Environmental Product Declaration

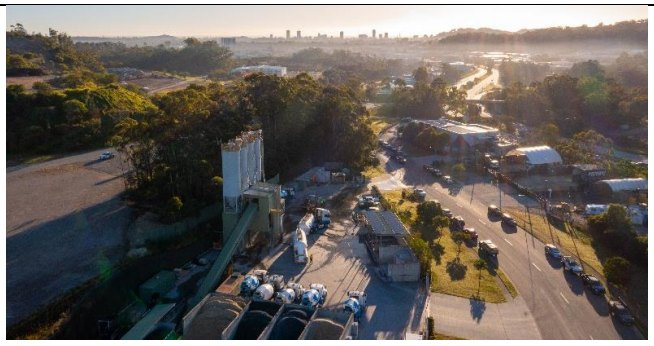
In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

N40/20/100 GP/FA blend

Nucon Concrete P/L	

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	EPD-IES-0019997:001
Regional Programme:	*EPD Australasia*
Geographical Scope:	*Queensland and New South Wales, Australia*
Publication date:	2025-06-18
Valid until:	2030-06-18

EPD of a single product, based on the volume weighted average results of multiple sites.
An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com



General information

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
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Regional Programme:	EPD Australasia Ltd
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Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): Product Category Rules (PCR): PCR 2019:14 Construction products, version 1.3.4, 2024-04-30 c-PCR-003 (to 2019:14) Concrete and concrete elements, version 2024-04-30
PCR review was conducted by: The Technical Committee of the International EPD System. See www.environdec.com for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat www.environdec.com/contact.
Life Cycle Assessment (LCA)
LCA accountability: Nucon Concrete: Stuart Pignat Technical Manager, Nucon Concrete email: stuartp@nucrush.com.au Concrete Insights: Jason Chandler Owner/Director, Concrete Insights email: jason@concreteinsights.com.au

Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ EPD verification by individual verifier Third-party verifier: Sazal Kundu Principal Consultant, Edge Impact email: sazal.kundu@edgeimpact.global Greenhouse, Level 3 180 George Street NSW 2000 Approved by: EPD Australasia
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Nucon has over 50 years of experience supplying concrete products in South East Queensland and Northern NSW. The company serves residential, commercial, government, and infrastructure projects. This EPD covers concrete products produced at Nucon facilities and includes data representative of regional production processes and supply chains.

Nucon are committed to delivering high-quality, sustainable ready mixed concrete backed by technical expertise and responsive customer service.

Customers can speak directly with our experienced Batcher Allocators, while our three regionally based Production Managers—who bring over 30 years of combined industry experience—oversee manufacturing and supply operations. They are supported by a knowledgeable Commercial and Residential Sales Team, ensuring a seamless and informed customer experience.

Nucon's Technical Services team, together with our NATA-accredited laboratory, maintains strict quality control and assurance across all concrete products. This ensures reliable performance and rapid resolution of any technical issues on-site.

Owner of the EPD: Nucon Concrete Pty Ltd
Registered Address: PO Box 179 Oxenford QLD 4210
Contact: Stuart Pignat
Email: stuartp@nucrush.com.au
Description of the organisation: Ready mix concrete supplier
Product-related or management system-related certifications:

- ISO 9001:2015 - Quality Management Systems
    - Certificate Number: 500-15676-Q (Citation Certification)
- ISO 45001:2018 -Occupational Health & Safety Management Systems
    - Certificate Number: 500-15676-OHS (Citation Certification)
- ISO 14001:2015 – Environmental Management Systems
    - Certificate Number: 500-15676-E (Citation Certification)

Name and location of production site(s):

- Nucon Burleigh - 75 Hutchinson Street Burleigh, Queensland
- Nucon Logan - 58 Kingston Road Logan, Queensland
- Nucon Yatala - 39 Computer Road Yatala, Queensland
- Nucon Oxenford - 33 Maudsland Road Oxenford, Queensland
- Nucon Southport - 273 Southport Nerang Road Southport, Queensland
- Nucon Ballina - 6 Convair Avenue Ballina, New South Wales

Product information

A summary of the properties of the N40/20/100 ready mixed concrete product covered in this EPD is provided below:

Product Identification	
Product name	N40/20/100 GP/FA blend
Product identification	N4020100BX
Product description	N40/20/100
Application	General Concrete
Strength Grade	N40
UN CPC code	375 (Articles of concrete, cement and plaster)
ANZSIC code	20330 (Concrete - ready mixed - except dry mix)
CPV code	44114000-3 (Ready mixed concrete)

Concrete is a mixture of cement &/or supplementary materials (such as flyash or ground granulated blast furnace slag), water, coarse and fine aggregates (crushed rock or natural gravel and sand), as well as some chemcial admxitures where deemed necassary to improve the performance of the concrete.

