



Environmental Product Declaration

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

Agglo

from

Ménara préfa



Programme:

Programme operator:

EPD registration number:

Publication date:

Valid until:

The International EPD® System, www.environdec.com

EPD International AB, EPD MENA

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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



General information

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	info@environdec.com

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): Product category rules (PCR): PCR 2019:14 Construction products version 1.2.5 CONCRETE AND CONCRETE ELEMENTS (EN 16757:2017) C-PCR-003 (TO PCR 2019:14) VERSION: 2019-12-20 PRODUCT GROUP CLASSIFICATION: UN CPC 375 .
PCR review was conducted by: The Technical Committee of the International EPD® System. Contact via info@environdec.com . PCR moderator Martin Erlandsson, IVL Swedish Environmental Research Institute, martin.erlandsson@ivl.se
Life Cycle Assessment (LCA)
LCA accountability: <i>Menara préfa</i>
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: Bárbara Civit Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

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.

Company information

Owner of the EPD: Ménara Préfa a

Contact : Sanaa EL GARNI; s.elgarni@menara-prefa.ma

Description of the organisation: producer of concrete products

Product-related or management system-related certifications: ISO 9001, ISO 14001, ISO 45001, ISO 5001 and conformity to the product standard

Name and location of production site(s): Km 0,5 route d'Agadir, BP 4741 , Hay Massira 40 005 Marrakech , Maroc

Product information

Product name: AGGLO

Product identification: Concrete blocks in accordance with the standard NM.10.1.009

Product description:

name	dimensions
AGGLOS CREUX TYPE 07	500X70X200
AGGLOS CREUX TYPE 10	500X100X200
AGGLOS CREUX TYPE 15	500X150X200
AGGLOS CREUX TYPE 20	500X200X200
AGGLOS CREUX TYPE 25	500X250X200

Technical information					
Fire reaction	A1				
Ressitance class	B30				
Mechanical resistance 2/28 days	(R>1,8 MPa à 2days) (R28days>=3MPa)				
Physical properties	AG07	AG10	AG15	AG20	AG25
Block dry density (kg/m3) (+/-10%)	1360	1200	1110	1000	1000
Concrete dry density (kg/m3)(+/-10%)	2320				
Lines of cavities	1	1	2	2	3
cavities	3	3	6	6	9
Surface mm2	35358	49302	74202	99102	125000
Acceptance class	(D1) : L (* 3,-5) ; (* 3,-5); H (* 3,-5)				
Nominal dimensions	490X70X190	490X100X190	490X15X190	490X20X190	490X25X190

Standard applicable	NM.10.1.009
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The indicators that will be given in the EPD are from the AG20. The additional information is applicable for the products for which the conversion factors will be given in an annex.

Products application:

These products are intended to be used in building and civil works. Can be used exposed or covered by a rendering. Can be employed in any kind of wall,

UN CPC code: 375

Geographical scope: Morocco

LCA information

Functional unit / declared unit: The declared unit of the study is the amount of blocks required to build 1 m² of wall. The mass of the product per declared unit is included in the table. The scope of the EPD is cradle to gate with modules C1–C4 and module D (A1–A3 + C + D).

Name	Dimensions	Units per F/U	Mass per F/U
AGGLOS CREUX TYPE 07	500X70X200	10	92
AGGLOS CREUX TYPE 10	500X100X200	10	98
AGGLOS CREUX TYPE 15	500X150X200	10	150
AGGLOS CREUX TYPE 20	500X200X200	10	180
AGGLOS CREUX TYPE 25	500X250X200	10	220

As per the PCR of concrete products CONCRETE AND CONCRETE ELEMENTS (EN 16757:2017) C-PCR-003 (TO PCR 2019:14) VERSION: 2019-12-20, the reference service life of the product is 50 years

