

AGGLO BAGHIN s.r.l.

ENVIRONMENTAL PRODUCT DECLARATION

In accordance with regulations ISO 14025 e EN 15804+A2

Name of products:

tiles of the line Ecostone, series “Retro Style Terrazzo” and “Venezia”

Production site:

Via Callalta, 24/a 31039 Riese Pio X (TV), Italy

Program Operator

EPDItaly

Registration number

EPDITALY0707

Declaration Number

EPD_Aggl_Ecostone_02_EN



Issue Date

18/12/2024


Expiry Date

18/12/2029



General informations

REFERENCES EPD			
OWNER	AGGLO BAGHIN SRL Via Callalta, 24/a 31039 RIESE PIO X (TV) ITALY info@agglobaghin.it +39 0423 755339		
REFERENCE PRODUCTION SITE	Via Callalta, 24/a 31039 RIESE PIO X (TV) ITALY		
PROGRAM OPERATOR	EPDItaly Via Gaetano De Castillia 10, 20124 Milano (MI), Italy www.epditaly.it		
INDEPENDENT VERIFICATION	This declaration was developed following the general indications of the EPDItaly program. The PCR review was conducted by Daniele Pace, who can be contacted at info@epditaly.it . Independent verification of the declaration and data, according to UNI EN ISO 14025:2010. <input type="checkbox"/> Internal <input checked="" type="checkbox"/> External Third part verification made by: ICMQ SpA, Via Gaetano De Castillia 10, 20124 Milano (MI) www.icmq.it Accredited by Accredia.		
SCOPE OF APPLICATION	The following EPD refers to 1 kilogram of finished tile of the following recipes and dimensions: <table border="1" data-bbox="436 842 2150 1098"> <tbody> <tr> <td> ECOSTONE linea Retro Style Terrazzo: - EM10317 BIELLE (40x40*1,5cm) - EM1012 MARTON (40x40*1,5cm) - EM1019 OSLO (40x40*1,5cm) - EM1087 AMSTERDAM (40x40*1,5cm) - EM1088 STOCCOLMA (40x40*1,5cm) - EM6906 SAN PIETROBURGO(40x40*1,5cm) </td> <td> ECOSTONE linea Venezia: - EV 2012 CANNAREGIO (40x40*1,5cm) - EV 2015 SAN MARCO (40x40*1,5cm) - EV 2090 FENICE (40x40*1,5cm) - EV 2035 DUCALE(40x40*1,5cm) </td> </tr> </tbody> </table>	ECOSTONE linea Retro Style Terrazzo: - EM10317 BIELLE (40x40*1,5cm) - EM1012 MARTON (40x40*1,5cm) - EM1019 OSLO (40x40*1,5cm) - EM1087 AMSTERDAM (40x40*1,5cm) - EM1088 STOCCOLMA (40x40*1,5cm) - EM6906 SAN PIETROBURGO(40x40*1,5cm)	ECOSTONE linea Venezia: - EV 2012 CANNAREGIO (40x40*1,5cm) - EV 2015 SAN MARCO (40x40*1,5cm) - EV 2090 FENICE (40x40*1,5cm) - EV 2035 DUCALE(40x40*1,5cm)
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UNCPC CODE	3754 Tiles, flagstones, bricks and similar articles, of cement, concrete or artificial stone		
REFERENCE DOCUMENTATION	EPDItaly regulation rev. 6.0 published on 30/10/2023, available on website: www.epditaly.it . CEN standard EN 15804 used as core PCR.		
PCR	PCR ICMQ-001/15 rev. 3.1 "Prodotti da costruzione e servizi per costruzione", EPDItaly. Issuing date: 12/11/2024 IBU PCR Part B: Requirements on the EPD for Ceramic tiles and panels v.1 – SUPPORTING PCR. Background report: Background report: Analisi del ciclo di vita di agglomerati per pavimenti e rivestimenti interni ed esterni - Agglo Baghin s.r.l. - Novembre 2024 – 26/11/2024 – rev.04		

