isomat
building quality
for a sustainable future

EPD®
ENVIRONMENTAL PRODUCT DECLARATION

ECO PLATFORM
EPD
VERIFIED

Environmental Product Declaration

for Primers by ISOMAT

Programme	Programme operator	EPD registration number	Publication date	Valid until	Geographical scope
The International EPD® System, www.environdec.com	EPD International AB	S-P-06176	2022-07-20	2027-07-19	Global

In accordance with **ISO 14025** and **EN 15804:2012+A2:2019:**

FLEX-PRIMER

UNI-PRIMER

PRIMER-PROFESSIONAL

EPD owner	isomat building quality for a sustainable future	**ISOMAT** 17th km Thessaloniki – Ag. Athanasios Road, P.O. BOX 1043, 570 03 Ag. Athanasios, Greece **export@isomat.eu | www.isomat.eu**
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Programme operator	EPD® ENVIRONMENTAL PRODUCT DECLARATION	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden **www.environdec.com |info@environdec.com**
Third party verifier	LCA Studio	Prof. Vladimír Kočí Šárecká 5,16000, Prague 6 - Czech Republic **www.lcastudio.cz**
Accredited by	The International EPD® system	

Independent third-party verification of the declaration and data, according to ISO 14025:2006:
☐ EPD process certification ☒ EPD verification

Procedure for follow-up of data during EPD validity involves third party verifier:
☐Yes ☒ No

Product category rules (PCR)

CEN standard EN 15804 serves as the Core Product Category Rules (PCR).

Product category rules (PCR): PCR 2019:14 Construction products, version 1.11. Published on 2021.02.05, valid until: 2024.12.20.
CPC CODE: 351 Paints and varnishes and related products.

PCR review was conducted by the Technical Committee of the International EPD® System.
Chair: Contact via info@environdec.com

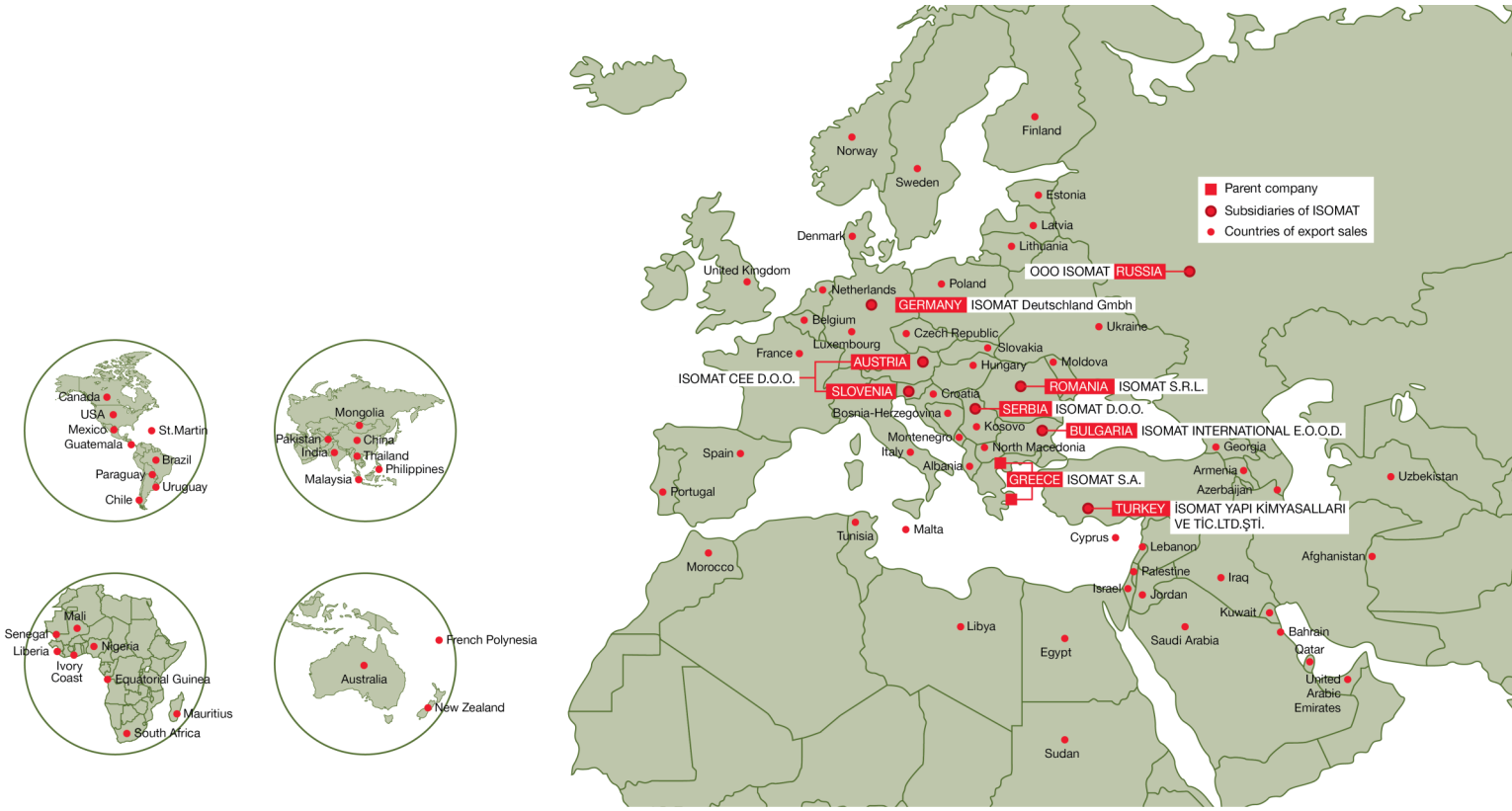
The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but from different programmes may not be comparable.
EPDs of construction products may not be comparable if they do not comply with EN 15804.
For further information about comparability, see EN 15804 and ISO 14025.

