



# Environmental Product Declaration (EPD) for Concrete



## Plants covered in this EPD

Alliance 2901 Hwy. 114 Justin, TX 76247	Haslet 1989 Keller Hicks Rd. Fort Worth, TX 76177	Richardson 1250 Digital Dr. Richardson, TX 75081
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Arlington 6400 New York Ave. Arlington, TX 76019	Hurst 3152 Precinct Line Rd. Hurst, TX 76118	Saginaw 1037 Jarvis Rd. Saginaw, TX 76179
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Coppell 601 N. Hwy. 121 Coppell, TX 75019	Irving 5150 Valley View Ln. Irving, TX 75038	Southlake 1968 Brumlow Southlake, TX 76092
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Downtown Dallas 240 Singleton Blvd. Dallas, TX 75212	Lewisville 1225 S. Railroad Lewisville, TX 75067	Southside 6100 Old Hemphill Rd. S. Fort Worth, TX 76134
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Ft. Worth 880 N. Houston Fort Worth, TX 76106	Mesquite 1719 Scyene Rd. Mesquite, TX 75149	Terrell 103 Metrocrest Way Terrell, TX 75160
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Frisco 15050 Hwy. 121 Frisco, TX 75035	Prosper 770 S. Dallas Pkwy. Prosper, TX 75078	Waxahachie 4109 North Hwy. 77 Waxahachie, TX 75165
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## About Argos Ready Mix South Central

Argos Ready Mix South Central, headquartered in Irving, Texas, is a focused concrete supplier serving the major metropolitan market of Dallas – Ft. Worth. From Argos' network of 30 concrete plants concentrated in this area, production is nearly two million yards of concrete annually.

Argos Ready Mix South Central is part of Argos USA Corp., a wholly-owned subsidiary of Cementos Argos S.A., which, in turn, is a publicly traded corporation with headquarters in Colombia, South America. Argos is a member of the Dow Jones Sustainability Indices.

EPD Program Operator  
National Ready Mix Concrete Association  
900 Spring Street, Silver Spring, MD 20910  
301-587-1400  
[www.nrmca.org/sustainability](http://www.nrmca.org/sustainability)

Date of Issue: August 26, 2014  
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(until August 26, 2019)  
Declaration#: NRMCAEPD:10004





# Environmental Product Declaration (EPD) for Concrete



## NRMCA Certified Environmental Product Declaration

This environmental product declaration was conducted in accordance with ISO 14025:2006

Internal Verification  External Verification

Declared Product: This Environmental Product Declaration (EPD) covers 19 concrete mixes produced for 18 different concrete plants owned and operated by Argos Ready Mix South Central in the major metropolitan market of Dallas – Ft. Worth.

Declaration Owner:	<b>Argos Ready Mix South Central</b> 8500 Freeport Parkway, Suite 200 Irving, Texas 75063 (972) 621-0999 <a href="http://www.argos-us.com">www.argos-us.com</a>	
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Program Operator:	National Ready Mix Concrete Association 301-587-1400 <a href="http://www.nrmca.org/sustainability">www.nrmca.org/sustainability</a>  Lionel Lemay	
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LCA and EPD Developer:	PRé (202) 728-5087 <a href="http://www.pre-sustainability.com/">www.pre-sustainability.com/</a>  Cashion East	
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Independent Verifier:	Athena Sustainable Materials Institute 613-729-9996 <a href="http://www.athenaasmi.org">www.athenaasmi.org</a>  Lindita Bushi	
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Product Category Rule:	Product Category Rules (PCR) for ISO 14025 Type III Environmental Product Declarations (EPDs) for Concrete meeting the requirements of one of the following: ASTM C94, ASTM C90, CSA A23.1/A23.2, UNSPSC code 30111500, Version 1.1 dated December 4, 2013, The Carbon Leadership Forum <a href="http://www.carbonleadershipforum.org">www.carbonleadershipforum.org</a>
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## ENVIRONMENTAL PRODUCT DECLARATION: DETAILED VERSION

### Product Description

Products covered by this Environmental Product Declaration (EPD) are for general purpose concrete for commercial applications developed and produced by Argos Ready Mix South Central for the Dallas – Ft. Worth market. This EPD reports the impacts for the product “ready-mix concrete” meeting the following specifications:

- ASTM C94: Standard Specification for Ready-Mixed Concrete
- UNSPSC code 30111500 Ready Mix Concrete
- Concrete CSI Section 03 30 00: Cast-in-Place

### Product Components

Component	Standard	Specification for:
Portland Cement	ASTM C150	Portland Cement
Fly Ash	ASTM C618	Coal fly ash and raw or calcined Natural pozzolan for use in concrete
Slag Cement	ASTM C989	Slag cement for use in concrete and mortars
Natural and Crushed Aggregates	ASTM C33	Concrete aggregates
Admixtures	ASTM C494	Chemical Admixtures for Concrete
Batch Water	ASTM C1602	Mixing water used in the production of hydraulic cement concrete

### Declared Unit

The declared unit is 1m<sup>3</sup> of Argos concrete that corresponds to the Argos mix numbers and plants given in the tables below, plant sustainability certifications are included as well:

Mix Code	Strength Class (PSI @28 days)	Slump (in)
1597	3000	4
1734	4500	4
1735	4000	4
1738	4400	4
1811	4500	4
1841	4500	4
1899	5000	4
2554	3000	4
4070	4500	6
4072	6000	6
4176	9000	7.5
8482	5000	6
8880	3600	4
9279	6000	7.5
9630	5000	6
9908	8000	7.5
9920	8000 (@56 days)	7.5
9930	9000 (@56 days)	7.5
9932	9000 (@56 days)	7.5

Plant #	Plant Location	NRMCA Certified Concrete Production Facility	NRMCA Green Star Certification
1015	Alliance	✓	
1018	Arlington	✓	✓
1010	Coppell	✓	
1004	Downtown Dallas	✓	
1006	Ft. Worth	✓	
1009	Frisco	✓	✓
1026	Haslet	✓	✓
1012	Hurst	✓	✓
1005	Irving	✓	✓
1011	Lewisville	✓	✓
1002	Mesquite	✓	✓
1013	Prosper	✓	✓
1008	Richardson	✓	✓
1042	Saginaw	✓	
1025	Southlake	✓	✓
1014	Southside	✓	✓
1024	Terrell	✓	✓
1022	Waxahachie	✓	

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# Environmental Product Declaration (EPD) for Concrete



## Life Cycle Assessment (LCA)

The LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.

A summary of the life cycle stages included in the EPD is as follows:

1. Raw Material Supply (upstream processes): Extraction, handling and processing of the raw materials used in production of concrete: cement, supplementary cementitious materials, aggregate (course and fine), water, admixtures and other materials or chemicals used in concrete mixtures.
2. Transportation: Transportation of these materials from supplier to the 'gate' of the concrete producer.
3. Manufacturing (core processes): The core processes result from the energy used to store, batch, mix and distribute the concrete and operate the facility (concrete plant).
4. Water use in mixing and distributing concrete.

A summary of life cycle stages excluded from the EPD is as follows:

1. Transportation to the construction site.
2. Construction (reinforcement, forming, placing, curing, etc.).
3. Building use and maintenance.
4. End of life.

Additionally, the following cycle processes are excluded from this study:

1. Production, manufacturer and construction of buildings' capital goods and infrastructure.
2. Production and manufacture of concrete production equipment, concrete delivery vehicles, earthmoving equipment, and laboratory equipment.

3. Personnel-related activities (travel, furniture, office supplies).
4. Energy and water use related to company management and sales activities, which may be located either within the factory site or at another location.

A summary of the limitations of this EPD include:

1. This EPD does not report all of the environmental impacts due to manufacturing of the product, but rather reports the environmental impacts for those categories with established life cycle assessment based methods to track and report. Unreported environmental impacts include (but are not limited to) factors attributable to human health, land use change, water use in the upstream manufacturing process and habitat destruction.
2. This EPD report the results of an LCA for 'cradle-to-gate' analysis. Thus, declarations are not comparative assertions defined as an environmental claim regarding the superiority or equivalence of one product versus a competing product that performs the same function. An EPD does not make any statements that the product covered by the EPD is better or worse than any other product.
3. In order to assess the local impacts of product manufacturing, additional analysis is required.
4. The product manufacturer has the option of declaring additional information about their product including conformance with any other sustainability certification programs that often have performance and prescriptive requirements that aim to illustrate environmental best practices that cannot be captured by LCA.
5. Life Cycle Impact Assessment results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.

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EPDs of concrete mixes may not be comparable if they do not comply with this standard and data from this EPD. The data cannot be used to compare between concrete mixes, construction products or concrete mixtures used in different concrete products unless the data is integrated into a comprehensive LCA. For example, precast concrete, concrete masonry units and site cast concrete all have different manufacturing processes whose impacts are attributed to different LCA stages. This precludes direct comparison between mixtures used in these different products unless all life cycle phases are included. Additionally, environmental declarations from different programs may not be comparable. More information about the NRMCA program can be found at <http://www.nrmca.org/sustainability/EPDProgram/>.

## Data Quality and Variability

This EPD was created using plant specific data for upstream materials. Potential variations due to supplier locations, manufacturing processes and efficiencies and fuel use are thus accounted for in this EPD.

## Data Sources

Data for this study came from several different sources and primary data was collected for foreground processes wherever possible. This section provides a qualitative and quantitative description of data, sources of generic data or literature, validation of data (including data quality assessment) and allocation principals and procedures. Data is assessed on the following five data quality indicators Technological Representativeness, "Geographical Representativeness", "Temporal Representativeness", "Completeness" and "Reliability". Gross Calorific Values (GCV) were used where applicable.

