

Environmental Product Declaration

for Waterproofing slurries by ISOMAT

Programme

The International
EPD® System,
www.environdec.com

Programme operator

EPD International AB

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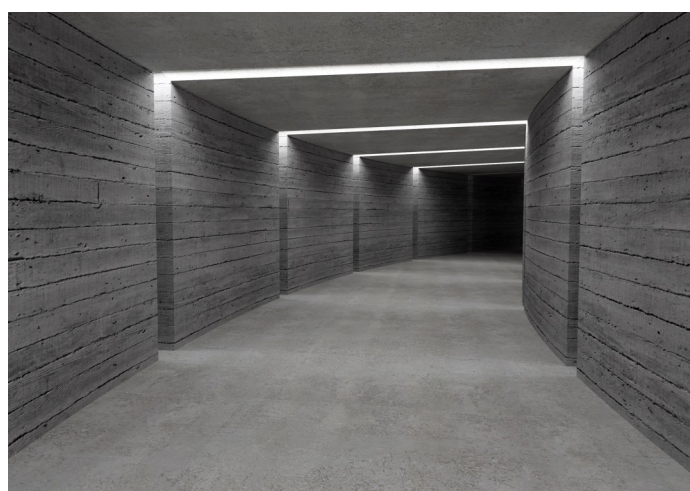
2022-07-20

Valid until

2027-07-19

Geographical scope

Global



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

AQUAMAT-MONOELASTIC

AQUAMAT-ELASTIC

AQUAMAT-FLEX

EPD owner



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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: 375 Articles of concrete, cement and plaster.

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.

P R E M I S E S



Product Info

This is a product-specific EPD for AQUAMAT-MONOELASTIC and AQUAMAT-FLEX. For AQUAMAT-ELASTIC, this is an average EPD concerning grey and white color mortars. Maximum GWP-GHG deviation of grey and white AQUAMAT ELASTIC products shall be 10%, thus they can be grouped into one category, which represents one weighted average product. The results of this EPD represent the weighted average product. Three different products are presented below.

AQUAMAT-MONOELASTIC	AQUAMAT-ELASTIC (A)+(B) (grey and white)	AQUAMAT-FLEX (A)+(B)
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AQUAMAT-MONOELASTIC

AQUAMAT-MONOELASTIC is a highly flexible, fiber-reinforced, one-component waterproofing cement-based slurry. It consists of a cementitious powder mortar reinforced with polymers (resins). After hardening, it forms a membrane without seams and joints. It is used for waterproofing surfaces of concrete, plaster, brick, cement blocks, terrazzo, plasterboard, wood, metal, etc. It is ideal for applications where high flexibility and good adhesion are required. Suitable for waterproofing surfaces subject to expansion-contraction or vibration and show or are about to show hairline cracks, such as flat roofs, terraces, balconies, above ground water tanks, swimming pools, inverted roofs, etc. It is suitable for internal and external basement waterproofing, against moisture or water under pressure.

AQUAMAT-MONOELASTIC complies with all the requirements established in Royal Decree 140/2003, modified by RD 314/2016 and by RD 902/2018, which establishes sanitary criteria for the quality of water for human consumption. Water tanks must be thoroughly washed prior to filling with potable water.

It is certified as root-resistant according to UNE CEN/TS 14416 EX: 2014.

It is also certified according to EN 14891 and classified as a liquid-applied, one-component, water-impermeable product CM P for waterproofing under tiles, in external installations (walls and floors) and swimming pools.

It is certified according to EN 1504-2 and classified as a coating for surface protection of concrete.

AQUAMAT-ELASTIC

AQUAMAT-ELASTIC is a highly flexible, two-component waterproofing cement-based slurry. It consists of a cementitious powder mortar (component A) and a resin emulsion (component B). After hardening, it forms a membrane without seams or joints.

