

# Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

## Protecta FR IPT (Plastic Cartridge)



*Polyseam.*

The Norwegian Business  
Sector Foundation  
for Environmental  
Product Declarations

**Owner of the declaration:**

Polyseam AS

**Product:**

Protecta FR IPT (Plastic Cartridge)

**Declared entity:**

1 kg

**The declaration is based on PCR:**

EN 15804:2012+A2:2019 serves as the core PCR  
NPCR 009:2021 Part B for Technical - Chemical products  
for building and construction industry

**Programme operator:** The  
Norwegian Business Sector  
Foundation for Environmental  
Product Declarations

**Declaration number :**

NEPD-5257-4592-EN

**Publication number :**

NEPD-5257-4592-EN

**Approved date:** 25.10.2023

**Valid until:** 25.10.2028

**EPD Software:**

LCA.no EPD generator ID: 81306

## General information

### Product

Protecta FR IPT (Plastic Cartridge)

### Program Operator:

P.O. Box 5250 Majorstuen, 0303 Oslo, Norway The Norwegian Business Foundation for Environmental Product Declarations Phone: +47 23 08 80 00 Web: [post@epd-norge.no](mailto:post@epd-norge.no)

**Declaration number :** NEPD-5257-4592-EN

### The declaration is based on PCR:

EN 15804:2012+A2:2019 serves as the core PCR NPCR 009:2021 Part B for Technical - Chemical products for building and construction industry

### Statement of responsibility:

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

### Declared entity:

1 kg Protecta FR IPT (plastic cartridge)

### Declared device with option:

A1,A2,A3,A4,A5

### Functional device:

### General information about verification of EPDs from tools:

Independent verification of data, other environmental information and EPDs has been carried out in accordance with ISO 14025:2010, Chapters 8.1.3 and 8.1.4. Verification of each EPD is carried out in accordance with EPD-Norway's guidelines for verification and approval, which require that EPD tools are i) integrated into the company's environmental management system, ii) procedures for the use of EPD tools are approved by EPD-Norway and iii) the process is reviewed annually by an independent 3rd party verifier. See Appendix G in EPD-Norway's guidelines for more information on EPD tools.

### Verification of EPD tools:

Independent third-party verification of tools, background data and test EPDs is done in accordance with EPD-Norway's procedures and guidelines for verification and approval of EPD tools. NEPDT73 Third-party verifier:

Linda Høiby - Life Cycle Assessment Consulting  
(does not require signature)

### Owner of the declaration:

Polyseam AS  
Contact: Andrea Bogstad Phone: +47 33 30 67 00  
E-mail: [post.no@polyseam.com](mailto:post.no@polyseam.com)

### Producer:

Polyseam Ltd

### Place of production:

Polyseam Ltd  
St Andrews Road 15  
HD1 6SB Huddersfield, West Yorkshire, United Kingdom

### Quality/Environmental System:

ISO 9001, ISO 14001

### Org. no.:

986 426 051

**Approved date:** 25.10.2023

**Valid until:** 25.10.2028

### Year of the study:

2022

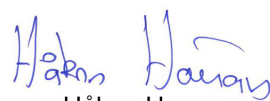
### Comparability:

EPDs of building products are not necessarily comparable if they do not comply with NS-EN 15804 and are seen in a building context.

### Preparation and verification of environmental declarations:

The declaration has been prepared and verified using the EPD tool lca.tools ver EPD2022.03, developed by LCA.no. The EPD tool is integrated into the company's environmental management system, and approved by EPD-Norway The EPD has been prepared by: Andrea Bogstad  
Company-specific data and EPD are controlled by: Wol Hluchan

### Approved:



Håkon Hauan  
Daglig leder av EPD-Norge

## Product

### Product Description:

Protecta FR IPT is a high-quality fire-rated sealant. It is designed for sealing joints, openings and irregular holes in walls, partitions and other structures, resulting in an airtight and watertight joint.

Based on the innovative Inert Polymer technology, FR IPT can be used in a wide range of indoor building disciplines, such as firefighters, painters, floor layers, joint installers, plumbers and tilers.

FR IPT is a non-reactive, environmentally friendly chemistry that ensures compatibility with most building materials and has the unique property of moving dynamically to accommodate both natural and unexpected movements in jointed openings, ensuring a long-lasting functionality.

