Environmental Product Declaration

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

HORMIGONES Y MORTEROS RMX FABRICADOS CON CEM II/B Y ÁRIDO RECICLADO
H25 (ESTÁNDAR, AGILIA, ARTEVIA),
H30 (ESTÁNDAR, AGILIA, ARTEVIA),
H35 (ESTÁNDAR, AGILIA)

from

HOLCIM ESPAÑA

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	EPD-IES-0002681
Publication date:	2021-02-04
Review date:	2024-07-30
Valid until:	2026-02-03

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

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product category rules (PCR): PCR 2019:14 Construction Products. Version 1.1, c-PCR-003 Concrete and concrete elements (EN 16757). Version 2019-12-20
PCR review was conducted by: The Technical Committee of the International EPD® System. See www.environdec.com/TC for a list of members. Review chair: Claudia A. Peña. The review panel may be contacted via the Secretariat info@environdec.com
Independent third-party verification of the declaration and data, according to ISO 14025:2006: ☐ EPD process certification ☒ EPD verification
Third party verifier: TECNALIA R&I Certificación S.L. Auditor: Cristina Gazulla Santos Accredited by: ENAC. Accreditation no.125/C-PR283
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: HOLCIM SPAIN.
Avenida de Manoteras, 20. 28050 Madrid (Spain).
https://www.holcim.es/

Contact: HOLCIM ESPAÑA
Telephone: 34 912 13 31 00
Email: marketing.spain@holcim.com

Description of the organization: Holcim is one of the world leaders in building materialsand solutions with activity in four business segments: cement, aggregate, concrete solutions and products in the field of construction. Its ambition is to lead the industry towards reducing carbon emissions and moving towards low carbon construction. With the strongest R&D areain the industry, the company seeks to promote the development and marketing of high-qualityand sustainable building materials and solutions for its customers around the world.
Holcim has five cement factories in Spain with an installed capacity of seven million tons per year, 19 concrete plants, a mortar plant, a plant for the preparation of alternative fuelsfrom waste, four terminals and two distribution centers, where about 700 employees work. The company is distinguished by having the first Laboratory with an exclusive area of alternative fuels and the first Research and Development Center for New Concrete and Mortars. Holcim contributes to global development by making significant efforts in innovation, which materialize in the creation of safe, sustainable and high-performance materials and solutions that respond to customer challenges.
Product-related or management system-related certifications:
Holcim has implemented ISO 9001 and ISO 14001 management systems.

Name and location of production site(s), all placed in Spain:

- ALCOBENDAS - Madrid
- ALGEMESI – Valencia
- ALMENARA-Castellon
- BETERA- Valencia
- COLMENAR- Madrid
- CONSTANTI- Tarragona
- FONCALENT- Madrid
- FUENCARRAL- Madrid
- LA ROCA- Barcelona
- MAJADAHONDA- Madrid
- MONTCADA- Barcelona
- PAPIOL- Barcelona
- POLOP- Valencia
- TORTOSA- Tarragona
- VALENCIA- Valencia
- VALLECAS- Madrid
- VILLAVERDE- Madrid
- ZARAGOZA- Zaragoza
- ZONA FRANCA- Barcelona

This EPD cover all concrete produced in production site listed above..

Product information

Product name: Hormigones con CEM II/B y árido reciclado H25 (Estándar, Agilia and Artevia), Hormigones con CEM II/B y árido reciclado H30 (Estándar, Agilia and Artevia), Hormigones con CEM II/B y árido reciclado H35 (Estándar, Agilia).

Product description: Holcim is a leading manufacturer and supplier of high-quality concrete, has projects and activities on road and network, collective housing.

Concrete production is a specific process: depending on the nature and quantity of each of the components (cement, aggregates, water, additives), it will have different characteristics. Once manufactured, the ready-mixed concrete is a fresh product, which must be transported and used quickly on local markets, and under optimal conditions.

Holcim´s concrete offer an outstanding combination of product quality andperformance. All manufactured products are high quality concrete, characterized by their extraordinary capacity and great finishing. Hormigones H25 (Estándar, Agilia andArtevia), H30 (Estándar, Agilia and Artevia) and H35 (Estándar and Agilia) are concrete manufactured in different factories in Spain. Products are a ready-mix concrete, as well as thatthe ranges included are structural concretes, except Artevia which is to be used in continuouspavements.

UN CPC code: 375 Articles of concrete, cement and plaster

LCA information

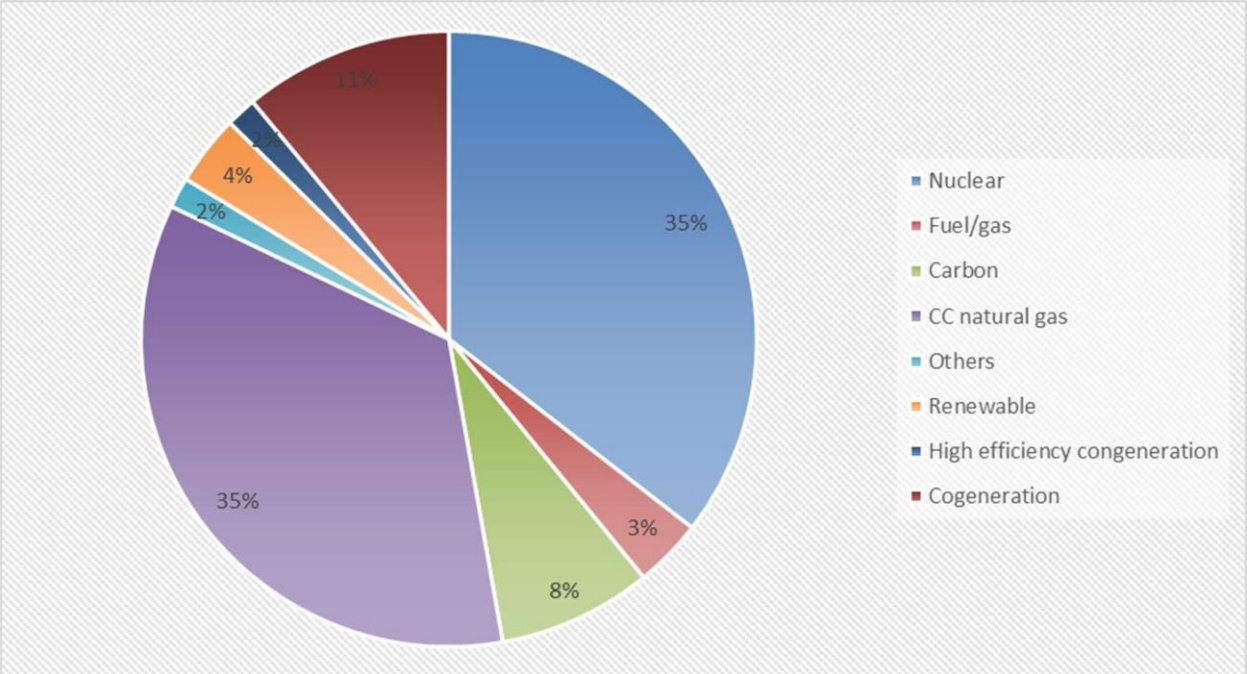
Functional unit: one m3 of ready-mix of concrete with a strength of 25 MPa, 30 MPa or 35 MPa which fulfils the requirements of technical behaviour referred to construction (strength and other technical characteristics) with a Reference Service Life of 100 years.

Type of concrete	Strength (Mpa)	Density (kg/m3)
Hnes con CEM II/B y árido reciclado H25 Estándar	25	2288
Hnes con CEM II/B y árido reciclado H30 Estándar	30	2287
Hnes con CEM II/B y árido reciclado H35 Estándar	35	2301
Hnes con CEM II/B y árido reciclado H25 AGILIA	25	2299
Hnes con CEM II/B y árido reciclado H30 AGILIA	30	2302
Hnes con CEM II/B y árido reciclado H35 AGILIA	35	2321
Hnes con CEM II/B y árido reciclado H25 Artevia	25	2298
Hnes con CEM II/B y árido reciclado H30 Artevia	30	2276

Reference service life: 100 years (as declared by the manufacturer) and recommended in c-PCR for structural concrete.

Time representativeness: data from factory (primary data) is from 2019 and residual electricity mix from Spain in 2018[1]. The products are manufactured in the manufacturing plants in Spain listed previously. The amount used of raw materials (cement, water, gravel stone), as well as energy consumption, waste production, pollutant emissions and transport distance (in A2 and A4) have been obtained from the manufacturing plants (primary data). Primary data has been obtained through an average of the different plants where each product is manufactured, weighted according to % of production of every plant (in m^3) over the total production of the company in Spain in 2019. The composition of the specific cement used for each product has been obtained also directly from the manufacturing plants and therefore corresponds to reality.
.