Concrete is produced in two classes, 'Normal Class" and 'Special Class'. Nucon supplies concrete complying with both classes. Normal Class concrete is defined in AS1379 and essentially complies with the basic performance requirements of that Standard. Special Class concrete is defined in AS1379 as concrete requiring any other or more stringent compliance with performance or prescriptive mix criteria.

Concrete is fluid when first mixed, but it then sets and hardens into a strong, solid mass. Nucon produces concrete to the requirements of Australian Standard AS1379 – Specification and Supply of Concrete at its six concrete batching plants in southern Queensland and northern New South Wales.

The gross weighted average of this declared material, 2350 kg per cubic metre, makes up a minimum of 99% of the products covered by this EPD.

Ready mix concrete is classified as Non-Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. None of the products contain one or more substances that are listed in the "Candidate List of Substances of Very High Concern for authorisation".

Manufacturing process:

1. Raw materials are shipped to concrete plant either by ship, road or rail or a combination of these transportation methods, the materials are stocked at the plant in either silos, ground bins and tanks (in case of water & admixtures).
2. The materials are batched by computer systems in a prescribed manner, as per the mix design through the use of conveyors, air slides, front end loaders and pumps.
3. The materials are loaded into an agitator truck during the batching process.
4. The final product is then mixed and transported to site.
5. The product is then discharged on site.

LCA information

Declared unit: 1 cubic metre (m^3)
The density of the final product is approximately 2350kg/m^3

Time representativeness: 12 months (1 July 2022 – 30 June 2023)

Database(s) and LCA software used: GCCA Industry EPD Tool for Cement and Concrete (V5.0), International version. The life cycle inventory database used in the tool is the ecoinvent database (v3.10), cut-off system model. The ecoinvent LCI database is the most widely used LCI database worldwide and the reference database for a large number of EPDs and sector-specific LCI datasets. EN 15804 reference package based on EF 3.1 (Environmental Footprint) has been used.

Allocation:

- No co-products are generated during clinker and cement production, eliminating the need for allocation in co-products.

- This concrete is delivered to site immediately after its production. No packaging is used for its raw materials nor in this distribution of the final product and therefore there are no packaging materials requiring end-of-life treatment and thus no co-product allocation is required.

Cut-off criteria:

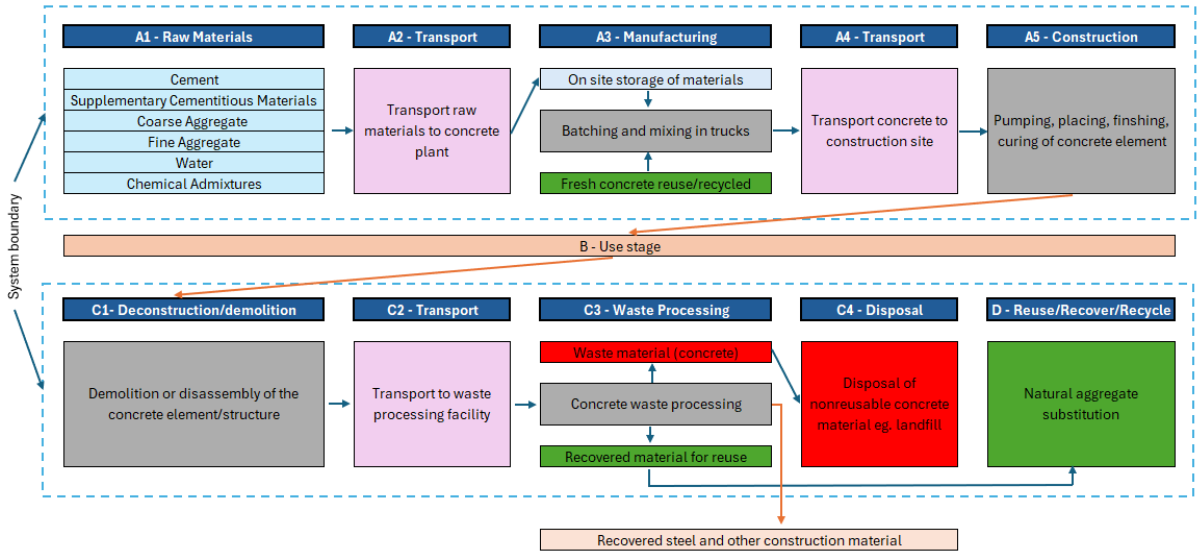
In accordance with the PCR 2019:14, the following system boundaries are applied to manufacturing equipment and employees:

