DECLARACIÓN AMBIENTAL DE PRODUCTO

CONCRETO
Planta 240 **/ Colombia**

SOSTENIBILIDAD COLOMBIA
2024

Declared product:

This Environmental Product Declaration (EPD) covers ready-mix concrete products manufactured by CEMEX Colombia in the 240 Plant.

Plant address: Autopista Norte Nº 235-91 Costado Occidental, Bogotá, Colombia.

Declared unit**:** 1 cubic meter of concrete

Declaration Owner:

CEMEX Colombia S.A.

Cl. 99 #9a 54, Bogotá, Colombia

SustainabilitySCA&C@cemex.com

www.cemexcolombia.com

Program Operator:

Labeling Sustainability

11670 W Sunset Blvd.

Los Angeles, CA

http://labelinsustainability.com/

ISO 21930:2017 Sustainability in Building Construction – Environmental Declaration of Building Products serves as the core PCR.

NSF PCR for Concrete (NSF, 2022v) serves as the subcategory PCR.

Subcategory PCR Review was conducted by:

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Independent verification of the declaration and data, according to ISO 21930:2017 and ISO 14025:2006

✓ External ☐ Internal

Third-party verifier:

Denice V. Staaf, Certified 3rd Party Verifier under Labeling Sustainability (www.labelingsustainability.com)

EPD Software Tool: GCCA Industry EPD Tool for Cement and Concrete (V4.2), North American version.

Date of Issue: 28 February 2025

Period of validity: 28 February 2030

EPD Number: CCO02282504

ENVIRONMENTAL PRODUCT DECLARATION
CEMEX COLOMBIA

1. Company Description

CEMEX S.A.B. de C.V. (CEMEX) is at global building materials company dedicated to building at better future through sustainable products and solutions. CEMEX is committed to achieving carbon neutrality through constant innovation and industry leadership in research and development. CEMEX is at the front of the circular economy within the construction value chain and promotes innovative processes with the use of advanced technologies to increase the use of waste as raw materials and alternative fuels in its operations. CEMEX provides cement, ready-mix concrete, aggregates, and urban solutions in fast-growing markets around the world, powered by a multinational workforce focused on delivering superior customer experience, using digital technologies.

Cemex Colombia's cement plants have an environmental management system certified under ISO 14001, which guarantees that the environmental impact is being rigorously measured, that pollution is being prevented, and that continuous improvement is enabled.

2. Study Goal

The intended application of this life cycle assessment (LCA) is to comply with the procedures for creating Type III environmental product declaration (EPD) and publish the EPD for public review on the website, http://labelingsustainability.com/. This level of study is in accordance with EPD Product Category Rule (PCR) for Concrete (version 2.3, dated February 2024) and is at sub-PCR of International Standards Organization (ISO) 21930:2017 Sustainability in buildings and civil works - Core rules for EPDs of construction products and services; International Standards Organization (ISO) 14025:2006 Environmental labels and declarations, Type III environmental declarations-Principles and procedures; ISO 14044:2006 Environmental management, Life cycle assessment- Requirements and guidelines; and ISO 14040:2006 Environmental management, Life cycle assessment-Principles and framework. EPDs for concrete that follow other PCRs may not be comparable.

The performance of this study and its subsequent publishing is in alignment with the business-to-business (B2B) communication requirements for the environmental assessment of building products. The study does not intend to support comparative assertions and is intended to be disclosed to the public. This project report was commissioned to differentiate CEMEX S.A.B. de C.V.

from their competition for the following reasons: generate an advantage for the organization; offer customers information to help them make informed product decisions; improve the environmental performance of CEMEX S.A.B. de C.V. by continuously measuring, controlling and reducing the environmental impacts of their products; help project facilitators working on Leadership in Energy and Environmental Design (LEED) projects achieve their credit goal; and to strengthen CEMEX S.A.B. de C.V. license to operate in the community. The intended audience for this LCA report is CEMEX S.A.B. de C.V. employees, their suppliers, project specifiers of their products, architects, and engineers. The EPD report is also available for policy makers, government officials interested in sustainability, academic professors, and LCA professionals. This LCA report does not include product comparisons of other facilities.

Only EPDs prepared from cradle-to-grave life-cycle results and based on the same function, reference service life, and quantified by the same functional unit, can be used to assist purchasers and users in making informed comparisons between products. Since EPDs developed under these PCR only cover the cradle-to-gate impacts of Ready-mix concrete, using at declared unit, the results cannot be used to compare products used in different mixtures and construction products. The results from Concrete EPD must be integrated into a comprehensive cradle-to-grave, ISO 14044-compliant LCA to compare between different products. The basis of at comparison, where applicable, shall include the product application in accordance with ISO 21930 ASTM (2014).

3. Product Information

3.1. Product Identification

This EPD is prepared for products classified as UN CPC Group 3744-Cement or CSI MasterFormat Division 03 30 00 Cast-in-Place Concrete.

3.2. Ready-mix Concrete Design Summary

The following table provides a list of the concrete products considered in this EPD along with key performance parameters.

Strength <15 MPa

Table 1. Declared products considered in this Environmental Product Declaration

Nº	Ready-mix	Description	Strength (MPa)	Age (Days)	Slump (cm)	Category
1	1-105-3-A-28-15-1-3-000	10.30 MPa at 28 Days Strength Ready Mix Concrete	10.3	28	15	Convencional
2	1-105-5-A-28-10-0-3-000	10.30 MPa at 28 Days Strength Ready Mix Concrete	10.3	28	10	Convencional
3	1-105-5-A-28-13-1-3-000	10.30 MPa at 28 Days Strength Ready Mix Concrete	10.3	28	13	Convencional
4	1-105-5-A-28-15-1-3-000	10.30 MPa at 28 Days Strength Ready Mix Concrete	10.3	28	15	Convencional

Table 1. Declared products considered in this Environmental Product Declaration						
Nº	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
5	**1-105-5-A-28-15-1-3-060**	10.30 MPa at 28 Days Strength Ready Mix Concrete	10.3	28	15	Convencional
6	**1-105-5-A-28-20-1-3-000**	10.30 MPa at 28 Days Strength Ready Mix Concrete	10.3	28	20	Convencional
7	**1-140-3-A-28-10-0-3-000**	13.73 MPa at 28 Days Strength Ready Mix Concrete	13.7	28	10	Convencional
8	**1-140-5-A-28-10-0-3-000**	13.73 MPa at 28 Days Strength Ready Mix Concrete	13.7	28	10	Convencional
9	**1-140-5-A-28-13-1-3-000**	13.73 MPa at 28 Days Strength Ready Mix Concrete	13.7	28	13	Convencional
10	**1-140-5-A-28-15-1-3-000**	13.73 MPa at 28 Days Strength Ready Mix Concrete	13.7	28	15	Convencional
11	**L-105-0-A-28-23-1-3-478**	10.30 MPa at 28 Days Strength Ready Mix Concrete	10.3	28	23	Especial
12	**L-105-0-A-28-23-1-3-479**	10.30 MPa at 28 Days Strength Ready Mix Concrete	10.3	28	23	Especial
13	**M-105-0-A-28-13-1-3-000**	10.30 MPa at 28 Days Strength Ready Mix Concrete	10.3	28	13	Mortero
14	**M-105-0-A-28-13-1-3-061**	10.30 MPa at 28 Days Strength Ready Mix Concrete	10.3	28	13	Mortero
15	**M-105-0-A-28-20-1-3-000**	10.30 MPa at 28 Days Strength Ready Mix Concrete	10.3	28	20	Mortero
16	**M-125-0-A-28-13-1-3-060**	12.26 MPa at 28 Days Strength Ready Mix Concrete	12.3	28	13	Mortero
17	**M-125-0-A-28-15-1-3-000**	12.26 MPa at 28 Days Strength Ready Mix Concrete	12.3	28	15	Mortero
18	**M-125-0-A-28-15-1-3-061**	12.26 MPa at 28 Days Strength Ready Mix Concrete	12.3	28	15	Mortero
19	**M-125-0-A-28-20-1-3-000**	12.26 MPa at 28 Days Strength Ready Mix Concrete	12.3	28	20	Mortero
20	**M-140-0-A-28-15-1-3-000**	13.73 MPa at 28 Days Strength Ready Mix Concrete	13.7	28	15	Mortero
21	**M-140-0-A-28-15-1-3-001**	13.73 MPa at 28 Days Strength Ready Mix Concrete	13.7	28	15	Mortero
22	**M-140-0-A-28-20-1-3-000**	13.73 MPa at 28 Days Strength Ready Mix Concrete	13.7	28	20	Mortero
23	**P-036-5-A-03-13-0-3-000**	3.53 MPa at 03 Days Strength Ready Mix Concrete	3.5	3	13	Pavimento
24	**P-037-5-A-28-10-0-3-534**	3.63 MPa at 28 Days Strength Ready Mix Concrete	3.6	28	10	Pavimento
25	**P-039-5-A-28-15-1-3-000**	3.82 MPa at 28 Days Strength Ready Mix Concrete	3.8	28	15	Pavimento
26	**P-040-5-A-07-13-0-3-000**	3.92 MPa at 07 Days Strength Ready Mix Concrete	3.9	7	13	Pavimento
27	**P-040-5-A-28-10-0-3-000**	3.92 MPa at 28 Days Strength Ready Mix Concrete	3.9	28	10	Pavimento
28	**P-040-5-A-28-10-0-3-004**	3.92 MPa at 28 Days Strength Ready Mix Concrete	3.9	28	10	Pavimento
29	**P-040-5-A-28-13-0-3-000**	3.92 MPa at 28 Days Strength Ready Mix Concrete	3.9	28	13	Pavimento

Table 1. Declared products considered in this Environmental Product Declaration						
N°	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
30	**P-040-5-A-28-15-1-3-000**	3.92 MPa at 28 Days Strength Ready Mix Concrete	3.9	28	15	Pavimento
31	**P-041-5-A-07-13-0-3-000**	4.02 MPa at 07 Days Strength Ready Mix Concrete	4.0	7	13	Pavimento
32	**P-041-5-A-28-10-0-3-000**	4.02 MPa at 28 Days Strength Ready Mix Concrete	4.0	28	10	Pavimento
33	**P-041-5-A-28-13-0-3-000**	4.02 MPa at 28 Days Strength Ready Mix Concrete	4.0	28	13	Pavimento
34	**P-041-5-A-28-15-1-3-000**	4.02 MPa at 28 Days Strength Ready Mix Concrete	4.0	28	15	Pavimento
35	**P-042-5-A-28-13-0-3-003**	4.12 MPa at 28 Days Strength Ready Mix Concrete	4.1	28	13	Pavimento
36	**P-042-5-A-28-15-1-3-000**	4.12 MPa at 28 Days Strength Ready Mix Concrete	4.1	28	15	Pavimento
37	**P-043-5-A-03-13-0-3-000**	4.22 MPa at 03 Days Strength Ready Mix Concrete	4.2	3	13	Pavimento
38	**P-043-5-A-28-13-0-3-000**	4.22 MPa at 28 Days Strength Ready Mix Concrete	4.2	28	13	Pavimento
39	**P-045-5-A-28-10-0-3-000**	4.41 MPa at 28 Days Strength Ready Mix Concrete	4.4	28	10	Pavimento
40	**P-045-5-A-28-13-0-3-000**	4.41 MPa at 28 Days Strength Ready Mix Concrete	4.4	28	13	Pavimento
41	**P-045-5-A-28-15-1-3-000**	4.41 MPa at 28 Days Strength Ready Mix Concrete	4.4	28	15	Pavimento
42	**R-010-0-A-28-20-0-3-000**	0.98 MPa at 28 Days Strength Ready Mix Concrete	1.0	28	20	Rellenos Fluidos

Strength 15 to 20 MPa

Table 2. Declared products considered in this Environmental Product Declaration						
N°	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
43	**1-175-3-A-28-15-1-3-061**	17.16 MPa at 28 Days Strength Ready Mix Concrete	17.2	28	15	Convencional
44	**1-175-5-A-28-10-0-3-000**	17.16 MPa at 28 Days Strength Ready Mix Concrete	17.2	28	10	Convencional
45	**1-175-5-A-28-13-1-3-000**	17.16 MPa at 28 Days Strength Ready Mix Concrete	17.2	28	13	Convencional
46	**1-175-5-A-28-13-1-3-060**	17.16 MPa at 28 Days Strength Ready Mix Concrete	17.2	28	13	Convencional
47	**1-175-5-A-28-15-1-3-000**	17.16 MPa at 28 Days Strength Ready Mix Concrete	17.2	28	15	Convencional
48	**1-175-5-A-28-15-1-3-060**	17.16 MPa at 28 Days Strength Ready Mix Concrete	17.2	28	15	Convencional
49	**1-175-5-A-28-15-1-3-061**	17.16 MPa at 28 Days Strength Ready Mix Concrete	17.2	28	15	Convencional
50	**M-175-0-A-28-13-1-3-000**	17.16 MPa at 28 Days Strength Ready Mix Concrete	17.2	28	13	Mortero

Table 2. Declared products considered in this Environmental Product Declaration						
N°	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
51	**M-175-0-A-28-13-1-3-060**	17.16 MPa at 28 Days Strength Ready Mix Concrete	17.2	28	13	Mortero

Strength 20 to 35 MPa

Table 3. Declared products considered in this Environmental Product Declaration						
N°	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
52	**1-210-3-A-03-13-1-3-000**	20.59 MPa at 03 Days Strength Ready Mix Concrete	20.6	3	13	Acelerado
53	**1-210-3-A-07-13-1-3-000**	20.59 MPa at 07 Days Strength Ready Mix Concrete	20.6	7	13	Acelerado
54	**1-210-3-A-07-15-1-3-000**	20.59 MPa at 07 Days Strength Ready Mix Concrete	20.6	7	15	Acelerado
55	**1-210-3-A-28-10-0-3-000**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	10	Convencional
56	**1-210-3-A-28-13-1-3-000**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	13	Convencional
57	**1-210-3-A-28-15-1-3-000**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Convencional
58	**1-210-3-A-28-15-1-3-001**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Convencional
59	**1-210-3-A-28-20-1-3-000**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	20	Convencional
60	**1-210-5-A-03-13-1-3-000**	20.59 MPa at 03 Days Strength Ready Mix Concrete	20.6	3	13	Acelerado
61	**1-210-5-A-03-15-1-3-000**	20.59 MPa at 03 Days Strength Ready Mix Concrete	20.6	3	15	Acelerado
62	**1-210-5-A-03-15-1-3-001**	20.59 MPa at 03 Days Strength Ready Mix Concrete	20.6	3	15	Acelerado
63	**1-210-5-A-03-20-1-3-000**	20.59 MPa at 03 Days Strength Ready Mix Concrete	20.6	3	20	Acelerado
64	**1-210-5-A-03-20-1-3-04M**	20.59 MPa at 03 Days Strength Ready Mix Concrete	20.6	3	20	Acelerado
65	**1-210-5-A-07-13-1-3-000**	20.59 MPa at 07 Days Strength Ready Mix Concrete	20.6	7	13	Acelerado
66	**1-210-5-A-07-15-1-3-000**	20.59 MPa at 07 Days Strength Ready Mix Concrete	20.6	7	15	Acelerado
67	**1-210-5-A-07-15-1-3-04M**	20.59 MPa at 07 Days Strength Ready Mix Concrete	20.6	7	15	Acelerado
68	**1-210-5-A-07-20-1-3-000**	20.59 MPa at 07 Days Strength Ready Mix Concrete	20.6	7	20	Acelerado
69	**1-210-5-A-07-20-1-3-04M**	20.59 MPa at 07 Days Strength Ready Mix Concrete	20.6	7	20	Acelerado
70	**1-210-5-A-07-20-1-3-04W**	20.59 MPa at 07 Days Strength Ready Mix Concrete	20.6	7	20	Acelerado
71	**1-210-5-A-14-13-1-3-000**	20.59 MPa at 14 Days Strength Ready Mix Concrete	20.6	14	13	Acelerado
72	**1-210-5-A-14-15-1-3-001**	20.59 MPa at 14 Days Strength Ready Mix Concrete	20.6	14	15	Acelerado

Table 3. Declared products considered in this Environmental Product Declaration

Nº	Ready-mix	Description	Strength (MPa)	Age (Days)	Slump (cm)	Category
73	1-210-5-A-28-10-0-3-000	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	10	Convencional
74	1-210-5-A-28-13-1-3-000	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	13	Convencional
75	1-210-5-A-28-15-1-3-000	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Convencional
76	1-210-5-A-28-15-1-3-001	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Convencional
77	1-210-5-A-28-15-1-3-01K	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Convencional
78	1-210-5-A-28-15-1-3-04M	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Convencional
79	1-210-5-A-28-15-1-3-061	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Convencional
80	1-210-5-A-28-20-1-3-000	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	20	Convencional
81	1-210-5-A-28-20-1-3-04M	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	20	Convencional
82	1-210-5-A-28-20-1-3-04W	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	20	Convencional
83	1-245-3-A-28-10-0-3-000	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	10	Convencional
84	1-245-3-A-28-13-1-3-000	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	13	Convencional
85	1-245-3-A-28-13-1-3-001	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	13	Convencional
86	1-245-3-A-28-15-1-3-000	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	15	Convencional
87	1-245-3-A-28-20-1-3-000	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	20	Convencional
88	1-245-5-A-03-13-1-3-000	24.03 MPa at 03 Days Strength Ready Mix Concrete	24.0	3	13	Acelerado
89	1-245-5-A-07-13-1-3-000	24.03 MPa at 07 Days Strength Ready Mix Concrete	24.0	7	13	Acelerado
90	1-245-5-A-28-10-0-3-000	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	10	Convencional
91	1-245-5-A-28-13-1-3-000	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	13	Convencional
92	1-245-5-A-28-13-1-3-001	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	13	Convencional
93	1-245-5-A-28-15-1-3-000	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	15	Convencional
94	1-245-5-A-28-15-1-3-061	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	15	Convencional
95	1-280-3-A-03-15-1-3-000	27.46 MPa at 03 Days Strength Ready Mix Concrete	27.5	3	15	Acelerado
96	1-280-3-A-03-20-1-3-000	27.46 MPa at 03 Days Strength Ready Mix Concrete	27.5	3	20	Acelerado
97	1-280-3-A-03-20-1-3-001	27.46 MPa at 03 Days Strength Ready Mix Concrete	27.5	3	20	Acelerado

Table 3. Declared products considered in this Environmental Product Declaration						
N°	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
98	**1-280-3-A-07-13-1-3-000**	27.46 MPa at 07 Days Strength Ready Mix Concrete	27.5	7	13	Acelerado
99	**1-280-3-A-14-13-1-3-000**	27.46 MPa at 14 Days Strength Ready Mix Concrete	27.5	14	13	Acelerado
100	**1-280-3-A-28-10-0-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	10	Convencional
101	**1-280-3-A-28-13-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	13	Convencional
102	**1-280-3-A-28-13-1-3-013**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	13	Convencional
103	**1-280-3-A-28-15-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Convencional
104	**1-280-3-A-28-15-1-3-001**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Convencional
105	**1-280-3-A-28-15-1-3-009**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Convencional
106	**1-280-3-A-28-20-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Convencional
107	**1-280-3-A-28-20-1-3-001**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Convencional
108	**1-280-3-A-28-20-1-3-061**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Convencional
109	**1-280-5-A-03-13-1-3-000**	27.46 MPa at 03 Days Strength Ready Mix Concrete	27.5	3	13	Acelerado
110	**1-280-5-A-03-13-1-3-001**	27.46 MPa at 03 Days Strength Ready Mix Concrete	27.5	3	13	Acelerado
111	**1-280-5-A-03-15-1-3-000**	27.46 MPa at 03 Days Strength Ready Mix Concrete	27.5	3	15	Acelerado
112	**1-280-5-A-03-20-1-3-000**	27.46 MPa at 03 Days Strength Ready Mix Concrete	27.5	3	20	Acelerado
113	**1-280-5-A-07-13-1-3-000**	27.46 MPa at 07 Days Strength Ready Mix Concrete	27.5	7	13	Acelerado
114	**1-280-5-A-07-15-1-3-000**	27.46 MPa at 07 Days Strength Ready Mix Concrete	27.5	7	15	Acelerado
115	**1-280-5-A-07-15-1-3-001**	27.46 MPa at 07 Days Strength Ready Mix Concrete	27.5	7	15	Acelerado
116	**1-280-5-A-07-15-1-3-04M**	27.46 MPa at 07 Days Strength Ready Mix Concrete	27.5	7	15	Acelerado
117	**1-280-5-A-07-20-1-3-000**	27.46 MPa at 07 Days Strength Ready Mix Concrete	27.5	7	20	Acelerado
118	**1-280-5-A-07-20-1-3-04W**	27.46 MPa at 07 Days Strength Ready Mix Concrete	27.5	7	20	Acelerado
119	**1-280-5-A-28-10-0-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	10	Convencional
120	**1-280-5-A-28-10-0-3-001**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	10	Convencional
121	**1-280-5-A-28-10-0-3-013**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	10	Convencional
122	**1-280-5-A-28-13-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	13	Convencional

