

## **NRMCA Industry Wide EPD and Benchmark Report V4.0**

Lionel Lemay, EVP, Structures and Sustainability, NRMCA

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James Salazar, Director of Sustainability, WAP Sustainability



## **Agenda**

- Introduction (Lionel Lemay)
- Why and how do you participate? (Matthew Lemay)
- Data collection and timeline (James Salazar)
- Q&A (type questions in Zoom)

# NRMCA Sustainability Initiatives

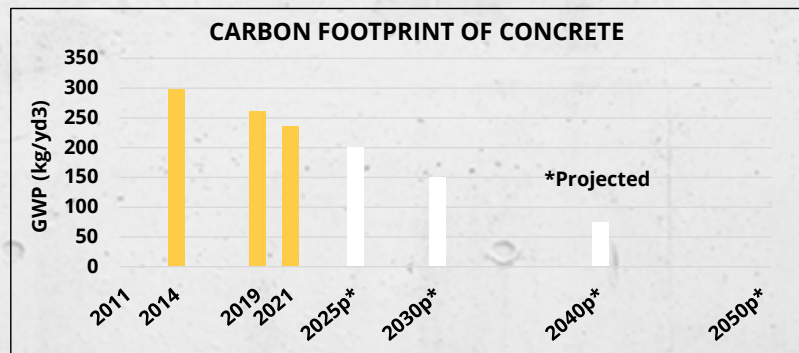
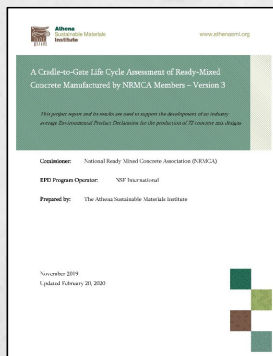
## Goal

- Position NRMCA members to be leaders in green building

## Strategies

- Sustainability Programs (EPDs, Benchmarks, etc.)
- Educate members (LEED, GSA, etc.)
- Educate stakeholders ([www.concreteinnovations.com](http://www.concreteinnovations.com))
- Celebrate innovation ([www.concreteinnovations.com](http://www.concreteinnovations.com))
- Research innovative products
- Measure concrete's progress to carbon neutrality

# Commitment to Carbon Neutrality



## How can you help us meet our goal?

### Producers

- Participate in the NRMCA IW EPD and Benchmark Report
- Encourage other producers to participate
- The most accurate benchmarks

### State Associations

- Encourage your members to participate
- If we get enough participation, we will publish benchmarks for your state

# NRMCA's Industry Wide EPD Version 4.0

08.24.2023

**Matthew Lemay**

Manager, Codes and Sustainability Programs



## What is an EPD?

### ENVIRONMENTAL IMPACTS

#### Declared Product:

Mix 34000HW • Pearlant #35 LLC Plant  
Description: 4000 PSI 1" Agg LS HRWR Winter  
Compressive strength: 4000 PSI at 28 days

Declared Unit: 1 m<sup>3</sup> of concrete (1 cwt)

**Global Warming Potential (kg CO<sub>2</sub>-eq) 285 (218)**

Acidification Potential (kg SO <sub>2</sub> -eq)	1.11 (0.85)
Eutrophication Potential (kg N-eq)	0.32 (0.24)
Photochemical Ozone Creation Potential (kg O <sub>3</sub> -eq)	28.0 (21.4)
Abiotic Depletion, non-fossil (kg Sb-eq)	8.92E-5 (6.82E-5)
Abiotic Depletion, fossil (MJ)	761 (582)
Total Waste Disposed (kg)	79.3 (60.6)

**Product Components:** crushed aggregate (ASTM C33), natural aggregate (ASTM C33), Portland cement (ASTM C150), fly ash (ASTM C618), admixture (ASTM C494), batch water (ASTM C1602)

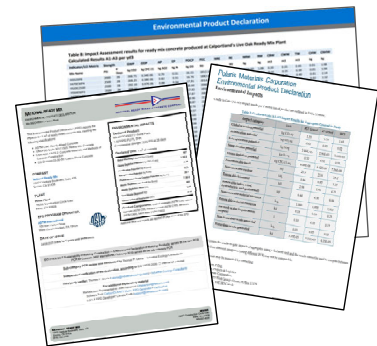
Additional detail and impacts are reported on page three of this EPD

Third-party verified & registered documents that communicate environmental impacts...

...most importantly GWP (global warming potential), measured in kg CO<sub>2</sub> equivalent per cubic yard...

