DECLARACIÓN AMBIENTAL DE PRODUCTO

CONCRETO
Planta Bosa **/ Colombia**

SOSTENIBILIDAD COLOMBIA
2024

Declared product:

This Environmental Product Declaration (EPD) covers ready-mix concrete products manufactured by CEMEX Colombia in the Bosa Plant.
Plant address: Calle 57 Z # 76 A 15, 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:

Dr. Thomas P. Gloria, PhD
Industrial Ecology Consultants
35 Bracebridge Road
Newton, MA 02459-1728
t.gloria@industrial-ecology.com

Mr. Bill Stough
Sustainable Research Group
PO Box 1684
Grand Rapids, MI 49501-1684
bstough@sustainableresearchgroup.com

Dr. Michael Overcash
Environmental Clarity
2908 Chipmunk Lane
Raleigh, NC 27607-3117 U.S.A.
mrovercash@earthlink.net

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: CCO02282505

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-28-10-0-3-000**	10.30 MPa at 28 Days Strength Ready Mix Concrete	10.3	28	10	Convencional
2	**1-105-3-A-28-15-1-3-000**	10.30 MPa at 28 Days Strength Ready Mix Concrete	10.3	28	15	Convencional
3	**1-105-5-A-28-10-0-3-000**	10.30 MPa at 28 Days Strength Ready Mix Concrete	10.3	28	10	Convencional

Table 1. Declared products considered in this Environmental Product Declaration						
N°	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
4	**1-105-5-A-28-13-1-3-000**	10.30 MPa at 28 Days Strength Ready Mix Concrete	10.3	28	13	Convencional
5	**1-105-5-A-28-15-1-3-000**	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	**1-140-3-A-28-13-1-3-000**	13.73 MPa at 28 Days Strength Ready Mix Concrete	13.7	28	13	Convencional
9	**1-140-3-A-28-15-1-3-000**	13.73 MPa at 28 Days Strength Ready Mix Concrete	13.7	28	15	Convencional
10	**1-140-5-A-28-10-0-3-000**	13.73 MPa at 28 Days Strength Ready Mix Concrete	13.7	28	10	Convencional
11	**1-140-5-A-28-13-1-3-000**	13.73 MPa at 28 Days Strength Ready Mix Concrete	13.7	28	13	Convencional
12	**1-140-5-A-28-15-1-3-000**	13.73 MPa at 28 Days Strength Ready Mix Concrete	13.7	28	15	Convencional
13	**1-140-5-A-28-15-1-3-55A**	13.73 MPa at 28 Days Strength Ready Mix Concrete	13.7	28	15	Convencional
14	**C-140-3-A-28-23-1-3-62B**	13.73 MPa at 28 Days Strength Ready Mix Concrete	13.7	28	23	Especial
15	**G-140-3-A-28-20-1-3-000**	13.73 MPa at 28 Days Strength Ready Mix Concrete	13.7	28	20	Especial
16	**K-036-3-A-28-00-0-3-55V**	3.53 MPa at 28 Days Strength Ready Mix Concrete	3.5	28	0	Especial
17	**M-105-0-A-28-15-1-3-000**	10.30 MPa at 28 Days Strength Ready Mix Concrete	10.3	28	15	Mortero
18	**M-125-0-A-28-13-1-3-000**	12.26 MPa at 28 Days Strength Ready Mix Concrete	12.3	28	13	Mortero
19	**M-125-0-A-28-15-1-3-000**	12.26 MPa at 28 Days Strength Ready Mix Concrete	12.3	28	15	Mortero
20	**M-125-0-A-28-15-1-3-060**	12.26 MPa at 28 Days Strength Ready Mix Concrete	12.3	28	15	Mortero
21	**M-140-0-A-28-15-1-3-000**	13.73 MPa at 28 Days Strength Ready Mix Concrete	13.7	28	15	Mortero
22	**M-140-0-A-28-15-1-3-001**	13.73 MPa at 28 Days Strength Ready Mix Concrete	13.7	28	15	Mortero
23	**P-039-5-A-28-13-0-3-000**	3.82 MPa at 28 Days Strength Ready Mix Concrete	3.8	28	13	Pavimento
24	**P-040-5-A-03-13-0-3-000**	3.92 MPa at 03 Days Strength Ready Mix Concrete	3.9	3	13	Pavimento
25	**P-041-5-A-03-13-0-3-000**	4.02 MPa at 03 Days Strength Ready Mix Concrete	4.0	3	13	Pavimento
26	**P-041-5-A-28-10-0-3-000**	4.02 MPa at 28 Days Strength Ready Mix Concrete	4.0	28	10	Pavimento
27	**P-041-5-A-28-13-0-3-000**	4.02 MPa at 28 Days Strength Ready Mix Concrete	4.0	28	13	Pavimento
28	**P-042-5-A-28-13-0-3-000**	4.12 MPa at 28 Days Strength Ready Mix Concrete	4.1	28	13	Pavimento

Table 1. Declared products considered in this Environmental Product Declaration						
Nº	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
29	**P-043-5-A-03-13-0-3-000**	4.22 MPa at 03 Days Strength Ready Mix Concrete	4.2	3	13	Pavimento
30	**P-043-5-A-28-10-0-3-000**	4.22 MPa at 28 Days Strength Ready Mix Concrete	4.2	28	10	Pavimento
31	**P-045-5-A-03-13-0-3-000**	4.41 MPa at 03 Days Strength Ready Mix Concrete	4.4	3	13	Pavimento
32	**P-045-5-A-03-13-0-3-534**	4.41 MPa at 03 Days Strength Ready Mix Concrete	4.4	3	13	Pavimento
33	**P-045-5-A-07-13-0-3-000**	4.41 MPa at 07 Days Strength Ready Mix Concrete	4.4	7	13	Pavimento
34	**P-045-5-A-07-13-0-3-534**	4.41 MPa at 07 Days Strength Ready Mix Concrete	4.4	7	13	Pavimento
35	**P-045-5-A-14-13-0-3-000**	4.41 MPa at 14 Days Strength Ready Mix Concrete	4.4	14	13	Pavimento
36	**P-045-5-A-14-13-0-3-534**	4.41 MPa at 14 Days Strength Ready Mix Concrete	4.4	14	13	Pavimento
37	**P-045-5-A-28-10-0-3-534**	4.41 MPa at 28 Days Strength Ready Mix Concrete	4.4	28	10	Pavimento
38	**P-045-5-A-28-13-0-3-000**	4.41 MPa at 28 Days Strength Ready Mix Concrete	4.4	28	13	Pavimento
39	**P-045-5-A-28-13-0-3-534**	4.41 MPa at 28 Days Strength Ready Mix Concrete	4.4	28	13	Pavimento
40	**P-045-5-A-28-15-1-3-000**	4.41 MPa at 28 Days Strength Ready Mix Concrete	4.4	28	15	Pavimento
41	**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
42	**R-015-0-A-28-20-0-3-000**	1.47 MPa at 28 Days Strength Ready Mix Concrete	1.5	28	20	Rellenos Fluidos
43	**R-020-0-A-28-20-0-3-000**	1.96 MPa at 28 Days Strength Ready Mix Concrete	2.0	28	20	Rellenos Fluidos

Strength 15 to 20 MPa

Table 2. Declared products considered in this Environmental Product Declaration						
Nº	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
44	**1-175-3-A-28-10-0-3-000**	17.16 MPa at 28 Days Strength Ready Mix Concrete	17.2	28	10	Convencional
45	**1-175-3-A-28-13-1-3-000**	17.16 MPa at 28 Days Strength Ready Mix Concrete	17.2	28	13	Convencional
46	**1-175-3-A-28-15-1-3-000**	17.16 MPa at 28 Days Strength Ready Mix Concrete	17.2	28	15	Convencional
47	**1-175-5-A-28-10-0-3-000**	17.16 MPa at 28 Days Strength Ready Mix Concrete	17.2	28	10	Convencional
48	**1-175-5-A-28-13-1-3-000**	17.16 MPa at 28 Days Strength Ready Mix Concrete	17.2	28	13	Convencional

Table 2. Declared products considered in this Environmental Product Declaration						
N°	Ready-mix	Description	Strength (MPa)	Age (Days)	Slump (cm)	Category
49	1-175-5-A-28-15-1-3-000	17.16 MPa at 28 Days Strength Ready Mix Concrete	17.2	28	15	Convencional
50	1-175-5-A-28-15-1-3-001	17.16 MPa at 28 Days Strength Ready Mix Concrete	17.2	28	15	Convencional
51	G-175-3-A-28-20-1-3-000	17.16 MPa at 28 Days Strength Ready Mix Concrete	17.2	28	20	Especial

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	03	13	Acelerado
53	1-210-3-A-03-13-1-3-001	20.59 MPa at 03 Days Strength Ready Mix Concrete	20.6	03	13	Acelerado
54	1-210-3-A-03-15-1-3-000	20.59 MPa at 03 Days Strength Ready Mix Concrete	20.6	03	15	Acelerado
55	1-210-3-A-07-13-1-3-000	20.59 MPa at 07 Days Strength Ready Mix Concrete	20.6	07	13	Acelerado
56	1-210-3-A-07-15-1-3-000	20.59 MPa at 07 Days Strength Ready Mix Concrete	20.6	07	15	Acelerado
57	1-210-3-A-07-15-1-3-03Z	20.59 MPa at 07 Days Strength Ready Mix Concrete	20.6	07	15	Acelerado
58	1-210-3-A-07-20-1-3-004	20.59 MPa at 07 Days Strength Ready Mix Concrete	20.6	07	20	Acelerado
59	1-210-3-A-14-13-1-3-000	20.59 MPa at 14 Days Strength Ready Mix Concrete	20.6	14	13	Acelerado
60	1-210-3-A-14-15-1-3-000	20.59 MPa at 14 Days Strength Ready Mix Concrete	20.6	14	15	Acelerado
61	1-210-3-A-28-10-0-3-000	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	10	Convencional
62	1-210-3-A-28-13-1-3-000	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	13	Convencional
63	1-210-3-A-28-13-1-3-001	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	13	Convencional
64	1-210-3-A-28-13-1-3-008	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	13	Convencional
65	1-210-3-A-28-15-1-3-000	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Convencional
66	1-210-3-A-28-15-1-3-003	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Convencional
67	1-210-3-A-28-15-1-3-004	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Convencional
68	1-210-3-A-28-15-1-3-03Z	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Convencional

Table 3. Declared products considered in this Environmental Product Declaration						
Nº	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
69	**1-210-3-A-28-15-1-3-060**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Convencional
70	**1-210-3-A-28-20-1-3-000**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	20	Convencional
71	**1-210-5-A-03-13-1-3-000**	20.59 MPa at 03 Days Strength Ready Mix Concrete	20.6	03	13	Acelerado
72	**1-210-5-A-03-15-1-3-000**	20.59 MPa at 03 Days Strength Ready Mix Concrete	20.6	03	15	Acelerado
73	**1-210-5-A-07-13-1-3-000**	20.59 MPa at 07 Days Strength Ready Mix Concrete	20.6	07	13	Acelerado
74	**1-210-5-A-14-13-1-3-000**	20.59 MPa at 14 Days Strength Ready Mix Concrete	20.6	14	13	Acelerado
75	**1-210-5-A-14-15-1-3-000**	20.59 MPa at 14 Days Strength Ready Mix Concrete	20.6	14	15	Acelerado
76	**1-210-5-A-28-10-0-3-000**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	10	Convencional
77	**1-210-5-A-28-13-1-3-000**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	13	Convencional
78	**1-210-5-A-28-13-1-3-04W**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	13	Convencional
79	**1-210-5-A-28-15-1-3-000**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Convencional
80	**1-210-5-A-28-15-1-3-001**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Convencional
81	**1-210-5-A-28-15-1-3-009**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Convencional
82	**1-210-5-A-28-15-1-3-04W**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Convencional
83	**1-210-5-A-28-15-1-3-55A**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Convencional
84	**1-210-5-A-28-20-1-3-000**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	20	Convencional
85	**1-245-3-A-07-15-1-3-000**	24.03 MPa at 07 Days Strength Ready Mix Concrete	24.0	07	15	Acelerado
86	**1-245-3-A-14-13-1-3-001**	24.03 MPa at 14 Days Strength Ready Mix Concrete	24.0	14	13	Acelerado
87	**1-245-3-A-14-15-1-3-000**	24.03 MPa at 14 Days Strength Ready Mix Concrete	24.0	14	15	Acelerado
88	**1-245-3-A-28-15-1-3-000**	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	15	Convencional
89	**1-245-3-A-28-15-1-3-003**	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	15	Convencional
90	**1-245-3-A-28-15-1-3-004**	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	15	Convencional
91	**1-245-3-A-28-20-1-3-000**	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	20	Convencional
92	**1-245-3-A-28-20-1-3-020**	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	20	Convencional

Table 3. Declared products considered in this Environmental Product Declaration						
Nº	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
93	**1-245-5-A-03-13-1-3-000**	24.03 MPa at 03 Days Strength Ready Mix Concrete	24.0	03	13	Acelerado
94	**1-245-5-A-03-15-1-3-000**	24.03 MPa at 03 Days Strength Ready Mix Concrete	24.0	03	15	Acelerado
95	**1-245-5-A-07-15-1-3-001**	24.03 MPa at 07 Days Strength Ready Mix Concrete	24.0	07	15	Acelerado
96	**1-245-5-A-28-10-0-3-000**	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	10	Convencional
97	**1-245-5-A-28-13-1-3-000**	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	13	Convencional
98	**1-245-5-A-28-13-1-3-009**	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	13	Convencional
99	**1-245-5-A-28-15-1-3-000**	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	15	Convencional
100	**1-245-5-A-28-20-1-3-000**	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	20	Convencional
101	**1-280-3-A-03-13-1-3-000**	27.46 MPa at 03 Days Strength Ready Mix Concrete	27.5	03	13	Acelerado
102	**1-280-3-A-03-13-1-3-001**	27.46 MPa at 03 Days Strength Ready Mix Concrete	27.5	03	13	Acelerado
103	**1-280-3-A-03-15-1-3-000**	27.46 MPa at 03 Days Strength Ready Mix Concrete	27.5	03	15	Acelerado
104	**1-280-3-A-03-15-1-3-001**	27.46 MPa at 03 Days Strength Ready Mix Concrete	27.5	03	15	Acelerado
105	**1-280-3-A-03-20-1-3-000**	27.46 MPa at 03 Days Strength Ready Mix Concrete	27.5	03	20	Acelerado
106	**1-280-3-A-07-15-1-3-000**	27.46 MPa at 07 Days Strength Ready Mix Concrete	27.5	07	15	Acelerado
107	**1-280-3-A-07-20-1-3-001**	27.46 MPa at 07 Days Strength Ready Mix Concrete	27.5	07	20	Acelerado
108	**1-280-3-A-14-13-1-3-000**	27.46 MPa at 14 Days Strength Ready Mix Concrete	27.5	14	13	Acelerado
109	**1-280-3-A-14-15-1-3-000**	27.46 MPa at 14 Days Strength Ready Mix Concrete	27.5	14	15	Acelerado
110	**1-280-3-A-28-10-0-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	10	Convencional
111	**1-280-3-A-28-13-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	13	Convencional
112	**1-280-3-A-28-13-1-3-001**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	13	Convencional
113	**1-280-3-A-28-13-1-3-061**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	13	Convencional
114	**1-280-3-A-28-15-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Convencional
115	**1-280-3-A-28-15-1-3-001**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Convencional
116	**1-280-3-A-28-15-1-3-004**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Convencional

Table 3. Declared products considered in this Environmental Product Declaration						
Nº	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
117	**1-280-3-A-28-15-1-3-061**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Convencional
118	**1-280-3-A-28-20-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Convencional
119	**1-280-3-A-28-20-1-3-004**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Convencional
120	**1-280-3-A-28-20-1-3-014**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Convencional
121	**1-280-5-A-03-13-1-3-000**	27.46 MPa at 03 Days Strength Ready Mix Concrete	27.5	03	13	Acelerado
122	**1-280-5-A-03-13-1-3-001**	27.46 MPa at 03 Days Strength Ready Mix Concrete	27.5	03	13	Acelerado
123	**1-280-5-A-03-15-1-3-000**	27.46 MPa at 03 Days Strength Ready Mix Concrete	27.5	03	15	Acelerado
124	**1-280-5-A-07-13-1-3-000**	27.46 MPa at 07 Days Strength Ready Mix Concrete	27.5	07	13	Acelerado
125	**1-280-5-A-07-13-1-3-001**	27.46 MPa at 07 Days Strength Ready Mix Concrete	27.5	07	13	Acelerado
126	**1-280-5-A-07-15-1-3-000**	27.46 MPa at 07 Days Strength Ready Mix Concrete	27.5	07	15	Acelerado
127	**1-280-5-A-07-20-1-3-000**	27.46 MPa at 07 Days Strength Ready Mix Concrete	27.5	07	20	Acelerado
128	**1-280-5-A-14-13-1-3-000**	27.46 MPa at 14 Days Strength Ready Mix Concrete	27.5	14	13	Acelerado
129	**1-280-5-A-14-15-1-3-001**	27.46 MPa at 14 Days Strength Ready Mix Concrete	27.5	14	15	Acelerado
130	**1-280-5-A-28-10-0-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	10	Convencional
131	**1-280-5-A-28-10-0-3-001**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	10	Convencional
132	**1-280-5-A-28-13-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	13	Convencional
133	**1-280-5-A-28-13-1-3-001**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	13	Convencional
134	**1-280-5-A-28-15-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Convencional
135	**1-280-5-A-28-15-1-3-001**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Convencional
136	**1-280-5-A-28-15-1-3-01P**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Convencional
137	**1-280-5-A-28-15-1-3-027**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Convencional
138	**1-280-5-A-28-15-1-3-060**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Convencional
139	**1-280-5-A-28-15-1-3-55A**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Convencional
140	**1-280-5-A-28-20-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Convencional

Table 3. Declared products considered in this Environmental Product Declaration						
Nº	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
141	**1-280-5-A-28-20-1-3-001**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Convencional
142	**1-280-5-A-28-20-1-3-63Q**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Convencional
143	**1-315-3-A-28-15-1-3-001**	30.89 MPa at 28 Days Strength Ready Mix Concrete	30.9	28	15	Convencional
144	**1-315-3-A-28-15-1-3-004**	30.89 MPa at 28 Days Strength Ready Mix Concrete	30.9	28	15	Convencional
145	**1-315-5-A-03-15-1-3-020**	30.89 MPa at 03 Days Strength Ready Mix Concrete	30.9	03	15	Acelerado
146	**1-315-5-A-07-15-1-3-000**	30.89 MPa at 07 Days Strength Ready Mix Concrete	30.9	07	15	Acelerado
147	**1-315-5-A-14-15-1-3-000**	30.89 MPa at 14 Days Strength Ready Mix Concrete	30.9	14	15	Acelerado
148	**1-315-5-A-28-15-1-3-000**	30.89 MPa at 28 Days Strength Ready Mix Concrete	30.9	28	15	Convencional
149	**1-315-5-A-28-15-1-3-001**	30.89 MPa at 28 Days Strength Ready Mix Concrete	30.9	28	15	Convencional
150	**1-315-5-A-28-15-1-3-004**	30.89 MPa at 28 Days Strength Ready Mix Concrete	30.9	28	15	Convencional
151	**1-350-3-A-28-13-1-3-000**	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	13	Convencional
152	**1-350-3-A-28-15-1-3-000**	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	15	Convencional
153	**1-350-3-A-28-20-1-3-000**	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	20	Convencional
154	**1-350-5-A-03-13-1-3-000**	34.32 MPa at 03 Days Strength Ready Mix Concrete	34.3	03	13	Acelerado
155	**1-350-5-A-03-13-1-3-001**	34.32 MPa at 03 Days Strength Ready Mix Concrete	34.3	03	13	Acelerado
156	**1-350-5-A-07-13-1-3-000**	34.32 MPa at 07 Days Strength Ready Mix Concrete	34.3	07	13	Acelerado
157	**1-350-5-A-07-13-1-3-001**	34.32 MPa at 07 Days Strength Ready Mix Concrete	34.3	07	13	Acelerado
158	**1-350-5-A-14-13-1-3-001**	34.32 MPa at 14 Days Strength Ready Mix Concrete	34.3	14	13	Acelerado
159	**1-350-5-A-28-10-0-3-001**	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	10	Convencional
160	**1-350-5-A-28-13-1-3-000**	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	13	Convencional
161	**1-350-5-A-28-13-1-3-001**	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	13	Convencional
162	**1-350-5-A-28-15-1-3-000**	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	15	Convencional
163	**1-350-5-A-28-15-1-3-63A**	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	15	Convencional
164	**2-350-3-A-28-15-1-3-000**	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	15	Durabilidad

