dapcons®

ADMINISTRATOR OF
PROGRAMME OPERATOR

COL·LEGI D'APARELLADORS,
ARQUITECTES TÈCNICS I ENGINYERS
D'EDIFICACIÓ DE BARCELONA

EMAS
GESTIÓ AMBIENTAL VERIFICADA
REG. No. 000142

CERTIFICAZIONE DI SISTEMA AMBIENTALE
DNV·GL
ISO 14001

DECLARACIÓN AMBIENTAL DE PRODUCTO
ENVIRONMENTAL PRODUCT DECLARATION

DAPcons®. 100.055

According to ISO 14025 and
EN UNE 15804 + A2:2020

COL·LEGI D'APARELLADORS, ARQUITECTES TÈCNICS I ENGINYERS D'EDIFICACIÓ DE BARCELONA

Product

TECNOCOAT P-2049 SYSTEM - POLYUREA MEMBRANE PURE FOR WATERPROOFING

Owner

Product description

The waterproofing liquid system TECNOCOAT P-2049 is based on a sprayable, aromatic, two-compound pure polyurea membrane. The two liquid, high reactive compounds, isocyanates, and amines, are mixed using the specific equipment, to form the solid, continuous, and watertight polyurea membrane.

PCR Reference

PCR 100. Construction products in general, v3 (27/05/2021)

Production plant

This Environmental Product Declaration (EPD) corresponds to the products produced by Tecnopol in Spain in its factory in Les Franqueses del Valles (Barcelona).
Finlàndia,33 · 08520 Les Franqueses de Vallès

Validity

From: 19/10/2021 To: 19/10/2021

The validity of DAPcons® .100.055 is subject to the conditions of DAPcons® regulations. The relevant version of this DAPcons® is included in the register kept by the CAATEEB; for more information, consult the Program Operator website: www.csostenible.net

ENVIRONMENTAL PRODUCT DECLARATION. EXECUTIVE SUMMARY

TECNOCOAT P-2049 SYSTEM - POLYUREA MEMBRANE PURE FOR WATERPROOFING

PROGRAMME OPERATOR DAPconstrucción®
Environmental product declarations of construction sector
www.csostenible.net

Administrator of Programme Operator
Col·legi d'Aparelladors, Arquitectes Tècnics i Enginyers de l'Edificació de Barcelona
Bon Pastor, 5 · 08021 Barcelona
www.apabcn.cat

Owner of the Declaration
TECNOPOL SISTEMAS S.L.U
Finlandia, 33. 08520 Les Franqueses del Valles Barcelona (España).

Declaration carried out by:
ISOLANA AHORRO ENERGÉTICO SL
Amalia Roca.

Declared Product
TECNOCOAT P-2049 SYSTEM - POLYUREA MEMBRANE PURE FOR WATERPROOFING

Product description
The waterproofing liquid system TECNOCOAT P-2049 is based on a sprayable, aromatic, two-compound pure polyurea membrane. The two liquid, high reactive compounds, isocyanates, and amines, are mixed using the specific equipment, to form the solid, continuous, and watertight polyurea membrane.

Geographical representativeness
It is considered a geographical and technological environment of Spain for the year 2019.

Variability between different products
-

Declaration Number
DAPcons®.100.055

Registration date
19/10/2021

Validity
This verified declaration authorises the owner to use the DAPcons® eco-label logo. The declaration is applicable exclusively to the product in question and for five years as of the date of registration.The responsible for the information contained in this declaration is:

Endorsed by CAATEEB
Celesti Ventura Cisternas. President of CAATEEB

Endorsed by authorised verifier
Ferran Perez by ITeC. Verifier accredited by the Administrator of the DAPcons® Program

This environmental product declaration complies with the ISO 14025 and UNE-EN 15804: 2012 + A2: 2020 standards and describes environmental information regarding the life cycle of the Tecnocoat P2049 system-polyurea membrane pure for waterproofing product manufactured by TECNOPOL SL at its plants in Les Franqueses del Valles (Barcelona). This statement is based on the document PCR 100. Construction products in general, v3 (27/05/2021).

ENVIRONMENTAL PRODUCT DECLARATION

1. PRODUCT DESCRIPTION AND APPLICATION

TECNOCOAT P-2049 is a membrane of great surface hardness, elongation and resistance against wear that once applied offers great stability, durability and waterproofing and perfect tightness on pedestrian walkable roofs and with vehicular traffic.

The waterproofing system is EOTA certified based on the EAD 030350-00-0402 guide for its use in waterproofing ETE 11/0357 roofs, with a useful life of 25 years W3, for a thickness of 1.4 mm. even on zero roof slope.

It has the evaluation for the British market BBA 16/5340, for waterproofing roofs and walkable terraces, for a minimum thickness of 1.4 mm.

It has obtained the certificate of application methodology for the roof waterproofing system DTA 5.2-19 / 2665 (Avis Technique), issued by the French construction institute CSTB, for a minimum thickness of 1.4 mm.

The waterproofing system has EOTA certification based on the European guide ETAG 033 for its use in waterproofing bridge decks ETE 16/0680, for a minimum thickness of 2.3 mm.

The TECNOCOAT P-2049 polyurea membrane is suitable for application in contact situations with drinking water, according to the British standard BS-6920 and WRAS approval and is evaluated under RD 140/2003.

The membrane is evaluated under the ISO / DTS 11665-13 standard, diffusion to the passage of radon gas (according to TE DB HS6).

2. LIFE CYCLE PHASES DESCRIPTION

2.1. Manufacture (A1, A2 and A3)

Raw materials (A1 and A2)

• A1 Supply of raw materials: extraction and processing of raw materials and energy that occurs before the manufacturing process. The main raw materials used as an indication are: calcium carbonate and isocyanate.

• A2 Transport of raw materials: transport of the different raw materials from the supplier of raw materials to the factory where the final product is made. The specific distance and type of truck used in each transport have been considered.

Manufacturing (A3)

• A3 Manufacturing: consumption of energy, water and packaging materials used during the manufacturing process of the product. The transportation and management of waste generated at the production site is also included.

The raw materials are mixed according to the master formula in a disperser and then they are arranged in drums.