Table 3. Declared products considered in this Environmental Product Declaration

Nº	Ready-mix	Description	Strength (MPa)	Age (Days)	Slump (cm)	Category
123	1-280-5-A-28-13-1-3-001	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	13	Convencional
124	1-280-5-A-28-15-1-3-000	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Convencional
125	1-280-5-A-28-15-1-3-001	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Convencional
126	1-280-5-A-28-15-1-3-060	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Convencional
127	1-280-5-A-28-20-1-3-000	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Convencional
128	1-280-5-A-28-20-1-3-001	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Convencional
129	1-315-3-A-28-13-1-3-000	30.89 MPa at 28 Days Strength Ready Mix Concrete	30.9	28	13	Convencional
130	1-315-3-A-28-13-1-3-001	30.89 MPa at 28 Days Strength Ready Mix Concrete	30.9	28	13	Convencional
131	1-315-5-A-07-13-1-3-001	30.89 MPa at 07 Days Strength Ready Mix Concrete	30.9	7	13	Acelerado
132	1-315-5-A-28-10-0-3-000	30.89 MPa at 28 Days Strength Ready Mix Concrete	30.9	28	10	Convencional
133	1-315-5-A-28-13-1-3-000	30.89 MPa at 28 Days Strength Ready Mix Concrete	30.9	28	13	Convencional
134	1-315-5-A-28-13-1-3-001	30.89 MPa at 28 Days Strength Ready Mix Concrete	30.9	28	13	Convencional
135	1-315-5-A-28-15-1-3-000	30.89 MPa at 28 Days Strength Ready Mix Concrete	30.9	28	15	Convencional
136	1-350-3-A-03-15-1-3-000	34.32 MPa at 03 Days Strength Ready Mix Concrete	34.3	3	15	Acelerado
137	1-350-3-A-03-15-1-3-024	34.32 MPa at 03 Days Strength Ready Mix Concrete	34.3	3	15	Acelerado
138	1-350-3-A-03-20-1-3-000	34.32 MPa at 03 Days Strength Ready Mix Concrete	34.3	3	20	Acelerado
139	1-350-3-A-28-15-1-3-000	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	15	Convencional
140	1-350-3-A-28-15-1-3-009	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	15	Convencional
141	1-350-3-A-28-20-1-3-000	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	20	Convencional
142	1-350-3-A-28-20-1-3-009	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	20	Convencional
143	1-350-3-A-28-20-1-3-060	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	20	Convencional
144	1-350-3-A-28-20-1-3-061	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	20	Convencional
145	1-350-5-A-03-13-1-3-000	34.32 MPa at 03 Days Strength Ready Mix Concrete	34.3	3	13	Acelerado
146	1-350-5-A-03-15-1-3-000	34.32 MPa at 03 Days Strength Ready Mix Concrete	34.3	3	15	Acelerado
147	1-350-5-A-07-13-1-3-000	34.32 MPa at 07 Days Strength Ready Mix Concrete	34.3	7	13	Acelerado

Table 3. Declared products considered in this Environmental Product Declaration						
N°	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
148	**1-350-5-A-28-13-1-3-000**	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	13	Convencional
149	**1-350-5-A-28-15-1-3-000**	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	15	Convencional
150	**1-350-5-A-28-15-1-3-001**	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	15	Convencional
151	**1-350-5-A-28-15-1-3-024**	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	15	Convencional
152	**1-350-5-A-28-20-1-3-000**	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	20	Convencional
153	**2-350-5-A-28-15-1-3-000**	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	15	Durabilidad
154	**2-350-5-A-28-15-1-3-001**	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	15	Durabilidad
155	**3-280-3-A-28-13-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	13	Durabilidad
156	**3-280-3-A-28-13-1-3-001**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	13	Durabilidad
157	**3-280-3-A-28-13-1-3-013**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	13	Durabilidad
158	**3-280-3-A-28-13-1-3-072**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	13	Durabilidad
159	**3-280-3-A-28-15-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Durabilidad
160	**3-280-3-A-28-15-1-3-001**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Durabilidad
161	**3-280-3-A-28-20-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Durabilidad
162	**3-280-3-A-28-20-1-3-001**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Durabilidad
163	**3-280-3-A-28-65-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	65	Durabilidad
164	**3-280-5-A-28-13-1-3-001**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	13	Durabilidad
165	**3-280-5-A-28-13-1-3-024**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	13	Durabilidad
166	**3-280-5-A-28-15-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Durabilidad
167	**3-280-5-A-28-20-1-3-001**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Durabilidad
168	**7-210-5-A-28-15-1-3-000**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Convencional
169	**7-280-5-A-28-15-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Convencional
170	**8-280-3-A-28-20-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Especial
171	**8-350-3-A-28-20-1-3-000**	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	20	Especial
172	**C-210-3-A-28-25-1-3-000**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	25	Especial

Table 3. Declared products considered in this Environmental Product Declaration

Nº	Ready-mix	Description	Strength (MPa)	Age (Days)	Slump (cm)	Category
173	C-210-3-A-28-25-1-3-464	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	25	Especial
174	C-245-3-A-28-25-1-3-000	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	25	Especial
175	C-245-3-A-28-25-1-3-200	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	25	Especial
176	F-210-3-A-18-65-1-3-000	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	65	Especial
177	F-280-3-A-18-65-1-3-02U	27.46 MPa at 18 Days Strength Ready Mix Concrete	27.5	18	65	Especial
178	J-210-3-A-28-65-1-3-000	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	65	Especial
179	J-280-3-A-28-65-1-3-000	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	65	Especial
180	M-280-0-A-28-20-1-3-000	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Mortero
181	M-280-0-A-28-20-1-3-061	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Mortero
182	O-210-3-A-18-13-1-3-000	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	13	Industrializado
183	O-210-3-A-18-15-1-3-000	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	15	Industrializado
184	O-210-3-A-18-15-1-3-061	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	15	Industrializado
185	O-210-3-A-18-18-1-3-000	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	18	Industrializado
186	O-210-3-A-18-18-1-3-061	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	18	Industrializado
187	O-210-3-A-18-20-1-3-000	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	20	Industrializado
188	O-210-3-A-18-23-1-3-000	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	23	Industrializado
189	O-210-3-A-20-20-1-3-000	20.59 MPa at 20 Days Strength Ready Mix Concrete	20.6	20	20	Industrializado
190	O-210-5-A-18-13-1-3-000	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	13	Industrializado
191	O-210-5-A-18-13-1-3-001	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	13	Industrializado
192	O-210-5-A-18-13-1-3-009	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	13	Industrializado
193	O-210-5-A-18-13-1-3-060	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	13	Industrializado
194	O-210-5-A-18-13-1-3-074	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	13	Industrializado
195	O-210-5-A-18-15-1-3-000	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	15	Industrializado
196	O-210-5-A-18-15-1-3-001	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	15	Industrializado
197	O-210-5-A-18-15-1-3-009	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	15	Industrializado

Table 3. Declared products considered in this Environmental Product Declaration						
N°	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
198	**O-210-5-A-20-13-1-3-000**	20.59 MPa at 20 Days Strength Ready Mix Concrete	20.6	20	13	Industrializado
199	**O-245-3-A-18-18-1-3-000**	24.03 MPa at 18 Days Strength Ready Mix Concrete	24.0	18	18	Industrializado
200	**O-245-5-A-18-13-1-3-000**	24.03 MPa at 18 Days Strength Ready Mix Concrete	24.0	18	13	Industrializado
201	**O-245-5-A-18-15-1-3-000**	24.03 MPa at 18 Days Strength Ready Mix Concrete	24.0	18	15	Industrializado
202	**O-280-3-A-18-13-1-3-000**	27.46 MPa at 18 Days Strength Ready Mix Concrete	27.5	18	13	Industrializado
203	**O-280-3-A-18-15-1-3-000**	27.46 MPa at 18 Days Strength Ready Mix Concrete	27.5	18	15	Industrializado
204	**O-280-3-A-18-18-1-3-000**	27.46 MPa at 18 Days Strength Ready Mix Concrete	27.5	18	18	Industrializado
205	**O-280-3-A-18-18-1-3-060**	27.46 MPa at 18 Days Strength Ready Mix Concrete	27.5	18	18	Industrializado
206	**O-280-3-A-18-20-1-3-000**	27.46 MPa at 18 Days Strength Ready Mix Concrete	27.5	18	20	Industrializado
207	**O-280-3-A-18-23-1-3-000**	27.46 MPa at 18 Days Strength Ready Mix Concrete	27.5	18	23	Industrializado
208	**O-280-3-A-20-20-1-3-000**	27.46 MPa at 20 Days Strength Ready Mix Concrete	27.5	20	20	Industrializado
209	**O-280-5-A-18-13-1-3-000**	27.46 MPa at 18 Days Strength Ready Mix Concrete	27.5	18	13	Industrializado
210	**O-280-5-A-18-15-1-3-000**	27.46 MPa at 18 Days Strength Ready Mix Concrete	27.5	18	15	Industrializado
211	**O-315-3-A-18-18-1-3-000**	30.89 MPa at 18 Days Strength Ready Mix Concrete	30.9	18	18	Industrializado
212	**O-315-3-A-18-23-1-3-000**	30.89 MPa at 18 Days Strength Ready Mix Concrete	30.9	18	23	Industrializado
213	**O-315-5-A-18-13-1-3-000**	30.89 MPa at 18 Days Strength Ready Mix Concrete	30.9	18	13	Industrializado
214	**O-315-5-A-18-15-1-3-000**	30.89 MPa at 18 Days Strength Ready Mix Concrete	30.9	18	15	Industrializado
215	**O-350-3-A-18-15-1-3-000**	34.32 MPa at 18 Days Strength Ready Mix Concrete	34.3	18	15	Industrializado
216	**O-350-3-A-18-18-1-3-000**	34.32 MPa at 18 Days Strength Ready Mix Concrete	34.3	18	18	Industrializado
217	**O-350-3-A-18-20-1-3-000**	34.32 MPa at 18 Days Strength Ready Mix Concrete	34.3	18	20	Industrializado
218	**O-350-3-A-18-23-1-3-000**	34.32 MPa at 18 Days Strength Ready Mix Concrete	34.3	18	23	Industrializado
219	**O-350-5-A-18-15-1-3-000**	34.32 MPa at 18 Days Strength Ready Mix Concrete	34.3	18	15	Industrializado
220	**Q-210-5-A-28-15-1-3-504**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Especial
221	**T-210-3-A-28-18-1-3-665**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	18	Tremie
222	**T-210-3-A-28-20-1-3-000**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	20	Tremie

Table 3. Declared products considered in this Environmental Product Declaration						
N°	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
223	**T-210-5-A-28-20-1-3-000**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	20	Tremie
224	**T-245-3-A-28-20-1-3-000**	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	20	Tremie
225	**T-245-5-A-28-20-1-3-000**	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	20	Tremie
226	**T-245-5-A-28-20-1-3-464**	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	20	Tremie
227	**T-280-3-A-28-20-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Tremie
228	**T-280-5-A-28-18-1-3-665**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	18	Tremie
229	**T-280-5-A-28-20-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Tremie
230	**T-350-5-A-28-18-1-3-665**	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	18	Tremie
231	**T-350-5-A-28-20-1-3-000**	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	20	Tremie
232	**T-350-5-A-28-20-1-3-464**	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	20	Tremie
233	**V-280-3-A-28-65-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	65	Especial
234	**V-350-3-A-03-65-1-3-000**	34.32 MPa at 03 Days Strength Ready Mix Concrete	34.3	3	65	Especial
235	**V-350-3-A-28-65-1-3-000**	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	65	Especial
236	**V-350-3-A-28-65-1-3-001**	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	65	Especial

Strength >35 MPa

Table 4. Declared products considered in this Environmental Product Declaration						
N°	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
237	**1-420-3-A-28-15-1-3-001**	41.19 MPa at 28 Days Strength Ready Mix Concrete	41.2	28	15	Convencional
238	**1-420-3-A-28-20-1-3-000**	41.19 MPa at 28 Days Strength Ready Mix Concrete	41.2	28	20	Convencional
239	**1-420-5-A-14-15-1-3-001**	41.19 MPa at 14 Days Strength Ready Mix Concrete	41.2	14	15	Acelerado
240	**1-420-5-A-28-10-0-3-000**	41.19 MPa at 28 Days Strength Ready Mix Concrete	41.2	28	10	Convencional
241	**1-420-5-A-28-15-1-3-000**	41.19 MPa at 28 Days Strength Ready Mix Concrete	41.2	28	15	Convencional
242	**3-420-5-A-28-15-1-3-000**	41.19 MPa at 28 Days Strength Ready Mix Concrete	41.2	28	15	Durabilidad
243	**3-420-5-A-28-15-1-3-001**	41.19 MPa at 28 Days Strength Ready Mix Concrete	41.2	28	15	Durabilidad
244	**8-420-3-A-28-20-1-3-000**	41.19 MPa at 28 Days Strength Ready Mix Concrete	41.2	28	20	Especial

Table 4. Declared products considered in this Environmental Product Declaration						
Nº	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
245	**AT-490-3-A-28-20-1-3-551**	48.05 MPa at 28 Days Strength Ready Mix Concrete	48.1	28	20	Alta resistencia
246	**F-420-3-A-18-65-1-3-000**	41.19 MPa at 18 Days Strength Ready Mix Concrete	41.2	18	65	Especial
247	**O-420-3-A-18-18-1-3-000**	41.19 MPa at 18 Days Strength Ready Mix Concrete	41.2	18	18	Industrializado
248	**O-420-3-A-18-20-1-3-000**	41.19 MPa at 18 Days Strength Ready Mix Concrete	41.2	18	20	Industrializado
249	**O-420-3-A-18-23-1-3-000**	41.19 MPa at 18 Days Strength Ready Mix Concrete	41.2	18	23	Industrializado
250	**O-420-3-A-18-23-1-3-001**	41.19 MPa at 18 Days Strength Ready Mix Concrete	41.2	18	23	Industrializado
251	**O-420-3-A-20-20-1-3-000**	41.19 MPa at 20 Days Strength Ready Mix Concrete	41.2	20	20	Industrializado
252	**O-420-5-A-18-15-1-3-000**	41.19 MPa at 18 Days Strength Ready Mix Concrete	41.2	18	15	Industrializado
253	**O-420-5-A-18-15-1-3-001**	41.19 MPa at 18 Days Strength Ready Mix Concrete	41.2	18	15	Industrializado
254	**T-525-3-A-28-20-1-3-551**	51.49 MPa at 28 Days Strength Ready Mix Concrete	51.5	28	20	Tremie
255	**V-420-3-A-28-65-1-3-000**	41.19 MPa at 28 Days Strength Ready Mix Concrete	41.2	28	65	Especial

The following table provides the mass breakdown (kg per functional unit) of the material composition of each ready-mix concrete design considered. Please note that the breakdown has been randomly altered and is therefore only an approximation; this manipulation is to ensure confidentiality.

Table 5. Ready-mix Concrete Composition	
Product Components	**Raw Material, weight (%)**
Cement	Proprietary
Aggregates	30 - 60
Water	10-15
Others	0.01 – 5.00
Total	100.00

This EPD was calculated using manufacturer-specific cement data from Cemex, representing 100% of the total cement used in each mix included in this EPD. The cement data used in the concrete mixes is Cemex' cement products EPDs, which are supplied from Caracolito Plant[1] in Ibagué and Santa Rosa

[1] EPD Number CCO01102501

Plant[2] in La Calera. The GCCA Industry EPD tool uses the results from the clinker and cement life cycle assessment to generate results.

4. Life Cycle Assessment (LCA)

4.1 Declared Unit

This Environmental Product Declaration refers to **one cubic meter of ready-mix concrete (1 m³)**

4.2 Time representativeness

Data was collected by CEMEX at its own plants between January and December 2023 (12 months) and the data collected is representative of the production technology used in 2023.

4.3 LCA Software and Data Bases Used

The Life Cycle Assessment was developed using the GCCA Industry EPD Tool for Cement and Concrete (V4.2), North American version, which uses Ecoinvent v3.5 and GCCA datasets for the LCA database.

4.4 System Boundaries

This study covers **the cradle-to-gate** stages of the product; transport to site (A4), construction (A5), Use (B) or end of life (C) stages of the products are not included. The following figure depicts the cradle-to-gate system boundary considered in this study:

Environmental assessment information, Cradle to Gate (A1-A3)
(MA – Module assessed, MNA – Module not assessed, INA – Indicator Not Assessed)

Product stage			Construction process		Use stage							End of life				Benefits and loads beyond the system boundary
Raw material supply	Transport	Manufaturing	Transport to construction site	Construction installation process	Use	Maintenance	Repair	Refurbishment	Operational energy use	Operational water use	Operational water use	Deconstruction demolition	Transport	Waste processing	Disposal	Reuse-recovery recycling potential
A1	A2	A3	A4	A5	B1	B2	A3	B4	B5	B6	B7	C1	C2	C3	C4	D
MA	MA	MA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	

Figure 1. General life cycle phases for consideration in a construction works system.

1. A1: Raw material supply (upstream processes) - Extraction, handling, and processing of the materials used in manufacturing the declared products in this LCA.
2. A2: Transportation - Transportation of A1 materials from the supplier to the "gate" of the manufacturing facility (i.e., A3).
3. A3: Manufacturing (core processes)- The energy and other utility inputs used to store, move,

[2] EPD Number CCO01102502

and manufacture the declared products and to operate the facility.

The product category rules for this EPD recognize fly ash, silica fume, and slag as recovered materials and thus the environmental impacts allocated to these materials are limited to the treatment and transportation required to use as a concrete material input.

In addition, according to the relevant PCR, the following requirements are excluded from this study:

- Production, manufacture, and construction of A3 building/capital goods and infrastructure.
- Production and manufacture of production equipment, delivery vehicles, earthmoving equipment, and laboratory equipment.
- Personnel-related activities (travel, furniture, office supplies).

4.5 Process Information

4.5.1 Modules A1 - A2: Extraction and transport of raw materials

One of the main constituents of concrete is cement, and CEMEX is the manufacturer of the cement used in the concrete mixes. The following process describes the manufacture of cement.

Limestone and clay are extracted from the stone quarries by drilling and blasting with explosives, the impact of which is minimal thanks to the modern technology used. Once the large masses of stone have been fragmented, they are transported to the plant in trucks or conveyors.

The entire extraction process has rigorous operational controls that mitigate environmental impact, allow comprehensive monitoring and ensure compliance with the requirements of current environmental regulations.

The quarry material is fragmented in crushers and, by impact and/or pressure, reduced to a maximum size of one and at half inches. Then, in the pre-homogenization process, the different types of clay, limestone or any other material that is required are mixed proportionally. Each of the raw materials is transported separately to silos where they are for the production of different types of cement.

They are then ground using a vertical steel mill, which grinds the material by means of the pressure exerted by three conical rollers rolling on a rotating grinding table. Horizontal mills are also used for this phase, in which the material is pulverized by means of steel balls.

The homogenization process of raw meal is carried out in silos equipped to achieve a homogeneous mixture of the material. This meal is then subjected to the calcination process, the core part of the process, where large rotary kilns are used, inside which, at 1400 °C, the flour is transformed into clinker, which are small dark grey modules of 3 to 4 cm.

Finally, the clinker is ground through steel balls of different sizes as it passes through the two chambers of the mill, adding gypsum to lengthen the setting time of the cement. The cement is sent to the storage silos; from which it is extracted by pneumatic or mechanical systems.

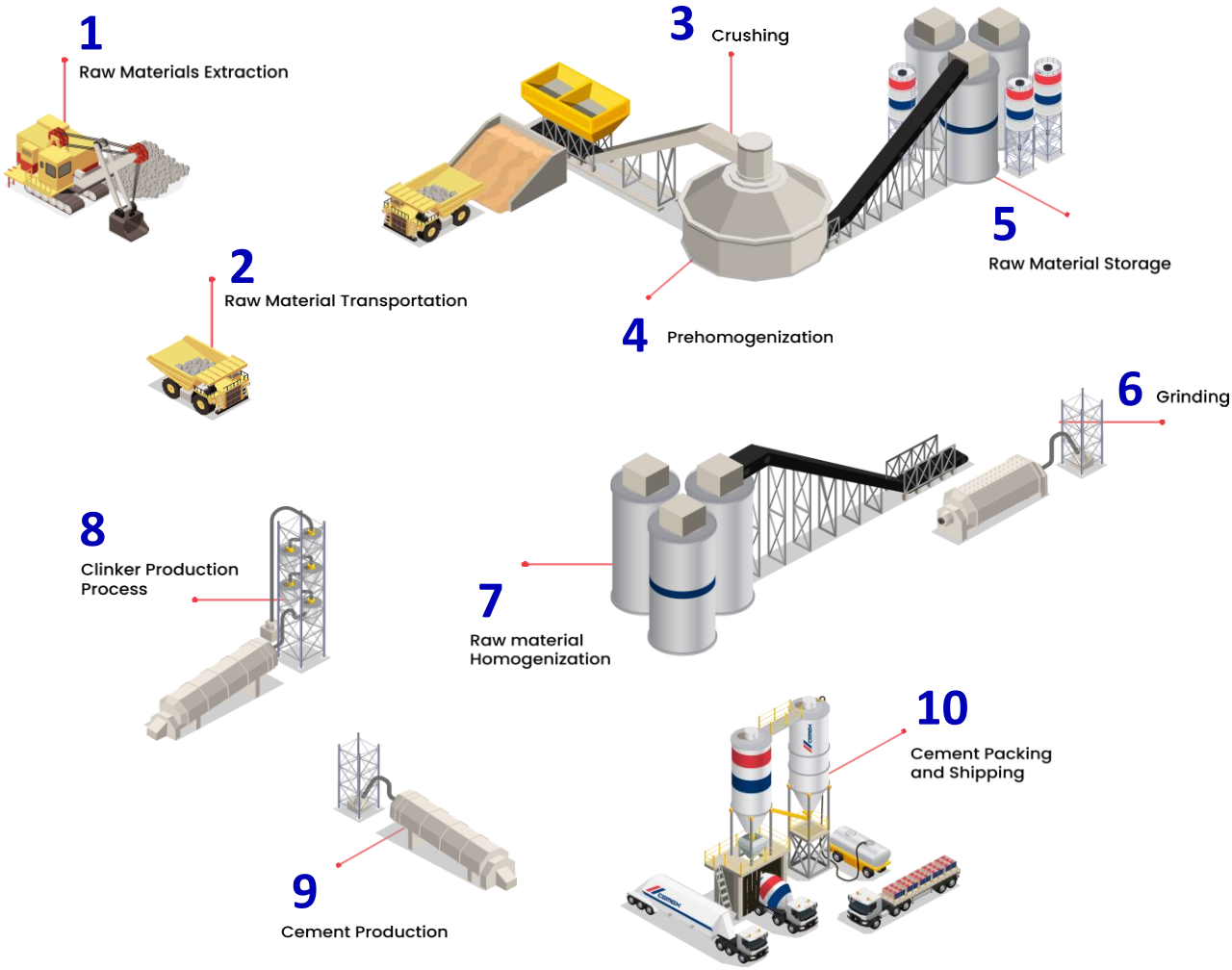

Figure 2. Cement Production

Truck transportation calculations are based on the weight of transported products per unit of clinker, cement or raw material and on the distances travelled per transported product. The volume of the materials was not considered because the majority of the transported materials are weight-limited and not volume-limited. In the Ecoinvent datasets, the allocation of truck's impact to the merchandise transported is done through at top-down approach, considering the total tonnes and total km transported. An average load factor is considered (5.79 t for 16-32 t trucks i.e. 39% average load rate and 15.96 t for > 32 t trucks, i.e. 71% average load factor) – this average load factor accounts for all truck journeys including empty backhauls and is used to allocate an impact per truck per km to at tonne transported over 1 km (one tkm). In effect, this approach allocates empty backhauls, on average, to at tkm of transported merchandise. Infrastructure, maintenance and end-of-life of roads and trucks are taken into consideration, assuming at 540'000 km lifetime per

truck.[3]