Table 3. Declared products considered in this Environmental Product Declaration						
Nº	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
165	**3-210-5-A-28-15-1-3-000**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Durabilidad
166	**3-280-3-A-28-13-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	13	Durabilidad
167	**3-280-3-A-28-13-1-3-001**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	13	Durabilidad
168	**3-280-3-A-28-15-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Durabilidad
169	**3-280-3-A-28-15-1-3-001**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Durabilidad
170	**3-280-3-A-28-20-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Durabilidad
171	**3-280-5-A-28-13-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	13	Durabilidad
172	**3-280-5-A-28-13-1-3-001**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	13	Durabilidad
173	**3-280-5-A-28-15-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Durabilidad
174	**3-280-5-A-28-15-1-3-009**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Durabilidad
175	**3-315-3-A-28-15-1-3-001**	30.89 MPa at 28 Days Strength Ready Mix Concrete	30.9	28	15	Durabilidad
176	**8-210-3-A-28-13-1-3-000**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	13	Especial
177	**8-210-5-A-28-13-1-3-000**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	13	Especial
178	**8-210-5-A-28-15-1-3-000**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Especial
179	**8-245-5-A-28-15-1-3-000**	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	15	Especial
180	**8-280-3-A-28-13-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	13	Especial
181	**8-280-3-A-28-15-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Especial
182	**8-280-3-A-28-20-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Especial
183	**8-280-5-A-28-15-1-3-000**	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	15	Especial
184	**8-315-5-A-28-15-1-3-000**	30.89 MPa at 28 Days Strength Ready Mix Concrete	30.9	28	15	Especial
185	**8-315-5-A-28-20-1-3-000**	30.89 MPa at 28 Days Strength Ready Mix Concrete	30.9	28	20	Especial
186	**8-350-3-A-28-20-1-3-000**	34.32 MPa at 28 Days Strength Ready Mix Concrete	34.3	28	20	Especial
187	**C-210-3-A-28-25-1-3-000**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	25	Especial
188	**F-210-3-A-18-65-1-3-000**	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	65	Especial

Table 3. Declared products considered in this Environmental Product Declaration

Nº	Ready-mix	Description	Strength (MPa)	Age (Days)	Slump (cm)	Category
189	F-210-3-A-18-65-1-3-061	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	65	Especial
190	F-280-3-A-18-65-1-3-000	27.46 MPa at 18 Days Strength Ready Mix Concrete	27.5	18	65	Especial
191	F-280-3-A-18-65-1-3-061	27.46 MPa at 18 Days Strength Ready Mix Concrete	27.5	18	65	Especial
192	F-315-3-A-18-65-1-3-000	30.89 MPa at 18 Days Strength Ready Mix Concrete	30.9	18	65	Especial
193	F-350-3-A-18-65-1-3-000	34.32 MPa at 18 Days Strength Ready Mix Concrete	34.3	18	65	Especial
194	I-280-3-A-28-13-1-3-51A	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	13	Especial
195	I-280-5-A-28-13-1-3-000	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	13	Especial
196	I-280-5-A-28-13-1-3-00T	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	13	Especial
197	J-210-3-A-28-65-1-3-000	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	65	Especial
198	J-210-3-A-28-65-1-3-460	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	65	Especial
199	J-210-3-A-28-65-1-3-464	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	65	Especial
200	J-210-3-A-28-65-1-3-62L	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	65	Especial
201	J-245-3-A-28-65-1-3-000	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	65	Especial
202	M-210-0-A-28-13-1-3-000	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	13	Mortero
203	M-210-0-A-28-13-1-3-060	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	13	Mortero
204	M-210-0-A-28-15-1-3-000	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Mortero
205	M-210-0-A-28-15-1-3-001	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Mortero
206	M-210-0-A-28-15-1-3-004	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Mortero
207	M-210-0-A-28-15-1-3-009	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Mortero
208	M-210-0-A-28-15-1-3-061	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Mortero
209	M-210-0-A-28-15-1-3-073	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Mortero
210	M-210-0-A-28-15-1-3-074	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	15	Mortero
211	O-210-3-A-18-13-1-3-000	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	13	Industrializado
212	O-210-3-A-18-15-1-3-000	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						
Nº	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
213	**O-210-3-A-18-18-1-3-000**	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	18	Industrializado
214	**O-210-3-A-18-18-1-3-060**	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	18	Industrializado
215	**O-210-3-A-18-20-1-3-000**	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	20	Industrializado
216	**O-210-3-A-18-23-1-3-000**	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	23	Industrializado
217	**O-210-3-A-20-20-1-3-000**	20.59 MPa at 20 Days Strength Ready Mix Concrete	20.6	20	20	Industrializado
218	**O-210-3-A-20-20-1-3-060**	20.59 MPa at 20 Days Strength Ready Mix Concrete	20.6	20	20	Industrializado
219	**O-210-3-A-20-20-1-3-061**	20.59 MPa at 20 Days Strength Ready Mix Concrete	20.6	20	20	Industrializado
220	**O-210-5-A-18-13-1-3-000**	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	13	Industrializado
221	**O-210-5-A-18-13-1-3-009**	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	13	Industrializado
222	**O-210-5-A-18-15-1-3-000**	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	15	Industrializado
223	**O-210-5-A-18-15-1-3-004**	20.59 MPa at 18 Days Strength Ready Mix Concrete	20.6	18	15	Industrializado
224	**O-245-3-A-18-13-1-3-000**	24.03 MPa at 18 Days Strength Ready Mix Concrete	24.0	18	13	Industrializado
225	**O-245-3-A-18-15-1-3-000**	24.03 MPa at 18 Days Strength Ready Mix Concrete	24.0	18	15	Industrializado
226	**O-245-3-A-18-23-1-3-000**	24.03 MPa at 18 Days Strength Ready Mix Concrete	24.0	18	23	Industrializado
227	**O-245-5-A-18-13-1-3-000**	24.03 MPa at 18 Days Strength Ready Mix Concrete	24.0	18	13	Industrializado
228	**O-245-5-A-18-15-1-3-000**	24.03 MPa at 18 Days Strength Ready Mix Concrete	24.0	18	15	Industrializado
229	**O-245-5-A-20-13-1-3-000**	24.03 MPa at 20 Days Strength Ready Mix Concrete	24.0	20	13	Industrializado
230	**O-245-5-A-20-13-1-3-060**	24.03 MPa at 20 Days Strength Ready Mix Concrete	24.0	20	13	Industrializado
231	**O-245-5-A-20-13-1-3-061**	24.03 MPa at 20 Days Strength Ready Mix Concrete	24.0	20	13	Industrializado
232	**O-280-3-A-18-13-1-3-000**	27.46 MPa at 18 Days Strength Ready Mix Concrete	27.5	18	13	Industrializado
233	**O-280-3-A-18-15-1-3-000**	27.46 MPa at 18 Days Strength Ready Mix Concrete	27.5	18	15	Industrializado
234	**O-280-3-A-18-18-1-3-000**	27.46 MPa at 18 Days Strength Ready Mix Concrete	27.5	18	18	Industrializado
235	**O-280-3-A-18-18-1-3-001**	27.46 MPa at 18 Days Strength Ready Mix Concrete	27.5	18	18	Industrializado
236	**O-280-3-A-18-20-1-3-000**	27.46 MPa at 18 Days Strength Ready Mix Concrete	27.5	18	20	Industrializado

Table 3. Declared products considered in this Environmental Product Declaration						
Nº	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
237	**O-280-3-A-18-23-1-3-000**	27.46 MPa at 18 Days Strength Ready Mix Concrete	27.5	18	23	Industrializado
238	**O-280-3-A-20-20-1-3-000**	27.46 MPa at 20 Days Strength Ready Mix Concrete	27.5	20	20	Industrializado
239	**O-280-3-A-20-23-1-3-000**	27.46 MPa at 20 Days Strength Ready Mix Concrete	27.5	20	23	Industrializado
240	**O-280-5-A-18-13-1-3-000**	27.46 MPa at 18 Days Strength Ready Mix Concrete	27.5	18	13	Industrializado
241	**O-280-5-A-18-15-1-3-000**	27.46 MPa at 18 Days Strength Ready Mix Concrete	27.5	18	15	Industrializado
242	**O-280-5-A-18-15-1-3-001**	27.46 MPa at 18 Days Strength Ready Mix Concrete	27.5	18	15	Industrializado
243	**O-280-5-A-18-15-1-3-004**	27.46 MPa at 18 Days Strength Ready Mix Concrete	27.5	18	15	Industrializado
244	**O-280-5-A-18-15-1-3-61U**	27.46 MPa at 18 Days Strength Ready Mix Concrete	27.5	18	15	Industrializado
245	**O-315-3-A-18-13-1-3-000**	30.89 MPa at 18 Days Strength Ready Mix Concrete	30.9	18	13	Industrializado
246	**O-315-3-A-18-15-1-3-000**	30.89 MPa at 18 Days Strength Ready Mix Concrete	30.9	18	15	Industrializado
247	**O-315-3-A-18-23-1-3-000**	30.89 MPa at 18 Days Strength Ready Mix Concrete	30.9	18	23	Industrializado
248	**O-315-5-A-18-13-1-3-000**	30.89 MPa at 18 Days Strength Ready Mix Concrete	30.9	18	13	Industrializado
249	**O-315-5-A-18-15-1-3-000**	30.89 MPa at 18 Days Strength Ready Mix Concrete	30.9	18	15	Industrializado
250	**O-315-5-A-18-15-1-3-61U**	30.89 MPa at 18 Days Strength Ready Mix Concrete	30.9	18	15	Industrializado
251	**O-350-3-A-18-15-1-3-000**	34.32 MPa at 18 Days Strength Ready Mix Concrete	34.3	18	15	Industrializado
252	**O-350-3-A-18-18-1-3-000**	34.32 MPa at 18 Days Strength Ready Mix Concrete	34.3	18	18	Industrializado
253	**O-350-3-A-18-20-1-3-000**	34.32 MPa at 18 Days Strength Ready Mix Concrete	34.3	18	20	Industrializado
254	**O-350-3-A-18-23-1-3-000**	34.32 MPa at 18 Days Strength Ready Mix Concrete	34.3	18	23	Industrializado
255	**O-350-5-A-18-13-1-3-000**	34.32 MPa at 18 Days Strength Ready Mix Concrete	34.3	18	13	Industrializado
256	**O-350-5-A-18-15-1-3-61U**	34.32 MPa at 18 Days Strength Ready Mix Concrete	34.3	18	15	Industrializado
257	**T-210-3-A-28-20-1-3-000**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	20	Tremie
258	**T-210-5-A-28-20-1-3-000**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	20	Tremie
259	**T-210-5-A-28-20-1-3-200**	20.59 MPa at 28 Days Strength Ready Mix Concrete	20.6	28	20	Tremie
260	**T-210-5-A-28-20-1-3-464**	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						
Nº	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
261	T-245-3-A-28-20-1-3-000	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	20	Tremie
262	T-245-5-A-28-20-1-3-000	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	20	Tremie
263	T-280-3-A-28-20-1-3-000	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Tremie
264	T-280-3-A-28-20-1-3-59M	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Tremie
265	T-280-5-A-28-20-1-3-000	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Tremie
266	T-280-5-A-28-20-1-3-59X	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Tremie
267	T-280-5-A-28-20-1-3-5D7	27.46 MPa at 28 Days Strength Ready Mix Concrete	27.5	28	20	Tremie
268	V-245-3-A-28-65-1-3-50K	24.03 MPa at 28 Days Strength Ready Mix Concrete	24.0	28	65	Especial
269	V-280-3-A-03-65-1-3-000	27.46 MPa at 03 Days Strength Ready Mix Concrete	27.5	03	65	Especial

Strength >35 Mpa

Table 4. Declared products considered in this Environmental Product Declaration						
Nº	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
270	1-420-3-A-03-13-1-3-001	41.19 MPa at 03 Days Strength Ready Mix Concrete	41.2	03	13	Acelerado
271	1-420-3-A-03-13-1-3-009	41.19 MPa at 03 Days Strength Ready Mix Concrete	41.2	03	13	Acelerado
272	1-420-3-A-03-13-1-3-072	41.19 MPa at 03 Days Strength Ready Mix Concrete	41.2	03	13	Acelerado
273	1-420-3-A-07-13-1-3-072	41.19 MPa at 07 Days Strength Ready Mix Concrete	41.2	07	13	Acelerado
274	1-420-3-A-07-15-1-3-55A	41.19 MPa at 07 Days Strength Ready Mix Concrete	41.2	07	15	Acelerado
275	1-420-3-A-14-13-1-3-000	41.19 MPa at 14 Days Strength Ready Mix Concrete	41.2	14	13	Acelerado
276	1-420-3-A-28-13-1-3-000	41.19 MPa at 28 Days Strength Ready Mix Concrete	41.2	28	13	Convencional
277	1-420-3-A-28-13-1-3-009	41.19 MPa at 28 Days Strength Ready Mix Concrete	41.2	28	13	Convencional
278	1-420-3-A-28-13-1-3-072	41.19 MPa at 28 Days Strength Ready Mix Concrete	41.2	28	13	Convencional
279	1-420-3-A-28-15-1-3-000	41.19 MPa at 28 Days Strength Ready Mix Concrete	41.2	28	15	Convencional
280	1-420-3-A-28-20-1-3-000	41.19 MPa at 28 Days Strength Ready Mix Concrete	41.2	28	20	Convencional
281	1-420-5-A-14-13-1-3-000	41.19 MPa at 14 Days Strength Ready Mix Concrete	41.2	14	13	Acelerado

Table 4. Declared products considered in this Environmental Product Declaration						
N°	**Ready-mix**	**Description**	**Strength (MPa)**	**Age (Days)**	**Slump (cm)**	**Category**
282	**1-420-5-A-28-13-1-3-000**	41.19 MPa at 28 Days Strength Ready Mix Concrete	41.2	28	13	Convencional
283	**AT-490-3-A-28-15-1-3-551**	48.05 MPa at 28 Days Strength Ready Mix Concrete	48.1	28	15	Alta resistencia
284	**AT-490-5-A-28-15-1-3-551**	48.05 MPa at 28 Days Strength Ready Mix Concrete	48.1	28	15	Alta resistencia
285	**AT-700-3-A-28-20-1-3-551**	68.65 MPa at 28 Days Strength Ready Mix Concrete	68.6	28	20	Alta resistencia
286	**F-420-3-A-18-65-1-3-000**	41.19 MPa at 18 Days Strength Ready Mix Concrete	41.2	18	65	Especial
287	**F-490-3-A-18-65-1-3-524**	48.05 MPa at 18 Days Strength Ready Mix Concrete	48.1	18	65	Especial
288	**O-420-3-A-18-18-1-3-000**	41.19 MPa at 18 Days Strength Ready Mix Concrete	41.2	18	18	Industrializado
289	**O-420-3-A-18-23-1-3-000**	41.19 MPa at 18 Days Strength Ready Mix Concrete	41.2	18	23	Industrializado
290	**O-420-5-A-18-13-1-3-000**	41.19 MPa at 18 Days Strength Ready Mix Concrete	41.2	18	13	Industrializado
291	**O-490-3-A-18-15-1-3-406**	48.05 MPa at 18 Days Strength Ready Mix Concrete	48.1	18	15	Industrializado
292	**O-490-3-A-18-18-1-3-407**	48.05 MPa at 18 Days Strength Ready Mix Concrete	48.1	18	18	Industrializado
293	**O-490-3-A-18-23-1-3-407**	48.05 MPa at 18 Days Strength Ready Mix Concrete	48.1	18	23	Industrializado
294	**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 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 <u>are not included</u>. 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

[1] EPD Number CCO01102501
[2] EPD Number CCO01102502

manufacturing facility (i.e., A3).

3. A3: Manufacturing (core processes)- The energy and other utility inputs used to store, move, 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.