Residual electricity mix Spain 2018

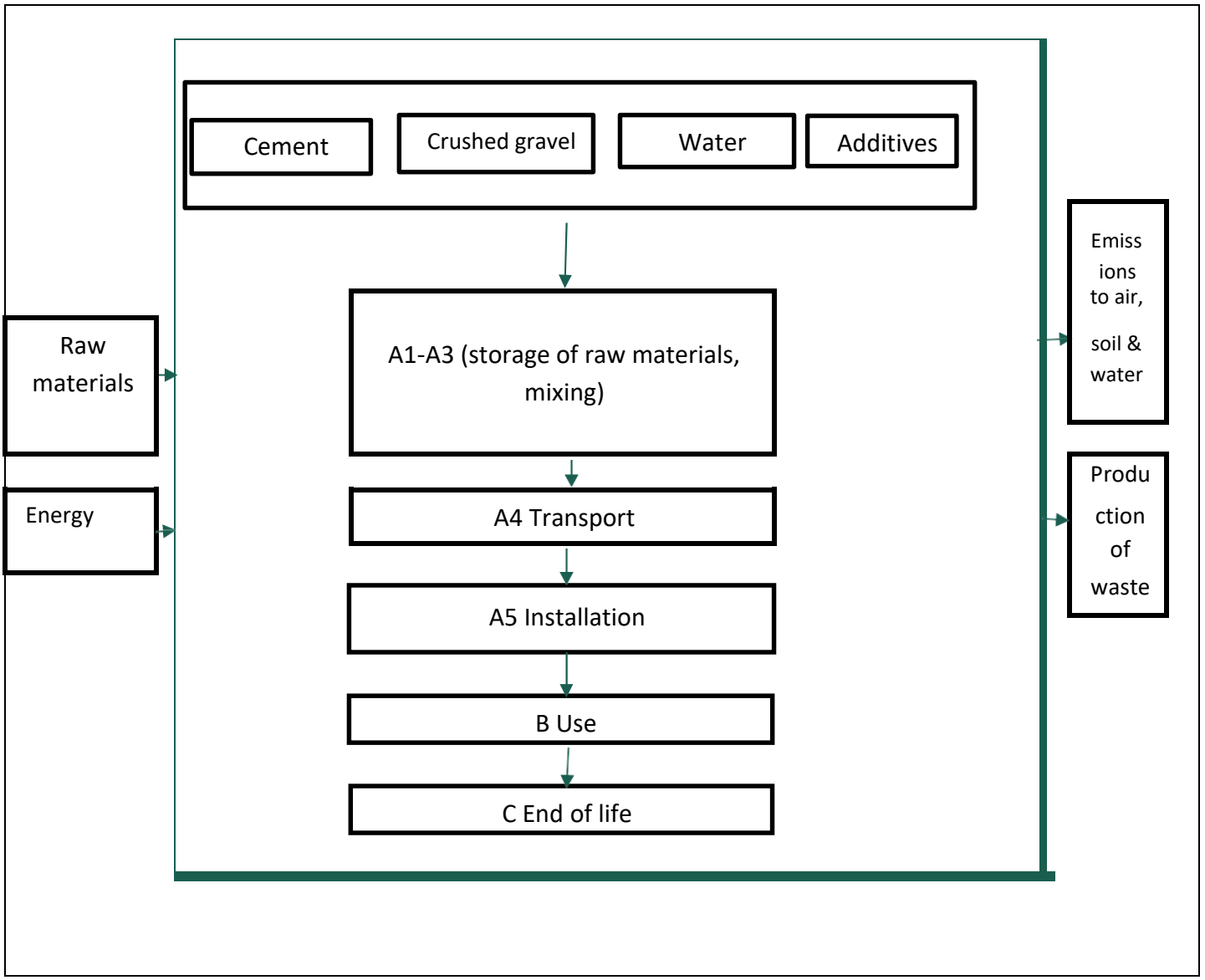


Database(s) and LCA software used: generic data on the impact per unit of matter or energy have been taken to determine emissions per kg of matter, kWh of energy or km transported. These data have been obtained from the Ecoinvent database version 3.5. (updated in <5 years) and Simapro 9.1. The impact models used are those indicated in EN 15804:2012+A2:2019

Description of system boundaries:
Cradle to grave and Module D (A+B+C+D).

[1] https://www.aib-net.org/sites/default/files/assets/facts/residual-mix/2018/AIB_2018_Residual_Mix_Results_v1_1.pdf

System diagram:



More information: www.holcim.es

- Technical support for the implementation of the EPD: Marcel Gómez Consultoría Ambiental.
- The modularity principle, as well as the polluter-payer principle have been followed.
- Variability between manufacturing plants has been assessed modelling the impact on Global Warming Potential of A1-A3 for every single plant.
- Cut off rules: according to EN 15804 a minimum of 95% of total inflows (mass and energy) per module are included and more than 99% of the inflows are accounted for.
- Allocation procedure: where necessary (energy and water consumption, waste production) an allocation based in volume has been used.
- The next processes have not been included since its impact is not significant:
    - Environmental impact from infrastructure, construction, production equipment, and tools that are not directly consumed in the production process.
    - Personnel-related impacts, such as transportation to and from work.

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

	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-construction 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
Geography	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
Specific data	More than 99% specific data is used in the EPD.					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	Less than 10% inside of every group of products					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	Less than 10 %					-	-	-	-	-	-	-	-	-	-	-	-

- **A1-A3 Product stage**
  - **A1 Raw materials supply:** this module takes into account the extraction and processing of raw materials and the energy that is produced prior to the manufacturing process under study.
  - **A2 Transport:** this module includes the transport of the different raw materials from the manufacturer to the factory. The distance and type of concrete truck for each raw material has been introduced.
  - **A3 Manufacturing:** this module includes the consumption of energy and water used during the manufacturing process, as well as the transport and management of the factory-produced waste. The manufacture of concreate consists mainly of a mixing process of different components.

- **A4-A5 Construction process stage**
  - **A4 Transport**

PARAMETER	VALUE/DESCRIPTION
Fuel type and consumption of vehicle or vehicle type used for transport e.g. long distance truck, boat, etc	Truck of 16- 32 tn. Fuel consumption: 31,1 L/100 Km
Distance	Truck: 12.16 Km
Capacity utilisation (including empty returns)	100%
Bulk density of transported products*	Expressed in LCA information section
Volume capacity utilisation factor	1

  - **A5 Construction/Installation**

The product is directly transferred from the truck to the construction site.

PARAMETER	VALUE/DESCRIPTION
Auxiliary materials for installation	No auxiliary material used
Use of water	Not used
Use of other resources	No other resource consumption
Quantitative description of the type of energy (regional mix) and the consumption during the installation process	Not used
Wastage of materials on the building site before waste processing, generated by the product's installation (specified by type)	Product losses (2%)

- **B Use stage:** the products fix CO2 by carbonatation during the use phase (B1), and do not require maintenance (B2), repair (B3), replacement (B4), refurbishment (B5), operational energy use (B6) or operational water use (B7) during its Reference Service Life. CO2 fixed by carbonatation of cement during the use phase has been included as required in c-PCR, following the methodology explained in EN 16757[2].

$$CO2\ uptake = k * (\frac{\sqrt{t}}{1000}) * Utcc * C * Dc$$

[2] **UNE-EN 16757:2018.** Sustainability of construction works - Environmental product declarations - Product Category Rules for concrete and concrete elements

Where:
K:K factor, mm of carbonatation/year^{0,5}
Utcc: maximum theoretical uptake in g CO2/Kg of cementC:cement content in kg/m^3 of concrete
Dc: degree of carbonation

A hypothesis is made where only one face of one m^3 of concrete is in contact with air, being the other 3 faces not in contact with air.

- **C End of life stage**
  - **C1 Deconstruction/demolition:** the use of diesel during the demolition process has been included.
  - **C2 Transport to waste processing:** the model use for the transportation (see A4, transportation to the building site) is applied.
  - **C3 Waste processing for reuse, recovery and/or recycling:** the product is 89% recycled[3].
  - **C4 Disposal:** the product is 11% landfilled.

PARAMETER	VALUE/DESCRIPTION
Collection process specified by type	The product is collected mixed with construction waste
Recovery system specified by type	89% recycled
Disposal specified by type	11% landfill
Assumptions for scenario development (e.g. transportation)	16-32 tn truck. Fuel consumption: 25 l/100 Km Distance: 50 km

- **D Reuse-Recovery-Recycling potential**

The product is recycled in 89%[3]

As a consequence, the module D has been calculated,where the results of recycling (avoided product) is crushed gravel..

[3] https://ec.europa.eu/eurostat/documents/2995521/9629294/8-04032019-BP-EN.pdf/295c2302-4ed1-45b9-af86-96d1bbb7acb1

Content information

Hormigones con CEM II/B y árido reciclado H25 Estándar

Product components	Weight, kg	Post-consumer material, weight-%	Renewable material, weight-%
CEM II/B	200-350	0	0
Crushed Gravel	1800-2100	100	0
Water	100-250	[4]*	100
Additives	0-50	0	0
TOTAL	2288	82	7

Hormigones con CEM II/B y árido reciclado H30 estándar

Product components	Weight, kg	Post-consumer material, weight-%	Renewable material, weight-%
CEM II/B	200-350	0	0
Crushed Gravel	1700-2000	100	0
Water	100-250	[4]*	100
Additives	0-50	0	0
Total	2287	81	7

Hormigones con CEM II/B y árido reciclado H35 Estándar

Product components	Weight, kg	Post-consumer material, weight-%	Renewable material, weight-%
CEM II/B	200-400	0	0
Crushed Gravel	1600-2000	100	0
Water	100-250	[4]*	100
Additives	0-50	0	0
TOTAL	2301	79	7

[4] The product contains a significant amount ofcleaning recycled water with origin on harvested rain water and of the transport trucks.