Process	LCI Data Source	Geography	Year	Data Quality Assessment
Aggregates	Limestone, at mine (USLCI)	US	2008	<ul style="list-style-type: none"> <li><b>Technology:</b> good Process represents extraction of aggregates</li> <li><b>Time:</b> fair Data is within ten years</li> <li><b>Geography:</b> very good</li> <li><b>Completeness:</b> very good Data is based on national average</li> <li><b>Reliability:</b> good Data is from USLCI database</li> </ul>
Air Entraining Admixture	EFCA 301 Air Entrainer EPD	Europe	2005	<ul style="list-style-type: none"> <li><b>Technology:</b> very good Process represents admixture production for use in concrete</li> <li><b>Time:</b> fair Data is within ten years</li> <li><b>Geography:</b> fair</li> <li><b>Completeness:</b> good Data from a federation of European admixture producers</li> <li><b>Reliability:</b> fair EPD is not compliant with ISO standards</li> </ul>

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Process	LCI Data Source	Geography	Year	Data Quality Assessment
Batch Water	Primary			<ul style="list-style-type: none"> <li>• <b>Technology:</b> very good Data represents batch water inputs specific to each mix design</li> <li>• <b>Time:</b> very good Data is within three years</li> <li>• <b>Geography:</b> very good</li> <li>• <b>Completeness:</b> very good Primary data from current Argos mix sheets</li> <li>• <b>Reliability:</b> very good Data based on actual use</li> </ul>
Cement	Portland cement, at plant (USLCI). Modified to include upstream impacts of fuel and energy production	US	2007	<ul style="list-style-type: none"> <li>• <b>Technology:</b> good Process represents average cement production in the US</li> <li>• <b>Time:</b> fair Data is within 10 years</li> <li>• <b>Geography:</b> very good</li> <li>• <b>Completeness:</b> good Data is based on an average of national production</li> <li>• <b>Reliability:</b> good</li> </ul>
Cleaning Agents	Phosphoric acid (ecoinvent v2.2)	Switzerland	2004	<ul style="list-style-type: none"> <li>• <b>Technology:</b> very good Process represents production of phosphoric acid, which is the primary active ingredient in the cleaning agents</li> <li>• <b>Time:</b> fair Data is within ten years</li> <li>• <b>Geography:</b> fair</li> <li>• <b>Completeness:</b> good Data is representative of UK and US production</li> <li>• <b>Reliability:</b> good ecoinvent has verified the data</li> </ul>

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Process	LCI Data Source	Geography	Year	Data Quality Assessment
<b>Diesel</b>	Diesel, combusted in industrial equipment, US (US LCI)	US	2008	<ul style="list-style-type: none"> <li>• <b>Technology:</b> very good Process represents combustion of diesel in industrial equipment.</li> <li>• <b>Time:</b> fair Data is within ten years</li> <li>• <b>Geography:</b> fair</li> <li>• <b>Completeness:</b> good Data is representative of US conditions</li> <li>• <b>Reliability:</b> good Data is from USLCI database</li> </ul>
<b>Electricity</b>	Electricity, medium voltage, TRE (ecoinvent v3)	US	2008	<ul style="list-style-type: none"> <li>• <b>Technology:</b> very good Process represents production of electricity in the appropriate NERC region (TRE)</li> <li>• <b>Time:</b> fair Data is within ten years</li> <li>• <b>Geography:</b> very good</li> <li>• <b>Completeness:</b> good Data is representative of US production</li> <li>• <b>Reliability:</b> good ecoinvent has verified the data</li> </ul>
<b>Fly Ash</b>	None, no incoming burden and only inbound transport was considered	N/A	N/A	N/A
<b>Natural Gas</b>	Natural Gas, combusted in industrial boiler, US (USLCI)	US	2008	<ul style="list-style-type: none"> <li>• <b>Technology:</b> very good Process represents combustion of natural gas in an industrial boiler.</li> <li>• <b>Time:</b> fair Data is within ten years</li> <li>• <b>Geography:</b> fair</li> <li>• <b>Completeness:</b> good Data is representative of US conditions</li> <li>• <b>Reliability:</b> good Data is from USLCI database</li> </ul>

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Process	LCI Data Source	Geography	Year	Data Quality Assessment
<b>Plasticizing Admixture</b>	ECCA 324 Plasticizing EPD	Europe	2005	<ul style="list-style-type: none"> <li>• <b>Technology:</b> very good Process represents admixture production for use in concrete</li> <li>• <b>Time:</b> fair Data is within ten years</li> <li>• <b>Geography:</b> fair</li> <li>• <b>Completeness:</b> good Data from a federation of European admixture producers</li> <li>• <b>Reliability:</b> fair EPD is not compliant with ISO standards.</li> </ul>
<b>Rail Transportation</b>	Transport, train, diesel powered (USLCI)	US	2008	<ul style="list-style-type: none"> <li>• <b>Technology:</b> very good Process represents combustion of diesel for train transportation</li> <li>• <b>Time:</b> fair Data is within ten years</li> <li>• <b>Geography:</b> fair</li> <li>• <b>Completeness:</b> good Data is representative of US conditions</li> <li>• <b>Reliability:</b> good Data is from USLCI database</li> </ul>
<b>Truck Transportation</b>	Transport, combination truck, diesel powered (USLCI)	US	2008	<ul style="list-style-type: none"> <li>• <b>Technology:</b> very good Process represents combustion of diesel for transportation</li> <li>• <b>Time:</b> fair Data is within ten years</li> <li>• <b>Geography:</b> fair</li> <li>• <b>Completeness:</b> good Data is representative of US conditions</li> <li>• <b>Reliability:</b> good Data is from USLCI database</li> </ul>

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Process	LCI Data Source	Geography	Year	Data Quality Assessment
Sand	Sand, at mine (ecoinvent v2.2)	Switzerland	2007	<ul style="list-style-type: none"> <li>• <b>Technology:</b> very good Process represents extraction of sand for production</li> <li>• <b>Time:</b> very good Data is within three years</li> <li>• <b>Geography:</b> fair</li> <li>• <b>Completeness:</b> very good Data is representative of 100 percent of Swiss production</li> <li>• <b>Reliability:</b> good ecoinvent has verified the data</li> </ul>
Super-plasticizing Admixture	EFCA 325 Super-Plasticizing EPD	Europe	2005	<ul style="list-style-type: none"> <li>• <b>Technology:</b> very good Process represents admixture production for use in concrete</li> <li>• <b>Time:</b> fair Data is within ten years</li> <li>• <b>Geography:</b> fair</li> <li>• <b>Completeness:</b> good Data from a federation of European admixture producers</li> <li>• <b>Reliability:</b> fair EPD is not compliant with ISO standards</li> </ul>
Wash Water	LCI of Portland Cement Concrete, Marceau et al., 2007	US	2006	<ul style="list-style-type: none"> <li>• <b>Technology:</b> good Process uses averages for different plant types and regional areas</li> <li>• <b>Time:</b> fair Data is within ten years</li> <li>• <b>Geography:</b> very good</li> <li>• <b>Completeness:</b> very good Data from Portland Cement Associations annual surveys</li> <li>• <b>Reliability:</b> good Data base on surveys</li> </ul>

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# Environmental Product Declaration (EPD) for Concrete



## Environmental Impacts

This EPD covers the required set of environmental impact categories and metrics in accordance with the PCR, Section 3.2 (CLF 2013), given in the table below:

Inventory / Impact Metrics	Unit	Abbreviation	Method
<b>Inventory Metric</b>			
Total primary energy consumption	MJ	TED	Inventory Metric
Concrete batching water consumption	m <sup>3</sup>	BW	Inventory Metric
Concrete washing water consumption	m <sup>3</sup>	WW	Inventory Metric
Total water consumption	m <sup>3</sup>	TW	Inventory Metric
Depletion of non-renewable energy resources	MJ	NRED	Inventory Metric
Depletion of non-renewable material resources	kg	NRMR	Inventory Metric
Use of renewable material resources	kg	RMR	Inventory Metric
Use of renewable primary energy	MJ	RED	Inventory Metric
Hazardous waste	kg	HW	Inventory Metric
Non-hazardous waste	kg	NHW	Inventory Metric
<b>Impact Assessment Metrics</b>			
Climate change	kg CO <sub>2</sub> e	GWP	TRACI 2.1
Ozone depletion	kg CFC-11 eq	OD	TRACI 2.1
Acidification	kg SO <sub>2</sub> eq	AP	TRACI 2.1
Eutrophication	kg N eq	EP	TRACI 2.1
Photochemical ozone creation/Smog	kg O <sub>3</sub> eq	SMOG	TRACI 2.1

This EPD does not cover any optional additional information specified in the PCR Section 3.2. The following tables show the environmental impacts for the 19 mix designs from 18 plants.

