



ViroDecs™ Special

Holcim Australia Ready-Mix Concrete

New South Wales – Northern New South Wales – ECOPact

Environmental Product Declaration

In accordance with ISO 14025 and EN 15804+A2:2019

Programme: The International EPD® System | www.environdec.com

Programme operator: EPD International AB

Regional Programme: EPD Australasia | www.epd-australasia.com

Managed by: Holcim Certified EPD Process

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Version Number	Reversion Date	Description of Changes
2.0	23 April 2024	Updated and including Coffs Harbour and Newcastle regions.

Introduction

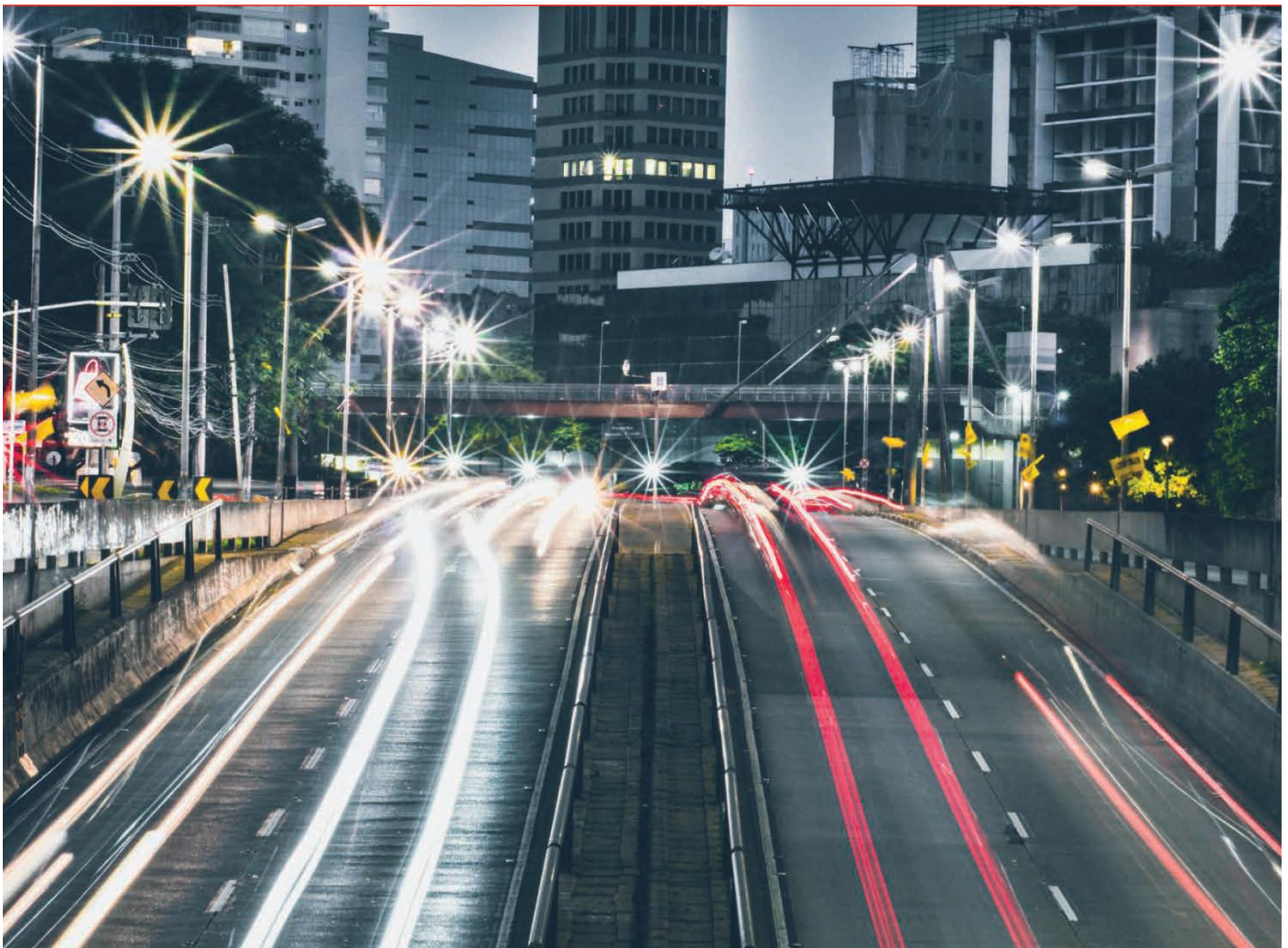
All around the world, the expectation for Governments and organisations to provide enhanced transparency and disclosure of environmental impacts, such as greenhouse gas (GHG) emissions, has been growing. This follows the landmark COP 21 Paris Agreement in 2015 in which all nations agreed to ambitiously pursue efforts to combat climate change and its effects.

