



# ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

## PROMAPAIN<sup>®</sup>-SC4



Programme: The international EPD® system, [www.environdec.com](http://www.environdec.com)

Programme operator: EPD International AB

EPD registration number: S-P-08957

Publication date: 2023-03-31

Valid until: 2028-03-29

Geographical scope: Europe



## GENERAL INFORMATION

### MANUFACTURER INFORMATION

Manufacturer	Promat SpA
Address	Via Provinciale 10, 24040 Filago, Italy
Contact details	info@etexgroup.com
Website	www.promat.com

### PRODUCT IDENTIFICATION

Product name	PROMAPAIN <sup>®</sup> -SC4
Place(s) of production	Filago, Italy
CPC code	3511-Paint and varnishes and related products

The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

### EPD INFORMATION

EPD program operator	The International EPD System
EPD standards	This EPD is in accordance with EN 15804+A2 and ISO 14025/ ISO 21930 standards.
Product category rules	The CEN standard EN 15804 serves as the core PCR. In addition, the Int'l EPD System PCR 2019:14 Construction products, version 1.11 (05.02.2021) is used.
EPD author	Neena Chandramathy, One Click LCA
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal certification <input checked="" type="checkbox"/> External verification
Verification date	2023-03-29
EPD verifier	Anni Oviir, Rangi Maja OÜ www.lcasupport.com
EPD number	S-P-08957
ECO Platform nr.	-
Publishing date	2023-03-31
EPD valid until	2028-03-29

## PRODUCT INFORMATION

### PRODUCT DESCRIPTION

PROMAPAIN<sup>®</sup>-SC4 is a single component intumescent paint in water emulsion consisting of synthetic resin especially formulated for fire protection of steel structures. In a fire, a chemical reaction takes place, causing the material to expand and form an insulating layer, which prevents the temperature of the steel from rising to a critical level.

### PRODUCT APPLICATION

For normal interior application, PROMAPAIN<sup>®</sup>-SC4 can be used without any additional, decorative topcoat. For exterior, semi exposed or high ambient humidity applications, the addition of a topcoat is necessary. PROMAPAIN<sup>®</sup>-SC4 can be specifically used in areas where the application of solvent-based products is perceived to be an environmental hazard. Examples of such areas are hospitals, health care centres, schools, public buildings or in fact any buildings that are occupied or attached to occupied areas.

PROMAPAIN<sup>®</sup>-SC4 is preferably spray applied with airless paint equipment for speed and quality of finish. Brush and roller application is also possible.

PROMAPAIN<sup>®</sup>-SC4 is supplied ready for use and should not be diluted (only in specific case: maximum dilution with 5% water). It should be stirred thoroughly with a rotar type mixer prior to application by either airless spray, brush or roller.

### TECHNICAL SPECIFICATIONS

PROMAPAIN<sup>®</sup> SC4 is a spray or brush/roller applied water born intumescent paint formulated for the fire protection of structural steel elements installed in the following environmental conditions:

- Internal conditions (ETAG 018-2 type Z2),

- Internal conditions with high humidity (ETAG 018-2 type Z1),
- Internal and semi-exposed use (ETAG 018-2 type Y).

The intended use of PROMAPAIN<sup>®</sup> SC4 is to fire protect various sizes of structural steel 'H' or 'I' beams and columns, rectangular and circular hollow sections, for up to a fire resistance classification of R180 and for design temperatures in the range of 350°C to 750°C.

Technical data and Properties	
Consumption	~1,95 kg/m <sup>2</sup> [1 mm DFT* <i>* Dry film thickness</i> ]
Curing time between layers (for the same product)	~1000 µm after 8 hours (20°C, 50% RH)
Working temperature	+10°C up to +35°C
Storage temperature	+5°C up to +40°C
VOC-content	< 2,2 g/l
Dilution	water - max. 5%
Use category (according to ETAG 018-2)	without topcoat: type Z <sub>2</sub> with suitable protective topcoat: type X, Y and Z <sub>1</sub>

### PRODUCT STANDARDS

The declaration of performance concerns construction product for which a European Technical Assessment has been issued.

PROMAPAIN<sup>®</sup>-SC4 is approved by ETA and is tested for steel structures according to European standards. The coated steel components achieve fire resistance classes from R 15 to R 120.