...while protecting proprietary information such as

- Quantities in mix design
- Specific products and suppliers



Ingram Ready Mix  
NRMCA EPD: 20090

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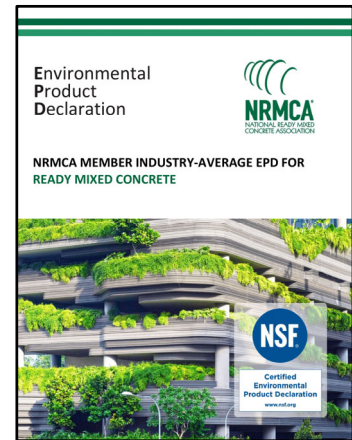




# What is an Industry-Wide EPD?

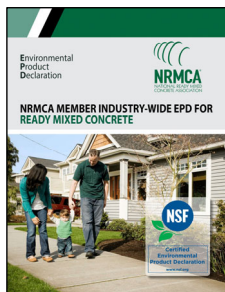
**Industry-Wide EPDs represent the average impacts of products (concrete mix designs) across the entire industry.**

- Contains many different mix designs
- Useful in most of the same use cases as product-specific EPDs
- Required alongside product-specific EPDs for some cases
- Significantly lower cost than product-specific EPDs: \$50-250 per plant vs. \$2,000-\$5,000 per plant



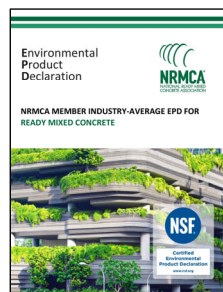
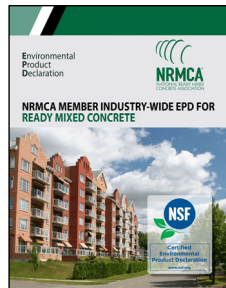
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## Industry-Wide EPD Version History



Version 1 (2013)

Version 2 (2016)



Version 3 (2019)

- v3.1 (2020)
- v3.2 (2022)

### Version 3 Data:

- 1,961 participating plants
- Members and nonmembers can participate, including retroactively (increased cost)
- 489 plants surveyed (6% of US, 8% of NRMCA membership)
- 4.29% margin of error



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# Declared Products in the IW-EPD v3

Environmental Product Declaration

Table 1: Declared Product Range Classification

Product Name	28-Day Strength (PSI)	Product Name
2500 LW	2500	3000 LW
3000 LW	3000	4000 LW
4000 LW	4000	5000 LW
5000 LW	5000	6000
6000	6000	8000

How to Use This Table

NRMCA members participating in this program use Table 1 to claim compliance with the EPD. The products are listed in a product range that meets the required specified compressive strength and percentage of air entrainment (AE) for the product. The products are listed in the EPD in the order of their declared strength.

Step 1: Identify the 28-day specified compressive strength of the proposed product and the percentage of air entrainment (AE) for the product. The product must meet the required specified compressive strength and percentage of air entrainment (AE) for the product.

Step 2: In Table 1, identify the product range that meets the required specified compressive strength and percentage of air entrainment (AE) for the product. The product must meet the required specified compressive strength and percentage of air entrainment (AE) for the product.

Step 3: In Table 1, identify the product range that meets the required specified compressive strength and percentage of air entrainment (AE) for the product. The product must meet the required specified compressive strength and percentage of air entrainment (AE) for the product.

Step 4: In Table 1, identify the product range that meets the required specified compressive strength and percentage of air entrainment (AE) for the product. The product must meet the required specified compressive strength and percentage of air entrainment (AE) for the product.

## v3: 9 Strength Classes

### Strength Classes (PSI)

2500*	
3000*	3000 LW
4000*	4000 LW
5000*	5000 LW
6000	
8000	

\* Air entrained



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# Declared Products in the IW-EPD v4

Environmental Product Declaration

Table 1: Declared Product Range Classification

Product Name	28-Day Strength (PSI)	Product Name
2500 AE	2500	3000 AE
3000 AE	3000	4000 AE
4000 AE	4000	5000 AE
5000 AE	5000	6000
6000	6000	8000
10000+	10000+	

How to Use This Table

NRMCA members participating in this program use Table 1 to claim compliance with the EPD. The products are listed in a product range that meets the required specified compressive strength and percentage of air entrainment (AE) for the product. The products are listed in the EPD in the order of their declared strength.

Step 1: Identify the 28-day specified compressive strength of the proposed product and the percentage of air entrainment (AE) for the product. The product must meet the required specified compressive strength and percentage of air entrainment (AE) for the product.

Step 2: In Table 1, identify the product range that meets the required specified compressive strength and percentage of air entrainment (AE) for the product. The product must meet the required specified compressive strength and percentage of air entrainment (AE) for the product.

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Step 4: In Table 1, identify the product range that meets the required specified compressive strength and percentage of air entrainment (AE) for the product. The product must meet the required specified compressive strength and percentage of air entrainment (AE) for the product.