COMPARABILITY	Environmental Statements published within the same product category, but by different programs, may not be comparable. In particular, the EPDs of similar products may not be comparable if they do not comply with the reference technical standard.
RESPONSIBILITY	Agglo Baghin s.r.l. exempts EPDIItaly from any non-compliance with environmental regulations self-declared by the manufacturer. The statement holder is responsible for the information and supporting evidence; EPDIItaly declines any responsibility for the manufacturer's information, data and results of the life cycle assessment.
COMPANY CONTACTS	Cristina Priamo info@agglobaghin.it
TECHNICAL CONTACT	<p>Federica Gilardelli, Alessio Zapparoli, Elisa Panzeri Greenwich S.r.l. Operative office: Via Presolana 2/4, 24030 Medolago (BG) Italy Registered office: Via Vittorio Emanuele II 179, 24033 Calusco d'Adda (BG) Italy tecnicog4@greenwichsrl.it</p> 

Company informations

Agglo Baghin s.r.l. was founded in 1998 by Luciano and Vittorio Baghin, thanks to an entrepreneurial experience that has been handed down for generations.

To date, after 25 years of activity, Agglo Baghin develops 200 samples per year supplying 5 continents. The company creates a product of high quality and resistance, combining extraordinary manufacturing capacity with the technological efficiency of advanced systems - Breton Terastone System.

Agglo Baghin offers a range of products that have achieved an aesthetic refinement of the highest and absolute value to also be the protagonist in residential or prestigious applications.

At the same time, thanks to the very high technical characteristics that have always made it a leading product in the world, Ecostone is chosen and successfully used in the realization of important international projects exposed to intense pedestrian traffic.

The company is ISO 9001:2015 certified and, in 2013, it obtained GREEN TAG LEVEL A certification according to the A21 scheme (valid until 2014). Furthermore, all products are CE marked.



PURPOSE AND TYPE OF THE EPD

Il presente documento è una dichiarazione specifica del prodotto. L'EPD è "cradle to gate con modulo A5, C1-C4 e modulo D"; sono state quindi considerate le seguenti fasi:

- This document is a product specific declaration. The EPD is "cradle to gate with module A5, C1-C4 and module D"; the following phases were therefore considered:
- Production Phase (extraction of raw materials, including waste recycling processes and production of semi-finished products and ancillary products, as well as their packaging; transportation of raw materials to the production site; production of product constituents, including all phases; assembly of the product; packaging; waste recycling processes);
- Construction and commissioning phase (installation, auxiliary materials for installation, waste produced in the cellar, energy consumption necessary for installation)
- End of life phase (deinstallation; collection and transport; end of life treatments)
- Load and benefits beyond system boundaries.

	PRODUCTION PHASE			CONSTRUCTION PHASE		USE PHASE							END OF LIFE PHASE			RESOURCE RECOVERY PHASE	
	Procurement of raw materials	Transportation	Manufacturing	Transportation	Construction Installation	Use	Maintenance	Repair	Replacement	Renovation	Energy consumption during use	Water resource consumption during use	Deconstruction demolition	Transport	Waste treatment	Disposal	Potential for reuse - recovery - Recycling
Modules	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Declared modules	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Regionalization	IT	IT	IT										EU	EU	EU	EU	EU

Information on the LCA study

EPD type	Product specific EPD. From the cradle to the gate with modules A5, C1-C4 and module D
Geographical validity	The performances were calculated using the Agglo Baghin srl plant located in via Callalta 24/a, 31039, Riese Pio X (TV), Italy as a reference. The reference market is international.
Temporal validity	The reference time period is the calendar year 2021.
Database used	Ecoinvent 3.9.1
Software	SimaPro 9.5.0.1
Declared unit	The unit declared in the study is 1 kilogram of finished tile.
CUT-OFF rules	Cut-off raw materials were not considered.
Exclusions	<ul style="list-style-type: none"> - - Movement of employees; - - Packaging of auxiliary materials.
Allocation	The allocation is based on the mass of finished tiles produced in 2021.
Proxy data	It was possible to model all the raw materials in a timely manner, therefore proxy data were not considered.
Data quality	<ul style="list-style-type: none"> - - All manufacturing data is site-specific; - - for the production of data on raw materials, the data relating to weight, quantity and waste derive from company databases and are site-specific. The type of material and processes were taken from the Ecoinvent 3.9.1 database. - The energy purchased by the company is covered by a CERTIFICATE OF CANCELLATION OF GUARANTEES OF ORIGIN which guarantees its origin from 100% renewable sources.
Generic data	<p>The following criteria were applied when using generic data:</p> <ul style="list-style-type: none"> • geographical equivalence when possible; • technological equivalence; • equivalence with respect to system boundaries. <p>For generic data, information between 2018 and 2022 was considered.</p>