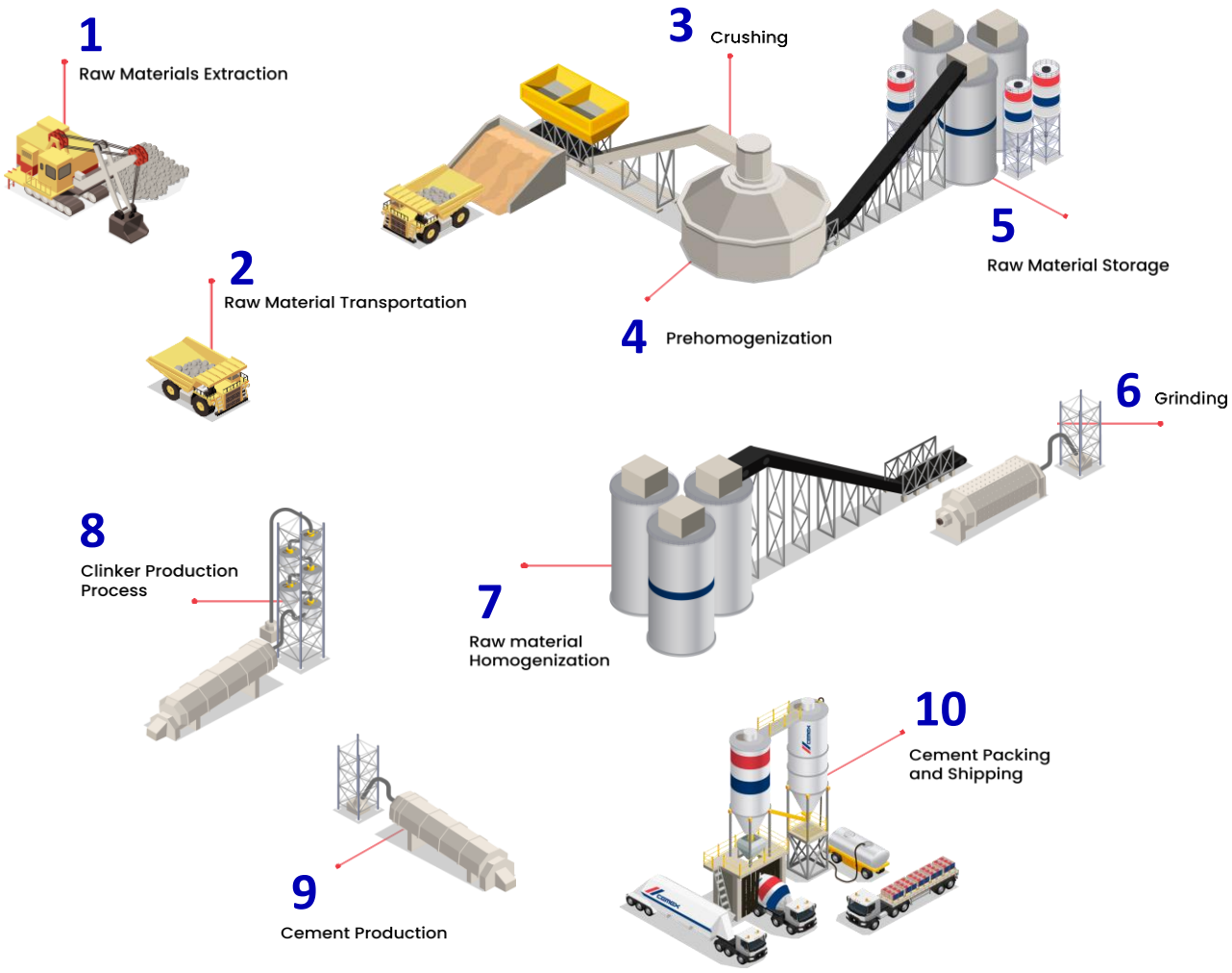

Figure 2. Cement Production

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

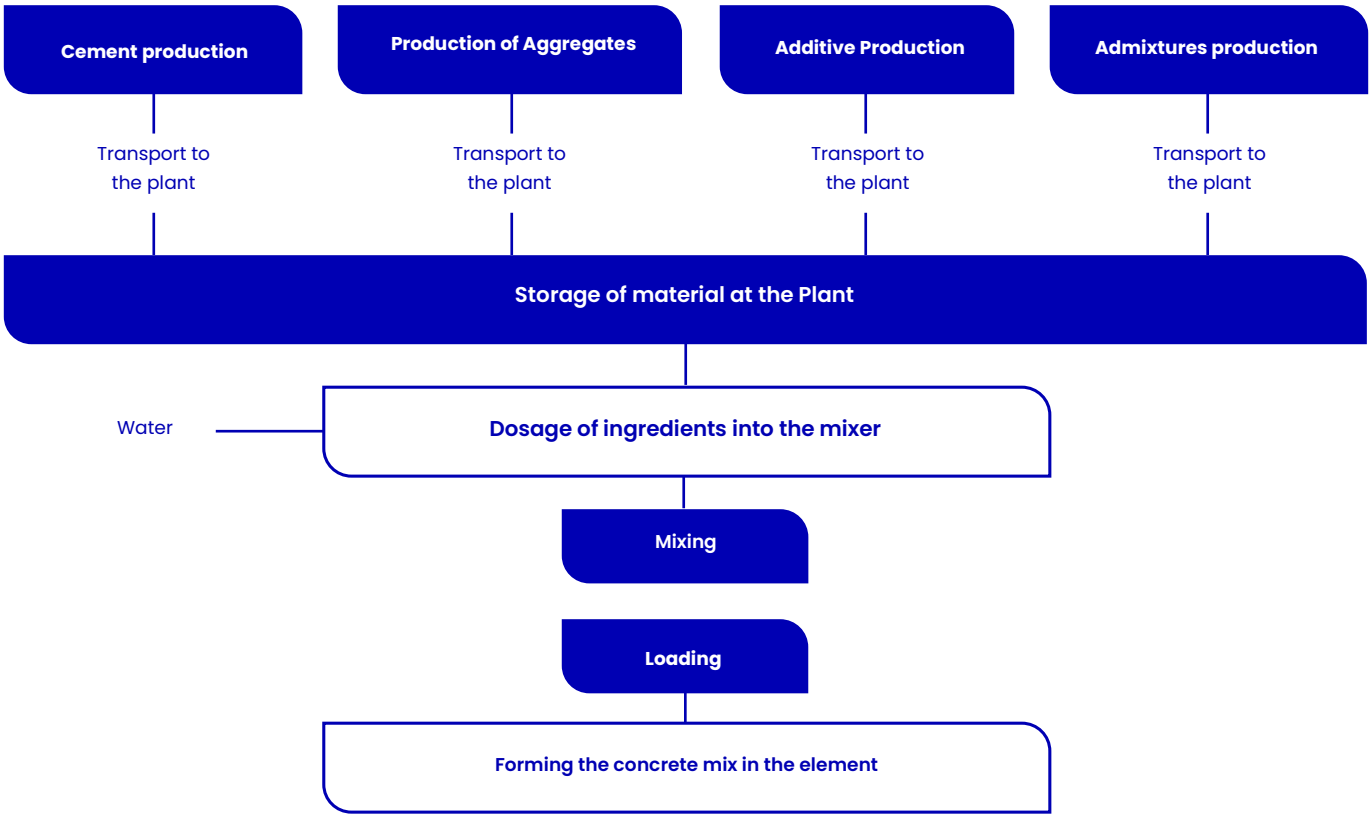

Figure 3. Concrete Production - Inputs and Processes System

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.

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

- **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.

  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

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

recent region-specific electricity inputs were utilized.

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-28-10-0-3-000	234	0.08	1.02E-05	1.22	0.25	25.49	1.91E-004	1522.13
1-105-3-A-28-15-1-3-000	236	0.08	1.04E-05	1.24	0.26	25.74	1.92E-004	1543.06
1-105-5-A-28-10-0-3-000	220	0.08	9.89E-06	1.17	0.24	24.74	1.42E-004	1492.83
1-105-5-A-28-13-1-3-000	212	0.07	9.77E-06	1.15	0.23	24.18	1.42E-004	1467.84
1-105-5-A-28-15-1-3-000	218	0.08	9.92E-06	1.17	0.24	24.55	1.42E-004	1488.78
1-105-5-A-28-20-1-3-000	224	0.08	1.01E-05	1.19	0.24	24.94	1.44E-004	1512.66
1-140-3-A-28-10-0-3-000	251	0.09	1.06E-05	1.30	0.27	27.01	1.89E-004	1604.34
1-140-3-A-28-13-1-3-000	237	0.08	1.03E-05	1.24	0.26	25.84	1.88E-004	1548.84
1-140-3-A-28-15-1-3-000	248	0.08	1.06E-05	1.29	0.27	26.79	1.89E-004	1600.61
1-140-5-A-28-10-0-3-000	232	0.08	1.01E-05	1.22	0.25	25.56	1.42E-004	1529.77
1-140-5-A-28-13-1-3-000	238	0.08	1.03E-05	1.25	0.25	26.10	1.44E-004	1564.38
1-140-5-A-28-15-1-3-000	235	0.08	1.03E-05	1.24	0.25	25.96	1.44E-004	1558.13
1-140-5-A-28-15-1-3-55A	258	0.08	1.02E-05	1.31	0.27	27.59	1.40E-004	1595.75
C-140-3-A-28-23-1-3-62B	255	0.09	1.07E-05	1.30	0.27	27.33	1.92E-004	1617.56
G-140-3-A-28-20-1-3-000	298	0.10	1.21E-05	1.51	0.32	31.06	2.01E-004	1853.72
K-036-3-A-28-00-0-3-55V	291	0.09	1.07E-05	1.33	0.30	26.44	1.22E-004	1511.30
M-105-0-A-28-15-1-3-000	277	0.09	1.22E-05	1.48	0.30	30.74	1.66E-004	1893.14
M-125-0-A-28-13-1-3-000	285	0.09	1.22E-05	1.51	0.31	31.29	1.67E-004	1912.49
M-125-0-A-28-15-1-3-000	291	0.09	1.26E-05	1.54	0.32	31.94	1.69E-004	1956.75
M-125-0-A-28-15-1-3-060	296	0.09	1.27E-05	1.55	0.32	31.95	1.77E-004	1963.79
M-140-0-A-28-15-1-3-000	299	0.09	1.26E-05	1.57	0.32	32.38	1.69E-004	1974.30
M-140-0-A-28-15-1-3-001	296	0.09	1.25E-05	1.55	0.32	31.91	1.66E-004	1945.86
P-039-5-A-28-13-0-3-000	320	0.09	1.16E-05	1.56	0.33	32.30	1.50E-004	1842.81
P-040-5-A-03-13-0-3-000	385	0.10	1.46E-05	1.82	0.40	36.79	1.54E-004	2176.99

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-041-5-A-03-13-0-3-000	382	0.10	1.47E-05	1.82	0.40	36.71	1.55E-004	2181.36
P-041-5-A-28-10-0-3-000	331	0.10	1.17E-05	1.60	0.34	32.99	1.48E-004	1866.76
P-041-5-A-28-13-0-3-000	324	0.09	1.16E-05	1.58	0.33	32.56	1.49E-004	1851.85
P-042-5-A-28-13-0-3-000	343	0.10	1.19E-05	1.65	0.35	33.89	1.48E-004	1915.16
P-043-5-A-03-13-0-3-000	386	0.10	1.48E-05	1.84	0.40	37.06	1.54E-004	2199.25
P-043-5-A-28-10-0-3-000	344	0.10	1.18E-05	1.65	0.35	33.86	1.47E-004	1907.14
P-045-5-A-03-13-0-3-000	404	0.11	1.53E-05	1.91	0.42	38.43	1.57E-004	2271.86
P-045-5-A-03-13-0-3-534	478	0.12	1.64E-05	2.18	0.48	43.69	1.56E-004	2510.01
P-045-5-A-07-13-0-3-000	388	0.11	1.47E-05	1.84	0.40	37.20	1.56E-004	2196.87
P-045-5-A-07-13-0-3-534	425	0.11	1.51E-05	1.97	0.43	39.76	1.52E-004	2294.89
P-045-5-A-14-13-0-3-000	321	0.09	1.16E-05	1.57	0.33	32.40	1.48E-004	1848.29
P-045-5-A-14-13-0-3-534	384	0.10	1.25E-05	1.80	0.39	36.80	1.46E-004	2034.33
P-045-5-A-28-10-0-3-534	355	0.10	1.21E-05	1.69	0.36	34.79	1.48E-004	1947.98
P-045-5-A-28-13-0-3-000	350	0.10	1.22E-05	1.69	0.36	34.66	1.51E-004	1961.54
P-045-5-A-28-13-0-3-534	342	0.10	1.20E-05	1.64	0.35	33.81	1.48E-004	1901.47
P-045-5-A-28-15-1-3-000	362	0.10	1.25E-05	1.74	0.37	35.72	1.54E-004	2018.26
R-010-0-A-28-20-0-3-000	166	0.06	9.48E-06	0.99	0.19	20.98	1.38E-004	1381.46
R-015-0-A-28-20-0-3-000	185	0.07	9.86E-06	1.06	0.21	22.42	1.40E-004	1452.54
R-020-0-A-28-20-0-3-000	184	0.07	9.82E-06	1.06	0.21	22.30	1.40E-004	1444.31
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**
1-105-3-A-28-10-0-3-000	76.39	0.00	76.39	1575.29	0.00	1575.29	22.43	18.33	222.74	2.47
1-105-3-A-28-15-1-3-000	76.92	0.00	76.92	1596.41	0.00	1596.41	24.15	18.48	224.55	2.50
1-105-5-A-28-10-0-3-000	70.64	0.00	70.64	1530.83	0.00	1530.83	26.88	16.66	202.41	3.36

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**
1-105-5-A-28-13-1-3-000	68.80	0.00	68.80	1507.12	0.00	1507.12	34.04	15.70	190.81	3.39
1-105-5-A-28-15-1-3-000	70.08	0.00	70.08	1527.24	0.00	1527.24	28.37	16.39	199.09	3.37
1-105-5-A-28-20-1-3-000	71.60	0.00	71.60	1548.54	0.00	1548.54	12.58	17.13	208.09	3.34
1-140-3-A-28-10-0-3-000	79.89	0.00	79.89	1652.63	0.00	1652.63	25.79	20.05	243.64	2.51
1-140-3-A-28-13-1-3-000	76.51	0.00	76.51	1599.16	0.00	1599.16	41.56	18.46	224.29	2.48
1-140-3-A-28-15-1-3-000	79.16	0.00	79.16	1648.40	0.00	1648.40	28.81	19.65	238.78	2.53
1-140-5-A-28-10-0-3-000	73.31	0.00	73.31	1567.70	0.00	1567.70	30.39	18.02	218.89	3.33
1-140-5-A-28-13-1-3-000	74.70	0.00	74.70	1601.78	0.00	1601.78	20.61	18.56	225.46	3.36
1-140-5-A-28-15-1-3-000	74.17	0.00	74.17	1595.94	0.00	1595.94	27.03	18.32	222.55	3.36
1-140-5-A-28-15-1-3-55A	77.09	0.00	77.09	1631.38	0.00	1631.38	42.95	21.62	262.69	3.25
C-140-3-A-28-23-1-3-62B	77.77	0.00	77.77	1661.62	0.00	1661.62	119.63	20.54	249.50	2.44
G-140-3-A-28-20-1-3-000	90.64	0.00	90.64	1888.67	0.00	1888.67	22.93	24.34	295.71	2.76
K-036-3-A-28-00-0-3-55V	87.86	0.00	87.86	1594.44	0.00	1594.44	0.66	26.99	327.90	3.07
M-105-0-A-28-15-1-3-000	82.37	0.00	82.37	1893.14	0.00	1893.14	32.62	21.16	257.07	3.15
M-125-0-A-28-13-1-3-000	84.67	0.00	84.67	1912.49	0.00	1912.49	34.15	22.01	267.41	3.16
M-125-0-A-28-15-1-3-000	85.67	0.00	85.67	1956.75	0.00	1956.75	30.95	22.54	273.88	3.19
M-125-0-A-28-15-1-3-060	87.35	0.00	87.35	1963.79	0.00	1963.79	16.70	23.07	280.25	3.17
M-140-0-A-28-15-1-3-000	87.47	0.00	87.47	1974.30	0.00	1974.30	33.30	23.51	285.62	3.15
M-140-0-A-28-15-1-3-001	86.69	0.00	86.69	1945.86	0.00	1945.86	36.23	23.38	284.01	3.07
P-039-5-A-28-13-0-3-000	94.46	0.00	94.46	1888.03	0.00	1888.03	18.62	28.01	340.37	3.38
P-040-5-A-03-13-0-3-000	107.59	0.00	107.59	2218.82	0.00	2218.82	7.34	34.17	415.14	3.28
P-041-5-A-03-13-0-3-000	107.06	0.00	107.06	2228.37	0.00	2228.37	0.82	33.64	408.73	3.43
P-041-5-A-28-10-0-3-000	96.86	0.00	96.86	1913.84	0.00	1913.84	36.47	29.38	356.99	3.33
P-041-5-A-28-13-0-3-000	95.22	0.00	95.22	1896.74	0.00	1896.74	33.22	28.45	345.66	3.35
P-042-5-A-28-13-0-3-000	99.42	0.00	99.42	1959.27	0.00	1959.27	47.21	30.70	373.00	3.26
P-043-5-A-03-13-0-3-000	107.85	0.00	107.85	2244.74	0.00	2244.74	19.47	34.19	415.35	3.36
P-043-5-A-28-10-0-3-000	99.56	0.00	99.56	1951.10	0.00	1951.10	47.52	30.93	375.80	3.22
P-045-5-A-03-13-0-3-000	111.94	0.00	111.94	2317.95	0.00	2317.95	11.54	36.02	437.59	3.40
P-045-5-A-03-13-0-3-534	126.96	0.00	126.96	2552.77	0.00	2552.77	16.87	44.73	543.46	3.20
P-045-5-A-07-13-0-3-000	108.49	0.00	108.49	2242.56	0.00	2242.56	2.35	34.36	417.48	3.40

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**
P-045-5-A-07-13-0-3-534	115.04	0.00	115.04	2338.51	0.00	2338.51	24.07	39.14	475.49	3.24
P-045-5-A-14-13-0-3-000	94.31	0.00	94.31	1892.59	0.00	1892.59	42.24	28.13	341.71	3.31
P-045-5-A-14-13-0-3-534	107.29	0.00	107.29	2078.82	0.00	2078.82	54.39	35.89	436.02	3.15
P-045-5-A-28-10-0-3-534	100.88	0.00	100.88	1993.69	0.00	1993.69	41.85	32.26	392.00	3.29
P-045-5-A-28-13-0-3-000	101.31	0.00	101.31	2006.48	0.00	2006.48	39.29	31.36	381.00	3.33
P-045-5-A-28-13-0-3-534	97.97	0.00	97.97	1948.37	0.00	1948.37	37.47	30.93	375.75	3.33
P-045-5-A-28-15-1-3-000	103.96	0.00	103.96	2061.23	0.00	2061.23	32.30	32.52	395.06	3.34
R-010-0-A-28-20-0-3-000	55.63	0.00	55.63	1381.46	0.00	1381.46	15.24	9.87	119.89	2.86
R-015-0-A-28-20-0-3-000	60.23	0.00	60.23	1452.54	0.00	1452.54	3.41	12.02	146.08	2.87
R-020-0-A-28-20-0-3-000	60.13	0.00	60.13	1444.31	0.00	1444.31	12.26	12.02	145.99	2.84
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-28-10-0-3-000	261	0.09	1.07E-005	1.33	0.28	27.59	1.90E-004	1623.93
1-175-3-A-28-13-1-3-000	266	0.09	1.08E-005	1.35	0.28	27.90	1.90E-004	1644.01
1-175-3-A-28-15-1-3-000	266	0.09	1.09E-005	1.35	0.28	28.00	1.94E-004	1650.57
1-175-5-A-28-10-0-3-000	257	0.08	1.05E-005	1.32	0.27	27.60	1.44E-004	1627.33
1-175-5-A-28-13-1-3-000	253	0.08	1.05E-005	1.31	0.27	27.29	1.45E-004	1613.25
1-175-5-A-28-15-1-3-000	257	0.08	1.06E-005	1.32	0.27	27.60	1.45E-004	1633.12
1-175-5-A-28-15-1-3-001	254	0.08	1.04E-005	1.29	0.27	26.94	1.40E-004	1594.11
G-175-3-A-28-20-1-3-000	329	0.10	1.28E-005	1.64	0.35	33.52	2.07E-004	1982.85

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**
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-28-10-0-3-000	82.47	0.00	82.47	1674.85	0.00	1674.85	32.84	21.38	259.78	2.44
1-175-3-A-28-13-1-3-000	83.87	0.00	83.87	1694.61	0.00	1694.61	33.87	21.89	266.01	2.44
1-175-3-A-28-15-1-3-000	83.76	0.00	83.76	1704.52	0.00	1704.52	33.86	21.77	264.53	2.45
1-175-5-A-28-10-0-3-000	79.14	0.00	79.14	1662.96	0.00	1662.96	31.68	20.90	253.94	3.28
1-175-5-A-28-13-1-3-000	78.32	0.00	78.32	1652.00	0.00	1652.00	29.44	20.36	247.39	3.34
1-175-5-A-28-15-1-3-000	79.23	0.00	79.23	1671.24	0.00	1671.24	26.16	20.78	252.51	3.35
1-175-5-A-28-15-1-3-001	78.11	0.00	78.11	1628.57	0.00	1628.57	32.09	20.75	252.09	3.16
G-175-3-A-28-20-1-3-000	97.84	0.00	97.84	2013.29	0.00	2013.29	30.57	27.61	335.47	2.78
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	323	0.10	1.33E-05	1.60	0.34	32.49	1.99E-004	1953.43