### Product Specification:

Materials	Value	Unit
MATERIALS		
Pigments	0,25-2	%
Bind	40-50	%
Preservative	0,03	%
Chemical	1-10	%
Mineral	30-60	%
Solvent	10-15	%
PACKAGING		
Packaging - Cardboard	0,03	Kg
Packaging - Plastic	0,12	Kg
Packaging - Wood	0,04	Kg

### Technical data:

The product has a third-party approved European Technical Assessment issued in accordance with Regulation (EU) No. 305/2011 on the basis of EAD 350454-00-1104, based on tests carried out in accordance with EN 1366-3, -4 & -12 in conjunction with EN 1363-1. The product is CE marked for Europe.

For more information see [https:// www.protecta.co.uk/no/product/fr-ipt/](https://www.protecta.co.uk/no/product/fr-ipt/)

### Market area:

Norway.

### Lifespan, product:

The reference life of the product depends on the application.

### Lifespan, building or construction:

60 years.

## LCA: Calculation rules

### Declared entity:

1 kg Protecta FR IPT (plastic cartridge)

### Cut-off criteria:

All important raw materials and all important energy use are included. The production process of the raw materials and energy streams included in very small quantities (less than 1%) are not included. These cut-off criteria do not apply to hazardous materials and substances.

### Allocation:

Allocation has been made in accordance with the provisions of EN 15804. Input energy and water, as well as the production of waste in own production, are allocated equally between all products through mass allocation. The environmental impact and resource consumption of the primary production of recycled materials are allocated to the original product system. The processing process and transport of the material to the production site are allocated to the analysis in this EPD.

### Data quality:

Specific data for the product composition has been provided by the manufacturer. They represent the production of the declared product and were collected for EPD development in the stated year of the study. Background data is based on EPDs according to EN 15804 and various LCA databases.

The data quality for the raw materials in A1 is presented in the table below.

Materials	Source	Data quality	Year
Bind	ecoinvent 3.6	Database	2019
Chemical	ecoinvent 3.6	Database	2019
Mineral	ecoinvent 3.6	Database	2019
Packaging - Plastic	ecoinvent 3.6	Database	2019
Pigments	ecoinvent 3.6	Database	2019
Preservative	ecoinvent 3.6	Database	2019
Solvent	ecoinvent 3.6	Database	2019
Bind	Modified ecoinvent 3.6	Database	2019
Packaging - Cardboard	Modified ecoinvent 3.6	Database	2019
Packaging - Wood	Modified ecoinvent 3.6	Database	2019

## System limits (X=included, MND=module not declared, MNR=module not applicable)

Product phase			Assembly phase		Usage							Final			Gains and burdens end of life (D)	
Raw	Transport	Manufact	Transport	Construction/installation phase	Cust	Maintenanc	Repair	Replaceme	Renovatio	Operational energy use	Operational water use	Disassembly	Transport	Waste treatment	Waste for final treatment	Reuse/recycling/recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	MONTH	MONTH	MONTH	MONTH	MONTH	MONTH	MONTH	MONTH	MONTH	MONTH	MONTH	MONTH

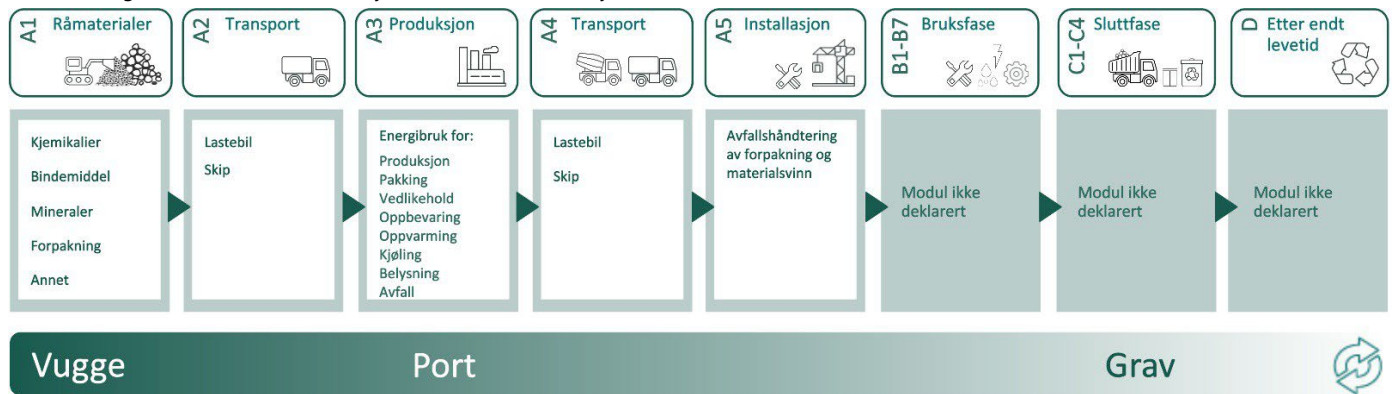
### System limits:

The life cycle analysis is a cradle-to-gate (A1 - A3) study, with alternative A4 transport to market and A5 installation. This includes extraction and production of raw materials and packaging, transport to the production site, the production process itself, transport to the construction site, as well as waste management during the installation of the product.