Hypotheses/scenarios – End of life phase

Modules	Scenario
C1	For the dismantling phase, diesel consumption in a construction site machine of 0.047 mJ/kg was considered.
C2	For the transport of waste to the treatment plants, a total distance of 50 km was considered.
C3	For the destination of the product that has become waste, a European scenario of destination of construction-demolition waste was considered and linked to the end of life of the masonry works, the following assumptions were considered: <ul style="list-style-type: none"> • 82,8% recycling • 5.6% backfilling • 0,6 % burning with energy recovery • 11% landfill
C4	With the same assumptions derived from the scenario used in module C3, 11% of the dismantled product was sent to landfill.
D	This module includes benefits related to material recycling. It therefore takes into consideration the products avoided thanks to recycling and backfilling considered in module C3.

DESCRIPTION OF THE PRODUCT AND THE PRODUCTION PROCESS

The products under study all belong to the Ecostone collection. Ecostone products are agglomerates based on cement, water and prestigious stone materials (marble, granite, quartz, porphyry, diorite and gravel) created through a vacuum vibro-compaction process. Ecostone products are certified for class 0 fire resistance.

Thanks to the wide range of colours, formats and surface finishes available, Ecostone is suitable for:

- floors glued to the screed;
- raised floors (external and internal);
- internal coverings;
- external coverings, both glued and with ventilated structure.

In particular, the tiles from the Ecostone collection covered by this study can be made in two sizes (40x40x1.5 cm or 60x60x2 cm) and belong to the series:

- Marble: Agglomerate tiles based on natural marble and cement stones. Made with the finest Italian marble.
- Retro Style Terrazzo: Agglomerate tiles made from natural marble and cement stones.
- Granite: Agglomerate tiles based on natural granite or basalt stone and cement.
- Venice: Agglomerate tiles made from natural stone, selected local river pebbles and cement.

TECHNICAL CHARACTERISTICS

- Colors stable under light and ultraviolet rays
- Polished or honed, calibrated and ground on the sides, bevelled edges
- Possibility of re-polishing on site
- Reaction to fire in class A1fl (non-combustible)
- High resistance to wear, compression and atmospheric agents
- Also available with non-slip surface (certified R9, R10, R13 according to DIN regulations).

CARATTERISTICHE FISICO-MECCANICHE* Secondo le normative europee / PHYSICO-MECHANICAL CHARACTERISTICS* / According to the european standards

LEGANTE / BINDER	CEMENTO PORTLAND CLASSE I / CEMENT PORTLAND CLASS I				
AGGREGATO / AGGREGATE	MARMO / MARBLE LASA	MARMO / MARBLE BOTTICINO	GHIAIA DI FIUME RIVER STONE	GRANITO / GRANITE MONTORFANO	NORME UTILIZZATE STANDARDS
RESISTENZA ALLA FLESSIONE FLEXURAL STRENGTH	$R_{tm} = 11,0$ MPa	$R_{tm} = 12,6$ MPa	$R_{tm} = 9,7$ MPa	$R_{tm} = 11,5$ MPa	EN 14617 - 2:2004
RESISTENZA ALLA COMPRESIONE RESISTANCE TO COMPRESSION	$R_m = 86$ MPa	$R_m = 71$ MPa	$R_m = 101$ MPa	$R_m = 102$ MPa	EN 14617 - 15:2005
RESISTENZA ALL'ABRASIONE RESISTANCE TO ABRASION	20,6 mm	19,2 mm	16,9 mm	15,7 mm	EN 13748 - 1:2004 / AC:2005
ASSORBIMENTO ACQUA (% IN PESO) WATER ABSORPTION (% IN WEIGHT)	$W_{m,a} 3,57$ %	$W_{m,a} 3,88$ %	$W_{m,a} 3,50$ %	$W_{m,a} 3,76$ %	EN 13748 - 1:2004 / AC:2005
REAZIONE AL FUOCO REACTION TO FIRE	CLASSE A1 _{fl}	CLASSE A1 _{fl}	CLASSE A1 _{fl}	CLASSE A1 _{fl}	EN 13748 - 1:2004 / AC:2005
RESISTENZA AL GELO/DISGELO RESISTANCE TO COLD/FREEZE	RESISTE RESISTANT	RESISTE RESISTANT	RESISTE RESISTANT	RESISTE RESISTANT	DIN-52104

*Valori medi indicativi dopo 28 giorni di stagionatura (formato 40x40x1,5 cm) **Trattandosi di un prodotto naturale, i dati relativi alle caratteristiche meccaniche di Ecostone, sono variabili a seconda della scelta cromatica (e quindi del componente naturale contenuto), in quanto questi dati si riferiscono a prove eseguite su una tipologia cromatica campione per ciascuna serie.

