



# ENVIRONMENTAL PRODUCT DECLARATION

in accordance with ISO 14025, ISO 21930 and EN 15804

Owner of the declaration:	ZENO-PROTECT B.V.
Program operator:	The Norwegian EPD Foundation
Publisher:	The Norwegian EPD Foundation
Declaration number:	NEPD-2143-968-EN
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ECO Platform reference number:	-
Issue date:	17.04.2020
Valid to:	17.04.2025

## EXCELLENCE

Zeno-Protect B.V.



**ZENO PROTECT**  
ENTRANCE FLOORING

[www.epd-norge.no](http://www.epd-norge.no)



## General information

**Product:**

EXCELLENCE

**Program operator:**

The Norwegian EPD Foundation

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**Declaration number:**

NEPD-2143-968-EN

**ECO Platform reference number:****This declaration is based on Product Category Rules:**

CEN Standard EN 15804 serves as core PCR  
This EPD is also compliant with IBU PCR for Building-Related Products and Services, adapted for UL Environment from the range of Environmental Product Declarations of Institute Construction and Environment e.V. (IBU), Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project report, version 1.3 ) used in addition to the core PCR and IBU Part B: Requirements on the EPD for Floor coverings.

**Statement of liability:**

The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

**Declared unit:**

1 m<sup>2</sup> of synthetic entrance floor covering roll with a total weight of 4,2 kg

**Declared unit with option:**

A1, A2, A3, A4, A5, C1,C2,C3,C4

**Functional unit:****Verification:**

The CEN Norm EN 15804 serves as the core PCR.  
Independent verification of the declaration and data,  
according to ISO14025:2010

internal  external

Third party verifier:

**SGS SEARCH**

&lt;Harry van Ewijk MSc&gt;

(Independent verifier approved by EPD Norway)

**Owner of the declaration:**

ZENO-PROTECT B.V.

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**Manufacturer:**

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BELGIUM

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e-mail: info@mercuryflooring.com

**Place of production:**

Steenovenstraat 38

B-8790 Waregem

BELGIUM

**Management system:**

ISO 9001, ISO 14001

**Organisation no:**

NL805720819B01

**Issue date:**

17.04.2020

**Valid to:**

17.04.2025

**Year of study:**

2019

**Comparability:**


EPD of construction products may not be comparable if they not comply with EN 15804 and seen in a building context.

**The EPD has been worked out by:**

The EPD has been calculated by CO2logic team (Laura Shabbenderian) using Open LCA software and EuGeos 15804-IA Database Version 2.1



Approved

Håkon Hauan  
Managing Director of EPD-Norway

## Product

### Product description:

EXCELLENCE is a synthetic entrance floor covering made of tufted polyamide with 100% of regenerated nylon, with a non-woven recycled polyester primary backing and reinforced with vinyl backing, manufactured by Zeno-Protect and designed to ensure the covering for heavy commercial use.

EXCELLENCE Clean-Off-Zone is a distinction in the present ranges of products in this field, on account of an ingenious combination of small and larger polyamide filaments, resulting in an optimal density. As a result dirt and moisture are more effectively stopped and contained. Dirt and moisture cannot spread into the building and avoids considerable cost in cleaning.

Also the spread of "fine dust" in the air will be prevented. This will result in an improvement of the indoor air quality and consequently in a reduction of the ill effects on health (the first step in fighting the Sick Building Syndrome).

### Technical data:

Total product weight : 4,2 kg/m<sup>2</sup>  
 Pile weight: ca. 1 080 g/m<sup>2</sup>  
 Total height: ca. 8,7 mm  
 Pile height: ca. 6,7 mm  
 Method of manufacture Tufted 5/32" cut pile  
 Pile material : 100% recycled ECONYL® nylon  
 Primary backing: Colback™ recycled polyester  
 Secondary backing: Comfort™ vinyl | Phthalate-Free  
 Number of tufts: ca. 92990 p/m<sup>2</sup>  
 Use classification : 33, Commercial heavy  
 Luxury comfort: LC3  
 Suitable for castor chairs : A, intensive use r-3,1  
 Suitable for stairs: Intensive use  
 Thermal resistance: 0,10 m<sup>2</sup> K/W