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-03-13-1-3-001	344	0.10	1.38E-05	1.66	0.36	33.66	2.00E-004	2015.51
1-210-3-A-03-15-1-3-000	321	0.10	1.34E-05	1.59	0.34	32.17	2.00E-004	1947.01
1-210-3-A-07-13-1-3-000	327	0.10	1.34E-05	1.62	0.35	32.89	2.09E-004	1974.40
1-210-3-A-07-15-1-3-000	343	0.10	1.38E-05	1.69	0.36	34.19	2.08E-004	2045.94
1-210-3-A-07-15-1-3-03Z	320	0.10	1.36E-05	1.58	0.35	31.83	2.24E-004	1988.92
1-210-3-A-07-20-1-3-004	316	0.10	1.33E-05	1.56	0.34	31.59	1.98E-004	1967.81
1-210-3-A-14-13-1-3-000	318	0.10	1.2E-05	1.57	0.33	32.33	1.93E-004	1870.59
1-210-3-A-14-15-1-3-000	286	0.09	1.14E-05	1.45	0.30	29.86	2.02E-004	1746.24
1-210-3-A-28-10-0-3-000	290	0.09	1.12E-05	1.44	0.31	29.86	2.03E-004	1727.49
1-210-3-A-28-13-1-3-000	290	0.09	1.13E-05	1.45	0.31	29.85	1.98E-004	1739.08
1-210-3-A-28-13-1-3-001	307	0.10	1.15E-05	1.50	0.32	30.90	1.96E-004	1787.34
1-210-3-A-28-13-1-3-008	292	0.09	1.14E-05	1.46	0.31	30.01	1.88E-004	1802.59
1-210-3-A-28-15-1-3-000	290	0.09	1.13E-05	1.45	0.31	29.87	1.93E-004	1744.19
1-210-3-A-28-15-1-3-003	292	0.09	1.14E-05	1.45	0.31	29.93	1.95E-004	1747.05
1-210-3-A-28-15-1-3-004	307	0.10	1.17E-05	1.52	0.32	31.28	1.92E-004	1862.34
1-210-3-A-28-15-1-3-03Z	296	0.10	1.18E-05	1.48	0.32	30.14	2.12E-004	1829.61
1-210-3-A-28-15-1-3-060	292	0.09	1.15E-05	1.47	0.31	30.18	2.01E-004	1772.35
1-210-3-A-28-20-1-3-000	299	0.09	1.16E-05	1.48	0.31	30.55	1.92E-004	1781.56
1-210-5-A-03-13-1-3-000	312	0.09	1.3E-05	1.55	0.33	31.78	1.52E-004	1918.36
1-210-5-A-03-15-1-3-000	316	0.09	1.31E-05	1.57	0.33	32.08	1.52E-004	1937.99
1-210-5-A-07-13-1-3-000	291	0.09	1.25E-05	1.48	0.31	30.34	1.51E-004	1843.62
1-210-5-A-14-13-1-3-000	259	0.08	1.06E-05	1.33	0.27	27.78	1.45E-004	1641.85
1-210-5-A-14-15-1-3-000	318	0.09	1.18E-05	1.57	0.33	32.39	1.49E-004	1867.11
1-210-5-A-28-10-0-3-000	274	0.09	1.08E-05	1.39	0.29	28.93	1.46E-004	1690.80
1-210-5-A-28-13-1-3-000	268	0.08	1.07E-05	1.36	0.28	28.40	1.44E-004	1669.30
1-210-5-A-28-13-1-3-04W	282	0.10	1.29E-05	1.46	0.32	29.23	2.29E-004	1822.06
1-210-5-A-28-15-1-3-000	278	0.09	1.1E-05	1.40	0.29	29.16	1.45E-004	1709.13
1-210-5-A-28-15-1-3-001	276	0.09	1.09E-05	1.39	0.29	28.72	1.46E-004	1684.08

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-28-15-1-3-009	289	0.09	1.11E-05	1.44	0.30	29.77	1.46E-004	1777.83
1-210-5-A-28-15-1-3-04W	296	0.10	1.35E-05	1.53	0.34	30.28	2.29E-004	1891.63
1-210-5-A-28-15-1-3-55A	286	0.09	1.08E-05	1.42	0.29	29.89	1.44E-004	1707.23
1-210-5-A-28-20-1-3-000	282	0.09	1.12E-05	1.42	0.30	29.38	1.49E-004	1727.25
1-245-3-A-07-15-1-3-000	335	0.10	1.37E-05	1.64	0.36	33.17	2.02E-004	1993.81
1-245-3-A-14-13-1-3-001	324	0.10	1.2E-05	1.59	0.34	32.69	1.92E-004	1886.15
1-245-3-A-14-15-1-3-000	280	0.09	1.09E-05	1.39	0.30	28.62	1.88E-004	1669.30
1-245-3-A-28-15-1-3-000	299	0.09	1.17E-05	1.49	0.32	30.79	1.99E-004	1796.48
1-245-3-A-28-15-1-3-003	319	0.10	1.2E-05	1.57	0.33	32.13	2.02E-004	1860.24
1-245-3-A-28-15-1-3-004	305	0.10	1.18E-05	1.51	0.32	30.99	2.02E-004	1845.91
1-245-3-A-28-20-1-3-000	293	0.09	1.17E-05	1.48	0.31	30.43	2.05E-004	1777.28
1-245-3-A-28-20-1-3-020	287	0.09	1.15E-05	1.44	0.30	29.56	1.96E-004	1742.65
1-245-5-A-03-13-1-3-000	346	0.10	1.37E-05	1.68	0.36	34.22	1.52E-004	2048.35
1-245-5-A-03-15-1-3-000	350	0.10	1.36E-05	1.70	0.37	34.64	1.53E-004	2055.43
1-245-5-A-07-15-1-3-001	323	0.09	1.33E-05	1.59	0.34	32.43	1.49E-004	1956.69
1-245-5-A-28-10-0-3-000	270	0.09	1.08E-05	1.38	0.28	28.77	1.47E-004	1684.31
1-245-5-A-28-13-1-3-000	281	0.09	1.11E-05	1.42	0.29	29.37	1.46E-004	1718.83
1-245-5-A-28-13-1-3-009	296	0.09	1.13E-05	1.47	0.31	30.34	1.47E-004	1810.44
1-245-5-A-28-15-1-3-000	282	0.09	1.12E-05	1.43	0.30	29.57	1.47E-004	1739.70
1-245-5-A-28-20-1-3-000	278	0.09	1.12E-05	1.42	0.29	29.55	1.49E-004	1736.62
1-280-3-A-03-13-1-3-000	389	0.11	1.5E-05	1.87	0.41	37.62	2.03E-004	2234.19
1-280-3-A-03-13-1-3-001	373	0.11	1.47E-05	1.80	0.39	36.30	2.00E-004	2173.56
1-280-3-A-03-15-1-3-000	414	0.11	1.56E-05	1.96	0.43	39.24	2.12E-004	2315.18
1-280-3-A-03-15-1-3-001	420	0.11	1.54E-05	1.97	0.43	39.73	1.98E-004	2316.74
1-280-3-A-03-20-1-3-000	423	0.11	1.61E-05	2.00	0.44	39.82	2.03E-004	2371.81
1-280-3-A-07-15-1-3-000	358	0.10	1.4E-05	1.74	0.38	35.19	1.97E-004	2093.92
1-280-3-A-07-20-1-3-001	374	0.11	1.46E-05	1.79	0.39	35.96	1.98E-004	2149.25
1-280-3-A-14-13-1-3-000	327	0.10	1.21E-05	1.61	0.34	33.04	1.94E-004	1905.38

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**
1-280-3-A-14-15-1-3-000	336	0.10	1.22E-05	1.64	0.35	33.54	1.94E-004	1925.25
1-280-3-A-28-10-0-3-000	297	0.09	1.15E-05	1.49	0.31	30.78	1.92E-004	1789.51
1-280-3-A-28-13-1-3-000	308	0.10	1.18E-05	1.53	0.32	31.52	1.99E-004	1828.68
1-280-3-A-28-13-1-3-001	323	0.10	1.2E-05	1.58	0.34	32.43	2.02E-004	1864.00
1-280-3-A-28-13-1-3-061	293	0.10	1.18E-05	1.48	0.32	30.24	2.18E-004	1791.38
1-280-3-A-28-15-1-3-000	317	0.10	1.2E-05	1.56	0.33	32.00	2.00E-004	1851.12
1-280-3-A-28-15-1-3-001	317	0.10	1.18E-05	1.56	0.33	32.04	1.93E-004	1850.05
1-280-3-A-28-15-1-3-004	329	0.10	1.21E-05	1.60	0.34	32.81	1.98E-004	1928.96
1-280-3-A-28-15-1-3-061	297	0.10	1.18E-05	1.49	0.32	30.37	2.15E-004	1787.55
1-280-3-A-28-20-1-3-000	311	0.10	1.19E-05	1.54	0.33	31.66	1.97E-004	1841.06
1-280-3-A-28-20-1-3-004	353	0.11	1.27E-05	1.71	0.37	34.78	2.09E-004	2032.95
1-280-3-A-28-20-1-3-014	319	0.11	1.32E-05	1.59	0.36	32.03	2.96E-004	1919.47
1-280-5-A-03-13-1-3-000	353	0.10	1.41E-05	1.72	0.37	34.94	1.54E-004	2096.45
1-280-5-A-03-13-1-3-001	358	0.10	1.41E-05	1.73	0.37	35.15	1.54E-004	2099.44
1-280-5-A-03-15-1-3-000	395	0.11	1.52E-05	1.89	0.41	37.95	1.55E-004	2261.28
1-280-5-A-07-13-1-3-000	349	0.10	1.38E-05	1.69	0.37	34.40	1.52E-004	2059.26
1-280-5-A-07-13-1-3-001	369	0.10	1.43E-05	1.77	0.38	35.91	1.54E-004	2137.19
1-280-5-A-07-15-1-3-000	363	0.10	1.42E-05	1.76	0.38	35.58	1.55E-004	2121.49
1-280-5-A-07-20-1-3-000	358	0.10	1.42E-05	1.74	0.38	35.14	1.54E-004	2110.00
1-280-5-A-14-13-1-3-000	313	0.09	1.17E-05	1.55	0.33	32.02	1.49E-004	1848.01
1-280-5-A-14-15-1-3-001	310	0.09	1.14E-05	1.52	0.32	31.45	1.46E-004	1813.98
1-280-5-A-28-10-0-3-000	291	0.09	1.12E-05	1.46	0.30	30.30	1.48E-004	1760.56
1-280-5-A-28-10-0-3-001	298	0.09	1.13E-05	1.48	0.31	30.75	1.49E-004	1780.06
1-280-5-A-28-13-1-3-000	290	0.09	1.13E-05	1.46	0.30	30.24	1.47E-004	1764.31
1-280-5-A-28-13-1-3-001	302	0.09	1.14E-05	1.50	0.31	30.97	1.47E-004	1792.82
1-280-5-A-28-15-1-3-000	307	0.09	1.17E-05	1.53	0.32	31.57	1.50E-004	1831.50
1-280-5-A-28-15-1-3-001	297	0.09	1.13E-05	1.48	0.31	30.52	1.45E-004	1770.93
1-280-5-A-28-15-1-3-01P	314	0.10	1.23E-05	1.57	0.34	32.11	1.85E-004	1892.26

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-28-15-1-3-027	305	0.09	1.17E-05	1.52	0.32	31.28	1.52E-004	1820.15
1-280-5-A-28-15-1-3-060	295	0.09	1.15E-05	1.48	0.31	30.42	1.57E-004	1787.32
1-280-5-A-28-15-1-3-55A	330	0.09	1.17E-05	1.61	0.34	33.37	1.47E-004	1885.34
1-280-5-A-28-20-1-3-000	305	0.09	1.16E-05	1.52	0.32	31.41	1.49E-004	1821.99
1-280-5-A-28-20-1-3-001	331	0.10	1.2E-05	1.61	0.34	33.03	1.49E-004	1895.25
1-280-5-A-28-20-1-3-63Q	310	0.09	1.15E-05	1.52	0.32	31.54	1.43E-004	1806.55
1-315-3-A-28-15-1-3-001	346	0.10	1.23E-05	1.67	0.36	34.15	2.02E-004	1941.29
1-315-3-A-28-15-1-3-004	387	0.11	1.33E-05	1.85	0.40	37.60	1.97E-004	2174.86
1-315-5-A-03-15-1-3-020	507	0.13	1.8E-05	2.36	0.52	47.42	1.73E-004	2766.57
1-315-5-A-07-15-1-3-000	396	0.11	1.52E-05	1.90	0.41	38.15	1.57E-004	2271.48
1-315-5-A-14-15-1-3-000	377	0.11	1.31E-05	1.82	0.39	37.29	1.59E-004	2114.83
1-315-5-A-28-15-1-3-000	335	0.10	1.22E-05	1.64	0.35	33.63	1.51E-004	1931.49
1-315-5-A-28-15-1-3-001	341	0.10	1.22E-05	1.65	0.35	34.02	1.50E-004	1944.43
1-315-5-A-28-15-1-3-004	351	0.10	1.25E-05	1.69	0.36	34.51	1.54E-004	2026.22
1-350-3-A-28-13-1-3-000	361	0.11	1.28E-05	1.74	0.38	35.64	2.12E-004	2027.78
1-350-3-A-28-15-1-3-000	333	0.10	1.23E-05	1.63	0.35	33.32	2.04E-004	1915.92
1-350-3-A-28-20-1-3-000	339	0.10	1.25E-05	1.66	0.35	33.92	2.04E-004	1951.63
1-350-5-A-03-13-1-3-000	422	0.11	1.57E-05	2.00	0.44	40.27	1.62E-004	2371.38
1-350-5-A-03-13-1-3-001	442	0.11	1.58E-05	2.07	0.45	41.56	1.58E-004	2417.87
1-350-5-A-07-13-1-3-000	376	0.10	1.46E-05	1.82	0.39	36.75	1.57E-004	2191.97
1-350-5-A-07-13-1-3-001	390	0.11	1.47E-05	1.86	0.40	37.64	1.55E-004	2219.41
1-350-5-A-14-13-1-3-001	399	0.11	1.33E-05	1.88	0.41	38.47	1.57E-004	2164.44
1-350-5-A-28-10-0-3-001	309	0.09	1.15E-05	1.53	0.32	31.58	1.48E-004	1823.19
1-350-5-A-28-13-1-3-000	305	0.09	1.16E-05	1.52	0.32	31.47	1.49E-004	1827.58
1-350-5-A-28-13-1-3-001	314	0.09	1.17E-05	1.55	0.33	32.00	1.47E-004	1847.02
1-350-5-A-28-15-1-3-000	317	0.09	1.19E-05	1.57	0.33	32.34	1.50E-004	1872.48
1-350-5-A-28-15-1-3-63A	357	0.10	1.25E-05	1.73	0.36	35.82	1.51E-004	2018.26
2-350-3-A-28-15-1-3-000	411	0.11	1.37E-05	1.95	0.42	39.67	2.10E-004	2222.52

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**
3-210-5-A-28-15-1-3-000	276	0.08	1.09E-05	1.41	0.29	29.27	1.41E-004	1714.70
3-280-3-A-28-13-1-3-000	339	0.10	1.22E-05	1.65	0.35	33.67	1.94E-004	1925.83
3-280-3-A-28-13-1-3-001	414	0.12	1.38E-05	1.94	0.42	39.47	2.11E-004	2213.85
3-280-3-A-28-15-1-3-000	370	0.11	1.27E-05	1.77	0.38	36.01	1.93E-004	2038.95
3-280-3-A-28-15-1-3-001	340	0.10	1.21E-05	1.65	0.35	33.86	1.86E-004	1933.45
3-280-3-A-28-20-1-3-000	415	0.12	1.39E-05	1.95	0.43	39.53	2.09E-004	2219.45
3-280-5-A-28-13-1-3-000	335	0.10	1.21E-05	1.65	0.35	34.06	1.52E-004	1948.21
3-280-5-A-28-13-1-3-001	327	0.09	1.18E-05	1.60	0.34	33.00	1.46E-004	1889.57
3-280-5-A-28-15-1-3-000	325	0.09	1.19E-05	1.60	0.34	33.05	1.49E-004	1898.84
3-280-5-A-28-15-1-3-009	332	0.10	1.2E-05	1.62	0.34	33.08	1.44E-004	1946.58
3-315-3-A-28-15-1-3-001	391	0.11	1.31E-05	1.85	0.40	37.66	1.92E-004	2119.72
8-210-3-A-28-13-1-3-000	300	0.09	1.16E-05	1.50	0.32	31.06	1.94E-004	1806.98
8-210-5-A-28-13-1-3-000	307	0.09	1.15E-05	1.52	0.32	31.59	1.52E-004	1823.42
8-210-5-A-28-15-1-3-000	272	0.09	1.09E-05	1.39	0.29	28.90	1.46E-004	1699.64
8-245-5-A-28-15-1-3-000	282	0.09	1.09E-05	1.41	0.29	29.13	1.43E-004	1698.84
8-280-3-A-28-13-1-3-000	312	0.10	1.17E-05	1.54	0.33	31.64	1.94E-004	1831.88
8-280-3-A-28-15-1-3-000	324	0.10	1.21E-05	1.59	0.34	32.73	2.05E-004	1880.27
8-280-3-A-28-20-1-3-000	325	0.10	1.21E-05	1.60	0.34	32.95	1.93E-004	1904.61
8-280-5-A-28-15-1-3-000	315	0.09	1.17E-05	1.55	0.33	31.97	1.47E-004	1846.18
8-315-5-A-28-15-1-3-000	351	0.10	1.23E-05	1.70	0.36	34.81	1.50E-004	1982.13
8-315-5-A-28-20-1-3-000	359	0.10	1.26E-05	1.73	0.37	35.49	1.53E-004	2022.03
8-350-3-A-28-20-1-3-000	394	0.11	1.35E-05	1.87	0.41	38.04	2.08E-004	2147.54
C-210-3-A-28-25-1-3-000	281	0.09	1.19E-05	1.44	0.31	29.50	2.07E-004	1780.33
F-210-3-A-18-65-1-3-000	338	0.10	1.39E-05	1.67	0.36	33.71	1.93E-004	2045.14
F-210-3-A-18-65-1-3-061	357	0.11	1.58E-05	1.75	0.39	34.75	2.19E-004	2186.40
F-280-3-A-18-65-1-3-000	386	0.11	1.53E-05	1.86	0.41	37.11	2.07E-004	2240.37
F-280-3-A-18-65-1-3-061	387	0.12	1.54E-05	1.86	0.42	36.89	2.35E-004	2232.05
F-315-3-A-18-65-1-3-000	417	0.11	1.59E-05	1.99	0.44	39.75	1.93E-004	2371.99