Hormigones con CEM II/B y árido reciclado H25 Agilia

Product components	Weight, kg	Post-consumer material, weight-%	Renewable material, weight-%
CEM II/B	300-400	0	0
Crushed gravel	1600-200	100	0
Water	100-250	4*	100
Additives	0-50	0	0
TOTAL	2299	69	7

Hormigones con CEM II/B y árido reciclado H30 Agilia

Product components	Weight, kg	Post-consumer material, weight-%	Renewable material, weight-%
CEM II/B	200-400	0	0
Crushed gravel	1400-1800	100	0
Water	100-200	4*	100
Additives	0-50	0	0
TOTAL	2302	69	8

Hormigones con CEM II/B y árido reciclado H35 Agilia

Product components	Weight, kg	Post-consumer material, weight-%	Renewable material, weight-%
CEM II/B	200-400	0	0
Crushed gravel	1500-1900	100	0
Water	100-250	4*	100
Additives	0-50	0	0
TOTAL	2321	69	8

Hormigones con CEM II/B y árido reciclado H25 Artevia

Product components	Weight, kg	Post-consumer material, weight-%	Renewable material, weight-%
CEM II/B	200-350	0	0
Crushed gravel	1700-2000	100	0
Water	100-300	[4]*	100
Additives	0-50	0	0
TOTAL	2298	81	7

Hormigones con CEM II/B y árido reciclado H30 Artevia

Product components	Weight, kg	Post-consumer material, weight-%	Renewable material, weight-%
CEM II/B	200-400	0	0
Crushed gravel	1800-2100	100	0
Water	100-300	[4]*	100
Additives	0-50	0	0
TOTAL	2276	80	7

During the life cycle of the product any hazardous substance listed in the “Candidate List of Substances of Very High Concern (SVHC) for authorization” has not been used in a percentage higher than 0,1% of the weight of the product.

Environmental Information- results are by m^3 of product

Estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

Hormigones con CEM II/B y árido reciclado H 25 Estándar

Potential environmental impact – mandatory indicators according to EN 15804

Results per Functional Unit																
Indicator	**Unit**	**Tot.A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	1,89E+02	4,16E+00	4,48E+00	-3,11E+00	0	0	0	0	0	0	9,27E+00	1,86E+01	0	9,12E+00	-7,28E+00
GWP-biogenic	kg CO_2 eq.	5,91E-02	1,29E-03	1,53E-03	0	0	0	0	0	0	0	1,63E-03	5,78E-03	0	7,76E-03	-2,61E-02
GWP-luluc	kg CO_2 eq.	1,95E-02	1,21E-03	5,87E-04	0	0	0	0	0	0	0	7,87E-04	5,43E-03	0	1,48E-03	-1,13E-02
GWP-total	kg CO_2 eq.	1,89E+02	4,16E+00	4,48E+00	-3,11E+00	0	0	0	0	0	0	9,27E+00	1,86E+01	0	9,13E+00	-7,32E+00
ODP	kg CFC 11 eq.	9,41E-06	9,54E-07	3,86E-07	0	0	0	0	0	0	0	2,09E-06	4,26E-06	0	4,52E-06	-1,71E-07
AP	mol H^+ eq.	4,91E-01	1,70E-02	1,36E-02	0	0	0	0	0	0	0	9,71E-02	7,61E-02	0	8,98E-02	-4,11E-02
EP-freshwater	kg PO_4^{3-} eq.	5,46E-02	2,20E-03	1,60E-03	0	0	0	0	0	0	0	1,50E-02	9,84E-03	0	1,29E-02	-3,93E-03
EP-freshwater	kg P eq	1,76E-03	6,16E-05	4,52E-05	0	0	0	0	0	0	0	7,08E-05	2,75E-04	0	1,18E-04	-6,23E-04
EP-marine	kg N eq.	1,26E-01	4,92E-03	3,72E-03	0	0	0	0	0	0	0	4,21E-02	2,20E-02	0	3,26E-02	-2,96E-03
EP-terrestrial	mol N eq.	1,51E+00	5,49E-02	4,37E-02	0	0	0	0	0	0	0	4,63E-01	2,45E-01	0	3,64E-01	-6,97E-02
POCP	kg NMVOC eq.	3,80E-01	1,66E-02	1,16E-02	0	0	0	0	0	0	0	1,27E-01	7,44E-02	0	1,03E-01	-1,15E-02
ADP-minerals&metals*	kg Sb eq.	5,59E-05	1,23E-05	2,78E-06	0	0	0	0	0	0	0	3,09E-06	5,52E-05	0	9,75E-06	-7,96E-05
ADP-fossil*	MJ	9,95E+02	6,34E+01	3,31E+01	0	0	0	0	0	0	0	1,34E+02	2,83E+02	0	3,02E+02	-8,61E+01
WDP	m^3	2,49E+01	4,31E-01	5,77E-01	0	0	0	0	0	0	0	7,23E-01	1,93E+00	0	1,27E+00	-1,32E+01
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.*

Potential environmental impact – additional mandatory and voluntary indicators

Results per Functional Unit															
Indicator	**Unit**	**Tot.A 1-A3**	**A4**	**A5**	**B1**	**B2**	**B 3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[5]	kg CO_2 eq.	1,89E +02	4,16 E+00	4,48 E+0 0	- 3,11 E+00	0	0	0	0	0	0	9,27E+0 0	1,86E+0 1	0	9,12E+ 00	-7,28E+00

Use of resources

Results per Functional Unit																
Indicator	**Unit**	**Tot.A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	3,17E+ 01	6,67E- 01	8,33E- 01	0	0	0	0	0	0	0	7,3 4E -01	2,98E+ 00	0	3,95E+0 0	- 2,09E +01
PERM	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERT	MJ	3,17E+ 01	6,67E- 01	8,33E- 01	0	0	0	0	0	0	0	7,3 4E -01	2,98E+ 00	0	3,95E+0 0	- 2,09E +01
PENRE	MJ	1,05E+ 03	6,73E+ 01	3,51E+ 01	0	0	0	0	0	0	0	1,3 4E +0 2	3,01E+ 02	0	3,20E+0 2	- 9,15E +01
PENRM	MJ.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PENRT	MJ	1,05E+ 03	6,73E+ 01	3,51E+ 01	0	0	0	0	0	0	0	1,3 4E +0 2	3,01E+ 02	0	3,20E+0 2	- 9,15E +01
SM	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m^3	2,03E+ 00	1,19E- 02	5,20E- 02	0	0	0	0	0	0	0	1,4 1E -02	5,30E- 02	0	3,40E-01	- 2,38E +00
Acronyms	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 ofsecondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water															

[5] The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

Waste production and output flows

Waste production

Results per Functional Unit															
Indicator	**Unit**	**Tot.A 1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	6,52E-04	4,00E-05	1,91 E-05	0	0	0	0	0	0	0	5,98E-05	1,79E-04	0	1,03E-04	-4,59E-04
Non-hazardous waste disposed	kg	1,39E +01	2,98E +00	4,63 E+01	0	0	0	0	0	0	0	1,43E-01	1,33E +01	0	2,52E +02	-3,97E+00
Radioactive waste disposed	kg	7,69E-03	4,29E-04	2,39 E-04	0	0	0	0	0	0	0	9,31E-04	1,92E-03	0	2,06E-03	-5,03E-04

Other output flows

Results per Functional Unit																
Indicator	**Unit**	**Tot. A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for recycling	kg	0	0	0	0	0	0	0	0	0	0	0	0	2,04 E+03	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Information on biogenic carbon content

Results per Functional Unit		
BIOGENIC CARBON CONTENT	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO_2.

