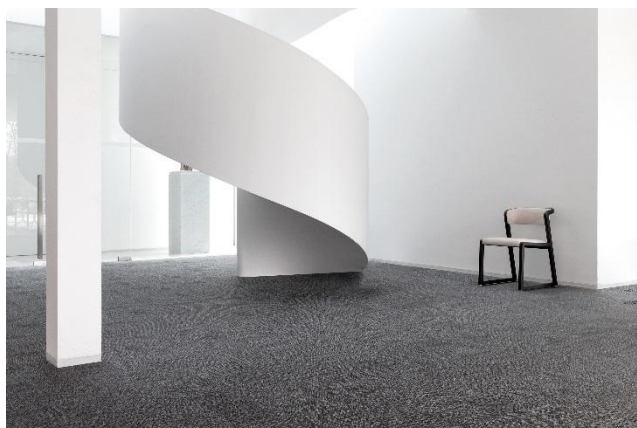
is in accordance with the requirements of:
EN 15804:2012+A1:2013
and
BRE Global Scheme Document SD207

This declaration is for:
Woven vinyl roll

Company Address

Chaussée d'Aelbeke 284
7700 Mouscron
Belgium

2tec2[®]
high tech flooring



Emma Baker

Signed for BRE Global Ltd

Emma Baker
Operator

30 January 2018
Date of this Issue

30 January 2018
Date of First Issue

29 January 2023
Expiry Date



This Statement of Verification is issued subject to terms and conditions (for details visit www.greenbooklive.com/terms).

To check the validity of this statement of verification please, visit www.greenbooklive.com/check or contact us.

BRE Global Ltd., Garston, Watford WD25 9XX.

T: +44 (0)333 321 8811 F: +44 (0)1923 664603 E: Enquiries@breglobal.com

Environmental Product Declaration

EPD Number: 000167

General Information

EPD Programme Operator	Applicable Product Category Rules
BRE Global Watford, Herts WD25 9XX United Kingdom	BRE Environmental Profiles 2013 Product Category Rules for Type III environmental product declaration of construction products to EN 15804:2012+A1:2013
Commissioner of LCA study	LCA consultant/Tool
Le Tissage d'Arcade Boulevard Industriel 98, B-7700 Mouscron Belgium	CO2logic sa nv Rue d'Accolay 15-17 1000 Brussels Belgium Tool: Open LCA, EuGeos_15804_IA_database_v1_1 Ecoinvent 3.2
Declared/Functional Unit	Applicability/Coverage
1 square metre of woven vinyl roll (2200 g/m ²).	Product Average.
EPD Type	Background database
Cradle to Gate with options	ecoinvent
Demonstration of Verification	
CEN standard EN 15804 serves as the core PCR ^a	
Independent verification of the declaration and data according to EN ISO 14025:2010 <input type="checkbox"/> Internal <input checked="" type="checkbox"/> External	
(Where appropriate ^b) Third party verifier: Julia Barnard	
a: Product category rules b: Optional for business-to-business communication; mandatory for business-to-consumer communication (see EN ISO 14025:2010, 9.4)	
Comparability	
Environmental product declarations from different programmes may not be comparable if not compliant with EN 15804:2012+A1:2013. Comparability is further dependent on the specific product category rules, system boundaries and allocations, and background data sources. See Clause 5.3 of EN 15804:2012+A1:2013 for further guidance	

Information modules covered

Product			Construction		Use stage							End-of-life				Benefits and loads beyond the system boundary
A1	A2	A3	A4	A5	Related to the building fabric					Related to the building		C1	C2	C3	C4	D
Raw materials supply	Transport	Manufacturing	Transport to site	Construction – Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction demolition	Transport	Waste processing	Disposal	Reuse, Recovery and/or Recycling potential
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Note: Ticks indicate the Information Modules declared.

Manufacturing site(s)

Le Tissage d'Arcade (2tec2 manufacturing site)
Boulevard Industriel 98,
7700 Mouscron,
Belgium.

Sioen Industries (coating supplier)
Avenue Urbino 6,
B- 7700 Mouscron

2tec2 packaging and expedition center:
Chaussée d'Aelbeke 284
B-7700 Mouscron

Construction Product:

Product Description

2tec2 provide floor covering woven rolls made of polyvinyl chloride yarn with a glass fiber yarn core, manufactured on Jacquard weaving looms, and finished with a PVC backing reinforced with a non-woven glass fiber veil.