The technical datasheet can be found on Zeno Protect brochure (page 2-3 for Excellence) :[https://zeno-protect.com/wp-content/uploads/2019/11/Zeno-Protect-Clean-Off-Zone\\_Brochure\\_2020\\_EN.pdf](https://zeno-protect.com/wp-content/uploads/2019/11/Zeno-Protect-Clean-Off-Zone_Brochure_2020_EN.pdf)

### Product specification:

Materials	kg	%
Recycled nylon	0,9555	22,8
Recycled polyester	0,0945	2,3
Polyvinyl chloride	1,0248	24,4
Filler	0,798	19
Plasticizers	0,945	22,5
Additives	0,3822	9

### Market:

Global

### Reference service life, product:

The service life of textile floorcoverings strongly depends on the correct installation and the cleaning and maintenance instructions provided by Zeno-Protect. The service life will vary depending on the amount of floor traffic and the type and frequency of maintenance.

For Excellence, the Reference Service Life (RSL) of 10 years could be assumed; technical service life can be considerably longer.

### Reference service life, building:

60 years

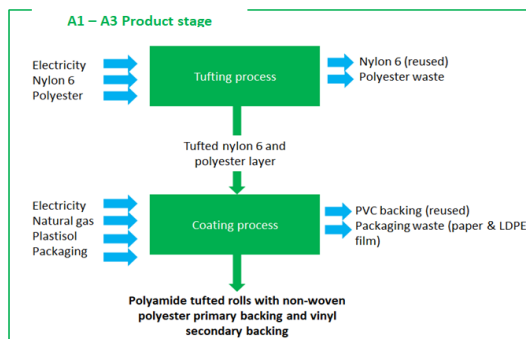
## LCA: Calculation rules

### Declared unit:

1 m<sup>2</sup> of synthetic entrance floor covering roll with a total weight of 4,2 kg

### System boundary:

The scope is a cradle to gate with options (A1-A3, A4-A5, C1-C4)



**Data quality:**

Activity data is based on primary data collected amongst Mercury Flooring (the manufacturer) for the year 2019 (energy, waste, packaging, product components quantities, transport distances). Raw material stage data is derived directly from the Ecoinvent 3.3, cut-off database.

**Allocation:**

The allocation is made in accordance with the provisions of EN 15804. Incoming energy and water and waste production in-house is allocated equally among all products through mass allocation. Effects of primary production of recycled materials allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

**Cut-off criteria:**

All major raw materials and all the essential energy is included. The production process for raw materials and energy flows that are included with very small amounts (<1%) are not included. This cut-off rule does not apply for hazardous materials and substances.

## LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

This is a cradle to gate (A1-A3) EPD with no declared modules after the factory gate. Therefore this section is empty.

### Transport from production place to user (A4)

Type	Capacity utilisation (incl. return) %		Type of vehicle	Distance km	Fuel/Energy consumption	Value (l/t)
Truck	A4	63%	Lorry 16-32 metric	209	0,038 l/tkm	7,8375
Truck	A4	63%	Lorry 16-32 metric	32,8	0,038 l/tkm	1,23
Truck	C2	63%	Lorry 16-32 metric	50	0,038 l/tkm	1,875
Truck for waste collecti	A5	50%	21 metric	50	0,336 l/tkm	16,8
Truck	A4	68%	Lorry 3.5-7.5 metric	202	0,109 l/tkm	22,018
Oceangoing ship	A4	-	Transoceanic ship	1133,5	##### l/tkm	2,8338

The scenario for transport distances and transportation modes from manufacturing site to warehouse in Norway represents both recorded and calculated routes and distances provided by N3Zones Group commercializing Protect Excellence (Stopzoner) in Norway and Sweden. Transport in A4 describes the transport of the product from factory gate in Belgium to the warehouse in Norway and transport to building in Norway/Sweden. Transportation of waste (A5, C2) is based on an average distance of 50 km. Capacity utilization has been calculated by dividing the average load as reported in ecoinvent v3.3 by the maximum load. Fuel consumption as given in ecoinvent v3.3.