### PHYSICAL PROPERTIES OF THE PRODUCT

Colour: white  
 Consistency: liquid  
 Density: 1.300 kg/m<sup>3</sup> ± 50 kg/m<sup>3</sup>  
 Solid content: 68% ± 2 %  
 Expansion ratio: high expansion  
 Viscosity: ~30 Pas at 20°C

### ADDITIONAL TECHNICAL INFORMATION

Further information can be found at [www.promat.com](http://www.promat.com).

### MARKET

World

### REFERENCE SERVICE LIFE, PRODUCT

When used for the intended purpose, the service life is at least 10 years, in accordance with EAD 350402-00-1106. The respective “Technical Approval Body” has recommended a service life of 25 years for dry interior applications – category Z2 in accordance with EAD 350402-00-1106. However, the practical service life can be far longer. A precondition for a long service life is that the requirements of correct handling and regular inspection of the coated surfaces are met.

### ESTIMATED SERVICE LIFE, OBJECT

The coated object service life is not declared.

### PRODUCT RAW MATERIAL COMPOSITION

Product and Packaging Material	Weight, kg	Post-consumer %	Renewable %	Country Region of origin
Binders	0,2-0,4	-	-	EU
Water as solvent	0,1-0,3	-	-	EU
Pigments	0,05-0,2	-	-	EU
Other constituents	0,1-0,3	-	-	EU
Product Packaging	0,01-0,09	-	-	EU

### SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

PROMAPAIN<sup>®</sup>-SC4 is deemed free of heavy metals such as lead, cadmium, chromium, mercury, arsenic and selenium and no heavy metals are added voluntary.





## PRODUCT LIFE-CYCLE

### MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

The production of the paint product consists of four steps: pre-mixing, mixing, canning, and loading on pallets. The production process starts with the preparation of a premix (with water and additives) using a mixer. Then other raw materials are added during mixing. At the end of the dispersion the product is packed into steel pails through an automatic filling station and then the pallets with finished pails are prepared.

The manufacturing process requires electricity. A production loss of 2% is included in the study.

Eventually, the product is moved out and transported to the construction site.

### TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

For the transportation from the production plant to the building site, a scenario was assumed with a transportation distance of 100 km and using a lorry as transportation method. For other transportation distances with lorry or ship, the impacts (refer 'SCENARIO DOCUMENTATION') can be easily calculated by multiplying the impacts in module A4 with the lorry transport distance to the specific location and dividing by 100 and adding the impacts of ship transport if applicable. Vehicle capacity utilization volume factor is assumed to be 100 % which means full load. In reality, it may vary but as role of transportation emissions in total results is small, the variety in load is assumed to be negligible. Empty returns are not taken into account as it is assumed that return trip is used by the transportation company to serve the needs of other clients. Transportation does not cause losses as product is packaged properly. Also, volume capacity utilisation factor is assumed to be 100 % for the nested packaged products.

The paint can be applied manually by roller/brush or airless spray. All big surfaces will mainly be applied by spraying. Installation loss of 2% is assumed. Apart from packaging waste disposal an energy consumption for spraying, 0,07kWh/kg, is assumed for the installation.