A4: Transport from factory in England to Norway is included. 300km of transport from our warehouse to the construction site has also been added according to PCR.

A5: Manual installation is taken into account, electricity is not taken into account. 3% material waste is included in installation. Emissions of VOCs during installation are included. All packaging is sent to the average waste disposal.

The following flowchart illustrates the system limits for the analysis:



### Additional Technical Information:

Protecta FR IPT can be removed with a knife/scrapper and sorted as hazardous waste at an approved waste facility.

Polyseam's factory is certified according to the ISO 14001 Environment Management (EMS) Standard. This framework guides you in reducing and managing the impact of production on the environment.

Read more here [https:// www.polyseam.com/sustainability/](https://www.polyseam.com/sustainability/)

## LCA: Scenarios and other technical information

The following information describes the scenarios for the modules in the EPD.














Transport from production site to user (A4)	Capacity utilisation incl. return (%)	Distance (km)	Fuel/Energy consumption	Unit	Value (Litres/tons)
Ship, Ferry, Sea (km)	50,0 %	1117	0,034	l/tkm	37,98
Truck, 16-32 tonnes, EURO 6 (km) - Europe	36,7 %	69	0,043	l/tkm	2,97
Truck, 16-32 tonnes, EURO 6 (km) - Europe	36,7 %	300	0,043	l/tkm	12,90
Truck, 16-32 tonnes, EURO 6 (km) - Europe	36,7 %	138	0,043	l/tkm	5,93

Construction phase (A5)	Unit	Value			
Material loss during instalation (kg)	Units/DU	0,03			
Volatile organic compounds (VOCs) to air (kg)	kg/DU	0,00			
Waste treatment of material lost during instalation (kg)	kg/DU	0,03			
Waste, packaging, cardboard, to average treatment (kg)	Kg	0,03			
Waste, packaging, pallet, EUR wooden pallet, reusable, to average treatment (kg)	Kg	0,04			
Waste, packaging, Plastic cartridges, HDPE, to average treatment (kg)	Kg	0,12			
Waste, packaging, plastic film (LDPE), to average treatment (kg)	Kg	0,00			

## LCA: Results

The LCA results are presented below for the unit defined on page 2 of the EPD document.

Environmental impact							
Indicator	Unit	A1	A2	A3	A4	A5	
 GWP total	kg CO2 -eq	1.78E+00	1,43E-01	5.40E-02	2,43E-01	1,55E-01	
 GWP fossil	kg CO2 -eq	1.88E+00	1,43E-01	5.23E-02	2,43E-01	4.90E-02	
 GWP-biogenic	kg CO2 -eq	-1.01E-01	6.80E-05	1,68E-03	7,80E-05	1,06E-01	
 GWP-luluc	kg CO2 -eq	1,20E-03	9,53E-05	5,97E-05	1,25E-04	2,67E-05	
 ODP	kg CFC11 -eq	1,32E-07	3,05E-08	4,67E-09	5,12E-08	4,55E-09	
 AP	mole H+ -eq	1,03E-02	1,32E-03	1,83E-04	5,04E-03	7,40E-05	
 EP-FreshWater	kg P -eq	6,18E-05	1,21E-06	1,34E-06	1,34E-06	8,89E-07	
 EP-Marine	kg N -eq	1,39E-03	3,97E-04	3,70E-05	1,24E-03	2,39E-05	
 EP-Terrestrial	mole N -eq	1,64E-02	4,39E-03	4,03E-04	1,38E-02	1,92E-04	
 POCP	kg NMVOC -eq	8,43E-03	1,20E-03	1,05E-04	3,65E-03	2,83E-04	
 ADP-minerals&metals1	kg Sb -eq	4,50E-05	2,83E-06	6,49E-07	3,68E-06	1,97E-07	
 ADP fossils1	MJ	4,48E+01	2,06E+00	1,07E+00	3,34E+00	2,12E-01	
 WDP1	m3	7,73E+01	2,04E+00	4,62E+00	1,79E+00	7,99E-01	