2.2. Construction (A4 and A5)

Product transport to the building site (A4)

• A4 Construction: This module includes transportation from the factory gate to the site where the product is installed.

For the calculation of transport, a weighted average has been made considering the kilometers to each country, and the percentage of sales over the total. The average number of kilometers has resulted in 550 km for Europe and 2300 km for the rest of the world.

The following table shows the results for Europe and the rest of the world.

Table 1. Transport scenarios of product to the building site

Destination	Type of transport	Percentage (%)	Average Km
Spain	-	-	-
Europe	Truck 16-32 Tons	75	550
Rest of the world	Transoceanic Ship - Asia Transoceanic Ship - South America Transoceanic Ship - Africa	12 4 6	2300
		Total 100%	

Construction and instalation process (A5)

• A5 Installation: This stage includes all the materials and energy used for the installation of the membrane. Likewise, the transport and management of the waste produced (packaging and wasted product) is also considered.

Section 4 of this document includes the data mentioned per unit declared.

2.3. Product use (B1-B7)

The performance of the system allows assuming a reference useful life of 25 years at a minimum thickness of 1.4 mm according to ETE 11/0357.

Once installed, the insulation system does not require maintenance operations or energy or water inputs, so no environmental loads are attributed to this stage.

In this DAP the energy and emission savings derived from the insulating properties of the system have not been accounted for.

2.4. End-of-life (C1-C4)

• C1 Deconstruction / Demolition: the deconstruction and / or dismantling of the Tecnocoat system is part of the entire demolition of the building. The part of the environmental impact associated with our system is very small, so it can be neglected compared to the overall demolition of the building.

• C2 Transportation: In this case, a 16-32 Tn truck has been considered and a distance of 50 km to the management site.

• C3 Waste management for reuse, recovery and recycling: materials are not separated from other construction products during the end of the building's life, so the impact of this stage is considered to be zero.

• C4 Waste disposal: It is considered that 100% of the product is deposited in a controlled landfill.

2.5. Benefits and loads beyond the system boundary (D)

• D: In this study, modulus D is considered to have a value of 0.

3. LIFE CYCLE ASSESSEMENT

This DAP is cradle to door with options, including all life cycle stages (A + B + C + D).
The present LCA study has been carried out using the LCA software SIMAPRO 9.1. together with the ECOINVENT 3.5 database.
The impact methodology used corresponds to CML-IA (baseline) v3.05 and EDIP v1.07 (for the production of waste) and Cumulative Energy Demand v 1.11 (for the consumption of natural resources).
The primary data (consumption of raw materials and energy, waste production, transport from suppliers and product transport) correspond to factory data for 2019.
The polluter pays and modularity principles have been followed.
Wherever it has been necessary, a load assignment has been made based on physical criteria.
To represent the electricity consumption in the factory, the production mix in Spain has been used.

3.1. Unit functional

The functional unit of the Tecnocoat system is 1m2. The weight of 1m2 of Tecnocoat P-2049 is 2.2kg.

3.2. System boundary

Table 2. Declared modules

Product stage			Construction Process Stage		Use stage							End of life stage				Benefits and loads beyond the system boundaries
Raw materials supply	Transport	Manufacturing	Transport	Installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy use	Operational water use	De-construction	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	X	X	X	X	X	X	X	X	X	X	X	X

X = Included in LCA MND = Module not Declared

3.3. Data analysis for the life cycle (LCA)

Table 3. Indicators of the environmental impact

RESULTS PER FUNCTIONAL UNIT											
Impact cateogry	Unidad	Tot.A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D	TOTAL
GWP-fossil	kg CO_2 eq.	1,35E+01	4,01E-01	2,30E-02	0,00E+00	0,00E+00	3,71E-02	0,00E+00	3,71E-02	0,00E+00	1,40E+01
GWP-biogenic	kg CO_2 eq.	5,07E-02	1,31E-04	5,98E-05	0,00E+00	0,00E+00	1,23E-05	0,00E+00	1,32E-04	0,00E+00	5,11E-02
GWP- luluc	kg CO_2 eq.	3,29E-01	1,22E-04	2,07E-04	0,00E+00	0,00E+00	1,31E-05	0,00E+00	1,51E-05	0,00E+00	3,30E-01
GWP-total	kg CO_2 eq.	1,39E+01	4,01E-01	2,33E-02	0,00E+00	0,00E+00	3,72E-02	0,00E+00	3,72E-02	0,00E+00	1,44E+01
ODP	kg CFC 11 eq.	3,91E-07	7,27E-08	2,99E-09	0,00E+00	0,00E+00	6,58E-09	0,00E+00	9,91E-09	0,00E+00	4,83E-07
AP	mol H^+ eq.	8,26E-02	2,08E-03	2,18E-04	0,00E+00	0,00E+00	1,49E-04	0,00E+00	3,23E-04	0,00E+00	8,54E-02
EP-freshwater	kg PO_4^{3} eq.	1,32E-02	2,38E-04	1,56E-05	0,00E+00	0,00E+00	1,92E-05	0,00E+00	4,22E-05	0,00E+00	1,35E-02
EP- marine	kg N eq.	2,58E-02	5,51E-04	3,05E-05	0,00E+00	0,00E+00	4,15E-05	0,00E+00	1,05E-04	0,00E+00	2,65E-02
EP-terrestrial	mol N eq.	1,62E-01	6,17E-03	3,67E-04	0,00E+00	0,00E+00	4,65E-04	0,00E+00	1,16E-03	0,00E+00	1,70E-01
POCP	kg NMVOC eq.	5,35E-02	1,82E-03	9,10E-05	0,00E+00	0,00E+00	1,41E-04	0,00E+00	3,37E-04	0,00E+00	5,59E-02
ADP-minerals&metals*	kg Sb eq.	1,91E-05	1,13E-06	1,49E-08	0,00E+00	0,00E+00	1,46E-07	0,00E+00	4,79E-08	0,00E+00	2,05E-05
ADP-fossil*	MJ	1,78E+02	5,98E+00	2,58E-01	0,00E+00	0,00E+00	5,46E-01	0,00E+00	9,06E-01	0,00E+00	1,86E+02
WDP	m^3	1,24E+01	4,13E-02	1,28E-02	0,00E+00	0,00E+00	3,87E-03	0,00E+00	4,02E-02	0,00E+00	1,25E+01
Human toxicity, cancer effects	CTUh	2,31E-07	2,94E-09	2,22E-10	0,00E+00	0,00E+00	3,24E-10	0,00E+00	5,51E-10	0,00E+00	2,35E-07
Human toxicity, non-cancer effects	CTUh	1,75E-06	5,70E-08	2,84E-09	0,00E+00	0,00E+00	5,00E-09	0,00E+00	2,59E-09	0,00E+00	1,82E-06
Exo-toxicity, freshwater	CTUe	4,44E+01	9,37E-01	7,80E-03	0,00E+00	0,00E+00	7,55E-02	0,00E+00	2,21E-02	0,00E+00	4,55E+01
Land use related impacts/soil quality	Dimensionless	3,07E+02	5,73E+00	1,67E-01	0,00E+00	0,00E+00	4,61E-01	0,00E+00	3,11E+00	0,00E+00	3,17E+02
Particulate matter emissions	Incidence of disease	8,45E-07	2,72E-08	4,93E-10	0,00E+00	0,00E+00	2,28E-09	0,00E+00	6,03E-09	0,00E+00	8,81E-07
Ionizing radiation, human health	kBq U235 eq	1,52E-01	2,61E-02	5,29E-03	0,00E+00	0,00E+00	2,35E-03	0,00E+00	3,68E-03	0,00E+00	1,89E-01
EP-freshwater	kg PO	3,63E-04	5,98E-06	1,27E-06	0,00E+00	0,00E+00	6,59E-07	0,00E+00	9,00E-07	0,00E+00	3,72E-04
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption										