### PRODUCT USE AND MAINTENANCE (B1-B7)

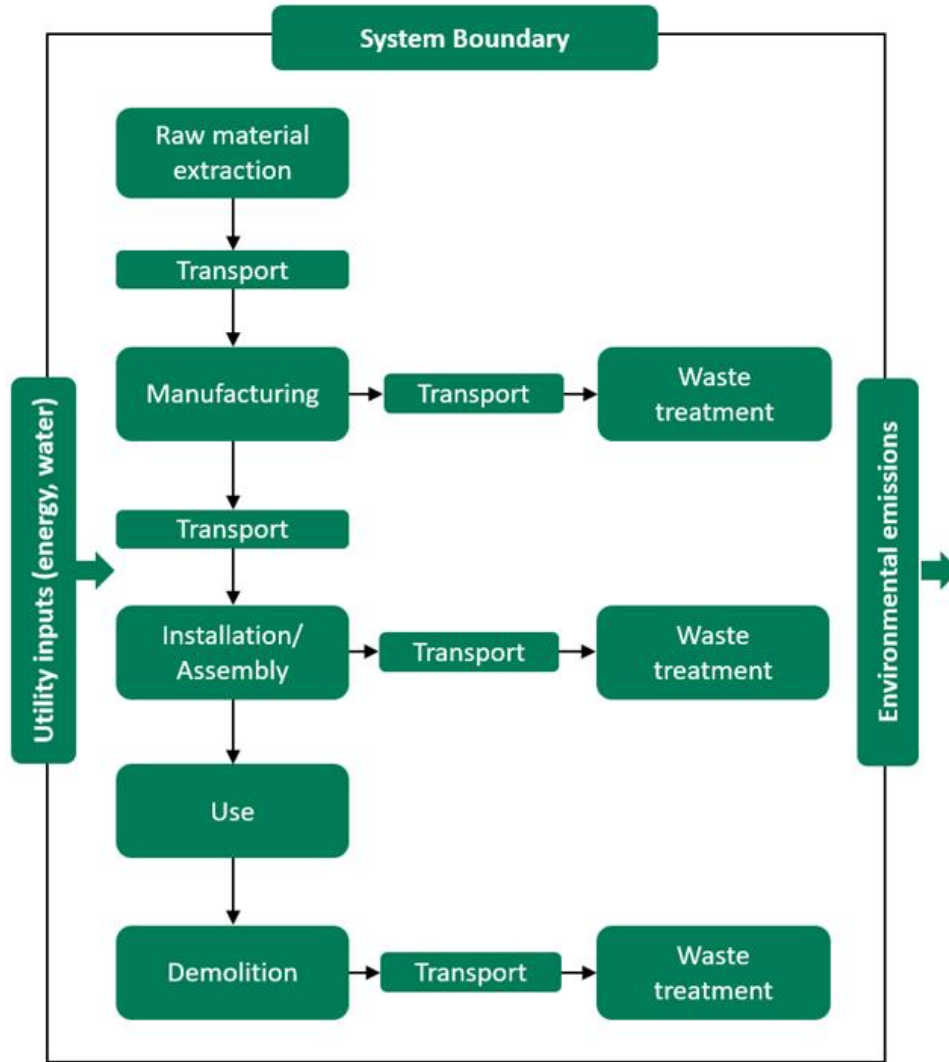
Once the paint is applied and in place there are no impacts expected in the use phase. Therefore, environmental impacts related to this stage has been taken as zero.

Air, soil, and water impacts during the use phase have not been studied

## PRODUCT END OF LIFE (C1-C4, D)

At the end-of-life, in the demolition phase 100% of the waste is assumed to be collected as mixed waste. It is assumed that the water present in product is lost as evaporation after paint application, therefore the end-of-life product has a lower weight than the declared product. The consumption of energy and natural resources is negligible for disassembling of the end-of-life product since the paint becomes a part of another product. So, the impacts of demolition are assumed to be zero (C1). The dismantled structure on which the paint is applied to is delivered to the nearest construction waste treatment plant (C2). At the waste treatment plant, waste that can be reused, recycled or recovered for energy is separated and diverted for further use. (C3). Dried paint films are currently not recycled. Therefore, recycling is not considered. The paint has a steel substrate and thus no energy content and are assumed to be 100% landfilled (Ref : PEFCR Decorative Paints – v1.0– April 2018).

## MANUFACTURING PROCESS



## LIFE-CYCLE ASSESSMENT

### LIFE-CYCLE ASSESSMENT INFORMATION

Period for data	Calendar year 2021
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### DECLARED AND FUNCTIONAL UNIT

Declared unit	1 kg
Mass per declared unit	1 kg
Functional unit	1kg of the wet paint applied on a substrate providing fire protection for 25 years
Reference service life	25 years

### BIOGENIC CARBON CONTENT

#### Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	-
Biogenic carbon content in packaging, kg C	0,0138

## SYSTEM BOUNDARY

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	D	D
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<b>Geography</b> , by two-letter ISO country code or regions. The International EPD System only.																		
EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU		EU	
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demol.	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

### CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019 and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy and water use related to company management and sales activities are excluded.



## ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation.

In this study, as per EN 15804, allocation is conducted in the following order.

1. Allocation should be avoided.
2. Allocation should be based on physical properties (e.g., mass, volume) when the difference in revenue is small.
3. Allocation should be based on economic values.

Since all the data used in this study are already provided by the manufacturer, there are no data gaps which should be filled by estimates and conservative assumptions with average or generic data. The allocation is performed in which the product output fixed to 1 kg and the corresponding amount of product is used in the calculations. This LCA study is conducted in accordance with all methodological considerations, such as performance, system boundaries, data quality, allocation procedures, and decision rules to evaluate inputs and outputs.

All estimations and assumptions are given below:

- Modules A2, A4 & C2: Vehicle capacity utilization volume factor is assumed to be 1 which means full load. It may vary but as the role of transportation emission in total results is small and so the variety in load assumed to be negligible. Empty returns are not considered as it is assumed that return trip is used by transportation companies to serve the needs of other clients.
- Module A4: Transportation doesn't cause losses as products are

packaged properly. Also, volume capacity utilisation factor is assumed to be 1 for the nested packaged products.

- Module A5: Product loss is assumed to be 2%. Packaging materials are assumed to be recycled or incinerated for energy recovery. Consumed materials for installation is negligible. Assumed 0,07kWh/kg of energy consumption for air spraying.
- Module B1-B7: It is assumed that no impacts occur in the use phase after the paint is applied
- Module C1: Consumed energy and other sources for demolition process of the product is negligible.
- Module C2: Transportation distance to the closest disposal area is estimated as 50 km and the transportation method is assumed as lorry which is the most common.
- Module C3: No reuse, recycling or incineration with energy recovery is assumed to be applicable for the product.
- Modules C4: 100% of end-of-life product is assumed to be landfilled.
- Module D: Benefits and loads of packaging materials are calculated. The materials incinerated for energy recovery displaces electricity and heat production, while the recycled material replaces the need for virgin raw material production.

Allocation used in Ecoinvent 3.6 environmental data sources follows the methodology 'allocation, cut-off by classification'. This methodology is in line with the requirements of the EN 15804 -standard.

## AVERAGES AND VARIABILITY

There is no average result considered in this study since this EPD refers to one specific product produced in one production plant.

## ENVIRONMENTAL IMPACT DATA

Note: additional environmental impact data in accordance with EN 15804+A1, CML / ISO 21930 are presented in annex 1.

### CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total <sup>1)</sup>	kg CO <sub>2</sub> e	1,87E0	4,12E-2	3,22E-1	2,23E0	9,77E-3	8,09E-2	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	3,09E-3	0,00E0	8,13E-2	0,00E0
GWP – fossil	kg CO <sub>2</sub> e	1,87E0	4,11E-2	3,25E-1	2,24E0	9,86E-3	7,37E-2	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	3,09E-3	0,00E0	8,12E-2	-3,96E-2
GWP – biogenic	kg CO <sub>2</sub> e	-1,75E-3	4,89E-5	-3,49E-3	-5,19E-3	7,16E-6	7,07E-3	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	2,24E-6	0,00E0	7,91E-5	1,46E-3
GWP – LULUC	kg CO <sub>2</sub> e	3,04E-3	1,58E-5	2,52E-4	3,3E-3	2,97E-6	1,75E-4	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	9,3E-7	0,00E0	3,64E-6	-5,74E-5
Ozone depletion pot.	kg CFC <sub>11</sub> e	2,14E-7	9,31E-9	1,85E-8	2,42E-7	2,32E-9	8,55E-9	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	7,26E-10	0,00E0	2,23E-9	-1,65E-9
Acidification potential	mol H <sup>+</sup> e	2,62E-2	1,89E-4	2,02E-3	2,84E-2	4,14E-5	7,77E-4	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	1,3E-5	0,00E0	6,17E-5	-2,19E-4
EP-freshwater	kg Pe	3,14E-4	4,65E-7	1,35E-5	3,28E-4	8,02E-8	7,74E-6	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	2,51E-8	0,00E0	1,29E-7	-6,09E-7
EP-marine	kg Ne	1,85E-3	5,85E-5	3,39E-4	2,25E-3	1,25E-5	7,6E-5	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	3,91E-6	0,00E0	2,08E-5	-4,41E-5
EP-terrestrial	mol Ne	2,6E-2	6,47E-4	3,85E-3	3,05E-2	1,38E-4	9,91E-4	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	4,32E-5	0,00E0	2,29E-4	-4,91E-4
POCP (“smog”) <sup>2)</sup>	kg NMVOCe	7,67E-3	2,02E-4	1,3E-3	9,17E-3	4,43E-5	2,8E-4	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	1,39E-5	0,00E0	8,35E-5	-1,41E-4
ADP-minerals & metals <sup>3)</sup>	kg Sbe	1,03E-4	6,69E-7	1E-5	1,13E-4	1,68E-7	2,57E-6	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	5,27E-8	0,00E0	7,72E-8	-5,42E-7
ADP-fossil resources	MJ	3,59E1	6,37E-1	3,68E0	4,02E1	1,53E-1	1,33E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	4,81E-2	0,00E0	1,69E-1	-3,14E-1
Water use <sup>4)</sup>	m <sup>3</sup> e depr.	2,96E0	2,77E-3	3,3E-1	3,29E0	5,71E-4	8,39E-2	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	1,79E-4	0,00E0	7,56E-3	-3,64E-3

