

1. Concrete Mixture

	Mix 1	Mix 2	Mix 3
1a. Mixture Name	Mix 1	Mix 2	Mix 3
1b. Cement type	Cement CEM I	Cement CEM I	Cement CEM I
1c. Quantity of cement type <i>kg per m3</i>	300.0	350.0	350.0
1d. Any additional cement replacements			
GGBS, <i>kg per m3</i>	50.0		
Fly ash, <i>kg per m3</i>			
Limestone fines, <i>kg per m3</i>			
For information: Total cementitious content			
Cementitious materials, <i>kg per m3</i>	350.0	350.0	350.0
of which:			
Cement	85.7%	100.0%	100.0%
GGBS	14.3%	0.0%	0.0%
Fly Ash	0.0%	0.0%	0.0%
1e. Water to cement ratio	0.50	0.50	0.50
For information: Water content			
Water, <i>kg per m3</i>	175.0	175.0	175.0
1e. Admixtures			
Average Admixture, <i>kg per m3 concrete</i>	5.0	5.0	5.0
Air entrainers, <i>kg per m3 concrete</i>			
Hardening Accelerators, <i>kg per m3 concrete</i>			
Plasticisers and Superplasticisers, <i>kg per m3 concrete</i>			
Retarders, <i>kg per m3 concrete</i>			
Set Accelerators, <i>kg per m3 concrete</i>			
Water Resisting Admixtures, <i>kg per m3 concrete</i>			
For information: Total admixtures			
Total admixtures, <i>kg per m3</i>	5.0	5.0	5.0

1f. Aggregates

Total coarse and fine aggregates, <i>kg per m3 concrete</i>	1,850.0	1,850.0	1,850.0
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For information: Total materials

TOTAL material, <i>kg per m3 concrete</i>	2380.0	2380.0	2380.0
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2. In-situ or precast

2a. Concrete type

Mix 1 in-situ	Mix 2 in-situ	Mix 3 in-situ
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3. Steel reinforcement

3a. Amount of steel
kg per m3

20.0	20.0	20.0
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For information: Volume of steel

Volume steel	0.3%	0.3%	0.3%
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3b. Type of steel

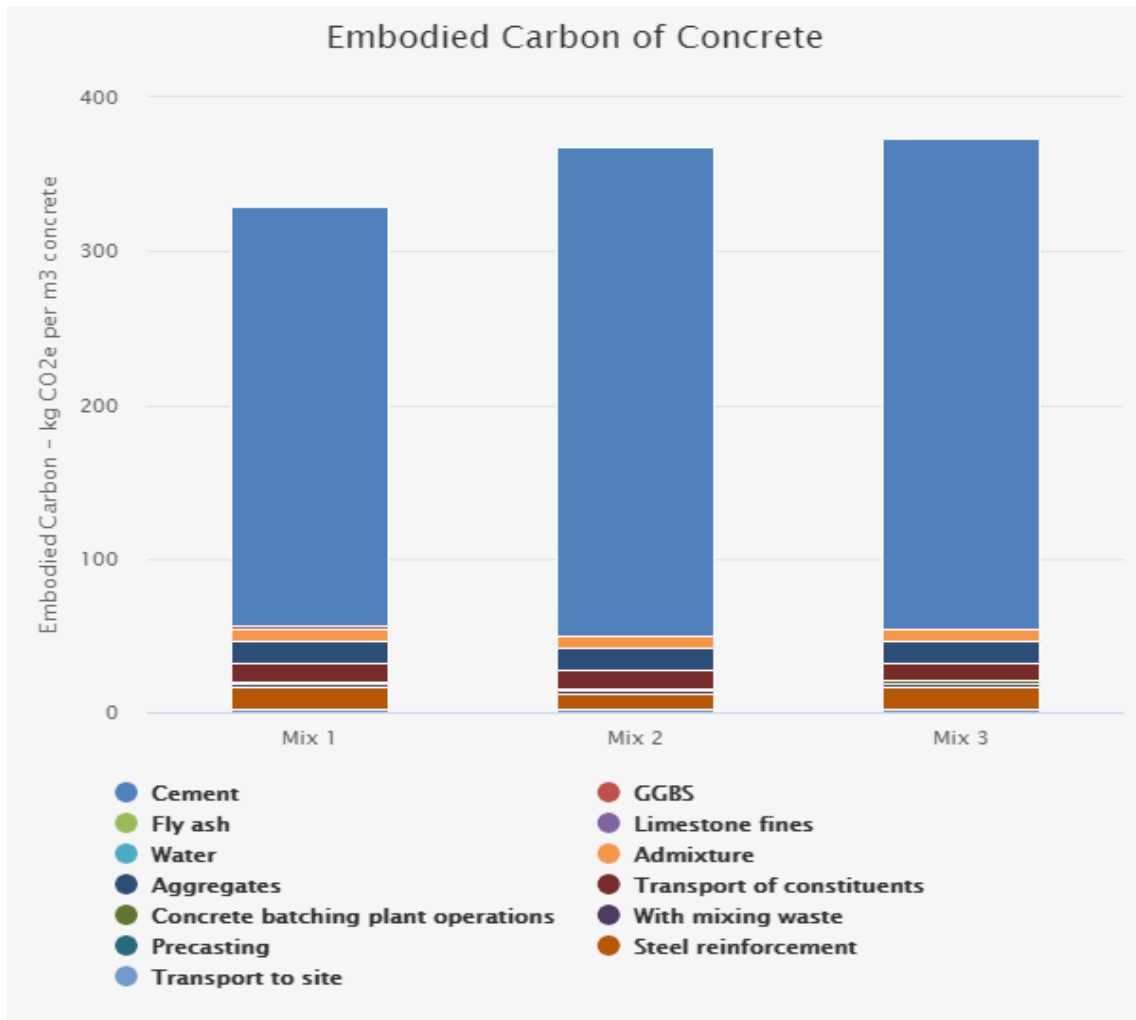
Europe recycled	Custom EPD	Europe recycled
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4. Transport from concrete producer to construction site