RESULTS PER FUNCTIONAL UNIT											
Impact cateogry	Unidad	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D	TOTAL
GWP-GHG	kg CO2 eq.	1,34E+01	3,97E-01	2,29E-02	0,00E+00	0,00E+00	3,68E-02	0,00E+00	3,65E-02	0,00E+00	1,39E+01

A1 Raw materials suply. **A2** Transport. **A3** Manufacturing Product. **A4** Transport **A5** Construction – Installation process **B1** Use. **B2** Maintenance. **B3** Repair. **B4** Replacement. **B5** Refurbisshment. **B6** Operational Energy use. **B7** Operational water use. **C1** Decosntruction and demolition. **C2** Transport. **C3** Waste management for reuse, recovery and recycling. **C4** Disposal. **MND** Module not declared. **MJ** Net calorific value.

Table 4. Use of resources, waste and material outflows parameters

RESULTS PER FUNCTIONAL UNIT											
Impact category	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D	TOTAL
PERE	MJ	3,85E+01	6,77E-02	1,22E-01	0,00E+00	0,00E+00	6,51E-03	0,00E+00	1,44E-02	1,44E-02	3,87E+01
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	3,85E+01	6,77E-02	1,22E-01	0,00E+00	0,00E+00	6,51E-03	0,00E+00	1,44E-02	1,44E-02	3,87E+01
PENRE	MJ	2,21E+02	6,46E+00	5,16E-01	0,00E+00	0,00E+00	5,90E-01	0,00E+00	9,90E-01	9,90E-01	2,30E+02
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	2,21E+02	6,46E+00	5,16E-01	0,00E+00	0,00E+00	5,90E-01	0,00E+00	9,90E-01	9,90E-01	2,30E+02
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	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	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	4,24E-01	1,11E-03	2,16E-04	0,00E+00	0,00E+00	1,04E-04	0,00E+00	9,62E-04	9,62E-04	4,27E-01
Acronyms	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 re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary										

RESULTS PER FUNCTIONAL UNIT											
Impact category	Unit	Tot.A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D	TOTAL
Hazardous waste disposed	kg	5,47E-05	3,83E-06	3,04E-07	0,00E+00	0,00E+00	3,98E-07	0,00E+00	7,16E-07	0,00E+00	6,00E-05
Non-hazardous waste disposed	kg	1,23E+00	2,73E-01	1,92E-03	0,00E+00	0,00E+00	2,16E-02	0,00E+00	3,47E+00	0,00E+00	5,00E+00
Radioactive waste disposed	kg	1,70E-04	4,11E-05	3,71E-06	0,00E+00	0,00E+00	3,71E-06	0,00E+00	5,66E-06	0,00E+00	2,24E-04

RESULTS PER FUNCTIONAL UNIT											
Impact cateogry	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D	Total
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	4,66E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4,66E-02
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

A1 Raw materials suply. **A2** Transport. **A3** Manufacturing Product. **A4** Transport **A5** Construction – Installation process **B1** Use. **B2** Maintenance. **B3** Repair. **B4** Replacement. **B5** Refurbisshment. **B6** Operational Energy use. **B7** Operational water use. **C1** Decosntruction and demolition. **C2** Transport. **C3** Waste management for reuse, recovery and recycling. **C4** Disposal. **MND** Module not declared. **MJ** Net calorific value.

Table 5. Kg of biogenic carbon

Product	0,00E+00	Kg
Packaging	8,20E-03	Kg

3.4. Recommendations of this DAP

The comparison of construction products must be done by applying the same functional unit and at the building level, that is, including the behavior of the product throughout its entire life cycle.
This DAP includes the TECNOCOAT P-2049 products.

3.5. Cut-off rules

At least 99% of the total life cycle matter and energy have been included, and 95% of matter and energy per module. It has been excluded because its impact is considered negligible:
1) Manufacture of equipment used in production, buildings or any other capital good;
2) •Transportation of personnel to the plant;
3) •Transportation of personnel within the plant;
4) •Research and development activities.

3.6. Additional environmental information

3.7. Other data

It has CE marking based on a Declaration of Performance (DoP) prepared in accordance with the regulation UE305 / 2011.
The Tecnocoat P-2049 system has ETE 10/0121 certification, with a useful life of 25 years for a minimum thickness of 1.2 mm. as well as British BBA 16/5340 certification.