1) GWP = Global Warming Potential. 2) POCP = Photochemical ozone formation. 3) ADP = Abiotic depletion potential. 4) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

## ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	1,78E-7	3,66E-9	2,74E-8	2,09E-7	8,92E-10	5,05E-9	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	2,8E-10	0,00E0	1,18E-9	-3,08E-9
Ionizing radiation <sup>5)</sup>	kBq U235e	7,56E-2	2,85E-3	9,89E-3	8,83E-2	6,7E-4	5,44E-3	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	2,1E-4	0,00E0	6,61E-4	4,01E-3
Ecotoxicity (freshwater)	CTUe	3,59E1	5,02E-1	1,06E1	4,7E1	1,17E-1	1,45E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	3,67E-2	0,00E0	1,49E-1	-1,15E0
Human toxicity, cancer	CTUh	1,56E-9	1,5E-11	4,81E-9	6,38E-9	3E-12	1,41E-10	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	9,4E-13	0,00E0	9,02E-12	-4,52E-10
Human tox. non-cancer	CTUh	2,94E-8	5,93E-10	1,41E-8	4,41E-8	1,39E-10	1,32E-9	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	4,35E-11	0,00E0	1,21E-10	-6,74E-10
SQP <sup>6)</sup>	-	2,42E1	9,07E-1	9,06E-1	2,6E1	2,32E-1	5,78E-1	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	7,26E-2	0,00E0	6,02E-1	-1,73E-1

5) SQP = Land use related impacts/soil quality. 6) EN 15804+A2 disclaimer for ionizing radiation, human health. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

## USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy <sup>7)</sup>	MJ	1,81E0	1,28E-2	8,85E-1	2,7E0	1,93E-3	1,97E-1	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	6,05E-4	0,00E0	2,86E-3	-3,61E-2
Renew. PER as material	MJ	0,00E0	0,00E0	5,52E-2	5,52E-2	0,00E0	-5,52E-2	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0
Total use of renew. PER	MJ	1,81E0	1,28E-2	9,4E-1	2,76E0	1,93E-3	1,41E-1	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	6,05E-4	0,00E0	2,86E-3	-3,61E-2
Non-re. PER as energy	MJ	3,02E1	6,37E-1	3,67E0	3,45E1	1,53E-1	1,21E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	4,81E-2	0,00E0	1,69E-1	-3,14E-1
Non-re. PER as material	MJ	5,66E0	0,00E0	-1,04E-1	5,56E0	0,00E0	-6,72E-3	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	-5,55E0	0,00E0
Total use of non-re. PER	MJ	3,59E1	6,37E-1	3,57E0	4,01E1	1,53E-1	1,21E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	4,81E-2	0,00E0	-5,38E0	-3,14E-1
Secondary materials	kg	2,45E-2	0,00E0	1,09E-2	3,54E-2	0,00E0	7,09E-4	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	-2,19E-3
Renew. secondary fuels	MJ	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	-6,54E-6
Non-ren. secondary fuels	MJ	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0
Use of net fresh water	m <sup>3</sup>	2,32E-2	1,41E-4	1,8E-3	0,0252	3,19E-5	6,38E-4	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	1E-5	0,00E0	1,91E-4	-8,79E-5

