

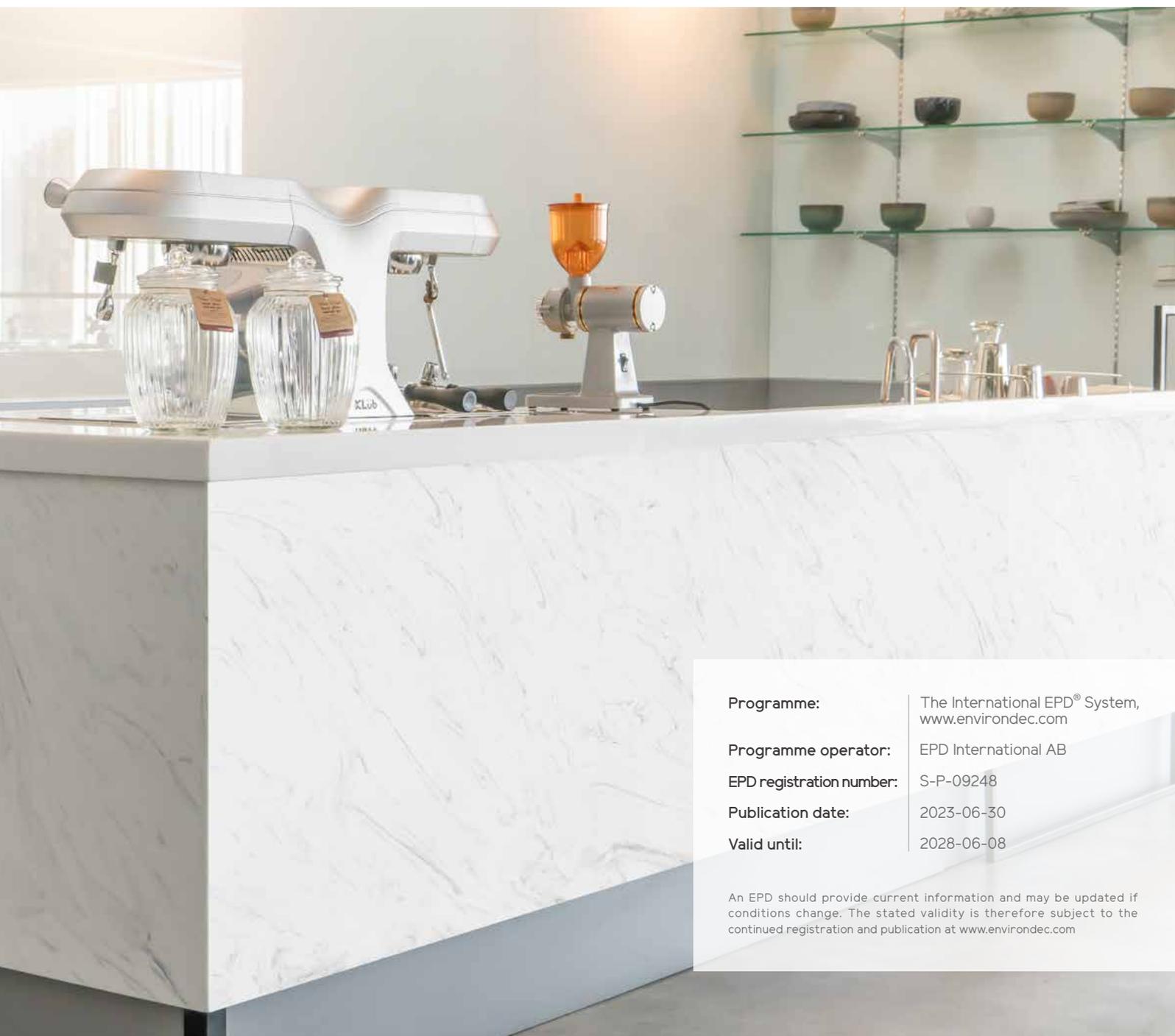
ENVIRONMENTAL PRODUCT DECLARATION



In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

MEGANITE[®] Acrylic Solid Surface

from Meganite Inc.