### Assembly (A5)

	Unit	Value
Auxiliary	kg	0,648
Water consumption	m <sup>3</sup>	
Electricity consumption	kWh	
Other energy carriers	MJ	
Material loss	kg	0,756
Output materials from waste treatment	kg	
Dust in the air	kg	

### Use (B1)

	Unit	Value

<Short description>

### Maintenance (B2)/Repair (B3)

	Unit	Value
Maintenance cycle*		
Auxiliary	kg	
Other resources	kg	
Water consumption	m <sup>3</sup>	
Electricity consumption	kWh	
Other energy carriers	MJ	
Material loss	kg	

### Replacement (B4)/Refurbishment (B5)

	Unit	Value
Replacement cycle*		
Electricity consumption	kWh	
Replacement of worn parts	0	

\* Number or RSL (Reference Service Life)

<Short description>

### Operational energy (B6) and water consumption (B7)

	Unit	Value
Water consumption	m <sup>3</sup>	
Electricity consumption	kWh	
Other energy carriers	MJ	
Power output of equipment	kW	

### End of Life (C1, C3, C4)

	Unit	Value
Hazardous waste disposed	kg	
Collected as mixed construction waste	kg	
Reuse	kg	
Recycling	kg	
Energy recovery	kg	4,2
To landfill	kg	

Disposal is calculated as a municipal waste incineration scenario.

### Transport to waste processing (C2)

Type	Capacity utilisation (incl. return) %		Type of vehicle	Distance km	Fuel/Energy consumption	Value (l/t)
Truck	63%		y 16-32 metric ton, EUF	50	0,038 l/tkm	1,875
Railway					kWh/tkm	
Boat					l/tkm	
<Other Transportation>					<xx>	

Transport in C2 module is assumed to be made by a 16-32 road truck for an average distance of 50 km.

**Benefits and loads beyond the system boundaries**

(D)

	Unit	Value

<Short description>

**Additional technical information**

<Description>

**LCA: Results**

Compared to previous version of EXCELLENCE, this product has been highly improved from environmental perspective. Indeed all impact indicators have significantly decreased thanks to the use of 100% recycled nylon (pile material) and 100% recycled polyester (primary backing). Table below shows the decreases for A1-A3 in % for LCA indicators compared to 2017:

GWP	ODP	AP	EP	POCP	ADPE	ADPF
kg CO <sub>2</sub> equiv.	kg CFC 11 equiv.	kg SO <sub>2</sub> equiv.	kg (PO <sub>4</sub> ) <sup>3-</sup> equiv.	kg C <sub>2</sub> H <sub>4</sub> equiv.	kg Sb equiv.	MJ, NCV
-20%	-15%	-39%	-29%	-10%	-56%	-32%

**System boundaries (X=included, MND= module not declared, MNR=module not relevant)**

Product stage			Assembly stage		Use stage								End of life stage				Beyond the system boundaries
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-contruction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential	
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
X	X	X	X	X	MND	MND	MNR	MND	MNR	MNR	MNR	X	X	X	X	MND	

**Environmental impact**

Parameter	Unit	A1- A3	A4	A5	C1	C2	C3	C4
GWP	kg CO <sub>2</sub> -eqv	1,12E+01	6,68E-01	4,05E+00	0,00E+00	3,43E-02	8,72E+00	0,00E+00
ODP	kg CFC11-eqv	4,51E-07	1,18E-07	1,39E-07	0,00E+00	6,43E-09	7,51E-08	0,00E+00
POCP	kg C <sub>2</sub> H <sub>4</sub> -eqv	2,75E-03	1,44E-04	6,65E-04	0,00E+00	5,69E-06	1,09E-04	0,00E+00
AP	kg SO <sub>2</sub> -eqv	2,89E-02	3,13E-03	7,70E-03	0,00E+00	1,11E-04	2,31E-03	0,00E+00
EP	kg PO <sub>4</sub> <sup>3-</sup> -eqv	8,14E-03	4,07E-04	1,79E-03	0,00E+00	1,81E-05	5,63E-04	0,00E+00
ADPM	kg Sb-eqv	3,75E-05	9,37E-06	1,15E-05	0,00E+00	3,32E-07	3,04E-06	0,00E+00
ADPE	MJ	1,96E+02	9,91E+00	4,43E+01	0,00E+00	5,19E-01	4,52E+00	0,00E+00