AQUAMAT-ELASTIC is used for waterproofing surfaces of concrete, plaster, brick, cement blocks, terrazzo, plasterboard, wood, metal, etc. It is ideal for applications where high flexibility and good adhesion are required. Suitable for waterproofing surfaces subject to expansion-contraction or vibration and show or are expected to show hairline cracks, such as flat roofs, terraces, balconies, above ground water tanks, swimming pools, inverted roofs, etc. Can also be applied for internal and external basement waterproofing, against moisture or water under pressure.

It is certified according to EN 1504-2 and classified as a coating for surface protection of concrete.

It is also certified according to EN 14891 as a liquid-applied, two-component, water-impermeable product CM O2P, for waterproofing under tiles, in external installations (walls and floors) and swimming pools.

AQUAMAT-ELASTIC has been also tested and approved by the German Institute TÜV Rheinland LGA Bautechnik GmbH for being resistant when in contact with sewage water.

It has also been tested and approved as a radon barrier by the Federal Budgetary Scientific Institution, Saint Petersburg Professor P.V. Ramzaev, Scientific Research Institute for Radiation Hygiene.

It is also certified as root-resistant, according to UNE CEN/TS 14416 EX: 2014.

AQUAMAT-FLEX

AQUAMAT-FLEX is a flexible, two-component waterproofing cement-based slurry. It consists of a cementitious powder mortar (component A) and a resin emulsion (component B). After hardening, it forms a membrane without seams or joints. It is used to waterproof surfaces of concrete, plaster, brick, cement blocks, terrazzo, etc. that show or are expected to show hairline cracks. It is ideal for waterproofing flat roofs, terraces, balconies and wet areas (bathrooms, kitchens, etc.) to be covered with tiles.

AQUAMAT-FLEX is also suitable for waterproofing inverted roofs, underground tanks, flower stands, etc. It can also be used for internal and external basement waterproofing, against moisture or water under pressure.

It is certified according to EN 1504-2 and classified as a coating for surface protection of concrete.

Technical Specifications			
Specification	AQUAMAT-MONOELASTIC	AQUAMAT-ELASTIC	AQUAMAT-FLEX
Base	Cementitious powder	Component A: cementitious powder Component B: acrylic polymer dispersion	Component A: cementitious powder Component B: acrylic polymer dispersion
Colors	Grey	Grey, white	Grey
Packaging	Paper bags 18 kg	35 kg packaging (25 kg cement-based powder mortar + 10 kg emulsion resin), in grey and white. 18 kg packaging (12,9 kg cement-based powder mortar + 5,1 kg emulsion resin), in white. 7 kg packaging (5 kg cement-based powder mortar + 2 kg emulsion resin), in white.	33 kg packaging (25 kg cement-based powder mortar + 8 kg emulsion) 18 kg packaging (13,6 kg cement-based powder mortar bag + 4,4 kg emulsion resin)
Mixing ratio with water (depending on application tool)	5,0 - 5,4 l / 18 kg bag (brush) 4,1 - 4,5 l / 18Kg bag (trowel)	—	—
Bulk density of dry mortar	1,10 ± 0,05 kg/l	1,40 ± 0,05 kg/l	1,36 ± 0,05 kg/l
Bulk density of fresh mortar	1,50 ± 0,10 kg/l	1,70 ± 0,10 kg/l	1,90 ± 0,10 kg/l