Environmental Information- results are by m³ of product

Hormigones con CEM II/B y árido reciclado H30 Estándar

Potential environmental impact – mandatory indicators according to EN 15804

Results per Functional Unit

Indicator	Unit	Tot.A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	2,19E+02	4.40E+00	5,06E+00	-3,67E+00	0	0	0	0	0	0	9,27E+00	1.93E+01	0	1.00E+01	-1,66E+01
GWP-biogenic	kg CO_2 eq.	5,13E-02	1.37E-03	1,38E-03	0	0	0	0	0	0	0	1,63E-03	6.01E-03	0	8.53E-03	-5,96E-02
GWP-luluc	kg CO_2 eq.	1,59E-02	1.28E-03	5,08E-04	0	0	0	0	0	0	0	7,87E-04	5.64E-03	0	1.62E-03	-2,59E-02
GWP-total	kg CO_2 eq.	2,19E+02	4.40E+00	5,06E+00	-3,67E+00	0	0	0	0	0	0	9,27E+00	1.93E+01	0	1.00E+01	-1,67E+01
ODP	kg CFC 11 eq.	1,02E-05	1.01E-06	4,15E-07	0	0	0	0	0	0	0	2,09E-06	4.43E-06	0	4.97E-06	-3,92E-07
AP	mol H^+ eq.	5,47E-01	1.80E-02	1,49E-02	0	0	0	0	0	0	0	9,71E-02	7.91E-02	0	9.87E-02	-9,41E-02
EP-freshwater	kg PO_4^{3-} eq.	6,00E-02	2.33E-03	1,74E-03	0	0	0	0	0	0	0	1,50E-02	1.02E-02	0	1.41E-02	-8,98E-03
EP-freshwater	kg P eq	1,97E-03	6.52E-05	4,91E-05	0	0	0	0	0	0	0	7,08E-05	2.86E-04	0	1.30E-04	-1,42E-03
EP-marine	kg N eq.	1,40E-01	5.20E-03	4,10E-03	0	0	0	0	0	0	0	4,21E-02	2.28E-02	0	3.58E-02	-6,76E-03
EP-terrestrial	mol N eq.	1,67E+00	5.81E-02	4,78E-02	0	0	0	0	0	0	0	4,63E-01	2.55E-01	0	4.00E-01	-1,59E-01
POCP	kg NMVOC eq.	4,30E-01	1.76E-02	1,28E-02	0	0	0	0	0	0	0	1,27E-01	7.73E-02	0	1.14E-01	-2,63E-02
ADP-minerals&metals*	kg Sb eq.	4,89E-05	1.31E-05	2,60E-06	0	0	0	0	0	0	0	3,09E-06	5.73E-05	0	1.07E-05	-1,82E-04
ADP-fossil*	MJ	1,18E+03	6.71E+01	3,75E+01	0	0	0	0	0	0	0	1,34E+02	2.94E+02	0	3.31E+02	-1,97E+02
WDP	m^3	2,82E+01	6.52E-05	6,44E-01	0	0	0	0	0	0	0	7,23E-01	2.00E+00	0	1.40E+00	-3,02E+01
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.*

Potential environmental impact – additional mandatory and voluntary indicators

Results per Functional Unit															
Indicator	**Unit**	**Tot.A 1-A3**	**A4**	**A5**	**B1**	**B2**	**B 3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[6]	kg CO_2 eq.	2,19E +02	4.40 E+00	5,06 E+0 0	- 3,67 E+00	0	0	0	0	0	0	9,27E+0 0	1,93E+0 1	0	1,00E+ 01	-1,66E+01

Use of resources

Results per Functional Unit																
Indicator	**Unit**	**Tot.A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	2,59E+ 01	7.06E- 01	7,16E- 01	0	0	0	0	0	0	0	7,77E- 01	3.10E+0 0	0	4.34E+0 0	- 2,08E +01
PERM	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERT	MJ	2,59E+ 01	7.06E- 01	7,16E- 01	0	0	0	0	0	0	0	7,77E- 01	3.10E+0 0	0	4.34E+0 0	- 2,08E +01
PENRE	MJ	1,24E+ 03	7.12E+ 01	3,98E+ 01	0	0	0	0	0	0	0	1,42E +02	3.12E+0 2	0	3.52E+0 2	- 2,09E +02
PENRM	MJ.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PENRT	MJ	1,24E+ 03	7.12E+ 01	3,98E+ 01	0	0	0	0	0	0	0	1,42E +02	3.12E+0 2	0	3.52E+0 2	- 2,09E +02
SM	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m^3	1,50E+ 00	1.25E- 02	4,18E- 02	0	0	0	0	0	0	0	1,41E- 02	5.51E- 02	0	3.73E-01	- 2,38E +00
Acronyms	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															

[6] The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

Waste production and output flows

Waste production

Results per Functional Unit															
Indicator	**Unit**	**Tot.A 1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	4,73E-04	4,23E-05	1,64 E-05	0	0	0	0	0	0	0	5,98E-05	1,86E-04	0	1,13E-04	-4,58E-04
Non-hazardous waste disposed	kg	2,26E +01	3,15E +00	4,73 E+01	0	0	0	0	0	0	0	1,43E-01	1,38E +01	0	2,52E +02	-3,96E+00
Radioactive waste disposed	kg	5,80E -03	4,54E-04	2,11 E-04	0	0	0	0	0	0	0	9,31E-04	1,99E-03	0	2,27E-03	-5,02E-04

Other output flows

Results per Functional Unit																
Indicator	**Unit**	**Tot. A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for recycling	kg	0	0	0	0	0	0	0	0	0	0	0	0	2,04 E+03	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Information on biogenic carbon content

Results per Functional Unit		
BIOGENIC CARBON CONTENT	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO_2.

Environmental Information- results are by m^3 of product

Hormigones con CEM II/B y árido reciclado H35 Estándar

Potential environmental impact – mandatory indicators according to EN 15804

Results per Functional Unit

Indicator	Unit	Tot.A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	2,21E+02	4,40E+00	6,88E+00	-4,16E+00	0	0	0	0	0	0	9,32E+00	1,93E+01	0	9,84E+00	-1,67E+01
GWP-biogenic	kg CO_2 eq.	6,25E-02	1,37E-03	2,22E-03	0	0	0	0	0	0	0	1,64E-03	6,01E-03	0	8,38E-03	-6,00E-02
GWP-luluc	kg CO_2 eq.	1,69E-02	1,29E-03	7,24E-04	0	0	0	0	0	0	0	7,92E-04	5,64E-03	0	1,59E-03	-2,60E-02
GWP-total	kg CO_2 eq.	2,21E+02	4,40E+00	6,88E+00	-4,16E+00	0	0	0	0	0	0	9,32E+00	1,93E+01	0	9,85E+00	-1,68E+01
ODP	kg CFC 11 eq.	8,97E-06	1,01E-06	4,69E-07	0	0	0	0	0	0	0	2,11E-06	4,43E-06	0	4,88E-06	-3,94E-07
AP	mol H^+ eq.	5,51E-01	1,80E-02	1,96E-02	0	0	0	0	0	0	0	9,77E-02	7,91E-02	0	9,69E-02	-9,47E-02
EP-freshwater	kg PO_4^{3-} eq.	6,03E-02	2,33E-03	2,25E-03	0	0	0	0	0	0	0	1,51E-02	1,00E-02	0	1,39E-02	-9,04E-03
EP-freshwater	kg P eq	2,09E-03	6,53E-05	6,82E-05	0	0	0	0	0	0	0	7,12E-05	2,81E-04	0	1,28E-04	-1,43E-03
EP-marine	kg N eq.	1,38E-01	5,20E-03	5,20E-03	0	0	0	0	0	0	0	4,23E-02	2,24E-02	0	3,52E-02	-6,80E-03
EP-terrestrial	mol N eq.	1,66E+00	5,81E-02	6,14E-02	0	0	0	0	0	0	0	4,65E-01	2,50E-01	0	3,93E-01	-1,60E-01
POCP	kg NMVOC eq.	4,14E-01	1,76E-02	1,59E-02	0	0	0	0	0	0	0	1,28E-01	7,59E-02	0	1,12E-01	-2,64E-02
ADP-minerals&metals*	kg Sb eq.	5,96E-05	1,31E-05	3,24E-06	0	0	0	0	0	0	0	3,11E-06	5,63E-05	0	1,05E-05	-1,83E-04
ADP-fossil*	MJ	1,06E+03	6,71E+01	4,40E+01	0	0	0	0	0	0	0	1,35E+02	2,89E+02	0	3,25E+02	-1,98E+02
WDP	m^3	2,89E+01	4,57E-01	8,79E-01	0	0	0	0	0	0	0	7,27E-01	1,97E+00	0	1,37E+00	-3,04E+01
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.*

Potential environmental impact – additional mandatory and voluntary indicators

Results per Functional Unit															
Indicator	**Unit**	**Tot.A 1-A3**	**A4**	**A5**	**B1**	**B2**	**B 3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[7]	kg CO_2 eq.	2,21E +02	4,40 E+00	6,88 E+0 0	- 4,16 E+00	0	0	0	0	0	0	9,32E+0 0	1,93E+0 1	0	9,84E+ 00	-1,67E+01