GWP total = Global warming potential total; GWP fossil = Global warming potential fossil fuels; GWP-biogenic = Global warming potential biogenic sources; GWP-luluc = Global warming potential land use and land use change; ODP = Potential for stratospheric ozone depletion; WP = Acidification potential for sources on land and water; EP = eutrophication potential to freshwater, oceans and soil; POCP = Potential for photochemical oxidant formation; ADP-minerals&metals = Abiotic depletion potential of non-fossil resources, minerals and metals; ADP fossil = Abiotic depletion potential of fossil resources, fossil fuels; WDP = Depletion potential of water resources

"Reading example: 9.0 E-03 =  $9.0 \cdot 10^{-3} = 0.009$ "

\*INA Indicator Not Assessed

1. The results of this Environmental Impact Indicator shall be used with caution as the uncertainty of the results is high or there is limited experience in the use of the indicator.

### Notice on the environmental impact

Supplementary indicators of environmental impact							
Indicator	Unit	A1	A2	A3	A4	A5	
 PM	Disease incidence	7,93E-08	8,30E-09	7,27E-10	9,96E-09	1,17E-09	
 IRP2	kgBq U235 -eq	6,33E-02	9,09E-03	1,72E-02	1,44E-02	8,98E-04	
 ETP-FW1	CTUe	3,06E+01	1,49E+00	7,72E-01	2,15E+00	7,70E-01	
 HTP-c1	CTUh	2,46E-09	0,00E+00	1,90E-11	0,00E+00	4,10E-11	
 HTP-nc1	CTUh	1,99E-08	1,34E-09	6,56E-10	2,52E-09	3,83E-10	
 SQP1	Dimensionless	1,24E+01	1,41E+00	8,97E-01	1,27E+00	1,99E-01	











PM = Particulate emissions; IRP = Ionizing radiation (health effect); ETP-fw = Ecotoxicity (freshwater); HTP-c = Toxicity impact on humans, cancer; HTP-nc = Toxicity impact on humans, effects other than cancer; SQP = Impacts related to land-use change / soil quality

"Reading example:  $9.0 \text{ E-}03 = 9.0 \cdot 10^{-3} = 0.009$ "

\*INA Indicator Not Assessed

1. The results of this environmental impact indicator should be used with caution as the uncertainty of the results is high or there is limited experience with the use of the indicator.
2. This category of impact mainly deals with the eventual effect of low-dose ionizing radiation on human health in the nuclear fuel cycle. It does not take into account effects due to possible nuclear accidents, occupational exposures or due to the removal of radioactive waste in underground facilities. Potential ionizing radiation from the soil, from radon and from some building materials is also not measured by this indicator.






Resource use								
	Indicator	Unit	A1	A2	A3	A4	A5	
	PERE	MJ	2.42E+00	3.20E-02	2.94E-01	3.29E-02	3.36E-02	
	PERM	MJ	9.85E-01	0.00E+00	0.00E+00	0.00E+00	-9.85E-01	
	PERT	MJ	3.40E+00	3.20E-02	2.94E-01	3.29E-02	-9.51E-01	
	PRERE	MJ	3.45E+01	2.06E+00	1.07E+00	3.34E+00	2.12E-01	
	PENRM	MJ	1.11E+01	0.00E+00	0.00E+00	0.00E+00	-4.91E+00	
	PENRT	MJ	4.56E+01	2.06E+00	1.07E+00	3.34E+00	-4.69E+00	
	SM	Kg	4.22E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	RSF	MJ	6.64E-02	1.40E-03	4.26E-04	1.05E-03	5.91E-04	
	NRSF	MJ	1.49E-02	3.90E-03	4.96E-04	2.71E-03	1.90E-03	
	FW	m3	3.75E-02	2.38E-04	4.30E-04	2.47E-04	1.63E-04	

PERE = Renewable primary energy used as an energy carrier; PERM = Renewable primary energy used as raw material; PERT = Total use of renewable primary energy; PRERE = Non-renewable primary energy used as an energy carrier; PENRM = Non-renewable primary energy used as raw material; PENRT = Total use of non-renewable primary energy; SM = Use of secondary materials; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water.