The verifier and the programme operator do not make any claim or have any responsibility of the legality of the product.

Company Info

ISOMAT is a Greek multinational Group specializing in the development and manufacture of building chemicals, mortars and paints. For over 40 years, **ISOMAT** has been making a history of quality, reliability, advanced know-how and continuous business growth. It has three production plants; one in the parent company in Greece and two in its subsidiaries in Romania and Serbia. In addition, it has five sales subsidiaries in Germany, Russia, Turkey, Bulgaria, and Slovenia and exports to over 80 countries worldwide.



The **ISOMAT** Group produces and distributes an extensive range of high-quality products falling into the following 8 product categories:

- Waterproofing
- External Thermal Insulation
- Paints & Surface Protection
- Tile & Stone Installation
- Concrete Admixtures & Repair Products
- Masonry Construction & Repair
- Industrial Floorings
- Microcement Coatings & Decorative Floorings

ISOMAT is committed to continuously developing new, pioneering products in keeping pace with the ever-increasing market needs and technological advancements in the construction industry and with sustainability as its main drive. It owns a fully organized R&D department consisting of 7 chemistry R&D labs and 4 Quality Control labs staffed by highly qualified scientific personnel. Their mission is to continuously optimize existing products and develop innovative, high-performing product solutions and integrated systems covering a wide range of construction needs and applications.