4.5.2 Module A3: Production

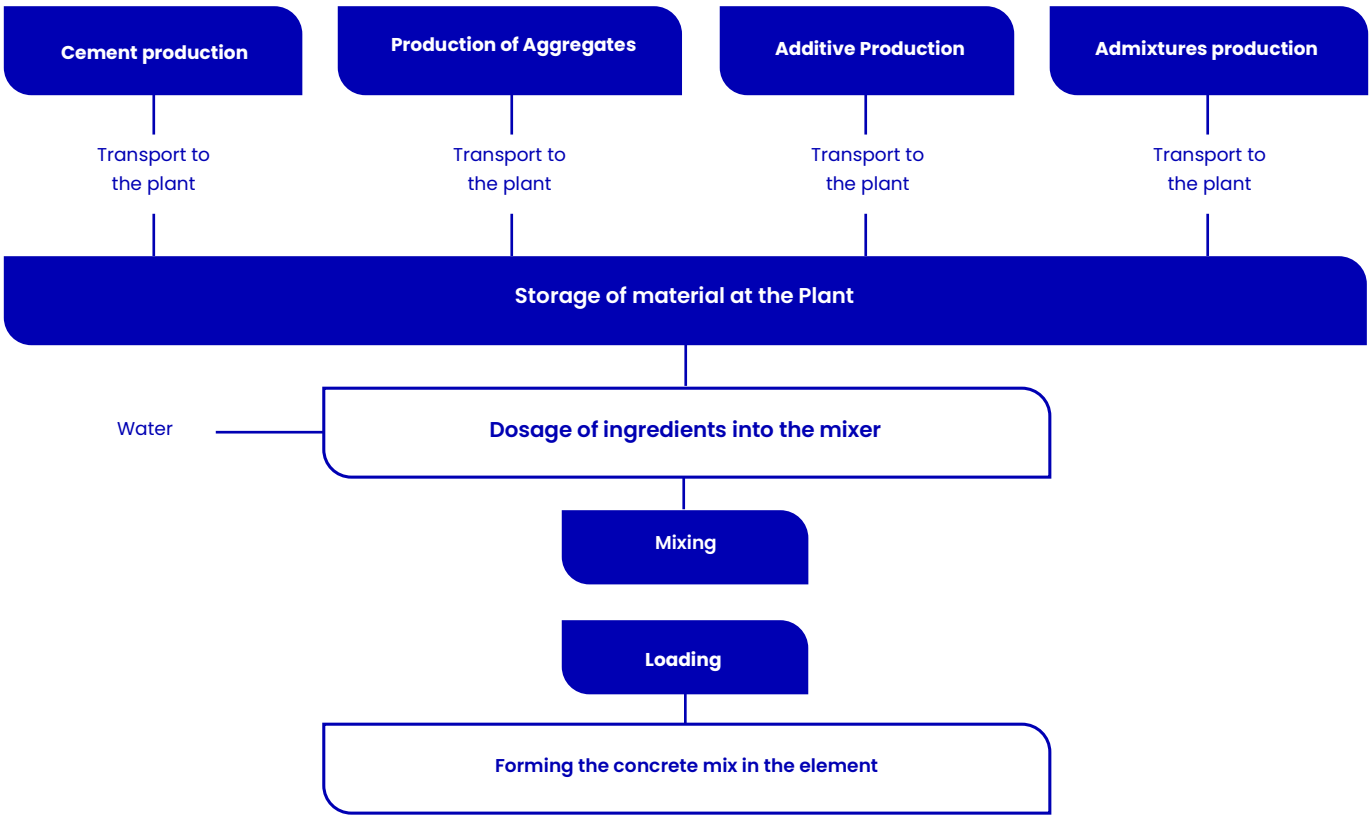

Figure 3. Concrete Production - Inputs and Processes System

After the materials for concrete are transferred to the concrete plant and stored, the substrates are weighed and mixed according to the process shown in Figure 3. The environmental impacts related to the ash have been considered based on economic allocation.

- **Reception and Storage of Raw Materials**: The process begins with the collection of necessary raw materials such as sand, gravel, water, cement, admixtures and additives.
- **Storage Silos**: Cement and fly-ash are received in bulk via tanker trucks and stored in silos equipped with filters and pressure control systems.
- **Weighing and Dosing**: The production coordinator uses the RMS (Ready Mixer Solution) program to automatically load the exact quantities of materials required for the specific mix. Aggregates are weighed and transported to the mixing machine, while water and additives are dosed and loaded directly into the mixer.
- **Mixing**: All materials are homogenized in the mixer to prepare the concrete, which is then ready to be discharged either directly at the construction site or into a transport vehicle.

[3] Information taken from the GCCA Industry EPD Tool for Cement and Concrete: LCA Model, North American version, 18 December 2023.

During the mixing phase, the different components come together to produce at uniform mass of concrete. Mixing time is registered from the moment material and water are poured into the cement mixer, and it begins rotating.

- **Transport:** While transporting concrete to site, the concrete mixer never stops revolving at speed of two to six rotations per minute. Transport from the concrete plant to the project site (A4) is not accounted for in this study, however, 30% of the truck diesel is allocated to manufacturing (A3) as per the PCR.

5. CUT-OFF CRITERIA

ISO 14044:2006 and the focus PCR requires the LCA model to contain at minimum of 95% of the total inflows (mass and energy) to the upstream and core modules which have been included in this study. The cut-off criteria were applied to all other processes unless otherwise noted above as follows. A 1% cut-off is considered for all renewable and non-renewable primary energy consumption and the total mass of inputs within a unit process where the total of the neglected inputs does not exceed 5%.

6. DATA SOURCES AND DATA QUALITY ASSESSMENT

- Raw material transport: Actual distance data is provided for each key bulk material. For materials with more than one supplier, the distance is weighted to obtain at single datum.
- Material loss: The Operations, Operational Excellence and Internal Control teams strive to maintain meticulous control of material inventory, performing several monitoring and management processes to limit material loss.

  According to these process controls, there are different permitted inventory deviations that adhere to the following maximums, which are used as material loss factors: 1% for cement and supplementary cementitious materials such as fly-ash, 2% for aggregates (gravel/sand) and 3% for additions and admixtures.
- Electricity: CEMEX Colombia, consumes electricity from various electricity sources and suppliers, including the national grid and self-generation. To calculate the site-specific electricity mix used in the EPD Tool, and align with the PCR, the site-specific electricity mix is distributed proportionally to the plant's energy consumption. The national electricity mix used is published by the authorities (UPME, Colombia's Mining and Energy Planning Unit).
- Ancillary OEM Materials: Due to technical limitations, lubricating oils, engine oils, & other consumable operations equipment maintenance (OEM) were not included within the study and are subject to the cut-off criteria.
- Fuel required for machinery: Fuel needs related to machinery and the low heating value were determined from direct calculations by CEMEX with actual accounting of consumption at the plant.
- Waste generation: Waste generation values are directly reported from CEMEX operations.
- Recovered energy: Thermal energy recovered from fuels produced from recycled materials. It was 31.0% average for cement plants Colombia in 2023.

- Recycled/reused material/components: CEMEX is committed to sustainability and circularity practices. Cemex uses post-industrial material waste as inputs to its products, to save virgin raw materials as well as reducing impacts within and outside its boundaries. Common recycled raw materials include fly-ash, ground granulated blast-furnace slag and recycled aggregates from industrial and construction and demolition waste. The quantities are directly reported by CEMEX operations. Specific batch/mix recycled content is readily available for Cemex' customers upon request.
- Direct A1 and A3 emissions accounting: The direct CO2 emissions of the plant (calcination process and fuel) were calculated following the methodology stipulated in "The Cement CO2 and Energy Protocol[4]" of the GCCA. Process emissions were estimated using method A2 - Analysis of the CO2 released from total carbon (TC) of raw meals. Emissions are from fuels burned on-site (kiln and non-kiln fuels) and calculated in the clinker phase in the Caracolito plant. These emissions were estimated using fossil fuel Emission Factors from the IPCC Energy Module - 2006, as well as Emission Factors for alternative fuels suggested by the GCCA[5]. AT third party audits these direct emissions annually. All other emissions were obtained from Ecoinvent Emission Factor data and the respective consumption recorded by the plant.
- Concrete mixing energy use: actual truck fuel use is considered (specific gal/m^3, by plant); the GCCA Industry EPD Tool allocates 30% of all mixing truck (fleet) energy use to Module A3, as defined by the PCR. The Operations and Operational Excellence teams within Cemex continuously monitor and track truck energy use for optimization and efficiency measures.
- Waste transport requirements**:** Transport distances use actual values between the plant location and the waste treatment location.

7. DATA QUALITY ASSESSMENT

Data quality/variability requirements, as specified in the PCR, are applied. This section describes the data quality achieved relative to the ISO 14044:2006 requirements. Data quality is judged based on its precision (measured, calculated, or estimated), completeness (e.g., unreported emissions), consistency (degree of uniformity of the methodology applied within at study serving as at data source) and representativeness (geographical, temporal, and technological).

7.1. Precision: Thorough measurement and calculation; the manufacturer collected and provided primary data on their annual production.

7.2. Completeness: All relevant specific processes, including inputs (raw materials, energy, and ancillary materials) and outputs (emissions and production volume) were considered and modeled to represent the specified and declared products. Most relevant background materials and processes were taken from Ecoinvent v3.5 LCI datasets and GCCA data where relatively recent region-specific electricity inputs were utilized.

[4] https://www.cement-co2-protocol.org/en/
[5] https://www.cement-co2-protocol.org/v3/Content/Internet_Manual/constants.htm

7.3. Consistency: To ensure consistency, the same modeling structure across the respective product systems was utilized for all inputs, which consisted of raw material inputs and ancillary material, energy flows, water resource inputs, product, and co-products outputs, returned and recovered Cement materials, emissions to air, water and soil, and waste recycling and treatment. The same background LCI datasets from the GCCA EPD Tool (which includes the Ecoinvent v3.5 database and GCCA data) were used across all product systems. Cross checks concerning the plausibility of mass and energy flows were continuously conducted. The LCA team conducted mass and energy balances at the plant and selected process level to maintain a high level of consistency.

7.4. Reproducibility: Internal reproducibility is possible since the data and the models are stored and available in a consolidated database with all inputs and all background reports (outputs) within Cemex' archives and within the GCCA's Industry EPD Tool. The Life Cycle Assessment and calculations for all foreground and background processes are contained within the Industry EPD Tool and replicable at any moment. A considerable level of transparency is provided throughout the detailed LCA report as the specifications and material quantity make-up for the declared products are presented and key primary and secondary LCI data sources are summarized. The provision of more detailed publicly accessible data to allow full external reproducibility was not possible due to reasons of confidentiality.

7.5. Life Cycle Assessment tool: The Global Cement and Concrete Association (GCCA) is at CEO-led industry initiative. Its members, Board of Directors, and Executive team are committed to sustainability – reducing the impacts of cement production and promoting the unique properties of concrete as at sustainable, durable and resilient building material – at material that will answer the needs of at growing and increasingly urban population that is set to exceed 9 billion people by 2050.

GCCA's Industry EPD Tool for Cement and Concrete is at web-based calculation tool for EPDs of clinker, cement, aggregates, concrete and precast elements, available in both International and North American versions. The latter complies with the latest North American cement and concrete PCRs registered at NSF International, namely PCR for Portland, Blended, Masonry, Mortar, and Plastic (Stucco) Cements (version 3.2, dated September 2021), the PCR for Concrete (version 3.2, dated February 2022) and the PCR for Precast Concrete (version 3.0, dated May 2021), all registered at NSF International.

The tool produces a background report with the complete set of input data and results of the specific product. This document is in the form of an Excel file that contains all the information required to produce an EPD and for a verifier to validate it.

7.6. Representativeness: The representativeness of the data is summarized as follows.

- Time related coverage of the manufacturing processes' primary collected data from 2023-01-01 to 2023-12-31.
- Upstream (background) LCI data was either the PCR specified default (if applicable) or more appropriate LCI datasets as found in the country-adjusted Ecoinvent v3.5 database.

- Geographical coverage for inputs required by the A3 facility is representative of its region of focus (Bogotá, Colombia); other upstream and background processes are based on US, North American, regional or global average data and adjusted to regional electricity mixes when relevant.

- Technological coverage is typical or average and specific to the participating facilities for all primary data.

8. ENVIRONMENTAL INDICATORS AND INVENTORY METRICS

Per the PCR, this EPD supports the life cycle impact assessment indicators and inventory metrics as listed in the tables below. As specified in the PCR, the most recent US EPA Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts (TRACI), impact categories were utilized as they provide at North American context for the mandatory category indicators to be included in the EPD. Additionally, the PCR requires a set of inventory metrics to be reported with the LCIA indicators (see tables below). It should be noted that emerging LCA impact categories and inventory items are still under development and can have high levels of uncertainty that preclude international acceptance pending further development. Use caution when interpreting data in any of the following categories.

9. LIMITATIONS

This EPD is at declaration of potential environmental impact and does not support or provide definitive comparisons of the environmental performance of specific products. Only EPDs prepared from cradle-to-grave life cycle results and based on the same function and reference service life and quantified by the same functional unit can be used to assist purchasers and users in making informed comparisons between products. LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks. Further, LCA offers a wide array of environmental impact indicators, and this EPD reports at collection of those, as specified by the PCR. In addition to the impact results, this EPD provides several metrics related to resource consumption and waste generation. While this data may be informational in other ways, it does not provide at measure of impact on the environment.

10. ENVIRONMENTAL INFORMATION

The results presented in this document cover **cradle-to-gate scope (A1-A3)**; transport to site (A4), construction (A5), Use (B) or end of life (C) stages of the products are not included. The following tables present aggregated A1 to A3 results:

Strength <15Mpa

ENVIRONMENTAL IMPACTS: 1 M^3 OF READY-MIX CONCRETE.								
Indicator	**GWP-tot ***	**GWP-bio ***	**ODP**	**AP**	**EP**	**POCP**	**ADPE**	**ADPF**
Unit	**kg CO_2 eq.**	**kg CO_2 eq.**	**kg CFC 11 eq.**	**kg SO_2 eq.**	**kg N eq**	**kg O_3 eq.**	**kg Sb eq.**	**MJ, net calorific value**
1-105-3-A-28-15-1-3-000	214	0.07	7.75E-06	1.11	0.22	23.40	1.54E-004	1297.11
1-105-5-A-28-10-0-3-000	199	0.07	7.33E-06	1.03	0.21	21.89	1.03E-004	1218.75
1-105-5-A-28-13-1-3-000	206	0.07	7.45E-06	1.06	0.21	22.46	1.03E-004	1244.96
1-105-5-A-28-15-1-3-000	206	0.07	7.54E-06	1.07	0.21	22.61	1.05E-004	1257.00
1-105-5-A-28-15-1-3-060	201	0.07	7.42E-06	1.04	0.21	21.93	1.09E-004	1226.03
1-105-5-A-28-20-1-3-000	212	0.07	7.54E-06	1.07	0.22	22.62	1.01E-004	1255.76
1-140-3-A-28-10-0-3-000	248	0.08	8.39E-06	1.26	0.26	26.37	1.60E-004	1439.01
1-140-5-A-28-10-0-3-000	221	0.07	7.73E-06	1.12	0.23	23.68	1.05E-004	1304.62
1-140-5-A-28-13-1-3-000	225	0.07	7.79E-06	1.14	0.23	23.98	1.04E-004	1319.68
1-140-5-A-28-15-1-3-000	236	0.07	8.08E-06	1.18	0.24	24.90	1.06E-004	1369.43
L-105-0-A-28-23-1-3-478	439	0.11	1.28E-05	1.96	0.44	39.00	1.20E-004	2152.32
L-105-0-A-28-23-1-3-479	397	0.10	1.2E-05	1.80	0.40	36.02	1.19E-004	2002.49
M-105-0-A-28-13-1-3-000	237	0.07	9.24E-06	1.18	0.25	24.44	1.22E-004	1436.08
M-105-0-A-28-13-1-3-061	236	0.08	9.45E-06	1.18	0.26	24.28	1.39E-004	1442.40
M-105-0-A-28-20-1-3-000	241	0.08	9.39E-06	1.20	0.26	24.73	1.21E-004	1454.61
M-125-0-A-28-13-1-3-060	251	0.08	9.6E-06	1.24	0.27	25.53	1.32E-004	1495.27
M-125-0-A-28-15-1-3-000	257	0.08	9.63E-06	1.27	0.27	25.98	1.23E-004	1512.52
M-125-0-A-28-15-1-3-061	256	0.08	9.91E-06	1.27	0.28	25.90	1.43E-004	1526.52
M-125-0-A-28-20-1-3-000	258	0.08	9.67E-06	1.27	0.27	25.98	1.22E-004	1514.15
M-140-0-A-28-15-1-3-000	268	0.08	9.86E-06	1.31	0.28	26.88	1.24E-004	1557.54
M-140-0-A-28-15-1-3-001	268	0.08	9.88E-06	1.31	0.28	26.70	1.25E-004	1548.15
M-140-0-A-28-20-1-3-000	260	0.08	9.79E-06	1.28	0.28	26.27	1.24E-004	1532.78

ENVIRONMENTAL IMPACTS: 1 M^3 OF READY-MIX CONCRETE.								
Indicator	**GWP-tot ***	**GWP-bio ***	**ODP**	**AP**	**EP**	**POCP**	**ADPE**	**ADPF**
Unit	**kg CO_2 eq.**	**kg CO_2 eq.**	**kg CFC 11 eq.**	**kg SO_2 eq.**	**kg N eq**	**kg O_3 eq.**	**kg Sb eq.**	**MJ, net calorific value**
P-036-5-A-03-13-0-3-000	409	0.10	1.29E-05	1.89	0.41	38.14	1.16E-004	2120.57
P-037-5-A-28-10-0-3-534	273	0.08	9.06E-06	1.36	0.28	28.46	1.15E-004	1553.75
P-039-5-A-28-15-1-3-000	324	0.09	9.56E-06	1.55	0.32	31.97	1.11E-004	1701.76
P-040-5-A-07-13-0-3-000	394	0.10	1.26E-05	1.84	0.40	37.24	1.18E-004	2070.27
P-040-5-A-28-10-0-3-000	348	0.09	9.91E-06	1.65	0.35	34.22	1.15E-004	1801.42
P-040-5-A-28-10-0-3-004	335	0.09	9.61E-06	1.59	0.33	32.76	1.12E-004	1773.95
P-040-5-A-28-13-0-3-000	347	0.09	9.93E-06	1.64	0.35	33.91	1.14E-004	1792.00
P-040-5-A-28-15-1-3-000	355	0.09	1.01E-05	1.68	0.35	34.52	1.14E-004	1824.88
P-041-5-A-07-13-0-3-000	392	0.10	1.28E-05	1.85	0.40	37.41	1.20E-004	2086.70
P-041-5-A-28-10-0-3-000	310	0.09	9.17E-06	1.49	0.31	31.03	1.11E-004	1645.78
P-041-5-A-28-13-0-3-000	331	0.09	9.57E-06	1.57	0.33	32.54	1.12E-004	1722.31
P-041-5-A-28-15-1-3-000	336	0.09	9.8E-06	1.60	0.34	33.05	1.14E-004	1754.69
P-042-5-A-28-13-0-3-003	365	0.09	1.04E-05	1.71	0.36	35.08	1.13E-004	1859.01
P-042-5-A-28-15-1-3-000	364	0.10	1.03E-05	1.71	0.36	35.24	1.15E-004	1863.48
P-043-5-A-03-13-0-3-000	372	0.09	1.17E-05	1.70	0.38	34.13	1.02E-004	1904.35
P-043-5-A-28-13-0-3-000	339	0.09	9.7E-06	1.60	0.34	33.02	1.11E-004	1747.37
P-045-5-A-28-10-0-3-000	344	0.09	9.73E-06	1.63	0.34	33.69	1.13E-004	1771.43
P-045-5-A-28-13-0-3-000	354	0.09	1.02E-05	1.67	0.35	34.49	1.14E-004	1829.70
P-045-5-A-28-15-1-3-000	361	0.09	1.03E-05	1.70	0.36	34.92	1.14E-004	1852.53
R-010-0-A-28-20-0-3-000	132	0.05	6.64E-06	0.72	0.15	15.26	9.36E-005	954.63
Acronyms	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)							