- Environmental impact from infrastructure, construction, production equipment, and tools that are not directly consumed in the production process are not accounted for in this LCI. Capital equipment and buildings typically account for less than a few percent of nearly all LCIs and this is usually smaller than the error in the inventory data itself. For this project it is assumed that the capital equipment makes a negligible contribution to the impacts as per Frischknecht et al. (2007) with no further investigation.
- Personnel related impacts, for example transportation to and from work, are also not accounted for in this LCI. The impacts of employees are also excluded from the inventory impacts on the basis that if they were not employed for this production or service function, they would be employed for another. It is very difficult to determine what proportion of the impacts from their whole lives should count toward their employment. For this project, the impact of employees are excluded.
- No energy or mass flows, except packaging of materials were excluded. All materials required for manufacturing are delivered via trucks and ships without packaging.

Description of system boundaries:

The scope of the EPD is from cradle to gate (modules A1-A3) with options, modules A4-A5, modules C1-C4 and module D. Refer to the system diagram and modules declared below:

System Diagram:



Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results)

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Geography	GLO	GLO	AU	AU	AU	-	-	-	-	-	-	-	AU	AU	AU	AU	AU
Specific data used	>90%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	< 10%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note – It is discouraged to use the results of modules A1-A3 without taking into consideration the results of module C

Data quality

Foreground data on raw material requirements, manufacture and distribution was provided as primary source by Nucon for the year 1 July 2022 – 30 June 2023. Schemes for data quality assessment of generic and specific data from EN 15804+A2 (table E.1) are used to perform this data quality assessment activity, as shown in the following table. A published EPD (S-P-10953) was used for cement data however the exact data quality from that EPD is unknown. Other data is typically sourced from ecoinvent 3.10 database unless otherwise noted.

Stage	Life Cycle Stage	Source	Geography	Year	Data Quality
A1	Raw Material – Cement	Published EPD: S-P-10953, International EPD Systems	GLO / AU	2022–2023	Very Good
	Raw Material - Flyash and Ground Granulated Blast Furnace Slag	Ecoinvent 3.10 / Nucon mix design	GLO / AU	2022–2023	Good
	Raw Material - Crushed Natural aggregates, manufactured sand & alluvial sand	Ecoinvent v3.10 / Nucon mix design	AU	2022–2023	Good
	Raw Material - Admixtures	Ecoinvent v3.10 / Nucon mix design	GLO / AU	2022–2023	Fair
A2	Transport of raw materials from suppliers	Actual distances from source to Nucon site, GCCA default factors	GLO / AU	2022–2023	Good
A3	Manufacture of concrete	Actual primary data metering of electricity, water inputs and plant production volumes. Estimation of waste	AU	2022–2023	Very Good
A4	Transport of concrete to site	Actual primary data on fuel usage and truck distance travelled. GCCA default factors for truck type	AU	2022–2023	Good
A5	Construction	Default scenario, Ecoinvent v3.10	AU	Estimate using Ecoinvent factors	Fair
C1	Deconstruction – demolition of concrete structure	Default scenario, Ecoinvent v3.10	AU	Estimate using Ecoinvent factors	Fair
C2	Transport of demolished concrete to end-of-life processing	Default scenario, Ecoinvent v3.10	AU	Estimate using Ecoinvent factors	Fair
C3	Waste process & recovery of concrete	Default scenario, Ecoinvent v3.10	AU	Estimate using Ecoinvent factors	Fair
C4	Disposal of unrecoverable materials	Default scenario, Ecoinvent v3.10	AU	Estimate using Ecoinvent factors	Fair
D	Benefits & loads of recycled materials	Default scenario, Ecoinvent v3.10	AU	Estimate using Ecoinvent factors	Fair

Assumptions:

- The GCCA Industry EPD Tool for Cement and Concrete (V5.0), International version uses global characterisation factors for Water Deprivation Potential (WDP) and does not use regionalized Australian catchment level data.