Woven vinyl floorings manufactured by 2tec2 are durable floorings designed specifically for high traffic areas while providing high quality thermal and acoustic insulation. The three-layer composition creates a fire-resistant, water and UV-resistant product with low VOC emissions and produced without any hazardous or toxic substances (Reach compliant).

Website: <http://www.2tec2.com>

Technical Information

	Standards	2tec2 Roll
Manufacturing process	-	Woven
Backing	-	Vinyl
Total thickness	ISO 1765	2,5 mm
Total weight	ISO 8543	2200g/m ²
Roll width	EN ISO 24341	Ca 200 cm
Roll length	EN ISO 24341	Ca 30 m
Level of use	EN 15114	Class 33
	ASTM D5252	Heavy commercial
		use
Foot traffic test	ASTM 06119-12	Heavy traffic
Castor Chair suitability	EN 985	Continuous use
Reaction to fire	EN 13501-1	Bfl s1
Critical radiant flux	ASTM E648-10e1	1,02 W/cm ²
	NFPA	Class I
Smoke density	ASTM E622-09	< 300
Walking test	ISO 6356	< 2kv
	AATCC 134-2006	Permanently
		antistatic
Light fastness	ISO 105-B02	≥ 7
Friction	EN 13893	≥ 0,3
	ASTM C1028-07	0,85
Impact sound	ISO 140-8	12 dB
Dimensional stability	EN 986	Meets requirements
	ISO 2551	
CE certificate	EN 14041	0493-CPR-0035

Main Product Contents

This evaluation is carried out by considering “2tec2 Vinyl roll” as representative of the entire range of 2tec2 rolls specific product group. All 2tec2 roll products have the exact same mass and composition, only colours of the external pattern layer may differ. It is considered that the environmental impacts of all products within the roll product group are the same. The product group includes the followings roll products:

- Lustre
- New basic
- Herringbone
- Cracked earth
- Panama
- Stripes
- Seamless rolls

The content list under include the composition of the pattern layer manufactured by 2tec2 as well as the backing manufactured by the external supplier.

Material/Chemical Input	%
Polyvinyl Chloride	49,83%
Plasticiser (DOTP - pattern layer)	6,82%
Calcium carbonate	15,00%
Colour pigment	1,13%
Glass fiber	9,58%
Plasticizer (DINP - Backing)	15,30%
Additives	2,34%

Manufacturing Process

The pattern layer is manufactured by 2tec2 out of PVC coated yarns made at the 2tec2 manufacturing side by the extrusion process.

A PVC compound is extruded around a glass fiber yarn to form a PVC coated yarn. These extruded PVC yarns with glass fiber core are the winded into bobbins. The yarns are fitted to the weaving looms and weaved to form the external pattern woven layer. The woven pattern layers are then sent to the external supplier for the coating process.