4. TECHNICAL INFORMATION AND SCENARIOS

4.1. Transport from the factory to the building site (A4)

Parameter	Parameter expressed by functional unit
Type and fuel consumption, type of vehicle used for transportation	Truck 16-32 Tn Euro 5
Distance	550 km
Capacity utilization (including empty return)	Road transport: 85% Transport by cargo ship: 100%
Apparent density of transported product	1,10 g/cm³
Useful capacity factor (1, <1, or> 1 for products that are packed compressed or nested)	1

4.2. Installation processes (A5)

Parameter	Parameter expressed by functional unit
Construction ancillary materials (specifying each material)	PRIMER EPW-1070 | PRIMER PU-1050 TECNOTOP 2C
Water consumption	It is not required.
Consumption of other resources	It is not required.
Quantitive despription of the type of energy (mix regional) and consumption during the installation process	It is not required.
Materials waste on site before waste treatment, generated by the installation of the product (specify by type)	Product losses: 0% Packaging waste. 0.0178 kg of wooden pallet.
Material outputs (specified by type) as a result of waste treatment on the building site. For example: collection for recycling, energy valuation, disposal (specified by route)	Reused pallets for a new reuse center: 0.0178 kg of pallet per m2 of product. 100% recycling. Product wasted: 0%.
Emisions to the air, ground or water	There is not.

Reference service life (B1)

Parameter	Parameter expressed by functional unit
Reference service life (RSL)	The shelf life of the product is 25 years.
Properties and characteristics of the product	Coating suitable for waterproofing, protection and sealing in general.
Requirements (ways of using, maintenance frequency, repair, etc.)	It is not required.

4.4. Maintenance (B2), repair (B3), replacement (B4) or refurbishement (B5)

B2 Maintenance	
Parameter	**Parameter expressed by functional unit**
Maintenance, for example: cleaning agent, type of surfactant	It is not required.
Maintenance cycle	It is not required.
Auxiliar materials for the maintenance process (specifying each material)	It is not required.
Net consumption of fresh water	It is not required.
Loss of material during maintenance or repair (specifying the type)	It is not required.

B3 Repair	
Parameter	**Parameter expressed by functional unit**
Repair process	It is not required.
Inspection process	It is not required.
Repair cycle	It is not required.
Auxiliary materials (specifying each material), e.g. lubricant	It is not required.
Energy input during repair, vector type energy (for example, electricity) and quantity	It is not required.
Energy input during the process of renovation (amount and type of energy vector)	It is not required.
Loss of material during repair (specifying each material)	It is not required.
Net consumption of fresh water	It is not required.

B4 Replacement	
Parameter	**Parameter expressed by functional unit**
Energy input during replacement, for example for the use of cranes (quantity and energy vector)	It is not required.
Worn out parts replacement in the life cycle of the product (specifying each material)	It is not required.
Replacement cycle	25 years.

B5 Rehabilitation	
Parameter	**Parameter expressed by functional unit**
Rehabilitation process	It is not required.
Rehabilitation cycle	It is not required.
Energy input during rehabilitation, for example for the use of cranes (quantity and energy vector)	It is not required.
Material input for rehabilitation, including auxiliary materials (specified by material)	It is not required.
Material waste during rehabilitation (specifying each material)	It is not required.
Other scenario development assumptions	It is not required.

4.5. Useful life reference

Parameter	Parameter expressed by functional unit
Useful life reference	The shelf life of the product is 25 years.
Product declared properties, finishes, etc.	Coating suitable for waterproofing, protection and sealing in general.
Application design parameters (manufacturer's instructions)	For the formation, it is necessary to mix the two initial liquid components, isocyanates and amines, using our TC2049 dosing equipment.
Workmanship quality estimation, when installed in accordance with the manufacturer's instructions	A minimum total applied thickness of 1.5 mm is recommended, with an approximate total consumption of 2.4 kg / m² (dry film thickness); applied in one or more layers.
Outdoor environment for outdoor applications. For example, weather, pollutants, UV radiation, temperature, etc.	System designed for outdoors.

Indoor environment for indoor applications. For example, temperature, humidity, exposure to chemicals	Does not apply.
Terms of use. For example, frequency of use, mechanical exposure, etc.	It is not required.
Maintenance. For example, the required frequency, etc.	It is not required.

4.6. Operational use of energy (B6) and water (B7)

Parameter	Parameter expressed by functional unit
Construction ancillary materials (specified by material)	It is not required.
Energy vector type. For example, electricity, natural gas, district heating	Does not apply.
Equipment output power	Does not apply.
Net fresh water consumption	It is not required.
Characteristic features (energy efficiency, emissions, etc.)	Energy reduction in the building use stage.
Other scenarios development assumptions. For example, transportation	-

4.7. End of life (C1-C4)

Process	Parameter expressed by functional unit
Collection processes (specified by types)	Manual process.
Recovery systems (specified by type)	Does not apply.
Elimination	100% to landfill.
Assumptions for the development of scenarios. For example, transportation	Product waste is transported by truck that complies with Euro VI regulations, at a distance of 50 km to its final destination.

5. ADDITIONAL INFORMATION

It has CE marking based on a Declaration of Performance (DoP) prepared in accordance with the regulation UE305 / 2011.
The Tecnocoat P-2049 system has ETE 10/0121 certification, with a useful life of 25 years for a minimum thickness of 1.2 mm. as well as British BBA 16/5340 certification.

6. PCR AND VERIFICATION

This declaration is based on the Document

PCR 100. Construction products in general, v3 (27/05/2021)

Independent verification of the declaration and data according to ISO 14025 and UNE EN15804 + A2

☐ Internal ☑ External

Independent verifier appointed

ITeC. Ferran Pérez. Verifier accredited by the DAPcons® Program

Oficina d'Acreditació d'Entitats Col·laboradores
Verificació VEDAP-001-10

Verification date

28/09/2021

References

- General rules of the DAP®construction program.
- ISO 14040: 2006 Environmental management - Life cycle analysis - Principles and reference framework.
- ISO 14044: 2006 Environmental management - Life cycle analysis - Requirements and guidelines.
- UNE-EN 15804: 2012 + A1: 2014 Sustainability in construction. Environmental product declarations. Basic product category rules for construction products.
- ISO 14025: 2006 Environmental labels and declarations - Type III environmental declarations - Principles and procedures.
- Product life cycle modeled with SimaPro 9.1 software.