Programme:	The International EPD [®] System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	S-P-09248
Publication date:	2023-06-30
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An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

EPD CONTENT

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GENERAL INFORMATION

Programme :	The International EPD® System
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Accountabilities for PCR, LCA and independent, third-party verification

Product Category Rules (PCR)

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

Product Category Rules (PCR):
PCR 2019:2014 Construction products (version 1.2.5);
UNCPC Code: 372

PCR review was conducted by:
The Technical Committee of the International EPD® System. The review panel could be contacted via info@environdec.com.

Life Cycle Assessment (LCA)

LCA accountability:
Si HUANG, Juanjuan YAO, and Sijia YANG from IVL Swedish Environmental Research Institute and SIWALIYA Environmental Technologies (Beijing) Co. Ltd

Third-party verification

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:
EPD verification by individual verifier

Third-party verifier: <name, organisation, and signature of the third-party verifier>
Pär Lindman, Miljögiraff AB (par@miljogiraff.se)

Approved by: The International EPD® System

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

EPDs within the same product category but registered in different EPD programs, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterization factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

2. ABOUT MEGANITE®

Company background:

Founded by a chemical engineer, Meganite is a private, family-owned business focusing on 100% acrylic solid surface. With the advantage of developing unique colors, it is now among the top Solid Surface brands in the world.

In 1976, company started from producing pigments/resins for the plastics industry. This experience provides a solid foundation for the company's future development. In 1994, the manufacturing plants of Meganite formed a joint venture with key American building material distributors to create Meganite Solid Surface. Meganite is one of a few brands that produce their own chip particulates and pigments, this gives more flexibility to maintain the quality and produce custom colors.

Name and location of production site(s):

Headquarter: 1461 South Balboa Ave. Ontario, CA 91761, USA

Manufacturing site: 12 Chunyu Road, Xishan Economic Development Zone, Wuxi City, Jiangsu Province, China

Vision of environmental protection:

Since inception of Meganite Solid Surface, we have been producing safe materials with various certifications. We also have developed pre-consumer products and make packaging material recyclable.

Today, Meganite's environmental vision is to be progress and proactive. Here are our key initiatives:

1 Circular Economy:

Majority of the solid wastes from solid surface production are processed into inputs for other building material industries to use as raw material.

2 Green Energy:

Starting Q4, 2023, more than 70% of the energy used at our solid surface production lines are powered by green energy.

3 Carbon Neutral:

Our goal is to be carbon neutral by 2025. We are participating in various United Nation's Carbon Offset programs.

4 Second Life:

Meganite works with local communities to establish a second life program that give used solid surface a new home, instead waste treatment plants. This second life recycled program reuses demolition solid surface wastes as furniture parts, arts and craft pieces. Meganite and its distribution partner provide funding, space, and technical advises to local communities that are interested in second life programs.

3. PRODUCT DESCRIPTION

Product name:

MEGANITE® Acrylic Solid Surface

Product description:

MEGANITE® Acrylic Solid Surface is a solid, nonporous, homogeneous composite material composed of acrylic resin (methacrylate or MMA), aluminum trihydrate (ATH) and toner. In this EPD, the standard size of material is 3660x760x12mm/piece with the weight of 60 kg/piece, covering sheets of different colors. The component and ratio of the raw materials for the different color variants of 12mm thickness, as well as the production processes are all the same. According to the producer, one of the raw materials, toner, which makes the color different, accounts for only 1% of the raw materials for all variants covered in this EPD. The LCA study is based on the practical data, which was collected for the 12mm-thick products, the total amount of which accounts for 90.06% of the total output of 2021.

Product characteristics:

MEGANITE® offers versatility, functionality, and durability in multiple interior applications. It can be seamlessly jointed and thermoformed into unlimited variety of shapes. It requires no sealing and easy maintenance. It is available in a vast range of trendsetting patterns and tones, as well as custom-designed colors and sizes. Whether you're looking to design sleek residential environments, modern corporate or public area, MEGANITE® is the perfect solution for you.

