Carbon Footprint Declaration

TWILIGHT

Declared unit: 1 m^2 of Twilight, a heterogeneous cushion vinyl, produced with PVC made from 100% biocircular attributed resources according to the mass balance chain of custody principle, digitally printed.

Type: Cradle-to-grave (A1-D), reference service life = 1 year

Product Description
The declared unit is 1 m^2 produced by B.I.G. Floorcoverings. The tube on which the vinyl is rolled is considered as well and packaging is included in scope. Twilight is a heterogeneous cushion vinyl floorcovering with foam backing, digitally printed and produced using PVC's from a renewable (biocircular) feedstock via the mass balance chain of custody principle. The product is destined for the residential market due to its technical characteristics, and can be loose laid (installation without glue).
The vinyl floorcovering is produced using a knife over roll coating technique, applying the 'plastisol' (mixture of the below mentioned ingredients).

Description of the Organisation
BIG Floorcoverings, member of the Beaulieu International Group, is a leading European manufacturer of cushion vinyl floorcovering on rolls. The Cushion Vinyl division has two production sites in Europe – one in Belgium and one in Slovenia.

Carbon Footprint Declaration
The climate declaration shows the Cradle-to-Gate emissions of greenhouse gases, expressed as CO_2-equivalents per 1 m^2 Twilight.

This declaration is based on verified results from a life cycle assessment (LCA), in conformance with ISO14044 and follows the requirements of EN 15804+A2, but does not claim full conformance with this standard as an EPD has not been generated or published.

Contact
Dorine Degryse
Sustainability Coordinator Cushion Vinyl Europe
Dorine.degryse@bintg.com

Total Global Warming Potential (kg CO_2 eq./ 1 m^2) - A1-A3

Global Warming Potential	Twilight
Fossil	3,31E+00
Biogenic	-1,06E+00
Luluc	1,79E-02
Total A1-A3	**2,28E+00**

This document only addresses one environmental impact category and does not assess other potential social, economic, and environmental impacts arising from the provision of this product. These aspects may be of equal or greater importance than the single impact category displayed.

Additional Background information

Product specification

	Value
Usage class	23 / 32
Thickness	3,00 mm
Wearlayer thickness[1]	0,40 mm
Weight/m²	1857 g

For more product technical information, consult the TDS

Product composition and information on biogenic carbon content

Product components	Weight%	recycled material weight-%	Renewable material weight-%
E-PVC	35% - 40%	35% - 40%	100% attributed
Filler (chalk)	35% - 38%	35% - 38%	0%
Plasticizer	20% - 23%	20% - 23%	0%
Additives	2% - 3%	2% - 3%	0%
Glass fibre tissue (carrier)	2% - 3%	2% - 3%	0%
Ink & lacquer	1% - 2%	1% - 2%	0%
Total	100%	100%	0%

Indicator	Unit	Value
Biogenic carbon content in product	Kg C	2,77E-01
Biogenic carbon content in packaging	Kg C	2,80E-02

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

Because the PVC's in this product are made from a recycled biobased resource according to the mass balance chain of custody principle, the exact % of biogenic carbon content is not traceable through the C14 method. The Biogenic content is likely to be released at end of life of the product.

Description of system boundaries

This LCA study covers the Cradle-to-Grave of Twilight cushion vinyl flooring, with a focus on modules A1 to A3 of Twilight vinyl. This includes raw material supply, transport of raw materials and manufacturing, packaging and production waste processing. But also transport to the customer, installation, use and maintenance, dismantling, transport to waste processing and waste processing itself. All off-system costs/benefits (D) have also been calculated.

Regional and temporal scope

Produced by BIG Floorcoverings' Slovenian site 'Juteks' in Zalec, Slovenia. Primary plant data from reference year 2024 was used. Product carbon footprint data from our PVC suppliers was used (different reference years applied in their EPD's).

Limitations, assumptions and allocations

As little cut-off as possible is used in the foreground system. All flows with an influence higher than 1% of the total mass, energy or environmental impact are included. Some assumptions are made due to limitations in the available databases, limitations to the availability of primary data, or simplify when impact is considered low.
The process generates no co-products, only some waste products that are either incinerated or collected for recycling. For the externally recycled waste, a cut-off allocation approach was applied. For the externally incinerated non-recyclable waste, a substitution allocation approach was applied. The amounts of energy are allocated from the annual total energy demand according to annual total production volumes. It is considered that the difference of energy use between different products is barely measurable and this is an appropriate way of working. The Slovenian production plant consumes 100% renewable electricity (2024 data).
Since Twilight relies on supplier specific E-PVC with low CO_2e emissions, carbon footprint data were received from the specific suppliers. For one supplier, not all indicators necessary for compliance to EN 15804:2012+A2:2019/AC:2021 were received. Where there was information missing, the datasets were supplemented with the information from the PVC-dataset of the other supplier, who could deliver a complete dataset with all required indicators. It is considered that this is a logical approach, since all PVC's used with both suppliers are biocircular attributed PVC's according to the mass balance chain of custody.

Comparison to the product's fossil version (PVC's of fossil origin used)

To compare the impact of bio-circular attributed PVC's in Twilight, a sensitivity analysis was made calculating an alternative scenario where only PVC's from fossil resources are used. For this analysis, the generic dataset "RER: Polyvinyl chloride, from emulsion process, E-PVC – Plastics Europe" was used for all E-PVC's and "BE: Polyvinyl chloride granulate (S-PVC) Sphera" for the S-PVC.