Administrator of programme operator

Col·legi d'Aparelladors, Arquitectes Tècnics i Enginyers de l'Edificació de Barcelona (CAATEEB)
Bon Pastor 5, 08021 Barcelona
www.apabcn.cat

Tecnopol®

ADMINISTRATOR OF
PROGRAMME OPERATOR

COL·LEGI D'APARELLADORS,
ARQUITECTES TÈCNICS I ENGINYERS
D'EDIFICACIÓ DE BARCELONA

DECLARACIÓN AMBIENTAL DE PRODUCTO
ENVIRONMENTAL PRODUCT DECLARATION

DAPcons®. 100.054

According to ISO 14025 and
EN UNE 15804 + A2:2020

COL·LEGI D'APARELLADORS, ARQUITECTES TÈCNICS I ENGINYERS D'EDIFICACIÓ DE BARCELONA

Product

DESMOPOL SYSTEM - POLYURETHANE WATERPROOFING MEMBRANE

Owner

Product description

DESMOPOL waterproofing liquid system is based on a one-component, aromatic, solvent-based polyurethane membrane, moisture curing that produces a continuous, elastic, solid membrane, completely adhered to the support, without joints or overlaps, 100% watertight and waterproof, excellent for application on all types of surfaces.

PCR Reference

PCR 100. Construction products in general, v3 (27/05/2021)

Production plant

This Environmental Product Declaration (EPD) corresponds to the products produced by Tecnopol in Spain in its factory in Les Franqueses del Valles (Barcelona).
Finlàndia,33 · 08520 Les Franqueses de Vallès

Validity

From: 19/10/2021 To: 19/10/2026

ENVIRONMENTAL PRODUCT DECLARATION. EXECUTIVE SUMMARY

DESMOPOL SYSTEM - POLYURETHANE WATERPROOFING MEMBRANE

PROGRAMME OPERATOR DAPconstrucción®
Environmental product declarations of construction sector
www.csostenible.net

Administrator of Programme Operator
Col·legi d'Aparelladors, Arquitectes Tècnics i Enginyers de l'Edificació de Barcelona
Bon Pastor, 5 · 08021 Barcelona
www.apabcn.cat

Owner of the Declaration
TECNOPOL SISTEMAS S.L.U
Finlandia, 33. 08520 Les Franqueses del Valles Barcelona (España).

Declaration carried out by:
ISOLANA AHORRO ENERGÉTICO SL
Amalia Roca.

Declared Product
DESMOPOL SYSTEM - POLYURETHANE WATERPROOFING MEMBRANE

Product description
DESMOPOL waterproofing liquid system is based on a one-component, aromatic, solvent-based polyurethane membrane, moisture curing that produces a continuous, elastic, solid membrane, completely adhered to the support, without joints or overlaps, 100% watertight and waterproof, excellent for application on all types of surfaces.

Geographical representativeness
It is considered a geographical and technological environment of Spain for the year 2019.

Variability between different products
-

Declaration Number
DAPcons®.100.054

Registration date
19/10/2021

Validity
This verified declaration authorises the owner to use the DAPcons® eco-label logo. The declaration is applicable exclusively to the product in question and for five years as of the date of registration.The responsible for the information contained in this declaration is: TECNOPOL SL

Endorsed by CAATEEB
Celesti Ventura Cisternas. President of CAATEEB

36548201M CELESTINO VENTURA (R:Q0875009C)

Firmado digitalmente por 36548201M CELESTINO VENTURA (R:Q0875009C)
Fecha: 2021.10.25 09:54:56 +02'00'

Endorsed by authorised verifier
Ferran Perez by ITeC. Verifier accredited by the Administrator of the DAPcons® Program

This environmental product declaration complies with the ISO 14025 and UNE-EN 15804: 2012 + A2: 2020 standards and describes environmental information regarding the life cycle of the Desmopol system-polyurethane waterproofing membrane product manufactured by TECNOPOL SL at its plants in Les Franqueses del Valles (Barcelona). This statement is based on the document PCR 100. Construction products in general, v3 (27/05/2021).

ENVIRONMENTAL PRODUCT DECLARATION

1. PRODUCT DESCRIPTION AND APPLICATION

DESMOPOL is a membrane of great elasticity and resistance against wear that once applied offers great stability, durability and certified tightness (ETE 10/0121 and BBA 16/5340).

The waterproofing system is EOTA certified based on the 005 guide for use in ETE 10/0121 roof waterproofing, with a useful life of 25 years W3, for a thickness of 1.2 mm, even on a zero slope.

It has the evaluation for the British market BBA 16/5340, for waterproofing roofs and walkable terraces, for a minimum thickness of 1.2 mm, even on a zero slope.

The versatility of Desmopol gives it the possibility of adapting on a multitude of surfaces and different materials, it is the ideal product to be applied in irregular areas with shapes of any nature whether curved or square.

It is not necessary to assemble on the surface, only at singular points of encounters with other construction elements.

Application in garden areas, it has the European certificate of resistance to roots according to the EN 13948 standard (ETE 10/0121 and BBA 16/5340).

The traditional application is carried out by applying successive layers of maximum thickness 0.7 mm each (1.2 kg / m^2). Dry between coats of approximately 4-6 hours.

2. LIFE CYCLE PHASES DESCRIPTION

2.1. Manufacture (A1, A2 and A3)

Raw materials (A1 and A2)

• A1 Supply of raw materials: extraction and processing of raw materials and energy that occurs before the manufacturing process. The main raw materials used as an indication are: calcium carbonate and isocyanate.

• A2 Transport of raw materials: transport of the different raw materials from the supplier of raw materials to the factory where the final product is made. The specific distance and type of truck used in each transport have been considered.

Manufacturing (A3)

• A3 Manufacturing: consumption of energy, water and packaging materials used during the manufacturing process of the product. The transportation and management of waste generated at the production site is also included.

The raw materials are mixed according to the master formula in a disperser and then they are arranged in drums.

2.2. Construction (A4 and A5)

Product transport to the building site (A4)

• A4 Construction: This module includes transportation from the factory gate to the site where the product is installed.

For the calculation of transport, a weighted average has been made considering the kilometers to each country, and the percentage of sales over the total. The average number of kilometers has resulted in 550 km for Europe and 2300 km for the rest of the world.