* Medium values after 28 days of seasoning (size 40x40x1,5 cm) **The physico-technical mechanical characteristics data indicated are related to one colour sample of each serie. Since Ecostone is a product made of natural stony components, these data various in respect to the colour choice (and to its natural stony components).

RECIPES for the production of the Tiles

SERIE RETRO STYLE TERRAZZO

	% [g/g]
Cement	16-18%
Water	5-6%
Chemical Additives	1.5-5.5% on cement weight
Inert material	73.5-80%

SERIE VENEZIA

	% [g/g]
Cement	17-19%
Water	5-6%
Chemical Additives	1,7-4,0% sul peso del cemento
Inert material	75-77%

PRODUCTIVE PROCESS

In the Agglo Baghin s.r.l. factory the production of the tiles under study takes place in via Callalta, 24/a 31039 Riese Pio X (TV), Italy. The conformation of the plant, composed of a single building, provides a single evaluation of the electrical and thermal energy consumption of the entire plant.

The tiles are manufactured in the above-mentioned factory and stored there.

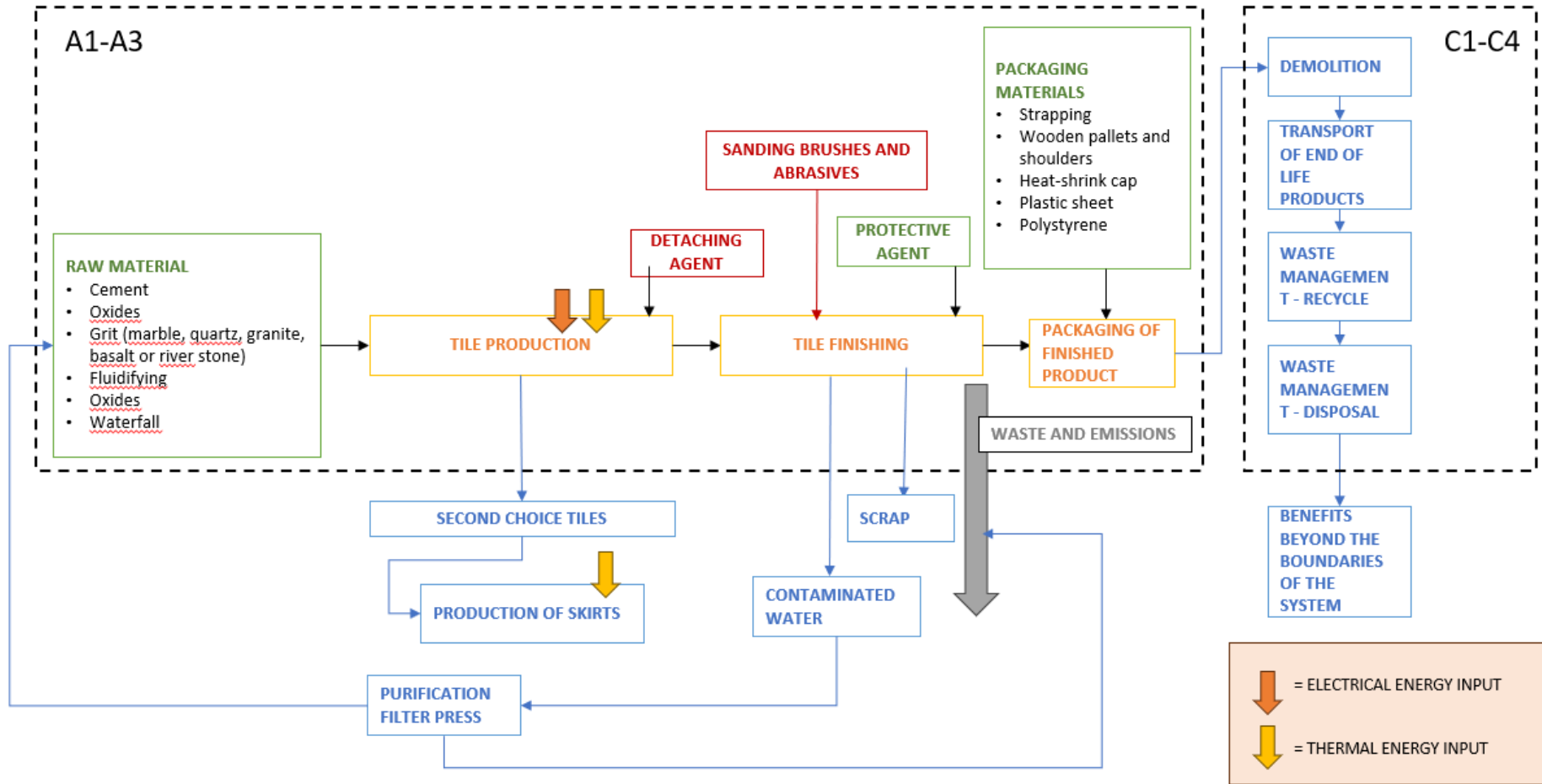
As regards the supply of raw materials, these are delivered to the production site mainly loose on trucks, alternatively also in big bags, paper bags, cardboard boxes or plastic cans. The first step in the production process for the production of tiles is the weighing of the raw materials which are placed in the mixing hoppers. Then the raw materials are mixed according to the specific recipes. The mixture is then deposited in trays, inside which it is vibro-compacted under vacuum and taken to the maturing chambers. The maturing chambers are located at a temperature between 40°C and 45°C.