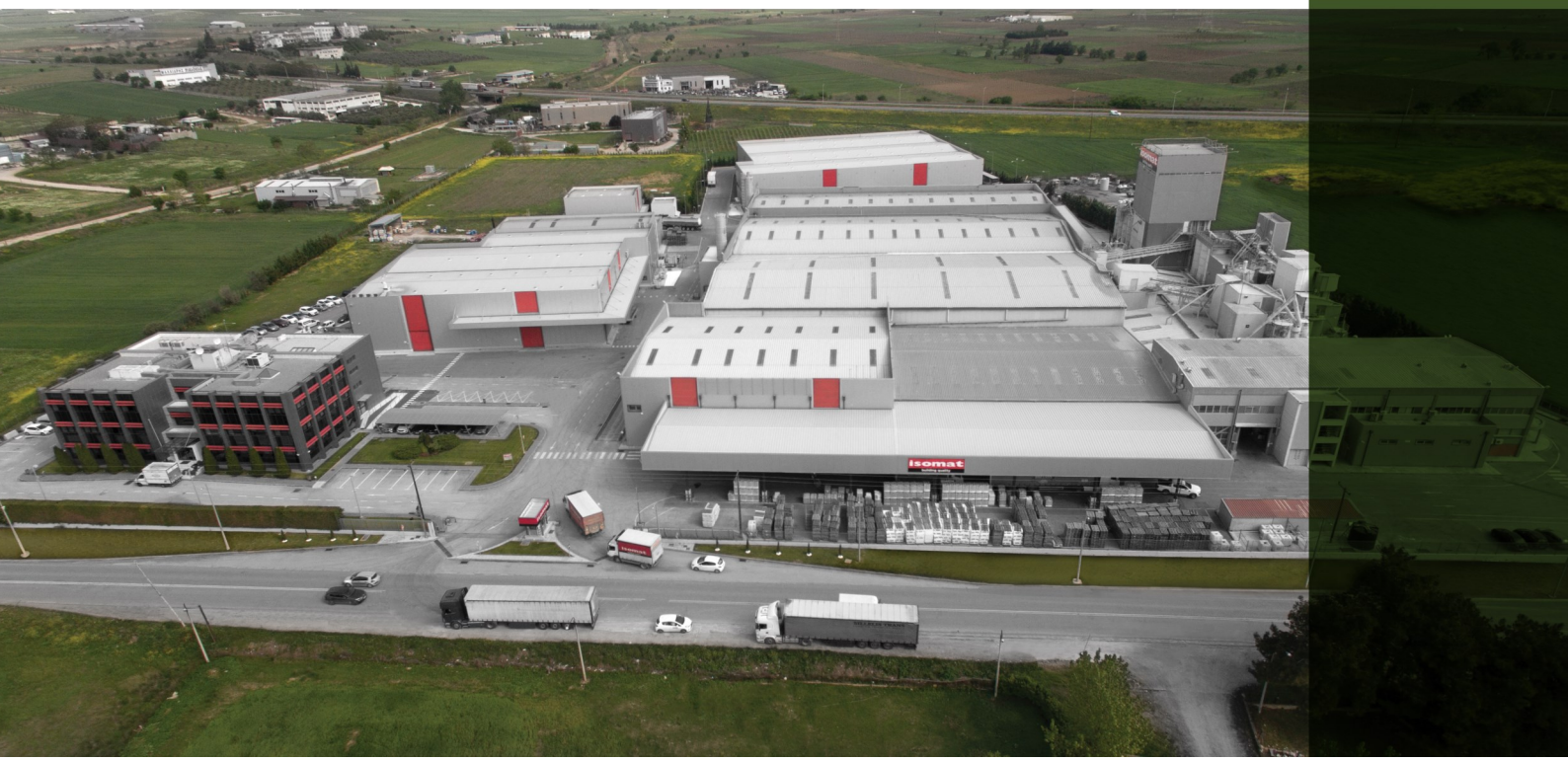
Energy and Social Responsibility Policy

For **ISOMAT**, its people are its key asset in which it constantly invests and thanks to which it evolves. The company's primary concern is to ensure safe and healthy working conditions, have an excellently trained staff, and provide continuous training through technical or educational seminars. In addition, it implements corporate social responsibility practices in relationships with socially vulnerable groups, public benefit foundations and entities, hospitals, educational institutions, public services, etc. Plus, with a customer-centric approach, ISOMAT meets its customers' ever-changing needs and provides a high-quality service experience.

ISOMAT operates in compliance with the requirements of the Legislation, the ISO 9001: 2015 standard and other international standards, based on which its products are certified. The efficiency of the Quality Management System is constantly being improved and measurable quality targets are established and reviewed on an annual basis. These objectives are stated in the annual quality review.

Sustainability is a strategic priority for the **ISOMAT** Group. **ISOMAT**'s Environmental and Energy Policy is oriented toward the guiding principles of sustainability and environmental protection. It implements an Energy and Environmental Management system, certified according to ISO 50001 and ISO 14001, to reduce the consumption of available natural resources and water, reduce the burden of the atmosphere, and save energy during the production process. Waste recycling is another priority for management and employees, as it is promoted through corporate policy as a whole. In this way, the Group's environmental footprint is reduced year by year. Last but not least, aiming towards sustainability, **ISOMAT** is continuously developing and producing more and more premium quality products that contribute to the creation of a healthy living environment and workspace. These products have been awarded internationally recognized certifications for both their technical characteristics and their friendliness towards applicators, end-users, and the environment.

PREMISES



Product Info

This is a product-specific EPD for ISOMAT Primers. Results are presented in this EPD separately for three products.
These products are:

FLEX-PRIMER	UNI-PRIMER	PRIMER-PROFESSIONAL

FLEX-PRIMER

FLEX PRIMER is a high-penetration acrylic water-based primer used to consolidate porous substrates, ensuring proper adhesion of water-based paints, tile adhesives, flexible mortars, liquid-applied elastomeric membranes , acrylic renders, etc. By penetrating deep into the substrate pores, it acts as a bonding layer between the substrate and the paint, adhesive, mortar, coating, etc. to be applied. When used in combination with the premium, waterproofing, elastic paint ISOMAT FLEXCOAT, they form an ideal waterproofing system for walls. FLEX-PRIMER is also used as a ready-to-use primer to ensure adhesion of water-based paints and MARMOCRYL acrylic renders to porous substrates, such as concrete, brickwork, render, gypsum boards, chipboards, etc. It can consolidate weak or crumbling surfaces, such as plaster. It is also used as a primer for stabilizing and reducing the water absorption of surfaces like gypsum boards or chipboards to be covered with tile adhesives, the highly flexible, waterproofing cement-based slurry AQUAMAT-ELASTIC or the elastomeric liquid membrane for waterproofing under tiles ISOMAT SL-17. It is suitable for indoor and outdoor applications.