Technical Specifications			
Specification	AQUAMAT-MONOELASTIC	AQUAMAT-ELASTIC	AQUAMAT-FLEX
Adhesion strength	$\geq 1,0 \text{ N/mm}^2$	$\geq 1,0 \text{ N/mm}^2$	$\geq 1,0 \text{ N/mm}^2$
CO ₂ permeability	160 m	125m (white) / 140 m (grey)	145 m
Capillary absorption & permeability to water	$0,03 \text{ kg/m}^2 \cdot \text{h}^{0,5}$	$0,0594 \text{ kg/m}^2 \cdot \text{h}^{0,5}$	$0,011 \text{ kg/m}^2 \cdot \text{h}^{0,5}$
Water vapor permeability	$S_d = 0,83 \text{ m}$	$S_d = 0,61 \text{ m}$	$S_d = 0,45 \text{ m}$
Compressive strength after 28 days	—	$10,00 \pm 2,00 \text{ N/mm}^2$	$17,50 \pm 2,50 \text{ N/mm}^2$
Flexural strength after 28 days	—	$6,00 \pm 1,00 \text{ N/mm}^2$	$8,50 \pm 1,50 \text{ N/mm}^2$
Composition			
	AQUAMAT-MONOELASTIC	AQUAMAT-ELASTIC	AQUAMAT-FLEX
Cement	15-30%	20-40%	20-40%
Calcium Carbonate Filler	40-60%	35-55%	30-50%
Vinyl Acetate Copolymer	15-35%	—	—
Styrene Butadiene Rubber	—	< 3%	< 1%
Styrene Acrylic Copolymer	—	5-15%	10-25%
Water	—	5-15%	3-10%
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	EU	GR										EU	EU	EU	EU	EU
Specific data used	> 90%			—	—	—	—	—	—	—	—	—	—	—	—	—	—
Variation-products	< 10%			—	—	—	—	—	—	—	—	—	—	—	—	—	—
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. Portland cement and calcium carbonate are the main raw materials for mortar production and STAC is the main raw material for emulsions production.

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 transferred to specially formed silos in order to obtain their final structure. Last stage of manufacturing is the packaging of final products.

C1: De-construction, demolition

The deconstruction and demolition of waterproofing slurries takes place with the demolition of the building or other constructions. Thus it is assumed that energy used for the demolition of waterproofing slurries 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 from construction/demolition sites to disposal sites has been chosen as a conservative assumption.

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

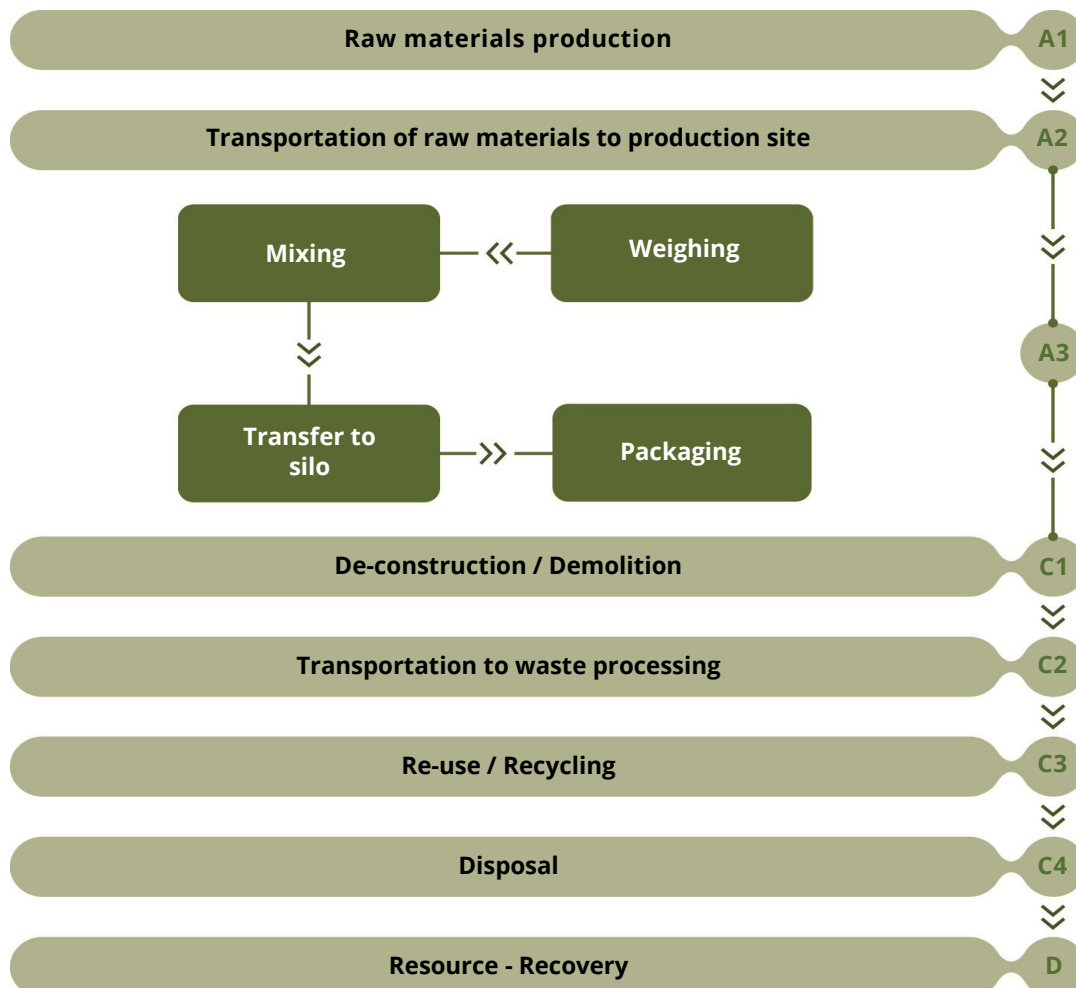
This module includes waste processing of the product after its life cycle in order to be recycled and reused in another product system. It is assumed that 100% of waterproofing slurries' end-of-life waste will be landfilled, thus the environmental impact of this module is set to be zero.