## v4: Air Entrained & High Strength

### Strength Classes (PSI)

2500	<b>2500 AE</b>	
3000	<b>3000 AE</b>	3000 LW
4000	<b>4000 AE</b>	4000 LW
5000	<b>5000 AE</b>	5000 LW
6000		
8000		
<b>10000+</b>		



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# Declared Products in the IW-EPD v3

## v3: 8 SCM Content Ranges

Environmental Product Declaration

Table 1 Declared Product Range Classification (continued)

Weight	20-25 kg PA	26-30 kg PA	31-35 kg PA
Lightweight	20-25 kg PA	26-30 kg PA	31-35 kg PA
200-250 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
251-300 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
301-350 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
351-400 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
401-450 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
451-500 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
501-550 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
551-600 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
601-650 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
651-700 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
701-750 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
751-800 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
801-850 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
851-900 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
901-950 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
951-1000 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
1001-1050 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
1051-1100 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
1101-1150 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
1151-1200 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
1201-1250 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
1251-1300 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
1301-1350 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
1351-1400 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
1401-1450 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
1451-1500 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
1501-1550 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
1551-1600 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
1601-1650 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
1651-1700 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
1701-1750 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
1751-1800 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
1801-1850 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
1851-1900 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
1901-1950 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
1951-2000 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
2001-2050 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
2051-2100 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
2101-2150 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
2151-2200 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
2201-2250 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
2251-2300 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
2301-2350 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
2351-2400 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
2401-2450 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
2451-2500 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
2501-2550 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
2551-2600 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
2601-2650 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
2651-2700 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
2701-2750 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
2751-2800 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
2801-2850 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
2851-2900 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
2901-2950 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
2951-3000 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
3001-3050 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
3051-3100 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
3101-3150 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
3151-3200 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
3201-3250 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
3251-3300 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
3301-3350 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
3351-3400 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
3401-3450 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
3451-3500 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
3501-3550 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA
3551-3600 kg PA	20-25 kg PA	26-30 kg PA	31-35 kg PA

## Environmental Product Declaration

Table 2 Declared Product Range Classification (continued)