FUTURO EN ACCIÓN

RESOURCES USED: 1 M^3 OF READY-MIX CONCRETE.										
Indicator	**PERE**	**PERM**	**PERT**	**PENRE**	**PENRM**	**PENRT**	**SM**	**RSF**	**NRSF**	**NFW**
Unit	**MJ**	**MJ**	**MJ**	**MJ**	**MJ.**	**MJ**	**kg**	**MJ**	**MJ**	**m^3**
1-105-3-A-28-15-1-3-000	67.22	0.00	67.22	1351.30	0.00	1351.30	27.06	17.90	217.49	2.00
1-105-5-A-28-10-0-3-000	62.08	0.00	62.08	1261.11	0.00	1261.11	32.13	16.63	202.02	2.92
1-105-5-A-28-13-1-3-000	63.89	0.00	63.89	1287.03	0.00	1287.03	26.25	17.49	212.44	2.92
1-105-5-A-28-15-1-3-000	63.87	0.00	63.87	1299.99	0.00	1299.99	33.27	17.35	210.82	2.98
1-105-5-A-28-15-1-3-060	63.01	0.00	63.01	1267.53	0.00	1267.53	46.75	16.87	204.98	2.87
1-105-5-A-28-20-1-3-000	64.96	0.00	64.96	1294.52	0.00	1294.52	27.95	18.27	221.92	2.80
1-140-3-A-28-10-0-3-000	75.51	0.00	75.51	1496.22	0.00	1496.22	32.86	21.62	262.69	1.97
1-140-5-A-28-10-0-3-000	67.31	0.00	67.31	1347.33	0.00	1347.33	31.80	19.05	231.46	2.93
1-140-5-A-28-13-1-3-000	68.14	0.00	68.14	1361.56	0.00	1361.56	41.48	19.54	237.45	2.89
1-140-5-A-28-15-1-3-000	70.64	0.00	70.64	1411.84	0.00	1411.84	31.64	20.60	250.34	2.92
L-105-0-A-28-23-1-3-478	115.86	0.00	115.86	2152.33	0.00	2152.33	4.07	42.92	521.42	1.87
L-105-0-A-28-23-1-3-479	106.50	0.00	106.50	2002.49	0.00	2002.49	0.94	38.29	465.27	2.03
M-105-0-A-28-13-1-3-000	69.57	0.00	69.57	1436.08	0.00	1436.08	30.74	20.27	246.23	2.57
M-105-0-A-28-13-1-3-061	70.69	0.00	70.69	1442.40	0.00	1442.40	30.62	20.04	243.50	2.61
M-105-0-A-28-20-1-3-000	70.53	0.00	70.53	1454.61	0.00	1454.61	31.80	20.76	252.23	2.54
M-125-0-A-28-13-1-3-060	73.70	0.00	73.70	1495.27	0.00	1495.27	33.12	21.81	264.99	2.56
M-125-0-A-28-15-1-3-000	74.23	0.00	74.23	1512.52	0.00	1512.52	33.97	22.48	273.11	2.54
M-125-0-A-28-15-1-3-061	75.58	0.00	75.58	1526.52	0.00	1526.52	33.98	22.22	269.93	2.59
M-125-0-A-28-20-1-3-000	74.50	0.00	74.50	1514.15	0.00	1514.15	34.39	22.68	275.60	2.50
M-140-0-A-28-15-1-3-000	76.87	0.00	76.87	1557.54	0.00	1557.54	36.17	23.71	288.08	2.52
M-140-0-A-28-15-1-3-001	77.06	0.00	77.06	1548.15	0.00	1548.15	29.67	23.83	289.55	2.49
M-140-0-A-28-20-1-3-000	74.85	0.00	74.85	1532.78	0.00	1532.78	34.84	22.72	276.07	2.53
P-036-5-A-03-13-0-3-000	109.10	0.00	109.10	2166.24	0.00	2166.24	23.18	38.63	469.35	2.82
P-037-5-A-28-10-0-3-534	79.46	0.00	79.46	1601.67	0.00	1601.67	36.48	24.16	293.49	3.20
P-039-5-A-28-15-1-3-000	91.21	0.00	91.21	1750.19	0.00	1750.19	46.11	30.25	367.58	2.92
P-040-5-A-07-13-0-3-000	105.96	0.00	105.96	2119.95	0.00	2119.95	20.86	36.89	448.18	2.95
P-040-5-A-28-10-0-3-000	97.19	0.00	97.19	1855.41	0.00	1855.41	48.79	32.80	398.51	3.03

RESOURCES USED: 1 M³ OF READY-MIX CONCRETE.										
Indicator	**PERE**	**PERM**	**PERT**	**PENRE**	**PENRM**	**PENRT**	**SM**	**RSF**	**NRSF**	**NFW**
Unit	**MJ**	**MJ**	**MJ**	**MJ**	**MJ.**	**MJ**	**kg**	**MJ**	**MJ**	**m³**
P-040-5-A-28-10-0-3-004	95.43	0.00	95.43	1805.29	21.08	1826.37	47.43	31.26	379.83	2.96
P-040-5-A-28-13-0-3-000	96.62	0.00	96.62	1842.25	0.00	1842.25	48.20	32.71	397.41	2.94
P-040-5-A-28-15-1-3-000	98.56	0.00	98.56	1873.20	0.00	1873.20	49.50	33.70	409.49	2.91
P-041-5-A-07-13-0-3-000	105.57	0.00	105.57	2139.47	0.00	2139.47	29.86	36.43	442.65	3.07
P-041-5-A-28-10-0-3-000	88.30	0.00	88.30	1696.65	0.00	1696.65	43.92	28.77	349.58	2.97
P-041-5-A-28-13-0-3-000	92.94	0.00	92.94	1771.25	0.00	1771.25	46.90	31.08	377.64	2.91
P-041-5-A-28-15-1-3-000	94.07	0.00	94.07	1802.53	0.00	1802.53	48.03	31.53	383.12	2.94
P-042-5-A-28-13-0-3-003	100.36	0.00	100.36	1904.69	0.00	1904.69	53.14	34.71	421.70	2.82
P-042-5-A-28-15-1-3-000	100.39	0.00	100.39	1911.49	0.00	1911.49	52.57	34.52	419.46	2.91
P-043-5-A-03-13-0-3-000	99.96	0.00	99.96	1942.14	0.00	1942.14	20.44	35.36	429.62	2.28
P-043-5-A-28-13-0-3-000	94.66	0.00	94.66	1792.43	0.00	1792.43	49.04	32.09	389.88	2.81
P-045-5-A-28-10-0-3-000	96.06	0.00	96.06	1822.95	0.00	1822.95	48.89	32.45	394.27	2.96
P-045-5-A-28-13-0-3-000	98.19	0.00	98.19	1878.84	0.00	1878.84	54.20	33.48	406.79	2.93
P-045-5-A-28-15-1-3-000	99.61	0.00	99.61	1898.93	0.00	1898.93	52.06	34.24	416.04	2.86
R-010-0-A-28-20-0-3-000	44.69	0.00	44.69	954.64	0.00	954.64	15.18	9.75	118.40	2.25
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 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)									

Strength 15 to 20 Mpa

ENVIRONMENTAL IMPACTS: 1 M^3 OF READY-MIX CONCRETE.								
Indicator	**GWP-tot ***	**GWP-bio ***	**ODP**	**AP**	**EP**	**POCP**	**ADPE**	**ADPF**
Unit	**kg CO_2 eq.**	**kg CO_2 eq.**	**kg CFC 11 eq.**	**kg SO_2 eq.**	**kg N eq**	**kg O_3 eq.**	**kg Sb eq.**	**MJ, net calorific value**
1-175-3-A-28-15-1-3-061	259	0.09	8.97E-06	1.31	0.27	27.35	1.88E-04	1510.01
1-175-5-A-28-10-0-3-000	233	0.07	7.95E-06	1.17	0.24	24.73	1.06E-04	1354.69
1-175-5-A-28-13-1-3-000	242	0.07	8.08E-06	1.21	0.25	25.46	1.07E-04	1387.88
1-175-5-A-28-13-1-3-060	247	0.08	8.27E-06	1.23	0.25	25.71	1.16E-04	1407.16
1-175-5-A-28-15-1-3-000	239	0.07	8.09E-06	1.20	0.25	25.16	1.05E-04	1379.41
1-175-5-A-28-15-1-3-060	239	0.08	8.28E-06	1.21	0.25	25.31	1.17E-04	1397.19
1-175-5-A-28-15-1-3-061	238	0.08	8.28E-06	1.20	0.25	25.02	1.25E-04	1385.93
M-175-0-A-28-13-1-3-000	295	0.09	1.04E-05	1.43	0.31	29.15	1.29E-04	1670.02
M-175-0-A-28-13-1-3-060	288	0.09	1.04E-05	1.40	0.31	28.49	1.38E-04	1643.56
Acronyms	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)							

RESOURCES USED: 1 M^3 OF READY-MIX CONCRETE										
Indicator	**PERE**	**PERM**	**PERT**	**PENRE**	**PENRM**	**PENRT**	**SM**	**RSF**	**NRSF**	**NFW**
Unit	**MJ**	**MJ**	**MJ**	**MJ**	**MJ.**	**MJ**	**kg**	**MJ**	**MJ**	**m^3**
1-175-3-A-28-15-1-3-061	79.42	0.00	79.42	1572.25	0.00	1572.25	61.95	22.26	270.40	2.01
1-175-5-A-28-10-0-3-000	70.19	0.00	70.19	1398.14	0.00	1398.14	33.14	20.36	247.38	2.95
1-175-5-A-28-13-1-3-000	72.25	0.00	72.25	1431.80	0.00	1431.80	32.42	21.31	258.88	2.96
1-175-5-A-28-13-1-3-060	74.11	0.00	74.11	1450.48	0.00	1450.48	33.48	21.87	265.70	2.94

RESOURCES USED: 1 M^3 OF READY-MIX CONCRETE										
Indicator	**PERE**	**PERM**	**PERT**	**PENRE**	**PENRM**	**PENRT**	**SM**	**RSF**	**NRSF**	**NFW**
Unit	**MJ**	**MJ**	**MJ**	**MJ**	**MJ.**	**MJ**	**kg**	**MJ**	**MJ**	**m^3**
1-175-5-A-28-15-1-3-000	71.27	0.00	71.27	1421.78	0.00	1421.78	53.46	21.01	255.31	2.88
1-175-5-A-28-15-1-3-060	72.04	0.00	72.04	1441.26	0.00	1441.26	57.47	20.75	252.13	2.97
1-175-5-A-28-15-1-3-061	72.54	0.00	72.54	1428.83	0.00	1428.83	57.42	20.72	251.72	2.92
M-175-0-A-28-13-1-3-000	83.24	0.00	83.24	1670.02	0.00	1670.02	41.34	26.57	322.86	2.54
M-175-0-A-28-13-1-3-060	82.52	0.00	82.52	1643.56	0.00	1643.56	39.38	25.80	313.51	2.55
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 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)									

Strength 20 to 35 MPa

ENVIRONMENTAL IMPACTS: 1 M^3 OF READY-MIX CONCRETE.								
Indicator	**GWP-tot ***	**GWP-bio ***	**ODP**	**AP**	**EP**	**POCP**	**ADPE**	**ADPF**
Unit	**kg CO_2 eq.**	**kg CO_2 eq.**	**kg CFC 11 eq.**	**kg SO_2 eq.**	**kg N eq**	**kg O_3 eq.**	**kg Sb eq.**	**MJ, net calorific value**
1-210-3-A-03-13-1-3-000	325	0.09	1.14E-05	1.58	0.34	32.26	1.69E-004	1827.55
1-210-3-A-07-13-1-3-000	298	0.09	1.08E-05	1.48	0.31	30.38	1.73E-004	1723.94
1-210-3-A-07-15-1-3-000	291	0.09	1.06E-05	1.45	0.30	29.75	1.70E-004	1692.70
1-210-3-A-28-10-0-3-000	281	0.09	8.95E-06	1.40	0.29	29.28	1.67E-004	1576.80
1-210-3-A-28-13-1-3-000	285	0.09	9.01E-06	1.41	0.29	29.52	1.69E-004	1585.75
1-210-3-A-28-15-1-3-000	278	0.08	8.95E-06	1.38	0.28	28.77	1.63E-004	1557.13
1-210-3-A-28-15-1-3-001	284	0.08	8.89E-06	1.39	0.29	28.99	1.59E-004	1558.81
1-210-3-A-28-20-1-3-000	280	0.08	9.02E-06	1.38	0.29	28.79	1.60E-004	1561.45
1-210-5-A-03-13-1-3-000	302	0.08	1.07E-05	1.46	0.31	29.83	1.11E-004	1698.08
1-210-5-A-03-15-1-3-000	298	0.08	1.06E-05	1.44	0.31	29.54	1.11E-004	1681.56

ENVIRONMENTAL IMPACTS: 1 M^3 OF READY-MIX CONCRETE.

Indicator	GWP-tot *	GWP-bio *	ODP	AP	EP	POCP	ADPE	ADPF
Unit	kg CO_2 eq.	kg CO_2 eq.	kg CFC 11 eq.	kg SO_2 eq.	kg N eq	kg O_3 eq.	kg Sb eq.	MJ, net calorific value
1-210-5-A-03-15-1-3-001	300	0.08	1.05E-05	1.44	0.31	29.38	1.08E-004	1670.00
1-210-5-A-03-20-1-3-000	315	0.09	1.12E-05	1.52	0.33	30.94	1.15E-004	1766.41
1-210-5-A-03-20-1-3-04M	310	0.10	1.32E-05	1.54	0.35	30.13	1.95E-004	1854.91
1-210-5-A-07-13-1-3-000	274	0.08	1E-05	1.35	0.28	27.72	1.10E-004	1585.63
1-210-5-A-07-15-1-3-000	269	0.08	9.95E-06	1.33	0.28	27.36	1.10E-004	1567.58
1-210-5-A-07-15-1-3-04M	294	0.11	1.26E-05	1.47	0.35	28.79	2.79E-004	1775.97
1-210-5-A-07-20-1-3-000	277	0.08	1.03E-05	1.36	0.29	27.94	1.10E-004	1605.27
1-210-5-A-07-20-1-3-04M	297	0.11	1.28E-05	1.49	0.35	29.14	2.81E-004	1802.24
1-210-5-A-07-20-1-3-04W	309	0.10	1.32E-05	1.55	0.35	30.30	1.96E-004	1865.48
1-210-5-A-14-13-1-3-000	254	0.08	8.49E-06	1.25	0.26	26.12	1.06E-004	1436.45
1-210-5-A-14-15-1-3-001	273	0.08	8.71E-06	1.34	0.28	27.85	1.08E-004	1509.46
1-210-5-A-28-10-0-3-000	253	0.08	8.37E-06	1.25	0.26	26.20	1.07E-004	1433.00
1-210-5-A-28-13-1-3-000	256	0.08	8.35E-06	1.26	0.26	26.48	1.07E-004	1441.00
1-210-5-A-28-15-1-3-000	259	0.08	8.47E-06	1.28	0.26	26.79	1.08E-004	1459.13
1-210-5-A-28-15-1-3-001	266	0.08	8.48E-06	1.30	0.27	27.17	1.06E-004	1472.71
1-210-5-A-28-15-1-3-01K	273	0.08	8.95E-06	1.34	0.28	27.93	1.23E-004	1573.01
1-210-5-A-28-15-1-3-04M	288	0.11	1.12E-05	1.44	0.34	28.55	2.83E-004	1681.46
1-210-5-A-28-15-1-3-061	265	0.08	8.8E-06	1.31	0.28	27.22	1.29E-004	1492.32
1-210-5-A-28-20-1-3-000	272	0.08	8.75E-06	1.33	0.28	27.73	1.09E-004	1506.89
1-210-5-A-28-20-1-3-04M	298	0.11	1.16E-05	1.46	0.35	28.88	2.89E-004	1711.36
1-210-5-A-28-20-1-3-04W	277	0.09	1.1E-05	1.40	0.31	27.80	1.88E-004	1640.49
1-245-3-A-28-10-0-3-000	281	0.09	9.07E-06	1.40	0.29	29.19	1.66E-004	1580.03
1-245-3-A-28-13-1-3-000	287	0.09	9.25E-06	1.41	0.29	29.35	1.59E-004	1597.63
1-245-3-A-28-13-1-3-001	286	0.09	9.17E-06	1.41	0.29	29.43	1.63E-004	1592.91
1-245-3-A-28-15-1-3-000	282	0.09	9.13E-06	1.39	0.29	28.87	1.66E-004	1563.53
1-245-3-A-28-20-1-3-000	276	0.08	9.25E-06	1.36	0.28	28.25	1.64E-004	1548.47
1-245-5-A-03-13-1-3-000	361	0.10	1.22E-05	1.72	0.37	34.90	1.20E-004	1964.48
1-245-5-A-07-13-1-3-000	302	0.08	1.07E-05	1.46	0.31	29.97	1.13E-004	1706.03

ENVIRONMENTAL IMPACTS: 1 M^3 OF READY-MIX CONCRETE.

Indicator	GWP-tot *	GWP-bio *	ODP	AP	EP	POCP	ADPE	ADPF
Unit	kg CO_2 eq.	kg CO_2 eq.	kg CFC 11 eq.	kg SO_2 eq.	kg N eq	kg O_3 eq.	kg Sb eq.	MJ, net calorific value
1-245-5-A-28-10-0-3-000	271	0.08	8.71E-06	1.33	0.27	27.70	1.09E-004	1503.95
1-245-5-A-28-13-1-3-000	272	0.08	8.79E-06	1.33	0.28	27.83	1.10E-004	1514.01
1-245-5-A-28-13-1-3-001	264	0.08	8.63E-06	1.30	0.27	27.16	1.09E-004	1480.95
1-245-5-A-28-15-1-3-000	269	0.08	8.65E-06	1.32	0.27	27.49	1.09E-004	1493.82
1-245-5-A-28-15-1-3-061	273	0.08	9.06E-06	1.35	0.28	28.02	1.33E-004	1538.73
1-280-3-A-03-15-1-3-000	389	0.10	1.29E-05	1.84	0.40	37.32	1.76E-004	2088.70
1-280-3-A-03-20-1-3-000	403	0.11	1.36E-05	1.91	0.41	38.39	1.75E-004	2173.49
1-280-3-A-03-20-1-3-001	476	0.12	1.53E-05	2.23	0.49	44.92	1.94E-004	2502.46
1-280-3-A-07-13-1-3-000	374	0.10	1.26E-05	1.79	0.38	36.36	1.77E-004	2038.61
1-280-3-A-14-13-1-3-000	366	0.10	1.08E-05	1.75	0.37	36.05	1.80E-004	1916.81
1-280-3-A-28-10-0-3-000	306	0.09	9.47E-06	1.49	0.31	30.97	1.66E-004	1663.46
1-280-3-A-28-13-1-3-000	300	0.09	9.45E-06	1.47	0.31	30.61	1.66E-004	1651.28
1-280-3-A-28-13-1-3-013	363	0.10	1.06E-05	1.74	0.37	35.85	1.71E-004	1907.08
1-280-3-A-28-15-1-3-000	305	0.09	9.45E-06	1.49	0.31	30.98	1.66E-004	1663.52
1-280-3-A-28-15-1-3-001	327	0.09	9.92E-06	1.58	0.33	32.67	1.69E-004	1749.60
1-280-3-A-28-15-1-3-009	317	0.09	9.75E-06	1.53	0.32	31.65	1.65E-004	1747.93
1-280-3-A-28-20-1-3-000	324	0.09	1E-05	1.57	0.33	32.47	1.67E-004	1751.95
1-280-3-A-28-20-1-3-001	313	0.09	9.73E-06	1.52	0.32	31.38	1.62E-004	1693.63
1-280-3-A-28-20-1-3-061	312	0.09	1.02E-05	1.53	0.33	31.24	1.89E-004	1719.40
1-280-5-A-03-13-1-3-000	373	0.10	1.26E-05	1.76	0.38	35.57	1.18E-004	2014.35
1-280-5-A-03-13-1-3-001	366	0.09	1.24E-05	1.72	0.37	34.78	1.15E-004	1969.60
1-280-5-A-03-15-1-3-000	381	0.10	1.27E-05	1.79	0.39	36.14	1.18E-004	2039.24
1-280-5-A-03-20-1-3-000	443	0.11	1.45E-05	2.07	0.45	41.54	1.29E-004	2335.19
1-280-5-A-07-13-1-3-000	346	0.09	1.18E-05	1.64	0.35	33.34	1.15E-004	1886.70
1-280-5-A-07-15-1-3-000	338	0.09	1.16E-05	1.61	0.35	32.78	1.16E-004	1853.59
1-280-5-A-07-15-1-3-001	340	0.09	1.16E-05	1.62	0.35	32.82	1.13E-004	1855.35
1-280-5-A-07-15-1-3-04M	386	0.13	1.52E-05	1.85	0.45	35.90	3.14E-004	2178.42
1-280-5-A-07-20-1-3-000	361	0.09	1.23E-05	1.70	0.37	34.43	1.18E-004	1954.98

ENVIRONMENTAL IMPACTS: 1 M^3 OF READY-MIX CONCRETE.								
Indicator	**GWP-tot ***	**GWP-bio ***	**ODP**	**AP**	**EP**	**POCP**	**ADPE**	**ADPF**
Unit	**kg CO_2 eq.**	**kg CO_2 eq.**	**kg CFC 11 eq.**	**kg SO_2 eq.**	**kg N eq**	**kg O_3 eq.**	**kg Sb eq.**	**MJ, net calorific value**
1-280-5-A-07-20-1-3-04W	373	0.11	1.5E-05	1.81	0.42	35.12	2.20E-004	2139.31
1-280-5-A-28-10-0-3-000	277	0.08	8.85E-06	1.36	0.28	28.28	1.10E-004	1532.79
1-280-5-A-28-10-0-3-001	284	0.08	8.94E-06	1.38	0.29	28.64	1.10E-004	1548.72
1-280-5-A-28-10-0-3-013	295	0.08	9.11E-06	1.42	0.30	29.51	1.11E-004	1593.47
1-280-5-A-28-13-1-3-000	288	0.08	9.11E-06	1.40	0.29	29.13	1.11E-004	1579.58
1-280-5-A-28-13-1-3-001	301	0.08	9.32E-06	1.45	0.30	30.10	1.10E-004	1625.86
1-280-5-A-28-15-1-3-000	291	0.08	9.06E-06	1.41	0.29	29.34	1.10E-004	1583.60
1-280-5-A-28-15-1-3-001	298	0.08	9.29E-06	1.44	0.30	29.75	1.09E-004	1609.91
1-280-5-A-28-15-1-3-060	286	0.08	9.38E-06	1.41	0.29	29.16	1.25E-004	1596.33
1-280-5-A-28-20-1-3-000	294	0.08	9.34E-06	1.43	0.30	29.55	1.10E-004	1607.58
1-280-5-A-28-20-1-3-001	317	0.09	9.73E-06	1.52	0.32	31.30	1.11E-004	1690.32
1-315-3-A-28-13-1-3-000	333	0.09	1E-05	1.61	0.34	33.33	1.72E-004	1778.40
1-315-3-A-28-13-1-3-001	358	0.10	1.04E-05	1.70	0.36	34.93	1.63E-004	1860.16
1-315-5-A-07-13-1-3-001	384	0.10	1.28E-05	1.79	0.39	36.19	1.17E-004	2043.06
1-315-5-A-28-10-0-3-000	300	0.08	9.32E-06	1.45	0.30	30.22	1.13E-004	1630.26
1-315-5-A-28-13-1-3-000	322	0.09	9.78E-06	1.55	0.32	32.07	1.16E-004	1720.85
1-315-5-A-28-13-1-3-001	326	0.09	9.7E-06	1.55	0.33	31.99	1.12E-004	1712.87
1-315-5-A-28-15-1-3-000	303	0.08	9.32E-06	1.46	0.31	30.35	1.13E-004	1634.27
1-350-3-A-03-15-1-3-000	504	0.12	1.57E-05	2.30	0.51	46.03	1.73E-004	2564.68
1-350-3-A-03-15-1-3-024	514	0.12	1.67E-05	2.37	0.52	47.06	1.79E-004	2661.13
1-350-3-A-03-20-1-3-000	556	0.13	1.72E-05	2.54	0.56	50.77	1.89E-004	2820.45
1-350-3-A-28-15-1-3-000	340	0.10	1.04E-05	1.63	0.35	33.62	1.70E-004	1809.37
1-350-3-A-28-15-1-3-009	356	0.10	1.06E-05	1.70	0.36	34.81	1.69E-004	1910.28
1-350-3-A-28-20-1-3-000	349	0.10	1.06E-05	1.67	0.35	34.36	1.66E-004	1848.88
1-350-3-A-28-20-1-3-009	358	0.10	1.08E-05	1.71	0.36	35.00	1.68E-004	1930.78
1-350-3-A-28-20-1-3-060	360	0.10	1.1E-05	1.73	0.37	35.41	1.90E-004	1909.38
1-350-3-A-28-20-1-3-061	346	0.10	1.09E-05	1.68	0.36	34.24	1.99E-004	1866.14
1-350-5-A-03-13-1-3-000	457	0.11	1.46E-05	2.10	0.46	42.04	1.23E-004	2359.79

ENVIRONMENTAL IMPACTS: 1 M^3 OF READY-MIX CONCRETE.