- Values for Module C are determined from predefined values within the GCCA tool, including use of default values for construction materials recycling of 80%. The results of modules A1-A3 should be assessed in conjunction with the results of module C.

- In the GCCA tool direct (foreground) infrastructure is excluded, as it is commonly accepted to contribute negligibly to the environmental footprint of clinker, cement, aggregates, concrete and precast. However, infrastructure is included by default within the background processes of the ecoinvent 3.10 database used in this model.

- As this is a multi-site, single-product EPD, it is assumed that the relative share of each product from each batching plant is proportional to the total production volume of the respective plant.

- The energy balancing as per PCR 2019:14 Construction Products v1.3.4 is performed according to Option B (see Annex 3 of the PCR).

- Fly ash is a supplementary cementitious material derived from burning of coal in electricity production and used as a raw material in the product. It is considered to carry no environmental impact for the purposes of this EPD, hence an economic allocation of $0 has been applied. The transport of flyash to concrete batching sites has been taken into account when carrying out the LCA

- Blast furnace slag is a by-product of steel production that is dried and ground for use in concrete production as a supplementary cementitious material. Slag imported into Brisbane is assumed sourced from Japan. The Japanese Economic allocation from LCI Cement and Concrete Life Cycle Strategies (2015) is 0.318%. 1% is used in this case as a conservative allocation figure.

Content information

Product components	% by weight	Post consumer recycled material (Weight % of product)	Biogenic material, weight % by product	Biogenic material, kg C/product
General Purpose Cement	4 - 18	0.0	0.0	0.0
Supplementary cementitious materials	0 - 10	0.0	0.0	0.0
Aggregate	30 – 45	0.0	0.0	0.0
Natural Sand	18 – 44	0.0	0.0	0.0
Admixtures	0.1 – 0.3	0.0	0.0	0.0
Water	5 – 10	0.0	0.0	0.0

Cradle to Gate (Modules A1-A3)

Raw materials used in production of Nucon's ready mix concrete covered by this EPD include cement, supplementary cementitious materials, aggregates, admixtures and water. These materials are transported to the batching plant from their place of manufacture by road, rail and sea and stored in silos, hoppers, ground bins or tanks. During the batching process they are conveyed to a batching hopper where they are weighed and discharged into a concrete agitator truck and mixed together to form a heterogenous concrete mixture.

The impact of electricity usage at concrete batching plants was calculated based on metered values during the reference period. Custom values for the electricity mix are sourced from:

Department of Climate Change, Energy, the Environment and Water, Australian Energy Statistics, Table O, March 2024 (Australian electricity generation, by state and territory, by fuel type, physical units) (Finacial year 2022 – 2023)

The amount should be considered conservative as the metered amount includes solar power produced by Burleigh concrete plant.

As the composition of the residual grid mix on the market has not been publicly disclosed for either state, it has been conservatively estimated by subtracting renewables from the consumption mix of the market.

For the QLD based concrete plants the breakdown of supply (volume weighted) is thus - Coal + Peat (61.11%), Oil (1.75%), Gas (12.88%), Renewables (24.26%).

For the NSW based concrete plants the breakdown of supply (volume weighted) is thus - Coal + Peat (62.41%), Oil (0.53%), Gas (3.42%), Renewables (33.64%).

For QLD the impact of this electricity on the GWP-GHG of modules A1-A3 is 1.02kg CO_2 eq. per kWh.

For NSW the impact of this electricity on the GWP-GHG of modules A1-A3 is 1.01kg CO_2 eq. per kWh.

Gate to Site (Module A4)

The GCCA tool utilises a default truck emission standard of Euro 4 for Oceania. An assumed average load size of 4.5m^3 in a 6.0m^3 capacity was used as a conservative figure estimating that not all delivery loads would be full and nor would all back loads be empty. Fuel consumption and distance travelled data is as per recorded by Nucon Concrete during the period.