Reference service life: 50 years

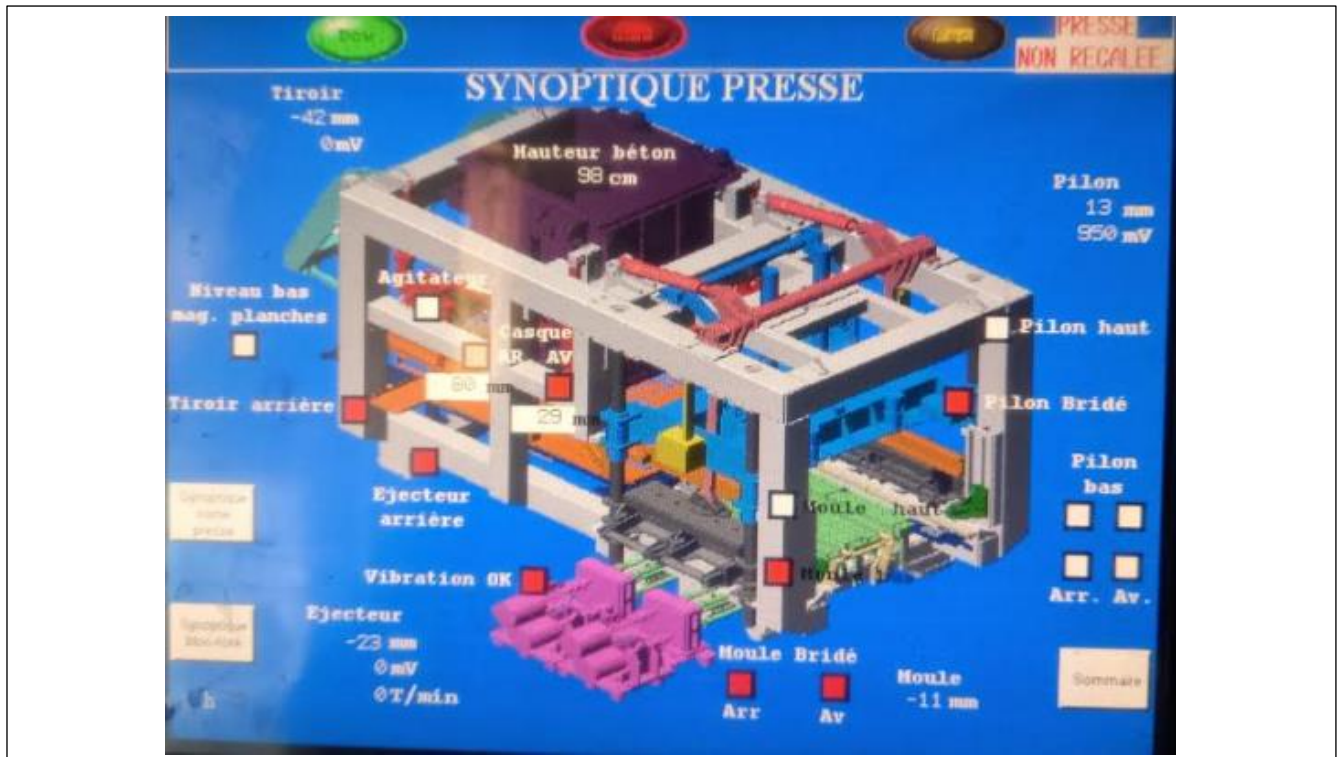
Time representativeness: The study was performed using data from 2021

Database(s) and LCA software used: One click LCA and databases from ecoinvent 3.6

Description of system boundaries:

Cradle to gate with modules C1–C4 and module D (A1–A3 + C + D). Allocation is done by mass.

System diagram:



Concrete blocks are produced using a vibrating press. These are automatic machines with a high production rate that are integrated in a production unit that includes the mixing, the press, the curing area and the conditioning. The production includes the 4 process as follows:

1) Concrete production, includes the reception of raw materials, dosing, transportation, mixing and homogenisation.

Once the concrete is ready is transported to the moulding area;

2) Fill in : the mould with a metal or wood sheet in the bottom, is filled with concrete with the support of a moving box;

3)Compacting : Concrete is compacted using the vibration of the machine;

4)Demoulding : Take the product out of the mould carefully;

5)transport : The fresh products are transported to the curing area;

6) Curing : The products stay in the curing area during 32 h until settle. After are put in pallets and stored to be commercialised.

At end of life all the products goes to landfill, not recycling, reutilisation or energy recovery is considered in this moment. The distance to landfill is the average distance to existing landfill.

More information: <https://menaraprefa.ma>

Modules declared

Product stage			Assembly stage		Use stage								End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	D	D	
x	x	x	MND	MND	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x	x	x	
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction /demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling	

MND Module not declare

Content information

Material	Weight, kg	Country / Region of origin
Cement CPA 65	6-7%	Morocco
Gravel	32-33%	Morocco
Sand (0...8 mm)	56-57%	Morocco
Water	6-7%	Morocco

Products do not contain any REACH SVHC substances in amounts greater than 0,1% (1000 ppm).

There is not secondary materials in these products.

There is not biogenic carbon in these products.