UNI-PRIMER

UNI-PRIMER is an acrylic water-based primer used to stabilize porous substrates and ensure proper adhesion of water-based paints, tile adhesives, flexible mortars, liquid-applied elastomeric membranes, etc. By penetrating deep into the substrate pores, it acts as a bonding layer between the substrate and the paint, adhesive, mortar, coating, etc. to be applied. UNI-PRIMER is used as a ready-to-use primer, to ensure adhesion of water-based paints to porous substrates, such as concrete surfaces, brickwork, gypsum boards, chipboards, etc. It can consolidate weak or crumbling surfaces, such as plasters. It is also used as a primer for stabilizing and reducing the water absorption of surfaces like gypsum boards or chipboards to be covered with tile adhesives, the highly flexible, waterproofing cement-based slurry AQUAMAT-ELASTIC or the elastomeric liquid membrane for waterproofing under tiles ISOMAT SL-17. It is suitable for indoor and outdoor applications.

PRIMER-PROFESSIONAL

PRIMER-PROFESSIONAL is a concentrated acrylic water-based primer for emulsion and acrylic paints. It has strong adhesion and high penetration. PRIMER-PROFESSIONAL is suitable for use on new surfaces, such as plaster, concrete, brick, etc., to be coated with emulsion or acrylic paints.

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Technical Specifications			
Specification	**FLEX-PRIMER**	**UNI-PRIMER**	**PRIMER-PROFESSIONAL**
Form	Emulsion	Emulsion	Emulsion
Color	Transparent off-white	Transparent off-White	Transparent off-white
Density	1,00 kg/l	1,00 kg/l	1,10 kg/l
Packaging	1 kg, 5 kg, 10 kg, 20 kg plastic containers	1 kg, 5 kg, 20 kg plastic containers	0,75 l, 3 l, 10 l, plastic containers
pH	8,5	8,5	8,5

Composition			
	FLEX-PRIMER	**UNI-PRIMER**	**PRIMER-PROFESSIONAL**
Styrene Acrylic Copolymer	30-50%	10-50%	30-50%
Calcium Carbonate Filler	—	—	7-15%
Vinyl Acetate	—	—	7-15%
Coalescing Agent	—	—	< 5%
Water	50-70%	70-90%	30-50%

No substance in the “Candidate List of Substances of Very High Concern (SVHC) for authorization” exceeds 0.1% by weight in the final products.

System Boundaries

X= Included, MND= Module Not Declared																
	Product stage			**Construction stage**		**Use stage**							**End-of-life stage**				**Resource recovery stage**
	Raw Materials Supply	**Transport**	**Manufacturing**	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	**De-construction and demolition**	**Transport**	**Waste processing for re-use, recovery and/or recycling**	**Disposal**	**Re-use-Recovery-Recycling-potential**
Module	**A1**	**A2**	**A3**	A4	A5	B1	B2	B3	B4	B5	B6	B7	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	**X**	**X**	**X**	MND	MND	MND	MND	MND	MND	MND	MND	MND	**X**	**X**	**X**	**X**	**X**
Geography	**EU**	**GLO**	**GR**										**EU**	**EU**	**EU**	**EU**	**EU**
Specific data used	**> 90%**			—	—	—	—	—	—	—	—	—	**—**	**—**	**—**	**—**	**—**
Variation-products	**Not relevant**			—	—	—	—	—	—	—	—	—	**—**	**—**	**—**	**—**	**—**
Variation-sites	**Not relevant**			—	—	—	—	—	—	—	—	—	**—**	**—**	**—**	**—**	**—**

A1: Raw Material Supply

The production starts with the material supply. This stage includes the extraction and processing of raw materials, the generation of electricity and fuels required for the manufacturing stage. STAC (acrylic binder) and water are the main raw materials for FLEX-PRIMER and UNI-PRIMER, while in PRIMER-PROFESSIONAL there are some extra additives such as calcium carbonate and vinyl acetate.

A2: Transportation of raw materials to manufacturer

Transport is relevant for delivery of raw materials from the supplier to the gate of manufacturing plant. Raw materials for the production are transported by trucks from different regions all over the world.

A3: Manufacturing

Manufacturing starts with weighing of raw materials. After weighing, raw materials are mixed and stirred in order to obtain their final structure. Last stage of manufacturing is the packaging of final products.

C1: De-construction, demolition

Demolition of primers takes place with the whole demolition of the building/construction. Thus, it is assumed that energy used for the demolition of primers has minor significance and the environmental impact of this module is set to be zero.

C2: Transportation of waste

A distance of 100 km by a 16-32 tonne lorry construction/demolition sites to disposal sites has been chosen as a conservative assumption.