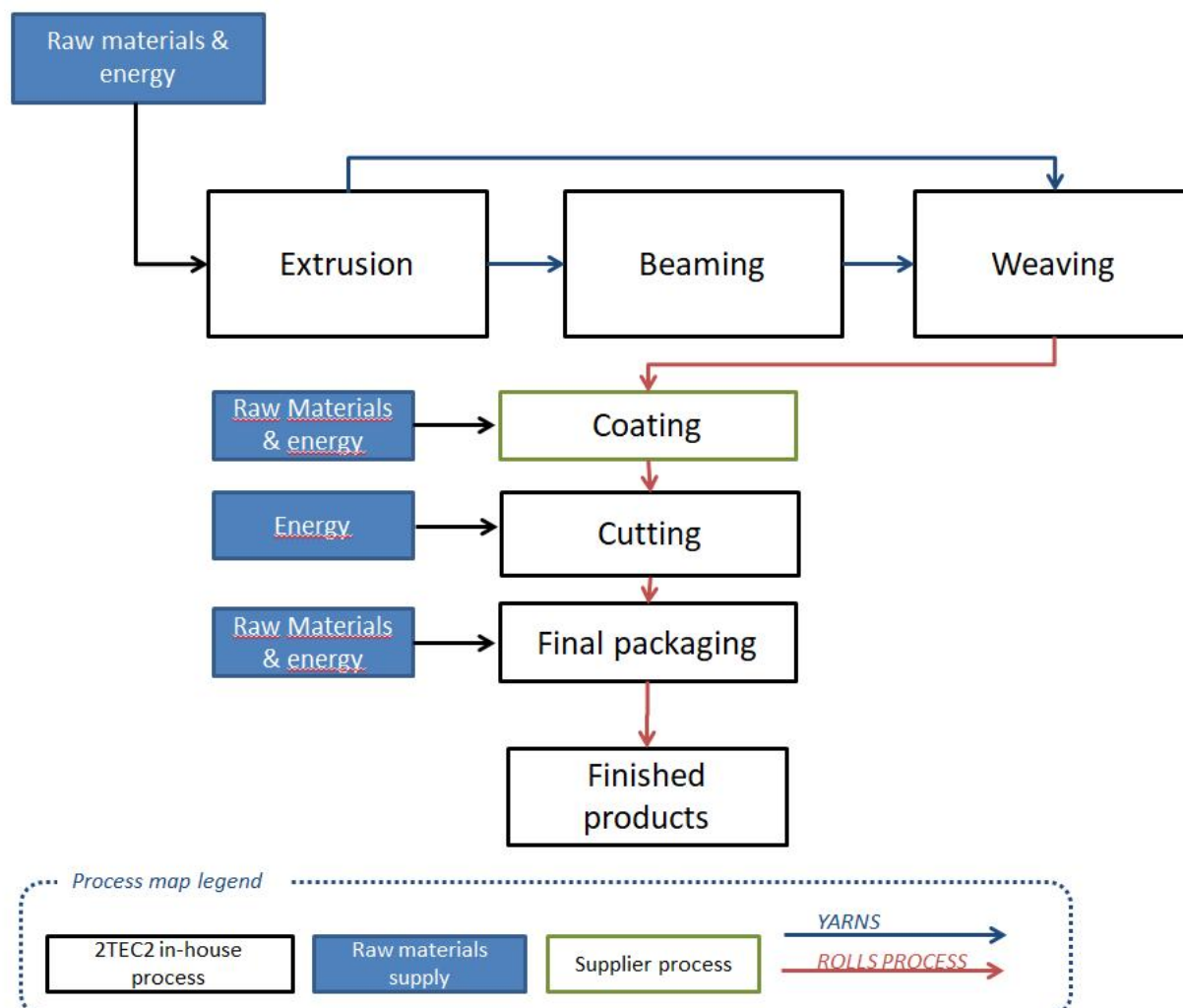
The coating process is performed by the external supplier. The process starts with plastisol preparation. Plastisol is a suspension of PVC particles in a liquid plasticizer. All ingredients, PVC powder, plasticizer, filler, pigment, stabilizer and additives are being mixed in a vessel to form a liquid ready to be used for the coating process.

The indirect coating process of 2tec2 rolls is a three step process. The PVC plastisol is applied on a paper carrier in three steps. In each step the PVC is gelled in an oven. In the second step a non-woven glass fiber is being integrated and in the last step the 2tec2 pattern layer comes on top. After the coating the material is cooled down before winding it on large rolls. These rolls are being expedited back to 2tec2 expedition site.

2tec2 cuts the rolls into smaller rolls on an inspection table and winded onto cardboard tubes. The rolls are being wrapped into protection foil.

All the manufacturing processes take place in Belgium.

Process flow diagram



Construction Installation

2tec2 recommends installing the floorings by hand and using 350 g of water based glue per m² roll. The quantity of waste produced was estimated taking into account the packaging of the product and the installation losses (scrap rate estimated to 6% for per m² for this EPD but can vary). The installation loss rate was suggested based on benchmark of competitors EPD's for similar products.

Use Information

2TEC2 woven vinyl rolls are tested by Eurofins and comply with the Construction Products Regulation (EU 2011/305) (CPR) and the Belgian regulation on VOC emissions from construction products published on 18th August 2014.

End of Life

Woven vinyl products manufactured by 2tec2 are recyclable, nevertheless there are currently no commercially available recycling techniques on the market and no reclamation program has been developed by 2tec2. Environmental impacts at end of life stage will depend on waste disposal options in the countries where 2tec2 woven vinyl floorings are being eliminated, often incineration with energy recovery or landfill.

Life Cycle Assessment Calculation Rules

Declared / Functional unit description

1 square meter of woven vinyl roll (2200 g/m²), installed according to 2tec2 installation instructions, and designed to ensure the covering for heavy commercial use on a basis of 10 years of minimal life time.