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# Environmental Impacts and LCA Results Environmental Product Declaration (EPD) for Concrete



## LCA Results (per m<sup>3</sup>) Plant 1002 – Mesquite

Mix Code	Inventory Metrics										Life Cycle Impact Categories				
	TED	BW	WW	TW	NRED	NRMR	RMR	RED	HW	NHW	GWP	OD	AP	EP	SMOG
1597	1947	0.148	0.063	0.210	1933	2390	0.634	14.57	2.0E-04	1.26	346	3.99E-06	1.946	0.060	28.2
1734	2096	0.158	0.063	0.221	2080	2460	0.678	15.59	2.3E-04	1.26	377	4.33E-06	2.106	0.064	30.4
1735	2241	0.154	0.063	0.217	2225	2404	0.727	16.38	2.3E-04	1.26	409	4.66E-06	2.268	0.068	32.3
1738	2205	0.157	0.063	0.220	2189	2474	0.714	16.41	2.3E-04	1.26	400	4.59E-06	2.222	0.067	31.8
1811	1921	0.153	0.063	0.216	1907	2370	0.621	14.07	2.4E-04	1.26	340	3.91E-06	1.924	0.060	28.3
1841	2390	0.158	0.063	0.221	2372	2410	0.774	17.24	2.5E-04	1.26	440	4.99E-06	2.432	0.072	34.5
1899	2536	0.161	0.063	0.224	2518	2420	0.820	18.20	2.7E-04	1.26	472	5.33E-06	2.591	0.075	36.5
2554	1954	0.152	0.063	0.214	1939	2458	0.637	14.82	1.8E-04	1.26	347	4.01E-06	1.948	0.060	28.2
4070	1581	0.136	0.063	0.198	1570	2456	0.510	11.95	2.6E-04	1.26	264	3.11E-06	1.548	0.052	23.8
4072	1765	0.145	0.063	0.208	1752	2452	0.567	12.95	3.1E-04	1.26	303	3.52E-06	1.752	0.057	26.5
4176	2991	0.157	0.063	0.220	2970	2562	0.953	21.41	3.5E-02	1.25	563	6.44E-06	3.064	0.087	42.4
8482	2288	0.166	0.063	0.229	2271	2457	0.738	16.72	3.8E-04	1.26	417	4.79E-06	2.315	0.069	33.1
8880	2028	0.153	0.063	0.216	2013	2450	0.658	15.07	2.2E-04	1.26	362	4.16E-06	2.033	0.063	29.5
9279	2715	0.146	0.063	0.209	2695	2560	0.869	19.71	2.9E-02	1.26	504	5.84E-06	2.761	0.080	38.5
9630	2539	0.166	0.063	0.229	2520	2489	0.821	18.57	2.7E-04	1.26	472	5.36E-06	2.586	0.075	36.3
9908	2861	0.152	0.063	0.214	2841	2560	0.915	20.60	3.1E-02	1.25	536	6.16E-06	2.922	0.084	40.6
9920	2704	0.157	0.063	0.220	2684	2528	0.861	19.34	3.3E-02	1.25	501	5.79E-06	2.754	0.080	38.7
9930	2835	0.158	0.063	0.221	2815	2535	0.903	20.07	3.5E-02	1.25	529	6.04E-06	2.900	0.084	40.6
9932	2840	0.165	0.063	0.228	2819	2520	0.902	20.20	3.5E-02	1.26	530	6.11E-06	2.902	0.083	40.5

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# Environmental Impacts and LCA Results

## Environmental Product Declaration (EPD) for Concrete



### Plant 1004 – Downtown Dallas

Mix Code	Inventory Metrics										Life Cycle Impact Categories				
	TED	BW	WW	TW	NRED	NRMR	RMR	RED	HW	NHW	GWP	OD	AP	EP	SMOG
1597	1989	0.148	0.063	0.211	1975	2399	0.618	14.59	2.0E-04	1.26	350	4.10E-06	1.960	0.060	28.0
1734	2139	0.159	0.063	0.222	2123	2470	0.662	15.61	2.3E-04	1.26	380	4.44E-06	2.120	0.064	30.3
1735	2282	0.155	0.063	0.218	2265	2413	0.711	16.41	2.4E-04	1.26	412	4.77E-06	2.283	0.067	32.2
1738	2249	0.157	0.063	0.220	2232	2484	0.698	16.44	2.3E-04	1.26	404	4.70E-06	2.238	0.067	31.7
1811	1961	0.153	0.063	0.216	1947	2379	0.604	14.09	2.4E-04	1.26	343	4.01E-06	1.937	0.060	28.1
1841	2429	0.159	0.063	0.222	2412	2419	0.759	17.28	2.5E-04	1.26	444	5.10E-06	2.446	0.071	34.3
1899	2575	0.161	0.063	0.224	2557	2430	0.804	18.24	2.7E-04	1.26	475	5.44E-06	2.606	0.075	36.3
2554	1997	0.152	0.063	0.215	1983	2467	0.621	14.85	1.8E-04	1.26	350	4.12E-06	1.963	0.060	28.1
4070	1622	0.136	0.063	0.199	1610	2466	0.493	11.96	2.6E-04	1.26	267	3.22E-06	1.561	0.052	23.6
4072	1804	0.145	0.063	0.208	1791	2462	0.550	12.97	3.1E-04	1.26	306	3.63E-06	1.764	0.057	26.3
4176	3034	0.157	0.063	0.220	3013	2572	0.938	21.46	3.5E-02	1.26	567	6.56E-06	3.082	0.087	42.3
8482	2329	0.167	0.063	0.230	2312	2467	0.722	16.75	3.8E-04	1.26	421	4.90E-06	2.330	0.069	32.9
8880	2070	0.153	0.063	0.216	2055	2459	0.642	15.10	2.2E-04	1.26	365	4.27E-06	2.047	0.062	29.4
9279	2759	0.147	0.063	0.210	2739	2570	0.854	19.75	3.0E-02	1.26	508	5.95E-06	2.778	0.080	38.4
9630	2581	0.167	0.063	0.230	2563	2499	0.805	18.61	2.7E-04	1.26	475	5.48E-06	2.602	0.075	36.2
9908	2904	0.152	0.063	0.215	2884	2570	0.900	20.64	3.2E-02	1.26	539	6.28E-06	2.939	0.083	40.4
9920	2745	0.157	0.063	0.220	2726	2538	0.845	19.38	3.3E-02	1.26	505	5.90E-06	2.770	0.080	38.5
9930	2875	0.159	0.063	0.222	2855	2545	0.888	20.12	3.5E-02	1.26	532	6.16E-06	2.916	0.083	40.4
9932	2881	0.165	0.063	0.228	2861	2530	0.887	20.25	3.6E-02	1.26	534	6.23E-06	2.918	0.083	40.4

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# Environmental Impacts and LCA Results

## Environmental Product Declaration (EPD) for Concrete



### Plant 1005 – Irving

Mix Code	Inventory Metrics										Life Cycle Impact Categories				
	TED	BW	WW	TW	NRED	NRMR	RMR	RED	HW	NHW	GWP	OD	AP	EP	SMOG
1597	1919	0.145	0.062	0.207	1905	2352	0.605	14.32	1.9E-04	1.24	341	3.97E-06	1.918	0.058	27.7
1734	2066	0.156	0.062	0.217	2051	2422	0.649	15.32	2.2E-04	1.24	371	4.30E-06	2.075	0.063	29.9
1735	2205	0.152	0.062	0.214	2189	2366	0.697	16.11	2.3E-04	1.24	402	4.63E-06	2.233	0.066	31.8
1738	2175	0.154	0.062	0.216	2158	2435	0.684	16.13	2.2E-04	1.24	394	4.56E-06	2.190	0.065	31.3
1811	1889	0.150	0.062	0.212	1875	2332	0.592	13.83	2.4E-04	1.24	334	3.89E-06	1.894	0.058	27.8
1841	2347	0.156	0.062	0.217	2330	2372	0.743	16.96	2.5E-04	1.24	433	4.95E-06	2.393	0.070	33.8
1899	2491	0.158	0.062	0.220	2473	2382	0.788	17.90	2.7E-04	1.24	464	5.29E-06	2.549	0.073	35.8
2554	1929	0.149	0.062	0.211	1914	2419	0.608	14.57	1.8E-04	1.24	341	3.99E-06	1.921	0.059	27.8
4070	1557	0.133	0.062	0.195	1546	2417	0.483	11.74	2.6E-04	1.24	260	3.10E-06	1.525	0.050	23.4
4072	1733	0.143	0.062	0.204	1721	2414	0.539	12.73	3.0E-04	1.24	298	3.51E-06	1.724	0.055	26.0
4176	2945	0.154	0.062	0.216	2924	2522	0.919	21.05	3.5E-02	1.23	554	6.38E-06	3.018	0.085	41.7
8482	2252	0.164	0.062	0.225	2235	2419	0.707	16.44	3.7E-04	1.24	410	4.76E-06	2.280	0.067	32.5
8880	1998	0.150	0.062	0.212	1983	2411	0.628	14.82	2.1E-04	1.24	356	4.14E-06	2.003	0.061	29.0
9279	2675	0.144	0.062	0.206	2656	2520	0.836	19.38	2.9E-02	1.24	496	5.79E-06	2.720	0.078	37.9
9630	2500	0.164	0.062	0.225	2482	2450	0.789	18.26	2.7E-04	1.24	464	5.32E-06	2.547	0.073	35.7
9908	2817	0.149	0.062	0.211	2796	2520	0.882	20.26	3.1E-02	1.23	527	6.10E-06	2.877	0.082	39.9
9920	2660	0.154	0.062	0.216	2641	2488	0.828	19.02	3.3E-02	1.24	493	5.74E-06	2.711	0.078	38.0
9930	2785	0.156	0.062	0.217	2765	2495	0.869	19.74	3.5E-02	1.23	520	5.99E-06	2.853	0.082	39.8
9932	2793	0.162	0.062	0.224	2774	2480	0.869	19.87	3.5E-02	1.24	522	6.05E-06	2.857	0.081	39.8

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# Environmental Impacts and LCA Results