At the same time, the global demand for construction materials is also growing due to worldwide population growth and an increase in urbanisation. In fact, concrete is the second most used commodity in the world behind water, and typically a major contributor to the embodied GHG emissions of an infrastructure or property asset.

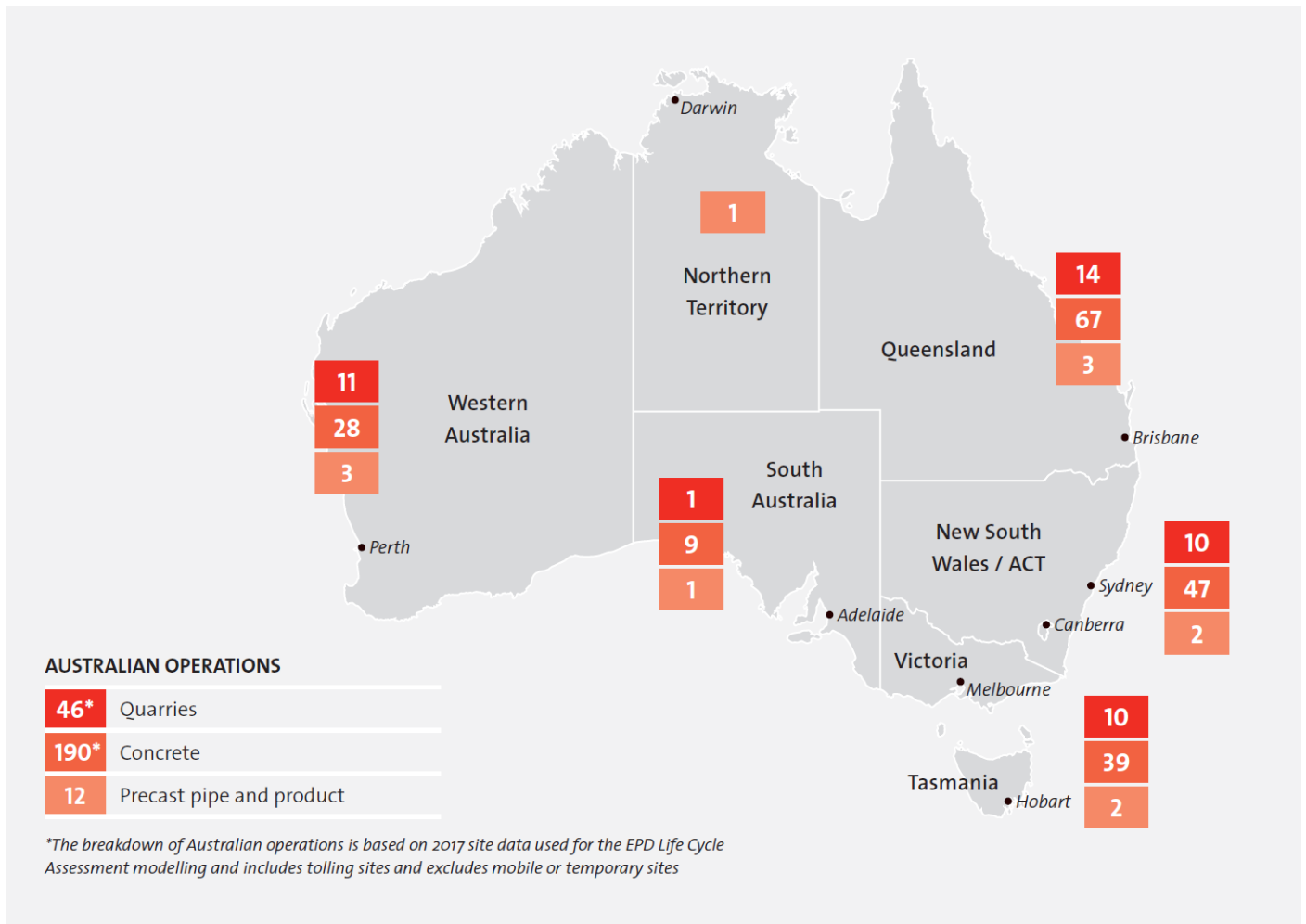
This clearly demonstrates both the essential need for construction materials now and in the future, as well as the necessity for the construction materials industry to be a leading part of the solution addressing climate change.

