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ECO PLATFORM EPD VERIFIED

Owner:	Egernsund Wienerberger A/S: Bachmanns Teglværk
No.:	MD-22005-EN
Issued:	04-03-2022
Valid to:	04-03-2027

3rd PARTY **VERIFIED**

EPD

VERIFIED ENVIRONMENTAL PRODUCT DECLARATION | **ISO 14025 & EN 15804:2012 + A1:2013**

Owner of declaration
Egernsund Wienerberger A/S
Rørmosevej 85
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Programme operator
Danish Technological Institute
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EPD Danmark
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Declared product
The EPD covers the process of blue braising of 1 tonne of bricks. It does not include the production of the bricks.

Production site
Bachmanns Teglværk
Amtsvejen 23
6400 Sønderborg

Product use
Adding colour to bricks. The process is an additional treatment of existing bricks, for aesthetic reasons.

Declared unit
Blue braising of 1 tonne of bricks at Bachmanns Teglværk using either natural gas or certified biogas. Certified green electricity is used at production site.

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Basis of calculation
This Environmental Product Declaration is developed in accordance with ISO 14025 and EN 15804:2012 + A1:2013.

Comparability
EPDs of construction products may not be comparable if they do not comply with the requirements in EN 15804:2012 + A1:2013. EPD data may not be comparable if the datasets used are not developed in accordance with EN 15804:2012 + A1:2013 and if the background systems are not based on the same database.

Validity
This EPD has been verified in accordance with ISO 14025 and is valid for 5 years from the date of issue.

Use
The intended use of an EPD is to communicate scientifically based environmental information for construction products, for the purpose of assessing the environmental performance of buildings.

EPD type
☒Cradle-to-gate
☐Cradle-to-gate with options
☐Cradle-to-grave

CEN standard EN 15804 serves as the core PCR

Independent verification of the declaration and data, according to EN ISO 14025

☐ internal ☒ external

Third party verifier:

Ninkie Bendtsen

Martha Katrine Sørensen
EPD Danmark

Life cycle stages and modules (MND = module not declared)																
Product			Construction process		Use							End of life				Beyond the system boundary
Raw material supply	Transport	Manufacturing	Transport	Installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Re-use, recovery and recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	**X**	**X**	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**

Product information

Product description

The EPD covers the process of blue braising and re-packaging of bricks. The production of bricks are not included. Blue braising performed using green electricity and either natural gas or biogas. The packaging materials are shown in the tables below.

Packaging	Weight-% of packaging
LDPE-film	77
Plastic strap (PET)	23
TOTAL	**100**

Important notice
This EPD only covers the blue braising process. To obtain environmental impacts of a blue braised brick, this EPD must be combined with the EPD of the bricks.

Representativeness

This declaration, including data collection, the modelled foreground system and the results, represents blue braising of 1 tonne of bricks on the production site located in Nybøl, Sønderborg, Denmark. Process specific data are based on average values collected from 2020.

Background data are based on the GaBi database. Generally, the used background datasets are of high quality and less than or 5 years old. All datasets are less than 10 years old.

Dangerous substances

Blue braising do not use or create substances listed in the "Candidate List of Substances of Very High Concern for authorisation"
http://echa.europa.eu/candidate-list-table
Absence of these substances are declared by the producer.

Essential characteristics (CE)

There are no CE marking for the process and no technical standards for blue braising. The process does not change the technical specifications of the bricks.

Reference Service Life (RSL)

RSL is not relevant. Blue braising does not alter the reference service life of the bricks.

Product illustrations:

Basis brick EW2123

Blue braised product EW2704

Basis brick EW2207

Blue braised product EW2702

LCA background

Declared unit

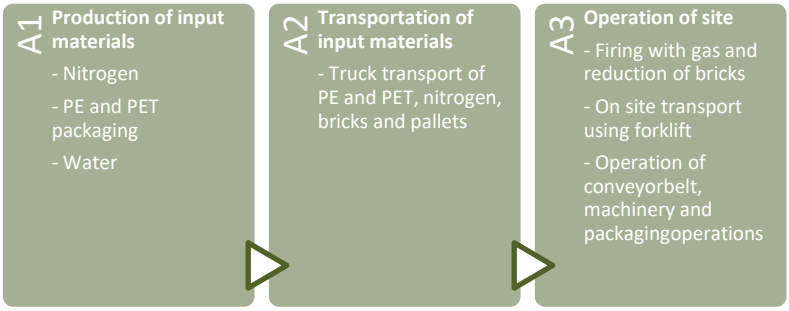
The LCI and LCIA results in this EPD relates to the blue braising of 1 ton of bricks.

Name	Value	Unit
Declared unit	1	braising
Conversion factor to 1 kg	Not applicable	-

PCR

This EPD is developed according to the core rules for the product category of construction products in EN 15804:2012 + A1:2013.

Flow diagram



System boundary

This EPD is based on a cradle-to-gate LCA (module A1-3), in which 100 weight-% has been accounted for. All relevant processes for the production are included.