## Environmental Product Declaration (EPD) for Concrete



### Plant 1006 – Ft. Worth

Mix Code	Inventory Metrics										Life Cycle Impact Categories				
	TED	BW	WW	TW	NRED	NRMR	RMR	RED	HW	NHW	GWP	OD	AP	EP	SMOG
1597	1912	0.150	0.064	0.214	1897	2432	0.611	14.80	2.0E-04	1.28	348	4.04E-06	1.952	0.058	28.1
1734	2065	0.161	0.064	0.225	2049	2504	0.656	15.84	2.3E-04	1.28	378	4.38E-06	2.115	0.063	30.3
1735	2209	0.157	0.064	0.221	2193	2446	0.706	16.64	2.4E-04	1.28	411	4.72E-06	2.279	0.066	32.2
1738	2177	0.160	0.064	0.223	2160	2518	0.693	16.67	2.3E-04	1.28	402	4.65E-06	2.234	0.065	31.7
1811	1885	0.156	0.064	0.219	1871	2411	0.598	14.29	2.5E-04	1.28	341	3.95E-06	1.929	0.058	28.1
1841	2358	0.161	0.064	0.225	2340	2452	0.754	17.52	2.6E-04	1.28	443	5.05E-06	2.445	0.070	34.4
1899	2507	0.164	0.064	0.228	2488	2463	0.800	18.49	2.8E-04	1.28	475	5.40E-06	2.607	0.074	36.4
2554	1920	0.154	0.064	0.218	1905	2501	0.614	15.06	1.8E-04	1.28	348	4.06E-06	1.954	0.058	28.1
4070	1540	0.138	0.064	0.202	1528	2499	0.485	12.13	2.7E-04	1.28	264	3.14E-06	1.547	0.050	23.6
4072	1725	0.147	0.064	0.211	1712	2496	0.543	13.15	3.1E-04	1.28	303	3.56E-06	1.754	0.055	26.3
4176	2977	0.160	0.064	0.223	2956	2607	0.936	21.76	3.6E-02	1.27	568	6.53E-06	3.091	0.086	42.6
8482	2259	0.169	0.064	0.233	2242	2501	0.717	16.99	3.8E-04	1.28	420	4.85E-06	2.327	0.068	33.0
8880	1994	0.156	0.064	0.219	1979	2493	0.635	15.31	2.2E-04	1.28	363	4.21E-06	2.040	0.061	29.4
9279	2695	0.149	0.064	0.213	2675	2605	0.850	20.03	3.0E-02	1.28	508	5.92E-06	2.782	0.079	38.6
9630	2514	0.169	0.064	0.233	2495	2533	0.801	18.87	2.7E-04	1.28	475	5.43E-06	2.603	0.074	36.3
9908	2842	0.154	0.064	0.218	2821	2605	0.897	20.93	3.2E-02	1.28	540	6.24E-06	2.945	0.082	40.6
9920	2683	0.160	0.064	0.223	2663	2573	0.842	19.65	3.4E-02	1.28	505	5.86E-06	2.774	0.079	38.7
9930	2813	0.161	0.064	0.225	2793	2580	0.885	20.40	3.6E-02	1.27	533	6.12E-06	2.922	0.082	40.6
9932	2823	0.168	0.064	0.232	2802	2564	0.884	20.53	3.6E-02	1.28	535	6.19E-06	2.925	0.082	40.6

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# Environmental Impacts and LCA Results

## Environmental Product Declaration (EPD) for Concrete



Plant 1008 – Richardson

Mix Code	Inventory Metrics										Life Cycle Impact Categories				
	TED	BW	WW	TW	NRED	NRMR	RMR	RED	HW	NHW	GWP	OD	AP	EP	SMOG
1597	1908	0.146	0.062	0.208	1894	2359	0.591	14.35	1.9E-04	0.85	341	3.91E-06	1.915	0.058	27.8
1734	2056	0.156	0.062	0.218	2040	2429	0.635	15.36	2.2E-04	0.85	371	4.24E-06	2.073	0.062	30.0
1735	2198	0.152	0.062	0.214	2182	2373	0.683	16.14	2.3E-04	0.85	403	4.57E-06	2.233	0.065	31.9
1738	2165	0.155	0.062	0.217	2148	2442	0.670	16.17	2.2E-04	0.85	394	4.50E-06	2.189	0.064	31.4
1811	1880	0.151	0.062	0.213	1866	2339	0.578	13.86	2.4E-04	0.85	334	3.82E-06	1.893	0.058	27.9
1841	2343	0.156	0.062	0.218	2326	2379	0.730	17.00	2.5E-04	0.85	434	4.89E-06	2.394	0.069	34.0
1899	2487	0.159	0.062	0.221	2469	2389	0.775	17.94	2.7E-04	0.85	465	5.23E-06	2.551	0.073	36.0
2554	1916	0.150	0.062	0.212	1902	2426	0.594	14.60	1.8E-04	0.85	342	3.93E-06	1.918	0.058	27.8
4070	1545	0.134	0.062	0.196	1533	2425	0.468	11.77	2.6E-04	0.85	260	3.04E-06	1.521	0.050	23.4
4072	1724	0.143	0.062	0.205	1712	2421	0.524	12.76	3.0E-04	0.85	298	3.44E-06	1.722	0.055	26.1
4176	2941	0.155	0.062	0.217	2920	2529	0.906	21.10	3.5E-02	0.85	555	6.32E-06	3.020	0.085	41.9
8482	2244	0.164	0.062	0.226	2228	2426	0.693	16.48	3.7E-04	0.86	411	4.70E-06	2.279	0.067	32.6
8880	1988	0.151	0.062	0.213	1973	2418	0.614	14.85	2.1E-04	0.85	356	4.08E-06	2.001	0.060	29.1
9279	2669	0.144	0.062	0.206	2649	2527	0.823	19.43	2.9E-02	0.85	497	5.73E-06	2.721	0.077	38.0
9630	2494	0.164	0.062	0.226	2475	2458	0.775	18.31	2.7E-04	0.85	465	5.26E-06	2.547	0.073	35.8
9908	2813	0.150	0.062	0.212	2792	2527	0.869	20.31	3.1E-02	0.85	528	6.05E-06	2.879	0.081	40.0
9920	2655	0.155	0.062	0.217	2636	2496	0.815	19.06	3.3E-02	0.85	494	5.68E-06	2.713	0.078	38.1
9930	2783	0.156	0.062	0.218	2763	2503	0.856	19.79	3.5E-02	0.85	521	5.93E-06	2.857	0.081	40.0
9932	2790	0.163	0.062	0.225	2770	2488	0.856	19.91	3.5E-02	0.85	523	6.00E-06	2.859	0.081	40.0

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# Environmental Impacts and LCA Results

## Environmental Product Declaration (EPD) for Concrete



### Plant 1009 – Frisco

Mix Code	Inventory Metrics										Life Cycle Impact Categories				
	TED	BW	WW	TW	NRED	NRMR	RMR	RED	HW	NHW	GWP	OD	AP	EP	SMOG
1597	1871	0.146	0.062	0.207	1857	2357	0.592	14.34	1.9E-04	1.24	338	3.87E-06	1.898	0.057	27.5
1734	2018	0.156	0.062	0.218	2003	2426	0.636	15.35	2.2E-04	1.24	368	4.20E-06	2.056	0.061	29.7
1735	2162	0.152	0.062	0.214	2146	2370	0.684	16.13	2.3E-04	1.24	400	4.53E-06	2.217	0.065	31.6
1738	2127	0.155	0.062	0.217	2111	2440	0.671	16.15	2.2E-04	1.24	391	4.46E-06	2.172	0.064	31.0
1811	1844	0.151	0.062	0.213	1830	2337	0.579	13.85	2.4E-04	1.24	332	3.78E-06	1.876	0.057	27.5
1841	2308	0.156	0.062	0.218	2291	2377	0.731	16.98	2.5E-04	1.24	431	4.85E-06	2.378	0.069	33.7
1899	2453	0.159	0.062	0.221	2435	2387	0.776	17.92	2.7E-04	1.24	462	5.19E-06	2.535	0.072	35.7
2554	1878	0.149	0.062	0.211	1864	2424	0.595	14.59	1.8E-04	1.24	339	3.89E-06	1.900	0.057	27.5
4070	1506	0.134	0.062	0.196	1494	2422	0.469	11.76	2.6E-04	1.24	257	3.00E-06	1.504	0.049	23.1
4072	1687	0.143	0.062	0.205	1674	2419	0.525	12.74	3.0E-04	1.24	295	3.40E-06	1.705	0.054	25.8
4176	2906	0.155	0.062	0.217	2885	2527	0.907	21.08	3.5E-02	1.24	552	6.28E-06	3.004	0.084	41.6
8482	2208	0.164	0.062	0.226	2191	2423	0.694	16.46	3.7E-04	1.24	408	4.66E-06	2.262	0.066	32.3
8880	1951	0.151	0.062	0.213	1936	2416	0.615	14.84	2.1E-04	1.24	354	4.04E-06	1.984	0.059	28.8
9279	2633	0.144	0.062	0.206	2613	2525	0.824	19.41	2.9E-02	1.24	494	5.69E-06	2.704	0.077	37.7
9630	2458	0.164	0.062	0.226	2440	2455	0.776	18.29	2.7E-04	1.24	462	5.22E-06	2.531	0.072	35.5
9908	2777	0.149	0.062	0.211	2757	2525	0.870	20.29	3.1E-02	1.24	525	6.01E-06	2.863	0.080	39.7
9920	2620	0.155	0.062	0.217	2601	2493	0.816	19.04	3.3E-02	1.24	491	5.64E-06	2.696	0.077	37.8
9930	2749	0.156	0.062	0.218	2729	2500	0.857	19.77	3.5E-02	1.24	518	5.89E-06	2.840	0.080	39.7
9932	2755	0.163	0.062	0.224	2735	2485	0.857	19.90	3.5E-02	1.24	520	5.96E-06	2.843	0.080	39.7

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# Environmental Impacts and LCA Results