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**
F-350-3-A-18-65-1-3-000	417	0.11	1.62E-05	1.99	0.44	39.76	2.00E-004	2388.24
I-280-3-A-28-13-1-3-51A	435	0.13	1.41E-05	2.01	0.44	40.61	2.30E-004	2289.42
I-280-5-A-28-13-1-3-000	301	0.09	1.12E-05	1.49	0.31	30.85	1.47E-004	1775.21
I-280-5-A-28-13-1-3-00T	310	0.11	1.35E-05	1.57	0.35	31.31	2.44E-004	1926.45
J-210-3-A-28-65-1-3-000	306	0.10	1.23E-05	1.53	0.33	31.32	2.16E-004	1862.30
J-210-3-A-28-65-1-3-460	392	0.13	1.58E-05	1.90	0.44	37.61	3.29E-004	2280.64
J-210-3-A-28-65-1-3-464	390	0.13	1.56E-05	1.88	0.44	37.22	3.33E-004	2240.85
J-210-3-A-28-65-1-3-62L	360	0.12	1.36E-05	1.74	0.39	34.96	2.65E-004	2059.83
J-245-3-A-28-65-1-3-000	335	0.10	1.3E-05	1.65	0.36	33.54	2.19E-004	1981.96
M-210-0-A-28-13-1-3-000	396	0.11	1.47E-05	1.99	0.42	40.88	1.90E-004	2401.54
M-210-0-A-28-13-1-3-060	388	0.12	1.5E-05	1.93	0.42	38.98	2.18E-004	2339.44
M-210-0-A-28-15-1-3-000	352	0.10	1.37E-05	1.78	0.37	36.53	1.76E-004	2182.20
M-210-0-A-28-15-1-3-001	351	0.10	1.36E-05	1.77	0.37	36.20	1.73E-004	2155.75
M-210-0-A-28-15-1-3-004	365	0.11	1.41E-05	1.84	0.39	37.53	1.80E-004	2282.27
M-210-0-A-28-15-1-3-009	354	0.10	1.36E-05	1.78	0.37	36.23	1.73E-004	2200.97
M-210-0-A-28-15-1-3-061	359	0.11	1.42E-05	1.82	0.39	36.96	2.16E-004	2222.72
M-210-0-A-28-15-1-3-073	357	0.11	1.38E-05	1.79	0.38	36.36	1.87E-004	2217.25
M-210-0-A-28-15-1-3-074	351	0.11	1.35E-05	1.74	0.37	35.68	1.94E-004	2149.17
O-210-3-A-18-13-1-3-000	310	0.10	1.29E-05	1.53	0.33	31.13	1.99E-004	1875.44
O-210-3-A-18-15-1-3-000	307	0.09	1.28E-05	1.52	0.33	30.96	1.94E-004	1872.90
O-210-3-A-18-18-1-3-000	318	0.10	1.31E-05	1.57	0.34	31.81	1.95E-004	1921.14
O-210-3-A-18-18-1-3-060	321	0.10	1.32E-05	1.58	0.34	32.17	2.02E-004	1943.14
O-210-3-A-18-20-1-3-000	327	0.10	1.34E-05	1.61	0.35	32.61	1.92E-004	1972.79
O-210-3-A-18-23-1-3-000	332	0.10	1.36E-05	1.63	0.35	32.96	2.00E-004	1986.36
O-210-3-A-20-20-1-3-000	322	0.10	1.25E-05	1.58	0.34	32.25	2.08E-004	1894.32
O-210-3-A-20-20-1-3-060	316	0.10	1.25E-05	1.56	0.34	31.71	2.20E-004	1873.37
O-210-3-A-20-20-1-3-061	322	0.10	1.27E-05	1.59	0.34	32.29	2.19E-004	1907.11
O-210-5-A-18-13-1-3-000	295	0.09	1.24E-05	1.48	0.31	30.34	1.49E-004	1835.47

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-210-5-A-18-13-1-3-009	308	0.09	1.24E-05	1.51	0.32	30.94	1.48E-004	1896.45
O-210-5-A-18-15-1-3-000	306	0.09	1.27E-05	1.53	0.32	31.33	1.51E-004	1888.66
O-210-5-A-18-15-1-3-004	306	0.09	1.27E-05	1.51	0.32	30.72	1.47E-004	1906.80
O-245-3-A-18-13-1-3-000	310	0.10	1.31E-05	1.54	0.33	31.21	2.00E-004	1893.45
O-245-3-A-18-15-1-3-000	313	0.10	1.31E-05	1.55	0.33	31.43	1.96E-004	1907.33
O-245-3-A-18-23-1-3-000	343	0.10	1.41E-05	1.68	0.37	33.98	2.04E-004	2051.39
O-245-5-A-18-13-1-3-000	297	0.09	1.27E-05	1.49	0.32	30.58	1.49E-004	1857.45
O-245-5-A-18-15-1-3-000	297	0.09	1.26E-05	1.49	0.32	30.35	1.48E-004	1849.30
O-245-5-A-20-13-1-3-000	295	0.09	1.17E-05	1.48	0.31	30.59	1.50E-004	1802.51
O-245-5-A-20-13-1-3-060	293	0.09	1.19E-05	1.48	0.31	30.50	1.61E-004	1808.05
O-245-5-A-20-13-1-3-061	297	0.09	1.2E-05	1.50	0.32	30.73	1.71E-004	1825.00
O-280-3-A-18-13-1-3-000	329	0.10	1.36E-05	1.61	0.35	32.69	2.04E-004	1970.69
O-280-3-A-18-15-1-3-000	339	0.10	1.37E-05	1.66	0.36	33.70	2.00E-004	2022.64
O-280-3-A-18-18-1-3-000	334	0.10	1.36E-05	1.64	0.35	33.17	1.96E-004	2001.14
O-280-3-A-18-18-1-3-001	336	0.10	1.37E-05	1.64	0.36	33.13	1.91E-004	2000.29
O-280-3-A-18-20-1-3-000	332	0.10	1.37E-05	1.63	0.35	32.83	2.02E-004	1981.56
O-280-3-A-18-23-1-3-000	327	0.10	1.37E-05	1.62	0.35	32.78	1.96E-004	1991.80
O-280-3-A-20-20-1-3-000	326	0.10	1.26E-05	1.61	0.34	32.79	2.05E-004	1919.69
O-280-3-A-20-23-1-3-000	333	0.10	1.29E-05	1.63	0.35	33.24	2.01E-004	1953.93
O-280-5-A-18-13-1-3-000	307	0.09	1.29E-05	1.53	0.33	31.23	1.49E-004	1895.94
O-280-5-A-18-15-1-3-000	311	0.09	1.3E-05	1.55	0.33	31.57	1.50E-004	1913.03
O-280-5-A-18-15-1-3-001	310	0.09	1.29E-05	1.54	0.33	31.30	1.48E-004	1897.08
O-280-5-A-18-15-1-3-004	318	0.10	1.27E-05	1.56	0.33	31.98	1.49E-004	1939.72
O-280-5-A-18-15-1-3-61U	347	0.10	1.39E-05	1.67	0.36	34.06	1.50E-004	2036.43
O-315-3-A-18-13-1-3-000	362	0.10	1.43E-05	1.75	0.38	35.18	2.02E-004	2104.42
O-315-3-A-18-15-1-3-000	386	0.11	1.47E-05	1.82	0.40	36.87	2.04E-004	2171.72
O-315-3-A-18-23-1-3-000	369	0.10	1.37E-05	1.77	0.39	35.55	1.86E-004	2087.60
O-315-5-A-18-13-1-3-000	345	0.10	1.36E-05	1.66	0.36	33.96	1.50E-004	2019.24

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-315-5-A-18-15-1-3-000	358	0.10	1.39E-05	1.73	0.37	35.05	1.52E-004	2089.51
O-315-5-A-18-15-1-3-61U	360	0.10	1.42E-05	1.73	0.37	35.08	1.50E-004	2086.51
O-350-3-A-18-15-1-3-000	399	0.11	1.46E-05	1.89	0.42	38.16	2.04E-004	2225.03
O-350-3-A-18-18-1-3-000	398	0.11	1.48E-05	1.90	0.42	38.38	2.05E-004	2247.41
O-350-3-A-18-20-1-3-000	376	0.11	1.42E-05	1.80	0.39	36.41	2.08E-004	2136.75
O-350-3-A-18-23-1-3-000	397	0.11	1.55E-05	1.90	0.42	38.01	2.00E-004	2278.68
O-350-5-A-18-13-1-3-000	368	0.10	1.38E-05	1.77	0.38	35.90	1.54E-004	2109.91
O-350-5-A-18-15-1-3-61U	382	0.10	1.51E-05	1.84	0.40	37.08	1.57E-004	2234.50
T-210-3-A-28-20-1-3-000	319	0.10	1.18E-05	1.56	0.34	32.09	2.14E-004	1844.69
T-210-5-A-28-20-1-3-000	306	0.09	1.15E-05	1.51	0.32	31.22	1.59E-004	1807.05
T-210-5-A-28-20-1-3-200	302	0.09	1.15E-05	1.50	0.32	30.92	1.59E-004	1797.49
T-210-5-A-28-20-1-3-464	316	0.11	1.31E-05	1.59	0.35	32.08	2.35E-004	1930.70
T-245-3-A-28-20-1-3-000	319	0.10	1.23E-05	1.58	0.34	32.20	2.04E-004	1883.88
T-245-5-A-28-20-1-3-000	310	0.09	1.2E-05	1.54	0.33	31.60	1.62E-004	1851.29
T-280-3-A-28-20-1-3-000	326	0.10	1.24E-05	1.60	0.34	32.68	2.06E-004	1906.25
T-280-3-A-28-20-1-3-59M	360	0.11	1.34E-05	1.71	0.38	34.80	2.30E-004	2018.95
T-280-5-A-28-20-1-3-000	318	0.10	1.21E-05	1.57	0.33	32.24	1.61E-004	1883.79
T-280-5-A-28-20-1-3-59X	348	0.10	1.32E-05	1.67	0.36	34.06	1.73E-004	1993.62
T-280-5-A-28-20-1-3-5D7	333	0.10	1.3E-05	1.61	0.35	32.89	1.71E-004	1945.16
V-245-3-A-28-65-1-3-50K	332	0.10	1.23E-05	1.61	0.34	32.90	1.88E-004	1890.30
V-280-3-A-03-65-1-3-000	497	0.13	1.83E-05	2.31	0.52	45.71	2.08E-004	2708.16
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	95.55	0.00	95.55	2004.22	0.00	2004.22	22.80	27.09	329.10	2.52
1-210-3-A-03-13-1-3-001	100.45	0.00	100.45	2069.45	0.00	2069.45	14.79	29.55	358.99	2.41
1-210-3-A-03-15-1-3-000	95.38	0.00	95.38	2000.15	0.00	2000.15	14.80	26.84	326.07	2.50
1-210-3-A-07-13-1-3-000	97.71	0.00	97.71	2033.05	0.00	2033.05	10.02	27.49	333.98	2.54
1-210-3-A-07-15-1-3-000	101.32	0.00	101.32	2101.55	0.00	2101.55	0.71	29.11	353.63	2.59
1-210-3-A-07-15-1-3-03Z	98.06	0.00	98.06	2022.69	21.08	2043.77	15.90	26.32	319.72	2.55
1-210-3-A-07-20-1-3-004	95.43	0.00	95.43	1998.40	21.08	2019.48	16.50	26.12	317.29	2.52
1-210-3-A-14-13-1-3-000	95.24	0.00	95.24	1918.09	0.00	1918.09	42.11	27.36	332.40	2.49
1-210-3-A-14-15-1-3-000	88.90	0.00	88.90	1802.83	0.00	1802.83	23.46	23.83	289.53	2.51
1-210-3-A-28-10-0-3-000	90.13	0.00	90.13	1786.70	0.00	1786.70	23.22	24.58	298.67	2.42
1-210-3-A-28-13-1-3-000	89.32	0.00	89.32	1794.46	0.00	1794.46	31.19	24.32	295.53	2.44
1-210-3-A-28-13-1-3-001	93.30	0.00	93.30	1840.13	0.00	1840.13	6.13	26.38	320.54	2.41
1-210-3-A-28-13-1-3-008	89.96	0.00	89.96	1827.32	21.08	1848.40	68.07	24.23	294.42	2.46
1-210-3-A-28-15-1-3-000	88.83	0.00	88.83	1795.96	0.00	1795.96	46.75	24.36	296.01	2.43
1-210-3-A-28-15-1-3-003	89.55	0.00	89.55	1800.48	0.00	1800.48	37.97	24.66	299.58	2.41
1-210-3-A-28-15-1-3-004	94.14	0.00	94.14	1887.69	21.08	1908.77	40.03	26.01	316.00	2.51
1-210-3-A-28-15-1-3-03Z	92.53	0.00	92.53	1854.44	21.08	1875.52	68.06	24.40	296.50	2.49
1-210-3-A-28-15-1-3-060	89.76	0.00	89.76	1819.37	0.00	1819.37	56.52	24.42	296.68	2.47
1-210-3-A-28-20-1-3-000	90.68	0.00	90.68	1831.38	0.00	1831.38	49.15	25.31	307.49	2.43
1-210-5-A-03-13-1-3-000	91.24	0.00	91.24	1959.56	0.00	1959.56	9.25	25.95	315.27	3.44
1-210-5-A-03-15-1-3-000	91.90	0.00	91.90	1978.73	0.00	1978.73	8.96	26.32	319.80	3.44
1-210-5-A-07-13-1-3-000	86.41	0.00	86.41	1884.13	0.00	1884.13	11.71	23.63	287.11	3.47
1-210-5-A-14-13-1-3-000	79.85	0.00	79.85	1678.50	0.00	1678.50	20.93	21.07	255.99	3.32
1-210-5-A-14-15-1-3-000	93.19	0.00	93.19	1904.18	0.00	1904.18	40.80	27.49	333.95	3.28
1-210-5-A-28-10-0-3-000	83.14	0.00	83.14	1728.67	0.00	1728.67	40.21	22.72	276.08	3.31
1-210-5-A-28-13-1-3-000	81.46	0.00	81.46	1707.07	0.00	1707.07	49.90	22.00	267.28	3.28
1-210-5-A-28-13-1-3-04W	90.60	0.00	90.60	1861.33	0.00	1861.33	34.46	22.38	271.96	3.52
1-210-5-A-28-15-1-3-000	83.86	0.00	83.86	1746.98	0.00	1746.98	41.98	23.10	280.68	3.29
1-210-5-A-28-15-1-3-001	83.77	0.00	83.77	1720.05	0.00	1720.05	17.30	23.19	281.72	3.21
1-210-5-A-28-15-1-3-009	88.04	0.00	88.04	1794.49	21.08	1815.57	37.33	24.28	294.97	3.27

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**
1-210-5-A-28-15-1-3-04W	93.31	0.00	93.31	1930.04	0.00	1930.04	36.71	23.81	289.34	3.47
1-210-5-A-28-15-1-3-55A	83.64	0.00	83.64	1744.85	0.00	1744.85	49.17	24.54	298.18	3.32
1-210-5-A-28-20-1-3-000	85.00	0.00	85.00	1762.26	0.00	1762.26	17.39	23.57	286.39	3.29
1-245-3-A-07-15-1-3-000	98.57	0.00	98.57	2049.01	0.00	2049.01	18.06	28.50	346.23	2.46
1-245-3-A-14-13-1-3-001	96.36	0.00	96.36	1932.73	0.00	1932.73	42.68	28.02	340.47	2.46
1-245-3-A-14-15-1-3-000	86.59	0.00	86.59	1720.89	0.00	1720.89	36.65	23.83	289.52	2.26
1-245-3-A-28-15-1-3-000	91.45	0.00	91.45	1849.40	0.00	1849.40	24.76	25.22	306.37	2.51
1-245-3-A-28-15-1-3-003	96.31	0.00	96.31	1915.17	0.00	1915.17	0.67	27.47	333.71	2.49
1-245-3-A-28-15-1-3-004	94.31	0.00	94.31	1880.10	21.08	1901.18	31.47	25.76	312.92	2.45
1-245-3-A-28-20-1-3-000	90.62	0.00	90.62	1835.45	0.00	1835.45	26.18	24.56	298.40	2.49
1-245-3-A-28-20-1-3-020	88.09	0.00	88.09	1796.80	0.00	1796.80	36.65	23.78	288.88	2.44
1-245-5-A-03-13-1-3-000	98.47	0.00	98.47	2086.00	0.00	2086.00	18.02	29.73	361.24	3.29
1-245-5-A-03-15-1-3-000	99.57	0.00	99.57	2094.17	0.00	2094.17	26.10	30.23	367.28	3.33
1-245-5-A-07-15-1-3-001	93.18	0.00	93.18	1994.62	0.00	1994.62	23.77	27.33	332.05	3.28
1-245-5-A-28-10-0-3-000	82.46	0.00	82.46	1724.89	0.00	1724.89	34.18	22.19	269.65	3.38
1-245-5-A-28-13-1-3-000	85.00	0.00	85.00	1759.16	0.00	1759.16	36.26	23.40	284.27	3.35
1-245-5-A-28-13-1-3-009	89.60	0.00	89.60	1828.26	21.08	1849.34	38.12	24.90	302.49	3.31
1-245-5-A-28-15-1-3-000	85.25	0.00	85.25	1778.08	0.00	1778.08	38.05	23.36	283.83	3.32
1-245-5-A-28-20-1-3-000	84.23	0.00	84.23	1776.41	0.00	1776.41	35.34	22.86	277.76	3.42
1-280-3-A-03-13-1-3-000	110.68	0.00	110.68	2283.87	0.00	2283.87	17.79	34.18	415.30	2.51
1-280-3-A-03-13-1-3-001	106.37	0.00	106.37	2222.07	0.00	2222.07	28.06	32.31	392.55	2.48
1-280-3-A-03-15-1-3-000	116.87	0.00	116.87	2373.41	0.00	2373.41	11.18	36.91	448.49	2.44
1-280-3-A-03-15-1-3-001	115.03	0.00	115.03	2363.15	0.00	2363.15	25.73	38.13	463.26	2.45
1-280-3-A-03-20-1-3-000	117.78	0.00	117.78	2421.03	0.00	2421.03	22.96	37.73	458.43	2.45
1-280-3-A-07-15-1-3-000	103.25	0.00	103.25	2141.22	0.00	2141.22	26.91	30.92	375.71	2.51
1-280-3-A-07-20-1-3-001	106.70	0.00	106.70	2198.79	0.00	2198.79	19.88	32.71	397.47	2.40
1-280-3-A-14-13-1-3-000	97.26	0.00	97.26	1952.67	0.00	1952.67	43.63	28.32	344.06	2.48
1-280-3-A-14-15-1-3-000	99.48	0.00	99.48	1973.36	0.00	1973.36	44.17	29.51	358.49	2.43
1-280-3-A-28-10-0-3-000	90.28	0.00	90.28	1837.78	0.00	1837.78	60.13	25.01	303.82	2.48
1-280-3-A-28-13-1-3-000	93.20	0.00	93.20	1882.23	0.00	1882.23	54.27	26.10	317.17	2.47