C3: Waste processing for re-use, recovery and/or recycling

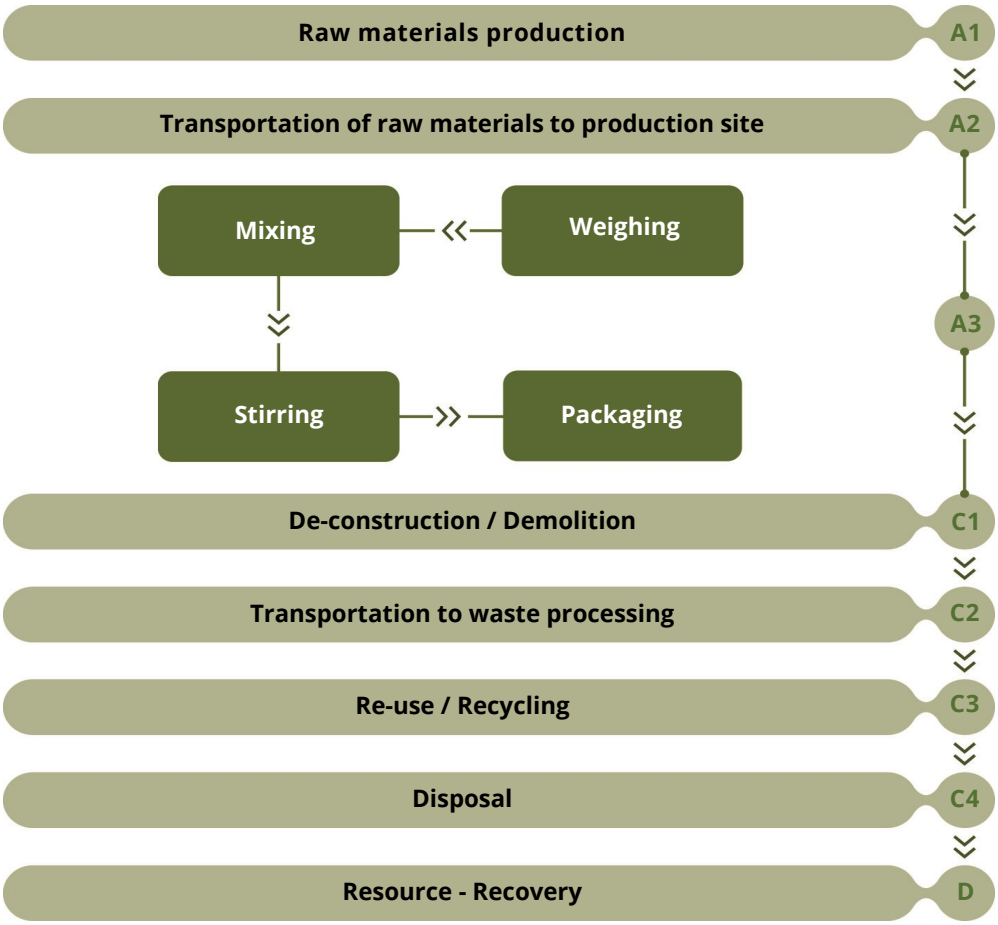
This module includes waste processing of the product after its life cycle in order to be recycled and reused in another product system. It is assumed that 100% of primers' end-of-life waste will be landfilled, thus the environmental impact of this module is set to be zero.

C4: Disposal

This module includes the final disposal of the discarded product. As mentioned above, 100% of primers' end-of-life waste will be landfilled.

D: Resource-Recovery stage

Since the product is only disposed of, there are no benefits deriving from the re-use or recycling of the product after its end-of-life stage, and neither is any energy recovery from incinerating the packaging materials.



LCA Info

Declared unit:
The declared unit is 1 kg of ISOMAT primers.

Goal and Scope:
This EPD evaluates the environmental impacts of the production of 1 kg of ISOMAT primers from Cradle to gate with module C1-C4 and D.

System Boundary:
The system boundaries are set to be cradle to gate (A1-A3) with modules C+D.

Cut-off rules:
The cut-off criteria adopted are as stated in "EN 15804:2012+A2:2019". Where there is insufficient data for a unit process, the cut-off criteria are 1% of the total mass of input of that process. The total of neglected input flows per module is a maximum of 5% of energy usage and mass.

Allocations:
Allocation rules have been performed in accordance with the requirements of ISO 14044:2006. Wherever possible, allocation was avoided by dividing the unit process to be allocated into two or more sub-processes and collecting the input and output data related to these sub-processes. Where allocation cannot be avoided, the inputs and outputs of the system were partitioned between its different products or functions in a way that reflects the underlying physical or economic relationships between them. Electricity data from ISOMAT was collected separately for each facility (offices, warehouses, utilities, mortars production line and liquids production line) and then was allocated to the corresponding products by mass.