Environmental Information

LCA results of the studied product(s) are presented in the tables below:

AGGLO 20

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	C1	C2	C3	C4	D
GWP – total	kg CO ₂ e	1,3E1	1,54E0	6,43E-1	0	0	0
GWP – fossil	kg CO ₂ e	1,3E1	1,51E0	6,42E-1	0	0	0
GWP – biogenic	kg CO ₂ e	9,76E-4	1,97E-2	4,66E-4	0	0	0
GWP – LULUC	kg CO ₂ e	5,82E-3	2,02E-3	1,93E-4	0	0	0
Ozone depletion pot.	kg CFC ₁₁ e	8,71E-7	1,37E-7	1,51E-7	0	0	0
Acidification potential	mol H ⁺ e	4E-2	9,85E-3	2,7E-3	0	0	0
EP-freshwater ²⁾	kg Pe	1,79E-4	9,95E-5	5,23E-6	0	0	0
EP-marine	kg Ne	1,07E-2	2,05E-3	8,13E-4	0	0	0
EP-terrestrial	mol Ne	1,23E-1	2,7E-2	8,98E-3	0	0	0
POCP (“smog”)	kg NMVOCe	3,37E-2	6,83E-3	2,89E-3	0	0	0
ADP-minerals & metals	kg Sbe	1,07E-4	1,61E-4	1,1E-5	0	0	0
ADP-fossil resources	MJ	8,45E1	2,2E1	9,99E0	0	0	0
Water use ¹⁾	m ³ e depr.	1,11E1	2,62E0	3,72E-2	0	0	0

GWP = Global Warming Potential; EP = Eutrophication potential. EN 15804+A2 disclaimer for Abiotic depletion and Water use indicators and all optional indicators except Particulate matter and Ionizing radiation, human health: The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator. Eutrophication aquatic freshwater is calculated and reported as kg P-eq, as the referenced characterisation in EN 15804+A2 requires (“EUTREND model, Struijs et al., 2009b, as implemented in ReCiPe”) uses the unit kg P eq. The EN 15804+A2 standard reporting table mistakenly labels the data as kg PO₄ eq. Multiply by 3,07 to get PO₄e.

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	C1	C2	C3	C4	D
Renew. PER as energy	MJ	7,27E0	1,97E0	1,26E-1	0	0	0
Renew. PER as material	MJ	9,4E0	0	0	0	0	0
Total use of renew. PER	MJ	1,67E1	1,97E0	1,26E-1	0	0	0
Non-re. PER as energy	MJ	8,45E1	2,2E1	9,99E0	0	0	0
Non-re. PER as material	MJ	0	0	0	0	0	0
Total use of non-re. PER	MJ	8,45E1	2,2E1	9,99E0	0	0	0
Secondary materials	kg	1,41E-2	0	0	0	0	0
Renew. secondary fuels	MJ	0	0	0	0	0	0
Non-ren. secondary fuels	MJ	0	0	0	0	0	0
Use of net fresh water	m ³	3E-1	2,09E-1	2,08E-3	0	0	0

PER abbreviation stands for primary energy resources

END OF LIFE – WASTE

Impact category	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste	kg	2,71E-1	1,13E-1	9,71E-3	0	0	0
Non-hazardous waste	kg	1E1	4,72E0	1,07E0	0	1,77E2	0
Radioactive waste	kg	4,81E-4	1,04E-4	6,86E-5	0	0	0

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	C1	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0
Materials for recycling	kg	0	0	0	0	0	0
Materials for energy rec	kg	0	0	0	0	0	0
Exported energy	MJ	0	0	0	0	0	0

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

Impact category	Unit	A1-A3	C1	C2	C3	C4	D
Particulate matter	Incidence	4,03E-7	1,12E-7	5,81E-8	0	0	0
Ionizing radiation ³⁾	kBq U235e	4,1E-1	1,43E-1	4,37E-2	0	0	0
Ecotoxicity (freshwater)	CTUe	1,06E2	2,61E1	7,64E0	0	0	0
Human toxicity, cancer	CTUh	2,96E-9	1,34E-9	1,95E-10	0	0	0
Human tox. non-cancer	CTUh	1,17E-7	3,18E-8	9,05E-9	0	0	0
SQP	-	5,93E1	1,45E1	1,51E1	0	0	0

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

ENVIRONMENTAL IMPACTS – GWP-GHG - THE INTERNATIONAL EPD SYSTEM

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG	kg	1,3E1	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	1,51E0	6,42E-1	0E0	0E0	0E0

10) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013) This indicator is almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

Additional information

The table below present the conversion factor applicable to the products that are indicated in the definition of the product.

name	coefficient
AGGLOS CREUX TYPE 07	0.52
AGGLOS CREUX TYPE 10	0.54
AGGLOS CREUX TYPE 15	0.88
AGGLOS CREUX TYPE 20	1
AGGLOS CREUX TYPE 25	1.28

References

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

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

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

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

PCR 2019:14 Construction products version 1.2.5

CONCRETE AND CONCRETE ELEMENTS (EN 16757:2017) C-PCR-003 (TO PCR 2019:14)
VERSION: 2019-12-20