## Environmental Product Declaration (EPD) for Concrete



### Plant 1010 – Coppell

Mix Code	Inventory Metrics										Life Cycle Impact Categories				
	TED	BW	WW	TW	NRED	NRMR	RMR	RED	HW	NHW	GWP	OD	AP	EP	SMOG
1597	1887	0.146	0.062	0.207	1872	2357	0.591	14.34	1.9E-04	1.24	339	3.94E-06	1.905	0.057	27.5
1734	2034	0.156	0.062	0.218	2018	2426	0.635	15.34	2.2E-04	1.24	369	4.26E-06	2.062	0.061	29.7
1735	2173	0.152	0.062	0.214	2157	2370	0.683	16.13	2.3E-04	1.24	401	4.59E-06	2.221	0.065	31.5
1738	2143	0.155	0.062	0.217	2127	2440	0.670	16.15	2.2E-04	1.24	392	4.52E-06	2.178	0.064	31.0
1811	1856	0.151	0.062	0.213	1842	2337	0.578	13.84	2.4E-04	1.24	332	3.85E-06	1.881	0.057	27.5
1841	2316	0.156	0.062	0.218	2299	2377	0.729	16.98	2.5E-04	1.24	431	4.92E-06	2.381	0.068	33.6
1899	2460	0.159	0.062	0.221	2442	2387	0.774	17.92	2.7E-04	1.24	462	5.25E-06	2.538	0.072	35.6
2554	1896	0.149	0.062	0.211	1882	2424	0.594	14.59	1.8E-04	1.24	340	3.95E-06	1.908	0.057	27.5
4070	1522	0.134	0.062	0.196	1510	2422	0.468	11.75	2.6E-04	1.24	258	3.07E-06	1.511	0.049	23.1
4072	1698	0.143	0.062	0.205	1685	2419	0.524	12.74	3.0E-04	1.24	296	3.47E-06	1.710	0.054	25.7
4176	2917	0.155	0.062	0.217	2895	2527	0.905	21.08	3.5E-02	1.24	553	6.35E-06	3.008	0.084	41.5
8482	2220	0.164	0.062	0.226	2204	2423	0.693	16.46	3.7E-04	1.24	409	4.72E-06	2.267	0.066	32.3
8880	1965	0.151	0.062	0.213	1950	2416	0.614	14.84	2.1E-04	1.24	354	4.10E-06	1.990	0.059	28.8
9279	2646	0.144	0.062	0.206	2626	2525	0.823	19.41	2.9E-02	1.24	495	5.75E-06	2.709	0.077	37.7
9630	2470	0.164	0.062	0.226	2452	2455	0.775	18.29	2.7E-04	1.24	463	5.28E-06	2.536	0.072	35.5
9908	2788	0.149	0.062	0.211	2768	2525	0.868	20.28	3.1E-02	1.24	526	6.07E-06	2.867	0.080	39.7
9920	2630	0.155	0.062	0.217	2611	2493	0.814	19.04	3.3E-02	1.24	492	5.70E-06	2.700	0.077	37.8
9930	2755	0.156	0.062	0.218	2735	2500	0.856	19.77	3.5E-02	1.24	519	5.95E-06	2.843	0.080	39.6
9932	2764	0.163	0.062	0.224	2744	2485	0.855	19.89	3.5E-02	1.24	520	6.02E-06	2.846	0.080	39.6

EPD Program Operator  
 National Ready Mix Concrete Association  
 900 Spring Street, Silver Spring, MD 20910  
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# Environmental Impacts and LCA Results Environmental Product Declaration (EPD) for Concrete



## Plant 1011 – Lewisville

Mix Code	Inventory Metrics										Life Cycle Impact Categories				
	TED	BW	WW	TW	NRED	NRMR	RMR	RED	HW	NHW	GWP	OD	AP	EP	SMOG
1597	1832	0.145	0.062	0.207	1818	2354	0.585	14.33	1.9E-04	1.24	336	3.82E-06	1.885	0.056	27.4
1734	1979	0.156	0.062	0.218	1964	2424	0.628	15.33	2.2E-04	1.24	365	4.14E-06	2.043	0.060	29.6
1735	2120	0.152	0.062	0.214	2104	2368	0.676	16.11	2.3E-04	1.24	397	4.47E-06	2.202	0.064	31.5
1738	2088	0.155	0.062	0.216	2072	2437	0.663	16.14	2.2E-04	1.24	389	4.40E-06	2.158	0.063	31.0
1811	1802	0.151	0.062	0.213	1788	2334	0.571	13.83	2.4E-04	1.24	329	3.73E-06	1.862	0.056	27.4
1841	2264	0.156	0.062	0.218	2247	2374	0.723	16.96	2.5E-04	1.24	428	4.80E-06	2.362	0.067	33.5
1899	2408	0.158	0.062	0.220	2390	2384	0.767	17.90	2.7E-04	1.24	459	5.13E-06	2.519	0.071	35.5
2554	1841	0.149	0.062	0.211	1827	2421	0.587	14.58	1.8E-04	1.24	336	3.83E-06	1.888	0.056	27.5
4070	1467	0.134	0.062	0.196	1455	2420	0.462	11.74	2.6E-04	1.24	254	2.95E-06	1.491	0.048	23.0
4072	1644	0.143	0.062	0.205	1631	2416	0.518	12.73	3.0E-04	1.24	292	3.35E-06	1.690	0.053	25.7
4167	2863	0.155	0.062	0.216	2841	2524	0.899	21.06	3.5E-02	1.23	549	6.22E-06	2.988	0.083	41.5
8482	2166	0.164	0.062	0.226	2150	2421	0.687	16.45	3.7E-04	1.24	405	4.60E-06	2.248	0.065	32.2
8880	1911	0.151	0.062	0.213	1896	2413	0.608	14.83	2.1E-04	1.24	351	3.98E-06	1.970	0.058	28.7
9279	2591	0.144	0.062	0.206	2572	2522	0.816	19.39	2.9E-02	1.24	491	5.63E-06	2.689	0.076	37.6
9630	2416	0.164	0.062	0.226	2398	2453	0.769	18.27	2.7E-04	1.24	459	5.16E-06	2.516	0.071	35.4
9908	2734	0.149	0.062	0.211	2714	2522	0.861	20.27	3.1E-02	1.24	522	5.95E-06	2.847	0.079	39.6
9920	2576	0.155	0.062	0.216	2557	2491	0.808	19.02	3.3E-02	1.24	488	5.58E-06	2.680	0.076	37.7
9930	2702	0.156	0.062	0.218	2683	2498	0.849	19.75	3.5E-02	1.23	515	5.83E-06	2.823	0.079	39.6
9932	2711	0.162	0.062	0.224	2691	2483	0.849	19.88	3.5E-02	1.24	517	5.90E-06	2.826	0.079	39.5

EPD Program Operator  
National Ready Mix Concrete Association  
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# Environmental Impacts and LCA Results

## Environmental Product Declaration (EPD) for Concrete



### Plant 1012 – Hurst

Mix Code	Inventory Metrics										Life Cycle Impact Categories				
	TED	BW	WW	TW	NRED	NRMR	RMR	RED	HW	NHW	GWP	OD	AP	EP	SMOG
1597	1815	0.145	0.062	0.207	1801	2355	0.595	14.33	1.9E-04	1.24	334	3.86E-06	1.876	0.056	27.0
1734	1962	0.156	0.062	0.218	1947	2424	0.639	15.33	2.2E-04	1.24	364	4.19E-06	2.033	0.060	29.2
1735	2105	0.152	0.062	0.214	2088	2368	0.687	16.11	2.3E-04	1.24	396	4.52E-06	2.193	0.063	31.0
1738	2070	0.155	0.062	0.216	2054	2437	0.674	16.14	2.2E-04	1.24	387	4.45E-06	2.148	0.062	30.5
1811	1790	0.151	0.062	0.212	1776	2334	0.582	13.83	2.4E-04	1.24	328	3.78E-06	1.854	0.056	27.1
1841	2250	0.156	0.062	0.218	2233	2374	0.733	16.97	2.5E-04	1.24	427	4.85E-06	2.354	0.067	33.1
1899	2394	0.158	0.062	0.220	2376	2384	0.778	17.91	2.7E-04	1.24	457	5.18E-06	2.511	0.071	35.1
2554	1821	0.149	0.062	0.211	1807	2421	0.598	14.58	1.8E-04	1.24	334	3.88E-06	1.877	0.056	27.0
4070	1453	0.134	0.062	0.195	1441	2420	0.473	11.75	2.6E-04	1.24	253	2.99E-06	1.483	0.048	22.6
4072	1633	0.143	0.062	0.205	1621	2416	0.529	12.73	3.0E-04	1.24	291	3.40E-06	1.684	0.053	25.3
4176	2846	0.155	0.062	0.216	2825	2524	0.909	21.07	3.5E-02	1.23	548	6.27E-06	2.978	0.082	41.0
8482	2151	0.164	0.062	0.226	2134	2421	0.697	16.45	3.7E-04	1.24	404	4.65E-06	2.239	0.065	31.8
8880	1894	0.151	0.062	0.212	1879	2413	0.618	14.83	2.1E-04	1.24	349	4.03E-06	1.961	0.058	28.3
9279	2572	0.144	0.062	0.206	2553	2522	0.826	19.39	2.9E-02	1.24	490	5.68E-06	2.679	0.075	37.1
9630	2398	0.164	0.062	0.226	2380	2453	0.779	18.27	2.7E-04	1.24	458	5.21E-06	2.506	0.071	35.0
9908	2716	0.149	0.062	0.211	2696	2522	0.872	20.27	3.1E-02	1.24	520	6.00E-06	2.837	0.079	39.1
9920	2561	0.155	0.062	0.216	2542	2491	0.818	19.03	3.3E-02	1.24	487	5.63E-06	2.672	0.075	37.3
9930	2689	0.156	0.062	0.218	2669	2498	0.860	19.75	3.5E-02	1.23	514	5.88E-06	2.815	0.079	39.2
9932	2696	0.162	0.062	0.224	2677	2483	0.860	19.88	3.5E-02	1.24	515	5.95E-06	2.818	0.079	39.1

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# Environmental Impacts and LCA Results