Use of resources

Results per Functional Unit																
Indicator	**Unit**	**Tot.A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B 7**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	2,73E+ 01	7,06E- 01	1,08E+ 00	0	0	0	0	0	0	0	7,81E- 01	3,04E+ 00	0	4,27E+0 0	- 2,10E +01
PERM	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERT	MJ	2,73E+ 01	7,06E- 01	1,08E+ 00	0	0	0	0	0	0	0	7,81E- 01	3,04E+ 00	0	4,27E+0 0	- 2,10E +01
PENRE	MJ	1,12E+ 03	7,12E+ 01	4,66E+ 01	0	0	0	0	0	0	0	1,43E +02	3,07E+ 02	0	3,45E+0 2	- 2,10E +02
PENRM	MJ.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PENRT	MJ	1,12E+ 03	7,12E+ 01	4,66E+ 01	0	0	0	0	0	0	0	1,43E +02	3,07E+ 02	0	3,45E+0 2	- 2,10E +02
SM	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m^3	1,57E+ 00	1,26E- 02	6,54E- 02	0	0	0	0	0	0	0	1,42E- 02	5,41E- 02	0	3,66E-01	- 2,39E +00
Acronyms	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															

[7] The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

Waste production and output flows

Waste production

Results per Functional Unit															
Indicator	**Unit**	**Tot.A 1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	6,52E-04	4,23E-05	1,91 E-05	0	0	0	0	0	0	0	6,01E-05	1,82E-04	0	1,11E-04	-4,61E-04
Non-hazardous waste disposed	kg	1,39E +01	3,15E +00	4,63 E+01	0	0	0	0	0	0	0	1,44E-01	1,36E +01	0	2,53E +02	-3,99E+00
Radioactive waste disposed	kg	7,69E -03	4,54E-04	2,39 E-04	0	0	0	0	0	0	0	9,36E-04	1,95E-03	0	2,23E-03	-5,05E-04

Other output flows

Results per Functional Unit																
Indicator	**Unit**	**Tot. A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for recycling	kg	0	0	0	0	0	0	0	0	0	0	0	0	2,04 E+03	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Information on biogenic carbon content

Results per Functional Unit		
BIOGENIC CARBON CONTENT	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO_2.

Environmental Information- results are by m^3 of product

Hormigones con CEM II/B y árido reciclado H25 Agilia

Potential environmental impact – mandatory indicators according to EN 15804

Results per Functional Unit																
Indicator	**Unit**	**Tot.A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	2,27E+02	5,02E+00	5,87E+00	-4,13E+00	0	0	0	0	0	0	9,31E+00	1,93E+01	0	9,84E+00	-1,67E+01
GWP-biogenic	kg CO_2 eq.	5,25E-02	1,56E-03	1,91E-03	0	0	0	0	0	0	0	1,64E-03	6,01E-03	0	8,38E-03	-5,99E-02
GWP-luluc	kg CO_2 eq.	1,55E-02	1,47E-03	7,32E-04	0	0	0	0	0	0	0	7,91E-04	5,64E-03	0	1,59E-03	-2,60E-02
GWP-total	kg CO_2 eq.	2,27E+02	5,03E+00	5,88E+00	-4,13E+00	0	0	0	0	0	0	9,32E+00	1,93E+01	0	9,85E+00	-1,68E+01
ODP	kg CFC 11 eq.	1,11E-05	1,15E-06	4,60E-07	0	0	0	0	0	0	0	2,10E-06	4,43E-06	0	4,88E-06	-3,94E-07
AP	mol H^+ eq.	5,77E-01	2,06E-02	1,73E-02	0	0	0	0	0	0	0	9,76E-02	7,91E-02	0	9,69E-02	-9,46E-02
EP-freshwater	kg PO_4^{3-} eq.	6,19E-02	2,66E-03	1,98E-03	0	0	0	0	0	0	0	1,51E-02	9,82E-03	0	1,36E-02	-9,03E-03
EP-freshwater	kg P eq	2,10E-03	7,45E-05	5,70E-05	0	0	0	0	0	0	0	7,11E-05	2,75E-04	0	1,25E-04	-1,43E-03
EP-marine	kg N eq.	1,45E-01	5,94E-03	4,68E-03	0	0	0	0	0	0	0	4,23E-02	2,19E-02	0	3,44E-02	-6,80E-03
EP-terrestrial	mol N eq.	1,72E+00	6,63E-02	5,50E-02	0	0	0	0	0	0	0	4,65E-01	2,45E-01	0	3,84E-01	-1,60E-01
POCP	kg NMVOC eq.	4,68E-01	2,01E-02	1,50E-02	0	0	0	0	0	0	0	1,28E-01	7,43E-02	0	1,09E-01	-2,64E-02
ADP-minerals&metals*	kg Sb eq.	4,80E-05	1,49E-05	2,61E-06	0	0	0	0	0	0	0	3,11E-06	5,51E-05	0	1,03E-05	-1,83E-04
ADP-fossil*	MJ	1,52E+03	7,66E+01	4,74E+01	0	0	0	0	0	0	0	1,35E+02	2,83E+02	0	3,19E+02	-1,98E+02
WDP	m^3	3,47E+01	5,21E-01	8,37E-01	0	0	0	0	0	0	0	7,26E-01	1,93E+00	0	1,34E+00	-3,04E+01
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.*

Potential environmental impact – additional mandatory and voluntary indicators

Results per Functional Unit															
Indicator	**Unit**	**Tot.A 1-A3**	**A4**	**A5**	**B1**	**B2**	**B 3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[8]	kg CO_2 eq.	2,27E +02	5,02 E+00	5,87 E+0 0	- 4,13 E+00	0	0	0	0	0	0	9,31E+0 0	1,93E+0 1	0	9,84 E+00	-1,67E+01

Use of resources

Results per Functional Unit																
Indicator	**Unit**	**Tot.A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	2,53E+ 01	8,06E-01	1,16E+ 00	0	0	0	0	0	0	0	1,43E+0 2	2,98E +00	0	4,17E+0 0	- 9,11E +00
PERM	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERT	MJ	2,53E+ 01	8,06E-01	1,16E+ 00	0	0	0	0	0	0	0	1,43E+0 2	3,04E +00	0	4,27E+0 0	- 9,11E +00
PENRE	MJ	1,62E+ 03	8,13E+ 01	5,04E+ 01	0	0	0	0	0	0	0	7,80E-01	3,00E +02	0	3,38E+0 2	-- 2,10E +02
PENRM	MJ.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PENRT	MJ	1,62E+ 03	8,13E+ 01	5,04E+ 01	0	0	0	0	0	0	0	7,80E-01	3,00E +02	0	3,38E+0 2	-- 2,10E +02
SM	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m^3	1,38E+ 00	1,43E-02	7,64E-02	0	0	0	0	0	0	0	1,42E-02	3,59E -01	0	3,66E-01	- 2,39E +00
Acronyms	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															

[8] The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

Waste production and output flows

Waste production

Results per Functional Unit															
Indicator	**Unit**	**Tot.A 1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	5,44E-04	4,83E-05	1,93 E-05	0	0	0	0	0	0	0	6,01E-05	1,78E-04	0	1,09E-04	-4,61E-04
Non-hazardous waste disposed	kg	2,29E+01	3,60E+00	4,54 E+01	0	0	0	0	0	0	0	1,44E-01	1,33E+01	0	2,52E+02	-3,99E+00
Radioactive waste disposed	kg	5,76E-03	5,18E-04	2,30 E-04	0	0	0	0	0	0	0	9,36E-04	1,91E-03	0	2,18E-03	-5,05E-04

Other output flows

Results per Functional Unit																
Indicator	**Unit**	**Tot. A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for recycling	kg	0	0	0	0	0	0	0	0	0	0	0	0	2,04 E+03	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Information on biogenic carbon content

Results per Functional Unit		
BIOGENIC CARBON CONTENT	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO_2.

Environmental Information- results are by m^3 of product

Hormigones con CEM II/B y árido reciclado H30 Agilia

Potential environmental impact – mandatory indicators according to EN 15804

Results per Functional Unit

Indicator	Unit	Tot.A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	2,53E+02	4,59E+00	5,73E+00	-3,98E+00	0	0	0	0	0	0	9,33E+00	1,91E+01	0	9,92E+00	-1,68E+01
GWP-biogenic	kg CO_2 eq.	6,16E-02	1,43E-03	1,55E-03	0	0	0	0	0	0	0	1,64E-03	5,95E-03	0	8,45E-03	-6,00E-02
GWP-luluc	kg CO_2 eq.	1,95E-02	1,34E-03	5,61E-04	0	0	0	0	0	0	0	7,92E-04	5,58E-03	0	1,61E-03	-2,60E-02
GWP-total	kg CO_2 eq.	2,53E+02	4,60E+00	5,74E+00	-3,98E+00	0	0	0	0	0	0	9,33E+00	1,91E+01	0	9,93E+00	-1,68E+01
ODP	kg CFC 11 eq.	1,23E-05	1,05E-06	4,53E-07	0	0	0	0	0	0	0	2,11E-06	4,39E-06	0	4,92E-06	-3,94E-07
AP	mol H^+ eq.	6,42E-01	1,88E-02	1,67E-02	0	0	0	0	0	0	0	9,77E-02	7,83E-02	0	9,77E-02	-9,47E-02
EP-freshwater	kg PO_4^{3-} eq.	6,91E-02	2,43E-03	1,91E-03	0	0	0	0	0	0	0	1,51E-02	1,01E-02	0	1,40E-02	-9,04E-03
EP-freshwater	kg P eq	2,92E-03	6,81E-05	5,58E-05	0	0	0	0	0	0	0	7,12E-05	2,83E-04	0	1,29E-04	-1,43E-03
EP-marine	kg N eq.	2,73E-01	5,43E-03	4,52E-03	0	0	0	0	0	0	0	4,24E-02	2,26E-02	0	3,55E-02	-6,81E-03
EP-terrestrial	mol N eq.	3,16E+00	6,06E-02	5,28E-02	0	0	0	0	0	0	0	4,66E-01	2,52E-01	0	3,96E-01	-1,61E-01
POCP	kg NMVOC eq.	8,69E-01	1,84E-02	1,45E-02	0	0	0	0	0	0	0	1,28E-01	7,65E-02	0	1,12E-01	-2,64E-02
ADP-minerals&metals*	kg Sb eq.	1,38E-04	1,36E-05	2,64E-06	0	0	0	0	0	0	0	3,11E-06	5,68E-05	0	1,06E-05	-1,83E-04
ADP-fossil*	MJ	2,51E+03	7,00E+01	4,65E+01	0	0	0	0	0	0	0	1,35E+02	2,91E+02	0	3,28E+02	-1,98E+02
WDP	m^3	4,19E+01	4,77E-01	8,08E-01	0	0	0	0	0	0	0	7,27E-01	1,98E+00	0	1,38E+00	-3,04E+01
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.*

