SELECT QUALITY MATERIALS AND CONCRETE, LLC

ENVIRONMENTAL PRODUCT DECLARATION

Mix 300057IP • Native Hills Plant

This Environmental Product Declaration (EPD) reports the impacts for 1 m^3 of ready mixed concrete mix, for use in business-to-business (B2B) comunication meeting the following specifications:

- ASTM C94: Ready-Mixed Concrete
- UNSPSC Code 30111505: Ready Mix Concrete
- CSA A23.1/A23.2: Concrete Materials and Methods of Concrete Construction
- CSI Division 03-30-00: Cast-in-Place Concrete

COMPANY

Select Quality Materials and Concrete, LLC
8327 US 277
Eagle Pass, TX 78852

PLANT

Native Hills Plant
8327 US 277
Eagle Pass, TX 78852

EPD PROGRAM OPERATOR

ASTM International
100 Barr Harbor Drive
West Conshohocken, PA 19428

DATE OF ISSUE

06/26/2024 **(valid for 5 years until 06/26/2029)**
(Portable plant validity is limited to location specified)

ENVIRONMENTAL IMPACTS

Declared Product:

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Description: 3000 psi
Compressive strength: 3000 PSI at 28 days

Declared Unit: 1 m^3 of concrete (1 cyd)

Global Warming Potential (kg CO_2-eq)	**238 (182)**
Ozone Depletion Potential (kg CFC-11-eq)	**6.21E-6 (4.75E-6)**
Acidification Potential (kg SO_2-eq)	**0.93 (0.71)**
Eutrophication Potential (kg N-eq)	**0.40 (0.31)**
Photochemical Ozone Creation Potential (kg O_3-eq)	**19.2 (14.7)**
Abiotic Depletion, non-fossil (kg Sb-eq)	**6.31E-5 (4.83E-5)**
Abiotic Depletion, fossil (MJ)	**598 (457)**
Total Waste Disposed (kg)	**4.31 (3.30)**
Consumption of Freshwater (m^3)	**3.25 (2.48)**

Product Components: natural aggregate (ASTM C33), Portland cement (ASTM C150), batch water (ASTM C1602), admixture (ASTM C494)

Additional detail and impacts are reported on page three of this EPD

ISO 21930:2017 Sustainability in Building Construction — Environmental Declaration of Building Products: serves as the core PCR
PCR for Concrete, NSF International, February 2024 v2.3 (including deviation) – extension, serves as the sub-category PCR

Sub-category PCR review was conducted by Thomas P. Gloria • Industrial Ecology Consultants

Independent verification of the declaration, according to ISO 14025:2006: ☐ internal ☑ external

Third party verifier Thomas P. Gloria (t.gloria@industrial-ecology.com) • Industrial Ecology Consultants

For additional explanatory material
Manufacture Representative: Jeff Richter (jeff.richter@selectqmc.com)
Software Tool: CarbonCLARITY Suite, EPD Generator • Verification
LCA & EPD Developer: Climate Earth (support@climateearth.com)

LIFE CYCLE ASSESSMENT

SYSTEM BOUNDARY

This EPD is a cradle-to-gate EPD covering the product stages (A1-A3) only

PRODUCTION Stage (*Mandatory*)			CONSTRUCTION Stage		USE Stage					END-OF-LIFE Stage			
Extraction and upstream production	Transport to factory	Manufacturing	Transport to site	Installation	Use	Maintenance	Repair	Replacement	Refurbishment	De-construction/ Demolition	Transport to waste processing or disposal	Waste processing	Disposal of waste
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	C1	C2	C3	C4

CUT-OFF

Items excluded from system boundary include: production, manufacture, and construction of manufacturing capital goods and infrastructure; production and manufacture of production equipment, delivery vehicles, and laboratory equipment; personnel-related activities (travel, furniture, and office supplies); and energy and water use related to company management and sales activities that may be located either within the factory site or at another location.
A one percent cut-off is considered for renewable and non-renewable primary energy consumption and the total mass of inputs within a unit process. The sum of the total neglected flows does not exceed 5% of all energy consumption and mass of inputs.

ALLOCATION PROCEDURE

Allocation follows the requirements and guidance of ISO 14044.
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.
Native Hills Plant is a truck (transit) mixing plant. 30% of all mixing truck(fleet) energy has been allocated to module A3.

LIFE CYCLE INVENTORY (LCI)

This EPD was calculated using manufacturer specific cement data that represents 100% of the total cement used in this mix.