Assumptions:
Modules A2 and C2: A EURO4 16-32 tonne lorry was utilized for road transportation and a bulk carrier for dry goods for sea transportation.
Module C1: Demolition of primers takes place with the whole demolition of the building/construction. Thus it is assumed that energy used for the demolition of primers has minor significance and the environmental impact of this module is set to be zero.
Module C2: A conservative assumption of 100 km by a 16-32 tonne lorry was used.
Module C3: It is assumed that 100% of primers' end-of-life waste will be landfilled, thus the environmental impact of this module is set to be zero.
Module C4: As mentioned above, 100% of primers' end-of-life waste will be landfilled.

Data quality:
ISO 14044 was applied in terms of data collection and quality requirements. The impact of the production of raw materials recovered from Ecoinvent database v.3.8. The data concerning the modules A2 (Transportation) and A3 (Product manufacturing) were provided by ISOMAT and concerns the full year 2021. These data were the quantities of all input and output materials extracted from the company's SAP system, the consumed utilities (energy, water) and the distances and means of transport for each input stream. Regarding electricity mix, the latest (2020) national residual electricity mix as published in DAPEEP SA was utilized. The end-of-life is based on the most representative scenarios for this product. Background data for this stage are retrieved from Ecoinvent v.3.8.

Geographical Scope:
Worldwide

Time representativeness:
Data obtained refer to the year 2021

Software used:
OpenLCA v.1.10.3

Environmental Performance

FLEX-PRIMER

ENVIRONMENTAL IMPACTS	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	5,84E-01	0,00E+00	1,65E-02	0,00E+00	5,27E-03	0,00E+00
GWP-fossil	kg CO_2 eq	5,83E-01	0,00E+00	1,65E-02	0,00E+00	5,27E-03	0,00E+00
GWP-biogenic	kg CO_2 eq	1,11E-03	0,00E+00	5,55E-06	0,00E+00	2,94E-06	0,00E+00
GWP-luluc	kg CO_2 eq	5,03E-04	0,00E+00	5,58E-06	0,00E+00	4,97E-06	0,00E+00
GWP-GHG[1]	kg CO_2 eq	5,62E-01	0,00E+00	1,63E-02	0,00E+00	5,16E-03	0,00E+00
ODP	kg CFC-11 eq	6,39E-08	0,00E+00	3,77E-09	0,00E+00	2,13E-09	0,00E+00
AP	mol H+ eq	2,99E-03	0,00E+00	8,25E-05	0,00E+00	4,95E-05	0,00E+00
EP-freshwater	kg PO4-3 eq	6,39E-04	0,00E+00	3,42E-06	0,00E+00	1,48E-06	0,00E+00
EP-freshwater[2]	kg P eq	2,08E-04	0,00E+00	1,11E-06	0,00E+00	4,82E-07	0,00E+00
EP-marine	kg N eq	5,19E-04	0,00E+00	2,88E-05	0,00E+00	1,72E-05	0,00E+00
EP-terrestrial	mol N eq	5,42E-03	0,00E+00	3,14E-04	0,00E+00	1,88E-04	0,00E+00
POCP	kg NMVOC eq	2,07E-03	0,00E+00	8,95E-05	0,00E+00	5,48E-05	0,00E+00
ADPe	kg Sb eq	9,32E-06	0,00E+00	5,98E-08	0,00E+00	1,20E-08	0,00E+00
ADPf	MJ	1,36E+01	0,00E+00	2,51E-01	0,00E+00	1,47E-01	0,00E+00
WDP[3]	m3 eq	5,63E-01	0,00E+00	1,17E-03	0,00E+00	6,77E-03	0,00E+00

[1] GWP-GHG indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product, with characterization factors (CFs) based on IPCC (2013).

[2] Eutrophication aquatic freshwater shall be given in both kg PO4 eq and kg P eq.

[3] The results of this environmental impact indicators of ADPf, ADPe and WDP shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

RESOURCE USE	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	6,35E-01	0,00E+00	3,38E-03	0,00E+00	1,25E-03	0,00E+00
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,00E+00	0,00E+00
PERT	MJ	6,35E-01	0,00E+00	3,38E-03	0,00E+00	5,00E+00	0,00E+00
PENRE	MJ	1,36E+01	0,00E+00	2,51E-01	0,00E+00	1,47E-01	0,00E+00
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,00E+00	0,00E+00
PENRT	MJ	1,36E+01	0,00E+00	2,51E-01	0,00E+00	5,15E+00	0,00E+00
SM	kg	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
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	1,31E-02	0,00E+00	2,71E-05	0,00E+00	1,58E-04	0,00E+00