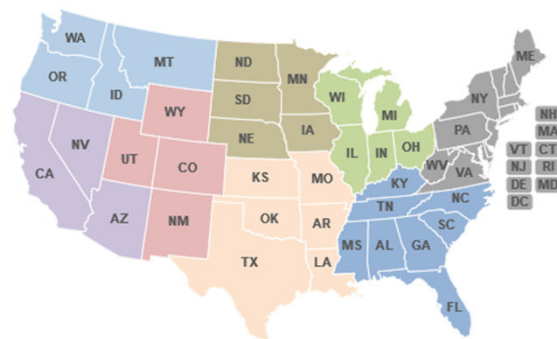
Declared Strength	Declared Weight (kg)	Declared Area (m <sup>2</sup> )
20-25 kg PA	20-25 kg PA	20-25 kg PA
26-30 kg PA	26-30 kg PA	26-30 kg PA
31-35 kg PA	31-35 kg PA	31-35 kg PA
36-40 kg PA	36-40 kg PA	36-40 kg PA
41-45 kg PA	41-45 kg PA	41-45 kg PA
46-50 kg PA	46-50 kg PA	46-50 kg PA
51-55 kg PA	51-55 kg PA	51-55 kg PA
56-60 kg PA	56-60 kg PA	56-60 kg PA
61-65 kg PA	61-65 kg PA	61-65 kg PA
66-70 kg PA	66-70 kg PA	66-70 kg PA
71-75 kg PA	71-75 kg PA	71-75 kg PA
76-80 kg PA	76-80 kg PA	76-80 kg PA
81-85 kg PA	81-85 kg PA	81-85 kg PA
86-90 kg PA	86-90 kg PA	86-90 kg PA
91-95 kg PA	91-95 kg PA	91-95 kg PA
96-100 kg PA	96-100 kg PA	96-100 kg PA
101-105 kg PA	101-105 kg PA	101-105 kg PA
106-110 kg PA	106-110 kg PA	106-110 kg PA
111-115 kg PA	111-115 kg PA	111-115 kg PA
116-120 kg PA	116-120 kg PA	116-120 kg PA
121-125 kg PA	121-125 kg PA	121-125 kg PA
126-130 kg PA	126-130 kg PA	126-130 kg PA
131-135 kg PA	131-135 kg PA	131-135 kg PA
136-140 kg PA	136-140 kg PA	136-140 kg PA
141-145 kg PA	141-145 kg PA	141-145 kg PA
146-150 kg PA	146-150 kg PA	146-150 kg PA
151-155 kg PA	151-155 kg PA	151-155 kg PA
156-160 kg PA	156-160 kg PA	156-160 kg PA
161-165 kg PA	161-165 kg PA	161-165 kg PA
166-170 kg PA	166-170 kg PA	166-170 kg PA
171-175 kg PA	171-175 kg PA	171-175 kg PA
176-180 kg PA	176-180 kg PA	176-180 kg PA
181-185 kg PA	181-185 kg PA	181-185 kg PA
186-190 kg PA	186-190 kg PA	186-190 kg PA
191-195 kg PA	191-195 kg PA	191-195 kg PA
196-200 kg PA	196-200 kg PA	196-200 kg PA
201-205 kg PA	201-205 kg PA	201-205 kg PA
206-210 kg PA	206-210 kg PA	206-210 kg PA
211-215 kg PA	211-215 kg PA	211-215 kg PA
216-220 kg PA	216-220 kg PA	216-220 kg PA
221-225 kg PA	221-225 kg PA	221-225 kg PA
226-230 kg PA	226-230 kg PA	226-230 kg PA
231-235 kg PA	231-235 kg PA	231-235 kg PA
236-240 kg PA	236-240 kg PA	236-240 kg PA
241-245 kg PA	241-245 kg PA	241-245 kg PA
246-250 kg PA	246-250 kg PA	246-250 kg PA
251-255 kg PA	251-255 kg PA	251-255 kg PA
256-260 kg PA	256-260 kg PA	256-260 kg PA
261-265 kg PA	261-265 kg PA	261-265 kg PA
266-270 kg PA	266-270 kg PA	266-270 kg PA
271-275 kg PA	271-275 kg PA	271-275 kg PA
276-280 kg PA	276-280 kg PA	276-280 kg PA
281-285 kg PA	281-285 kg PA	281-285 kg PA
286-290 kg PA	286-290 kg PA	286-290 kg PA
291-295 kg PA	291-295 kg PA	291-295 kg PA
296-300 kg PA	296-300 kg PA	296-300 kg PA
301-305 kg PA	301-305 kg PA	301-305 kg PA
306-310 kg PA	306-310 kg PA	306-310 kg PA
311-315 kg PA	311-315 kg PA	311-315 kg PA
316-320 kg PA	316-320 kg PA	316-320 kg PA
321-325 kg PA	321-325 kg PA	321-325 kg PA
326-330 kg PA	326-330 kg PA	326-330 kg PA
331-335 kg PA	331-335 kg PA	331-335 kg PA
336-340 kg PA	336-340 kg PA	336-340 kg PA
341-345 kg PA	341-345 kg PA	341-345 kg PA
346-350 kg PA	346-350 kg PA	346-350 kg PA
351-355 kg PA	351-355 kg PA	351-355 kg PA
356-360 kg PA	356-360 kg PA	356-360 kg PA
361-365 kg PA	361-365 kg PA	361-365 kg PA
366-370 kg PA	366-370 kg PA	366-370 kg PA
371-375 kg PA	371-375 kg PA	371-375 kg PA
376-380 kg PA	376-380 kg PA	376-380 kg PA
381-385 kg PA	381-385 kg PA	381-385 kg PA
386-390 kg PA	386-390 kg PA	386-390 kg PA
391-395 kg PA	391-395 kg PA	391-395 kg PA
396-400 kg PA	396-400 kg PA	396-400 kg PA
401-405 kg PA	401-405 kg PA	401-405 kg PA
406-410 kg PA	406-410 kg PA	406-410 kg PA
411-415 kg PA	411-415 kg PA	411-415 kg PA
416-420 kg PA	416-420 kg PA	416-420 kg PA
421-425 kg PA	421-425 kg PA	421-425 kg PA
426-430 kg PA	426-430 kg PA	426-430 kg PA
431-435 kg PA	431-435 kg PA	431-435 kg PA
436-440 kg PA	436-440 kg PA	436-440 kg PA
441-445 kg PA	441-445 kg PA	441-445 kg PA