C4: Disposal

This module includes the final disposal of the discarded product. As mentioned above, 100% of waterproofing slurries' 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:

For AQUAMAT MONOELASTIC: The declared unit is 1 kg of mortar.

For AQUAMAT ELASTIC: The declared unit is 1 kg of mortar + 0,41 kg of polymer emulsion (B).

For AQUAMAT FLEX: The declared unit is 1 kg of mortar + 0,33 kg of polymer emulsion (B).

Goal and Scope:

This EPD evaluates the environmental impacts of the production of 1 kg of ISOMAT waterproofing slurries from Cradle to gate (A1-A3) 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. Allocation based on physical properties (mass) is applied where allocation cannot be avoided. In this case, allocation based on the mass of the final products is applied for electricity used in the plant. 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 waterproofing slurries takes place with the whole demolition of the building/construction. Thus it is assumed that energy used for the demolition of waterproofing slurries 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 waterproofing slurries' 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 waterproofing slurries' 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

AQUAMAT-MONOELASTIC

ENVIRONMENTAL IMPACTS	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq	9,93E-01	0,00E+00	1,65E-02	0,00E+00	1,25E-02	0,00E+00
GWP-fossil	kg CO ₂ eq	9,91E-01	0,00E+00	1,65E-02	0,00E+00	1,24E-02	0,00E+00
GWP-biogenic	kg CO ₂ eq	1,35E-03	0,00E+00	5,55E-06	0,00E+00	5,05E-06	0,00E+00
GWP-luluc	kg CO ₂ eq	4,18E-04	0,00E+00	5,58E-06	0,00E+00	2,60E-05	0,00E+00
GWP-GHG¹	kg CO ₂ eq	9,56E-01	0,00E+00	1,63E-02	0,00E+00	1,23E-02	0,00E+00
ODP	kg CFC-11 eq	6,82E-08	0,00E+00	3,77E-09	0,00E+00	3,60E-09	0,00E+00
AP	mol H ⁺ eq	3,82E-03	0,00E+00	8,25E-05	0,00E+00	1,11E-04	0,00E+00
EP-freshwater	kg PO ₄ -3 eq	5,19E-04	0,00E+00	3,42E-06	0,00E+00	2,86E-06	0,00E+00
EP-freshwater²	kg P eq	1,69E-04	0,00E+00	1,11E-06	0,00E+00	9,34E-07	0,00E+00
EP-marine	kg N eq	7,95E-04	0,00E+00	2,88E-05	0,00E+00	4,28E-05	0,00E+00
EP-terrestrial	mol N eq	8,58E-03	0,00E+00	3,14E-04	0,00E+00	4,68E-04	0,00E+00
POCP	kg NMVOC eq	3,10E-03	0,00E+00	8,95E-05	0,00E+00	1,32E-04	0,00E+00
ADPe	kg Sb eq	1,17E-05	0,00E+00	5,98E-08	0,00E+00	2,53E-08	0,00E+00
ADPf	MJ	2,22E+01	0,00E+00	2,51E-01	0,00E+00	2,48E-01	0,00E+00
WDP³	m ³ eq	5,08E-01	0,00E+00	1,17E-03	0,00E+00	7,22E-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	5,80E-01	0,00E+00	3,38E-03	0,00E+00	2,56E-03	0,00E+00
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,00E+00	0,00E+00
PERT	MJ	5,80E-01	0,00E+00	3,38E-03	0,00E+00	4,00E+00	0,00E+00
PENRE	MJ	2,22E+01	0,00E+00	2,51E-01	0,00E+00	2,48E-01	0,00E+00
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,00E+00	0,00E+00
PENRT	MJ	2,22E+01	0,00E+00	2,51E-01	0,00E+00	4,25E+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	1,18E-02	0,00E+00	2,71E-05	0,00E+00	1,68E-04	0,00E+00