OUTPUT FLOWS AND WASTE	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	9,09E-06	0,00E+00	6,54E-07	0,00E+00	2,22E-07	0,00E+00
NHWD	kg	8,66E-02	0,00E+00	1,20E-02	0,00E+00	1,00E+00	0,00E+00
RWD	kg	3,57E-05	0,00E+00	1,72E-06	0,00E+00	9,64E-07	0,00E+00
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

UNI-PRIMER

ENVIRONMENTAL IMPACTS	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	3,06E-01	0,00E+00	1,65E-02	0,00E+00	5,27E-03	0,00E+00
GWP-fossil	kg CO_2 eq	3,05E-01	0,00E+00	1,65E-02	0,00E+00	5,27E-03	0,00E+00
GWP-biogenic	kg CO_2 eq	6,27E-04	0,00E+00	5,55E-06	0,00E+00	2,94E-06	0,00E+00
GWP-luluc	kg CO_2 eq	2,79E-04	0,00E+00	5,58E-06	0,00E+00	4,97E-06	0,00E+00
GWP-GHG[1]	kg CO_2 eq	2,94E-01	0,00E+00	1,63E-02	0,00E+00	5,16E-03	0,00E+00
ODP	kg CFC-11 eq	3,06E-08	0,00E+00	3,77E-09	0,00E+00	2,13E-09	0,00E+00
AP	mol H+ eq	1,57E-03	0,00E+00	8,25E-05	0,00E+00	4,95E-05	0,00E+00
EP-freshwater	kg PO4-3 eq	3,88E-04	0,00E+00	3,42E-06	0,00E+00	1,48E-06	0,00E+00
EP-freshwater[2]	kg P eq	1,26E-04	0,00E+00	1,11E-06	0,00E+00	4,82E-07	0,00E+00
EP-marine	kg N eq	2,55E-04	0,00E+00	2,88E-05	0,00E+00	1,72E-05	0,00E+00
EP-terrestrial	mol N eq	2,61E-03	0,00E+00	3,14E-04	0,00E+00	1,88E-04	0,00E+00
POCP	kg NMVOC eq	1,03E-03	0,00E+00	8,95E-05	0,00E+00	5,48E-05	0,00E+00
ADPe	kg Sb eq	4,96E-06	0,00E+00	5,98E-08	0,00E+00	1,20E-08	0,00E+00
ADPf	MJ	7,20E+00	0,00E+00	2,51E-01	0,00E+00	1,47E-01	0,00E+00
WDP[3]	m3 eq	3,27E-01	0,00E+00	1,17E-03	0,00E+00	6,77E-03	0,00E+00

[1] GWP-GHG indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product, with characterization factors (CFs) based on IPCC (2013).

[2] Eutrophication aquatic freshwater shall be given in both kg PO4 eq and kg P eq.

[3] The results of this environmental impact indicators of ADPf, ADPe and WDP shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

RESOURCE USE	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	3,63E-01	0,00E+00	3,38E-03	0,00E+00	1,25E-03	0,00E+00
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,00E+00	0,00E+00
PERT	MJ	3,63E-01	0,00E+00	3,38E-03	0,00E+00	5,00E+00	0,00E+00
PENRE	MJ	7,20E+00	0,00E+00	2,51E-01	0,00E+00	1,47E-01	0,00E+00
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,00E+00	0,00E+00
PENRT	MJ	7,20E+00	0,00E+00	2,51E-01	0,00E+00	5,15E+00	0,00E+00
SM	kg	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
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	7,62E-03	0,00E+00	2,71E-05	0,00E+00	1,58E-04	0,00E+00

OUTPUT FLOWS AND WASTE	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	4,19E-06	0,00E+00	6,54E-07	0,00E+00	2,22E-07	0,00E+00
NHWD	kg	3,28E-02	0,00E+00	1,20E-02	0,00E+00	1,00E+00	0,00E+00
RWD	kg	1,82E-05	0,00E+00	1,72E-06	0,00E+00	9,64E-07	0,00E+00
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