Vehicle	Fuel Consumption (l/km)	Fuel Type	Average distance travelled (km)	Density of products (kg/m^3)	Average load factor	Volume capacity utilisation factor
Euro 4 truck	0.34	Diesel	10.9	2350	37.5%	<1

Construction (Module A5)

As Nucon does not have operational control over the placement of ready mix concrete at the construction site assumptions for construction inputs and waste are made based on the GCCA tool default values. These values cover pumping, placing and finishing of concrete but do not include pre-installation activities such as form work and steel placing.

Construction inputs and waste	Value	Unit of measure
Concrete losses	3	%
Electricity	2.78	kWh
Diesel, in building machine	1.67	l
Water	669	kg
Wastewater	0.669	m^3

End-of-life (Modules C1-C4)

Concrete manufacturers such as Nucon Concrete have no control over the end-of-life use of their product. At the end of its use stage, concrete structures are demolished, crushed and either sent to landfill or recycled.

All other values associated with demolition, transport, waste processing and disposal are fixed default values based on ecoinvent 3.10 database which in turn is specifically found at:

C1 – Deconstruction/demolition: The energy for dismantling and handling from the waste management dataset *"Treatment of waste concrete, not reinforced, sorting plant, GLO".* This assigns a value for the use of diesel fuel in this stage of 96.1MJ per cubic metre of concrete. 100% of the product (2350kg) is assumed to be separately collected during deconstruction.

C2 – Transport after demolition: The transportation means of concrete waste flows at the end-of-life are derived from ecoinvent 3.10 dataset "*Market for waste concrete, GLO"*. The transportation distance considered comes from the JRC Technical Report, Model for Life Cycle Assessment (LCA) of buildings, 2018, Section 6.1.4, Table 20 and the transportation modelling is described in section 3.1.4. The default distance to landfill or processing facility is set at 50km and transport mode split between train and truck.

C3 – Waste processing: The life-cycle inventory for the processing of concrete waste to be recycled is based on the values provided in ecoinvent 3.10 for “Dry sorting plant for building wastes with pre-sorting of mixed waste, crushing and manual sorting”, from dataset *Treatment of waste concrete, not reinforced, sorting plant, GLO.* Those values are weighted by the recycling rate. In the GCCA tool, the recycling rate is a region-specific rate manually entered by the LCA producer. That value of 80% is sourced from DCCEEW 2023 data.

C4 – Disposal: The remaining waste concrete undergoes inert waste landfill.

During its life, chemicals within the concrete react with carbon dioxide in the atmosphere in a process known as carbonation, often referred to as ‘recarbonation’ in the context of concrete Life Cycle Analysis. As concrete is demolished, the exposed surface area of concrete particles increases and so does the rate of this carbonation reaction. The actual amount of carbonation is impacted by the exposed surface area, temperature and humidity and thus an exact figure is impossible to ascertain and default values from GCCA Tool are used in this EPD.

Benefits and Loads Beyond the System Boundary (Module D)

The impacts beyond the system boundaries are calculated, for each flow of recycled material, as the difference between the impacts of recycling 1 kg of material and the impacts of 1 kg of the primary materials avoided, multiplied by the mass flow sent to recycling minus its initial recycled material content.

Only concrete matrix is taken into consideration when calculating benefits and loads beyond the system boundaries.

Environmental information

The environmental indicators used in the EPD are listed below with their abbreviations and units:

Indicator	Abbreviation	Units
Core environmental impact indicators		
Global Warming Potential total	GWP-total	kg CO_2 eq.
Global Warming Potential fossil fuels	GWP-fossil	kg CO_2 eq.
Global Warming Potential biogenic	GWP-biogenic	kg CO_2 eq.
Global Warming Potential land use and land use change	GWP-luluc	kg CO_2 eq.
Depletion potential of the stratospheric ozone layer	ODP	kg CFC 11 eq.
Acidification potential, Accumulated Exceedance	AP	mol H^+ eq.
Eutrophication potential, fraction of nutrients reaching freshwater end compartment	EP-freshwater	kg P eq.
Eutrophication potential, fraction of nutrients reaching marine end compartment	EP-marine	kg N eq.
Eutrophication potential, Accumulated Exceedance	EP-terrestrial	mol N eq.
Formation potential of tropospheric ozone	POCP	kg NMVOC eq.
Abiotic depletion potential for non-fossil resources	ADPE	kg Sb eq.
Abiotic depletion for fossil resources potential	ADPF	MJ
Water (user) deprivation potential, deprivation-weighted water consumption	WDP	m^3
Additional environmental impact indicators		
Global Warming Potential greenhouse gas	GWP-GHG	kg CO_2 eq.
Potential incidence of disease due to pm emissions	PM	Disease incidence
Potential human exposure efficiency relative to U235	IRP	kBq U^{235} eq.
Potential comparative toxic unit for ecosystems	ETP	CTUe
Potential comparative toxic unit for humans	HTPC	CTUh
Potential comparative toxic unit for humans	HTPNC	CTUh
Potential soil quality index	SQP	dimensionless
Parameter describing resource use		
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	PERE	MJ
Use of renewable primary energy resources used as raw materials	PERM	MJ
Total use of renewable primary energy resources	PERT	MJ
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	PENRE	MJ
Use of non-renewable primary energy resources used as raw materials	PENRM	MJ
Total use of non-renewable primary energy resources	PENRT	MJ
Use of secondary material	SM	kg
Use of renewable secondary fuels	RSF	MJ
Use of non-renewable secondary fuels	NRSF	MJ
Use of net fresh water	FW	m^3
Information describing waste categories		
Hazardous waste disposed	HWD	kg
Non-hazardous waste disposed	NHWD	kg
Radioactive waste disposed	RWD	kg
Outputs		
Components for re-use	CFR	kg
Material for recycling	MFR	kg
Materials for energy recovery	MFEE	kg
Exported energy, electricity	EE - e	MJ
Exported energy, thermal	EE - t	MJ

Notes	The LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks. Module C is included in the EPD; this it is discouraged to use the results of modules A1-A3 (A1-A5 for services) without considering the results of module C. The GCCA tool uses global characterisation factors for WDP and does not use the regionalised Australian catchment level data

Results of the environmental performance indicators

The environmental impacts considered in this EPD, along with unit of measure and calculated values are shown in the tables below. The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

Mandatory impact category indicators according to EN 15804

Results per functional or declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	2.69E+02	5.40E-01	1.74E+01	9.63E+00	1.02E+01	3.88E+00	-1.06E+00	-1.35E+01
GWP-biogenic	kg CO_2 eq.	1.68E-01	2.21E-05	7.45E-03	1.05E-03	2.18E-03	6.73E-03	4.05E-04	-3.38E-02
GWP-luluc	kg CO_2 eq.	4.56E-02	2.19E-04	4.00E-03	8.36E-04	4.89E-03	7.06E-03	1.51E-03	-1.07E-02
GWP-total [1]	kg CO_2 eq.	2.69E+02	5.40E-01	1.74E+01	9.64E+00	1.02E+01	3.89E+00	-1.06E+00	-1.36E+01
ODP	kg CFC 11 eq.	3.35E-06	8.42E-09	3.03E-07	1.47E-07	1.48E-07	4.39E-08	8.49E-08	-1.10E-07
AP	mol H^+ eq.	1.17E+00	2.25E-03	1.18E-01	8.69E-02	5.30E-02	3.17E-02	2.08E-02	-8.56E-02
EP-freshwater	kg P eq.	4.38E-02	1.39E-05	1.78E-03	9.17E-05	3.42E-04	7.79E-04	7.95E-05	-1.22E-03
EP-marine	kg N eq.	6.19E-02	8.18E-04	3.22E-02	4.03E-02	1.98E-02	7.35E-03	7.93E-03	-2.03E-02
EP-terrestrial	mol N eq.	2.47E+00	8.92E-03	3.99E-01	4.41E-01	2.16E-01	7.63E-02	8.66E-02	-2.57E-01
POCP	kg NMVOC eq.	6.59E-01	3.26E-03	1.17E-01	1.32E-01	7.23E-02	2.28E-02	3.10E-02	-6.96E-02
ADPE [2]	kg Sb eq.	2.72E-04	1.52E-06	2.72E-05	3.53E-06	2.79E-05	3.02E-05	4.68E-06	-7.18E-05
ADPF [2]	MJ	1.58E+03	7.88E+00	1.71E+02	1.26E+02	1.44E+02	7.43E+01	7.20E+01	-1.62E+02
WDP [2, 3]	m^3	4.86E+01	3.78E-02	2.20E+00	3.09E-01	8.38E-01	1.18E+00	2.01E-01	-2.72E+01