Product applications:

MEGANITE® can be used as kitchen and bath countertops and backsplashes in residential applications, as well as receptions and tables in commercial applications for both horizontal and vertical installations. MEGANITE® is also the ideal choice for healthcare and education spaces. In addition, MEGANITE® wall cladding offers many advantages for ventilated applications in moisture applications.

UN CPC code:

372

Product classification in Unified Facilities Guide Specifications (UFGS):

06 61 16 Solid Surfacing Fabrications

Geographical scope:

Global

Product performance property:

Standard Sheet Size	144" x 30" x 1/2" (3660 x 760 x 12 mm)	
Physical Properties	Typical Test Result	Test
Destiny	1.7g/cm ³	ASTM D-792
Water Absorption (24 hours)	0.04%	ASTM D-570
Hardness, Barcol	60	ASTM D-2583
Hardness, Rockwell	90	ASTM D-785
Mechanical Properties	Typical Test Result	Test
Flexural Modulus	1,200,000 PSI	ASTM D-790
Flexural Strength	9,000 PSI	
Tensile Modulus	1,500,000 PSI	ASTM D-638
Tensile Strength	6,000 PSI	
Tensile Elongation	0.4% min	
Thermal Expansion	1.3"10 ⁻⁶ IN/IN/°F	ASTM D-696
Radiant Heat Resistance	No visual effect	NEMA LD 3-3-10
Impact Resistance	>125"	NEMA LD3-3 (1/2 LB Ball)
Surface Properties	Typical Test Result	Test
Consistency of Color	Pass	ISFA SST 2.1-00
Flatness of Sheet	Pass	ISFA SST 4.1-00
Visual Defects	Pass	ISFA SST 5.1-00
Light Resistance	Pass	ISFA SST 7.1-00
Stain Resistance	Pass	ASNI 124.6
Boiling Water Resistance	No Change	NEMA LD3-3-5
High Temperature Resistance	No Change	NEMA LD3-3-6
Color Stability	No Change	NEMA LD3-3-10
Fungi Resistance	No Growth	ASTM G21
Bacteria Resistance	No Growth	ASTM G22
Fire Performance	Typical Test Result	Test
Flammability	Class 1/A	ASTM E84
Flam Spread	Class 1/A (< 25)	
Smoke Development Density	Class 1/A (< 25)	
Certification	Typical Test Result	Test
Food Zone Use	NSF Approved	NSF Standard 51
Indoor Air Quality	Greenguard Approved	Greenguard
Indoor Air Quality for Children	Greenguard Gold Approved	Greenguard Gold

4. CONTENT INFORMATION

For 1 m² MEGANITE® acrylic solid surface, it contains no bio-carbon from the raw material and its package contains 0.529 kg bio-carbon.

MEGANITE® is free of heavy metals and toxic substance and complies with the EU Directive 2015/863 on the Restriction of Hazardous Substance (RoHS3). MEGANITE is also compliance with the EU REACH Regulation (EC 1907/2006) and GreenGuard® Gold certification, there are no SVHC substances in the product.

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Aluminum hydroxide	14.02	0%	0%, 0
MMA	7.334	0%	0%, 0
Toner	0.2157	0%	0%, 0
TOTAL	21.57	0%	0%, 0
Packaging materials	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg
Wooden pallet	0.90	4.17%	0.588
PE film	0.062	0.29%	0
TOTAL	0.962	4.46%	0.588 kg C/kg (i.e. 0.529 kg C/m ² product)

5. LCA INFORMATION

KEY ASSUMPTION IN THE LCA:

In the LCA's Transportation segment, Meganite provided shipping locations in major Western and Eastern North American locations and Western and Northern European locations to mimic some of the longest shipping routes possible into the LCA study.

Declared unit:

1 m² of 12mm thickness acrylic solid surface throughout its whole life cycle.

Reference service life:

10 years.

The life cycle of MEGANITE® provided in this document is for usage of a period of 10 years, providing peace of mind and confidence in its quality. However, depending on the function of the solid surface, the reference service life (RSL) can be much longer.

Time representativeness:

The primary data for manufacturing stage (A3) is provided by the acrylic solid surface producer, representing the year of 2021. The secondary data is cited from the Ecoinvent and/or Sphera databases, no older than 5 years.