OUTPUT FLOWS AND WASTE CATEGORIES	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	1,14E-05	0,00E+00	6,54E-07	0,00E+00	4,94E-07	0,00E+00
NHWD	kg	1,03E-01	0,00E+00	1,20E-02	0,00E+00	1,00E+00	0,00E+00
RWD	kg	3,17E-05	0,00E+00	1,72E-06	0,00E+00	1,64E-06	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

AQUAMAT-FLEX

ENVIRONMENTAL IMPACTS	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq	9,41E-01	0,00E+00	2,20E-02	0,00E+00	1,42E-02	0,00E+00
GWP-fossil	kg CO ₂ eq	9,40E-01	0,00E+00	2,19E-02	0,00E+00	1,42E-02	0,00E+00
GWP-biogenic	kg CO ₂ eq	1,13E-03	0,00E+00	7,40E-06	0,00E+00	6,03E-06	0,00E+00
GWP-luluc	kg CO ₂ eq	4,76E-04	0,00E+00	7,45E-06	0,00E+00	2,77E-05	0,00E+00
GWP-GHG¹	kg CO ₂ eq	9,19E-01	0,00E+00	2,17E-02	0,00E+00	1,40E-02	0,00E+00
ODP	kg CFC-11 eq	8,62E-08	0,00E+00	5,02E-09	0,00E+00	4,31E-09	0,00E+00
AP	mol H ⁺ eq	3,89E-03	0,00E+00	1,10E-04	0,00E+00	1,27E-04	0,00E+00
EP-freshwater	kg PO ₄ -3 eq	6,83E-04	0,00E+00	4,56E-06	0,00E+00	3,36E-06	0,00E+00
EP-freshwater²	kg P eq	2,23E-04	0,00E+00	1,49E-06	0,00E+00	1,09E-06	0,00E+00
EP-marine	kg N eq	7,67E-04	0,00E+00	3,84E-05	0,00E+00	4,86E-05	0,00E+00
EP-terrestrial	mol N eq	8,34E-03	0,00E+00	4,19E-04	0,00E+00	5,31E-04	0,00E+00
POCP	kg NMVOC eq	2,79E-03	0,00E+00	1,19E-04	0,00E+00	1,51E-04	0,00E+00
ADPe	kg Sb eq	1,36E-05	0,00E+00	7,97E-08	0,00E+00	2,93E-08	0,00E+00
ADPf	MJ	1,34E+01	0,00E+00	3,35E-01	0,00E+00	2,97E-01	0,00E+00
WDP³	m ³ eq	4,50E-01	0,00E+00	1,55E-03	0,00E+00	9,48E-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	6,75E-01	0,00E+00	4,51E-03	0,00E+00	2,98E-03	0,00E+00
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,67E+00	0,00E+00
PERT	MJ	6,75E-01	0,00E+00	4,51E-03	0,00E+00	5,67E+00	0,00E+00
PENRE	MJ	1,34E+01	0,00E+00	3,35E-01	0,00E+00	2,97E-01	0,00E+00
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,67E+00	0,00E+00
PENRT	MJ	1,34E+01	0,00E+00	3,35E-01	0,00E+00	5,96E+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	1,05E-02	0,00E+00	3,62E-05	0,00E+00	2,21E-04	0,00E+00