The finishing phase follows (polished, honed or other depending on the customer's needs) with the processing of the entire surface of the tile aimed at correctly sizing the tile and obtaining a shiny surface. These operations involve the production of waste powders which are collected by a flow of water.

This washing water is purified by a filter press system and then reintroduced into the production cycle.

Once the tiles are dried they are subjected to a quality control. As the last finishing step, a protectant is applied to the tile.

The following figure shows a flow diagram of the production process.



Results – environmental indicators

1 kg EM10317 BIELLE (40x40*1,5cm)

Impact Category.		Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	C1-C4	D
MAIN INDICATORS	GWP	Kg CO2eq	1,64E-01	3,68E-02	-2,06E-02	1,80E-01	4,67E-03	9,43E-03	1,52E-02	6,69E-04	2,99E-02	6,12E-04
	GWP-fossil	Kg CO2eq	1,61E-01	3,67E-02	7,00E-02	2,68E-01	4,66E-03	9,42E-03	1,20E-02	6,68E-04	2,67E-02	5,71E-04
	GWP-biogenic	Kg CO2eq	2,75E-03	3,32E-05	-9,08E-02	-8,80E-02	1,07E-06	8,51E-06	3,22E-03	3,83E-07	3,23E-03	4,29E-05
	GWP-land use	Kg CO2eq	4,03E-05	1,78E-05	1,51E-04	2,09E-04	5,25E-07	4,57E-06	5,96E-06	4,04E-07	1,15E-05	-2,18E-06
	ODP	Kg CFC11 eq	2,08E-09	7,99E-10	1,19E-08	1,48E-08	7,42E-11	2,05E-10	2,16E-10	1,94E-11	5,14E-10	5,18E-11
	AP	Mol H+ eq.	4,14E-04	1,20E-04	3,40E-04	8,74E-04	4,32E-05	3,07E-05	9,73E-05	5,04E-06	1,76E-04	1,82E-05
	EP-freshwater	Kg P eq.	2,07E-05	2,57E-06	1,64E-05	3,97E-05	1,43E-07	6,59E-07	2,01E-06	5,57E-08	2,87E-06	3,59E-07
	EP-marine	Kg N eq.	1,10E-04	4,12E-05	9,57E-05	2,47E-04	2,00E-05	1,06E-05	4,15E-05	1,93E-06	7,40E-05	1,40E-05
	EP-terrestrial	Mol N eq.	1,23E-03	4,35E-04	1,01E-03	2,67E-03	2,18E-04	1,11E-04	4,47E-04	2,07E-05	7,97E-04	1,48E-04
	POCP	Kg NMVOC eq.	3,82E-04	1,79E-04	4,32E-04	9,93E-04	6,45E-05	4,59E-05	1,36E-04	7,21E-06	2,54E-04	4,18E-05
	ADPF [2]	MJ	1,08E+00	5,21E-01	1,74E+00	3,34E+00	6,11E-02	1,33E-01	1,85E-01	1,67E-02	3,96E-01	3,21E-02
	ADPE [2]	Kg Sb eq.	4,21E-07	1,18E-07	2,69E-07	8,08E-07	1,63E-09	3,02E-08	2,48E-08	9,28E-10	5,76E-08	-1,99E-08
	Water Use	m3 world eq deprived	1,35E-01	2,12E-03	6,97E-02	2,07E-01	1,32E-04	5,44E-04	2,19E-03	7,36E-04	3,60E-03	-3,84E-02
ADDITIONAL INDICATORS.	PM	disease inc.	2,93E-09	2,92E-09	1,01E-08	1,59E-08	1,21E-09	7,49E-10	1,51E-08	1,10E-10	1,72E-08	1,38E-08
	IRP [1]	kBq U235 eq.	5,92E-03	6,96E-04	6,62E-03	1,32E-02	2,90E-05	1,79E-04	8,97E-04	1,06E-05	1,11E-03	5,59E-04