The general rules for the exclusion of inputs and outputs follows the requirements in EN 15804:2012 + A1:2013, 6.3.5, where the total of neglected input flows per module shall be a maximum of 5 % of energy usage and mass and 1 % of energy usage and mass for unit processes.

Key assumptions for the system boundary are described in each life cycle phase.

Product stage (A1-A3) includes:

A1 – Extraction and processing of raw materials
A2 – Transport to the production site
A3 – Manufacturing processes

The product stage comprises the acquisition of all raw materials, products and energy, transport to the production site, packaging and waste processing up to the ”end-of-waste” state or final disposal. The LCA results are declared in aggregated form for the product stage, which means, that the sub-modules A1, A2 and A3 are declared as one module A1-A3.

The EPD covers only the process of blue braising, but considers transport of bricks from original production site as related to the blue braising process. The production of the bricks are not included.

The bricks arrives in packaging, which is removed. The bricks are packed on wooden pallets which are reused for repackaging. The impacts from the pallets are deemed to be less than 1 ‰ and they are therefore excluded. The bricks are packaged with plastic and straps, which is also included in the EPD.

Cut-off criteria

The general rules for cut-offs of inputs and outputs in the EPD follows the rules in EN 15804:2012 + A1:2013 chapter 6.3.5. The maximum cut-off of input flows for a module is 5% for energy use and mass, while it is maximum 1% for unit processes.

LCA results

ENVIRONMENTAL IMPACTS PER TONNE			
Parameter	**Unit**	**A1-A3 (Natural gas)**	**A1-A3 (Biogas)**
GWP	[kg CO_2-eq.]	2,12E+02	6,90E+01
ODP	[kg CFC11-eq.]	3,38E-12	3,73E-12
AP	[kg SO_2-eq.]	1,02E-01	8,19E-01
EP	[kg PO_4^{3-}-eq.]	2,13E-02	2,98E-01
POCP	[kg ethene-eq.]	4,78E-03	2,66E-02
ADPE	[kg Sb-eq.]	2,46E-05	2,67E-04
ADPF	[MJ]	3,60E+03	5,07E+02
Caption	GWP = Global warming potential; ODP = Ozone depletion potential; AP = Acidification potential of soil and water; EP = Eutrophication potential; POCP = Photochemical ozone creation potential; ADPE = Abiotic depletion potential for non fossil resources; ADPF = Abiotic depletion potential for fossil resources		

RESOURCE USE PER TONNE			
Parameter	**Unit**	**A1-A3 (Natural gas)**	**A1-A3 (Biogas)**
PERE	[MJ]	3,86E+02	9,75E+03
PERM	[MJ]	0,00E+00	0,00E+00
PERT	[MJ]	3,86E+02	9,75E+03
PENRE	[MJ]	3,61E+03	5,51E+02
PENRM	[MJ]	2,48E+01	2,48E+01
PENRT	[MJ]	3,64E+03	5,76E+02
SM	[kg]	0,00E+00	0,00E+00
RSF	[MJ]	3,38E+03	3,38E+03
NRSF	[MJ]	0,00E+00	0,00E+00
FW	[m^3]	4,79E-02	2,02E+00
Caption	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 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		

WASTE CATEGORIES AND OUTPUT FLOWS PER TONNE			
Parameter	**Unit**	**A1-A3 (Natural gas)**	**A1-A3 (Biogas)**
HWD	[kg]	3,47E-07	6,71E-06
NHWD	[kg]	6,31E-01	6,98E+00
RWD	[kg]	2,00E-03	1,33E-02

CRU	[kg]	0,00E+00	0,00E+00
MFR	[kg]	1,20E+00	1,20E+00
MER	[kg]	0,00E+00	0,00E+00
EEE	[MJ]	4,93E-02	4,93E-02
EET	[MJ]	1,22E-01	1,22E-01
Caption	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; EEE = Exported electrical energy; EET = Exported thermal energy		

Additional information

Indoor air

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

Soil and water

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

References

Publisher	epddanmark http://www.epddanmark.dk
Programme operator	Danish Technological Institute Gregersensvej DK-2630 Taastrup http://www.teknologisk.dk
LCA-practitioner	Danish Technological Institute Gregersensvej DK-2630 Taastrup http://www.teknologisk.dk
LCA software /background data	GaBi ts, version 10.5.0.78 GaBi ts database, version 10.5 (Content version 2021.2)
3rd party verifier	Ninkie Bendtsen NIRAS A/S Sortemosevej 19 DK-3450 Allerød www.niras.dk

General programme instructions
Version 2.0
www.epddanmark.dk

EN 15804:2012 + A1:2013
DS/EN 15804 + A1:2013 - "Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products"

EN 15942
DS/EN 15942:2011 – " Sustainability of construction works – Environmental product declarations – Communication format business-to-business"

ISO 14025
DS/EN ISO 14025:2010 – " Environmental labels and declarations – Type III environmental declarations – Principles and procedures"

ISO 14040
DS/EN ISO 14040:2008 – " Environmental management – Life cycle assessment – Principles and framework"

ISO 14044
DS/EN ISO 14044:2008 – " Environmental management – Life cycle assessment – Requirements and guidelines"