Potential environmental impact – additional mandatory and voluntary indicators

Results per Functional Unit															
Indicator	**Unit**	**Tot.A 1-A3**	**A4**	**A5**	**B1**	**B2**	**B 3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[9]	kg CO_2 eq.	2,53E +02	4,60 E+00	5,74 E+0 0	- 3,98 E+00	0	0	0	0	0	0	9,33E+0 0	1,91E+0 1	0	9,93E+ 00	-1,68E+01

Use of resources

Results per Functional Unit																
Indicator	**Unit**	**Tot.A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	3,31E+ 01	7,37E- 01	8,23E- 01	0	0	0	0	0	0	0	7,81E- 01	3,07E+ 00	0	4,30E+0 0	- 2,10E +01
PERM	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERT	MJ	3,94E+ 01	7,37E- 01	9,50E- 01	0	0	0	0	0	0	0	7,81E- 01	3,07E+ 00	0	4,30E+0 0	- 2,10E +01
PENRE	MJ	1,74E+ 03	7,43E+ 01	4,95E+ 01	0	0	0	0	0	0	0	1,43E +02	3,09E+ 02	0	3,48E+0 2	- 2,11E +02
PENRM	MJ.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PENRT	MJ	1,74E+ 03	7,43E+ 01	4,95E+ 01	0	0	0	0	0	0	0	1,43E +02	3,09E+ 02	0	3,48E+0 2	- 2,11E +02
SM	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m^3	1,97E+ 00	1,31E- 02	4,81E- 02	0	0	0	0	0	0	0	1,42E- 02	5,45E- 02	0	3,69E-01	- 2,39E +00
Acronyms	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															

[9] The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

Waste production and output flows

Waste production

Results per Functional Unit															
Indicator	**Unit**	**Tot.A 1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	5,94E-04	4,42E-05	1,87 E-05	0	0	0	0	0	0	0	6,01E-05	1,84E-04	0	1,12E-04	-4,61E-04
Non-hazardous waste disposed	kg	2,35E +01	3,29E +00	4,68 E+01	0	0	0	0	0	0	0	1,44E-01	1,37E +01	0	2,52E +02	-3,99E+00
Radioactive waste disposed	kg	6,51E-03	4,74E-04	2,24 E-04	0	0	0	0	0	0	0	9,37E-04	1,97E-03	0	2,25E-03	-5,05E-04

Other output flows

Results per Functional Unit																
Indicator	**Unit**	**Tot. A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for recycling	kg	0	0	0	0	0	0	0	0	0	0	0	0	2,04 E+03	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Information on biogenic carbon content

Results per Functional Unit		
BIOGENIC CARBON CONTENT	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO_2.

Environmental Information- results are by m^3 of product

Hormigones con CEM II/B y árido reciclado H35 Agilia

Potential environmental impact – mandatory indicators according to EN 15804

Results per Functional Unit															
Indicator	**Unit**	**Tot.A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	2,58E+02	4,22E+00	5,81E+00	-4,11E+00	0	0	0	0	0	0	9,40E+00	1,87E+01	0	9,73E+00	-1,69E+01
GWP-biogenic	kg CO_2 eq.	6,51E-02	1,31E-03	1,61E-03	0	0	0	0	0	0	0	1,66E-03	5,83E-03	0	8,28E-03	-6,05E-02
GWP-luluc	kg CO_2 eq.	2,07E-02	1,23E-03	5,79E-04	0	0	0	0	0	0	0	7,99E-04	5,47E-03	0	1,58E-03	-2,63E-02
GWP-total	kg CO_2 eq.	2,58E+02	4,22E+00	5,81E+00	-4,11E+00	0	0	0	0	0	0	9,40E+00	1,88E+01	0	9,74E+00	-1,70E+01
ODP	kg CFC 11 eq.	1,23E-05	9,68E-07	4,49E-07	0	0	0	0	0	0	0	2,12E-06	4,30E-06	0	4,83E-06	-3,98E-07
AP	mol H^+ eq.	6,55E-01	1,73E-02	1,69E-02	0	0	0	0	0	0	0	9,85E-02	7,68E-02	0	9,58E-02	-9,55E-02
EP-freshwater	kg PO_4^{3-} eq.	7,06E-02	2,23E-03	1,93E-03	0	0	0	0	0	0	0	1,53E-02	9,92E-03	0	1,37E-02	-9,12E-03
EP-freshwater	kg P eq	2,36E-03	6,25E-05	5,66E-05	0	0	0	0	0	0	0	7,18E-05	2,78E-04	0	1,26E-04	-1,45E-03
EP-marine	kg N eq.	1,66E-01	4,99E-03	4,55E-03	0	0	0	0	0	0	0	4,27E-02	2,22E-02	0	3,48E-02	-6,86E-03
EP-terrestrial	mol N eq.	1,97E+00	5,57E-02	5,33E-02	0	0	0	0	0	0	0	4,69E-01	2,47E-01	0	3,88E-01	-1,62E-01
POCP	kg NMVOC eq.	5,29E-01	1,69E-02	1,46E-02	0	0	0	0	0	0	0	1,29E-01	7,51E-02	0	1,10E-01	-2,67E-02
ADP-minerals&metals*	kg Sb eq.	4,99E-05	1,25E-05	2,57E-06	0	0	0	0	0	0	0	3,14E-06	5,57E-05	0	1,04E-05	-1,85E-04
ADP-fossil*	MJ	1,66E+03	6,43E+01	4,66E+01	0	0	0	0	0	0	0	1,36E+02	2,86E+02	0	3,22E+02	-2,00E+02
WDP	m^3	3,74E+01	4,38E-01	8,23E-01	0	0	0	0	0	0	0	7,33E-01	1,94E+00	0	1,36E+00	-3,06E+01
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.*

Potential environmental impact – additional mandatory and voluntary indicators

Results per Functional Unit															
Indicator	**Unit**	**Tot.A 1-A3**	**A4**	**A5**	**B1**	**B2**	**B 3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[10]	kg CO_2 eq.	2,58E +02	4,22 E+00	5,81 E+0 0	- 4,11 E+00	0	0	0	0	0	0	9,40E+0 0	1,87E+0 1	0	9,73E+ 00	-1,69E+01

Use of resources

Results per Functional Unit																
Indicator	**Unit**	**Tot.A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	3,55E+ 01	6,77E- 01	8,67E- 01	0	0	0	0	0	0	0	1,44E +02	3,01E+ 00	0	4,22E+0 0	- 2,11E +01
PERM	MJ	0	0	0	0	0	0	0	0	0	0	1,44E +02	0	0	0	0
PERT	MJ	3,55E+ 01	6,77E- 01	8,67E- 01	0	0	0	0	0	0	0	0	3,01E+ 00	0	4,22E+0 0	- 2,11E +01
PENRE	MJ	1,77E+ 03	6,83E+ 01	4,96E+ 01	0	0	0	0	0	0	0	7,88E- 01	3,03E+ 02	0	3,42E+0 2	-- 2,12E +02
PENRM	MJ.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PENRT	MJ	1,77E+ 03	7,43E+ 01	4,96E+ 01	0	0	0	0	0	0	0	7,88E- 01	3,09E+ 02	0	3,48E+0 2	- 2,12E +02
SM	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m^3	2,15E+ 00	1,20E- 02	5,15E- 02	0	0	0	0	0	0	0	1,43E- 02	5,35E- 02	0	3,62E-01	- 2,41E +00
Acronyms	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															

[10] The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

Waste production and output flows

Waste production

Results per Functional Unit															
Indicator	**Unit**	**Tot.A 1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	6,52E-04	4,06E-05	1,91 E-05	0	0	0	0	0	0	0	6,06E-05	1,80E-04	0	1,10E-04	-4,65E-04
Non-hazardous waste disposed	kg	1,39E +01	3,02E +00	4,63 E+01	0	0	0	0	0	0	0	1,45E-01	1,34E +01	0	2,52E +02	-4,02E+00
Radioactive waste disposed	kg	7,69E-03	4,35E-04	2,39 E-04	0	0	0	0	0	0	0	9,44E-04	1,93E-03	0	2,20E-03	-5,09E-04

Other output flows

Results per Functional Unit																
Indicator	**Unit**	**Tot. A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for recycling	kg	0	0	0	0	0	0	0	0	0	0	0	0	2,04 E+03	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Information on biogenic carbon content

Results per Functional Unit		
BIOGENIC CARBON CONTENT	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO_2.