Data Quality Assessment:

Instances where specific data has been used in this study are:

- The weight of raw materials, packages' raw material, and auxiliary materials;
- Transportation data of raw material to manufacture and packages to Meganite's factory;
- Manufacturing process for Meganite producing products, e.g., energy use, material use and environmental emissions, waste disposed;
- Transportation data for the solid surface product sent to retailers/distribution platforms.

Where specific data has not been readily available from Meganite or their suppliers, generic data has been used to fill these gaps. Generic data has also been used for background processes that are upstream in the supply chain.

Instances where generic data have been used in this study are:

- Database data used for calculating the environmental impacts of upstream raw materials, packages' raw material, and auxiliary materials, from Gabi (Sphera) and Ecoinvent database;
- Power grid mix information and diesel data;
- Transport processes for raw materials and package's raw materials;
- Transportation processes for the solid surface product to the retailers/distribution platforms;
- End-of-life processes for packaging materials.

As for the reliability of the data, it can always present some uncertainties but as the data for the core module has been collected from the production sites, the data has been measured and verified internally. The data is assumed to be the most relevant according to current conditions and production practices.

Database(s) and LCA software used:

The Ecoinvent and Sphera databases are used in the study. Gabi 10.7 is the LCA software.

Description of system boundaries:

The system boundary is “cradle-to-gate with options” (A+B+C+D) in this LCA study, assessing the production of raw materials, the production process of the Meganite products, transportation to the retailer, as well as treatment of products and treatment of package at end- of-life. The production, maintenance, and after-use treatment of capital goods, such as machines, factories, etc., “overhead” activities, such as heating of buildings and lighting, and the activities of the employees are not included in the life cycle.

The EPD is a type b) EPD as per PCR, i.e., Cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + C + D and additional modules). However, all life cycle stages are analyzed in the LCA study, including A1-A3 product stage, A4-A5 construction stage, B use stage, C1-C4 end-of-life stage, and D benefits and loads beyond the system boundary.

For C1 deconstruction, since no energy and materials are consumed in this stage as well as no wastes or emissions generated due to the product from this stage, the environmental impact of this stage is assumed to be zero. For D, because the acrylic solid surface product will be landfilled at the end of life, it is assumed that no benefits will be generated during the waste disposal, and the environmental impact of module D is assumed to be zero.

System diagram:

Modules	Life cycle stage	Key points	Included in the study (Yes/No)
A1-A3 Product Stage	A1 Raw material supply	A1 – raw material supply, including processing of secondary material input	Yes
	A2 Transport	A2 – transport of raw material and secondary material to the manufacturer	Yes
	A3 Manufacturing	A3 – manufacture of the construction products, and all upstream processes from cradle to gate	Yes
A4-A5 Construction Process Stage	A4 Transport	A4 – transport of construction products to the building site	Yes
	A5 Construction installation	A5 – the building installation/construction and associated waste	Yes
B Use Stage	B1 Use	B1 – use of the installed product, service or appliance	Yes
	B2 Maintenance	B2 – maintenance of the product	
	B3 Repair	B3 – repair of the product	
	B4 Replacement	B4 – replacement of the product	
	B5 Refurbishment	B5 – refurbishment of the construction product	
	B6 Operational energy use	B6 – operational energy	
	B7 Operational water use	B7 – operational water use	

Modules	Life cycle stage	Key points	Included in the study (Yes/No)
C End of Life Stage	C1 Deconstruction, demolition	C1 – demolition of the building/building product	Yes
	C2 Transport	C2 – transport of the demolition waste comprising the end-of-life construction product to waste processing facility or to final disposal	Yes
	C3 Waste processing	C3 – waste processing operations for reuse, recovery, or recycling	Yes
	C4 Disposal	C4 – final disposal of end-of-life construction product	Yes
D Benefits and Loads Beyond the System Boundary	D Reuse, recovery, recycling,	D – reuse/recovery/recycling potential evaluated as net impacts and benefits	Yes

Allocation:

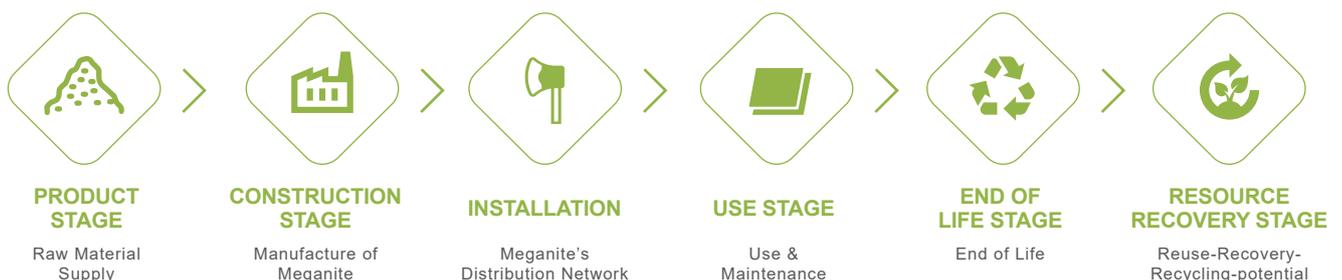
Allocation rules for multifunctional products and multiproduct processes are mentioned in PCR. Meganite produces several types of products and production data were collected at a factory level. Mass allocation is applied to assign the correct production burdens. The mass allocation is applied on the calculation of auxiliary materials added, energy consumption, and polluted emission in the factory.

Cut-off rules:

The cut-off criteria established by the PCR is that data for elementary flows to and from the product system contributing to a minimum of 95% of the declared environmental impacts shall be included (not including processes that are explicitly outside the system boundary).

This study strictly follows the cut-off rule. Raw materials with high environmental impacts were reserved in calculation even though their mass is smaller than 5% of the whole product. In this LCA study, cut-off rule was only applied to saw web use, because the mass is far smaller than 5% of the whole product.

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):



	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage	
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-contruction demolition	Transport	Waste processing	Disposal	Reuse-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	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	CN	CN	CN	CN to US	US	US	US	US	US	US	US	US	US	US	US	US	US	
Specific data used	>90%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Variation – products	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	

(X: module declared; ND: module not declared.)

- A1** The raw materials are supplied from the supplier to the MEGANITE® factory.
- A2** The transportation of the raw material and package material to the MEGANITE® factory.
- A3** The manufacturing of the acrylic solid surface in the MEGANITE® factory.

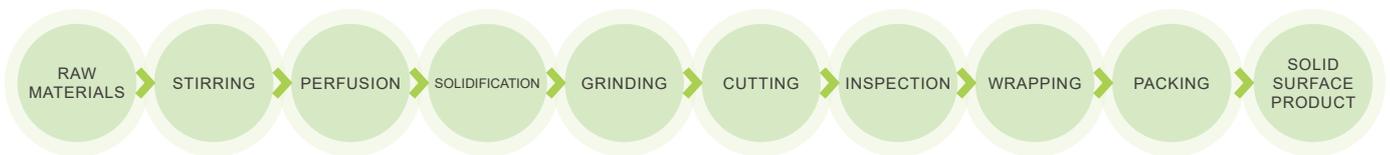


Figure 1. The Solid surface manufacturing processes in the Meganite factory (A3)

- A4** The transportation of the acrylic solid surface to the construction site. This stage contains the overseas shipping from MEGANITE® factory to US.
- A5** The construction of the acrylic solid surface. The package will be wasted in the stage with 10% product loss. Two kinds of ancillary materials and electricity are used during construction.

- B1-B7** Water and detergent are used for washing the installed product during B2 maintenance stage for 10 years' life time. It is assumed that the product is washed every week over the RSL of 10 years, and 0.02kg water and 0.005kg detergent are used for each time washing. Besides, no energy or other materials are consumed in the whole use stage. No wastes and emissions generated due to the product from the stage except for wastewater from washing in B2.
- C1** No energy and materials are consumed in the deconstruction stage. No wastes and emissions generated due to the product from the stage.
- C2** The transportation of the waste product to the waste processing plant.
- C3** The waste processing stage. No product waste is processed before the EOL disposal.
- C4** Waste acrylic solid surface products usually will be sent to landfill.
- D** As mentioned above, the acrylic solid surface product will be landfilled. It is assumed that no benefits will be generated during the waste disposal, and the environmental impact of module D is assumed to be zero.