PRIMARY SOURCES OF LCI DATA

- **Admixture (plasticizing)**: EFCA EPD, 2015
- **Aggregate (natural)**: US-EI (2020): “Gravel, round, at mine/US”, 2001
- **Blended Cement**: Supplier specific primary data, 2023
- **Cleaning Chemicals**: Ecoinvent 3.4: 50% Citric acid and 50% Phosphoric acid, industrial grade, without water, in 70% solution state, market for/GLO, 2017
- **Diesel**: USLCI: “Diesel, combusted in industrial equipment/NREL/US”, 2007
- **Non-Hazardous Solid Waste**: US-EI (2016): Disposal, municipal solid waste, 2008
- **Oils, Lubricants and Greases**: Ecoinvent 3.5: Lubricating oil, GLO, market for, cut-off, 2011
- **Truck transport**: USLCI:"Transport, combination truck, long-haul, diesel powered/tkm/RNA", 2010
- **Truck transport**: USLCI:"Transport, combination truck, short-haul, diesel powered/tkm/RNA", 2010
- **Truck transport**: USLCI:"Transport, single unit truck, long-haul, diesel powered/tkm/RNA", 2010

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DECLARATION OF ENVIRONMENTAL INDICATORS DERIVED FROM LCA

Impact Assessment	Unit	A1	A2	A3	Total
Global warming potential	kg CO_2-eq	208	11.6	18.2	238
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC-11-eq	6.20E-6	4.73E-10	9.74E-9	6.21E-6
Eutrophication potential	kg N-eq	0.37	9.09E-3	0.02	0.40
Acidification potential of soil and water sources (AP)	kg SO_2-eq	0.54	0.15	0.25	0.93
Formation potential of tropospheric ozone (POCP)	kg O_3-eq	7.55	3.88	7.81	19.2
Resource Use					
Abiotic depletion potential for non-fossil mineral resources (ADPelements)*	kg Sb-eq	6.30E-5	-	1.14E-7	6.31E-5
Abiotic depletion potential for fossil resources (ADPfossil)	MJ	189	160	248	598
Renewable primary energy resources as energy (fuel), (RPRE)*	MJ	52.8	0.00E+0	0.03	52.9
Renewable primary resources as material, (RPRM)*	MJ	0.00E+0	-	0.00E+0	0.00E+0
Non-renewable primary resources as energy (fuel), (NRPRE)*	MJ	1,317	160	248	1,726
Non-renewable primary resources as material (NRPRM)*	MJ	5.70	-	0.00E+0	5.70
Consumption of fresh water	m^3	3.22	-	0.03	3.25
Secondary Material, Fuel and Recovered Energy					
Secondary Materials, (SM)*	kg	86.2	-	0.00E+0	86.2
Renewable secondary fuels, (RSF)*	MJ	0.00E+0	-	0.00E+0	0.00E+0
Non-renewable secondary fuels (NRSF)*	MJ	0.00E+0	-	0.00E+0	0.00E+0
Recovered energy, (RE)*	MJ	0.00E+0	-	0.00E+0	0.00E+0
Waste & Output Flows					
Hazardous waste disposed*	kg	0.04	-	0.00E+0	0.04
Non-hazardous waste disposed*	kg	3.66	-	0.61	4.27
High-level radioactive waste*	m^3	1.06E-3	-	2.37E-11	1.06E-3
Intermediate and low-level radioactive waste*	m^3	4.74E-8	-	1.40E-9	4.88E-8
Components for reuse*	kg	0.00E+0	-	0.00E+0	0.00E+0
Materials for recycling*	kg	0.03	-	0.24	0.27
Materials for energy recovery*	kg	0.00E+0	-	0.00E+0	0.00E+0
Recovered energy exported from the product system*	MJ	0.00E+0	-	0.00E+0	0.00E+0
Additional Inventory Parameters for Transparency					
Emissions from calcination and uptake from carbonation*	kg CO_2-eq	10.6	-	0.00E+0	10.6

* 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 these categories.
- 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

This product contains no materials that are considered hazardous as defined by the PCR.
Comparability of EPDs is limited to those applying a functional unit. Comparisons based on A1-A3 data shall be made only if the same secondary data sets and all subsequent life cycle states are equivalent for both EPDs.

REFERENCES

ISO 21930:2017 Sustainability in Building Construction — Environmental Declaration of Building Products

ISO 14044:2006/Amd 1:2017/Amd 2:2020 Environmental Management — Life Cycle Assessment — Requirements and Guidelines

NSF International, February 2024 v2.3 (including deviation) – extension — PCR for Concrete

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