The installed flooring includes the 2tec2 roll product, the glue as well as the distribution packaging (cardboard tube), including instructions of installations and maintenance. The necessary accessories for laying the flooring on its support are not included in the scope (spatula or roller) of this EPD. The conditions of dry and wet maintenance are integrated as well as the end of life.

System boundary

The system boundaries of the product LCA follow the modular design defined by EN15804. The scope for 2TEC2 rolls EPD is a “**Cradle to gate with options**”.

All stages of the products life cycle are taken into account, except module B4 (module not declared).

Some of the modules are not considered relevant throughout the life cycle of 2tec2 products. For the “irrelevant” modules, no impact on environment has been taken into account, more specifically:

- **Irrelevant modules for Repair (B3), and Refurbishment (B5):** By default all interventions on the product required to maintain its performance are allocated to the Module B2 "maintenance".
- **Irrelevant modules for B6 and B7:** consumption of water and electricity corresponds to a maintenance action and are therefore assigned to module B2.
- **Irrelevant modules C1 and C3:** these modules do not cause any additional impact (dissembled by hand and do not need any pre-treatment process).

Data sources, quality and allocation

Time Coverage: In accordance with the requirements of EN 15804, the most current available data was used to calculate the EPD. Primary data collected from 2tec2 represents 12 continuous months of production during the 2015 calendar year. Primary data from the coating supplier was collected for the year 2015.

Sources of primary and secondary data: Primary data from manufacturing process (energy, materials, packaging and waste) has been supplied by 2tec2 and the external supplier. Generic data is used for all other upstream and downstream processes that are beyond the control of the manufacturer (i.e. raw material production, vehicle operation, maintenance, end-of-life). All relevant background LCI datasets were taken from the ecoinvent database v3.2

Allocation: Allocation procedures have been applied through the LCA and are considered appropriate.

- 2tec2 shares manufacturing site with a sister company. As 2tec2 do not track its own energy consumptions, electricity consumptions have been allocated to each company based on machinery power used by each company.
- 2tec2 produces woven vinyl pattern layers for tiles and rolls products only: Allocation of electricity and material flows has been made between the 2 product groups according to their mass.
- Beaming process produces co-product reused by the sister company. Inputs and output flows have been allocated to co-product of beaming process according to its mass.
- Allocation of energy for coating process performed by external supplier: the external supplier produces coating specialty products. The manufacturer do not track its energy consumptions in sufficient granularity to allow for a direct correlation to a particular product; therefore onsite energy, emissions, waste, were allocated according to total site production (per square meter coating produced).
- Finally, VOC emissions calculated based on 0.4 m² sample (from laboratory test results) where extrapolated to 1 m² of each 2tec2 product.

Data quality: Data quality is good. To cover data quality requirements and ensure reliable results, primary data was combined with background LCA data from the Ecoinvent 3.2 database.

Cut-off criteria

All inputs used (raw material, packaging material and consumable items including its transport) as well as all process-specific waste was assessed. All material streams which were below 1% (by mass) were captured, fulfilling the cut-off criteria according the BRE guidelines. Construction of the manufacturing weaving and beaming machines and employee commuting are not part of the scope. The capital equipment's were cut-off under the assumption that the impacts associated with these aspects are sufficiently small enough to fall below cut-off criteria when scaled down to the functional unit. Formaldehydes and aldehydes were not included in calculation for indoor emissions (B1) since they fall below the detection limits of the labo. This omission is not likely to influence the results.