[1] The indicated values (gross values) include the greenhouse gas emissions from the incineration of secondary fuels at clinker production. The net GWP-tot (excluding the emissions from the incineration of secondary fuels at clinker production) is 7.30E+02 kg CO_2–eq. The net GWP-fos is 7.30E+02 kg CO_2-eq. The net GWP-bio is 1.00E-01 kg CO_2-eq. This information was sourced from the GCCA tool.

[2] Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

[3] The 'Water deprivation potential' (WDP) indicator is characterized according to global characterization factors and not local

Additional mandatory and voluntary impact category indicators

Results per functional or declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG [4]	kg CO_2 eq.	2.69E+02	5.40E-01	1.74E+01	9.64E+00	1.02E+01	3.89E+00	-1.06E+00	-1.36E+01
PM	Disease incidence	8.57E-06	5.52E-08	1.94E-06	2.47E-06	1.12E-06	3.68E-07	4.73E-07	-1.39E-06
IRP [5]	kBq U235 eq	1.59E+03	6.96E-03	4.80E+01	5.65E-02	1.85E-01	7.08E-01	4.59E-02	-1.17E+00
ETP [6]	CTUe	2.11E+02	1.90E+00	1.73E+02	1.79E+01	4.14E+01	1.83E+01	9.84E+00	-8.68E+01
HTPC [6]	CTUh	7.23E-07	2.70E-09	6.29E-08	3.77E-08	6.54E-08	1.42E-08	1.33E-08	-1.67E-07
HTPNC [6]	CTUh	1.18E-05	5.21E-09	4.13-E7	1.72-E8	9.22E-08	5.18E-08	1.30E-08	-1.10E-07
SQP [6]	Dimensions	1.17E+03	7.93E+00	6.32E+01	8.86E+00	1.34E+02	4.05E+01	1.42E+02	-1.73E+02

[4] The indicated values (gross values) include the greenhouse gas emissions from the incineration of secondary fuels at clinker production. The net GWP-GHG (excluding the emissions from the incineration of secondary fuels at clinker production) is 7.30E+02 kg CO_2–eq. This information was sourced from the GCCA tool.

[4] This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO2 is set to zero.

[5] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

[6] The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

Resource use indicators

Results per functional or declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	2.93E+01	1.04E-01	6.22E+00	7.73E-01	2.81E+00	9.44E+00	6.69E-01	-1.35E+01
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	2.93E+01	1.04E-01	6.22E+00	7.73E-01	2.81E+00	9.44E+00	6.69E-01	-1.35E+01
PENRE	MJ	1.58E+03	7.88E+00	1.71E+02	1.26E+02	1.44E+02	7.43E+01	7.20E+01	-1.62E+02
PENRM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	1.58E+03	7.88E+00	1.71E+02	1.26E+02	1.44E+02	7.43E+01	7.20E+01	-1.62E+02
SM	kg	9.10E+01	0.00E+00	2.73E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	1.61E+00	1.16E-03	6.55E-02	8.19E-03	2.40E-02	3.37E-02	7.47E-02	-6.43E-01

Waste indicators

Results per functional or declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NHWD	kg	9.80E+01	0.00E+00	1.68E+01	0.00E+00	0.00E+00	0.00E+00	4.64E+02	0.00E+00
RWD	kg	5.00E-01	1.70E-06	1.51E-02	1.38E-05	4.55E-05	1.73E-04	1.12E-05	-2.84E-04

Output flow indicators

Results per functional or declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
CFR	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	0.00E+00	5.64E+01	0.00E+00	0.00E+00	1.88E+03	0.00E+00	0.00E+00
MFEE	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE – e	MJ	8.64E-03	0.00E+00	2.59E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE - t	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

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The SAFETY DATA SHEET – Ready mixed concrete is as per linked or available on the Nucon Concrete website or by contacting customer service.