Environmental Data Sheet | Self-declaration

Self-declaration based on NSF International PCR for Portland, Blended, Masonry, Mortar, and Plastic (Stucco) Cements (version 3.1, dated September 2020)

Cemento Estructural RioClaro

Manufacturer:	(US-FL)
Declared unit:	t
Product identification:	Cemento Estructural RioClaro, 4625981
Production site(s):	Planta Rioclaro
Scope:	A1-A3, cradle-to-gate
Methodology:	GCCA's Industry EPD Tool for Cement and Concrete (V3.2), North American version
Date of issue:	2023-03-06 21:52
Comment:	This document is NOT a verified EPD but a self-declaration in EPD format. All information about goal and scope necessary for results interpretation by the EPD verifier are present in the latest version of the "LCA Model" report, available in GCCA's Industry EPD Tool. Materials incorporated to the product and packaging materials available in the tool are pre-defined. For a given material, for instance, the share of primary versus secondary cannot be specified. Any give material is either 'primary' or 'secondary, product' or 'secondary, co-product' or 'secondary, waste'. The indicator 'Use of secondary materials' is computed as 'secondary materials, product' + 'secondary, recovered materials' + 'secondary, waste'. 'Secondary materials, waste' coming into the system are considered as a waste stream and are accepted as such. Therefore, no impact from the former life is considered. 'Secondary materials, product' and 'secondary materials, recovered materials' however inherit the impact of pre-processing, consistently with the requirements of the PCR. The PCR requires that the biogenic carbon content of the product and packaging should be reported in an EPD. It is mandatory when the biogenic carbon content exceeds 5% wt. (product or packaging). The latter is calculated and reported in the tool based on the default biogenic carbon content of input materials and is taken into account in the calculation of the GWP-bio indicator as per the requirements of the PCR. **It is the responsibility of the EPD owner to report the biogenic content of the product and packaging in the EPD.** The removals and emissions associated with biogenic carbon content of the product and packaging are taken into consideration in the calculation of the GWP-bio indicator, as per the PCR. The uptake of CO2 in A1-A3 (e.g. bio-based insulation materials in precast elements or bio-based packaging materials) and reemission in A5 (packaging end-of-life) or C3-C4 (product end-of-life). The tool does not calculate the 'Radioactive waste disposed' indicator. This is due to the absence of any readily available data in LCA databases for the corresponding indicator. The latter is considered not to be significant for the sector. The 'Water deprivation potential' (WDP) indicator is characterized according to global characterization factors and not local ones. The following hypotheses apply to waste streams at the end-of-life: 1) The only materials sent to recycling are the concrete itself and the reinforcement steel when applicable. Other materials (e.g. insulation, void formers) are considered to be landfilled. We assume the recycled materials are actually recycled and accounted for as recycled material. 2) The only credit in module D therefore applies to the recycling of concrete at the end of life and the recycling of reinforcing steel at the end of life. This methodological choice is consistent with the reality of the cement and concrete industry. No allocation is applied in the GCCA tool. For instance, no allocation of impacts will be applied to excess electricity or excess heat which may result from the production of concrete or precast. Such situations are considered to be marginal and negligible when they take place. **The limitations and non-conformities above should be explicitly stated in any EPD report when applicable.**

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Core environmental impact indicators

		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-tot	kg CO_2 eq.	8.67E2 *	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GWP-bio	kg CO_2 eq.	1.4E-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ODP	kg CFC 11 eq.	9.68E-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AP	kg SO_2 eq.	1.75E0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EP	kg N eq.	1.97E0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POCP	kg O_3 eq.	3.78E1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ADPE	kg Sb eq.	2.01E-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ADPF	MJ surplus	1.96E2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*** The indicated values (gross values) include the greenhouse gas emissions from the incineration of secondary fuels at clinker production. The net GWP-tot (excluding the emissions from the incineration of secondary fuels at clinker production) is 8.6E2 kg CO2–eq. The net GWP-bio is 1.07E-1 kg CO2-eq.**

It should be noted that the net/gross differentiation applies to GWP indicators only and is ignored for other indicators where gross is applied by default.

Core environmental impact indicators	**GWP-tot** (Global warming potential) • **GWP-bio** (Global warming potential, biogenic) • **ODP** (Depletion potential of the stratospheric ozone layer) • **AP** (Acidification potential of soil and water sources) • **EP** (Eutrophication potential) • **POCP** (Photochemical oxidant creation potential) • **ADPE** (Abiotic depletion potential for non-fossil mineral resources) • **ADPF** (Abiotic depletion potential for fossil resources)

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Additional environmental impact indicators

		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PM	kg PM2.5 eq.	5.04E-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ETP	CTUe	7.34E2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HTPC	CTUh	2.95E3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HTPNC	CTUh	4.54E-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SQP	dimensionless	1.4E3	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Additional environmental impact indicators	**PM** (Potential incidence of disease due to PM emissions) • **ETP** (Potential Comparative Toxic Unit for ecosystems) • **HTPC** (Potential Comparative Toxic Unit for humans - cancer) • **HTPNC** (Potential Comparative Toxic Unit for humans - non-cancer) • **SQP** (Potential soil quality index)

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Parameters describing resource use

		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ, net calorific value	3E2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PERM	MJ, net calorific value	0E0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PERT	MJ, net calorific value	3E2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PENRE	MJ, net calorific value	4.24E3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PENRM	MJ, net calorific value	0E0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PENRT	MJ, net calorific value	4.24E3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SM	kg	5.14E0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RSF	MJ, net calorific value	1.49E1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NRSF	MJ, net calorific value	3.95E1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NFW	m^3	1.19E1	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Parameters describing resource use	**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 materials) • **RSF** (Use of renewable secondary fuels) • **NRSF** (Use of non-renewable secondary fuels) • **NFW** (Net use of fresh water)

Other environmental information describing waste categories

		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	4.97E-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NHWD	kg	1.43E0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RWD	kg	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Waste categories	**HWD** (Hazardous waste disposed) • **NHWD** (Non-hazardous waste disposed) • **RWD** (Radioactive waste disposed)

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Environmental information describing output flows

		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
CRU	kg	1.87E-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MFR	kg	0E0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MER	kg	0E0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EE	MJ per energy carrier	0E0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Output flows	**CRU** (Components for re-use) • **MFR** (Materials for recycling) • **MER** (Materials for energy recovery) • **EE** (Exported energy)

Extra indicators

		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
CC	kg CO_2 eq.	4.4E2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWRS	kg CO_2 eq.	3.33E-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWNRS	kg CO_2 eq.	6.94E0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GWP-prod	kg CO_2	0E0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GWP-pack	kg CO_2	0E0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Extra indicators	**CC** (Emissions from calcination and removals from carbonation) • **CWRS** (Emissions from combustion of secondary fuels from renewable sources used in production processes) • **CWNRS** (Emissions from combustion of secondary fuels from non-renewable sources used in production processes) • **GWP-prod** (Removals and emissions associated with biogenic carbon content of the bio-based product) • **GWP-pack** (Removals and emissions associated with biogenic carbon content of the bio-based packaging)