LCA Results

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts			GWP	ODP	AP	EP	POCP	ADPE	ADPF
			kg CO ₂ equiv.	kg CFC 11 equiv.	kg SO ₂ equiv.	kg (PO ₄) ³⁻ equiv.	kg C ₂ H ₄ equiv.	kg Sb equiv.	MJ, net calorific value.
Product stage	Raw material supply	A1	AGG	AGG	AGG	AGG	AGG	AGG	AGG
	Transport	A2	AGG	AGG	AGG	AGG	AGG	AGG	AGG
	Manufacturing	A3	AGG	AGG	AGG	AGG	AGG	AGG	AGG
	Total (of product stage)	A1-3	6,17E+00	5,16E-07	2,11E-02	2,76E-03	1,35E-03	9,78E-05	1,25E+02
Construction process stage	Transport	A4	3,82E-02	7,02E-09	1,51E-04	2,64E-05	6,48E-06	1,14E-07	5,81E-01
	Construction	A5	8,51E-01	4,40E-08	2,34E-03	2,75E-04	1,63E-04	6,61E-06	1,18E+01
Use stage	Use	B1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,84E-06	0,00E+00	0,00E+00
	Maintenance	B2	4,30E+00	1,09E-06	8,85E-03	1,48E-03	5,02E-04	9,75E-06	6,37E+01
	Repair	B3	MNR	MNR	MNR	MNR	MNR	MNR	MNR
	Replacement	B4	MND	MND	MND	MND	MND	MND	MND
	Refurbishment	B5	MNR	MNR	MNR	MNR	MNR	MNR	MNR
	Operational energy use	B6	MNR	MNR	MNR	MNR	MNR	MNR	MNR
	Operational water use	B7	MNR	MNR	MNR	MNR	MNR	MNR	MNR
End of life	Deconstruction, demolition	C1	MNR	MNR	MNR	MNR	MNR	MNR	MNR
	Transport	C2	2,00E-02	3,68E-09	7,93E-05	1,38E-05	3,39E-06	6,00E-08	3,04E-01
	Waste processing	C3	MNR	MNR	MNR	MNR	MNR	MNR	MNR
	Disposal	C4 Landfill	1,30E-01	5,99E-09	1,65E-04	4,84E-05	2,79E-05	3,45E-08	5,69E-01
	Disposal	C4 Incineration	4,22E+00	1,34E-07	2,76E-03	3,92E-04	1,83E-04	3,13E-06	7,27E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-3,94E-01	-1,01E-07	-7,00E-04	-1,04E-04	-4,07E-05	-2,72E-07	-5,85E+00

GWP = Global Warming Potential;
 ODP = Ozone Depletion Potential;
 AP = Acidification Potential for Soil and Water;
 EP = Eutrophication Potential;

POCP = Formation potential of tropospheric Ozone;
 ADPE = Abiotic Depletion Potential – Elements;
 ADPF = Abiotic Depletion Potential – Fossil Fuels;

LCA Results (continued)

Parameters describing resource use, primary energy			PERE	PERM	PERT	PENRE	PENRM	PENRT
			MJ	MJ	MJ	MJ	MJ	MJ
Product stage	Raw material supply	A1	AGG	AGG	AGG	AGG	AGG	AGG
	Transport	A2	AGG	AGG	AGG	AGG	AGG	AGG
	Manufacturing	A3	AGG	AGG	AGG	AGG	AGG	AGG
	Total (of product stage)	A1-3	6,63E+00	0,00E+00	6,63E+00	1,48E+02	2,53E+01	1,74E+02
Construction process stage	Transport	A4	7,58E-03	0,00E+00	7,58E-03	6,21E-01	0,00E+00	6,21E-01
	Construction	A5	5,86E-01	0,00E+00	5,86E-01	1,29E+01	0,00E+00	1,29E+01
Use stage	Use	B1	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	Maintenance	B2	1,47E+01	0,00E+00	1,47E+01	1,65E+02	0,00E+00	1,65E+02
	Repair	B3	MNR	MNR	MNR	MNR	MNR	MNR
	Replacement	B4	MND	MND	MND	MND	MND	MND
	Refurbishment	B5	MNR	MNR	MNR	MNR	MNR	MNR
	Operational energy use	B6	MNR	MNR	MNR	MNR	MNR	MNR
	Operational water use	B7	MNR	MNR	MNR	MNR	MNR	MNR
End of life	Deconstruction, demolition	C1	MNR	MNR	MNR	MNR	MNR	MNR
	Transport	C2	3,97E-03	0,00E+00	3,97E-03	3,25E-01	0,00E+00	3,25E-01
	Waste processing	C3	MNR	MNR	MNR	MNR	MNR	MNR
	Disposal	C4 Landfill	1,69E-02	0,00E+00	1,69E-02	6,04E-01	0,00E+00	6,04E-01
	Disposal	C4 Incineration	5,90E-01	0,00E+00	5,90E-01	7,44E+00	0,00E+00	7,44E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1,20E+00	0,00E+00	-1,20E+00	-1,54E+01	0,00E+00	-1,54E+01

PERE = Use of renewable primary energy excluding renewable primary energy 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 resource

LCA Results (continued)