446-450 kg PA	446-450 kg PA	446-450 kg PA
451-455 kg PA	451-455 kg PA	451-455 kg PA
456-460 kg PA	456-460 kg PA	456-460 kg PA
461-465 kg PA	461-465 kg PA	461-465 kg PA
466-470 kg PA	466-470 kg PA	466-470 kg PA
471-475 kg PA	471-475 kg PA	471-475 kg PA
476-480 kg PA	476-480 kg PA	476-480 kg PA
481-485 kg PA	481-485 kg PA	481-485 kg PA
486-490 kg PA	486-490 kg PA	486-490 kg PA
491-495 kg PA	491-495 kg PA	491-495 kg PA
496-500 kg PA	496-500 kg PA	496-500 kg PA
501-505 kg PA	501-505 kg PA	501-505 kg PA
506-510 kg PA	506-510 kg PA	506-510 kg PA
511-515 kg PA	511-515 kg PA	511-515 kg PA
516-520 kg PA	516-520 kg PA	516-520 kg PA
521-525 kg PA	521-525 kg PA	521-525 kg PA
526-530 kg PA	526-530 kg PA	526-530 kg PA
531-535 kg PA	531-535 kg PA	531-535 kg PA
536-540 kg PA	536-540 kg PA	536-540 kg PA
541-545 kg PA	541-545 kg PA	541-545 kg PA
546-550 kg PA	546-550 kg PA	546-550 kg PA
551-555 kg PA	551-555 kg PA	551-555 kg PA
556-560 kg PA	556-560 kg PA	556-560 kg PA
561-565 kg PA	561-565 kg PA	561-565 kg PA
566-570 kg PA	566-570 kg PA	566-570 kg PA
571-575 kg PA	571-575 kg PA	571-575 kg PA
576-580 kg PA	576-580 kg PA	576-580 kg PA
581-585 kg PA	581-585 kg PA	581-585 kg PA
586-590 kg PA	586-590 kg PA	586-590 kg PA
591-595 kg PA	591-595 kg PA	591-595 kg PA
596-600 kg PA	596-600 kg PA	596-600 kg PA
601-605 kg PA	601-605 kg PA	601-605 kg PA
606-610 kg PA	606-610 kg PA	606-610 kg PA
611-615 kg PA	611-615 kg PA	611-615 kg PA
616-620 kg PA	616-620 kg PA	616-620 kg PA
621-625 kg PA	621-625 kg PA	621-625 kg PA
626-630 kg PA	626-630 kg PA	626-630 kg PA
631-635 kg PA	631-635 kg PA	631-635 kg PA
636-640 kg PA	636-640 kg PA	636-640 kg PA
641-645 kg PA	641-645 kg PA	641-645 kg PA
646-650 kg PA	646-650 kg PA	646-650 kg PA
651-655 kg PA	651-655 kg PA	651-655 kg PA
656-660 kg PA	656-660 kg PA	656-660 kg PA
661-665 kg PA	661-665 kg PA	661-665 kg PA
666-670 kg PA	666-670 kg PA	666-670 kg PA
671-675 kg PA	671-675 kg PA	671-675 kg PA
676-680 kg PA	676-680 kg PA	676-680 kg PA
681-685 kg PA	681-685 kg PA	681-685 kg PA
686-690 kg PA	686-690 kg PA	686-690 kg PA
691-695 kg PA	691-695 kg PA	691-695 kg PA
696-700 kg PA	696-700 kg PA	696-700 kg PA
701-705 kg PA	701-705 kg PA	701-705 kg PA
706-710 kg PA	706-710 kg PA	706-710 kg PA
711-715 kg PA	711-715 kg PA	711-715 kg PA
716-720 kg PA	716-720 kg PA	716-720 kg PA
721-725 kg PA	721-725 kg PA	721-725 kg PA
726-730 kg PA	726-730 kg PA	726-730 kg PA
731-735 kg PA	731-735 kg PA	731-735 kg PA
736-740 kg PA	736-740 kg PA	736-740 kg PA
741-745 kg PA	741-745 kg PA	741-745 kg PA
746-750 kg PA	746-750 kg PA	746-750 kg PA
751-755 kg PA	751-755 kg PA	751-755 kg PA
756-760 kg PA	756-760 kg PA	756-760 kg PA
761-765 kg PA	761-765 kg PA	761-765 kg PA
766-770 kg PA	766-770 kg PA	766-770 kg PA
771-775 kg PA	771-775 kg PA	771-775 kg PA
776-780 kg PA	776-780 kg PA	776-780 kg PA
781-785 kg PA	781-785 kg PA	781-785 kg PA
786-790 kg PA	786-790 kg PA	786-790 kg PA
791-795 kg PA	791-795 kg PA	791-795 kg PA
796-800 kg PA	796-800 kg PA	796-800 kg PA
801-805 kg PA	801-805 kg PA	801-805 kg PA
806-810 kg PA	806-810 kg PA	806-810 kg PA
811-815 kg PA	811-815 kg PA	811-815 kg PA
816-820 kg PA	816-820 kg PA	816-820 kg PA
821-825 kg PA	821-825 kg PA	821-825 kg PA
826-830 kg PA	826-830 kg PA	826-830 kg PA
831-835 kg PA	831-835 kg PA	831-835 kg PA
836-840 kg PA	836-840 kg PA	836-840 kg PA
841-845 kg PA	841-845 kg PA	841-845 kg PA
846-850 kg PA	846-850 kg PA	846-850 kg PA
851-855 kg PA	851-855 kg PA	851-855 kg PA
856-860 kg PA	856-860 kg PA	856-860 kg PA
861-865 kg PA	861-865 kg PA	861-865 kg PA
866-870 kg PA	866-870 kg PA	866-870 kg PA
871-875 kg PA	871-875 kg PA	871-875 kg PA