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**
1-280-3-A-28-13-1-3-001	97.24	0.00	97.24	1919.77	0.00	1919.77	25.77	28.07	341.07	2.41
1-280-3-A-28-13-1-3-061	90.96	0.00	90.96	1842.63	0.00	1842.63	67.67	24.22	294.28	2.47
1-280-3-A-28-15-1-3-000	95.43	0.00	95.43	1906.20	0.00	1906.20	40.47	27.25	331.11	2.42
1-280-3-A-28-15-1-3-001	95.12	0.00	95.12	1898.76	0.00	1898.76	39.06	27.40	332.86	2.43
1-280-3-A-28-15-1-3-004	99.55	0.00	99.55	1960.91	21.08	1981.99	43.93	28.61	347.54	2.42
1-280-3-A-28-15-1-3-061	92.07	0.00	92.07	1837.95	0.00	1837.95	69.75	24.97	303.41	2.44
1-280-3-A-28-20-1-3-000	93.70	0.00	93.70	1893.30	0.00	1893.30	50.17	26.49	321.83	2.45
1-280-3-A-28-20-1-3-004	106.03	0.00	106.03	2069.01	21.08	2090.09	0.76	30.92	375.63	2.54
1-280-3-A-28-20-1-3-014	103.16	0.00	103.16	1979.22	0.00	1979.22	40.77	26.63	323.50	2.61
1-280-5-A-03-13-1-3-000	100.16	0.00	100.16	2134.98	0.00	2134.98	20.66	30.33	368.46	3.36
1-280-5-A-03-13-1-3-001	101.19	0.00	101.19	2138.05	0.00	2138.05	18.56	30.94	375.96	3.32
1-280-5-A-03-15-1-3-000	109.34	0.00	109.34	2298.14	0.00	2298.14	25.32	34.90	423.98	3.27
1-280-5-A-07-13-1-3-000	99.06	0.00	99.06	2095.57	0.00	2095.57	18.48	30.03	364.82	3.28
1-280-5-A-07-13-1-3-001	103.66	0.00	103.66	2174.97	0.00	2174.97	21.09	32.24	391.68	3.27
1-280-5-A-07-15-1-3-000	102.48	0.00	102.48	2160.28	0.00	2160.28	11.98	31.47	382.37	3.36
1-280-5-A-07-20-1-3-000	101.01	0.00	101.01	2145.44	0.00	2145.44	13.89	30.89	375.32	3.30
1-280-5-A-14-13-1-3-000	92.35	0.00	92.35	1885.29	0.00	1885.29	34.52	26.99	327.89	3.30
1-280-5-A-14-15-1-3-001	91.11	0.00	91.11	1848.53	0.00	1848.53	41.46	26.80	325.66	3.16
1-280-5-A-28-10-0-3-000	87.14	0.00	87.14	1798.58	0.00	1798.58	32.59	24.47	297.29	3.33
1-280-5-A-28-10-0-3-001	88.81	0.00	88.81	1818.12	0.00	1818.12	31.51	25.37	308.20	3.29
1-280-5-A-28-13-1-3-000	86.67	0.00	86.67	1802.34	0.00	1802.34	48.60	24.32	295.54	3.31
1-280-5-A-28-13-1-3-001	89.54	0.00	89.54	1830.23	0.00	1830.23	32.22	25.80	313.49	3.26
1-280-5-A-28-15-1-3-000	90.83	0.00	90.83	1869.90	0.00	1869.90	32.82	26.21	318.42	3.34
1-280-5-A-28-15-1-3-001	88.28	0.00	88.28	1806.82	0.00	1806.82	38.95	25.37	308.24	3.19
1-280-5-A-28-15-1-3-01P	94.94	0.00	94.94	1930.79	0.00	1930.79	21.52	26.51	322.12	3.46
1-280-5-A-28-15-1-3-027	90.48	0.00	90.48	1857.02	0.00	1857.02	19.08	26.01	316.01	3.32
1-280-5-A-28-15-1-3-060	88.08	0.00	88.08	1822.68	0.00	1822.68	69.41	24.80	301.29	3.21
1-280-5-A-28-15-1-3-55A	93.76	0.00	93.76	1921.56	0.00	1921.56	58.43	29.34	356.52	3.23
1-280-5-A-28-20-1-3-000	90.37	0.00	90.37	1861.10	0.00	1861.10	32.94	26.02	316.19	3.34
1-280-5-A-28-20-1-3-001	96.52	0.00	96.52	1931.45	0.00	1931.45	0.72	29.22	355.03	3.23

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**
1-280-5-A-28-20-1-3-63Q	88.88	0.00	88.88	1846.41	0.00	1846.41	77.58	27.14	329.80	3.17
1-315-3-A-28-15-1-3-001	102.41	0.00	102.41	1998.56	0.00	1998.56	47.08	30.78	373.91	2.32
1-315-3-A-28-15-1-3-004	112.40	0.00	112.40	2198.90	21.08	2219.98	53.71	34.72	421.88	2.47
1-315-5-A-03-15-1-3-020	134.43	0.00	134.43	2805.97	0.00	2805.97	34.08	45.99	558.77	3.59
1-315-5-A-07-15-1-3-000	109.72	0.00	109.72	2310.29	0.00	2310.29	23.33	34.92	424.25	3.34
1-315-5-A-14-15-1-3-000	107.47	0.00	107.47	2153.11	0.00	2153.11	9.78	33.78	410.44	3.46
1-315-5-A-28-15-1-3-000	96.99	0.00	96.99	1969.09	0.00	1969.09	44.44	29.28	355.75	3.28
1-315-5-A-28-15-1-3-001	98.28	0.00	98.28	1981.81	0.00	1981.81	49.24	30.04	365.02	3.23
1-315-5-A-28-15-1-3-004	102.22	0.00	102.22	2041.96	21.08	2063.04	0.75	30.67	372.57	3.34
1-350-3-A-28-13-1-3-000	107.07	0.00	107.07	2086.64	0.00	2086.64	0.78	32.04	389.23	2.52
1-350-3-A-28-15-1-3-000	99.49	0.00	99.49	1972.14	0.00	1972.14	31.47	28.98	352.04	2.45
1-350-3-A-28-20-1-3-000	100.91	0.00	100.91	2007.64	0.00	2007.64	35.91	29.61	359.71	2.46
1-350-5-A-03-13-1-3-000	115.94	0.00	115.94	2411.02	0.00	2411.02	0.92	37.59	456.70	3.42
1-350-5-A-03-13-1-3-001	120.26	0.00	120.26	2454.66	0.00	2454.66	34.72	40.28	489.44	3.19
1-350-5-A-07-13-1-3-000	105.18	0.00	105.18	2228.96	0.00	2228.96	19.93	32.72	397.55	3.33
1-350-5-A-07-13-1-3-001	108.51	0.00	108.51	2257.13	0.00	2257.13	29.56	34.59	420.28	3.25
1-350-5-A-14-13-1-3-001	112.21	0.00	112.21	2202.36	0.00	2202.36	12.04	36.39	442.11	3.28
1-350-5-A-28-10-0-3-001	91.51	0.00	91.51	1862.83	0.00	1862.83	40.71	26.54	322.45	3.30
1-350-5-A-28-13-1-3-000	90.09	0.00	90.09	1866.70	0.00	1866.70	56.50	25.89	314.52	3.33
1-350-5-A-28-13-1-3-001	92.23	0.00	92.23	1884.28	0.00	1884.28	54.83	27.16	329.97	3.22
1-350-5-A-28-15-1-3-000	93.00	0.00	93.00	1909.96	0.00	1909.96	38.50	27.27	331.35	3.31
1-350-5-A-28-15-1-3-63A	99.70	0.00	99.70	2060.62	0.00	2060.62	59.63	31.83	386.76	3.37
2-350-3-A-28-15-1-3-000	117.54	0.00	117.54	2279.24	0.00	2279.24	74.15	37.58	456.56	2.38
3-210-5-A-28-15-1-3-000	82.59	0.00	82.59	1752.45	0.00	1752.45	137.75	22.93	278.55	3.14
3-280-3-A-28-13-1-3-000	100.18	0.00	100.18	1977.24	0.00	1977.24	83.82	29.87	362.94	2.33
3-280-3-A-28-13-1-3-001	118.54	0.00	118.54	2270.49	0.00	2270.49	0.93	37.99	461.55	2.43
3-280-3-A-28-15-1-3-000	107.16	0.00	107.16	2087.47	0.00	2087.47	85.40	33.43	406.12	2.30
3-280-3-A-28-15-1-3-001	99.38	0.00	99.38	1978.39	0.00	1978.39	112.14	30.05	365.15	2.29
3-280-3-A-28-20-1-3-000	118.65	0.00	118.65	2274.24	0.00	2274.24	0.93	38.13	463.32	2.43
3-280-5-A-28-13-1-3-000	97.11	0.00	97.11	1989.77	0.00	1989.77	78.34	29.15	354.18	3.39

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**
3-280-5-A-28-13-1-3-001	95.12	0.00	95.12	1928.01	0.00	1928.01	80.33	28.71	348.85	3.18
3-280-5-A-28-15-1-3-000	94.63	0.00	94.63	1938.48	0.00	1938.48	78.72	28.25	343.25	3.28
3-280-5-A-28-15-1-3-009	96.73	0.00	96.73	1958.39	21.08	1979.47	107.95	28.95	351.69	3.03
3-315-3-A-28-15-1-3-001	111.67	0.00	111.67	2165.29	0.00	2165.29	70.52	35.76	434.49	2.31
8-210-3-A-28-13-1-3-000	91.31	0.00	91.31	1854.94	0.00	1854.94	30.80	25.31	307.52	2.57
8-210-5-A-28-13-1-3-000	91.21	0.00	91.21	1862.60	0.00	1862.60	8.16	26.19	318.15	3.43
8-210-5-A-28-15-1-3-000	82.43	0.00	82.43	1739.49	0.00	1739.49	59.78	22.33	271.28	3.36
8-245-5-A-28-15-1-3-000	85.04	0.00	85.04	1737.87	0.00	1737.87	36.83	23.87	289.96	3.18
8-280-3-A-28-13-1-3-000	93.84	0.00	93.84	1882.17	0.00	1882.17	57.77	26.71	324.52	2.42
8-280-3-A-28-15-1-3-000	97.81	0.00	97.81	1939.20	0.00	1939.20	43.06	28.13	341.75	2.42
8-280-3-A-28-20-1-3-000	96.55	0.00	96.55	1951.50	0.00	1951.50	58.87	28.01	340.29	2.50
8-280-5-A-28-15-1-3-000	92.37	0.00	92.37	1881.41	0.00	1881.41	41.98	27.27	331.33	3.22
8-315-5-A-28-15-1-3-000	100.79	0.00	100.79	2018.84	0.00	2018.84	48.02	31.23	379.40	3.21
8-315-5-A-28-20-1-3-000	102.80	0.00	102.80	2058.52	0.00	2058.52	29.83	31.99	388.71	3.27
8-350-3-A-28-20-1-3-000	113.55	0.00	113.55	2204.28	0.00	2204.28	42.14	35.80	434.96	2.38
C-210-3-A-28-25-1-3-000	86.73	0.00	86.73	1821.34	0.00	1821.34	103.68	22.59	274.46	2.53
F-210-3-A-18-65-1-3-000	98.35	0.00	98.35	2088.22	0.00	2088.22	23.79	28.51	346.40	2.59
F-210-3-A-18-65-1-3-061	103.12	0.00	103.12	2230.84	0.00	2230.84	18.13	29.76	361.56	2.61
F-280-3-A-18-65-1-3-000	109.82	0.00	109.82	2281.67	0.00	2281.67	20.62	33.64	408.71	2.55
F-280-3-A-18-65-1-3-061	112.33	0.00	112.33	2275.81	0.00	2275.81	14.49	33.73	409.79	2.55
F-315-3-A-18-65-1-3-000	115.67	0.00	115.67	2409.43	0.00	2409.43	18.99	37.03	449.86	2.57
F-350-3-A-18-65-1-3-000	115.94	0.00	115.94	2429.94	0.00	2429.94	20.09	36.73	446.26	2.59
I-280-3-A-28-13-1-3-51A	124.89	0.00	124.89	2329.93	21.08	2351.01	1.00	40.71	494.64	2.37
I-280-5-A-28-13-1-3-000	89.64	0.00	89.64	1818.53	0.00	1818.53	39.77	25.82	313.69	3.35
I-280-5-A-28-13-1-3-00T	98.13	0.00	98.13	1969.95	0.00	1969.95	39.11	25.40	308.55	3.57
J-210-3-A-28-65-1-3-000	93.19	0.00	93.19	1909.17	0.00	1909.17	94.42	25.36	308.09	2.50
J-210-3-A-28-65-1-3-460	119.17	0.00	119.17	2325.72	0.00	2325.72	68.83	33.36	405.30	2.80
J-210-3-A-28-65-1-3-464	118.16	0.00	118.16	2288.20	0.00	2288.20	53.51	33.59	408.06	2.76
J-210-3-A-28-65-1-3-62L	109.27	0.00	109.27	2107.64	0.00	2107.64	76.50	31.11	377.96	2.51
J-245-3-A-28-65-1-3-000	99.84	0.00	99.84	2026.84	0.00	2026.84	72.89	28.40	345.09	2.57

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-210-0-A-28-13-1-3-000	110.48	0.00	110.48	2401.54	0.00	2401.54	28.58	33.50	406.98	3.45
M-210-0-A-28-13-1-3-060	111.02	0.00	111.02	2339.44	0.00	2339.44	0.80	32.71	397.45	3.25
M-210-0-A-28-15-1-3-000	99.94	0.00	99.94	2182.20	0.00	2182.20	27.79	29.22	355.02	3.17
M-210-0-A-28-15-1-3-001	99.63	0.00	99.63	2155.75	0.00	2155.75	45.65	29.49	358.34	3.03
M-210-0-A-28-15-1-3-004	104.44	0.00	104.44	2261.19	21.08	2282.27	30.38	30.29	368.01	3.21
M-210-0-A-28-15-1-3-009	101.83	0.00	101.83	2179.89	21.08	2200.97	45.70	29.63	360.05	3.04
M-210-0-A-28-15-1-3-061	104.58	0.00	104.58	2222.72	0.00	2222.72	45.75	29.80	362.12	3.20
M-210-0-A-28-15-1-3-073	103.39	0.00	103.39	2196.17	21.08	2217.25	46.12	29.81	362.21	3.06
M-210-0-A-28-15-1-3-074	100.02	0.00	100.02	2128.09	21.08	2149.17	46.25	30.05	365.09	3.04
O-210-3-A-18-13-1-3-000	92.98	0.00	92.98	1930.33	0.00	1930.33	10.86	25.99	315.79	2.44
O-210-3-A-18-15-1-3-000	92.03	0.00	92.03	1923.17	0.00	1923.17	19.82	25.62	311.22	2.47
O-210-3-A-18-18-1-3-000	94.40	0.00	94.40	1971.37	0.00	1971.37	13.83	26.74	324.90	2.48
O-210-3-A-18-18-1-3-060	95.50	0.00	95.50	1988.14	0.00	1988.14	21.70	26.93	327.15	2.54
O-210-3-A-18-20-1-3-000	95.85	0.00	95.85	2017.52	0.00	2017.52	13.43	27.52	334.37	2.55
O-210-3-A-18-23-1-3-000	97.75	0.00	97.75	2038.54	0.00	2038.54	10.10	28.17	342.24	2.50
O-210-3-A-20-20-1-3-000	97.12	0.00	97.12	1945.19	0.00	1945.19	12.57	27.58	335.13	2.51
O-210-3-A-20-20-1-3-060	96.65	0.00	96.65	1925.93	0.00	1925.93	16.82	26.93	327.16	2.49
O-210-3-A-20-20-1-3-061	97.86	0.00	97.86	1957.37	0.00	1957.37	11.27	27.43	333.31	2.54
O-210-5-A-18-13-1-3-000	87.17	0.00	87.17	1874.04	0.00	1874.04	13.66	24.34	295.68	3.37
O-210-5-A-18-13-1-3-009	91.48	0.00	91.48	1912.77	21.08	1933.85	15.86	25.80	313.41	3.27
O-210-5-A-18-15-1-3-000	89.72	0.00	89.72	1927.65	0.00	1927.65	13.58	25.40	308.55	3.42
O-210-5-A-18-15-1-3-004	90.78	0.00	90.78	1921.13	21.08	1942.21	15.69	25.43	308.96	3.26
O-245-3-A-18-13-1-3-000	92.72	0.00	92.72	1948.77	0.00	1948.77	22.43	25.78	313.17	2.45
O-245-3-A-18-15-1-3-000	93.21	0.00	93.21	1959.11	0.00	1959.11	22.68	26.14	317.62	2.46
O-245-3-A-18-23-1-3-000	100.34	0.00	100.34	2104.85	0.00	2104.85	8.18	29.13	353.92	2.54
O-245-5-A-18-13-1-3-000	87.21	0.00	87.21	1897.16	0.00	1897.16	15.65	24.46	297.20	3.39
O-245-5-A-18-15-1-3-000	87.22	0.00	87.22	1887.02	0.00	1887.02	13.34	24.43	296.77	3.32
O-245-5-A-20-13-1-3-000	87.93	0.00	87.93	1842.75	0.00	1842.75	17.79	24.67	299.68	3.41
O-245-5-A-20-13-1-3-060	88.19	0.00	88.19	1848.91	0.00	1848.91	20.79	24.22	294.31	3.46
O-245-5-A-20-13-1-3-061	89.95	0.00	89.95	1865.59	0.00	1865.59	15.40	24.72	300.34	3.46

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**
O-280-3-A-18-13-1-3-000	97.34	0.00	97.34	2028.30	0.00	2028.30	20.05	27.81	337.84	2.45
O-280-3-A-18-15-1-3-000	99.21	0.00	99.21	2073.93	0.00	2073.93	22.57	28.77	349.50	2.53
O-280-3-A-18-18-1-3-000	97.85	0.00	97.85	2050.18	0.00	2050.18	23.39	28.28	343.60	2.50
O-280-3-A-18-18-1-3-001	97.80	0.00	97.80	2045.80	0.00	2045.80	28.56	28.65	348.13	2.44
O-280-3-A-18-20-1-3-000	97.70	0.00	97.70	2037.77	0.00	2037.77	21.99	28.14	341.92	2.43
O-280-3-A-18-23-1-3-000	96.15	0.00	96.15	2039.89	0.00	2039.89	25.08	27.45	333.56	2.53
O-280-3-A-20-20-1-3-000	97.68	0.00	97.68	1977.29	0.00	1977.29	24.01	27.94	339.50	2.47
O-280-3-A-20-23-1-3-000	98.81	0.00	98.81	2006.02	0.00	2006.02	0.70	28.59	347.38	2.52
O-280-5-A-18-13-1-3-000	89.63	0.00	89.63	1934.95	0.00	1934.95	20.57	25.44	309.08	3.36
O-280-5-A-18-15-1-3-000	90.53	0.00	90.53	1952.01	0.00	1952.01	18.58	25.89	314.52	3.36
O-280-5-A-18-15-1-3-001	90.15	0.00	90.15	1936.13	0.00	1936.13	22.47	25.86	314.22	3.31
O-280-5-A-18-15-1-3-004	91.53	0.00	91.53	1957.31	21.08	1978.39	23.36	27.03	328.46	3.37
O-280-5-A-18-15-1-3-61U	96.37	0.00	96.37	2074.59	0.00	2074.59	0.74	30.24	367.39	3.29
O-315-3-A-18-13-1-3-000	104.39	0.00	104.39	2158.00	0.00	2158.00	26.91	31.41	381.56	2.43
O-315-3-A-18-15-1-3-000	108.45	0.00	108.45	2226.35	0.00	2226.35	8.41	34.30	416.72	2.43
O-315-3-A-18-23-1-3-000	105.72	0.00	105.72	2137.01	0.00	2137.01	16.23	32.59	396.00	2.40
O-315-5-A-18-13-1-3-000	96.63	0.00	96.63	2056.75	0.00	2056.75	8.45	30.00	364.50	3.30
O-315-5-A-18-15-1-3-000	101.21	0.00	101.21	2124.57	0.00	2124.57	8.87	31.13	378.25	3.26
O-315-5-A-18-15-1-3-61U	99.38	0.00	99.38	2123.59	0.00	2123.59	4.95	31.71	385.23	3.27
O-350-3-A-18-15-1-3-000	113.37	0.00	113.37	2276.42	0.00	2276.42	11.80	35.64	433.03	2.46
O-350-3-A-18-18-1-3-000	113.14	0.00	113.14	2298.21	0.00	2298.21	20.98	35.32	429.08	2.54
O-350-3-A-18-20-1-3-000	108.49	0.00	108.49	2193.94	0.00	2193.94	10.96	33.12	402.38	2.44
O-350-3-A-18-23-1-3-000	111.79	0.00	111.79	2326.01	0.00	2326.01	21.79	34.85	423.43	2.50
O-350-5-A-18-13-1-3-000	103.84	0.00	103.84	2146.93	0.00	2146.93	12.87	32.32	392.66	3.30
O-350-5-A-18-15-1-3-61U	106.53	0.00	106.53	2273.47	0.00	2273.47	15.31	33.12	402.38	3.38
T-210-3-A-28-20-1-3-000	97.26	0.00	97.26	1901.98	0.00	1901.98	42.04	27.57	335.00	2.42
T-210-5-A-28-20-1-3-000	91.40	0.00	91.40	1844.55	0.00	1844.55	31.35	26.24	318.81	3.30
T-210-5-A-28-20-1-3-200	90.66	0.00	90.66	1835.61	0.00	1835.61	32.28	25.68	312.06	3.31
T-210-5-A-28-20-1-3-464	99.30	0.00	99.30	1973.02	0.00	1973.02	28.62	26.28	319.33	3.59
T-245-3-A-28-20-1-3-000	96.02	0.00	96.02	1930.78	0.00	1930.78	42.32	27.29	331.59	2.49