The following table shows the results for Europe and the rest of the world.

Table 1. Transport scenarios of product to the building site

Destination	Type of transport	Percentage (%)	Average Km
Spain	-	-	-
Europe	Truck 16-32 Tons	47	550
Rest of the world	Transoceanic Ship - Asia Transoceanic Ship - South America Transoceanic Ship - Africa	35 8 10	2300
		Total 100%	

Construction and instalation process (A5)

• A5 Installation: This stage includes all the materials and energy used for the installation of the membrane. Likewise, the transport and management of the waste produced (packaging and wasted product) is also considered.

Section 4 of this document includes the data mentioned per unit declared.

2.3. Product use (B1-B7)

The performance of the system allows assuming a reference useful life of 25 years at a minimum thickness of 1.4 mm according to ETE 11/0357.

Once installed, the insulation system does not require maintenance operations or energy or water inputs, so no environmental loads are attributed to this stage.

In this DAP the energy and emission savings derived from the insulating properties of the system have not been accounted for.

2.4. End-of-life (C1-C4)

• C1 Deconstruction / Demolition: the deconstruction and / or dismantling of the Tecnocoat system is part of the entire demolition of the building. The part of the environmental impact associated with our system is very small, so it can be neglected compared to the overall demolition of the building.

• C2 Transportation: In this case, a 16-32 Tn truck has been considered and a distance of 50 km to the management site.

• C3 Waste management for reuse, recovery and recycling: materials are not separated from other construction products during the end of the building's life, so the impact of this stage is considered to be zero.

• C4 Waste disposal: It is considered that 100% of the product is deposited in a controlled landfill.

2.5. Benefits and loads beyond the system boundary (D)

• D: In this study, modulus D is considered to have a value of 0.

3. LIFE CYCLE ASSESSEMENT

This DAP is cradle to door with options, including all life cycle stages (A + B + C + D).
The present LCA study has been carried out using the LCA software SIMAPRO 9.1. together with the ECOINVENT 3.5 database.
The impact methodology used corresponds to CML-IA (baseline) v3.05 and EDIP v1.07 (for the production of waste) and Cumulative Energy Demand v 1.11 (for the consumption of natural resources).
The primary data (consumption of raw materials and energy, waste production, transport from suppliers and product transport) correspond to factory data for 2019.
The polluter pays and modularity principles have been followed.
Wherever it has been necessary, a load assignment has been made based on physical criteria.
To represent the electricity consumption in the factory, the production mix in Spain has been used.

3.1. Unit functional

The functional unit of the Desmopol system is 1 m2. The weight of 1m2 of Desmopol is 2 kg.

3.2. System boundary

Table 2. Declared modules

Product stage			Construction Process Stage		Use stage							End of life stage				Benefits and loads beyond the system boundaries
Raw materials supply	Transport	Manufacturing	Transport	Installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy use	Operational water use	De-construction	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	X	X	X	X	X	X	X	X	X	X	X	X

X = Included in LCA MND = Module not Declared

3.3. Data analysis for the life cycle (LCA)

Table 3. Indicators of the environmental impact

Results per functional unit												
Impact cateogry	Unit	Tot.A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D	TOTAL
GWP-fossil	kg CO_2 eq.	9,09E+00	3,70E-01	0,00E+00	0,00E+00	0,00E+00	3,52E-02	0,00E+00	3,51E-02	0,00E+00	9,53E+00
GWP-biogenic	kg CO_2 eq.	2,82E-02	1,38E-04	0,00E+00	0,00E+00	0,00E+00	1,17E-05	0,00E+00	1,25E-04	0,00E+00	2,85E-02
GWP- luluc	kg CO_2 eq.	9,66E-03	1,27E-04	0,00E+00	0,00E+00	0,00E+00	1,24E-05	0,00E+00	1,43E-05	0,00E+00	9,81E-03
GWP-total	kg CO_2 eq.	9,13E+00	3,70E-01	0,00E+00	0,00E+00	0,00E+00	3,52E-02	0,00E+00	3,53E-02	0,00E+00	9,57E+00
ODP	kg CFC 11 eq.	4,79E-07	6,57E-08	0,00E+00	0,00E+00	0,00E+00	6,24E-09	0,00E+00	9,39E-09	0,00E+00	5,60E-07
AP	mol H^+ eq.	5,27E-02	3,22E-03	0,00E+00	0,00E+00	0,00E+00	1,41E-04	0,00E+00	3,06E-04	0,00E+00	5,64E-02
EP-freshwater	kg PO_4^{3-} eq.	5,19E-03	2,99E-04	0,00E+00	0,00E+00	0,00E+00	1,81E-05	0,00E+00	4,00E-05	0,00E+00	5,55E-03
EP- marine	kg N eq.	1,12E-02	7,41E-04	0,00E+00	0,00E+00	0,00E+00	3,93E-05	0,00E+00	9,91E-05	0,00E+00	1,21E-02
EP-terrestrial	mol N eq.	8,32E-02	8,31E-03	0,00E+00	0,00E+00	0,00E+00	4,40E-04	0,00E+00	1,10E-03	0,00E+00	9,31E-02
POCP	kg NMVOC eq.	3,18E-02	2,34E-03	0,00E+00	0,00E+00	0,00E+00	1,34E-04	0,00E+00	3,19E-04	0,00E+00	3,46E-02
ADP-minerals&metals*	kg Sb eq.	1,01E-05	8,80E-07	0,00E+00	0,00E+00	0,00E+00	1,39E-07	0,00E+00	4,53E-08	0,00E+00	1,12E-05
ADP-fossil*	MJ	1,34E+02	5,44E+00	0,00E+00	0,00E+00	0,00E+00	5,18E-01	0,00E+00	8,58E-01	0,00E+00	1,41E+02
WDP	m^3	5,74E+00	3,75E-02	0,00E+00	0,00E+00	0,00E+00	3,67E-03	0,00E+00	3,81E-02	0,00E+00	5,82E+00
Human toxicity, cancer effects	CTUh	2,08E-07	2,63E-09	0,00E+00	0,00E+00	0,00E+00	3,07E-10	0,00E+00	5,22E-10	0,00E+00	2,11E-07
Human toxicity, non-cancer effects	CTUh	5,36E-07	4,61E-08	0,00E+00	0,00E+00	0,00E+00	4,74E-09	0,00E+00	2,45E-09	0,00E+00	5,89E-07
Exo-toxicity, freshwater	CTUe	1,03E+01	7,29E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,09E-02	0,00E+00	1,12E+01
Land use related impacts/soil quality	Dimensionless	6,59E+01	4,50E+00	0,00E+00	0,00E+00	0,00E+00	4,37E-01	0,00E+00	2,95E+00	0,00E+00	7,37E+01
Particulate matter emissions	Incidence of disease	5,52E-07	2,27E-08	0,00E+00	0,00E+00	0,00E+00	2,16E-09	0,00E+00	5,71E-09	0,00E+00	5,83E-07
Ionizing radiation, human health	kBq U235 eq	1,84E-01	2,40E-02	0,00E+00	0,00E+00	0,00E+00	2,23E-03	0,00E+00	3,49E-03	0,00E+00	2,14E-01
EP-freshwater	kg P	1,53E-04	5,64E-06	0,00E+00	0,00E+00	0,00E+00	6,24E-07	0,00E+00	8,53E-07	0,00E+00	1,60E-04
Acronimos	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption										