Fly Ash (%)	Slag (%)
0% Fly Ash or Slag	
20%	
30%	30%
40%	40%
	≥ 50%
≥ 20% Fly Ash & ≥ 30% Slag	



# Regional Benchmark Report v3

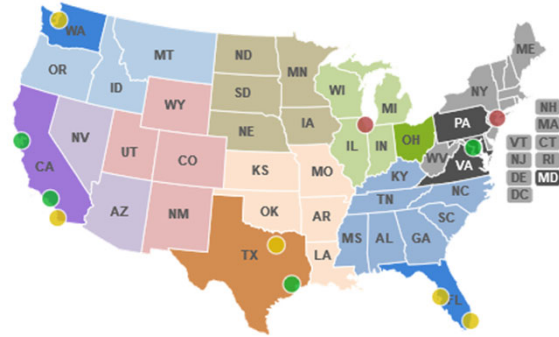
- Companion document to IW-EPD
- Measures impacts of “average mix” produced in each region
- Same strength classes as IW-EPD
- Now being used by state & local policy makers to set benchmarks



# Regional Benchmark Report v4

## Subregions

- States or metro areas
- Material supply differs between urban & rural areas
- Requires 5 participating companies in each subregion

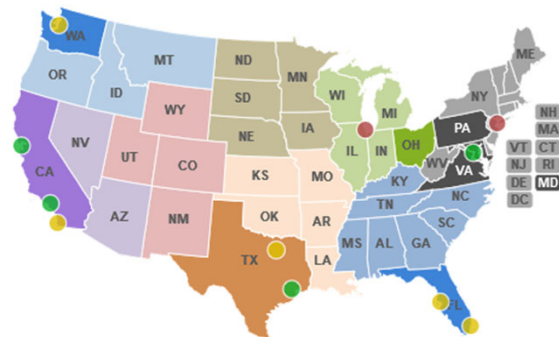


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# Regional Benchmark Report v4

## Possible Subregions in v4

California	SoCal & NorCal LA, Bay Area
	San Diego
Capital Region	DMV Metro Virginia
	Maryland
Texas	Houston
	DFW
Florida	Miami, Tampa
Washington	Seattle
Ohio (Statewide)	
Needs increased participation:	
New York, Chicago, PA & <u>everywhere else</u>	



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# How to Register for the IW-EPD v4

## NRMCA'S INDUSTRY-WIDE EPD V4.0

NRMCA will revise the NRMCA Industry-Wide Environmental Product Declaration (IW EPD) and Benchmark Report for Concrete in 2023.

Register by October 6, 2023

### WHY V4.0?

Green building standards and policies continue to drive environmental disclosure. NRMCA publishes the Industry-Wide Environmental Product Declaration (IW EPD) and Benchmark Report to help concrete producers meet these standards. NRMCA published previous versions of the IW EPD and Benchmark Report in 2014, 2019 and 2021. NRMCA will revise the IW EPD and Benchmark Report for Concrete to ensure the latest environmental data are included per the international standards. Version 4.0 will also provide an opportunity to those companies who have not participated in the past to provide their plant data.

### WHY SHOULD YOU PARTICIPATE?

- EPDs are required in LEED, Buy Clean regulations, and in Carbon Credit programs.
- The standards and regulations require you to compare your impacts to the industry average.
- Companies must provide data to the IW EPD and Benchmark Report to compare themselves to the industry average.
- Concrete contributes significantly to LEED and EPDs help design teams meet the requirements.
- By participating, you demonstrate leadership in environmental stewardship.
- Your company will be able to compete in the green building marketplace.

### Important Details

- Fees: \$50 per plant for NRMCA members, \$250 per plant for non-members.
- Only those producers who provide data for the IW EPD and Benchmark Report can be listed and be eligible to use the document.
- Any data you provide will remain completely confidential.

### HOW DO YOU PARTICIPATE?

Complete this application form to register your company for the IW EPD and Benchmark Report V4.0 and send it to [wepd@nrmca.org](mailto:wepd@nrmca.org) by October 6, 2023.

#### Questions?

Contact Matthew Lertay, [MLertay@nrmca.org](mailto:MLertay@nrmca.org) 847-323-0413

☐ NRMCA Member ☐ We want to join NRMCA

Company Name: \_\_\_\_\_

Number of Plants: \_\_\_\_\_

Primary Contact: \_\_\_\_\_

Email: \_\_\_\_\_

Phone: \_\_\_\_\_

## Fees

### NRMCA Member

\$50 per plant

### Nonmember

\$250 per plant

- NRMCA Membership (Yes / No)
- Company Name
- Number of Plants
- Primary Contact
- Email
- Phone #

Send to [IWEPD@nrmca.org](mailto:IWEPD@nrmca.org)  
by October 6<sup>th</sup>



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# GWP Reduction Goals



Turner SKANSKA

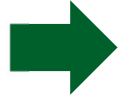


Meta

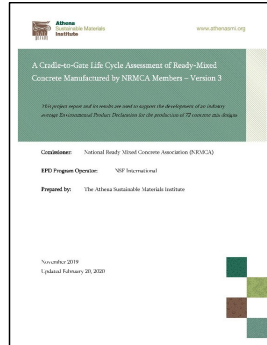


13

# Establishing a Carbon Budget

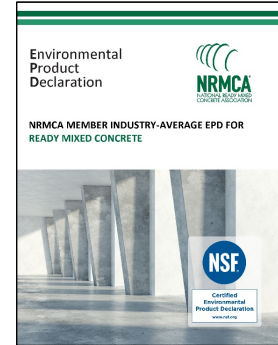


Benchmark Project



VS

Proposed Project



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## Using the IW-EPD to Meet Specified GWP Reduction Goals