GWP Global warming potential; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non fossil resources; ADPE Abiotic depletion potential for fossil resources

Resource use									
Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	
RPEE	MJ	3,16E+01	1,61E-01	5,97E+00	0,00E+00	7,25E-03	3,31E-01	0,00E+00	
RPEM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
TPE	MJ	3,16E+01	1,61E-01	5,97E+00	0,00E+00	7,25E-03	3,31E-01	0,00E+00	
NRPE	MJ	2,13E+02	1,06E+01	4,76E+01	0,00E+00	5,62E-01	4,56E+00	0,00E+00	
NRPM	MJ	8,25E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
TRPE	MJ	2,95E+02	1,06E+01	4,76E+01	0,00E+00	5,62E-01	4,56E+00	0,00E+00	
SM	kg	1,83E+00	0,00E+00	3,29E-01	0,00E+00	0,00E+00	1,34E-03	0,00E+00	
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
NRSF	MJ	6,13E-02	0,00E+00	1,10E-02	0,00E+00	0,00E+00	3,00E-03	0,00E+00	
W	m <sup>3</sup>	4,11E-01	2,03E-03	1,01E-01	0,00E+00	1,02E-04	9,36E-02	0,00E+00	

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water

End of life - Waste									
Parameter	Unit	A1- A3	A4	A5	C1	C2	C3	C4	
HW	kg	2,41E-01	7,78E-03	1,46E-01	0,00E+00	2,98E-04	5,17E-01	0,00E+00	
NHW	kg	4,11E+00	5,75E-01	1,97E+00	0,00E+00	3,43E-02	4,67E+00	0,00E+00	
RW	kg	4,47E-04	6,83E-05	1,09E-04	0,00E+00	3,74E-06	2,07E-05	0,00E+00	

HW Hazardous waste disposed; NHW Non hazardous waste disposed; RW Radioactive waste disposed

End of life - Output flow									
Parameter	Unit	A1- A3	A4	A5	C1	C2	C3	C4	
CR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
MR	kg	3,53E-01	7,46E-03	7,21E-02	0,00E+00	3,41E-04	1,06E-02	0,00E+00	
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
EEE	MJ	1,97E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
ETE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy

Reading example: 9,0 E-03 = 9,0\*10<sup>-3</sup> = 0,009

## Additional Norwegian requirements

### Greenhous gas emission from the use of electricity in the manufacturing phase

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process(A3).

Data source	Amount	Unit
Electricity, low voltage Belgium (market) Econinvent v3.3 (2016), cut-off	284,14	gCO <sub>2</sub> -eqv/kWh

### Dangerous substances

- The product contains no substances given by the REACH Candidate list or the Norwegian priority list
- The product contains substances given by the REACH Candidate list or the Norwegian priority list that are less than 0,1 % by weight.
- The product contain dangerous substances, more then 0,1% by weight, given by the REACH Candidate List or the Norwegian Priority list, see table.
- The product contains no substances given by the REACH Candidate list or the Norwegian priority list. The product is classified as hazardous waste (Avfallsforskriften, Annex III), see table.

Name	CAS no.	Amount

#### Indoor environment

The product meets the requirements for low emissions (M1) according to EN15251: 2007 Appendix E.

#### Carbon footprint

Carbon footprint has not been worked out for the product.





### Bibliography

ISO 14025:2010	<i>Environmental labels and declarations - Type III environmental declarations - Principles and procedures</i>
ISO 14044:2006	<i>Environmental management - Life cycle assessment - Requirements and guidelines</i>
EN 15804:2012+A1:2013	<i>Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products</i>
ISO 21930:2007	<i>Sustainability in building construction - Environmental declaration of building products</i>

LCA background report of Zeno protect products

IBU PCR for Building-Related Products and Services, adapted for UL Environment from the range of Environmental Product Declarations of the Institute Construction and Environment e. V.

Ecoinvent database (v3.:

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