Parameters describing resource use, secondary materials and fuels, use of water						
			SM	RSF	NRSF	FW
			kg	MJ net calorific value	MJ net calorific value	m ³
Product stage	Raw material supply	A1	AGG	AGG	AGG	AGG
	Transport	A2	AGG	AGG	AGG	AGG
	Manufacturing	A3	AGG	AGG	AGG	AGG
	Total (of product stage)	A1-3	-2,49E-02	0,00E+00	2,72E-01	2,89E-01
Construction process stage	Transport	A4	9,24E-05	0,00E+00	-9,17E-04	1,28E-04
	Construction	A5	-2,30E-03	0,00E+00	1,92E-02	3,50E-02
Use stage	Use	B1	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	Maintenance	B2	-6,35E-01	0,00E+00	3,26E+00	4,85E-02
	Repair	B3	MNR	MNR	MNR	MNR
	Replacement	B4	MND	MND	MND	MND
	Refurbishment	B5	MNR	MNR	MNR	MNR
	Operational energy use	B6	MNR	MNR	MNR	MNR
	Operational water use	B7	MNR	MNR	MNR	MNR
End of life	Deconstruction, demolition	C1	MNR	MNR	MNR	MNR
	Transport	C2	4,84E-05	0,00E+00	-4,81E-04	6,69E-05
	Waste processing	C3	MNR	MNR	MNR	MNR
	Disposal	C4 Landfill	7,95E-05	0,00E+00	-5,59E-04	6,38E-04
	Disposal	C4 Incineration	-2,88E-03	0,00E+00	4,22E-03	1,82E-01
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	5,94E-02	0,00E+00	-3,05E-01	-4,06E-03

SM = Use of secondary material;
RSF = Use of renewable secondary fuels;

NRSF = Use of non-renewable secondary fuels;
FW = Net use of fresh water

LCA Results (continued)

Other environmental information describing waste categories					
			HWD	NHWD	RWD
			kg	kg	kg
Product stage	Raw material supply	A1	AGG	AGG	AGG
	Transport	A2	AGG	AGG	AGG
	Manufacturing	A3	AGG	AGG	AGG
	Total (of product stage)	A1-3	4,00E-01	8,88E-01	3,68E-04
Construction process stage	Transport	A4	6,44E-04	1,28E-04	7,56E-06
	Construction	A5	9,75E-02	3,61E-01	4,04E-05
Use stage	Use	B1	0,00E+00	0,00E+00	0,00E+00
	Maintenance	B2	2,33E-01	8,49E-01	1,93E-03
	Repair	B3	MNR	MNR	MNR
	Replacement	B4	MND	MND	MND
	Refurbishment	B5	MNR	MNR	MNR
	Operational energy use	B6	MNR	MNR	MNR
	Operational water use	B7	MNR	MNR	MNR
End of life	Deconstruction, demolition	C1	MNR	MNR	MNR
	Transport	C2	3,38E-04	1,51E-02	3,96E-06
	Waste processing	C3	MNR	MNR	MNR
	Disposal	C4 Landfill	1,00E-03	2,21E+00	6,49E-06
	Disposal	C4 Incineration	9,31E-01	2,61E+00	6,62E-05
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-2,06E-02	-3,76E-02	-1,80E-04

HWD = Hazardous waste disposed;
 NHWD = Non-hazardous waste disposed;
 RWD = Radioactive waste disposed

LCA Results (continued)

Other environmental information describing output flows – at end of life						
			CRU	MFR	MER	EE
			kg	kg	kg	MJ per energy carrier
Product stage	Raw material supply	A1	AGG	AGG	AGG	AGG
	Transport	A2	AGG	AGG	AGG	AGG
	Manufacturing	A3	AGG	AGG	AGG	AGG
	Total (of product stage)	A1-3	5,28E-02	1,90E-01	0,00E+00	0,00E+00
Construction process stage	Transport	A4	0,00E+00	2,37E-04	0,00E+00	0,00E+00
	Construction	A5	0,00E+00	1,58E-02	0,00E+00	5,50E-01
Use stage	Use	B1	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	Maintenance	B2	0,00E+00	1,34E+00	0,00E+00	0,00E+00
	Repair	B3	MNR	MNR	MNR	MNR
	Replacement	B4	MND	MND	MND	MND
	Refurbishment	B5	MNR	MNR	MNR	MNR
	Operational energy use	B6	MNR	MNR	MNR	MNR
	Operational water use	B7	MNR	MNR	MNR	MNR
End of life	Deconstruction, demolition	C1	MNR	MNR	MNR	MNR
	Transport	C2	0,00E+00	1,24E-04	0,00E+00	0,00E+00
	Waste processing	C3	MNR	MNR	MNR	MNR
	Disposal	C4 Landfill	0,00E+00	2,87E-04	0,00E+00	0,00E+00
	Disposal	C4 Incineration	0,00E+00	1,21E-02	0,00E+00	4,97E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0,00E+00	-1,25E-01	0,00E+00	0,00E+00