7) PER = Primary energy resources

## END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	1,66E-1	8,08E-4	2,88E-1	4,55E-1	1,49E-4	1,13E-2	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	4,67E-5	0,00E0	3,06E-4	-2,12E-2
Non-hazardous waste	kg	2,84E0	7,02E-2	7,32E-1	3,64E0	1,65E-2	1,45E-1	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	5,17E-3	0,00E0	6,8E-1	-2,39E-2
Radioactive waste	kg	7,32E-5	4,32E-6	8,69E-6	8,62E-5	1,05E-6	4,41E-6	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	3,3E-7	0,00E0	1,01E-6	6,3E-7

## END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0
Materials for recycling	kg	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	1,28E-1	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0
Materials for energy rec	kg	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	3,61E-3	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0
Exported energy	MJ	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	4,52E-2	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0

## ENVIRONMENTAL IMPACTS – GWP-GHG - THE INTERNATIONAL EPD SYSTEM

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG <sup>8)</sup>	kg CO <sub>2</sub> e	1,87E0	4,11E-2	3,25E-1	2,24E0	9,86E-3	7,37E-2	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	3,09E-3	0,00E0	8,12E-2	-3,96E-2

8) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013). In addition, the characterisation factors for the flows - CH<sub>4</sub> fossil, CH<sub>4</sub> biogenic and Dinitrogen monoxide - were updated in line with the guidance of IES PCR 1.2.5 Annex 1. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO<sub>2</sub> is set to zero.

## SCENARIO DOCUMENTATION

### Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Electricity production, hydro, Ecoinvent 3.6, Year: 2019
Electricity CO <sub>2e</sub> / kWh	0,006

### Transport scenario documentation (A4)

Scenario parameter	Value
Transport freight, lorry CO <sub>2e</sub> emissions, kg CO <sub>2e</sub> /tkm	0,0901
Average transport distance, km	100
Capacity utilization (including empty return) %	100
Bulk density of transported products	1,35
Transport, freight container ship, kg CO <sub>2e</sub> / tkm	0,0094

## BIBLIOGRAPHY

ISO 14025:2010 Environmental labels and declarations – Type III environmental declarations. Principles and procedures.

ISO 14040:2006 Environmental management. Life cycle assessment. Principles and frameworks.

ISO 14044:2006 Environmental management. Life cycle assessment. Requirements and guidelines.

ISO 21930:2017 Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction products and services

Ecoinvent database v3.6 (2019) and One Click LCA database.

EN 15804:2012+A2:2019 Sustainability in construction works – Environmental product declarations – Core rules for the product category of construction products.

Int'l EPD System PCR 2019:14 Construction products, version 1.11 (05.02.2021)

UN CPC Code : 3511-Paint and varnishes and related products

EPD. General Programme Instructions of the international EPD<sup>®</sup> system. Version 3.10

Product Environmental Footprint Category Rules - Decorative Paints v1.0– April 2018

PROMAPAIN<sup>®</sup>-SC4 LCA background report 09.03.2023



## ABOUT THE MANUFACTURER

Part of the global ETEX Group, Promat is a worldwide producer of fire protective boards made from calcium silicate, intumescent paints, mortars, fire glazing, fire stopping and a wide variety of products for high performance insulation in industry, transport and energetics.

Promat wants to be in every building where people need to be protected against fire. This is why we are active in 42 countries all over the world. You can find a local expert in every market.

Promat commits to a clean, healthy and safe working environment for every person working in and for the company.

Promat SpA has an environment, health and safety management system which is ISO 14001 and ISO 45001 certified. The quality management system of the company and the production facility are certified according to ISO 9001.