6. ENVIRONMENTAL INFORMATION

Environmental impact indicators according to EN 15804:

Life Cycle Stage		Product Stage	Construction Process Stage			Use Stage							End of Life Stage				Resource Stage
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
GWP-total	kg CO ₂ eq.	1.10 E+02	2.04 E+00	2.70 E+00	0.00 E+00	2.09 E-01	0.00 E+00	1.85 E-01	0.00 E+00	1.36 E+00	0.00 E+00						
GWP-fossil	kg CO ₂ eq.	1.10 E+02	2.03 E+00	2.67 E+00	0.00 E+00	2.02 E-01	0.00 E+00	1.86 E-01	0.00 E+00	1.38 E+00	0.00 E+00						
GWP-biogenic	kg CO ₂ eq.	3.01 E-01	1.19 E-02	3.38 E-02	0.00 E+00	6.23 E-03	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00							
GWP-luluc	kg CO ₂ eq.	1.36 E-02	2.36 E-03	2.57 E-03	0.00 E+00	1.23 E-04	0.00 E+00	1.70 E-03	0.00 E+00	1.10 E-03	0.00 E+00						
ODP	kg CFC 11 eq.	1.27 E-06	9.59 E-14	7.08 E-08	0.00 E+00	2.97 E-14	0.00 E+00	2.38 E-14	0.00 E+00	2.25 E-12	0.00 E+00						
AP	mol H ⁺ eq.	6.70 E-01	5.03 E-02	9.27 E-03	0.00 E+00	9.21 E-04	0.00 E+00	2.51 E-04	0.00 E+00	4.01 E-03	0.00 E+00						
EP-freshwater	kg P eq.	1.51 E-02	1.11 E-06	1.82 E-04	0.00 E+00	8.54 E-06	0.00 E+00	6.69 E-07	0.00 E+00	2.57 E-04	0.00 E+00						
EP-marine	kg N eq.	1.15 E-01	1.27 E-02	2.33 E-03	0.00 E+00	1.80 E-04	0.00 E+00	8.77 E-05	0.00 E+00	9.19 E-04	0.00 E+00						
EP-terrestrial	mol N eq.	9.90 E-01	1.39 E-01	2.08 E-02	0.00 E+00	1.68 E-03	0.00 E+00	1.05 E-03	0.00 E+00	1.01 E-02	0.00 E+00						
POCP	kg NMVOC eq.	3.92 E-01	3.53 E-02	6.82 E-03	0.00 E+00	5.43 E-04	0.00 E+00	2.18 E-04	0.00 E+00	2.92 E-03	0.00 E+00						
ADP-minerals & metals*	kg Sb eq.	1.16 E-04	2.70 E-08	4.32 E-05	0.00 E+00	4.02 E-07	0.00 E+00	1.21 E-08	0.00 E+00	3.53 E-08	0.00 E+00						
ADP-fossil*	MJ	1.58 E+03	2.67 E+01	4.31 E+01	0.00 E+00	5.60 E+00	0.00 E+00	2.49 E+00	0.00 E+00	2.00 E+01	0.00 E+00						
WDP*	m ³	1.98 E+01	7.89 E-03	1.10 E+00	0.00 E+00	3.01 E-01	0.00 E+00	2.21 E-03	0.00 E+00	1.89 E-02	0.00 E+00						
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																

* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

Additional environmental impact indicators

Life Cycle Stage		Product Stage	Construction Process Stage			Use Stage							End of Life Stage				Resource Stage
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
GWP-GHG	kg CO ₂ eq.	1.05 E+02	2.00 E+00	2.60 E+00	0.00 E+00	1.98 E-01	0.00 E+00	1.84 E-01	0.00 E+00	1.32 E+00	0.00 E+00						

This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO₂ is set to zero.