Indicator	GWP-tot *	GWP-bio *	ODP	AP	EP	POCP	ADPE	ADPF
Unit	kg CO_2 eq.	kg CO_2 eq.	kg CFC 11 eq.	kg SO_2 eq.	kg N eq	kg O_3 eq.	kg Sb eq.	MJ, net calorific value
1-350-5-A-03-15-1-3-000	501	0.12	1.55E-05	2.27	0.50	45.46	1.27E-004	2529.75
1-350-5-A-07-13-1-3-000	399	0.10	1.32E-05	1.87	0.41	37.74	1.22E-004	2123.16
1-350-5-A-28-13-1-3-000	314	0.09	9.72E-06	1.51	0.32	31.16	1.11E-004	1687.83
1-350-5-A-28-15-1-3-000	343	0.09	1.04E-05	1.64	0.35	33.90	1.19E-004	1820.27
1-350-5-A-28-15-1-3-001	322	0.09	9.85E-06	1.55	0.32	31.95	1.14E-004	1720.83
1-350-5-A-28-15-1-3-024	325	0.10	1.05E-05	1.57	0.34	32.00	1.60E-004	1764.90
1-350-5-A-28-20-1-3-000	331	0.09	1.01E-05	1.58	0.33	32.41	1.13E-004	1751.27
2-350-5-A-28-15-1-3-000	387	0.10	1.11E-05	1.82	0.39	37.42	1.21E-004	1985.49
2-350-5-A-28-15-1-3-001	428	0.11	1.18E-05	2.00	0.42	41.22	1.30E-004	2165.00
3-280-3-A-28-13-1-3-000	337	0.10	1.01E-05	1.63	0.34	33.79	1.75E-004	1804.08
3-280-3-A-28-13-1-3-001	312	0.09	9.44E-06	1.51	0.32	31.26	1.57E-004	1674.74
3-280-3-A-28-13-1-3-013	332	0.09	9.9E-06	1.61	0.34	33.24	1.72E-004	1773.08
3-280-3-A-28-13-1-3-072	327	0.09	9.82E-06	1.58	0.33	32.62	1.64E-004	1748.33
3-280-3-A-28-15-1-3-000	299	0.09	9.34E-06	1.47	0.30	30.64	1.66E-004	1647.55
3-280-3-A-28-15-1-3-001	344	0.10	1.04E-05	1.67	0.35	34.51	1.77E-004	1848.25
3-280-3-A-28-20-1-3-000	305	0.09	9.73E-06	1.51	0.31	31.24	1.69E-004	1692.62
3-280-3-A-28-20-1-3-001	335	0.09	1.02E-05	1.62	0.34	33.30	1.64E-004	1793.58
3-280-3-A-28-65-1-3-000	315	0.09	1.04E-05	1.55	0.33	31.76	1.77E-004	1752.98
3-280-5-A-28-13-1-3-001	304	0.08	9.46E-06	1.47	0.31	30.46	1.10E-004	1648.85
3-280-5-A-28-13-1-3-024	278	0.08	9.46E-06	1.38	0.29	28.19	1.21E-004	1568.55
3-280-5-A-28-15-1-3-000	278	0.08	8.85E-06	1.36	0.28	28.37	1.07E-004	1539.23
3-280-5-A-28-20-1-3-001	308	0.09	9.58E-06	1.49	0.31	30.82	1.11E-004	1667.39
7-210-5-A-28-15-1-3-000	258	0.08	8.48E-06	1.27	0.26	26.60	1.14E-004	1451.94
7-280-5-A-28-15-1-3-000	292	0.08	9.14E-06	1.41	0.30	29.34	1.09E-004	1590.77
8-280-3-A-28-20-1-3-000	328	0.09	1.01E-05	1.59	0.33	32.75	1.67E-004	1764.78
8-350-3-A-28-20-1-3-000	395	0.10	1.15E-05	1.86	0.40	37.99	1.67E-004	2031.22
C-210-3-A-28-25-1-3-000	296	0.09	1.01E-05	1.46	0.31	29.93	1.85E-004	1672.38
C-210-3-A-28-25-1-3-464	328	0.11	1.2E-05	1.62	0.37	32.36	2.78E-004	1873.07

FUTURO EN ACCIÓN

ENVIRONMENTAL IMPACTS: 1 M^3 OF READY-MIX CONCRETE.

Indicator	GWP-tot *	GWP-bio *	ODP	AP	EP	POCP	ADPE	ADPF
Unit	kg CO_2 eq.	kg CO_2 eq.	kg CFC 11 eq.	kg SO_2 eq.	kg N eq	kg O_3 eq.	kg Sb eq.	MJ, net calorific value
C-245-3-A-28-25-1-3-000	336	0.10	1.12E-05	1.63	0.36	33.02	2.10E-004	1845.84
C-245-3-A-28-25-1-3-200	316	0.10	1.09E-05	1.54	0.34	31.17	2.10E-004	1764.09
F-210-3-A-18-65-1-3-000	377	0.11	1.35E-05	1.81	0.40	36.27	1.96E-004	2094.82
F-280-3-A-18-65-1-3-02U	355	0.12	1.45E-05	1.74	0.41	33.96	3.14E-004	2074.48
J-210-3-A-28-65-1-3-000	310	0.09	1.08E-05	1.52	0.33	30.88	1.92E-004	1744.41
J-280-3-A-28-65-1-3-000	359	0.11	1.2E-05	1.73	0.38	34.70	2.18E-004	1953.04
M-280-0-A-28-20-1-3-000	386	0.10	1.19E-05	1.80	0.39	36.53	1.41E-004	2020.90
M-280-0-A-28-20-1-3-061	396	0.11	1.24E-05	1.83	0.41	36.93	1.74E-004	2059.14
O-210-3-A-18-13-1-3-000	287	0.09	1.04E-05	1.42	0.30	29.32	1.67E-004	1661.24
O-210-3-A-18-15-1-3-000	297	0.09	1.05E-05	1.45	0.31	29.89	1.65E-004	1691.10
O-210-3-A-18-15-1-3-061	302	0.09	1.1E-05	1.48	0.32	30.11	1.86E-004	1724.85
O-210-3-A-18-18-1-3-000	297	0.09	1.05E-05	1.46	0.31	29.98	1.64E-004	1693.50
O-210-3-A-18-18-1-3-061	298	0.09	1.08E-05	1.47	0.32	30.15	1.88E-004	1719.83
O-210-3-A-18-20-1-3-000	295	0.09	1.07E-05	1.45	0.31	29.62	1.59E-004	1694.03
O-210-3-A-18-23-1-3-000	308	0.09	1.08E-05	1.51	0.32	30.88	1.66E-004	1745.25
O-210-3-A-20-20-1-3-000	303	0.09	9.96E-06	1.48	0.31	30.54	1.63E-004	1679.48
O-210-5-A-18-13-1-3-000	272	0.08	9.86E-06	1.34	0.28	27.64	1.10E-004	1572.75
O-210-5-A-18-13-1-3-001	277	0.08	9.79E-06	1.35	0.29	27.75	1.08E-004	1572.19
O-210-5-A-18-13-1-3-009	286	0.08	1.02E-05	1.38	0.29	28.30	1.10E-004	1660.35
O-210-5-A-18-13-1-3-060	268	0.08	9.89E-06	1.33	0.28	27.31	1.20E-004	1563.35
O-210-5-A-18-13-1-3-074	290	0.09	1.03E-05	1.40	0.30	28.47	1.30E-004	1673.08
O-210-5-A-18-15-1-3-000	275	0.08	9.93E-06	1.35	0.28	27.72	1.09E-004	1579.14
O-210-5-A-18-15-1-3-001	283	0.08	1.01E-05	1.37	0.29	28.21	1.09E-004	1606.83
O-210-5-A-18-15-1-3-009	285	0.08	9.99E-06	1.38	0.29	28.39	1.10E-004	1649.22
O-210-5-A-20-13-1-3-000	266	0.08	8.91E-06	1.30	0.27	27.13	1.08E-004	1496.25
O-245-3-A-18-18-1-3-000	284	0.09	1.02E-05	1.41	0.30	29.06	1.65E-004	1645.51
O-245-5-A-18-13-1-3-000	276	0.08	1E-05	1.36	0.29	27.97	1.11E-004	1593.04
O-245-5-A-18-15-1-3-000	280	0.08	1.03E-05	1.37	0.29	28.10	1.10E-004	1611.75

ENVIRONMENTAL IMPACTS: 1 M^3 OF READY-MIX CONCRETE.

Indicator	GWP-tot *	GWP-bio *	ODP	AP	EP	POCP	ADPE	ADPF
Unit	kg CO_2 eq.	kg CO_2 eq.	kg CFC 11 eq.	kg SO_2 eq.	kg N eq	kg O_3 eq.	kg Sb eq.	MJ, net calorific value
O-280-3-A-18-13-1-3-000	329	0.09	1.14E-05	1.60	0.34	32.79	1.73E-004	1846.63
O-280-3-A-18-15-1-3-000	333	0.09	1.14E-05	1.61	0.34	32.91	1.70E-004	1849.34
O-280-3-A-18-18-1-3-000	329	0.09	1.14E-05	1.60	0.34	32.55	1.67E-004	1835.45
O-280-3-A-18-18-1-3-060	332	0.10	1.15E-05	1.61	0.35	32.67	1.76E-004	1848.99
O-280-3-A-18-20-1-3-000	331	0.09	1.17E-05	1.61	0.34	32.73	1.69E-004	1861.08
O-280-3-A-18-23-1-3-000	338	0.09	1.17E-05	1.64	0.35	33.29	1.68E-004	1883.35
O-280-3-A-20-20-1-3-000	319	0.09	1.04E-05	1.54	0.33	31.69	1.63E-004	1742.09
O-280-5-A-18-13-1-3-000	303	0.08	1.06E-05	1.47	0.31	30.12	1.13E-004	1705.25
O-280-5-A-18-15-1-3-000	319	0.09	1.12E-05	1.53	0.33	31.03	1.12E-004	1771.00
O-315-3-A-18-18-1-3-000	376	0.10	1.27E-05	1.79	0.39	36.23	1.70E-004	2045.61
O-315-3-A-18-23-1-3-000	370	0.10	1.25E-05	1.77	0.38	35.70	1.66E-004	2012.85
O-315-5-A-18-13-1-3-000	338	0.09	1.15E-05	1.61	0.35	32.85	1.15E-004	1849.89
O-315-5-A-18-15-1-3-000	336	0.09	1.13E-05	1.60	0.34	32.58	1.14E-004	1830.50
O-350-3-A-18-15-1-3-000	378	0.10	1.22E-05	1.80	0.39	36.70	1.76E-004	2026.88
O-350-3-A-18-18-1-3-000	350	0.10	1.15E-05	1.68	0.36	34.35	1.70E-004	1903.61
O-350-3-A-18-20-1-3-000	339	0.10	1.13E-05	1.64	0.35	33.42	1.70E-004	1860.96
O-350-3-A-18-23-1-3-000	367	0.10	1.22E-05	1.76	0.38	35.70	1.70E-004	1994.99
O-350-5-A-18-15-1-3-000	329	0.09	1.11E-05	1.59	0.34	32.60	1.20E-004	1818.71
Q-210-5-A-28-15-1-3-504	297	0.09	9.22E-06	1.43	0.30	29.61	1.13E-004	1600.43
T-210-3-A-28-18-1-3-665	275	0.09	9.13E-06	1.37	0.29	28.52	1.77E-004	1559.52
T-210-3-A-28-20-1-3-000	291	0.09	9.4E-06	1.43	0.30	29.66	1.74E-004	1614.46
T-210-5-A-28-20-1-3-000	270	0.08	8.86E-06	1.33	0.28	27.56	1.19E-004	1508.38
T-245-3-A-28-20-1-3-000	286	0.09	9.45E-06	1.42	0.30	29.30	1.73E-004	1605.29
T-245-5-A-28-20-1-3-000	273	0.08	9.1E-06	1.34	0.28	27.85	1.21E-004	1532.58
T-245-5-A-28-20-1-3-464	274	0.10	1.02E-05	1.37	0.31	27.79	2.10E-004	1601.39
T-280-3-A-28-20-1-3-000	310	0.09	9.95E-06	1.52	0.32	31.28	1.79E-004	1704.25
T-280-5-A-28-18-1-3-665	301	0.09	9.54E-06	1.45	0.31	30.00	1.24E-004	1632.12
T-280-5-A-28-20-1-3-000	303	0.09	9.7E-06	1.47	0.31	30.24	1.23E-004	1654.44

ENVIRONMENTAL IMPACTS: 1 M^3 OF READY-MIX CONCRETE.

Indicator	GWP-tot *	GWP-bio *	ODP	AP	EP	POCP	ADPE	ADPF
Unit	kg CO_2 eq.	kg CO_2 eq.	kg CFC 11 eq.	kg SO_2 eq.	kg N eq	kg O_3 eq.	kg Sb eq.	MJ, net calorific value
T-350-5-A-28-18-1-3-665	326	0.09	1.03E-05	1.57	0.33	32.14	1.28E-004	1755.53
T-350-5-A-28-20-1-3-000	392	0.10	1.16E-05	1.84	0.40	37.26	1.35E-004	2012.03
T-350-5-A-28-20-1-3-464	348	0.12	1.23E-05	1.69	0.39	33.52	2.47E-004	1926.90
V-280-3-A-28-65-1-3-000	352	0.10	1.11E-05	1.69	0.36	34.41	1.76E-004	1880.10
V-350-3-A-03-65-1-3-000	511	0.13	1.61E-05	2.37	0.52	47.04	1.98E-004	2622.95
V-350-3-A-28-65-1-3-000	355	0.10	1.12E-05	1.71	0.37	34.90	1.80E-004	1910.93
V-350-3-A-28-65-1-3-001	381	0.10	1.18E-05	1.82	0.39	36.92	1.81E-004	2011.69
Acronyms	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)							

RESOURCES USED: 1 M^3 OF READY-MIX CONCRETE.

Indicator	PERE	PERM	PERT	PENRE	PENRM	PENRT	SM	RSF	NRSF	NFW
Unit	MJ	MJ	MJ	MJ	MJ.	MJ	kg	MJ	MJ	m^3
1-210-3-A-03-13-1-3-000	91.88	0.00	91.88	1886.63	0.00	1886.63	22.26	28.99	352.21	1.99
1-210-3-A-07-13-1-3-000	86.13	0.00	86.13	1786.80	0.00	1786.80	17.28	25.99	315.80	2.05
1-210-3-A-07-15-1-3-000	84.39	0.00	84.39	1754.98	0.00	1754.98	21.81	25.27	306.97	2.04
1-210-3-A-28-10-0-3-000	83.08	0.00	83.08	1638.88	0.00	1638.88	71.38	24.98	303.44	1.93
1-210-3-A-28-13-1-3-000	84.44	0.00	84.44	1648.26	0.00	1648.26	38.71	25.55	310.40	1.98
1-210-3-A-28-15-1-3-000	82.25	0.00	82.25	1615.01	0.00	1615.01	49.05	24.78	301.12	1.97
1-210-3-A-28-15-1-3-001	83.72	0.00	83.72	1615.27	0.00	1615.27	39.30	25.75	312.86	1.86
1-210-3-A-28-20-1-3-000	82.51	0.00	82.51	1618.52	0.00	1618.52	57.15	25.08	304.67	1.91
1-210-5-A-03-13-1-3-000	84.54	0.00	84.54	1740.39	0.00	1740.39	18.77	26.97	327.62	2.92
1-210-5-A-03-15-1-3-000	83.67	0.00	83.67	1724.17	0.00	1724.17	19.03	26.55	322.53	2.93
1-210-5-A-03-15-1-3-001	84.01	0.00	84.01	1709.42	0.00	1709.42	16.33	27.02	328.23	2.77
1-210-5-A-03-20-1-3-000	87.64	0.00	87.64	1808.96	0.00	1808.96	15.57	28.30	343.80	2.95
1-210-5-A-03-20-1-3-04M	91.77	0.00	91.77	1897.23	0.00	1897.23	22.98	26.57	322.82	3.08

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RESOURCES USED: 1 M³ OF READY-MIX CONCRETE.										
Indicator	**PERE**	**PERM**	**PERT**	**PENRE**	**PENRM**	**PENRT**	**SM**	**RSF**	**NRSF**	**NFW**
Unit	**MJ**	**MJ**	**MJ**	**MJ**	**MJ.**	**MJ**	**kg**	**MJ**	**MJ**	**m³**
1-210-5-A-07-13-1-3-000	78.46	0.00	78.46	1628.01	0.00	1628.01	14.38	24.08	292.59	2.94
1-210-5-A-07-15-1-3-000	77.16	0.00	77.16	1611.20	0.00	1611.20	19.24	23.41	284.38	2.99
1-210-5-A-07-15-1-3-04M	94.99	0.00	94.99	1818.37	0.00	1818.37	19.66	24.38	296.21	3.29
1-210-5-A-07-20-1-3-000	78.99	0.00	78.99	1647.04	0.00	1647.04	15.38	24.33	295.63	2.93
1-210-5-A-07-20-1-3-04M	95.85	0.00	95.85	1844.63	0.00	1844.63	15.04	24.66	299.60	3.32
1-210-5-A-07-20-1-3-04W	91.42	0.00	91.42	1908.67	0.00	1908.67	22.49	26.24	318.80	3.15
1-210-5-A-14-13-1-3-000	74.39	0.00	74.39	1477.16	0.00	1477.16	34.35	22.48	273.16	2.86
1-210-5-A-14-15-1-3-001	79.31	0.00	79.31	1551.79	0.00	1551.79	37.95	24.75	300.65	2.88
1-210-5-A-28-10-0-3-000	74.28	0.00	74.28	1473.39	0.00	1473.39	44.98	22.38	271.90	2.89
1-210-5-A-28-13-1-3-000	75.23	0.00	75.23	1482.61	0.00	1482.61	47.07	22.86	277.72	2.88
1-210-5-A-28-15-1-3-000	75.84	0.00	75.84	1501.62	0.00	1501.62	51.57	23.07	280.24	2.92
1-210-5-A-28-15-1-3-001	77.40	0.00	77.40	1513.91	0.00	1513.91	54.52	24.02	291.78	2.81
1-210-5-A-28-15-1-3-01K	81.31	0.00	81.31	1594.61	21.08	1615.69	66.65	24.08	292.56	2.98
1-210-5-A-28-15-1-3-04M	95.39	0.00	95.39	1722.74	0.00	1722.74	35.09	24.57	298.48	3.24
1-210-5-A-28-15-1-3-061	79.11	0.00	79.11	1534.68	0.00	1534.68	35.29	23.67	287.60	2.96
1-210-5-A-28-20-1-3-000	79.09	0.00	79.09	1548.33	0.00	1548.33	34.16	24.64	299.39	2.88
1-210-5-A-28-20-1-3-04M	97.82	0.00	97.82	1748.95	0.00	1748.95	24.16	25.67	311.88	3.15
1-210-5-A-28-20-1-3-04W	85.04	0.00	85.04	1681.22	0.00	1681.22	36.17	23.82	289.43	3.05
1-245-3-A-28-10-0-3-000	82.97	0.00	82.97	1641.18	0.00	1641.18	70.03	25.01	303.86	1.92
1-245-3-A-28-13-1-3-000	83.76	0.00	83.76	1652.66	0.00	1652.66	71.63	25.74	312.68	1.93
1-245-3-A-28-13-1-3-001	84.17	0.00	84.17	1649.78	0.00	1649.78	38.81	25.69	312.12	1.94
1-245-3-A-28-15-1-3-000	83.45	0.00	83.45	1620.24	0.00	1620.24	25.98	25.30	307.38	1.97
1-245-3-A-28-20-1-3-000	81.79	0.00	81.79	1603.61	0.00	1603.61	23.45	24.58	298.62	1.96
1-245-5-A-03-13-1-3-000	98.20	0.00	98.20	2008.94	0.00	2008.94	25.84	33.03	401.36	3.07
1-245-5-A-07-13-1-3-000	84.72	0.00	84.72	1748.56	0.00	1748.56	18.03	26.97	327.65	2.95
1-245-5-A-28-10-0-3-000	78.73	0.00	78.73	1546.75	0.00	1546.75	37.14	24.40	296.45	2.92
1-245-5-A-28-13-1-3-000	78.97	0.00	78.97	1555.79	0.00	1555.79	37.28	24.49	297.58	2.92
1-245-5-A-28-13-1-3-001	77.13	0.00	77.13	1522.64	0.00	1522.64	36.09	23.67	287.59	2.89
1-245-5-A-28-15-1-3-000	78.21	0.00	78.21	1534.04	0.00	1534.04	36.27	24.21	294.14	2.89