At Holcim, we recognise our responsibility to contribute to global emissions reduction targets and we have developed a roadmap with a number of actions to direct our efforts.

Our ViroDecs™ range of ready-mix concrete represented by an Environmental Product Declaration (EPD) is one such initiative for Holcim in Australia.



About Holcim



About Holcim

Holcim Australia is a leading supplier of construction materials in Australia, dating back to 1901. Today Holcim continues to supply essential construction materials including aggregates, sand, ready-mix concrete, engineered precast concrete and prestressed concrete solutions to a range of customers and projects throughout Australia.

Holcim operates right across the Australian continent supplying concrete from a network of concrete plants, quarries, precast and concrete pipe places, and mobile and on-site project facilities.

Sustainability is at the core of our strategy, with our industry's first 2050 net-zero targets, endorsed by the Science Based Targets initiative (SBTi).

Globally, Holcim is 70,000 people around the world who are passionate about building progress for people and the planet through four business segments: Cement, Ready-Mix Concrete, Aggregates and Solutions & Products.

Holcim builds progress for people and the planet. As a global leader in innovative and sustainable building solutions, Holcim is enabling greener cities, smarter infrastructure and improving living standards around the world. With sustainability at the core of its strategy Holcim is becoming a net zero company, with its people and communities at the heart of its success. The company is driving circular construction as a world leader in recycling to build more with less.

ViroDecs™ Special – a first for ready-mix concrete in Australia

ViroDecs™ Special at a glance

The Holcim ViroDecs™ Special provides project-specific, on-demand Environmental Product Declarations (EPDs) to Holcim's customers. This capability represents a significant step in Holcim's sustainability journey and embodies our multi-disciplinary approach to embedding sustainability into our organisation and operations. With the introduction of our ViroDecs™ Special, third-party verified data will underpin our capability to work with our customers from tender through to design and construction to optimise ready-mix concrete mix designs and report on sustainability performance.

The publication of the original ViroDecs™ EPD in 2019 introduced quality, third-party verified embodied life cycle impact data for ready-mix concrete into the Australian market for the first time. Holcim has been pleased by the positive response from the industry. The message was loud and clear: "we want transparency and we want an evidence-based approach to specification, procurement and reporting". With the introduction of our ViroDecs™ Special, Holcim's customers can now specify concrete sustainability performance in terms of CO₂-e, with the confidence that our claims are backed by our third-party verified EPD Process Certification.

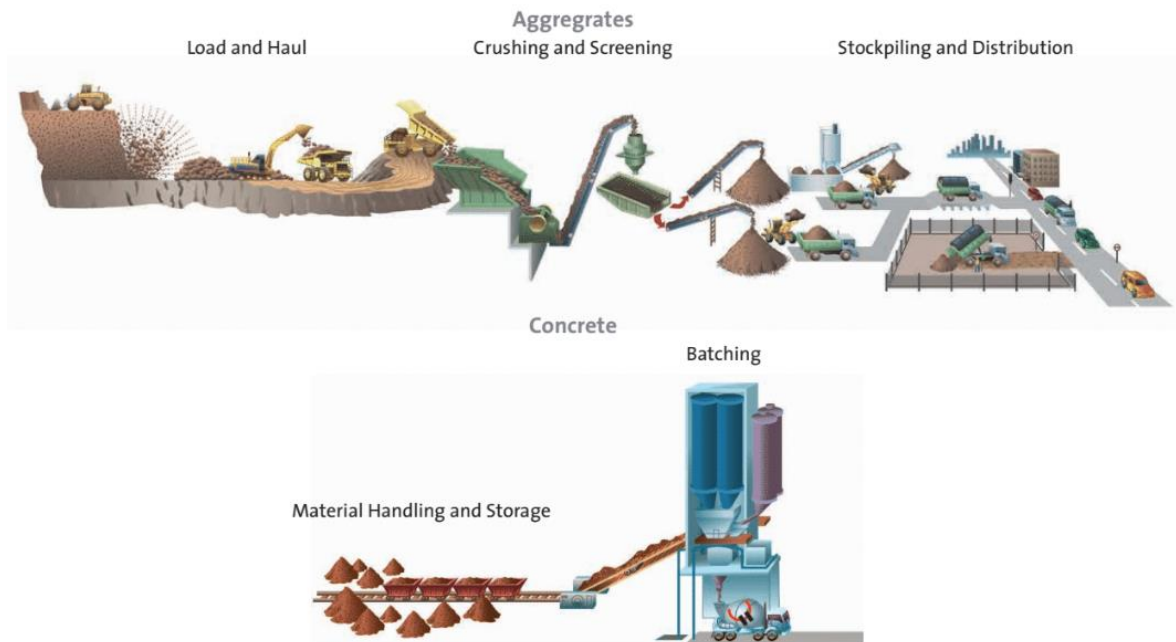
Holcim ViroDecs™ Special is backed by an EPD Process Certification. It's not only a first for concrete but a first for any product in Australia. Our EPD Process Certification is a stamp of approval to produce compliant EPDs in-house, opening up significant capability and flexibility in producing and using life cycle impact data to inform our operations and our customers.