Environmental Information- results are by m^3 of product

Hormigones con CEM II/B y árido reciclado H25 Artevia

Potential environmental impact – mandatory indicators according to EN 15804

Results per Functional Unit															
Indicator	**Unit**	**Tot.A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	2,01E+02	4,68E+00	4,68E+00	-3,72E+00	0	0	0	0	0	0	9,31E+00	1,91E+01	0	9,93E+00	-1,67E+01
GWP-biogenic	kg CO_2 eq.	3,89E-02	1,46E-03	1,22E-03	0	0	0	0	0	0	0	1,64E-03	5,95E-03	0	8,46E-03	-5,99E-02
GWP-luluc	kg CO_2 eq.	1,27E-02	1,37E-03	4,81E-04	0	0	0	0	0	0	0	7,91E-04	5,59E-03	0	1,61E-03	-2,60E-02
GWP-total	kg CO_2 eq.	2,01E+02	4,68E+00	4,68E+00	-3,72E+00	0	0	0	0	0	0	9,31E+00	1,91E+01	0	9,94E+00	-1,68E+01
ODP	kg CFC 11 eq.	9,68E-06	1,07E-06	3,96E-07	0	0	0	0	0	0	0	2,10E-06	4,39E-06	0	4,93E-06	-3,94E-07
AP	mol H^+ eq.	4,99E-01	1,92E-02	1,39E-02	0	0	0	0	0	0	0	9,76E-02	7,84E-02	0	9,78E-02	-9,45E-02
EP-freshwater	kg PO_4^{3-} eq.	5,47E-02	2,48E-03	1,63E-03	0	0	0	0	0	0	0	1,51E-02	1,01E-02	0	1,40E-02	-9,03E-03
EP-freshwater	kg P eq	1,72E-03	6,94E-05	4,40E-05	0	0	0	0	0	0	0	7,11E-05	2,84E-04	0	1,29E-04	-1,43E-03
EP-marine	kg N eq.	1,30E-01	5,53E-03	3,87E-03	0	0	0	0	0	0	0	4,23E-02	2,26E-02	0	3,55E-02	-6,80E-03
EP-terrestrial	mol N eq.	1,54E+00	6,18E-02	4,51E-02	0	0	0	0	0	0	0	4,65E-01	2,53E-01	0	3,96E-01	-1,60E-01
POCP	kg NMVOC eq.	4,02E-01	1,87E-02	1,22E-02	0	0	0	0	0	0	0	1,28E-01	7,66E-02	0	1,13E-01	-2,64E-02
ADP-minerals&metals*	kg Sb eq.	3,42E-05	1,39E-05	2,25E-06	0	0	0	0	0	0	0	3,11E-06	5,68E-05	0	1,06E-05	-1,83E-04
ADP-fossil*	MJ	1,11E+03	7,13E+01	3,58E+01	0	0	0	0	0	0	0	1,35E+02	2,92E+02	0	3,28E+02	-1,98E+02
WDP	m^3	2,54E+01	4,86E-01	5,89E-01	0	0	0	0	0	0	0	7,26E-01	1,98E+00	0	1,39E+00	-3,03E+01
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.*

Potential environmental impact – additional mandatory and voluntary indicators

Results per Functional Unit															
Indicator	**Unit**	**Tot.A 1-A3**	**A4**	**A5**	**B1**	**B2**	**B 3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[11]	kg CO_2 eq.	2,01E +02	4,68 E+00	4,68 E+0 0	- 3,72 E+00	0	0	0	0	0	0	9,31E+0 0	1,91E+0 1	0	9,94E+ 00	-1,68E+01

Use of resources

Results per Functional Unit																
Indicator	**Unit**	**Tot.A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	2,13E+ 01	7,51E- 01	7,08E- 01	0	0	0	0	0	0	0	7,80E- 01	3,07E+ 00	0	4,30E+0 0	- 2,09E +01
PERM	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERT	MJ	2,13E+ 01	7,51E- 01	7,08E- 01	0	0	0	0	0	0	0	7,80E- 01	3,07E+ 00	0	4,30E+0 0	- 2,09E +01
PENRE	MJ	1,17E+ 03	7,57E+ 01	3,80E+ 01	0	0	0	0	0	0	0	1,43E +02	3,10E+ 02	0	3,49E+0 2	- 2,10E +02
PENRM	MJ.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PENRT	MJ	1,17E+ 03	7,57E+ 01	3,80E+ 01	0	0	0	0	0	0	0	1,43E +02	3,10E+ 02	0	3,49E+0 2	- 2,10E +02
SM	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m^3	1,26E+ 00	1,33E- 02	4,42E- 02	0	0	0	0	0	0	0	1,42E- 02	5,46E- 02	0	3,70E-01	- 2,39E +00
Acronyms	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 ofsecondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water															

[11] The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

Waste production and output flows

Waste production

Results per Functional Unit															
Indicator	**Unit**	**Tot.A 1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	4,31E-04	4,50E-05	1,55 E-05	0	0	0	0	0	0	0	6,00E-05	1,84E-04	0	1,12E-04	-4,61E-04
Non-hazardous waste disposed	kg	1,31E+01	3,35E+00	4,82 E-04	0	0	0	0	0	0	0	1,43E-01	1,37E+01	0	2,52E+02	-3,98E+00
Radioactive waste disposed	kg	5,50E-03	4,82E-04	4,82 E-04	0	0	0	0	0	0	0	9,35E-04	1,97E-03	0	2,25E-03	-5,04E-04

Output flows

Results per Functional Unit																
Indicator	**Unit**	**Tot. A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for recycling	kg	0	0	0	0	0	0	0	0	0	0	0	0	2,04 E+03	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Information on biogenic carbon content

Results per Functional Unit		
BIOGENIC CARBON CONTENT	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO_2.

.

Environmental Information- results are by m^3 of product

Hormigones con CEM II/B y árido reciclado H30 Artevia

Potential environmental impact – mandatory indicators according to EN 15804

Results per Functional Unit															
Indicator	**Unit**	**Tot.A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	2,25E+02	4,44E+00	5,17E+00	-4,99E+00	0	0	0	0	0	0	9,22E+00	1,90E+01	0	9,86E+00	-1,66E+01
GWP-biogenic	kg CO_2 eq.	5,32E-02	1,38E-03	1,38E-03	0	0	0	0	0	0	0	1,62E-03	5,91E-03	0	8,39E-03	-5,93E-02
GWP-luluc	kg CO_2 eq.	1,89E-02	1,30E-03	5,46E-04	0	0	0	0	0	0	0	7,83E-04	5,54E-03	0	1,60E-03	-2,58E-02
GWP-total	kg CO_2 eq.	2,25E+02	4,44E+00	5,17E+00	-4,99E+00	0	0	0	0	0	0	9,22E+00	1,90E+01	0	9,87E+00	-1,67E+01
ODP	kg CFC 11 eq.	1,09E-05	1,02E-06	4,23E-07	0	0	0	0	0	0	0	2,08E-06	4,36E-06	0	4,89E-06	-3,90E-07
AP	mol H^+ eq.	5,66E-01	1,82E-02	1,52E-02	0	0	0	0	0	0	0	9,66E-02	7,78E-02	0	9,71E-02	-9,36E-02
EP-freshwater	kg PO_4^{3-} eq.	6,23E-02	2,35E-03	1,77E-03	0	0	0	0	0	0	0	1,50E-02	1,01E-02	0	1,39E-02	-8,94E-03
EP-freshwater	kg P eq	1,93E-03	6,59E-05	4,80E-05	0	0	0	0	0	0	0	7,04E-05	2,82E-04	0	1,28E-04	-1,42E-03
EP-marine	kg N eq.	1,48E-01	5,25E-03	4,21E-03	0	0	0	0	0	0	0	4,19E-02	2,25E-02	0	3,52E-02	-6,73E-03
EP-terrestrial	mol N eq.	1,76E+00	5,86E-02	4,92E-02	0	0	0	0	0	0	0	4,60E-01	2,51E-01	0	3,93E-01	-1,59E-01
POCP	kg NMVOC eq.	4,55E-01	1,78E-02	1,32E-02	0	0	0	0	0	0	0	1,26E-01	7,60E-02	0	1,12E-01	-2,61E-02
ADP-minerals&metals*	kg Sb eq.	3,65E-05	1,32E-05	2,33E-06	0	0	0	0	0	0	0	3,08E-06	5,64E-05	0	1,05E-05	-1,81E-04
ADP-fossil*	MJ	1,24E+03	6,77E+01	3,85E+01	0	0	0	0	0	0	0	1,33E+02	2,89E+02	0	3,26E+02	-1,96E+02
WDP	m^3	2,80E+01	4,61E-01	6,37E-01	0	0	0	0	0	0	0	7,19E-01	1,97E+00	0	1,38E+00	-3,01E+01
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.*