EN 15804 +A2 (based on EF 3.1)	**1) Generic dataset for fossil E-PVC's used (Sphera – LCA for experts)**		**Supplier PCF data for bio-circular attributed PVC's used (LCA results)**	
1. Environmental impact indicators	**A1-A3 Total**	**A1**	**A1-A3 Total**	**A1**
01 EN15804+A2 (EF 3.1) Climate Change - total [kg CO_2 eq.]	3,80E+00	2,96E+00	2,28E+00	1,44E+00
02 EN15804+A2 (EF 3.1) Climate Change, fossil [kg CO_2 eq.]	3,80E+00	2,94E+00	3,11E+00	2,45E+00
03 EN15804+A2 (EF 3.1) Climate Change, biogenic [kg CO_2 eq.]	-1,46E-02	1,11E-02	-1,06E+00	-1,03E+00
04 EN15804+A2 (EF 3.1) Climate Change, land use and land use change [kg CO_2 eq.]	4,70E-03	3,03E-03	1,79E-02	1,62E-02

Comparing this LCA's results vs using the generic fossil data for all PVC's in 1m² of the Twilight collection:

- GWP Total – A1 from this LCA results shows a decrease of 51% compared to the sensitivity check calculated with fossil PVC's (generic dataseets)
- GWP Total – A1 to A3 from the LCA results shows a reduction of **40%** compared to the sensitivity check calculated with fossil PVC's (generic dataseets)

Impact assessment method
The LCA software LCA for Experts 10.7.1.28 Content Version 2025.1 was used for inventory and impact assessment calculations. EN 15804+A2 climate change indicators are reported.

Additional information
LCA Background Document: Twilight, December 2025, version 2.0
Critically reviewed by Manfred Russ – Russ LCA Consulting (Official EPD verifier) in December 2025 and January 2026.

For additional information on the calculation methods or the LCA background report, please contact B.I.G. Floorcoverings.

B.I.G. Floorcoverings nv
Rijksweg 442
8710 Wielsbeke - Belgium
T +32 (0)56 67 66 11
info@beauflor.com

Critical Review Statement

Background

The life cycle assessment (LCA) study "Traces Collection" (Subject: Heterogeneous cushion vinyl produced with a renewable feedstock according to the mass balance chain of custody principle; commercial names "Twilight/Mistral, Monsoon, Ruption, Magma") was commissioned by BIG Floorcoverings and carried out internally by LCA specialists of Beaulieu International Group.
The study was critically reviewed by two independent external experts

- Manfred Russ – LCA-Consulting, Germany
- *Dr. Matthew Fishwick – Fishwick Environmental, UK (initial review)*

The reviewers were independent of any party with a commercial interest in the study.
Matthew Fishwick did not complete the critical review of the final version of the report, hence the critical review statement is based on the review of Manfred Russ.

The LCA study follows also the rules of EN15804+A2 as well as the PCR for construction products (PCR 2019:14, v.2.0.1) and the c-PCR-004 Resilient, textile and laminate floor coverings (EN16810). Both PCRs are published by EPD International AB.

The aim of the review was to ensure that:

- the methods used to carry out the LCA study are consistent with the ISO 14040:2006 and 14044:2006 standards;
- the methods used are scientifically and technically valid given the goal of the study;
- the data used are appropriate and reasonable in relation to the goal of the study;
- the interpretation of the results and the conclusions of the study reflect the goal and the findings of the study; and
- the study report is transparent and consistent.

The critical-review process involved the following:

- a review by Matthew Fishwick of the initial version of the draft report;
- Manfred Russ took over the role as external expert as Matthew Fishwick was due to personal reasons not available for completion of the review;
- a review by Manfred Russ of two further versions of the draft report according to the above criteria and recommendations for improvements to the study and the report; and
- a review of the final version of the report, in which the authors of the study fully addressed the points as suggested in the draft critical review.

All the findings of the critical review are based on the LCA report that was made available to the reviewer during the course of the critical review including screenshots of the LCA models developed by Beaulieu International Group for the purposes of this project.

Conclusion of the critical review

The reviewer confirms that this LCA study followed the guidance of and is consistent with the international standards for Life Cycle Assessment (ISO 14040:2006 and 14044:2006).

Communication of the study results

The following aspects should be mentioned when communicating the results of the study to external stakeholders:

- Some of the assumptions affect the results, interpretation and conclusions of the study. Therefore, it is of utmost importance that these and their influence on the results and conclusions are described transparently, whenever the study or its parts are disclosed to any stakeholders to avoid any potential misinterpretation of the study.
- Some supplier-specific data are not complete in terms of available environmental indicators and those data gaps are filled based on assumptions. To reduce the uncertainty and increase the robustness of the study, the assumptions and the results should be reviewed again as soon as more detailed information becomes available.
- It should always be mentioned that the LCA study is based on supplier specific data applying the mass balance approach (bio-attributed PVC). It is important to state this clearly in any future communication to maintain the transparency of the study.
- Whenever a reference is made to the review of the study and its outcome, it should also be mentioned that the critical review statement is available upon request.

Manfred Russ
Reviewer

February 2026