PRIMER-PROFESSIONAL

ENVIRONMENTAL IMPACTS	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	9,49E-01	0,00E+00	1,65E-02	0,00E+00	5,27E-03	0,00E+00
GWP-fossil	kg CO_2 eq	9,47E-01	0,00E+00	1,65E-02	0,00E+00	5,27E-03	0,00E+00
GWP-biogenic	kg CO_2 eq	1,74E-03	0,00E+00	5,55E-06	0,00E+00	2,94E-06	0,00E+00
GWP-luluc	kg CO_2 eq	7,78E-04	0,00E+00	5,58E-06	0,00E+00	4,97E-06	0,00E+00
GWP-GHG[1]	kg CO_2 eq	9,09E-01	0,00E+00	1,63E-02	0,00E+00	5,16E-03	0,00E+00
ODP	kg CFC-11 eq	3,76E-07	0,00E+00	3,77E-09	0,00E+00	2,13E-09	0,00E+00
AP	mol H+ eq	4,79E-03	0,00E+00	8,25E-05	0,00E+00	4,95E-05	0,00E+00
EP-freshwater	kg PO4-3 eq	9,40E-04	0,00E+00	3,42E-06	0,00E+00	1,48E-06	0,00E+00
EP-freshwater[2]	kg P eq	3,07E-04	0,00E+00	1,11E-06	0,00E+00	4,82E-07	0,00E+00
EP-marine	kg N eq	8,41E-04	0,00E+00	2,88E-05	0,00E+00	1,72E-05	0,00E+00
EP-terrestrial	mol N eq	8,85E-03	0,00E+00	3,14E-04	0,00E+00	1,88E-04	0,00E+00
POCP	kg NMVOC eq	3,58E-03	0,00E+00	8,95E-05	0,00E+00	5,48E-05	0,00E+00
ADPe	kg Sb eq	1,44E-05	0,00E+00	5,98E-08	0,00E+00	1,20E-08	0,00E+00
ADPf	MJ	2,28E+01	0,00E+00	2,51E-01	0,00E+00	1,47E-01	0,00E+00
WDP[3]	m3 eq	8,91E-01	0,00E+00	1,17E-03	0,00E+00	6,77E-03	0,00E+00

[1] GWP-GHG indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide emissions and uptake and biogenic carbon stored in the product, with characterization factors (CFs) based on IPCC (2013).

[2] Eutrophication aquatic freshwater shall be given in both kg PO4 eq and kg P eq.

[3] The results of this environmental impact indicators of ADPf, ADPe and WDP shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

RESOURCE USE	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	9,57E-01	0,00E+00	3,38E-03	0,00E+00	1,25E-03	0,00E+00
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,00E+00	0,00E+00
PERT	MJ	9,57E-01	0,00E+00	3,38E-03	0,00E+00	5,00E+00	0,00E+00
PENRE	MJ	2,28E+01	0,00E+00	2,51E-01	0,00E+00	1,47E-01	0,00E+00
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,00E+00	0,00E+00
PENRT	MJ	2,28E+01	0,00E+00	2,51E-01	0,00E+00	5,15E+00	0,00E+00
SM	kg	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
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	2,07E-02	0,00E+00	2,71E-05	0,00E+00	1,58E-04	0,00E+00

OUTPUT FLOWS AND WASTE	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	1,53E-05	0,00E+00	6,54E-07	0,00E+00	2,22E-07	0,00E+00
NHWD	kg	1,20E-01	0,00E+00	1,20E-02	0,00E+00	1,00E+00	0,00E+00
RWD	kg	5,76E-05	0,00E+00	1,72E-06	0,00E+00	9,64E-07	0,00E+00
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Additional Info

The EPD does not give information on release of dangerous substances to soil, water and indoor air because the horizontal standards on measurement of release of regulated dangerous substances from construction products using harmonized test methods according to the provisions of the respective technical committees for European product standards are not available.

Abbreviations

LCA	Life Cycle assessment
EPD	Environmental Product Declaration
PCR	Product category rules
GLO	Global
RER	Europe
RoW	Rest of the world
GWP-total	Global Warming Potential total
GWP-fossil	Global Warming Potential fossil
GWP-biogenic	Global Warming Potential biogenic
GWP-luluc	Global Warming Potential land use and land use change
ODP	Ozone Depletion Potential
AP	Acidification Potential
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 photochemical oxidants
ADPe	Abiotic depletion potential for non-fossil resources
ADPf	Abiotic depletion potential for fossil resources
WDP	Water use
PERE	Use of renewable primary energy excluding 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 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 resources

SM	Use of secondary material
RSF	Use of renewable secondary fuels
NRSF	Use of non-renewable secondary fuels
FW	Use of net fresh water
HWD	Hazardous waste disposed
NHWD	Non-hazardous waste disposed
RWD	Radioactive waste disposed
CRU	Components for re-use
MFR	Materials for recycling
MER	Materials for energy recovery
EE	Exported Energy

References

General Programme Instructions of the International EPD® System. Version 3.01, 2019-09-18

PCR 2019:14 v.1.11 Construction products. EPD System. Date 2021-02-05. Valid until 2024-12-20

EN 15804:2012+A2:2019, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

ISO 14020:2000 Environmental labels and declarations — General principles

ISO 14025:2006 Environmental labels and declarations — Type III environmental declarations — Principles and procedures

ISO 14040:2006 Environmental management — Life cycle assessment — Principles and framework

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

Ecoinvent / Ecoinvent Centre, www.Eco-invent.org

Residual Energy Mix 2020 from Renewable Energy Sources Operator & Guarantees of Origin (DAPEEP SA)