Potential environmental impact – additional mandatory and voluntary indicators

Results per Functional Unit															
Indicator	**Unit**	**Tot.A 1-A3**	**A4**	**A5**	**B1**	**B2**	**B 3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[12]	kg CO_2 eq.	2,25E +02	4,44 E+00	5,17 E+0 0	- 4,99 E+00	0	0	0	0	0	0	9,22E+0 0	1,90E+0 1	0	9,87E+ 00	-1,67E+01

Use of resources

Results per Functional Unit																
Indicator	**Unit**	**Tot.A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B 7**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	3,32E+ 01	7,13E- 01	3,32E+ 01	0	0	0	0	0	0	0	7,80 E-01	3,05E+ 00	0	4,27E+0 0	- 2,07E +01
PERM	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERT	MJ	3,32E+ 01	7,13E- 01	3,32E+ 01	0	0	0	0	0	0	0	7,80 E-01	3,05E+ 00	0	4,27E+0 0	- 2,07E +01
PENRE	MJ	1,32E+ 03	7,19E+ 01	4,08E+ 01	0	0	0	0	0	0	0	1,43 E+0 2	3,07E+ 02	0	3,46E+0 2	- 2,08E +02
PENRM	MJ.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PENRT	MJ	1,32E+ 03	7,19E+ 01	4,08E+ 01	0	0	0	0	0	0	0	1,43 E+0 2	3,07E+ 02	0	3,46E+0 2	- 2,08E +02
SM	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m^3	2,19E+ 00	1,27E- 02	5,26E- 02	0	0	0	0	0	0	0	1,40 E-02	5,42E- 02	0	3,67E-01	- 2,38E +00
Acronyms	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															

[12] The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

Waste production and output flows

Waste production

Results per Functional Unit															
Indicator	**Unit**	**Tot.A 1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	4,95E-04	4,27E-05	1,66 E-05	0	0	0	0	0	0	0	6,00E-05	1,83E-04	0	1,11E-04	-4,56E-04
Non-hazardous waste disposed	kg	1,32E +01	3,18E +00	4,63 E+01	0	0	0	0	0	0	0	1,43E-01	1,36E+01	0	2,52E +02	-3,95E+00
Radioactive waste disposed	kg	6,27E-03	4,58E-04	2,18 E-04	0	0	0	0	0	0	0	9,35E-04	1,96E-03	0	2,23E-03	-4,99E-04

Other output flows

Results per Functional Unit																
Indicator	**Unit**	**Tot. A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for recycling	kg	0	0	0	0	0	0	0	0	0	0	0	0	2,04 E+03	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Information on biogenic carbon content

Results per Functional Unit		
BIOGENIC CARBON CONTENT	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO_2.

Additional information

With the aim of achieving a positive contribution to nature and society, we develop our activity based on principles of sustainable development, through continuous improvement in our environmental behaviour and focused on these four fundamental principles: our Management System, control environmental impact, contribution to the circular economy and transparent relationship with the environment.

Registry of carbon footprint, compensation and CO2 absorption projects of the Ministerio para la Transición Ecológica y el Reto Demográfico de España.

Holcim Spain has registered its carbon footprint in section a) of the Carbon footprint and commitment to reduce greenhouse gas emissions for the years 2016, 2017, 2018 and 2019.
The limits of the organization included in the calculation are: cement, concrete and mortar manufacturing activity carried out in all its facilities in Spain, central offices in Madrid and 63 production centers.

Our commitment to the circular economy as the main way to take advantage of the waste life cycle.

The transition from a linear economy to a circular economy is one of the environmental priorities of our business. Within our activity, our objective is to reuse the value of waste as resources, that is, to maximize its life cycle.
At Holcim, we achieve the transition to circularity by complementing the activity of Geocycle, a subsidiary of the Group that is dedicated to the pre-treatment of waste to turn it into fuel, and the cement factories that use it in their clinker production process (component cement base).

Proactive restoration of our quarries

At Holcim we have been working, for more than 30 years, for the restoration of our quarries with the aim of generating a net positive impact on biodiversity. We are committed to a participatory model of quarry rehabilitation in which the increase of biodiversity and natural capital is favored.

Our restoration model serves as a lever for change on the critical problem of biodiversity loss and its potential to reverse its current negative trend. This work, key when it comes to creating shared value with the communities in which we operate, has been recognized in 2018 with the first second prize in the "Company and Biodiversity" category in the latest edition of the European Business Awards for the Environment, promoted by the Biodiversity Foundation.

References

- General Programme Instruction of the International EPD® System. Version 3.01.
- ISO 14020:2000 Environmental labels and declarations-General principles
- ISO 14025:2010 Environmental labels and declarations-Type III Environmental Declarations-Principles and procedures
- ISO 14040:2006 Environmental management-Life Cycle Assessment-Principles and framework
- ISO 14044:2006 Environmental management-Life Cycle Assessment-Requirements and guidelines
- PCR 2019:14 Construction products (EN 15804:A2) version 1.0
- EN 15804:2012+A2:2019 Sustainability of construction works-Environmental Product Declarations-Core rules for the product category of construction products
- c-PCR-003 Concrete and concrete elements (EN 16757)
- EN 16757 –Sustainability of Construction Works -Environmental Product Declarations -Product Category Rules for Concrete and Concrete Elements

Differences versus previous versions

This version of this DAP presents a modification of its initial version dated 04-02-2021 due to an editorial change as a result of the change in the name of the company and the change in the name of the product, none of the parameters specified therein being affected.

Thus, where LafargeHolcim España previously appeared, Holcim España now appears, and where ReduzCO2+ previously appeared, RMX Concretes and Mortars with CEM II/B and crushed stone, now appears

VERIFICATION STATEMENT CERTIFICATE

CERTIFICADO DE DECLARACIÓN DE VERIFICACIÓN

Certificate No. / Certificado nº: EPD04603

TECNALIA R&I CERTIFICACION S.L., confirms that independent third-party verification has been conducted of the Environmental Product Declaration (EPD) on behalf of:
TECNALIA *R&I CERTIFICACION S.L., confirma que se ha realizado verificación de tercera parte independiente de la Declaración Ambiental de Producto (DAP) en nombre de:*

HOLCIM ESPAÑA, S.A.U.
Avd. Manoteras, 20
28050 MADRID - SPAIN

for the following product(s):
para el siguiente(s) producto(s):

RMX CONCRETES AND MORTARS WITH CEM II B AND CRUSHED STONE: H25 (ESTÁNDAR, AGILIA and ARTEVIA), H30 (ESTÁNDAR, AGILIA and ARTEVIA), H35 (ESTÁNDAR and AGILIA)

HORMIGONES Y MORTEROS RMX FABRICADOS CON CEM II B Y ARIDO RECICLADO: H25 (ESTÁNDAR, AGILIA y ARTEVIA), H30 (ESTÁNDAR, AGILIA y ARTEVIA), H35 (ESTÁNDAR y AGILIA)

with registration number **EPD-IES-0002681** in the International EPD® System *(www.environdec.com)*
*con número de registro **EPD-IES-0002681** en el Sistema International EPD® (www.environdec.com)*

it´s in conformity with:
es conforme con:

- **ISO 14025:2010 Environmental labels and declarations. Type III environmental declarations.**
- **General Programme Instructions for the International EPD® System v.3.01.**
- **PCR 2019:14 Construction products (EN 15804+A2) v1.1.**
- **c-PCR-003 Concrete and concrete elements (EN 16757).**
- **UN CPC Code: 375**

Carlos Nazabal Alsua
Manager

Issued date / *Fecha de emisión:*	04/02/2021
Update date / *Fecha de actualización:*	30/07/2024
Valid until / *Válido hasta:*	03/02/2026
Serial Nº / *Nº Serie:*	EPD0460301-E

This certificate is not valid without its related EPD.
Este certificado no es válido sin su correspondiente EPD.

El presente certificado está sujeto a modificaciones, suspensiones temporales y retiradas por TECNALIA R&I CERTIFICACION.
This certificate is subject to modifications, temporary suspensions and withdrawals by TECNALIA R&I CERTIFICACION.

El estado de vigencia del certificado puede confirmarse mediante consulta en www.tecnaliacertificacion.com.
The validity of this certificate can be checked through consultation in www.tecnaliacertificacion.com.

CERTIFICACIÓN ISO 17065 Nº125 / C-PR283

EPD®

www.environdec.com