Delivery distance, from concrete producer to construction site - km	11.0	11.0	11.0
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5. Summary Charts

A result graph of the three concrete mixtures is shown below



5. Embodied Carbon

Material	Mix 1	Mix 2	Mix 3
RESULTS - kg CO2e / m3 concrete	329	368	373

Embodied carbon of concrete per kg concrete

RESULTS - kg CO2e / kg concrete	0.138	0.155	0.157
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Results - Contribution %

	Mix 1	Mix 2	Mix 3
Material	Mix 1	Mix 2	Mix 3
Cement	82.9%	86.4%	85.4%
GGBS	0.6%	0.0%	0.0%
Fly ash	0.0%	0.0%	0.0%
Limestone fines	0.0%	0.0%	0.0%
Water	0.0%	0.0%	0.0%
Admixture	2.5%	2.3%	2.2%
Aggregates	4.2%	3.7%	3.7%
Transport of constituents	3.6%	3.2%	3.2%
Concrete batching plant operations	0.5%	0.5%	0.5%
With mixing waste	0.5%	0.5%	0.5%
Precasting	0.0%	0.0%	0.0%
Steel reinforcement	4.4%	2.7%	3.9%
Transport to site	0.8%	0.7%	0.7%

5. Summary Calculations

Concrete calculations - Embodied Carbon Contribution - kg CO₂e / m³ concrete

	Mix 1	Mix 2	Mix 3
Material	Mix 1	Mix 2	Mix 3
Cement	272.9	318.4	318.4
GGBS	2.1	0.0	0.0
Fly ash	0.0	0.0	0.0
Limestone fines	0.0	0.0	0.0
Water	0.1	0.1	0.1
Admixture	8.3	8.3	8.3
Aggregates	13.8	13.8	13.8
Transport of constituents	11.8	11.8	11.8
Concrete batching plant operations	1.7	1.7	1.7
With mixing waste	1.55	1.76	1.76
Precasting	0.0	0.0	0.0
Steel reinforcement	14.6	10.0	14.6
Transport to site	2.5	2.5	2.5
RESULTS - kg CO₂e / m³ concrete	329	368	373
RESULTS - kg CO₂e / kg concrete	0.138	0.155	0.157

Mix 1

Mix 2

Mix 3

3b.

Custom EPD data for steel,
GWP - Mod A1-3 - kg CO₂e per kg steel

0.5