“10% GWP reduction from NRMCA national benchmark”

Compressive Strength	Benchmark GWP	Benchmark -10%	IW-EPD Mix Code	IW-EPD Mix GWP	GWP Reduction
4000 PSI	235.61	212.05	4000-40-FA	205.64	12.7%

From NRMCA Benchmark Report (≈18% cement replacement)

You design a mix using 40% fly ash & reference matching mix in the IW-EPD



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# LEED EPD Credit



## EPD Credit Option 1: Environmental Product Declarations

### Requires Product-Specific OR Industry-Wide EPD

- 20 products from 5 manufacturers
  - 1 product: Industry-wide EPD
  - 1.5 products: Verified product-specific EPD

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# LEED EPD Credit



## EPD Credit Option 2: Embodied Carbon/LCA Optimization Reports

### Requires Product-Specific AND Industry-Wide EPD

- 5 products from 3 manufacturers
- Comparison of product-specific EPD to baseline: another EPD or IW-EPD
  - 1 product: <10% GWP reduction
  - 1.5 products: >10% GWP reduction
  - 2 products: >20% GWP reduction from PS-EPD, >5% reduction in two other environmental impacts

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## IW-EPD in Carbon Credits

- NRMCA is tracking the development of several carbon credit schemes for concrete
- Expected within the next several years
- Expected to use GWP reduction from IW-EPD, require participation (same method as LEED)

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### Questions?

[mlemay@nrmca.org](mailto:mlemay@nrmca.org)

### Send forms to:

[IWEPD@nrmca.org](mailto:IWEPD@nrmca.org)



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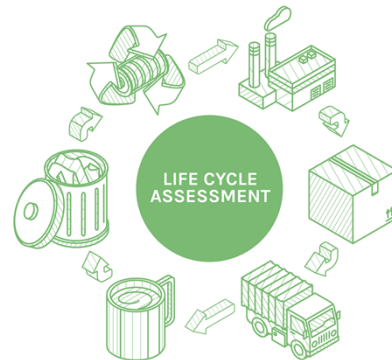
[buildwithstrength.com](http://buildwithstrength.com) | [nrmca.org/epd](http://nrmca.org/epd)



## NRMCA Industry Wide LCA & EPD

Kickoff | 2023.08.24

Prepared by WAP Sustainability





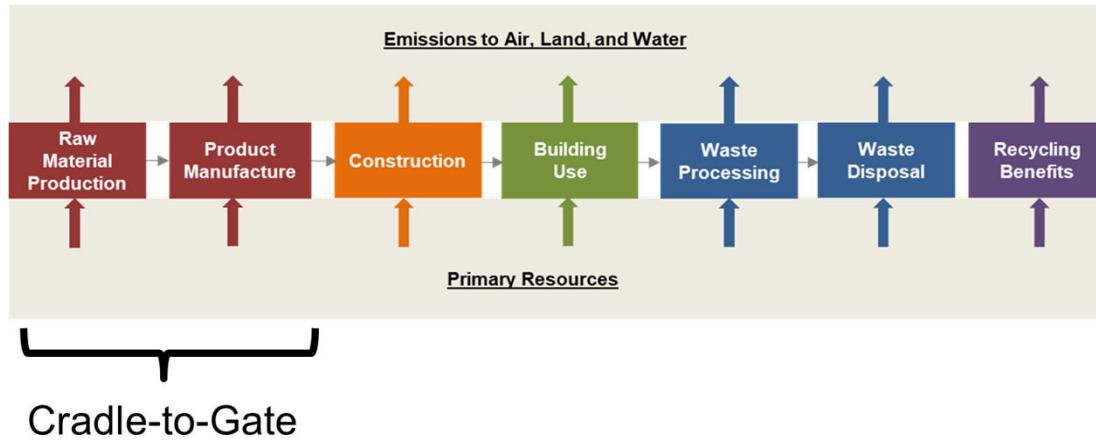
## Representative Statistical Average

- 95% Confidence Level / 5% Margin of Error
- Estimated 8000 total facilities in United States
- Estimated 2000 total potential facilities for study
- Minimum 350 facilities – goal of 500 facilities

## Previous Industry Sample

NRMCA Region	Total	Eastern	Great Lakes Midwest	North Central	Pacific Northwest	Pacific Southwest	Rocky Mountains	South Central	South Eastern	Other
v1 Reviewed & Updated	243	38	19	21	13	22	11	32	87	0
v2 Included Surveys	52	10	12	0	1	6	0	15	8	0
v3 New Surveys	194	17	38	7	18	22	11	44	36	1
Total Included Surveys	489	65	69	28	32	50	22	91	131	1
% of Total	100%	13%	14%	6%	7%	10%	4%	19%	27%	0%

## System boundaries are set by the PCR



## Log in

Email

Password

☐ Remember me?