	ETP-fw [2]	CTUe	3,26E-01	2,57E-01	3,41E-01	9,23E-01	2,92E-02	6,59E-02	7,86E-02	7,82E-03	1,82E-01	2,46E-03
	HTP-nc [2]	CTUh	1,26E-09	3,67E-10	6,21E-10	2,25E-09	9,93E-12	9,40E-11	6,80E-11	3,56E-12	1,75E-10	-4,27E-11
	HTP-c [2]	CTUh	4,60E-11	1,67E-11	1,40E-10	2,02E-10	1,43E-12	4,27E-12	5,26E-12	2,85E-13	1,13E-11	-3,23E-12
	SQP [2]	Pt	1,85E-01	3,10E-01	8,45E+00	8,94E+00	4,11E-03	7,95E-02	1,28E-01	3,31E-02	2,45E-01	-6,14E-01

<p>Acronymous</p>	<p>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</p> <p>PM = Particulate Matter, emissions; IRP = Ionising Radiation Potential, human health; ETP-fw = Eco-toxicity (freshwater); HTP-nc = Human Toxicity Potential, non-cancer; HTP-c = Human Toxicity Potential, cancer; SQP = Soil Quality Potential</p> <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> <p>HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Material for recycling; MER = Materials for energy recovery; EEE = Exported energy, electricity; EET = Exported energy, thermal</p>
<p>Disclaimer</p>	<p>[1] IRP: This impact category mainly concerns the possible impact of low-dose ionising radiation on human health from the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure or due to landfilling of radioactive waste in underground facilities. Potential ionising radiation from soil, radon and other building materials is also not measured by this indicator.</p> <p>[2] ADPF, ADPE, Water Use, ETP-fw, HTP-c, HTP-nc, SQP: The results of these environmental impact indicators should be used with caution as the uncertainties of these results are high or there is limited experience with these indicators.</p>

Biogenic Carbon Content

Biogenic Carbon Content	Unit (expressed per declared unit) [kg C/kg]
Biogenic Carbon Content in product	0
Biogenic Carbon Content in packaging	0,055

Bibliografia

- [1] ISO 14040: 2021 Environmental management. Life cycle assessment. Principles and framework
- [2] ISO 14044: 2021 Environmental management. Life cycle assessment. Requirements and guidelines.
- [3] UNI EN ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations - Principles and procedures
- [4] UNI EN 15804:2012 + A2:2019 Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
- [5] PCR ICMQ-001/15 rev. 3 Prodotti da costruzione e servizi per costruzione, EPDIItaly. Data di emissione: 02/12/2019
- [6] Regolamento di EPDIItaly rev. 6.0 pubblicato in data 30/10/2023
- [7] Background report: Analisi del ciclo di vita di agglomerati per pavimenti e rivestimenti interni ed esterni - Agglo Baghin s.r.l. - Novembre 2024 – 26/11/2024 – rev.04