FUTURO EN ACCIÓN

RESOURCES USED: 1 M³ OF READY-MIX CONCRETE.										
Indicator	**PERE**	**PERM**	**PERT**	**PENRE**	**PENRM**	**PENRT**	**SM**	**RSF**	**NRSF**	**NFW**
Unit	**MJ**	**MJ**	**MJ**	**MJ**	**MJ.**	**MJ**	**kg**	**MJ**	**MJ**	**m³**
1-245-5-A-28-15-1-3-061	80.79	0.00	80.79	1581.58	0.00	1581.58	67.21	24.28	295.04	2.96
1-280-3-A-03-15-1-3-000	106.52	0.00	106.52	2149.80	0.00	2149.80	21.55	35.76	434.50	1.97
1-280-3-A-03-20-1-3-000	109.07	0.00	109.07	2232.09	0.00	2232.09	31.64	36.99	449.40	1.97
1-280-3-A-03-20-1-3-001	126.60	0.00	126.60	2566.87	0.00	2566.87	26.59	44.44	539.95	2.19
1-280-3-A-07-13-1-3-000	103.31	0.00	103.31	2099.93	0.00	2099.93	20.53	34.10	414.35	2.03
1-280-3-A-14-13-1-3-000	103.36	0.00	103.36	1980.09	0.00	1980.09	0.84	34.12	414.51	2.04
1-280-3-A-28-10-0-3-000	88.86	0.00	88.86	1722.44	0.00	1722.44	42.41	27.86	338.52	1.95
1-280-3-A-28-13-1-3-000	87.42	0.00	87.42	1709.75	0.00	1709.75	48.74	27.15	329.82	1.96
1-280-3-A-28-13-1-3-013	101.94	0.00	101.94	1966.31	0.00	1966.31	85.80	33.93	412.20	1.94
1-280-3-A-28-15-1-3-000	88.54	0.00	88.54	1721.99	0.00	1721.99	50.37	27.68	336.25	1.96
1-280-3-A-28-15-1-3-001	93.69	0.00	93.69	1810.28	0.00	1810.28	45.56	30.08	365.42	1.90
1-280-3-A-28-15-1-3-009	92.71	0.00	92.71	1783.04	21.08	1804.12	42.98	28.86	350.68	1.96
1-280-3-A-28-20-1-3-000	92.66	0.00	92.66	1810.32	0.00	1810.32	58.68	29.64	360.06	1.94
1-280-3-A-28-20-1-3-001	90.14	0.00	90.14	1748.94	0.00	1748.94	43.79	28.68	348.47	1.90
1-280-3-A-28-20-1-3-061	91.36	0.00	91.36	1775.91	0.00	1775.91	77.47	28.03	340.57	1.96
1-280-5-A-03-13-1-3-000	100.59	0.00	100.59	2055.96	0.00	2055.96	29.48	34.43	418.27	2.89
1-280-5-A-03-13-1-3-001	98.89	0.00	98.89	2010.54	0.00	2010.54	28.83	33.83	411.00	2.81
1-280-5-A-03-15-1-3-000	102.45	0.00	102.45	2080.33	0.00	2080.33	23.26	35.31	429.03	2.89
1-280-5-A-03-20-1-3-000	116.68	0.00	116.68	2377.93	0.00	2377.93	27.04	41.52	504.42	3.09
1-280-5-A-07-13-1-3-000	94.41	0.00	94.41	1929.39	0.00	1929.39	27.20	31.57	383.56	2.90
1-280-5-A-07-15-1-3-000	92.77	0.00	92.77	1895.66	0.00	1895.66	20.20	30.74	373.45	2.93
1-280-5-A-07-15-1-3-001	93.25	0.00	93.25	1897.68	0.00	1897.68	26.57	31.14	378.32	2.86
1-280-5-A-07-15-1-3-04M	117.71	0.00	117.71	2217.36	0.00	2217.36	28.73	33.84	411.20	3.24
1-280-5-A-07-20-1-3-000	97.79	0.00	97.79	1995.19	0.00	1995.19	19.18	33.15	402.71	2.87
1-280-5-A-07-20-1-3-04W	107.15	0.00	107.15	2180.56	0.00	2180.56	28.18	32.83	398.90	3.11
1-280-5-A-28-10-0-3-000	80.20	0.00	80.20	1575.52	0.00	1575.52	43.80	25.06	304.50	2.92
1-280-5-A-28-10-0-3-001	81.86	0.00	81.86	1589.38	0.00	1589.38	36.23	25.98	315.66	2.84
1-280-5-A-28-10-0-3-013	84.53	0.00	84.53	1633.73	0.00	1633.73	41.47	27.20	330.50	2.82
1-280-5-A-28-13-1-3-000	82.43	0.00	82.43	1621.67	0.00	1621.67	55.59	26.14	317.61	2.90

FUTURO EN ACCIÓN

RESOURCES USED: 1 M³ OF READY-MIX CONCRETE.										
Indicator	**PERE**	**PERM**	**PERT**	**PENRE**	**PENRM**	**PENRT**	**SM**	**RSF**	**NRSF**	**NFW**
Unit	**MJ**	**MJ**	**MJ**	**MJ**	**MJ.**	**MJ**	**kg**	**MJ**	**MJ**	**m³**
1-280-5-A-28-13-1-3-001	85.31	0.00	85.31	1667.70	0.00	1667.70	64.94	27.61	335.43	2.85
1-280-5-A-28-15-1-3-000	83.15	0.00	83.15	1625.48	0.00	1625.48	56.39	26.52	322.20	2.89
1-280-5-A-28-15-1-3-001	84.79	0.00	84.79	1649.94	0.00	1649.94	54.97	27.45	333.46	2.79
1-280-5-A-28-15-1-3-060	83.10	0.00	83.10	1638.72	0.00	1638.72	39.08	25.69	312.13	3.04
1-280-5-A-28-20-1-3-000	83.81	0.00	83.81	1648.67	0.00	1648.67	55.22	26.86	326.39	2.86
1-280-5-A-28-20-1-3-001	89.24	0.00	89.24	1730.28	0.00	1730.28	45.35	29.49	358.29	2.81
1-315-3-A-28-13-1-3-000	95.28	0.00	95.28	1839.93	0.00	1839.93	46.71	30.68	372.75	1.95
1-315-3-A-28-13-1-3-001	100.53	0.00	100.53	1914.08	0.00	1914.08	51.49	33.68	409.16	1.90
1-315-5-A-07-13-1-3-001	102.99	0.00	102.99	2082.16	0.00	2082.16	21.57	35.74	434.28	2.79
1-315-5-A-28-10-0-3-000	85.58	0.00	85.58	1672.10	0.00	1672.10	41.26	27.51	334.27	2.94
1-315-5-A-28-13-1-3-000	90.81	0.00	90.81	1763.94	0.00	1763.94	43.61	29.89	363.19	2.97
1-315-5-A-28-13-1-3-001	91.28	0.00	91.28	1753.46	0.00	1753.46	46.40	30.45	369.94	2.80
1-315-5-A-28-15-1-3-000	86.04	0.00	86.04	1674.82	0.00	1674.82	42.38	27.79	337.68	2.91
1-350-3-A-03-15-1-3-000	131.54	0.00	131.54	2615.41	0.00	2615.41	40.86	48.02	583.45	1.92
1-350-3-A-03-15-1-3-024	133.82	0.00	133.82	2713.94	0.00	2713.94	29.48	48.73	591.99	1.98
1-350-3-A-03-20-1-3-000	143.99	0.00	143.99	2877.35	0.00	2877.35	29.96	53.11	645.26	2.07
1-350-3-A-28-15-1-3-000	96.53	0.00	96.53	1866.34	0.00	1866.34	39.85	31.40	381.45	1.97
1-350-3-A-28-15-1-3-009	101.53	0.00	101.53	1945.94	21.08	1967.02	50.15	32.93	400.13	1.95
1-350-3-A-28-20-1-3-000	98.43	0.00	98.43	1904.58	0.00	1904.58	46.84	32.45	394.31	1.94
1-350-3-A-28-20-1-3-009	101.90	0.00	101.90	1964.00	21.08	1985.08	50.01	33.14	402.67	1.99
1-350-3-A-28-20-1-3-060	102.38	0.00	102.38	1972.84	0.00	1972.84	50.73	33.28	404.33	1.95
1-350-3-A-28-20-1-3-061	100.01	0.00	100.01	1925.02	0.00	1925.02	48.19	31.71	385.25	2.03
1-350-5-A-03-13-1-3-000	119.39	0.00	119.39	2399.50	0.00	2399.50	36.75	43.36	526.85	2.81
1-350-5-A-03-15-1-3-000	129.46	0.00	129.46	2567.03	0.00	2567.03	28.49	48.10	584.37	2.77
1-350-5-A-07-13-1-3-000	106.54	0.00	106.54	2165.08	0.00	2165.08	21.76	37.03	449.84	2.97
1-350-5-A-28-13-1-3-000	88.09	0.00	88.09	1729.52	0.00	1729.52	73.53	28.88	350.92	2.85
1-350-5-A-28-15-1-3-000	95.54	0.00	95.54	1864.39	0.00	1864.39	46.90	31.95	388.13	3.03
1-350-5-A-28-15-1-3-001	90.63	0.00	90.63	1763.90	0.00	1763.90	46.14	29.92	363.56	2.91
1-350-5-A-28-15-1-3-024	94.38	0.00	94.38	1804.85	0.00	1804.85	45.29	29.67	360.50	2.99

CEMEX

FUTURO EN ACCIÓN

RESOURCES USED: 1 M³ OF READY-MIX CONCRETE.										
Indicator	**PERE**	**PERM**	**PERT**	**PENRE**	**PENRM**	**PENRT**	**SM**	**RSF**	**NRSF**	**NFW**
Unit	**MJ**	**MJ**	**MJ**	**MJ**	**MJ.**	**MJ**	**kg**	**MJ**	**MJ**	**m³**
1-350-5-A-28-20-1-3-000	92.35	0.00	92.35	1790.77	0.00	1790.77	47.41	30.93	375.84	2.81
2-350-5-A-28-15-1-3-000	105.72	0.00	105.72	2029.62	0.00	2029.62	66.97	36.86	447.82	2.98
2-350-5-A-28-15-1-3-001	115.54	0.00	115.54	2213.52	0.00	2213.52	68.43	40.97	497.75	3.22
3-280-3-A-28-13-1-3-000	96.06	0.00	96.06	1867.80	0.00	1867.80	73.29	30.92	375.68	1.95
3-280-3-A-28-13-1-3-001	89.53	0.00	89.53	1731.10	0.00	1731.10	105.85	28.74	349.12	1.76
3-280-3-A-28-13-1-3-013	95.01	0.00	95.01	1837.28	0.00	1837.28	84.58	30.55	371.15	1.85
3-280-3-A-28-13-1-3-072	93.32	0.00	93.32	1807.11	0.00	1807.11	101.51	30.14	366.14	1.81
3-280-3-A-28-15-1-3-000	86.90	0.00	86.90	1710.14	0.00	1710.14	98.80	26.93	327.18	1.86
3-280-3-A-28-15-1-3-001	97.60	0.00	97.60	1913.14	0.00	1913.14	81.42	31.53	383.12	1.97
3-280-3-A-28-20-1-3-000	88.24	0.00	88.24	1755.71	0.00	1755.71	101.27	27.44	333.38	1.87
3-280-3-A-28-20-1-3-001	94.96	0.00	94.96	1850.43	0.00	1850.43	83.43	30.93	375.80	1.88
3-280-3-A-28-65-1-3-000	90.90	0.00	90.90	1808.11	0.00	1808.11	94.39	28.30	343.83	1.97
3-280-5-A-28-13-1-3-001	85.95	0.00	85.95	1689.08	0.00	1689.08	84.70	27.95	339.56	2.82
3-280-5-A-28-13-1-3-024	80.73	0.00	80.73	1610.58	0.00	1610.58	90.85	24.88	302.25	2.83
3-280-5-A-28-15-1-3-000	79.93	0.00	79.93	1581.65	0.00	1581.65	90.60	25.15	305.54	2.82
3-280-5-A-28-20-1-3-001	87.00	0.00	87.00	1709.83	0.00	1709.83	77.89	28.38	344.78	2.83
7-210-5-A-28-15-1-3-000	76.26	0.00	76.26	1493.48	0.00	1493.48	35.13	23.04	279.93	2.91
7-280-5-A-28-15-1-3-000	83.05	0.00	83.05	1630.20	0.00	1630.20	73.82	26.65	323.74	2.80
8-280-3-A-28-20-1-3-000	93.74	0.00	93.74	1822.33	0.00	1822.33	45.89	30.16	366.43	1.96
8-350-3-A-28-20-1-3-000	108.90	0.00	108.90	2084.78	0.00	2084.78	57.24	37.50	455.66	1.93
C-210-3-A-28-25-1-3-000	86.88	0.00	86.88	1723.68	0.00	1723.68	82.89	26.01	316.00	2.04
C-210-3-A-28-25-1-3-464	100.74	0.00	100.74	1920.72	0.00	1920.72	79.45	28.39	344.89	2.34
C-245-3-A-28-25-1-3-000	97.86	0.00	97.86	1898.66	0.00	1898.66	83.42	30.17	366.53	2.04
C-245-3-A-28-25-1-3-200	93.01	0.00	93.01	1812.07	0.00	1812.07	76.69	27.83	338.13	2.09
F-210-3-A-18-65-1-3-000	104.82	0.00	104.82	2144.33	0.00	2144.33	42.27	33.90	411.92	2.18
F-280-3-A-18-65-1-3-02U	108.58	0.00	108.58	2123.28	0.00	2123.28	38.41	30.40	369.31	2.35
J-210-3-A-28-65-1-3-000	90.57	0.00	90.57	1789.41	0.00	1789.41	77.88	27.44	333.43	2.12
J-280-3-A-28-65-1-3-000	103.63	0.00	103.63	1998.56	0.00	1998.56	63.86	32.55	395.46	2.13
M-280-0-A-28-20-1-3-000	104.72	0.00	104.72	2020.90	0.00	2020.90	55.40	36.43	442.62	2.56

FUTURO EN ACCIÓN

RESOURCES USED: 1 M³ OF READY-MIX CONCRETE.										
Indicator	**PERE**	**PERM**	**PERT**	**PENRE**	**PENRM**	**PENRT**	**SM**	**RSF**	**NRSF**	**NFW**
Unit	**MJ**	**MJ**	**MJ**	**MJ**	**MJ.**	**MJ**	**kg**	**MJ**	**MJ**	**m³**
M-280-0-A-28-20-1-3-061	109.67	0.00	109.67	2059.14	0.00	2059.14	47.97	37.46	455.16	2.51
O-210-3-A-18-13-1-3-000	83.57	0.00	83.57	1721.54	0.00	1721.54	17.83	25.05	304.39	2.02
O-210-3-A-18-15-1-3-000	85.53	0.00	85.53	1749.33	0.00	1749.33	17.09	26.15	317.70	1.99
O-210-3-A-18-15-1-3-061	88.08	0.00	88.08	1782.35	0.00	1782.35	25.80	26.46	321.53	2.00
O-210-3-A-18-18-1-3-000	85.52	0.00	85.52	1749.06	0.00	1749.06	19.58	26.16	317.89	2.05
O-210-3-A-18-18-1-3-061	87.61	0.00	87.61	1777.48	0.00	1777.48	22.48	26.05	316.52	2.08
O-210-3-A-18-20-1-3-000	84.54	0.00	84.54	1746.31	0.00	1746.31	20.12	25.88	314.44	2.04
O-210-3-A-18-23-1-3-000	87.96	0.00	87.96	1801.95	0.00	1801.95	21.96	27.24	330.94	2.04
O-210-3-A-20-20-1-3-000	87.58	0.00	87.58	1734.91	0.00	1734.91	25.90	27.29	331.51	2.02
O-210-5-A-18-13-1-3-000	78.09	0.00	78.09	1616.07	0.00	1616.07	18.14	23.85	289.77	3.00
O-210-5-A-18-13-1-3-001	79.05	0.00	79.05	1611.50	0.00	1611.50	20.87	24.61	298.99	2.84
O-210-5-A-18-13-1-3-009	82.30	0.00	82.30	1680.54	21.08	1701.62	22.26	25.12	305.15	2.90
O-210-5-A-18-13-1-3-060	77.81	0.00	77.81	1607.15	0.00	1607.15	23.52	23.28	282.79	3.00
O-210-5-A-18-13-1-3-074	84.96	0.00	84.96	1690.30	21.08	1711.38	22.12	25.58	310.81	2.85
O-210-5-A-18-15-1-3-000	78.62	0.00	78.62	1621.11	0.00	1621.11	18.38	24.23	294.43	2.93
O-210-5-A-18-15-1-3-001	80.30	0.00	80.30	1647.70	0.00	1647.70	15.14	25.12	305.21	2.86
O-210-5-A-18-15-1-3-009	82.58	0.00	82.58	1669.88	21.08	1690.96	21.87	25.24	306.61	2.89
O-210-5-A-20-13-1-3-000	77.46	0.00	77.46	1538.13	0.00	1538.13	21.54	23.85	289.73	2.89
O-245-3-A-18-18-1-3-000	82.77	0.00	82.77	1702.97	0.00	1702.97	18.40	24.78	301.06	2.03
O-245-5-A-18-13-1-3-000	78.91	0.00	78.91	1636.40	0.00	1636.40	18.04	24.20	294.08	2.99
O-245-5-A-18-15-1-3-000	79.58	0.00	79.58	1653.54	0.00	1653.54	15.14	24.64	299.42	2.92
O-280-3-A-18-13-1-3-000	93.13	0.00	93.13	1908.16	0.00	1908.16	27.51	29.41	357.31	2.02
O-280-3-A-18-15-1-3-000	93.76	0.00	93.76	1908.57	0.00	1908.57	25.37	29.88	363.04	1.99
O-280-3-A-18-18-1-3-000	92.83	0.00	92.83	1891.74	0.00	1891.74	20.71	29.55	358.98	2.01
O-280-3-A-18-18-1-3-060	94.26	0.00	94.26	1902.44	0.00	1902.44	27.72	29.85	362.66	2.01
O-280-3-A-18-20-1-3-000	93.12	0.00	93.12	1918.81	0.00	1918.81	22.00	29.58	359.35	2.02
O-280-3-A-18-23-1-3-000	94.69	0.00	94.69	1940.08	0.00	1940.08	25.32	30.36	368.85	2.02
O-280-3-A-20-20-1-3-000	91.18	0.00	91.18	1797.25	0.00	1797.25	22.89	29.08	353.28	1.94
O-280-5-A-18-13-1-3-000	85.18	0.00	85.18	1747.92	0.00	1747.92	21.21	27.19	330.40	2.95