[Log in](#)

[Forgot your password?](#)

[Register as a new user](#)

[Resend email confirmation](#)

## Annual Production Data

### General

#### Reporting Period

Start Date 01/01/22  
End Date 12/31/22

### Plant Information - Annual Production and Usage

#### Concrete Production

Total Concrete Production (yd3) 55,000  
Batch Waste (%) 1

## Energy Inputs

### Purchased Energy

Purchased Electricity - Used at Plant	<input type="text"/>	kWh ▾
<i>Purchased Electricity From Green Grid</i>	<input type="text"/>	kWh ▾
<i>Site Generated Renewable Electricity (solar, wind) - Used at Plant</i>	<input type="text"/>	kWh ▾
<i>Site Generated Bio Based Electricity (wood waste) - Used at Plant</i>	<input type="text"/>	kWh ▾
<i>Site Generated Renewable Electricity (solar, wind) - Sold</i>	<input type="text"/>	kWh ▾
<i>Site Generated Bio Based Electricity (wood waste) - Sold</i>	<input type="text"/>	kWh ▾
Natural Gas - Used at Plant	<input type="text"/>	m3 ▾
Secondary Fuels - Liquid	<input type="text"/>	l ▾
Secondary Fuels - Solid	<input type="text"/>	metric ton ▾
Fuel Oil - Used at Plant	<input type="text"/>	l ▾
Diesel - Used at Plant	<input type="text"/>	l ▾
Gasoline - Used at Plant	<input type="text"/>	l ▾
LPG (Liquified Propane Gas) - Used at Plant	<input type="text"/>	l ▾
Transit Mix Only - Diesel - Used in Fleet	<input type="text"/>	l ▾
Natural Gas - Used in Fleet	<input type="text"/>	m3 ▾

## Other Inputs

### Annual Plant Consumables

Form Release Agent	<input type="text"/>	<input type="text"/>
Road Dust Control Chemicals (e.g. chlorides)	<input type="text"/>	<input type="text"/>
Oil and Lubricants	<input type="text"/>	<input type="text"/>
Grease	<input type="text"/>	<input type="text"/>

### Water Use

Total Water Use	<input type="text"/>	<input type="text"/>
Percentage of Batch Water That Is Recycled Wash Water	<input type="text"/>	<input type="text"/>

### Waste Generated

Hazardous Solid Waste	<input type="text"/>	<input type="text"/>
Non-Hazardous Solid Waste	<input type="text"/>	<input type="text"/>

### Air Emissions (if tracked)

Particulates, PM-2.5	<input type="text"/>	<input type="text"/>
Particulates, PM-10	<input type="text"/>	<input type="text"/>
Particulates, total	<input type="text"/>	<input type="text"/>
Lead	<input type="text"/>	<input type="text"/>
Hg	<input type="text"/>	<input type="text"/>

## Supplier Directory

Add a new supplier.	<input type="button" value="➔"/>
Specify the Ingredients for a supplier.	<input type="button" value="➔"/>
Update the supplier name.	<input type="button" value="➔"/>

### A

Accelerator - CCPPA Ontario (Ontario)  
*Accelerating Admixture - Non Chlorides*  
 Accelerator - CCPPA West (CCPPA West)  
*Accelerating Admixture - Non Chlorides*  
 Air Entrainer - CCPPA Ontario (Ontario)  
*Air Entrainer*  
 Air Entrainer - CCPPA West (CCPPA West)  
*Air Entrainer*

### C

Cold Drawn Wire Reinforcement - CCPPA Ontario (Ontario)  
*Welded Wire Reinforcement*  
 Cold Drawn Wire Reinforcement- CCPPA West (CCPPA West)  
*Welded Wire Reinforcement*  
 Crushed Coarse Aggregate - CCPPA Ontario (Ontario)  
*Crushed Coarse Aggregate*  
 Crushed Coarse Aggregate - CCPPA West (CCPPA West)  
*Crushed Coarse Aggregate*

# Plant Suppliers

Material Type

Cement

▼

Supplier

▼

Amount Unit of Measure

▼

Annual amount purchased

One Way Distances From Source.

Truck Distance (mi)

Rail Distance (mi)

Ocean Distance (mi)

Barge Distance (mi)

# Timeline and Next Steps



## Questions?

[mlemay@nrmca.org](mailto:mlemay@nrmca.org)

Send forms to:

[IWEPD@nrmca.org](mailto:IWEPD@nrmca.org)



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