Results per functional unit											
Impact cateogry	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D	TOTAL
GWP-GHG	kg CO2 eq.	8,78E+00	3,67E-01	0,00E+00	0,00E+00	0,00E+00	3,49E-02	0,00E+00	3,46E-02	0,00E+00	0,00E+00

A1 Raw materials suply. A2 Transport. A3 Manufacturing Product. A4 Transport A5 Construction – Installation process B1 Use. B2 Maintenance. B3 Repair. B4 Replacement. B5 Refurbisshment. B6 Operational Energy use. B7 Operational water use. C1 Decosntruction and demolition. C2 Transport. C3 Waste management for reuse, recovery and recycling. C4 Disposal. MND Module not declared. MJ Net calorific value.

Table 4. Use of resources, waste and material outflows parameters

Results per functional unit											
Impact cateogry	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D	TOTAL
PERE	MJ,	7,92E+00	7,28E-02	0,00E+00	0,00E+00	0,00E+00	6,17E-03	0,00E+00	1,37E-02	0,00E+00	8,01E+00
PERM	MJ,	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ,	7,92E+00	7,28E-02	0,00E+00	0,00E+00	0,00E+00	6,17E-03	0,00E+00	1,37E-02	0,00E+00	8,01E+00
PENRE	MJ,	1,64E+02	5,91E+00	0,00E+00	0,00E+00	0,00E+00	5,59E-01	0,00E+00	9,38E-01	0,00E+00	1,71E+02
PENRM	MJ,	0,00E+00	7,28E-02	0,00E+00	0,00E+00	0,00E+00	6,17E-03	0,00E+00	1,37E-02	0,00E+00	8,09E+00
PENRT	MJ,	1,64E+02	5,91E+00	0,00E+00	0,00E+00	0,00E+00	5,59E-01	0,00E+00	9,38E-01	0,00E+00	1,71E+02
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	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	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	1,38E-01	1,04E-03	0,00E+00	0,00E+00	0,00E+00	9,82E-05	0,00E+00	9,11E-04	0,00E+00	1,40E-01
Acronyms	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 re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water										

Results per functional unit											
Impact cateogry	Unit	Tot.A1-A3	A4	A5	B1- B7	C1	C2	C3	C4	D	TOTAL
Hazardous waste disposed	kg	4,26E-05	3,46E-06	0,00E+00	0,00E+00	0,00E+00	3,77E-07	0,00E+00	6,78E-07	0,00E+00	4,71E-05
Non-hazardous waste disposed	kg	7,14E-01	2,10E-01	0,00E+00	0,00E+00	0,00E+00	2,05E-02	0,00E+00	3,29E+00	0,00E+00	4,23E+00
Radioactive waste disposed	kg	2,35E-04	3,74E-05	0,00E+00	0,00E+00	0,00E+00	3,51E-06	0,00E+00	5,36E-06	0,00E+00	2,81E-04

Results per functional unit											
Impact cateogry	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D	Total
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0,00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	1,68E-02	0,00E+00	0.00E+00	0.00E+00	0.00E+00	0,00E+00	0.00E+00	0.00E+00	0.00E+00	1,68E-02
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0,00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0,00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0,00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

A1 Raw materials suply. A2 Transport. A3 Manufacturing Product. A4 Transport A5 Construction – Installation process B1 Use. B2 Maintenance. B3 Repair. B4 Replacement. B5 Refurbisshment. B6 Operational Energy use. B7 Operational water use. C1 Decosntruction and demolition. C2 Transport. C3 Waste management for reuse, recovery and recycling. C4 Disposal. MND Module not declared. MJ Net calorific value.

Table 5. Kg of biogenic carbon

Product	0,00E+00	Kg
Packaging	8,20E-03	Kg

3.4. Recommendations of this DAP

The comparison of construction products must be done by applying the same functional unit and at the building level, that is, including the behavior of the product throughout its entire life cycle.
This DAP includes Desmopol products.

3.5. Cut-off rules

At least 99% of the total life cycle matter and energy have been included, and 95% of matter and energy per module. It has been excluded because its impact is considered negligible:
1) Manufacture of equipment used in production, buildings or any other capital good;
2) Transportation of personnel to the plant;
3) Transportation of personnel within the plant;
4) Research and development activities.

3.6. Additional environmental information

3.7. Other data

It has CE marking on the basis of a statement made DoP Declaration of Performance (DoP) conforms to the regulations UE305/2011.
It has a European technical approval ETA 10/0121 and BBA 16/5340 (W3: working life 25 years, 1,2mm minimum thickness).