CRU = Components for reuse;
MFR = Materials for recycling

MER = Materials for energy recovery;
EE = Exported Energy

Scenarios and additional technical information

Scenarios and additional technical information			
Scenario	Parameter	Units	Results
A4 – Transport to the building site	Fuel type / Vehicle type	16-32 metric ton, EURO4 norm	Diesel
	Distance:	km	100
	Capacity utilisation (incl. empty returns)	%	50%
	Bulk density of transported products	kg/m ³	3.520
A5 – Installation in the building	A5 module includes A1 – A3 for the quantity of product wasted during installation and the delivery (A4) of this replacement quantity to site.		
	Scrap rate	%	6
	Glue	g	350
B1 – Use	Indoor VOC emissions (no VOC emissions after 20 days)	g/m ² /SP	0,039300
B2 – Maintenance	Estimated frequency for daily maintenance (4 days / week)	Days per year	208
	Electricity (vacuum cleaner) for daily maintenance	kWh/m ² /year	0,266
	Estimated frequency for deep periodic cleaning	Days per year	1
	Electricity (steam cleaner) for deep periodic cleaning	kWh/m ² /year	0,0044
	Water for deep periodic cleaning	Litres/m ² /year	0,0429
	Detergent for deep periodic cleaning	Kg/m ² /year	0,000086
B3 – Repair	If 2tec2 product is damaged, it will need to be replaced so there is no scenario of repair considered. Module B3 is therefore not relevant		
B5 – Refurbishment	If 2tec2 product is damaged, it will need to be replaced so there is no scenario of refurbishment considered. Module B5 is therefore not relevant		
Reference service life	Reference Service Life (RSL)	years	10
B6 – Use of energy; B7 – Use of water	2tec2 products do not require energy for operational use (energy use for regular maintenance is declared under B2 module) and therefore B6 is not relevant.		
	2tec2 products do not require water for operational use (water use for periodic cleaning is declared under B2 module) and therefore B7 is not relevant.		
C1 to C4 End of life,	2tec2 products are disassembled by hand and therefore C1 module is not relevant.		
	2tec2 products do not require any pre-treatment before disposal and therefore C3 module is not relevant.		
	Distance of transport to the end of life facility (C2)	km	50

Scenarios and additional technical information

Scenario	Parameter	Units	Results
	C4: Two different end-of-life scenarios where modelled and reported separately. Each scenario is calculated as a 100% scenario. <ul style="list-style-type: none"> Scenario 1: 100% landfill Scenario 2: 100% municipal waste incineration 	Kg	2.2
Module D	Module D, takes into account: <ul style="list-style-type: none"> - Electricity credits from waste incineration of packaging and product installation waste (from A5 module); - Electricity credits from waste incineration of product at end-of-life (from C 4.2 incineration module), substituting electricity production in Belgium 		
	Total net electric energy substituting electricity production in Belgium	MJ	5.5169

Summary, comments and additional information

Results conclusions

The product manufacturing stage (A1-A3) is the largest impact driver across all declared modules. Within product stage, raw material used for yarn manufacturing and backing account for the majority of impacts.

B2 maintenance, depending on RSL to cover the 60 years study period, is related to electricity consumptions using Belgian grid electricity (dependent upon nuclear energy mainly) and cleaning conditions (regular maintenance and periodic cleaning). Within this module, electricity consumptions accounts for more than 95% of all indicators. The impact of this module is therefore dependent upon electricity mix of the country where 2tec2 tiles will be installed. The impact of B2 module is also likely to change depending on the country of installation. If the cleaning conditions, electricity mix or the RSL change the results are likely to be affected.

A5 module accounts for product installation (with glue and packaging waste) taking into account 6% of installations losses as well as the production and transport of an additional amount of the products to replace installation losses. Glue (acrylic resin) was incorporated in the modelling (glue is not produced or sold by 2TEC2 but recommended). The impact of this module is therefore directly influenced by those scenario parameters.

The end-of-life treatment mode is an important parameter which can have an influence in the total impact (landfill or incineration). With incineration as disposal method, LCA results are highly affected (see figure 2 with incineration scenario results below). Incineration amounts to 27% of the total Global Warming Potential impact.