## Environmental Product Declaration (EPD) for Concrete



Plant 1013 – Prosper

Mix Code	Inventory Metrics										Life Cycle Impact Categories				
	TED	BW	WW	TW	NRED	NRMR	RMR	RED	HW	NHW	GWP	OD	AP	EP	SMOG
1597	1853	0.145	0.062	0.207	1838	2355	0.591	14.31	1.9E-04	1.24	337	3.85E-06	1.885	0.056	27.1
1734	2000	0.156	0.062	0.218	1985	2424	0.635	15.31	2.2E-04	1.24	367	4.18E-06	2.043	0.060	29.3
1735	2144	0.152	0.062	0.214	2128	2368	0.683	16.10	2.3E-04	1.24	399	4.51E-06	2.203	0.064	31.2
1738	2109	0.155	0.062	0.216	2093	2437	0.670	16.12	2.2E-04	1.24	390	4.44E-06	2.158	0.063	30.7
1811	1826	0.151	0.062	0.212	1812	2334	0.578	13.82	2.4E-04	1.24	330	3.77E-06	1.863	0.056	27.2
1841	2291	0.156	0.062	0.218	2274	2374	0.730	16.95	2.5E-04	1.24	430	4.84E-06	2.365	0.068	33.3
1899	2436	0.158	0.062	0.220	2418	2384	0.775	17.89	2.7E-04	1.24	460	5.17E-06	2.522	0.071	35.3
2554	1859	0.149	0.062	0.211	1845	2421	0.594	14.56	1.8E-04	1.24	337	3.87E-06	1.887	0.056	27.1
4070	1487	0.134	0.062	0.195	1475	2420	0.469	11.73	2.6E-04	1.24	255	2.98E-06	1.491	0.048	22.7
4072	1668	0.143	0.062	0.205	1656	2416	0.525	12.72	3.0E-04	1.24	294	3.39E-06	1.692	0.053	25.4
4176	2890	0.155	0.062	0.216	2869	2524	0.906	21.05	3.5E-02	1.23	551	6.26E-06	2.990	0.083	41.2
8482	2190	0.164	0.062	0.226	2174	2421	0.693	16.43	3.7E-04	1.24	407	4.64E-06	2.249	0.065	31.9
8880	1932	0.151	0.062	0.212	1917	2413	0.614	14.81	2.1E-04	1.24	352	4.02E-06	1.971	0.059	28.4
9279	2615	0.144	0.062	0.206	2596	2522	0.823	19.38	2.9E-02	1.24	493	5.67E-06	2.690	0.076	37.3
9630	2440	0.164	0.062	0.226	2422	2453	0.775	18.26	2.7E-04	1.24	461	5.20E-06	2.517	0.071	35.1
9908	2760	0.149	0.062	0.211	2740	2522	0.869	20.25	3.1E-02	1.24	524	5.99E-06	2.849	0.080	39.3
9920	2603	0.155	0.062	0.216	2584	2491	0.815	19.01	3.3E-02	1.24	490	5.62E-06	2.683	0.076	37.5
9930	2732	0.156	0.062	0.218	2712	2498	0.856	19.73	3.5E-02	1.23	517	5.87E-06	2.827	0.080	39.3
9932	2739	0.162	0.062	0.224	2719	2483	0.856	19.86	3.5E-02	1.24	518	5.94E-06	2.829	0.079	39.3

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# Environmental Impacts and LCA Results

## Environmental Product Declaration (EPD) for Concrete



### Plant 1014 – Southside

Mix Code	Inventory Metrics										Life Cycle Impact Categories				
	TED	BW	WW	TW	NRED	NRMR	RMR	RED	HW	NHW	GWP	OD	AP	EP	SMOG
1597	1942	0.146	0.062	0.208	1927	2359	0.623	14.40	1.9E-04	1.24	343	4.11E-06	1.943	0.060	28.3
1734	2090	0.156	0.062	0.218	2075	2429	0.667	15.41	2.2E-04	1.24	373	4.43E-06	2.101	0.064	30.5
1735	2231	0.152	0.062	0.214	2215	2373	0.715	16.19	2.3E-04	1.24	404	4.76E-06	2.260	0.068	32.3
1738	2198	0.155	0.062	0.217	2182	2442	0.702	16.22	2.2E-04	1.24	396	4.69E-06	2.216	0.067	31.8
1811	1918	0.151	0.062	0.213	1904	2339	0.610	13.91	2.4E-04	1.24	336	4.02E-06	1.922	0.060	28.3
1841	2376	0.156	0.062	0.218	2359	2379	0.761	17.05	2.5E-04	1.24	435	5.09E-06	2.421	0.072	34.4
1899	2520	0.159	0.062	0.221	2502	2389	0.807	17.99	2.7E-04	1.24	466	5.42E-06	2.579	0.075	36.4
2554	1948	0.150	0.062	0.212	1934	2426	0.626	14.65	1.8E-04	1.24	343	4.12E-06	1.944	0.060	28.3
4070	1582	0.134	0.062	0.196	1571	2425	0.501	11.82	2.6E-04	1.24	262	3.23E-06	1.551	0.052	23.9
4072	1763	0.143	0.062	0.205	1750	2421	0.557	12.80	3.0E-04	1.24	300	3.64E-06	1.752	0.057	26.6
4176	2974	0.155	0.062	0.217	2953	2529	0.938	21.15	3.5E-02	1.24	557	6.52E-06	3.047	0.087	42.3
8482	2278	0.164	0.062	0.226	2262	2426	0.725	16.53	3.7E-04	1.24	413	4.89E-06	2.307	0.069	33.1
8880	2022	0.151	0.062	0.213	2007	2418	0.646	14.90	2.1E-04	1.24	358	4.27E-06	2.029	0.063	29.5
9279	2700	0.144	0.062	0.206	2680	2527	0.855	19.48	2.9E-02	1.24	499	5.92E-06	2.747	0.080	38.4
9630	2526	0.164	0.062	0.226	2507	2458	0.807	18.36	2.7E-04	1.24	466	5.45E-06	2.574	0.075	36.3
9908	2843	0.150	0.062	0.212	2823	2527	0.901	20.35	3.1E-02	1.24	529	6.24E-06	2.906	0.084	40.4
9920	2690	0.155	0.062	0.217	2671	2496	0.847	19.11	3.3E-02	1.24	495	5.87E-06	2.741	0.080	38.6
9930	2817	0.156	0.062	0.218	2797	2503	0.888	19.84	3.5E-02	1.24	523	6.13E-06	2.884	0.084	40.5
9932	2825	0.163	0.062	0.225	2805	2488	0.888	19.96	3.5E-02	1.24	524	6.19E-06	2.887	0.083	40.4

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# Environmental Impacts and LCA Results Environmental Product Declaration (EPD) for Concrete



## Plant 1015 – Alliance

Mix Code	Inventory Metrics										Life Cycle Impact Categories				
	TED	BW	WW	TW	NRED	NRMR	RMR	RED	HW	NHW	GWP	OD	AP	EP	SMOG
1597	1958	0.145	0.062	0.207	1944	2355	0.603	14.33	1.9E-04	1.24	343	4.10E-06	1.931	0.059	27.6
1734	2107	0.156	0.062	0.218	2092	2424	0.646	15.33	2.2E-04	1.24	373	4.43E-06	2.089	0.063	29.8
1735	2244	0.152	0.062	0.214	2228	2368	0.694	16.11	2.3E-04	1.24	405	4.76E-06	2.247	0.067	31.6
1738	2217	0.155	0.062	0.216	2200	2437	0.681	16.14	2.2E-04	1.24	396	4.69E-06	2.205	0.066	31.2
1811	1929	0.151	0.062	0.212	1915	2335	0.589	13.83	2.4E-04	1.24	336	4.02E-06	1.908	0.059	27.6
1841	2386	0.156	0.062	0.218	2369	2374	0.741	16.96	2.5E-04	1.24	435	5.09E-06	2.407	0.070	33.7
1899	2531	0.158	0.062	0.220	2513	2384	0.786	17.90	2.7E-04	1.24	466	5.42E-06	2.564	0.074	35.7
2554	1968	0.149	0.062	0.211	1953	2421	0.606	14.58	1.8E-04	1.24	344	4.12E-06	1.934	0.059	27.6
4070	1596	0.134	0.062	0.195	1584	2420	0.480	11.74	2.6E-04	1.24	262	3.24E-06	1.538	0.051	23.2
4072	1772	0.143	0.062	0.205	1759	2416	0.536	12.73	3.0E-04	1.24	300	3.64E-06	1.737	0.056	25.9
4176	2992	0.155	0.062	0.216	2971	2524	0.917	21.06	3.5E-02	1.23	557	6.51E-06	3.035	0.086	41.7
8482	2293	0.164	0.062	0.226	2277	2421	0.705	16.45	3.7E-04	1.24	413	4.89E-06	2.294	0.068	32.4
8880	2037	0.151	0.062	0.212	2022	2414	0.626	14.83	2.1E-04	1.24	358	4.27E-06	2.016	0.061	28.9
9279	2719	0.144	0.062	0.206	2700	2522	0.834	19.39	2.9E-02	1.24	499	5.92E-06	2.736	0.079	37.8
9630	2543	0.164	0.062	0.226	2525	2453	0.787	18.27	2.7E-04	1.24	467	5.45E-06	2.562	0.074	35.6
9908	2861	0.149	0.062	0.211	2841	2522	0.880	20.27	3.1E-02	1.24	530	6.24E-06	2.893	0.082	39.8
9920	2705	0.155	0.062	0.216	2686	2491	0.826	19.02	3.3E-02	1.24	496	5.87E-06	2.727	0.079	37.9
9930	2829	0.156	0.062	0.218	2809	2498	0.867	19.75	3.5E-02	1.23	523	6.12E-06	2.869	0.082	39.7
9932	2840	0.162	0.062	0.224	2820	2483	0.867	19.88	3.5E-02	1.24	525	6.19E-06	2.874	0.082	39.7

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# Environmental Impacts and LCA Results Environmental Product Declaration (EPD) for Concrete