FUTURO EN ACCIÓN

RESOURCES USED: 1 M³ OF READY-MIX CONCRETE.										
Indicator	**PERE**	**PERM**	**PERT**	**PENRE**	**PENRM**	**PENRT**	**SM**	**RSF**	**NRSF**	**NFW**
Unit	**MJ**	**MJ**	**MJ**	**MJ**	**MJ.**	**MJ**	**kg**	**MJ**	**MJ**	**m³**
O-280-5-A-18-15-1-3-000	88.18	0.00	88.18	1808.70	0.00	1808.70	17.52	28.80	349.94	2.83
O-315-3-A-18-18-1-3-000	103.09	0.00	103.09	2100.40	0.00	2100.40	20.87	34.31	416.86	2.04
O-315-3-A-18-23-1-3-000	101.65	0.00	101.65	2065.24	0.00	2065.24	28.83	33.83	411.00	2.01
O-315-5-A-18-13-1-3-000	93.03	0.00	93.03	1892.72	0.00	1892.72	27.31	30.92	375.63	2.92
O-315-5-A-18-15-1-3-000	92.54	0.00	92.54	1873.39	0.00	1873.39	26.51	30.76	373.73	2.91
O-350-3-A-18-15-1-3-000	104.71	0.00	104.71	2088.14	0.00	2088.14	21.02	34.88	423.82	1.99
O-350-3-A-18-18-1-3-000	98.01	0.00	98.01	1960.73	0.00	1960.73	22.71	31.93	387.91	2.02
O-350-3-A-18-20-1-3-000	95.40	0.00	95.40	1918.95	0.00	1918.95	18.75	30.69	372.89	1.99
O-350-3-A-18-23-1-3-000	101.66	0.00	101.66	2051.46	0.00	2051.46	29.94	33.66	408.98	2.01
O-350-5-A-18-15-1-3-000	91.59	0.00	91.59	1862.51	0.00	1862.51	17.24	29.88	362.99	3.10
Q-210-5-A-28-15-1-3-504	85.50	0.00	85.50	1642.89	0.00	1642.89	0.67	27.29	331.58	2.96
T-210-3-A-28-18-1-3-665	82.28	0.00	82.28	1621.95	0.00	1621.95	61.74	24.17	293.64	1.93
T-210-3-A-28-20-1-3-000	85.94	0.00	85.94	1671.00	0.00	1671.00	51.17	26.08	316.89	1.98
T-210-5-A-28-20-1-3-000	79.36	0.00	79.36	1548.91	0.00	1548.91	39.65	24.31	295.32	2.89
T-245-3-A-28-20-1-3-000	84.73	0.00	84.73	1660.94	0.00	1660.94	38.97	25.47	309.46	2.02
T-245-5-A-28-20-1-3-000	79.88	0.00	79.88	1574.39	0.00	1574.39	39.76	24.40	296.43	2.94
T-245-5-A-28-20-1-3-464	86.33	0.00	86.33	1643.49	0.00	1643.49	64.71	23.49	285.34	3.13
T-280-3-A-28-20-1-3-000	90.35	0.00	90.35	1761.92	0.00	1761.92	53.54	27.98	339.92	1.98
T-280-5-A-28-18-1-3-665	86.73	0.00	86.73	1673.69	0.00	1673.69	11.61	27.62	335.55	2.94
T-280-5-A-28-20-1-3-000	86.60	0.00	86.60	1695.43	0.00	1695.43	72.46	27.62	335.56	2.87
T-350-5-A-28-18-1-3-665	92.16	0.00	92.16	1795.59	0.00	1795.59	45.77	30.05	365.08	2.94
T-350-5-A-28-20-1-3-000	107.42	0.00	107.42	2051.21	0.00	2051.21	56.72	37.23	452.28	2.84
T-350-5-A-28-20-1-3-464	105.34	0.00	105.34	1967.36	0.00	1967.36	85.79	31.07	377.46	3.09
V-280-3-A-28-65-1-3-000	99.70	0.00	99.70	1927.95	0.00	1927.95	51.40	32.62	396.32	2.06
V-350-3-A-03-65-1-3-000	135.34	0.00	135.34	2673.44	0.00	2673.44	41.51	48.61	590.60	2.09
V-350-3-A-28-65-1-3-000	100.26	0.00	100.26	1961.79	0.00	1961.79	64.09	32.65	396.74	2.06
V-350-3-A-28-65-1-3-001	106.34	0.00	106.34	2061.32	0.00	2061.32	53.92	35.52	431.52	2.07

RESOURCES USED: 1 M^3 OF READY-MIX CONCRETE.										
Indicator	**PERE**	**PERM**	**PERT**	**PENRE**	**PENRM**	**PENRT**	**SM**	**RSF**	**NRSF**	**NFW**
Unit	**MJ**	**MJ**	**MJ**	**MJ**	**MJ.**	**MJ**	**kg**	**MJ**	**MJ**	**m^3**
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 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)									

Strength >35 MPa

ENVIRONMENTAL IMPACTS: 1 M^3 OF READY-MIX CONCRETE.								
Indicator	**GWP-tot ***	**GWP-bio ***	**ODP**	**AP**	**EP**	**POCP**	**ADPE**	**ADPF**
Unit	**kg CO_2 eq.**	**kg CO_2 eq.**	**kg CFC 11 eq.**	**kg SO_2 eq.**	**kg N eq**	**kg O_3 eq.**	**kg Sb eq.**	**MJ, net calorific value**
1-420-3-A-28-15-1-3-001	423	0.11	1.17E-05	1.98	0.42	40.55	1.70E-004	2138.16
1-420-3-A-28-20-1-3-000	413	0.11	1.18E-05	1.93	0.41	39.30	1.66E-004	2094.66
1-420-5-A-14-15-1-3-001	486	0.12	1.32E-05	2.23	0.48	45.10	1.29E-004	2383.69
1-420-5-A-28-10-0-3-000	405	0.10	1.14E-05	1.88	0.40	38.57	1.20E-004	2043.02
1-420-5-A-28-15-1-3-000	428	0.11	1.2E-05	2.01	0.43	41.32	1.33E-004	2181.14
3-420-5-A-28-15-1-3-000	444	0.11	1.2E-05	2.04	0.44	41.60	1.24E-004	2187.10
3-420-5-A-28-15-1-3-001	482	0.12	1.28E-05	2.20	0.48	44.92	1.29E-004	2350.93
8-420-3-A-28-20-1-3-000	471	0.12	1.29E-05	2.17	0.47	43.81	1.67E-004	2317.53
A-490-3-A-28-20-1-3-551	414	0.11	1.2E-05	1.95	0.42	39.81	1.84E-004	2133.13
F-420-3-A-18-65-1-3-000	476	0.12	1.54E-05	2.21	0.49	44.08	1.71E-004	2482.88
O-420-3-A-18-18-1-3-000	419	0.11	1.3E-05	1.96	0.43	39.77	1.73E-004	2187.02
O-420-3-A-18-20-1-3-000	414	0.11	1.31E-05	1.95	0.42	39.54	1.75E-004	2180.64
O-420-3-A-18-23-1-3-000	429	0.11	1.36E-05	2.01	0.44	40.48	1.72E-004	2245.66
O-420-3-A-18-23-1-3-001	448	0.11	1.4E-05	2.08	0.46	41.79	1.68E-004	2316.71
O-420-3-A-20-20-1-3-000	412	0.11	1.26E-05	1.94	0.42	39.49	1.76E-004	2149.62
O-420-5-A-18-15-1-3-000	379	0.10	1.22E-05	1.78	0.38	36.15	1.18E-004	2008.55
O-420-5-A-18-15-1-3-001	415	0.10	1.29E-05	1.93	0.42	39.10	1.22E-004	2156.01

ENVIRONMENTAL IMPACTS: 1 M³ OF READY-MIX CONCRETE.

Indicator	GWP-tot *	GWP-bio *	ODP	AP	EP	POCP	ADPE	ADPF
Unit	kg CO_2 eq.	kg CO_2 eq.	kg CFC 11 eq.	kg SO_2 eq.	kg N eq	kg O_3 eq.	kg Sb eq.	MJ, net calorific value
T-525-3-A-28-20-1-3-551	520	0.13	1.51E-05	2.41	0.53	48.50	2.18E-004	2612.41
V-420-3-A-28-65-1-3-000	534	0.13	1.5E-05	2.46	0.54	49.31	2.00E-004	2639.53
Acronyms	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)							

RESOURCES USED: 1 M³ OF READY-MIX CONCRETE.

Indicator	PERE	PERM	PERT	PENRE	PENRM	PENRT	SM	RSF	NRSF	NFW
Unit	MJ	MJ	MJ	MJ	MJ	MJ	kg	MJ	MJ	m³
1-420-3-A-28-15-1-3-001	115.27	0.00	115.27	2193.22	0.00	2193.22	112.74	40.52	492.26	1.85
1-420-3-A-28-20-1-3-000	112.91	0.00	112.91	2146.71	0.00	2146.71	60.22	39.54	480.36	1.90
1-420-5-A-14-15-1-3-001	128.11	0.00	128.11	2422.93	0.00	2422.93	66.09	47.46	576.67	2.88
1-420-5-A-28-10-0-3-000	109.62	0.00	109.62	2083.79	0.00	2083.79	61.52	38.91	472.77	2.85
1-420-5-A-28-15-1-3-000	115.57	0.00	115.57	2229.21	0.00	2229.21	53.43	40.79	495.54	3.31
3-420-5-A-28-15-1-3-000	118.64	0.00	118.64	2226.88	0.00	2226.88	53.50	43.16	524.40	2.84
3-420-5-A-28-15-1-3-001	127.73	0.00	127.73	2391.89	0.00	2391.89	55.29	47.23	573.83	2.92
8-420-3-A-28-20-1-3-000	126.06	0.00	126.06	2367.07	0.00	2367.07	69.96	45.89	557.53	1.87
A-490-3-A-28-20-1-3-551	113.37	0.00	113.37	2199.23	0.00	2199.23	48.24	38.80	471.35	1.95
F-420-3-A-18-65-1-3-000	125.04	0.00	125.04	2528.94	0.00	2528.94	38.17	44.86	545.09	2.06
O-420-3-A-18-18-1-3-000	113.54	0.00	113.54	2241.57	0.00	2241.57	30.58	39.32	477.71	2.01
O-420-3-A-18-20-1-3-000	112.61	0.00	112.61	2236.27	0.00	2236.27	22.84	38.70	470.25	2.05
O-420-3-A-18-23-1-3-000	115.50	0.00	115.50	2299.80	0.00	2299.80	35.93	40.29	489.51	1.98
O-420-3-A-18-23-1-3-001	119.43	0.00	119.43	2366.08	0.00	2366.08	41.19	42.42	515.45	1.95
O-420-3-A-20-20-1-3-000	112.49	0.00	112.49	2204.64	0.00	2204.64	23.25	38.65	469.60	2.09
O-420-5-A-18-15-1-3-000	102.46	0.00	102.46	2049.92	0.00	2049.92	35.62	35.36	429.63	2.90
O-420-5-A-18-15-1-3-001	110.81	0.00	110.81	2197.71	0.00	2197.71	34.68	39.20	476.30	2.92

RESOURCES USED: 1 M³ OF READY-MIX CONCRETE.										
Indicator	**PERE**	**PERM**	**PERT**	**PENRE**	**PENRM**	**PENRT**	**SM**	**RSF**	**NRSF**	**NFW**
Unit	**MJ**	**MJ**	**MJ**	**MJ**	**MJ**	**MJ**	**kg**	**MJ**	**MJ**	**m³**
T-525-3-A-28-20-1-3-551	139.42	0.00	139.42	2678.59	0.00	2678.59	28.74	49.72	604.14	2.14
V-420-3-A-28-65-1-3-000	141.80	0.00	141.80	2687.28	0.00	2687.28	96.06	51.85	629.98	2.10
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 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)									

11. OTHER ENVIRONMENTAL INFORMATION

Strength <15 MPa

OTHER ENVIRONMENTAL INFORMATION: 1 M³ OF READY-MIX CONCRETE.								
Indicator	**GWP Net**	**HWD**	**NHWD**	**RWD**	**MER**	**MFR**	**EE**	**CRU**
Unit	**kgCO_2 eq**	**kg**	**kg**	**kg**	**kg**	**kg**	**MJ**	**kg**
1-105-3-A-28-15-1-3-000	192	0.06	0.03	-	0	35.53	0	0
1-105-5-A-28-10-0-3-000	179	0.06	0.04	-	0	35.53	0	0
1-105-5-A-28-13-1-3-000	186	0.06	0.04	-	0	35.53	0	0
1-105-5-A-28-15-1-3-000	186	0.06	0.04	-	0	35.53	0	0
1-105-5-A-28-15-1-3-060	181	0.06	0.03	-	0	35.53	0	0
1-105-5-A-28-20-1-3-000	190	0.06	0.03	-	0	35.53	0	0
1-140-3-A-28-10-0-3-000	223	0.06	0.03	-	0	35.54	0	0
1-140-5-A-28-10-0-3-000	198	0.06	0.05	-	0	35.53	0	0
1-140-5-A-28-13-1-3-000	202	0.06	0.04	-	0	35.54	0	0
1-140-5-A-28-15-1-3-000	212	0.06	0.03	-	0	35.54	0	0
L-105-0-A-28-23-1-3-478	388	0.09	0.04	-	0	35.60	0	0
L-105-0-A-28-23-1-3-479	352	0.08	0.04	-	0	35.59	0	0

OTHER ENVIRONMENTAL INFORMATION: 1 M^3 OF READY-MIX CONCRETE.								
Indicator	**GWP Net**	**HWD**	**NHWD**	**RWD**	**MER**	**MFR**	**EE**	**CRU**
Unit	**kgCO_2 eq**	**kg**	**kg**	**kg**	**kg**	**kg**	**MJ**	**kg**
M-105-0-A-28-13-1-3-000	212	0.06	0.03	-	0	35.54	0	0
M-105-0-A-28-13-1-3-061	212	0.06	0.03	-	0	35.54	0	0
M-105-0-A-28-20-1-3-000	216	0.06	0.03	-	0	35.54	0	0
M-125-0-A-28-13-1-3-060	225	0.07	0.03	-	0	35.54	0	0
M-125-0-A-28-15-1-3-000	230	0.07	0.03	-	0	35.54	0	0
M-125-0-A-28-15-1-3-061	230	0.07	0.03	-	0	35.54	0	0
M-125-0-A-28-20-1-3-000	231	0.07	0.03	-	0	35.54	0	0
M-140-0-A-28-15-1-3-000	240	0.07	0.03	-	0	35.55	0	0
M-140-0-A-28-15-1-3-001	240	0.07	0.09	-	0	35.55	0	0
M-140-0-A-28-20-1-3-000	233	0.07	0.03	-	0	35.54	0	0
P-036-5-A-03-13-0-3-000	363	0.08	0.04	-	0	35.59	0	0
P-037-5-A-28-10-0-3-534	244	0.07	0.03	-	0	35.55	0	0
P-039-5-A-28-15-1-3-000	288	0.07	0.04	-	0	35.57	0	0
P-040-5-A-07-13-0-3-000	351	0.08	0.04	-	0	35.58	0	0
P-040-5-A-28-10-0-3-000	309	0.08	0.04	-	0	35.57	0	0
P-040-5-A-28-10-0-3-004	298	0.08	0.04	-	0	35.57	0	0
P-040-5-A-28-13-0-3-000	308	0.08	0.04	-	0	35.57	0	0
P-040-5-A-28-15-1-3-000	315	0.08	0.04	-	0	35.58	0	0
P-041-5-A-07-13-0-3-000	349	0.08	0.04	-	0	35.58	0	0
P-041-5-A-28-10-0-3-000	276	0.07	0.04	-	0	35.56	0	0
P-041-5-A-28-13-0-3-000	294	0.07	0.04	-	0	35.57	0	0
P-041-5-A-28-15-1-3-000	298	0.08	0.04	-	0	35.57	0	0
P-042-5-A-28-13-0-3-003	324	0.08	0.04	-	0	35.58	0	0
P-042-5-A-28-15-1-3-000	323	0.08	0.04	-	0	35.58	0	0
P-043-5-A-03-13-0-3-000	330	0.08	0.04	-	0	35.58	0	0
P-043-5-A-28-13-0-3-000	301	0.08	0.04	-	0	35.57	0	0
P-045-5-A-28-10-0-3-000	305	0.08	0.04	-	0	35.57	0	0
P-045-5-A-28-13-0-3-000	315	0.08	0.04	-	0	35.57	0	0

OTHER ENVIRONMENTAL INFORMATION: 1 M³ OF READY-MIX CONCRETE.								
Indicator	**GWP Net**	**HWD**	**NHWD**	**RWD**	**MER**	**MFR**	**EE**	**CRU**
Unit	**kgCO_2 eq**	**kg**	**kg**	**kg**	**kg**	**kg**	**MJ**	**kg**
P-045-5-A-28-15-1-3-000	320	0.08	0.04	-	0	35.58	0	0
R-010-0-A-28-20-0-3-000	121	0.05	0.03	-	0	35.51	0	0
Acronyms	GWP-Net (Net Global warming potential) • HWD (hazardous waste disposed) • NHWD (non-hazardous waste disposed) • RWD (radioactive waste disposed) • MER (materials for energy recovery) • MFR (materials for recycling) • EE (exported energy) • CRU (components for re-use)							
Note	• The gross GWP values include the greenhouse gas emissions from the coprocessing of secondary fuels at clinker production. The net GWP values exclude emissions from the coprocessing of secondary fuels at clinker production. • Not all LCA datasets for upstream materials include these impact categories and thus results may be incomplete. Use caution when interpreting data in these categories: 'Radioactive waste disposed'. According to the Global Cement and Concrete Association and industry studies, the only contribution in the cement and concrete sectors is the indirect contribution from the nuclear power share in the electricity mix, which is not present in Colombia's energy mix.							

Strength 15 to 20 MPa

OTHER ENVIRONMENTAL INFORMATION: 1 M³ OF READY-MIX CONCRETE.								
Indicator	**GWP Net**	**HWD**	**NHWD**	**RWD**	**MER**	**MFR**	**EE**	**CRU**
Unit	**kgCO_2 eq**	**kg**	**kg**	**kg**	**kg**	**kg**	**MJ**	**kg**
1-175-3-A-28-15-1-3-061	233	0.07	0.03	-	0	35.54	0	0
1-175-5-A-28-10-0-3-000	209	0.06	0.04	-	0	35.54	0	0
1-175-5-A-28-13-1-3-000	217	0.06	0.03	-	0	35.54	0	0
1-175-5-A-28-13-1-3-060	221	0.07	0.03	-	0	35.54	0	0
1-175-5-A-28-15-1-3-000	215	0.06	0.03	-	0	35.54	0	0
1-175-5-A-28-15-1-3-060	215	0.06	0.03	-	0	35.54	0	0
1-175-5-A-28-15-1-3-061	214	0.06	0.03	-	0	35.54	0	0
M-175-0-A-28-13-1-3-000	263	0.07	0.03	-	0	35.56	0	0
M-175-0-A-28-13-1-3-060	258	0.07	0.03	-	0	35.55	0	0
Acronyms	GWP-Net (Net Global warming potential) • HWD (hazardous waste disposed) • NHWD (non-hazardous waste disposed) • RWD (radioactive waste disposed) • MER (materials for energy recovery) • MFR (materials for recycling) • EE (exported energy) • CRU (components for re-use)							
Notes	• The gross GWP values include the greenhouse gas emissions from the coprocessing of secondary fuels at clinker production. The net GWP values exclude emissions from the coprocessing of secondary fuels at clinker production.							

OTHER ENVIRONMENTAL INFORMATION: 1 M^3 OF READY-MIX CONCRETE.								
Indicator	**GWP Net**	**HWD**	**NHWD**	**RWD**	**MER**	**MFR**	**EE**	**CRU**
Unit	**kgCO_2 eq**	**kg**	**kg**	**kg**	**kg**	**kg**	**MJ**	**kg**
	• Not all LCA datasets for upstream materials include these impact categories and thus results may be incomplete. Use caution when interpreting data in these categories: 'Radioactive waste disposed'. According to the Global Cement and Concrete Association and industry studies, the only contribution in the cement and concrete sectors is the indirect contribution from the nuclear power share in the electricity mix, which is not present in Colombia's energy mix.							

Strength 20 to 35 MPa

OTHER ENVIRONMENTAL INFORMATION: 1 M^3 OF READY-MIX CONCRETE.								
Indicator	**GWP Net**	**HWD**	**NHWD**	**RWD**	**MER**	**MFR**	**EE**	**CRU**
Unit	**kgCO_2 eq**	**kg**	**kg**	**kg**	**kg**	**kg**	**MJ**	**kg**
1-210-3-A-03-13-1-3-000	291	0.07	0.04	-	0	35.56	0	0
1-210-3-A-07-13-1-3-000	267	0.07	0.03	-	0	35.55	0	0
1-210-3-A-07-15-1-3-000	261	0.07	0.03	-	0	35.55	0	0
1-210-3-A-28-10-0-3-000	251	0.07	0.03	-	0	35.55	0	0
1-210-3-A-28-13-1-3-000	255	0.07	0.03	-	0	35.55	0	0
1-210-3-A-28-15-1-3-000	249	0.07	0.04	-	0	35.55	0	0
1-210-3-A-28-15-1-3-001	254	0.07	0.03	-	0	35.55	0	0
1-210-3-A-28-20-1-3-000	250	0.07	0.04	-	0	35.55	0	0
1-210-5-A-03-13-1-3-000	270	0.07	0.04	-	0	35.56	0	0
1-210-5-A-03-15-1-3-000	266	0.07	0.03	-	0	35.56	0	0
1-210-5-A-03-15-1-3-001	268	0.07	0.04	-	0	35.56	0	0
1-210-5-A-03-20-1-3-000	281	0.07	0.06	-	0	35.56	0	0
1-210-5-A-03-20-1-3-04M	279	0.07	0.03	-	0	35.56	0	0
1-210-5-A-07-13-1-3-000	246	0.07	0.03	-	0	35.55	0	0
1-210-5-A-07-15-1-3-000	241	0.07	0.03	-	0	35.55	0	0
1-210-5-A-07-15-1-3-04M	265	0.07	0.03	-	0	35.55	0	0
1-210-5-A-07-20-1-3-000	248	0.07	0.03	-	0	35.55	0	0
1-210-5-A-07-20-1-3-04M	268	0.07	0.03	-	0	35.55	0	0
1-210-5-A-07-20-1-3-04W	278	0.07	0.03	-	0	35.55	0	0