Resource use indicators

Life Cycle Stage		Product Stage	Construction Process Stage			Use Stage							End of Life Stage				Resource Stage
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
PERE	MJ	1.06 E+02	3.10 E-01	1.52 E+01	0.00 E+00	1.91 E-01	0.00 E+00	1.81 E-01	0.00 E+00	1.80 E+00	0.00 E+00						
PERM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	
PERT	MJ	1.06 E+02	3.10 E-01	1.52 E+01	0.00 E+00	1.91 E-01	0.00 E+00	1.81 E-01	0.00 E+00	1.80 E+00	0.00 E+00						
PENRE	MJ	1.58 E+03	2.67 E+01	4.31 E+01	0.00 E+00	5.60 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.50 E+00	0.00 E+00	2.00 E+01	0.00 E+00	
PENRM	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	
PENRT	MJ	1.58 E+03	2.67 E+01	4.31 E+01	0.00 E+00	5.60 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	2.50 E+00	0.00 E+00	2.00 E+01	0.00 E+00	
SM	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	
RSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	
NRSF	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	
FW	m ³	4.63 E-01	4.10 E-04	3.21 E-02	0.00 E+00	-9.34 E-03	0.00 E+00	1.99 E-04	0.00 E+00	1.97 E-04	0.00 E+00						
Acronyms	<p>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</p>																

Waste indicators

Life Cycle Stage		Product Stage	Construction Process Stage			Use Stage							End of Life Stage				Resource Stage
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
Hazardous waste disposed	kg	-4.06 E-09	1.93 E-11	1.38 E-09	0.00 E+00	1.87 E-05	0.00 E+00	7.75 E-12	0.00 E+00	1.68 E-09	0.00 E+00						
Non-hazardous waste disposed	kg	8.44 E-02	1.37 E-03	2.57 E+00	0.00 E+00	1.32 E-02	0.00 E+00	3.82 E-04	0.00 E+00	1.94 E+01	0.00 E+00						
Radioactive waste disposed	kg	1.59 E-03	1.29 E-05	1.45 E-03	0.00 E+00	8.25 E-05	0.00 E+00	4.68 E-06	0.00 E+00	2.36 E-04	0.00 E+00						

Output flow indicators

Life Cycle Stage		Product Stage	Construction Process Stage			Use Stage							End of Life Stage				Resource Stage
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
Components for re-use	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	
Material for recycling	kg	8.27 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	
Materials for energy recovery	kg	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	
Exported energy, electricity	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	
Exported energy, thermal	MJ	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	

ADDITIONAL INFORMATION

Second life furniture:

Meganite has started to work with local communities to establish a second life program that give used solid surface a new home, instead of waste treatment plants. This second life recycled program aims to reuse demolition solid surface wastes as furniture parts, arts and craft pieces. Meganite and its distribution partner can provide funding, space, and technical advise to local communities that are interested in second life programs.

7. References

PCR Construction, PCR 2019:14, Version 1.2.5, Valid until 2024-12-20

The International EPD system, <https://www.environdec.com>

ISO (2006a). ISO 14025:2006, Environmental labels and declarations – Type III environmental declarations – Principles and procedures.

ISO (2006b). ISO 14040:2006, Environmental management – Life cycle assessment – Principles and framework.

ISO (2006c). ISO 14044: 2006, Environmental management – Life cycle assessment – Requirements and guidelines.

Gabi database. GaBi LCA Databases 2023 Edition.

Gabi LCA software. The Gabi LCA software and corresponding database are provided by Sphera in Leinfelden-Echterdingen, Germany. Gabi version 10.7 was used.

LCA database published by the ecoinvent association originally known as the ecoinvent Centre, the Swiss Centre for Life Cycle Inventories. Since June 2013 ecoinvent is a not-for-profit association founded by institutes of the ETH Domain and the Swiss Federal Offices. The version 3.8 was used.

GPI (2021), General Programme Instructions for the International EPD System version 4.0.

Sphera. The provider of the Gabi LCA software and database.

Meganite products promotional documents (2021).

Meganite technical files (2021).

Meganite 2021 energy uses data (2021).

Meganite 2021 transportation record data (2021).

Meganite emission monitoring report (2021).

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