Plant 1018 – Arlington

Mix Code	Inventory Metrics										Life Cycle Impact Categories				
	TED	BW	WW	TW	NRED	NRMR	RMR	RED	HW	NHW	GWP	OD	AP	EP	SMOG
1597	1860	0.147	0.062	0.209	1846	2373	0.598	14.44	1.9E-04	1.25	339	3.92E-06	1.903	0.057	27.4
1734	2008	0.157	0.062	0.219	1992	2443	0.642	15.46	2.2E-04	1.25	369	4.25E-06	2.061	0.061	29.6
1735	2151	0.153	0.062	0.215	2135	2387	0.691	16.25	2.3E-04	1.25	401	4.58E-06	2.223	0.065	31.5
1738	2116	0.156	0.062	0.218	2099	2457	0.678	16.27	2.2E-04	1.25	392	4.51E-06	2.177	0.064	31.0
1811	1836	0.152	0.062	0.214	1822	2353	0.585	13.95	2.4E-04	1.25	332	3.83E-06	1.882	0.057	27.5
1841	2297	0.157	0.062	0.219	2280	2393	0.738	17.10	2.5E-04	1.25	432	4.91E-06	2.385	0.068	33.6
1899	2442	0.160	0.062	0.222	2424	2403	0.783	18.05	2.7E-04	1.25	463	5.24E-06	2.543	0.072	35.6
2554	1866	0.151	0.062	0.213	1851	2441	0.601	14.70	1.8E-04	1.25	339	3.94E-06	1.904	0.057	27.4
4070	1498	0.135	0.062	0.197	1487	2439	0.475	11.84	2.6E-04	1.25	257	3.04E-06	1.508	0.049	23.1
4072	1680	0.144	0.062	0.206	1667	2436	0.532	12.84	3.1E-04	1.25	296	3.45E-06	1.711	0.054	25.8
4176	2894	0.156	0.062	0.218	2873	2544	0.915	21.23	3.5E-02	1.24	554	6.35E-06	3.012	0.084	41.5
8482	2197	0.165	0.062	0.227	2181	2440	0.701	16.58	3.7E-04	1.25	409	4.71E-06	2.269	0.066	32.3
8880	1940	0.152	0.062	0.214	1925	2433	0.622	14.95	2.2E-04	1.25	354	4.09E-06	1.989	0.059	28.7
9279	2620	0.145	0.062	0.208	2600	2542	0.831	19.55	2.9E-02	1.25	495	5.75E-06	2.711	0.077	37.6
9630	2445	0.165	0.062	0.227	2427	2472	0.784	18.42	2.7E-04	1.25	463	5.28E-06	2.537	0.072	35.5
9908	2764	0.151	0.062	0.213	2744	2542	0.877	20.43	3.1E-02	1.25	526	6.07E-06	2.870	0.080	39.6
9920	2610	0.156	0.062	0.218	2590	2510	0.823	19.18	3.3E-02	1.25	492	5.70E-06	2.704	0.077	37.8
9930	2739	0.157	0.062	0.219	2719	2518	0.865	19.91	3.5E-02	1.24	520	5.95E-06	2.849	0.080	39.7
9932	2745	0.164	0.062	0.226	2725	2503	0.865	20.04	3.5E-02	1.25	521	6.02E-06	2.851	0.080	39.6

EPD Program Operator  
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# Environmental Impacts and LCA Results

## Environmental Product Declaration (EPD) for Concrete



Plant 1022 – Waxahachie

Mix Code	Inventory Metrics										Life Cycle Impact Categories				
	TED	BW	WW	TW	NRED	NRMR	RMR	RED	HW	NHW	GWP	OD	AP	EP	SMOG
1597	1920	0.146	0.062	0.207	1905	2357	0.634	14.36	1.9E-04	1.24	341	4.01E-06	1.917	0.059	27.5
1734	2066	0.156	0.062	0.218	2051	2427	0.677	15.36	2.2E-04	1.24	371	4.34E-06	2.074	0.063	29.7
1735	2211	0.152	0.062	0.214	2195	2371	0.726	16.14	2.3E-04	1.24	403	4.67E-06	2.236	0.066	31.6
1738	2172	0.155	0.062	0.217	2156	2440	0.712	16.17	2.2E-04	1.24	394	4.60E-06	2.189	0.065	31.0
1811	1899	0.151	0.062	0.213	1885	2337	0.621	13.86	2.4E-04	1.24	335	3.93E-06	1.898	0.059	27.6
1841	2359	0.156	0.062	0.218	2342	2377	0.772	17.00	2.5E-04	1.24	434	4.99E-06	2.398	0.070	33.7
1899	2503	0.159	0.062	0.221	2485	2387	0.817	17.94	2.7E-04	1.24	465	5.33E-06	2.555	0.074	35.7
2554	1923	0.149	0.062	0.211	1909	2424	0.636	14.61	1.8E-04	1.24	341	4.03E-06	1.917	0.059	27.5
4070	1562	0.134	0.062	0.196	1550	2422	0.511	11.77	2.6E-04	1.24	260	3.14E-06	1.526	0.051	23.2
4072	1746	0.143	0.062	0.205	1733	2419	0.568	12.76	3.0E-04	1.24	299	3.54E-06	1.728	0.056	25.9
4176	2947	0.155	0.062	0.217	2926	2527	0.948	21.10	3.5E-02	1.24	555	6.42E-06	3.019	0.086	41.5
8482	2256	0.164	0.062	0.226	2240	2424	0.736	16.48	3.7E-04	1.24	411	4.80E-06	2.281	0.068	32.3
8880	2000	0.151	0.062	0.213	1985	2416	0.657	14.86	2.1E-04	1.24	357	4.18E-06	2.003	0.061	28.8
9279	2674	0.144	0.062	0.206	2654	2525	0.865	19.43	2.9E-02	1.24	497	5.83E-06	2.719	0.078	37.6
9630	2501	0.164	0.062	0.226	2483	2455	0.818	18.31	2.7E-04	1.24	465	5.36E-06	2.547	0.074	35.5
9908	2819	0.149	0.062	0.211	2799	2525	0.911	20.30	3.1E-02	1.24	527	6.15E-06	2.878	0.082	39.7
9920	2666	0.155	0.062	0.217	2647	2493	0.857	19.06	3.3E-02	1.24	494	5.78E-06	2.714	0.079	37.8
9930	2798	0.156	0.062	0.218	2778	2500	0.899	19.78	3.5E-02	1.24	521	6.03E-06	2.859	0.082	39.7
9932	2800	0.163	0.062	0.224	2781	2485	0.898	19.91	3.5E-02	1.24	523	6.10E-06	2.860	0.082	39.7

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# Environmental Impacts and LCA Results

## Environmental Product Declaration (EPD) for Concrete



Plant 1024 – Terrell

Mix Code	Inventory Metrics										Life Cycle Impact Categories				
	TED	BW	WW	TW	NRED	NRMR	RMR	RED	HW	NHW	GWP	OD	AP	EP	SMOG
1597	1926	0.145	0.062	0.207	1912	2355	0.597	14.32	1.9E-04	1.24	342	3.89E-06	1.909	0.057	27.7
1734	2069	0.156	0.062	0.218	2054	2424	0.640	15.32	2.2E-04	1.24	372	4.21E-06	2.059	0.061	29.6
1735	2218	0.152	0.062	0.214	2202	2368	0.688	16.11	2.3E-04	1.24	404	4.54E-06	2.225	0.065	31.7
1738	2179	0.155	0.062	0.216	2163	2437	0.675	16.13	2.2E-04	1.24	395	4.47E-06	2.178	0.064	31.1
1811	1894	0.151	0.062	0.212	1880	2334	0.583	13.83	2.4E-04	1.24	335	3.80E-06	1.871	0.056	27.2
1841	2366	0.156	0.062	0.218	2349	2374	0.735	16.96	2.5E-04	1.24	435	4.87E-06	2.386	0.069	33.8
1899	2509	0.158	0.062	0.220	2492	2384	0.780	17.90	2.7E-04	1.24	466	5.20E-06	2.542	0.072	35.7
2554	1933	0.149	0.062	0.211	1919	2421	0.599	14.57	1.8E-04	1.24	343	3.90E-06	1.914	0.058	27.8
4070	1554	0.134	0.062	0.195	1542	2420	0.474	11.74	2.6E-04	1.24	260	3.02E-06	1.494	0.048	22.6
4072	1735	0.143	0.062	0.205	1722	2416	0.530	12.73	3.0E-04	1.24	298	3.42E-06	1.689	0.052	25.0
4176	2953	0.155	0.062	0.216	2932	2524	0.911	21.06	3.5E-02	1.23	555	6.29E-06	3.000	0.083	41.3
8482	2259	0.164	0.062	0.226	2242	2421	0.699	16.44	3.7E-04	1.24	412	4.67E-06	2.263	0.066	32.2
8880	2004	0.151	0.062	0.212	1989	2413	0.620	14.82	2.1E-04	1.24	357	4.05E-06	1.989	0.059	28.8
9279	2685	0.144	0.062	0.206	2665	2522	0.828	19.39	2.9E-02	1.24	498	5.70E-06	2.711	0.077	37.8
9630	2511	0.164	0.062	0.226	2493	2453	0.781	18.27	2.7E-04	1.24	466	5.23E-06	2.539	0.072	35.7
9908	2830	0.149	0.062	0.211	2810	2522	0.874	20.26	3.1E-02	1.24	529	6.02E-06	2.869	0.080	39.8
9920	2668	0.155	0.062	0.216	2649	2491	0.820	19.02	3.3E-02	1.24	494	5.65E-06	2.690	0.076	37.5
9930	2799	0.156	0.062	0.218	2780	2498	0.861	19.74	3.5E-02	1.23	522	5.90E-06	2.834	0.080	39.3
9932	2801	0.162	0.062	0.224	2781	2483	0.861	19.87	3.5E-02	1.24	523	5.97E-06	2.834	0.079	39.2

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# Environmental Impacts and LCA Results Environmental Product Declaration (EPD) for Concrete