<b>Manufacturer</b>	Promat SpA
<b>EPD author</b>	Neena Chandramathy, One Click LCA
<b>EPD verifier</b>	Anni Oviir, Rangi Maja OÜ <a href="http://www.lcasupport.com">www.lcasupport.com</a>
<b>EPD program operator</b>	The International EPD System
<b>Background data</b>	This EPD is based on Ecoinvent 3.6 (cut-off)* and One Click LCA databases. <small>* Note that when different versions of Ecoinvent or other databases are used, possible differences can be expected in certain impact indicators</small>
<b>LCA software</b>	The LCA and EPD have been created using One Click LCA Pre-Verified EPD Generator for Paints, Coatings, Sealants and Adhesives

## VERIFICATION STATEMENT

### VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with EN 15804, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The background report (project report) for this EPD

Why does verification transparency matter? [Read more online.](#)

### VERIFICATION OVERVIEW

Following independent third party has verified this specific EPD:

EPD verification information	Answer
Independent EPD verifier	Anni Oviir, Rangi Maja OÜ
EPD verification started on	2023-03-04
EPD verification completed on	2023-03-29
Supply-chain specific data %	>90
Approver of the EPD verifier	The International EPD System

Author & tool verification	Answer
EPD author	Neena Chandramathy, One Click LCA
EPD author training completion	2021-10-01
EPD Generator module	Paints, Coatings, Sealants and Adhesives

Independent software verifier	Ugo Pretato, Studio Fieschi & soci Srl.
Software verification date	2021-05-11

### THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of

- the data collected and used in the LCA calculations,
- the way the LCA-based calculations have been carried out,
- the presentation of environmental data in the EPD, and
- other additional environmental information, as present

with respect to the procedural and methodological requirements in ISO 14025:2010 and EN 15804:2012+A2:2019.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.



Anni Oviir

## VERIFICATION AND REGISTRATION (INTERNATIONAL EPD SYSTEM)

ISO standard ISO 21930 and CEN standard EN 15804 serves as the core Product Category Rules (PCR)

PCR	PCR 2019:14 Construction products, version 1.11
PCR review was conducted by:	The Technical Committee of the International EPD® System. See <a href="http://www.environdec.com/TC">www.environdec.com/TC</a> for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat <a href="http://www.environdec.com/contact">www.environdec.com/contact</a> .
Independent third-party verification of the declaration and data, according to ISO 14025:2006:	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal certification <input checked="" type="checkbox"/> External verification
Third party verifier	Anni Oviir, Rangi Maja OÜ <a href="http://www.lcasupport.com">www.lcasupport.com</a>
	Approved by: The International EPD® System Technical Committee, supported by the Secretariat
Procedure for follow-up during EPD validity involves third party verifier	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no



EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden, E-mail: [info@environdec.com](mailto:info@environdec.com)

## ANNEX 1 : ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO <sub>2</sub> e	1,8E0	4,08E-2	3,14E-1	2,15E0	9,77E-3	7,15E-2	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	3,06E-3	0,00E0	5,77E-2	-3,86E-2
Ozone depletion Pot.	kg CFC <sub>11</sub> e	1,98E-7	7,43E-9	1,59E-8	2,21E-7	1,84E-9	7,92E-9	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	5,77E-10	0,00E0	1,77E-9	-1,34E-9
Acidification	kg SO <sub>2</sub> e	2,56E-2	9,98E-5	1,66E-3	2,74E-2	2,01E-5	7,31E-4	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	6,29E-6	0,00E0	2,73E-5	-1,8E-4
Eutrophication	kg PO <sub>4</sub> <sup>3</sup> e	3,73E-3	2,4E-5	5,53E-4	4,31E-3	4,05E-6	1,3E-4	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	1,27E-6	0,00E0	2,72E-3	-2,95E-5
POCP ("smog")	kg C <sub>2</sub> H <sub>4</sub> e	1,55E-3	5,69E-6	1,05E-4	1,66E-3	1,27E-6	3,99E-5	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	3,98E-7	0,00E0	1,21E-5	-7,79E-6
ADP-elements	kg Sbe	1,03E-4	6,69E-7	1E-5	1,13E-4	1,68E-7	2,57E-6	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	5,27E-8	0,00E0	7,72E-8	-5,42E-7
ADP-fossil	MJ	3,59E1	6,37E-1	3,68E0	4,02E1	1,53E-1	1,33E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	0,00E0	4,81E-2	0,00E0	1,69E-1	-3,14E-1