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**
T-245-5-A-28-20-1-3-000	92.19	0.00	92.19	1888.44	0.00	1888.44	27.16	26.37	320.35	3.33
T-280-3-A-28-20-1-3-000	97.90	0.00	97.90	1955.39	0.00	1955.39	52.78	28.15	342.00	2.46
T-280-3-A-28-20-1-3-59M	104.21	0.00	104.21	2076.02	0.00	2076.02	62.05	31.60	383.94	2.38
T-280-5-A-28-20-1-3-000	93.65	0.00	93.65	1919.70	0.00	1919.70	50.74	27.23	330.84	3.26
T-280-5-A-28-20-1-3-59X	98.39	0.00	98.39	2033.65	0.00	2033.65	59.56	30.25	367.56	3.31
T-280-5-A-28-20-1-3-5D7	94.36	0.00	94.36	1984.55	0.00	1984.55	83.03	28.42	345.32	3.25
V-245-3-A-28-65-1-3-50K	96.24	0.00	96.24	1937.55	0.00	1937.55	58.38	29.51	358.53	2.35
V-280-3-A-03-65-1-3-000	131.74	0.00	131.74	2739.42	0.00	2739.42	45.18	45.62	554.29	2.56
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-03-13-1-3-001	560	0.14	1.92E-05	2.54	0.57	50.27	2.09E-004	2917.62
1-420-3-A-03-13-1-3-009	606	0.15	2.03E-05	2.72	0.62	53.58	2.13E-004	3136.00
1-420-3-A-03-13-1-3-072	603	0.15	2.02E-05	2.71	0.62	53.42	2.12E-004	3083.70
1-420-3-A-07-13-1-3-072	480	0.13	1.73E-05	2.22	0.50	44.11	2.10E-004	2589.42
1-420-3-A-07-15-1-3-55A	452	0.12	1.59E-05	2.08	0.46	41.79	2.03E-004	2414.40
1-420-3-A-14-13-1-3-000	454	0.12	1.48E-05	2.11	0.46	42.75	2.17E-004	2385.83
1-420-3-A-28-13-1-3-000	400	0.11	1.33E-05	1.89	0.41	38.36	1.98E-004	2153.94
1-420-3-A-28-13-1-3-009	1290	0.30	3.3E-05	5.79	1.28	116.68	4.34E-004	6124.73
1-420-3-A-28-13-1-3-072	412	0.11	1.37E-05	1.93	0.42	39.22	2.07E-004	2202.42
1-420-3-A-28-15-1-3-000	407	0.11	1.36E-05	1.92	0.42	39.04	2.10E-004	2188.08
1-420-3-A-28-20-1-3-000	415	0.11	1.4E-05	1.97	0.43	39.89	1.98E-004	2249.34

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**
1-420-5-A-14-13-1-3-000	434	0.11	1.42E-05	2.03	0.44	41.36	1.62E-004	2318.87
1-420-5-A-28-13-1-3-000	392	0.11	1.33E-05	1.86	0.40	38.10	1.58E-004	2150.55
A-490-3-A-28-15-1-3-551	415	0.12	1.44E-05	1.97	0.43	39.62	2.32E-004	2263.79
A-490-5-A-28-15-1-3-551	400	0.11	1.36E-05	1.89	0.41	38.38	1.73E-004	2169.31
A-700-3-A-28-20-1-3-551	568	0.14	1.8E-05	2.58	0.57	51.31	2.22E-004	2855.59
F-420-3-A-18-65-1-3-000	481	0.12	1.77E-05	2.25	0.50	44.57	2.01E-004	2640.71
F-490-3-A-18-65-1-3-524	500	0.13	1.83E-05	2.31	0.52	45.86	2.06E-004	2697.61
O-420-3-A-18-18-1-3-000	448	0.12	1.58E-05	2.09	0.46	41.97	2.05E-004	2428.49
O-420-3-A-18-23-1-3-000	471	0.12	1.66E-05	2.19	0.49	43.77	2.12E-004	2534.22
O-420-5-A-18-13-1-3-000	408	0.11	1.46E-05	1.93	0.42	39.21	1.59E-004	2271.30
O-490-3-A-18-15-1-3-406	446	0.12	1.66E-05	2.07	0.46	41.39	2.11E-004	2436.88
O-490-3-A-18-18-1-3-407	446	0.12	1.67E-05	2.07	0.46	41.33	2.09E-004	2444.31
O-490-3-A-18-23-1-3-407	505	0.13	1.84E-05	2.34	0.52	46.60	2.26E-004	2732.81
V-420-3-A-28-65-1-3-000	443	0.12	1.5E-05	2.10	0.46	42.37	2.23E-004	2403.60
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**	**m^3**
1-420-3-A-03-13-1-3-001	148.48	0.00	148.48	2963.65	0.00	2963.65	32.39	52.55	638.42	2.35
1-420-3-A-03-13-1-3-009	160.23	0.00	160.23	3161.03	21.08	3182.11	34.95	57.37	697.06	2.32
1-420-3-A-03-13-1-3-072	158.27	0.00	158.27	3129.81	0.00	3129.81	35.81	57.37	697.08	2.28
1-420-3-A-07-13-1-3-072	131.11	0.00	131.11	2640.49	0.33	2640.82	23.55	44.09	535.67	2.36
1-420-3-A-07-15-1-3-55A	122.00	0.00	122.00	2468.68	0.00	2468.68	82.01	41.34	502.28	2.26
1-420-3-A-14-13-1-3-000	127.72	0.00	127.72	2442.43	0.00	2442.43	1.03	42.11	511.68	2.47
1-420-3-A-28-13-1-3-000	114.31	0.00	114.31	2202.96	0.00	2202.96	55.26	36.61	444.77	2.31
1-420-3-A-28-13-1-3-009	333.35	0.00	333.35	6216.02	21.08	6237.10	3.12	127.54	1549.55	5.17

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**
1-420-3-A-28-13-1-3-072	117.69	0.00	117.69	2255.67	0.00	2255.67	23.52	37.82	459.52	2.38
1-420-3-A-28-15-1-3-000	116.94	0.00	116.94	2245.41	0.00	2245.41	32.21	37.31	453.34	2.39
1-420-3-A-28-20-1-3-000	117.37	0.00	117.37	2294.01	0.00	2294.01	51.85	38.01	461.86	2.45
1-420-5-A-14-13-1-3-000	120.34	0.00	120.34	2358.00	0.00	2358.00	0.98	39.97	485.67	3.38
1-420-5-A-28-13-1-3-000	110.60	0.00	110.60	2188.37	0.00	2188.37	21.91	35.50	431.29	3.33
A-490-3-A-28-15-1-3-551	119.44	0.00	119.44	2319.48	0.00	2319.48	38.46	37.61	456.98	2.45
A-490-5-A-28-15-1-3-551	111.59	0.00	111.59	2210.60	0.00	2210.60	46.68	36.68	445.68	3.29
A-700-3-A-28-20-1-3-551	151.16	0.00	151.16	2911.23	0.00	2911.23	1.34	54.55	662.72	2.41
F-420-3-A-18-65-1-3-000	130.19	0.00	130.19	2681.24	0.00	2681.24	24.37	43.78	531.90	2.52
F-490-3-A-18-65-1-3-524	132.87	0.00	132.87	2744.66	0.00	2744.66	14.29	46.23	561.66	2.48
O-420-3-A-18-18-1-3-000	124.25	0.00	124.25	2476.57	0.00	2476.57	17.99	40.88	496.68	2.47
O-420-3-A-18-23-1-3-000	129.72	0.00	129.72	2585.51	0.00	2585.51	1.06	43.18	524.63	2.50
O-420-5-A-18-13-1-3-000	113.20	0.00	113.20	2308.76	0.00	2308.76	19.37	36.62	444.88	3.33
O-490-3-A-18-15-1-3-406	121.26	0.00	121.26	2494.29	0.00	2494.29	13.20	40.47	491.70	2.38
O-490-3-A-18-18-1-3-407	120.54	0.00	120.54	2500.68	0.00	2500.68	28.25	40.18	488.20	2.40
O-490-3-A-18-23-1-3-407	134.77	0.00	134.77	2794.83	0.00	2794.83	31.39	46.12	560.34	2.58
V-420-3-A-28-65-1-3-000	125.09	0.00	125.09	2450.75	0.00	2450.75	77.48	40.51	492.21	2.53
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 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**
1-105-3-A-28-10-0-3-000	212	0.07	0.03	-	0	0.77	0	0
1-105-3-A-28-15-1-3-000	214	0.07	0.03	-	0	0.77	0	0
1-105-5-A-28-10-0-3-000	200	0.07	0.03	-	0	0.77	0	0
1-105-5-A-28-13-1-3-000	193	0.07	0.02	-	0	0.77	0	0
1-105-5-A-28-15-1-3-000	198	0.07	0.03	-	0	0.77	0	0
1-105-5-A-28-20-1-3-000	204	0.07	0.08	-	0	0.77	0	0
1-140-3-A-28-10-0-3-000	227	0.07	0.03	-	0	0.78	0	0
1-140-3-A-28-13-1-3-000	215	0.07	0.03	-	0	0.77	0	0
1-140-3-A-28-15-1-3-000	225	0.07	0.03	-	0	0.78	0	0
1-140-5-A-28-10-0-3-000	210	0.07	0.03	-	0	0.77	0	0
1-140-5-A-28-13-1-3-000	216	0.07	0.03	-	0	0.77	0	0
1-140-5-A-28-15-1-3-000	214	0.07	0.03	-	0	0.77	0	0
1-140-5-A-28-15-1-3-55A	232	0.07	0.03	-	0	0.78	0	0
C-140-3-A-28-23-1-3-62B	231	0.07	0.03	-	0	0.78	0	0
G-140-3-A-28-20-1-3-000	270	0.08	0.04	-	0	0.79	0	0
K-036-3-A-28-00-0-3-55V	259	0.08	0.03	-	0	0.8	0	0
M-105-0-A-28-15-1-3-000	252	0.07	0.03	-	0	0.78	0	0
M-125-0-A-28-13-1-3-000	259	0.07	0.03	-	0	0.78	0	0
M-125-0-A-28-15-1-3-000	264	0.07	0.03	-	0	0.79	0	0
M-125-0-A-28-15-1-3-060	268	0.07	0.03	-	0	0.79	0	0
M-140-0-A-28-15-1-3-000	271	0.07	0.03	-	0	0.79	0	0
M-140-0-A-28-15-1-3-001	268	0.07	0.03	-	0	0.79	0	0
P-039-5-A-28-13-0-3-000	287	0.08	0.03	-	0	0.80	0	0
P-040-5-A-03-13-0-3-000	344	0.09	0.06	-	0	0.82	0	0
P-041-5-A-03-13-0-3-000	342	0.08	0.03	-	0	0.82	0	0
P-041-5-A-28-10-0-3-000	296	0.08	0.03	-	0	0.80	0	0
P-041-5-A-28-13-0-3-000	290	0.08	0.03	-	0	0.80	0	0
P-042-5-A-28-13-0-3-000	306	0.08	0.03	-	0	0.81	0	0
P-043-5-A-03-13-0-3-000	346	0.09	0.03	-	0	0.82	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-043-5-A-28-10-0-3-000	307	0.08	0.03	-	0	0.81	0	0
P-045-5-A-03-13-0-3-000	361	0.09	0.03	-	0	0.82	0	0
P-045-5-A-03-13-0-3-534	425	0.10	0.03	-	0	0.85	0	0
P-045-5-A-07-13-0-3-000	347	0.09	0.04	-	0	0.82	0	0
P-045-5-A-07-13-0-3-534	378	0.09	0.03	-	0	0.83	0	0
P-045-5-A-14-13-0-3-000	288	0.08	0.03	-	0	0.8	0	0
P-045-5-A-14-13-0-3-534	342	0.09	0.03	-	0	0.82	0	0
P-045-5-A-28-10-0-3-534	316	0.08	0.04	-	0	0.81	0	0
P-045-5-A-28-13-0-3-000	313	0.08	0.04	-	0	0.81	0	0
P-045-5-A-28-13-0-3-534	305	0.08	0.06	-	0	0.81	0	0
P-045-5-A-28-15-1-3-000	324	0.08	0.04	-	0	0.81	0	0
R-010-0-A-28-20-0-3-000	154	0.06	0.02	-	0	0.75	0	0
R-015-0-A-28-20-0-3-000	171	0.06	0.02	-	0	0.76	0	0
R-020-0-A-28-20-0-3-000	170	0.06	0.05	-	0	0.76	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-28-10-0-3-000	236	0.07	0.03	-	0	0.78	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**
1-175-3-A-28-13-1-3-000	240	0.07	0.03	-	0	0.78	0	0
1-175-3-A-28-15-1-3-000	240	0.07	0.03	-	0	0.78	0	0
1-175-5-A-28-10-0-3-000	233	0.07	0.03	-	0	0.78	0	0
1-175-5-A-28-13-1-3-000	229	0.07	0.03	-	0	0.78	0	0
1-175-5-A-28-15-1-3-000	232	0.07	0.03	-	0	0.78	0	0
1-175-5-A-28-15-1-3-001	229	0.07	0.03	-	0	0.78	0	0
G-175-3-A-28-20-1-3-000	297	0.08	0.03	-	0	0.80	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 20 to 35 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**
1-210-3-A-03-13-1-3-000	290	0.08	0.03	-	0	0.80	0	0
1-210-3-A-03-13-1-3-001	308	0.08	0.03	-	0	0.81	0	0
1-210-3-A-03-15-1-3-000	289	0.08	0.03	-	0	0.80	0	0
1-210-3-A-07-13-1-3-000	295	0.08	0.03	-	0	0.80	0	0
1-210-3-A-07-15-1-3-000	309	0.08	0.03	-	0	0.80	0	0
1-210-3-A-07-15-1-3-03Z	288	0.08	0.03	-	0	0.80	0	0
1-210-3-A-07-20-1-3-004	285	0.08	0.03	-	0	0.80	0	0
1-210-3-A-14-13-1-3-000	286	0.08	0.03	-	0	0.80	0	0
1-210-3-A-14-15-1-3-000	258	0.07	0.03	-	0	0.79	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**
1-210-3-A-28-10-0-3-000	261	0.08	0.06	-	0	0.79	0	0
1-210-3-A-28-13-1-3-000	261	0.08	0.03	-	0	0.79	0	0
1-210-3-A-28-13-1-3-001	276	0.08	0.03	-	0	0.80	0	0
1-210-3-A-28-13-1-3-008	263	0.08	0.03	-	0	0.79	0	0
1-210-3-A-28-15-1-3-000	261	0.08	0.03	-	0	0.79	0	0
1-210-3-A-28-15-1-3-003	263	0.08	0.03	-	0	0.79	0	0
1-210-3-A-28-15-1-3-004	277	0.08	0.03	-	0	0.80	0	0
1-210-3-A-28-15-1-3-03Z	267	0.08	0.03	-	0	0.79	0	0
1-210-3-A-28-15-1-3-060	263	0.08	0.03	-	0	0.79	0	0
1-210-3-A-28-20-1-3-000	268	0.08	0.03	-	0	0.79	0	0
1-210-5-A-03-13-1-3-000	281	0.08	0.03	-	0	0.80	0	0
1-210-5-A-03-15-1-3-000	285	0.08	0.03	-	0	0.80	0	0
1-210-5-A-07-13-1-3-000	263	0.07	0.03	-	0	0.79	0	0
1-210-5-A-14-13-1-3-000	234	0.07	0.03	-	0	0.78	0	0
1-210-5-A-14-15-1-3-000	285	0.08	0.03	-	0	0.80	0	0
1-210-5-A-28-10-0-3-000	247	0.07	0.03	-	0	0.79	0	0
1-210-5-A-28-13-1-3-000	242	0.07	0.03	-	0	0.78	0	0
1-210-5-A-28-13-1-3-04W	255	0.07	0.03	-	0	0.79	0	0
1-210-5-A-28-15-1-3-000	250	0.07	0.03	-	0	0.79	0	0
1-210-5-A-28-15-1-3-001	249	0.08	0.10	-	0	0.79	0	0
1-210-5-A-28-15-1-3-009	260	0.08	0.03	-	0	0.79	0	0
1-210-5-A-28-15-1-3-04W	268	0.07	0.03	-	0	0.79	0	0
1-210-5-A-28-15-1-3-55A	256	0.08	0.03	-	0	0.79	0	0
1-210-5-A-28-20-1-3-000	254	0.08	0.10	-	0	0.79	0	0
1-245-3-A-07-15-1-3-000	301	0.08	0.03	-	0	0.80	0	0
1-245-3-A-14-13-1-3-001	290	0.08	0.03	-	0	0.80	0	0
1-245-3-A-14-15-1-3-000	252	0.07	0.03	-	0	0.79	0	0
1-245-3-A-28-15-1-3-000	269	0.08	0.05	-	0	0.79	0	0
1-245-3-A-28-15-1-3-003	286	0.08	0.03	-	0	0.80	0	0
1-245-3-A-28-15-1-3-004	274	0.08	0.06	-	0	0.79	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**
1-245-3-A-28-20-1-3-000	264	0.08	0.07	-	0	0.79	0	0
1-245-3-A-28-20-1-3-020	258	0.07	0.03	-	0	0.79	0	0
1-245-5-A-03-13-1-3-000	311	0.08	0.03	-	0	0.81	0	0
1-245-5-A-03-15-1-3-000	314	0.08	0.03	-	0	0.81	0	0
1-245-5-A-07-15-1-3-001	291	0.08	0.03	-	0	0.80	0	0
1-245-5-A-28-10-0-3-000	244	0.07	0.03	-	0	0.78	0	0
1-245-5-A-28-13-1-3-000	253	0.07	0.03	-	0	0.79	0	0
1-245-5-A-28-13-1-3-009	266	0.08	0.03	-	0	0.79	0	0
1-245-5-A-28-15-1-3-000	254	0.07	0.03	-	0	0.79	0	0
1-245-5-A-28-20-1-3-000	251	0.07	0.03	-	0	0.79	0	0
1-280-3-A-03-13-1-3-000	349	0.09	0.03	-	0	0.82	0	0
1-280-3-A-03-13-1-3-001	334	0.08	0.03	-	0	0.81	0	0
1-280-3-A-03-15-1-3-000	370	0.09	0.03	-	0	0.83	0	0
1-280-3-A-03-15-1-3-001	375	0.09	0.03	-	0	0.83	0	0
1-280-3-A-03-20-1-3-000	378	0.09	0.03	-	0	0.83	0	0
1-280-3-A-07-15-1-3-000	321	0.08	0.03	-	0	0.81	0	0
1-280-3-A-07-20-1-3-001	335	0.08	0.03	-	0	0.81	0	0
1-280-3-A-14-13-1-3-000	293	0.08	0.03	-	0	0.80	0	0
1-280-3-A-14-15-1-3-000	301	0.08	0.03	-	0	0.81	0	0
1-280-3-A-28-10-0-3-000	267	0.08	0.03	-	0	0.79	0	0
1-280-3-A-28-13-1-3-000	277	0.08	0.03	-	0	0.80	0	0
1-280-3-A-28-13-1-3-001	290	0.08	0.04	-	0	0.80	0	0
1-280-3-A-28-13-1-3-061	264	0.08	0.03	-	0	0.79	0	0
1-280-3-A-28-15-1-3-000	284	0.08	0.03	-	0	0.80	0	0
1-280-3-A-28-15-1-3-001	284	0.08	0.04	-	0	0.80	0	0
1-280-3-A-28-15-1-3-004	295	0.08	0.03	-	0	0.80	0	0
1-280-3-A-28-15-1-3-061	267	0.08	0.03	-	0	0.79	0	0
1-280-3-A-28-20-1-3-000	279	0.08	0.03	-	0	0.80	0	0
1-280-3-A-28-20-1-3-004	316	0.08	0.03	-	0	0.81	0	0
1-280-3-A-28-20-1-3-014	288	0.08	0.03	-	0	0.80	0	0