Plant 1025 – Southlake

Mix Code	Inventory Metrics										Life Cycle Impact Categories				
	TED	BW	WW	TW	NRED	NRMR	RMR	RED	HW	NHW	GWP	OD	AP	EP	SMOG
1597	1850	0.145	0.062	0.207	1836	2350	0.587	14.30	1.9E-04	1.23	337	3.82E-06	1.892	0.058	27.4
1734	1997	0.156	0.062	0.217	1982	2419	0.630	15.30	2.2E-04	1.24	367	4.14E-06	2.049	0.062	29.6
1735	2135	0.152	0.062	0.213	2119	2363	0.678	16.08	2.3E-04	1.24	398	4.47E-06	2.208	0.066	31.4
1738	2106	0.154	0.062	0.216	2090	2432	0.665	16.11	2.2E-04	1.24	390	4.40E-06	2.165	0.065	31.0
1811	1820	0.150	0.062	0.212	1806	2330	0.573	13.81	2.4E-04	1.24	330	3.73E-06	1.869	0.058	27.4
1841	2278	0.156	0.062	0.217	2261	2369	0.724	16.93	2.5E-04	1.24	429	4.80E-06	2.367	0.070	33.5
1899	2421	0.158	0.062	0.220	2403	2379	0.769	17.87	2.7E-04	1.24	459	5.13E-06	2.523	0.073	35.5
2554	1860	0.149	0.062	0.211	1845	2416	0.590	14.55	1.8E-04	1.23	337	3.83E-06	1.895	0.059	27.5
4070	1489	0.133	0.062	0.195	1477	2415	0.465	11.72	2.6E-04	1.24	256	2.95E-06	1.500	0.050	23.1
4072	1664	0.142	0.062	0.204	1651	2411	0.520	12.71	3.0E-04	1.24	294	3.35E-06	1.698	0.055	25.7
4176	2877	0.154	0.062	0.216	2856	2519	0.900	21.02	3.5E-02	1.23	550	6.22E-06	2.992	0.085	41.4
8482	2183	0.163	0.062	0.225	2166	2416	0.689	16.42	3.7E-04	1.24	406	4.60E-06	2.254	0.067	32.2
8880	1929	0.150	0.062	0.212	1914	2408	0.610	14.80	2.1E-04	1.24	352	3.98E-06	1.977	0.061	28.7
9279	2606	0.144	0.062	0.205	2587	2517	0.818	19.36	2.9E-02	1.23	492	5.63E-06	2.694	0.078	37.6
9630	2432	0.163	0.062	0.225	2413	2448	0.770	18.24	2.7E-04	1.24	460	5.16E-06	2.521	0.073	35.4
9908	2748	0.149	0.062	0.211	2728	2517	0.863	20.23	3.1E-02	1.23	523	5.95E-06	2.851	0.082	39.6
9920	2591	0.154	0.062	0.216	2572	2486	0.809	18.99	3.3E-02	1.23	489	5.58E-06	2.685	0.078	37.7
9930	2716	0.156	0.062	0.217	2696	2493	0.851	19.71	3.5E-02	1.23	516	5.83E-06	2.827	0.082	39.5
9932	2725	0.162	0.062	0.224	2706	2478	0.851	19.84	3.5E-02	1.23	518	5.90E-06	2.831	0.081	39.5

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# Environmental Impacts and LCA Results

## Environmental Product Declaration (EPD) for Concrete



Plant 1026 – Haslet

Mix Code	Inventory Metrics										Life Cycle Impact Categories				
	TED	BW	WW	TW	NRED	NRMR	RMR	RED	HW	NHW	GWP	OD	AP	EP	SMOG
1597	1982	0.147	0.062	0.209	1967	2374	0.610	14.45	1.9E-04	1.25	346	4.18E-06	1.949	0.060	27.7
1734	2131	0.157	0.062	0.219	2116	2444	0.654	15.46	2.2E-04	1.25	376	4.52E-06	2.108	0.064	29.9
1735	2272	0.153	0.062	0.215	2255	2387	0.703	16.25	2.3E-04	1.25	408	4.85E-06	2.268	0.068	31.8
1738	2241	0.156	0.062	0.218	2225	2457	0.690	16.27	2.2E-04	1.25	400	4.78E-06	2.225	0.067	31.3
1811	1954	0.152	0.062	0.214	1940	2353	0.597	13.95	2.4E-04	1.25	340	4.10E-06	1.926	0.060	27.8
1841	2416	0.157	0.062	0.219	2399	2393	0.750	17.11	2.5E-04	1.25	439	5.17E-06	2.429	0.071	33.9
1899	2562	0.160	0.062	0.222	2544	2404	0.795	18.05	2.7E-04	1.25	470	5.51E-06	2.588	0.075	35.9
2554	1990	0.151	0.062	0.213	1975	2441	0.613	14.70	1.8E-04	1.25	347	4.20E-06	1.951	0.060	27.7
4070	1617	0.135	0.062	0.197	1605	2439	0.487	11.84	2.6E-04	1.25	264	3.31E-06	1.553	0.052	23.3
4072	1796	0.144	0.062	0.206	1783	2436	0.543	12.84	3.1E-04	1.25	303	3.71E-06	1.754	0.057	26.0
4176	3024	0.156	0.062	0.218	3003	2545	0.927	21.24	3.5E-02	1.24	562	6.61E-06	3.062	0.087	41.9
8482	2320	0.165	0.062	0.227	2304	2441	0.713	16.59	3.7E-04	1.25	417	4.98E-06	2.315	0.069	32.6
8880	2061	0.152	0.062	0.214	2046	2433	0.634	14.95	2.2E-04	1.25	362	4.35E-06	2.035	0.062	29.0
9279	2748	0.145	0.062	0.208	2728	2542	0.844	19.55	2.9E-02	1.25	503	6.02E-06	2.760	0.080	38.0
9630	2571	0.165	0.062	0.227	2553	2472	0.796	18.42	2.7E-04	1.25	471	5.54E-06	2.585	0.075	35.8
9908	2891	0.151	0.062	0.213	2871	2542	0.890	20.43	3.1E-02	1.25	534	6.34E-06	2.919	0.083	40.0
9920	2735	0.156	0.062	0.218	2716	2511	0.835	19.18	3.3E-02	1.25	500	5.96E-06	2.752	0.080	38.1
9930	2861	0.157	0.062	0.219	2841	2518	0.877	19.91	3.5E-02	1.24	527	6.22E-06	2.895	0.083	40.0
9932	2871	0.164	0.062	0.226	2851	2503	0.877	20.04	3.5E-02	1.25	529	6.29E-06	2.899	0.083	40.0

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# Environmental Impacts and LCA Results

## Environmental Product Declaration (EPD) for Concrete



Plant 1042 – Saginaw

Mix Code	Inventory Metrics										Life Cycle Impact Categories				
	TED	BW	WW	TW	NRED	NRMR	RMR	RED	HW	NHW	GWP	OD	AP	EP	SMOG
1597	1917	0.145	0.062	0.207	1902	2350	0.778	14.31	1.9E-04	1.23	340	4.15E-06	1.914	0.059	27.1
1734	2064	0.156	0.062	0.217	2049	2420	0.822	15.31	2.2E-04	1.24	369	4.48E-06	2.071	0.063	29.3
1735	2207	0.152	0.062	0.213	2191	2364	0.870	16.09	2.3E-04	1.24	401	4.81E-06	2.231	0.067	31.2
1738	2172	0.154	0.062	0.216	2156	2433	0.857	16.12	2.2E-04	1.24	393	4.74E-06	2.186	0.066	30.6
1811	1893	0.150	0.062	0.212	1879	2330	0.765	13.82	2.4E-04	1.24	333	4.07E-06	1.893	0.059	27.2
1841	2353	0.156	0.062	0.217	2336	2370	0.916	16.94	2.5E-04	1.24	432	5.13E-06	2.392	0.071	33.3
1899	2498	0.158	0.062	0.220	2480	2380	0.961	17.88	2.7E-04	1.24	463	5.47E-06	2.549	0.074	35.3
2554	1921	0.149	0.062	0.211	1906	2417	0.781	14.56	1.8E-04	1.23	340	4.17E-06	1.914	0.059	27.1
4070	1554	0.133	0.062	0.195	1542	2415	0.656	11.73	2.6E-04	1.24	258	3.29E-06	1.521	0.051	22.7
4072	1736	0.142	0.062	0.204	1723	2412	0.712	12.72	3.0E-04	1.24	297	3.69E-06	1.722	0.056	25.4
4176	2951	0.154	0.062	0.216	2930	2519	1.092	21.03	3.5E-02	1.23	553	6.56E-06	3.017	0.086	41.2
8482	2254	0.163	0.062	0.225	2237	2416	0.880	16.43	3.7E-04	1.24	409	4.94E-06	2.277	0.068	31.9
8880	1995	0.150	0.062	0.212	1981	2409	0.801	14.81	2.1E-04	1.24	355	4.32E-06	1.999	0.061	28.4
9279	2675	0.144	0.062	0.205	2655	2517	1.009	19.37	2.9E-02	1.23	495	5.97E-06	2.716	0.079	37.3
9630	2501	0.163	0.062	0.225	2483	2448	0.962	18.25	2.7E-04	1.24	463	5.50E-06	2.544	0.074	35.1
9908	2819	0.149	0.062	0.211	2799	2517	1.055	20.24	3.1E-02	1.23	526	6.28E-06	2.875	0.082	39.3
9920	2666	0.154	0.062	0.216	2647	2486	1.001	19.00	3.3E-02	1.23	492	5.91E-06	2.710	0.079	37.5
9930	2794	0.156	0.062	0.217	2774	2493	1.043	19.72	3.5E-02	1.23	519	6.17E-06	2.854	0.082	39.3
9932	2802	0.162	0.062	0.224	2782	2478	1.042	19.85	3.5E-02	1.23	521	6.23E-06	2.857	0.082	39.3

EPD Program Operator  
 National Ready Mix Concrete Association  
 900 Spring Street, Silver Spring, MD 20910  
 301-587-1400  
[www.nrmca.org/sustainability](http://www.nrmca.org/sustainability)

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# Environmental Product Declaration (EPD) for Concrete



## References

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