"Reading example: 9.0 E-03 = 9.0\*10<sup>-3</sup> = 0.009"






\*INA Indicator Not Assessed

End of life - Waste							
Indicator		Unit	A1	A2	A3	A4	A5
	HWD	Kg	4.34E-03	1,10E-04	3.21E-03	1,51E-04	3.00E-02
	NHWD	Kg	1,90E-01	8.00E-02	6.31E-03	7,59E-02	1,46E-01
	RWD	Kg	6.12E-05	1,41E-05	8,58E-06	2.30E-05	0,00E+00

HWD = Disposed of hazardous waste; NHWD = Disposed of non-hazardous waste; RWD = Disposed of radioactive waste

"Reading example: 9.0 E-03 =  $9.0 \cdot 10^{-3} = 0.009$ "

\*INA Indicator Not Assessed

End of life - Output flow							
Indicator		Unit	A1	A2	A3	A4	A5
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,58E-02
	MFR	Kg	8,85E-04	0,00E+00	1.10E-02	0,00E+00	9,23E-02
	MORE	Kg	3.46E-05	0,00E+00	8,75E-08	0,00E+00	1,62E-02
	EEE	MJ	2.81E-04	0,00E+00	8,41E-03	0,00E+00	3.70E-03
	EET	MJ	4,26E-03	0,00E+00	1,27E-01	0,00E+00	5,60E-02

CRU = Components for reuse, MFR Materials for recycling, MER = Materials for energy recovery, EEE = Exported electrical energy; EET = Exported Thermal Energy

"Reading example: 9.0 E-03 =  $9.0 \cdot 10^{-3} = 0.009$ "

\*INA Indicator Not Assessed

Information on the content of biogenic carbon		
Indicator	Unit	At the gate
Content of biogenic carbon in product	kg C	0,00E+00
Content of biogenic carbon in the packaging	kg C	2.90E-02

Note: 1 kg of biogenic carbon equals 44/12 kg of CO<sub>2</sub>

## Additional requirements

### Greenhouse gas emissions from the use of electricity in the production phase

The national production mix from imports, low voltage (including production of transmission lines, in addition to direct emissions and losses in the grid) is used for electricity used in the production process (A3). Background data are presented in the table below. Characterization factors from EN15804:2012+A2:2019 have been used.

Electricity mix	Data source	Amount	Unit
Electricity, United Kingdom, Market mix (kWh)	ecoinvent 3.6	386,67	g CO <sub>2</sub> -eq/kWh
Electricity, United Kingdom, Solar (kWh)	ecoinvent 3.6	78,98	g CO <sub>2</sub> -eq/kWh

### Hazardous substances

The product has not been added substances from the REACH Candidate List or the Norwegian Priority List.

### Indoor environment

Protecta FR IPT has been issue tested by Normec Product Testing. Meets minimum requirements for environmental toxins as well as a model level for indoor air quality as stated in the BREEAM-NOR Manual 2022 v6.0 - New Building.

FR IPT is also listed in the portal Nordic Ecolabel for building products that can be used in Swan-labelled buildings generation 3.

## Additional environmental information

Additional environmental impact indicators required in NPCR Part A for construction products						
Indicator	Unit	A1	A2	A3	A4	A5
GWPIOBC	kg CO <sub>2</sub> -eq	1.85E+00	1,43E-01	6,15E-02	2,43E-01	3,54E-02

GWPIOBC: Global warming potential calculated according to the principle of immediate oxidation. To increase the clarity of biogenic carbon contribution to climate impacts, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantaneous oxidation. GWP-IOBC is also referred to as GWP-GHG in the context of Swedish Public Procurement Act.

## Bibliography

NS-EN ISO 14025:2010 Environmental labels and declarations - Environmental declarations type III - Principles and procedures. NS-EN ISO 14044:2006 Environmental management - Life cycle assessments - Requirements and guidelines.

NS-EN 15804:2012+A2:2019 Sustainable building - Environmental declarations - Basic product category rules for building products. ISO 21930:2017 Sustainability in buildings and civil engineering works -

Core rules for environmental product declarations of construction products and services.

ecoinvent v3, (2019) Allocation, cut-off by classification, Swiss Centre of Life Cycle Inventories.






Iversen et al., (2021) eEPD v2021.09 Background information for EPD generator tool system verification, LCA.no Report number: 07.21

Ruttenborg, M. and Iversen, O.M.K., (2023) EPD generator for NPCR009:2021, Part B for Technical - Chemical products, Background information for EPD generator application and LCA data, LCA.no report number: 05.23.

NPCR Part A: Construction products and services. Ver. 2.0, 24.03.2021 EPD Norway.

NPCR 009 Part B for Technical - Chemical products for building and construction industry, Ver. 3.0, 06.10.2021, EPD Norway.

Testrapport SPT2023-R071 - VOC Emission Test Report

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