4. TECHNICAL INFORMATION AND SCENARIOS

4.1. Transport from the factory to the building site (A4)

Parameter	Parameter expressed by functional unit
Type and fuel consumption, type of vehicle used for transportation	Truck 16-32 Tn Euro 5
Distance	550 km
Capacity utilization (including empty return)	Road transport: 85% Transport by cargo ship: 100%
Apparent density of transported product	1400 kg/m^3
Useful capacity factor (1, <1, or> 1 for products that are packed compressed or nested)	1

4.2. Installation processes (A5)

Parameter	Parameter expressed by functional unit
Construction ancillary materials (specifying each material)	PRIMER EPW-1070 | PRIMER PU-1050 TECNOTOP 2C
Water consumption	It is not required.
Consumption of other resources	It is not required.
Quantitive despription of the type of energy (mix regional) and consumption during the installation process	It is not required.
Materials waste on site before waste treatment, generated by the installation of the product (specify by type)	Product losses: 0% Packaging waste. 0.0178 kg of wooden pallet.
Material outputs (specified by type) as a result of waste treatment on the building site. For example: collection for recycling, energy valuation, disposal (specified by route)	Reused pallets for a new reuse center: 0.0178 kg of pallet per m2 of product. 100% recycling. Product wasted: 0%.
Emisions to the air, ground or water	There is not.

Reference service life (B1)

Parameter	Parameter expressed by functional unit
Reference service life (RSL)	The shelf life of the product is 25 years.
Properties and characteristics of the product	Coating suitable for waterproofing, protection and sealing in general.
Requirements (ways of using, maintenance frequency, repair, etc.)	It is not required.

4.4. Maintenance (B2), repair (B3), replacement (B4) or refurbishement (B5)

B2 Maintenance	
Parameter	**Parameter expressed by functional unit**
Maintenance, for example: cleaning agent, type of surfactant	It is not required.
Maintenance cycle	It is not required.
Auxiliar materials for the maintenance process (specifying each material)	It is not required.
Net consumption of fresh water	It is not required.
Loss of material during maintenance or repair (specifying the type)	It is not required.

B3 Repair	
Parameter	**Parameter expressed by functional unit**
Repair process	It is not required.
Inspection process	It is not required.
Repair cycle	It is not required.
Auxiliary materials (specifying each material), e.g. lubricant	It is not required.
Energy input during repair, vector type energy (for example, electricity) and quantity	It is not required.
Energy input during the process of renovation (amount and type of energy vector)	It is not required.
Loss of material during repair (specifying each material)	It is not required.
Net consumption of fresh water	It is not required.

B4 Replacement	
Parameter	**Parameter expressed by functional unit**
Energy input during replacement, for example for the use of cranes (quantity and energy vector)	It is not required.
Worn out parts replacement in the life cycle of the product (specifying each material)	It is not required.
Replacement cycle	25 years.

B5 Rehabilitation	
Parameter	**Parameter expressed by functional unit**
Rehabilitation process	It is not required.
Rehabilitation cycle	It is not required.
Energy input during rehabilitation, for example for the use of cranes (quantity and energy vector)	It is not required.
Material input for rehabilitation, including auxiliary materials (specified by material)	It is not required.
Material waste during rehabilitation (specifying each material)	It is not required.
Other scenario development assumptions	It is not required.

4.5. Useful life reference

Parameter	Parameter expressed by functional unit
Useful life reference	The shelf life of the product is 25 years.
Product declared properties, finishes, etc.	Coating suitable for waterproofing, protection and sealing in general.
Application design parameters (manufacturer's instructions)	Open the DESMOPOL metal tin and stir up to homogenize. Extended the first layer using a short hair roller, a maximum thickness of 0,7 mm. (1,2 kg/m^2). Applying the material without dilution.
Workmanship quality estimation, when installed in accordance with the manufacturer's instructions	A minimum total applied thickness of 1.5 mm is recommended, with an approximate total consumption of 2.4 kg / m^2 (dry film thickness); applied in one or more layers.
Outdoor environment for outdoor applications. For example, weather, pollutants, UV radiation, temperature, etc.	System designed for outdoors.

Indoor environment for indoor applications. For example, temperature, humidity, exposure to chemicals	Does not apply.
Terms of use. For example, frequency of use, mechanical exposure, etc.	It is not required.
Maintenance. For example, the required frequency, etc.	It is not required.

4.6. Operational use of energy (B6) and water (B7)

Parameter	Parameter expressed by functional unit
Construction ancillary materials (specified by material)	It is not required.
Energy vector type. For example, electricity, natural gas, district heating	Does not apply.
Equipment output power	Does not apply.
Net fresh water consumption	It is not required.
Characteristic features (energy efficiency, emissions, etc.)	Energy reduction in the building use stage.
Other scenarios development assumptions. For example, transportation	-

4.7. End of life (C1-C4)

Process	Parameter expressed by functional unit
Collection processes (specified by types)	Manual process.
Recovery systems (specified by type)	Does not apply.
Elimination	100% to landfill.
Assumptions for the development of scenarios. For example, transportation	Product waste is transported by truck that complies with Euro VI regulations, at a distance of 50 km to its final destination.

5. ADDITIONAL INFORMATION

It has CE marking based on a Declaration of Performance (DoP) prepared in accordance with the regulation UE305 / 2011.
The Desmopol system has ETE 10/0121 certification, with a useful life of 25 years for a minimum thickness of 1.2 mm. as well as British BBA 16/5340 certification.

6. PCR AND VERIFICATION

This declaration is based on the Document

PCR 100. Construction products in general, v3 (27/05/2021)

Independent verification of the declaration and data according to ISO 14025 and UNE EN15804 + A2

☐ Internal ☑ External

Independent verifier appointed

ITeC. Ferran Pérez. Verifier accredited by the DAPcons® Program

Oficina d'Acreditació d'Entitats Col·laboradores

Verificació VEDAP-001-10

Verification date

28/09/2021

References

- General rules of the DAP®construction program.
- ISO 14040: 2006 Environmental management - Life cycle analysis - Principles and reference framework.
- ISO 14044: 2006 Environmental management - Life cycle analysis - Requirements and guidelines.
- UNE-EN 15804: 2012 + A1: 2014 Sustainability in construction. Environmental product declarations. Basic product category rules for construction products.
- ISO 14025: 2006 Environmental labels and declarations - Type III environmental declarations - Principles and procedures.
- Product life cycle modeled with SimaPro 9.1 software.

Administrator of programme operator

Col·legi d'Aparelladors, Arquitectes Tècnics i Enginyers de l'Edificació de Barcelona (CAATEEB)
Bon Pastor 5, 08021 Barcelona
www.apabcn.cat

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