OUTPUT FLOWS AND WASTE CATEGORIES	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	1,22E-05	0,00E+00	8,71E-07	0,00E+00	5,68E-07	0,00E+00
NHWD	kg	9,39E-02	0,00E+00	1,60E-02	0,00E+00	1,34E+00	0,00E+00
RWD	kg	4,18E-05	0,00E+00	2,29E-06	0,00E+00	1,96E-06	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

AQUAMAT-ELASTIC

ENVIRONMENTAL IMPACTS	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq	1,04E+00	0,00E+00	2,32E-02	0,00E+00	1,46E-02	0,00E+00
GWP-fossil	kg CO ₂ eq	1,03E+00	0,00E+00	2,32E-02	0,00E+00	1,46E-02	0,00E+00
GWP-biogenic	kg CO ₂ eq	1,31E-03	0,00E+00	7,82E-06	0,00E+00	6,25E-06	0,00E+00
GWP-luluc	kg CO ₂ eq	5,66E-04	0,00E+00	7,87E-06	0,00E+00	2,81E-05	0,00E+00
GWP-GHG¹	kg CO ₂ eq	1,01E+00	0,00E+00	2,30E-02	0,00E+00	1,44E-02	0,00E+00
ODP	kg CFC-11 eq	9,20E-08	0,00E+00	5,30E-09	0,00E+00	4,47E-09	0,00E+00
AP	mol H ⁺ eq	4,40E-03	0,00E+00	1,16E-04	0,00E+00	1,31E-04	0,00E+00
EP-freshwater	kg PO ₄ -3 eq	7,85E-04	0,00E+00	4,81E-06	0,00E+00	3,47E-06	0,00E+00
EP-freshwater²	kg P eq	2,56E-04	0,00E+00	1,57E-06	0,00E+00	1,13E-06	0,00E+00
EP-marine	kg N eq	8,46E-04	0,00E+00	4,05E-05	0,00E+00	4,99E-05	0,00E+00
EP-terrestrial	mol N eq	9,18E-03	0,00E+00	4,43E-04	0,00E+00	5,45E-04	0,00E+00
POCP	kg NMVOC eq	3,11E-03	0,00E+00	1,26E-04	0,00E+00	1,55E-04	0,00E+00
ADPe	kg Sb eq	1,55E-05	0,00E+00	8,42E-08	0,00E+00	3,02E-08	0,00E+00
ADPf	MJ	1,56E+01	0,00E+00	3,53E-01	0,00E+00	3,08E-01	0,00E+00
WDP³	m ³ eq	5,54E-01	0,00E+00	1,64E-03	0,00E+00	9,99E-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	7,80E-01	0,00E+00	4,76E-03	0,00E+00	3,07E-03	0,00E+00
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,04E+00	0,00E+00
PERT	MJ	7,80E-01	0,00E+00	4,76E-03	0,00E+00	6,05E+00	0,00E+00
PENRE	MJ	1,56E+01	0,00E+00	3,53E-01	0,00E+00	3,08E-01	0,00E+00
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,04E+00	0,00E+00
PENRT	MJ	1,56E+01	0,00E+00	3,53E-01	0,00E+00	6,35E+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	1,29E-02	0,00E+00	3,82E-05	0,00E+00	2,33E-04	0,00E+00

OUTPUT FLOWS AND WASTE	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	1,36E-05	0,00E+00	9,20E-07	0,00E+00	5,85E-07	0,00E+00
NHWD	kg	1,06E-01	0,00E+00	1,69E-02	0,00E+00	1,41E+00	0,00E+00
RWD	kg	4,50E-05	0,00E+00	2,42E-06	0,00E+00	2,03E-06	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

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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

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

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