OTHER ENVIRONMENTAL INFORMATION: 1 M^3 OF READY-MIX CONCRETE.								
Indicator	**GWP Net**	**HWD**	**NHWD**	**RWD**	**MER**	**MFR**	**EE**	**CRU**
Unit	**kgCO_2 eq**	**kg**	**kg**	**kg**	**kg**	**kg**	**MJ**	**kg**
1-210-5-A-14-13-1-3-000	227	0.07	0.03	-	0	35.54	0	0
1-210-5-A-14-15-1-3-001	244	0.07	0.03	-	0	35.55	0	0
1-210-5-A-28-10-0-3-000	226	0.07	0.04	-	0	35.54	0	0
1-210-5-A-28-13-1-3-000	229	0.07	0.04	-	0	35.55	0	0
1-210-5-A-28-15-1-3-000	231	0.07	0.04	-	0	35.55	0	0
1-210-5-A-28-15-1-3-001	237	0.07	0.03	-	0	35.55	0	0
1-210-5-A-28-15-1-3-01K	244	0.07	0.03	-	0	35.55	0	0
1-210-5-A-28-15-1-3-04M	259	0.07	0.05	-	0	35.55	0	0
1-210-5-A-28-15-1-3-061	237	0.07	0.03	-	0	35.55	0	0
1-210-5-A-28-20-1-3-000	243	0.07	0.04	-	0	35.55	0	0
1-210-5-A-28-20-1-3-04M	267	0.07	0.14	-	0	35.55	0	0
1-210-5-A-28-20-1-3-04W	248	0.07	0.03	-	0	35.55	0	0
1-245-3-A-28-10-0-3-000	252	0.07	0.03	-	0	35.55	0	0
1-245-3-A-28-13-1-3-000	257	0.07	0.03	-	0	35.55	0	0
1-245-3-A-28-13-1-3-001	256	0.07	0.03	-	0	35.55	0	0
1-245-3-A-28-15-1-3-000	252	0.07	0.13	-	0	35.55	0	0
1-245-3-A-28-20-1-3-000	246	0.07	0.14	-	0	35.55	0	0
1-245-5-A-03-13-1-3-000	322	0.08	0.04	-	0	35.57	0	0
1-245-5-A-07-13-1-3-000	270	0.07	0.04	-	0	35.56	0	0
1-245-5-A-28-10-0-3-000	242	0.07	0.03	-	0	35.55	0	0
1-245-5-A-28-13-1-3-000	243	0.07	0.03	-	0	35.55	0	0
1-245-5-A-28-13-1-3-001	236	0.07	0.03	-	0	35.55	0	0
1-245-5-A-28-15-1-3-000	240	0.07	0.04	-	0	35.55	0	0
1-245-5-A-28-15-1-3-061	244	0.07	0.03	-	0	35.55	0	0
1-280-3-A-03-15-1-3-000	346	0.08	0.04	-	0	35.58	0	0
1-280-3-A-03-20-1-3-000	359	0.08	0.04	-	0	35.58	0	0
1-280-3-A-03-20-1-3-001	423	0.09	0.04	-	0	35.61	0	0
1-280-3-A-07-13-1-3-000	334	0.08	0.04	-	0	35.58	0	0
1-280-3-A-14-13-1-3-000	325	0.08	0.04	-	0	35.58	0	0

OTHER ENVIRONMENTAL INFORMATION: 1 M^3 OF READY-MIX CONCRETE.								
Indicator	**GWP Net**	**HWD**	**NHWD**	**RWD**	**MER**	**MFR**	**EE**	**CRU**
Unit	**kgCO_2 eq**	**kg**	**kg**	**kg**	**kg**	**kg**	**MJ**	**kg**
1-280-3-A-28-10-0-3-000	273	0.07	0.04	-	0	35.56	0	0
1-280-3-A-28-13-1-3-000	268	0.07	0.04	-	0	35.56	0	0
1-280-3-A-28-13-1-3-013	323	0.08	0.04	-	0	35.58	0	0
1-280-3-A-28-15-1-3-000	272	0.07	0.04	-	0	35.56	0	0
1-280-3-A-28-15-1-3-001	291	0.07	0.04	-	0	35.57	0	0
1-280-3-A-28-15-1-3-009	283	0.07	0.04	-	0	35.56	0	0
1-280-3-A-28-20-1-3-000	289	0.07	0.04	-	0	35.56	0	0
1-280-3-A-28-20-1-3-001	279	0.07	0.04	-	0	35.56	0	0
1-280-3-A-28-20-1-3-061	279	0.07	0.04	-	0	35.56	0	0
1-280-5-A-03-13-1-3-000	332	0.08	0.04	-	0	35.58	0	0
1-280-5-A-03-13-1-3-001	326	0.08	0.04	-	0	35.58	0	0
1-280-5-A-03-15-1-3-000	339	0.08	0.04	-	0	35.58	0	0
1-280-5-A-03-20-1-3-000	394	0.09	0.04	-	0	35.60	0	0
1-280-5-A-07-13-1-3-000	308	0.08	0.04	-	0	35.57	0	0
1-280-5-A-07-15-1-3-000	301	0.07	0.04	-	0	35.57	0	0
1-280-5-A-07-15-1-3-001	303	0.07	0.04	-	0	35.57	0	0
1-280-5-A-07-15-1-3-04M	346	0.08	0.04	-	0	35.58	0	0
1-280-5-A-07-20-1-3-000	321	0.08	0.06	-	0	35.57	0	0
1-280-5-A-07-20-1-3-04W	334	0.08	0.04	-	0	35.57	0	0
1-280-5-A-28-10-0-3-000	247	0.07	0.04	-	0	35.55	0	0
1-280-5-A-28-10-0-3-001	253	0.07	0.06	-	0	35.55	0	0
1-280-5-A-28-10-0-3-013	263	0.07	0.04	-	0	35.56	0	0
1-280-5-A-28-13-1-3-000	257	0.07	0.04	-	0	35.55	0	0
1-280-5-A-28-13-1-3-001	268	0.07	0.04	-	0	35.56	0	0
1-280-5-A-28-15-1-3-000	259	0.07	0.04	-	0	35.56	0	0
1-280-5-A-28-15-1-3-001	266	0.07	0.05	-	0	35.56	0	0
1-280-5-A-28-15-1-3-060	255	0.07	0.03	-	0	35.55	0	0
1-280-5-A-28-20-1-3-000	262	0.07	0.04	-	0	35.56	0	0
1-280-5-A-28-20-1-3-001	282	0.07	0.04	-	0	35.56	0	0

OTHER ENVIRONMENTAL INFORMATION: 1 M^3 OF READY-MIX CONCRETE.								
Indicator	**GWP Net**	**HWD**	**NHWD**	**RWD**	**MER**	**MFR**	**EE**	**CRU**
Unit	**kgCO_2 eq**	**kg**	**kg**	**kg**	**kg**	**kg**	**MJ**	**kg**
1-315-3-A-28-13-1-3-000	296	0.07	0.04	-	0	35.57	0	0
1-315-3-A-28-13-1-3-001	318	0.08	0.04	-	0	35.58	0	0
1-315-5-A-07-13-1-3-001	342	0.08	0.04	-	0	35.58	0	0
1-315-5-A-28-10-0-3-000	268	0.07	0.04	-	0	35.56	0	0
1-315-5-A-28-13-1-3-000	287	0.07	0.04	-	0	35.56	0	0
1-315-5-A-28-13-1-3-001	289	0.07	0.04	-	0	35.57	0	0
1-315-5-A-28-15-1-3-000	270	0.07	0.04	-	0	35.56	0	0
1-350-3-A-03-15-1-3-000	447	0.09	0.04	-	0	35.62	0	0
1-350-3-A-03-15-1-3-024	457	0.09	0.04	-	0	35.62	0	0
1-350-3-A-03-20-1-3-000	493	0.10	0.04	-	0	35.63	0	0
1-350-3-A-28-15-1-3-000	302	0.08	0.09	-	0	35.57	0	0
1-350-3-A-28-15-1-3-009	317	0.08	0.04	-	0	35.57	0	0
1-350-3-A-28-20-1-3-000	311	0.08	0.04	-	0	35.57	0	0
1-350-3-A-28-20-1-3-009	319	0.08	0.04	-	0	35.57	0	0
1-350-3-A-28-20-1-3-060	320	0.08	0.04	-	0	35.57	0	0
1-350-3-A-28-20-1-3-061	309	0.08	0.04	-	0	35.57	0	0
1-350-5-A-03-13-1-3-000	406	0.09	0.04	-	0	35.6	0	0
1-350-5-A-03-15-1-3-000	444	0.09	0.05	-	0	35.62	0	0
1-350-5-A-07-13-1-3-000	355	0.08	0.04	-	0	35.58	0	0
1-350-5-A-28-13-1-3-000	279	0.07	0.04	-	0	35.56	0	0
1-350-5-A-28-15-1-3-000	305	0.08	0.04	-	0	35.57	0	0
1-350-5-A-28-15-1-3-001	287	0.07	0.04	-	0	35.56	0	0
1-350-5-A-28-15-1-3-024	290	0.07	0.04	-	0	35.56	0	0
1-350-5-A-28-20-1-3-000	294	0.07	0.04	-	0	35.57	0	0
2-350-5-A-28-15-1-3-000	344	0.08	0.04	-	0	35.58	0	0
2-350-5-A-28-15-1-3-001	379	0.09	0.04	-	0	35.6	0	0
3-280-3-A-28-13-1-3-000	300	0.08	0.06	-	0	35.57	0	0
3-280-3-A-28-13-1-3-001	278	0.07	0.04	-	0	35.56	0	0
3-280-3-A-28-13-1-3-013	295	0.07	0.04	-	0	35.57	0	0

OTHER ENVIRONMENTAL INFORMATION: 1 M^3 OF READY-MIX CONCRETE.								
Indicator	**GWP Net**	**HWD**	**NHWD**	**RWD**	**MER**	**MFR**	**EE**	**CRU**
Unit	**kgCO_2 eq**	**kg**	**kg**	**kg**	**kg**	**kg**	**MJ**	**kg**
3-280-3-A-28-13-1-3-072	291	0.07	0.04	-	0	35.57	0	0
3-280-3-A-28-15-1-3-000	267	0.07	0.04	-	0	35.56	0	0
3-280-3-A-28-15-1-3-001	306	0.08	0.04	-	0	35.57	0	0
3-280-3-A-28-20-1-3-000	272	0.07	0.04	-	0	35.56	0	0
3-280-3-A-28-20-1-3-001	298	0.07	0.04	-	0	35.57	0	0
3-280-3-A-28-65-1-3-000	281	0.07	0.04	-	0	35.56	0	0
3-280-5-A-28-13-1-3-001	271	0.07	0.04	-	0	35.56	0	0
3-280-5-A-28-13-1-3-024	248	0.07	0.03	-	0	35.55	0	0
3-280-5-A-28-15-1-3-000	248	0.07	0.03	-	0	35.55	0	0
3-280-5-A-28-20-1-3-001	275	0.07	0.04	-	0	35.56	0	0
7-210-5-A-28-15-1-3-000	231	0.07	0.03	-	0	35.55	0	0
7-280-5-A-28-15-1-3-000	261	0.07	0.03	-	0	35.56	0	0
8-280-3-A-28-20-1-3-000	292	0.07	0.04	-	0	35.57	0	0
8-350-3-A-28-20-1-3-000	351	0.08	0.04	-	0	35.59	0	0
C-210-3-A-28-25-1-3-000	265	0.07	0.05	-	0	35.55	0	0
C-210-3-A-28-25-1-3-464	294	0.07	0.04	-	0	35.56	0	0
C-245-3-A-28-25-1-3-000	300	0.07	0.04	-	0	35.57	0	0
C-245-3-A-28-25-1-3-200	282	0.07	0.04	-	0	35.56	0	0
F-210-3-A-18-65-1-3-000	337	0.08	0.04	-	0	35.58	0	0
F-280-3-A-18-65-1-3-02U	319	0.07	0.04	-	0	35.57	0	0
J-210-3-A-28-65-1-3-000	277	0.07	0.05	-	0	35.56	0	0
J-280-3-A-28-65-1-3-000	321	0.08	0.04	-	0	35.57	0	0
M-280-0-A-28-20-1-3-000	343	0.08	0.04	-	0	35.58	0	0
M-280-0-A-28-20-1-3-061	352	0.08	0.07	-	0	35.59	0	0
O-210-3-A-18-13-1-3-000	258	0.07	0.04	-	0	35.55	0	0
O-210-3-A-18-15-1-3-000	266	0.07	0.03	-	0	35.55	0	0
O-210-3-A-18-15-1-3-061	270	0.07	0.03	-	0	35.56	0	0
O-210-3-A-18-18-1-3-000	266	0.07	0.04	-	0	35.55	0	0
O-210-3-A-18-18-1-3-061	267	0.07	0.03	-	0	35.55	0	0

OTHER ENVIRONMENTAL INFORMATION: 1 M^3 OF READY-MIX CONCRETE.								
Indicator	**GWP Net**	**HWD**	**NHWD**	**RWD**	**MER**	**MFR**	**EE**	**CRU**
Unit	**kgCO_2 eq**	**kg**	**kg**	**kg**	**kg**	**kg**	**MJ**	**kg**
O-210-3-A-18-20-1-3-000	264	0.07	0.03	-	0	35.55	0	0
O-210-3-A-18-23-1-3-000	275	0.07	0.04	-	0	35.56	0	0
O-210-3-A-20-20-1-3-000	271	0.07	0.04	-	0	35.56	0	0
O-210-5-A-18-13-1-3-000	244	0.07	0.04	-	0	35.55	0	0
O-210-5-A-18-13-1-3-001	248	0.07	0.03	-	0	35.55	0	0
O-210-5-A-18-13-1-3-009	256	0.07	0.03	-	0	35.55	0	0
O-210-5-A-18-13-1-3-060	240	0.07	0.03	-	0	35.55	0	0
O-210-5-A-18-13-1-3-074	259	0.07	0.03	-	0	35.55	0	0
O-210-5-A-18-15-1-3-000	246	0.07	0.04	-	0	35.55	0	0
O-210-5-A-18-15-1-3-001	253	0.07	0.03	-	0	35.55	0	0
O-210-5-A-18-15-1-3-009	255	0.07	0.03	-	0	35.55	0	0
O-210-5-A-20-13-1-3-000	238	0.07	0.03	-	0	35.55	0	0
O-245-3-A-18-18-1-3-000	255	0.07	0.03	-	0	35.55	0	0
O-245-5-A-18-13-1-3-000	247	0.07	0.03	-	0	35.55	0	0
O-245-5-A-18-15-1-3-000	251	0.07	0.03	-	0	35.55	0	0
O-280-3-A-18-13-1-3-000	294	0.07	0.04	-	0	35.56	0	0
O-280-3-A-18-15-1-3-000	297	0.07	0.04	-	0	35.56	0	0
O-280-3-A-18-18-1-3-000	294	0.07	0.04	-	0	35.56	0	0
O-280-3-A-18-18-1-3-060	297	0.07	0.04	-	0	35.56	0	0
O-280-3-A-18-20-1-3-000	296	0.07	0.04	-	0	35.56	0	0
O-280-3-A-18-23-1-3-000	302	0.07	0.04	-	0	35.57	0	0
O-280-3-A-20-20-1-3-000	285	0.07	0.04	-	0	35.56	0	0
O-280-5-A-18-13-1-3-000	271	0.07	0.04	-	0	35.56	0	0
O-280-5-A-18-15-1-3-000	284	0.07	0.04	-	0	35.56	0	0
O-315-3-A-18-18-1-3-000	335	0.08	0.04	-	0	35.58	0	0
O-315-3-A-18-23-1-3-000	330	0.08	0.04	-	0	35.58	0	0
O-315-5-A-18-13-1-3-000	302	0.07	0.04	-	0	35.57	0	0
O-315-5-A-18-15-1-3-000	299	0.07	0.04	-	0	35.57	0	0
O-350-3-A-18-15-1-3-000	337	0.08	0.04	-	0	35.58	0	0

OTHER ENVIRONMENTAL INFORMATION: 1 M^3 OF READY-MIX CONCRETE.

Indicator Unit	GWP Net $kgCO_2$ eq	HWD kg	NHWD kg	RWD kg	MER kg	MFR kg	EE MJ	CRU kg
O-350-3-A-18-18-1-3-000	312	0.08	0.04	-	0	35.57	0	0
O-350-3-A-18-20-1-3-000	302	0.07	0.04	-	0	35.57	0	0
O-350-3-A-18-23-1-3-000	327	0.08	0.04	-	0	35.58	0	0
O-350-5-A-18-15-1-3-000	294	0.07	0.04	-	0	35.56	0	0
Q-210-5-A-28-15-1-3-504	265	0.07	0.04	-	0	35.56	0	0
T-210-3-A-28-18-1-3-665	246	0.07	0.03	-	0	35.55	0	0
T-210-3-A-28-20-1-3-000	260	0.07	0.04	-	0	35.55	0	0
T-210-5-A-28-20-1-3-000	242	0.07	0.04	-	0	35.55	0	0
T-245-3-A-28-20-1-3-000	256	0.07	0.03	-	0	35.55	0	0
T-245-5-A-28-20-1-3-000	244	0.07	0.05	-	0	35.55	0	0
T-245-5-A-28-20-1-3-464	246	0.07	0.03	-	0	35.55	0	0
T-280-3-A-28-20-1-3-000	277	0.07	0.04	-	0	35.56	0	0
T-280-5-A-28-18-1-3-665	269	0.07	0.04	-	0	35.56	0	0
T-280-5-A-28-20-1-3-000	270	0.07	0.04	-	0	35.56	0	0
T-350-5-A-28-18-1-3-665	290	0.07	0.04	-	0	35.57	0	0
T-350-5-A-28-20-1-3-000	348	0.08	0.04	-	0	35.59	0	0
T-350-5-A-28-20-1-3-464	311	0.07	0.04	-	0	35.57	0	0
V-280-3-A-28-65-1-3-000	313	0.08	0.07	-	0	35.57	0	0
V-350-3-A-03-65-1-3-000	453	0.09	0.04	-	0	35.62	0	0
V-350-3-A-28-65-1-3-000	316	0.08	0.04	-	0	35.57	0	0
V-350-3-A-28-65-1-3-001	339	0.08	0.04	-	0	35.58	0	0

Acronyms	GWP-Net (Net Global warming potential) • HWD (hazardous waste disposed) • NHWD (non-hazardous waste disposed) • RWD (radioactive waste disposed) • MER (materials for energy recovery) • MFR (materials for recycling) • EE (exported energy) • CRU (components for re-use)
Notes	• The gross GWP values include the greenhouse gas emissions from the coprocessing of secondary fuels at clinker production. The net GWP values exclude emissions from the coprocessing of secondary fuels at clinker production. • Not all LCA datasets for upstream materials include these impact categories and thus results may be incomplete. Use caution when interpreting data in these categories: 'Radioactive waste disposed'. According to the Global Cement and Concrete Association and industry studies, the only contribution in the cement and concrete sectors is the indirect contribution from the nuclear power share in the electricity mix, which is not present in Colombia's energy mix.

Strength >35 MPa

OTHER ENVIRONMENTAL INFORMATION: 1 M³ OF READY-MIX CONCRETE.								
Indicator **Unit**	**GWP Net** **kgCO_2 eq**	**HWD** **kg**	**NHWD** **kg**	**RWD** **kg**	**MER** **kg**	**MFR** **kg**	**EE** **MJ**	**CRU** **kg**
1-420-3-A-28-15-1-3-001	375	0.08	0.04	-	0	35.59	0	0
1-420-3-A-28-20-1-3-000	366	0.08	0.04	-	0	35.59	0	0
1-420-5-A-14-15-1-3-001	429	0.09	0.05	-	0	35.61	0	0
1-420-5-A-28-10-0-3-000	359	0.08	0.04	-	0	35.59	0	0
1-420-5-A-28-15-1-3-000	380	0.09	0.04	-	0	35.60	0	0
3-420-5-A-28-15-1-3-000	392	0.09	0.04	-	0	35.60	0	0
3-420-5-A-28-15-1-3-001	426	0.09	0.04	-	0	35.61	0	0
8-420-3-A-28-20-1-3-000	417	0.09	0.04	-	0	35.61	0	0
A-490-3-A-28-20-1-3-551	368	0.08	0.04	-	0	35.59	0	0
F-420-3-A-18-65-1-3-000	422	0.09	0.04	-	0	35.61	0	0
O-420-3-A-18-18-1-3-000	372	0.08	0.04	-	0	35.59	0	0
O-420-3-A-18-20-1-3-000	368	0.08	0.04	-	0	35.59	0	0
O-420-3-A-18-23-1-3-000	381	0.08	0.04	-	0	35.59	0	0
O-420-3-A-18-23-1-3-001	398	0.09	0.04	-	0	35.60	0	0
O-420-3-A-20-20-1-3-000	366	0.08	0.04	-	0	35.59	0	0
O-420-5-A-18-15-1-3-000	337	0.08	0.04	-	0	35.58	0	0
O-420-5-A-18-15-1-3-001	368	0.08	0.04	-	0	35.59	0	0
T-525-3-A-28-20-1-3-551	461	0.09	0.04	-	0	35.62	0	0
V-420-3-A-28-65-1-3-000	472	0.10	0.04	-	0	35.63	0	0

Acronyms	GWP-Net (Net Global warming potential) • HWD (hazardous waste disposed) • NHWD (non-hazardous waste disposed) • RWD (radioactive waste disposed) • MER (materials for energy recovery) • MFR (materials for recycling) • EE (exported energy) • CRU (components for re-use)
Notes	• The gross GWP values include the greenhouse gas emissions from the coprocessing of secondary fuels at clinker production. The net GWP values exclude emissions from the coprocessing of secondary fuels at clinker production. • Not all LCA datasets for upstream materials include these impact categories and thus results may be incomplete. Use caution when interpreting data in these categories: 'Radioactive waste disposed'. According to the Global Cement and Concrete Association and industry studies, the only contribution in the cement and concrete sectors is the indirect contribution from the nuclear power share in the electricity mix, which is not present in Colombia's energy mix.

12. REFERENCES

- ISO 14025:2006 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
- ISO 21930, Sustainability in building construction — Environmental declaration of building products.
- Labeling Sustainability - Program Operator for Product Category Rules (PCRs) and Environmental Product Declarations (EPDs): General Program Instructions
- NTC 220 - Cementos. Determinación de la resistencia de morteros de cemento hidráulico a la compresión, usando cubos de 50 mm o 2 pulgadas de lado.
- NTC 396 - Ingeniería Civil y Arquitectura. Método de ensayo para determinar el asentamiento del concreto.
- NTC 673 - Concretos. Ensayo de resistencia a la compresión de cilindros normales de Concreto.
- NTC 3318 - Concreto Premezclado.
- NSF International PCR for Portland, Blended, Masonry, Mortar, and Plastic (Stucco) Cements v3.2
- NSF International PCR for Concrete, Version 2.3 (including deviation) – 2024 Extension
- GCCA Industry EPD Tool for Cement and Concrete (v4.1), North American Version