FUTURO EN ACCIÓN

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
1-280-5-A-03-13-1-3-000	317	0.08	0.03	-	0	0.81	0	0
1-280-5-A-03-13-1-3-001	321	0.08	0.03	-	0	0.81	0	0
1-280-5-A-03-15-1-3-000	354	0.09	0.03	-	0	0.82	0	0
1-280-5-A-07-13-1-3-000	313	0.08	0.03	-	0	0.81	0	0
1-280-5-A-07-13-1-3-001	331	0.08	0.04	-	0	0.81	0	0
1-280-5-A-07-15-1-3-000	325	0.08	0.03	-	0	0.81	0	0
1-280-5-A-07-20-1-3-000	321	0.08	0.06	-	0	0.81	0	0
1-280-5-A-14-13-1-3-000	281	0.08	0.03	-	0	0.80	0	0
1-280-5-A-14-15-1-3-001	278	0.08	0.03	-	0	0.80	0	0
1-280-5-A-28-10-0-3-000	262	0.08	0.03	-	0	0.79	0	0
1-280-5-A-28-10-0-3-001	268	0.08	0.06	-	0	0.79	0	0
1-280-5-A-28-13-1-3-000	261	0.08	0.03	-	0	0.79	0	0
1-280-5-A-28-13-1-3-001	271	0.08	0.03	-	0	0.79	0	0
1-280-5-A-28-15-1-3-000	276	0.08	0.04	-	0	0.80	0	0
1-280-5-A-28-15-1-3-001	267	0.08	0.03	-	0	0.79	0	0
1-280-5-A-28-15-1-3-01P	283	0.08	0.03	-	0	0.80	0	0
1-280-5-A-28-15-1-3-027	274	0.08	0.11	-	0	0.80	0	0
1-280-5-A-28-15-1-3-060	266	0.08	0.03	-	0	0.79	0	0
1-280-5-A-28-15-1-3-55A	295	0.08	0.03	-	0	0.80	0	0
1-280-5-A-28-20-1-3-000	274	0.08	0.03	-	0	0.80	0	0
1-280-5-A-28-20-1-3-001	297	0.08	0.03	-	0	0.80	0	0
1-280-5-A-28-20-1-3-63Q	278	0.08	0.03	-	0	0.80	0	0
1-315-3-A-28-15-1-3-001	309	0.08	0.03	-	0	0.81	0	0
1-315-3-A-28-15-1-3-004	346	0.09	0.03	-	0	0.82	0	0
1-315-5-A-03-15-1-3-020	452	0.10	0.03	-	0	0.85	0	0
1-315-5-A-07-15-1-3-000	355	0.09	0.03	-	0	0.82	0	0
1-315-5-A-14-15-1-3-000	337	0.09	0.03	-	0	0.82	0	0
1-315-5-A-28-15-1-3-000	300	0.08	0.04	-	0	0.80	0	0
1-315-5-A-28-15-1-3-001	305	0.08	0.03	-	0	0.81	0	0
1-315-5-A-28-15-1-3-004	314	0.08	0.03	-	0	0.81	0	0

FUTURO EN ACCIÓN

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**
1-350-3-A-28-13-1-3-000	323	0.08	0.03	-	0	0.81	0	0
1-350-3-A-28-15-1-3-000	298	0.08	0.05	-	0	0.80	0	0
1-350-3-A-28-20-1-3-000	304	0.08	0.03	-	0	0.81	0	0
1-350-5-A-03-13-1-3-000	378	0.09	0.03	-	0	0.83	0	0
1-350-5-A-03-13-1-3-001	394	0.09	0.03	-	0	0.84	0	0
1-350-5-A-07-13-1-3-000	337	0.08	0.03	-	0	0.81	0	0
1-350-5-A-07-13-1-3-001	349	0.09	0.03	-	0	0.82	0	0
1-350-5-A-14-13-1-3-001	356	0.09	0.03	-	0	0.82	0	0
1-350-5-A-28-10-0-3-001	277	0.08	0.03	-	0	0.80	0	0
1-350-5-A-28-13-1-3-000	274	0.08	0.03	-	0	0.79	0	0
1-350-5-A-28-13-1-3-001	282	0.08	0.03	-	0	0.80	0	0
1-350-5-A-28-15-1-3-000	285	0.08	0.04	-	0	0.80	0	0
1-350-5-A-28-15-1-3-63A	319	0.08	0.03	-	0	0.81	0	0
2-350-3-A-28-15-1-3-000	367	0.09	0.03	-	0	0.83	0	0
3-210-5-A-28-15-1-3-000	249	0.07	0.03	-	0	0.79	0	0
3-280-3-A-28-13-1-3-000	303	0.08	0.03	-	0	0.81	0	0
3-280-3-A-28-13-1-3-001	369	0.09	0.03	-	0	0.83	0	0
3-280-3-A-28-15-1-3-000	331	0.08	0.03	-	0	0.82	0	0
3-280-3-A-28-15-1-3-001	304	0.08	0.03	-	0	0.81	0	0
3-280-3-A-28-20-1-3-000	369	0.09	0.03	-	0	0.83	0	0
3-280-5-A-28-13-1-3-000	300	0.08	0.03	-	0	0.80	0	0
3-280-5-A-28-13-1-3-001	293	0.08	0.03	-	0	0.80	0	0
3-280-5-A-28-15-1-3-000	292	0.08	0.03	-	0	0.80	0	0
3-280-5-A-28-15-1-3-009	297	0.08	0.03	-	0	0.80	0	0
3-315-3-A-28-15-1-3-001	349	0.09	0.03	-	0	0.82	0	0
8-210-3-A-28-13-1-3-000	270	0.08	0.03	-	0	0.79	0	0
8-210-5-A-28-13-1-3-000	275	0.08	0.03	-	0	0.80	0	0
8-210-5-A-28-15-1-3-000	246	0.07	0.03	-	0	0.78	0	0
8-245-5-A-28-15-1-3-000	254	0.07	0.03	-	0	0.79	0	0
8-280-3-A-28-13-1-3-000	280	0.08	0.03	-	0	0.80	0	0

FUTURO EN ACCIÓN

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**
8-280-3-A-28-15-1-3-000	291	0.08	0.03	-	0	0.80	0	0
8-280-3-A-28-20-1-3-000	291	0.08	0.03	-	0	0.80	0	0
8-280-5-A-28-15-1-3-000	282	0.08	0.03	-	0	0.80	0	0
8-315-5-A-28-15-1-3-000	314	0.08	0.03	-	0	0.81	0	0
8-315-5-A-28-20-1-3-000	321	0.08	0.04	-	0	0.81	0	0
8-350-3-A-28-20-1-3-000	352	0.09	0.03	-	0	0.82	0	0
C-210-3-A-28-25-1-3-000	254	0.07	0.03	-	0	0.79	0	0
F-210-3-A-18-65-1-3-000	304	0.08	0.03	-	0	0.80	0	0
F-210-3-A-18-65-1-3-061	321	0.08	0.03	-	0	0.81	0	0
F-280-3-A-18-65-1-3-000	346	0.08	0.03	-	0	0.82	0	0
F-280-3-A-18-65-1-3-061	346	0.09	0.03	-	0	0.82	0	0
F-315-3-A-18-65-1-3-000	373	0.09	0.03	-	0	0.83	0	0
F-350-3-A-18-65-1-3-000	373	0.09	0.03	-	0	0.83	0	0
I-280-3-A-28-13-1-3-51A	387	0.09	0.03	-	0	0.84	0	0
I-280-5-A-28-13-1-3-000	270	0.08	0.03	-	0	0.79	0	0
I-280-5-A-28-13-1-3-00T	280	0.08	0.03	-	0	0.79	0	0
J-210-3-A-28-65-1-3-000	276	0.08	0.03	-	0	0.79	0	0
J-210-3-A-28-65-1-3-460	353	0.08	0.03	-	0	0.82	0	0
J-210-3-A-28-65-1-3-464	350	0.09	0.09	-	0	0.82	0	0
J-210-3-A-28-65-1-3-62L	323	0.08	0.05	-	0	0.81	0	0
J-245-3-A-28-65-1-3-000	301	0.08	0.03	-	0	0.80	0	0
M-210-0-A-28-13-1-3-000	356	0.08	0.04	-	0	0.82	0	0
M-210-0-A-28-13-1-3-060	349	0.08	0.03	-	0	0.81	0	0
M-210-0-A-28-15-1-3-000	317	0.08	0.03	-	0	0.80	0	0
M-210-0-A-28-15-1-3-001	316	0.08	0.03	-	0	0.81	0	0
M-210-0-A-28-15-1-3-004	329	0.08	0.03	-	0	0.81	0	0
M-210-0-A-28-15-1-3-009	319	0.08	0.03	-	0	0.81	0	0
M-210-0-A-28-15-1-3-061	324	0.08	0.03	-	0	0.81	0	0
M-210-0-A-28-15-1-3-073	321	0.08	0.03	-	0	0.81	0	0
M-210-0-A-28-15-1-3-074	316	0.08	0.03	-	0	0.81	0	0

FUTURO EN ACCIÓN

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**
O-210-3-A-18-13-1-3-000	279	0.08	0.03	-	0	0.80	0	0
O-210-3-A-18-15-1-3-000	277	0.08	0.03	-	0	0.79	0	0
O-210-3-A-18-18-1-3-000	286	0.08	0.03	-	0	0.80	0	0
O-210-3-A-18-18-1-3-060	289	0.08	0.03	-	0	0.80	0	0
O-210-3-A-18-20-1-3-000	294	0.08	0.03	-	0	0.80	0	0
O-210-3-A-18-23-1-3-000	299	0.08	0.03	-	0	0.80	0	0
O-210-3-A-20-20-1-3-000	289	0.08	0.03	-	0	0.80	0	0
O-210-3-A-20-20-1-3-060	284	0.08	0.03	-	0	0.80	0	0
O-210-3-A-20-20-1-3-061	289	0.08	0.03	-	0	0.80	0	0
O-210-5-A-18-13-1-3-000	266	0.08	0.03	-	0	0.79	0	0
O-210-5-A-18-13-1-3-009	277	0.08	0.03	-	0	0.79	0	0
O-210-5-A-18-15-1-3-000	276	0.08	0.03	-	0	0.79	0	0
O-210-5-A-18-15-1-3-004	276	0.08	0.03	-	0	0.79	0	0
O-245-3-A-18-13-1-3-000	279	0.08	0.03	-	0	0.79	0	0
O-245-3-A-18-15-1-3-000	282	0.08	0.03	-	0	0.80	0	0
O-245-3-A-18-23-1-3-000	309	0.08	0.03	-	0	0.80	0	0
O-245-5-A-18-13-1-3-000	268	0.08	0.03	-	0	0.79	0	0
O-245-5-A-18-15-1-3-000	268	0.08	0.04	-	0	0.79	0	0
O-245-5-A-20-13-1-3-000	266	0.08	0.03	-	0	0.79	0	0
O-245-5-A-20-13-1-3-060	264	0.08	0.03	-	0	0.79	0	0
O-245-5-A-20-13-1-3-061	268	0.08	0.03	-	0	0.79	0	0
O-280-3-A-18-13-1-3-000	296	0.08	0.03	-	0	0.80	0	0
O-280-3-A-18-15-1-3-000	305	0.08	0.03	-	0	0.80	0	0
O-280-3-A-18-18-1-3-000	300	0.08	0.03	-	0	0.80	0	0
O-280-3-A-18-18-1-3-001	302	0.08	0.03	-	0	0.80	0	0
O-280-3-A-18-20-1-3-000	298	0.08	0.03	-	0	0.80	0	0
O-280-3-A-18-23-1-3-000	295	0.08	0.03	-	0	0.80	0	0
O-280-3-A-20-20-1-3-000	293	0.08	0.03	-	0	0.80	0	0
O-280-3-A-20-23-1-3-000	299	0.08	0.03	-	0	0.80	0	0
O-280-5-A-18-13-1-3-000	276	0.08	0.03	-	0	0.79	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-280-5-A-18-15-1-3-000	280	0.08	0.03	-	0	0.79	0	0
O-280-5-A-18-15-1-3-001	279	0.08	0.03	-	0	0.79	0	0
O-280-5-A-18-15-1-3-004	285	0.08	0.03	-	0	0.80	0	0
O-280-5-A-18-15-1-3-61U	311	0.08	0.03	-	0	0.81	0	0
O-315-3-A-18-13-1-3-000	325	0.08	0.03	-	0	0.81	0	0
O-315-3-A-18-15-1-3-000	345	0.09	0.03	-	0	0.82	0	0
O-315-3-A-18-23-1-3-000	330	0.08	0.03	-	0	0.81	0	0
O-315-5-A-18-13-1-3-000	309	0.08	0.03	-	0	0.81	0	0
O-315-5-A-18-15-1-3-000	321	0.08	0.03	-	0	0.81	0	0
O-315-5-A-18-15-1-3-61U	322	0.08	0.03	-	0	0.81	0	0
O-350-3-A-18-15-1-3-000	357	0.09	0.03	-	0	0.82	0	0
O-350-3-A-18-18-1-3-000	356	0.09	0.03	-	0	0.82	0	0
O-350-3-A-18-20-1-3-000	337	0.08	0.03	-	0	0.82	0	0
O-350-3-A-18-23-1-3-000	356	0.09	0.03	-	0	0.82	0	0
O-350-5-A-18-13-1-3-000	329	0.08	0.03	-	0	0.81	0	0
O-350-5-A-18-15-1-3-61U	342	0.08	0.03	-	0	0.82	0	0
T-210-3-A-28-20-1-3-000	286	0.08	0.03	-	0	0.80	0	0
T-210-5-A-28-20-1-3-000	275	0.08	0.03	-	0	0.80	0	0
T-210-5-A-28-20-1-3-200	271	0.08	0.03	-	0	0.79	0	0
T-210-5-A-28-20-1-3-464	285	0.08	0.05	-	0	0.80	0	0
T-245-3-A-28-20-1-3-000	286	0.08	0.03	-	0	0.80	0	0
T-245-5-A-28-20-1-3-000	278	0.08	0.04	-	0	0.80	0	0
T-280-3-A-28-20-1-3-000	293	0.08	0.03	-	0	0.80	0	0
T-280-3-A-28-20-1-3-59M	322	0.08	0.03	-	0	0.81	0	0
T-280-5-A-28-20-1-3-000	285	0.08	0.03	-	0	0.80	0	0
T-280-5-A-28-20-1-3-59X	312	0.08	0.03	-	0	0.81	0	0
T-280-5-A-28-20-1-3-5D7	300	0.08	0.03	-	0	0.80	0	0
V-245-3-A-28-65-1-3-50K	296	0.08	0.03	-	0	0.81	0	0
V-280-3-A-03-65-1-3-000	442	0.10	0.03	-	0	0.85	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**
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	**GWP Net**	**HWD**	**NHWD**	**RWD**	**MER**	**MFR**	**EE**	**CRU**
Unit	**kgCO_2 eq**	**kg**	**kg**	**kg**	**kg**	**kg**	**MJ**	**kg**
1-420-3-A-03-13-1-3-001	497	0.10	0.03	-	0	0.87	0	0
1-420-3-A-03-13-1-3-009	538	0.11	0.03	-	0	0.88	0	0
1-420-3-A-03-13-1-3-072	535	0.11	0.03	-	0	0.88	0	0
1-420-3-A-07-13-1-3-072	428	0.10	0.03	-	0	0.85	0	0
1-420-3-A-07-15-1-3-55A	403	0.09	0.03	-	0	0.84	0	0
1-420-3-A-14-13-1-3-000	404	0.09	0.03	-	0	0.84	0	0
1-420-3-A-28-13-1-3-000	356	0.09	0.03	-	0	0.83	0	0
1-420-3-A-28-13-1-3-009	1139	0.18	0.05	-	0	1.08	0	0
1-420-3-A-28-13-1-3-072	367	0.09	0.04	-	0	0.83	0	0
1-420-3-A-28-15-1-3-000	363	0.09	0.03	-	0	0.83	0	0
1-420-3-A-28-20-1-3-000	370	0.09	0.03	-	0	0.83	0	0
1-420-5-A-14-13-1-3-000	386	0.09	0.03	-	0	0.83	0	0
1-420-5-A-28-13-1-3-000	350	0.09	0.06	-	0	0.82	0	0
A-490-3-A-28-15-1-3-551	371	0.09	0.07	-	0	0.83	0	0
A-490-5-A-28-15-1-3-551	356	0.09	0.03	-	0	0.83	0	0
A-700-3-A-28-20-1-3-551	504	0.11	0.03	-	0	0.88	0	0
F-420-3-A-18-65-1-3-000	429	0.10	0.03	-	0	0.85	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**
F-490-3-A-18-65-1-3-524	445	0.10	0.03	-	0	0.85	0	0
O-420-3-A-18-18-1-3-000	399	0.09	0.03	-	0	0.84	0	0
O-420-3-A-18-23-1-3-000	420	0.09	0.03	-	0	0.84	0	0
O-420-5-A-18-13-1-3-000	364	0.09	0.03	-	0	0.83	0	0
O-490-3-A-18-15-1-3-406	398	0.09	0.03	-	0	0.84	0	0
O-490-3-A-18-18-1-3-407	398	0.09	0.03	-	0	0.84	0	0
O-490-3-A-18-23-1-3-407	450	0.10	0.03	-	0	0.85	0	0
V-420-3-A-28-65-1-3-000	395	0.09	0.03	-	0	0.84	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