Service reference life

The service life of textile floorcoverings strongly depends on the correct installation taking into account the declared use classification and the respects of cleaning and maintenance instructions provided by 2tec2. The service life of vinyl roll will vary depending on the amount of floor traffic and the type and frequency of maintenance. The Reference Service Life (RSL) is 10 years. This RSL was suggested by 2tec2 warranty on the product.

Nevertheless this is the minimal service life time, technical service life time is considerably longer.

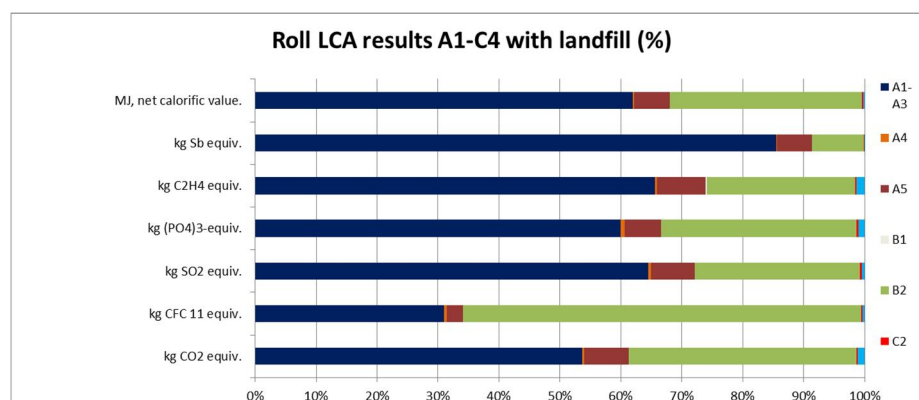


Figure 1

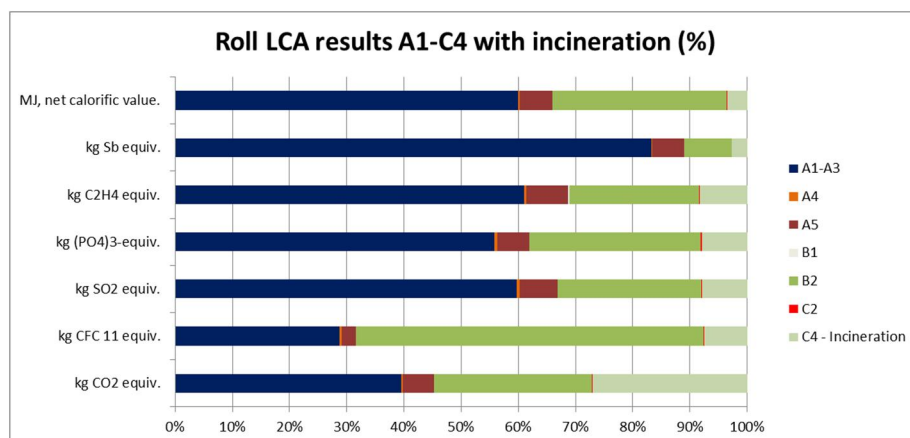


Figure 2

References

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

BSI. Environmental labels and declarations – Type III Environmental declarations – Principles and procedures. BS EN ISO 14025:2010 (exactly identical to ISO 14025:2006). London, BSI, 2010.

BSI. Environmental management – Life cycle assessment – Principles and framework. BS EN ISO 14040:2006. London, BSI, 2006.

BSI. Environmental management – Life cycle assessment – requirements and guidelines. BS EN ISO 14044:2006. London, BSI, 2006.

2tec2 technical specifications, page 65 « technical sheet »:

http://www.2tec2.com/media/files/Catalogue_2tec2_2017_Web_1493908887.pdf

2tec2 Rolls CE Labelling: http://www.2tec2.com/media/files/DOP_ROLLS_FR.pdf

2tec2 woven vinyl Roll product warranty

Belgian regulation on VOC emissions from construction products:

https://d1jj3zdokt13jd.cloudfront.net/corporate-eurofins/media/2291/kb_vloerbekleding_ar_revetements_sols.pdf

DINP Ecoprofile: <http://www.ecpi.org/wp-content/uploads/2015/10/21872-ecpi-eco-profile-dinp-2015-02-05.pdf>.

Eurofins test report on 2tec2 rolls in accordance to CDPH IAQ, February 2014.

Ecoinvent 3.2