To gain our EPD Process Certification, Holcim invested in embedding Life Cycle Assessment (LCA) into our systems and processes. We have satisfied a rigorous, third-party evaluation in accordance with the relevant ISO standards and guidelines of the International EPD Programme and EPD Australasia.

This EPD has been developed using our EPD Process Certification for the Northern New South Wales ECOPact range with production occurring at Holcim Northern New South Wales (NSW) sites.



Ready-mix concrete



Summary of properties and classes

Concrete is prepared by mixing cement, coarse and fine aggregates, and water, with or without the addition of auxiliary agents and additives. The fresh concrete is placed on the building site or prefabricated in factory moulds, compacted and hardened in the desired shape by the hydration of cement to form concrete.

General Australian Standard AS 1379 sets down a number of different ways of specifying and ordering concrete to promote uniformity, efficiency and economy in production and delivery. It refers to two classes of concrete: normal-class and special-class.

- **Normal-class** – designed for residential applications, low rise buildings, paving and driveways etc. Its specification and ordering have been simplified as far as practicable.
- **Special-class** – allows the purchaser to incorporate into the project specification any special requirements for the project. Special-class concrete is typically supplied to major and high-end construction projects from high rise buildings, dams and spillways, roads and bridges to public works infrastructure etc. Special-class concrete is typically specified in accordance with the technical parameters and performance requirements, which can include high-strength/high-performances concrete, high durability or marine application, post-tensioned, high-pumpability, super workable, piling concrete, architectural off-form finishes and other decorative applications.

LCA Information

Declared Unit

1 m³ of ready-mix concrete.

Reference Service Life (RSL)

The RSL is not specified as the scope is from cradle to gate.

Time Representativeness

The plant data for the LCA is based on 2017 calendar year production data. The mix data for the LCA is based on 2024 calendar year production data.

Databases and LCA Software Used

SimaPro® LCA software (v 9.1) was used for the LCA modelling which developed the LCA Calculator, used as per the certified EPD Process. It uses background data from:

1. The Australian National Life Cycle Inventory Database (AusLCI) (2018)
2. Ecoinvent 3.6 (2019)
3. Global Cement and Concrete (GCCA) EPD Tool Project Database version 3.1 (International Version) (2021); and
4. Product specific EPDs for pigments and fibres.

The environmental impacts modelled from the existing EPDs do not include impacts for the additional Green Star (v1.2) impact categories included in the environmental impact tables. The following impact categories were calculated manually for the foreground data:

- Use of renewable primary energy resources used as raw materials
- Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials
- Use of secondary material
- Use of renewable secondary fuels
- Use of non-renewable secondary fuels

Allocation

Allocation was necessary to proportion inputs and outputs to intermediate flows at the quarry and processes at the batching plant level.

As much as possible, intermediate flows were allocated physically based on weight (quarries) or based on m² of concrete (at the batching plant). At the quarry level, whenever physical allocation was not possible, economic allocation was carried out based on Holcim's internal cost system.

Regarding inputs, it was assumed that fly ash and silica fumes are waste products and therefore burden-free. Ground granulated blast furnace slag from steel blast furnace production was allocated economically. Please refer to the "Recycled Material" section for further detail.

Cut-Off Criteria

No flows were excluded on the basis of cut-off criteria.

Address and Contact Information

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Data Quality

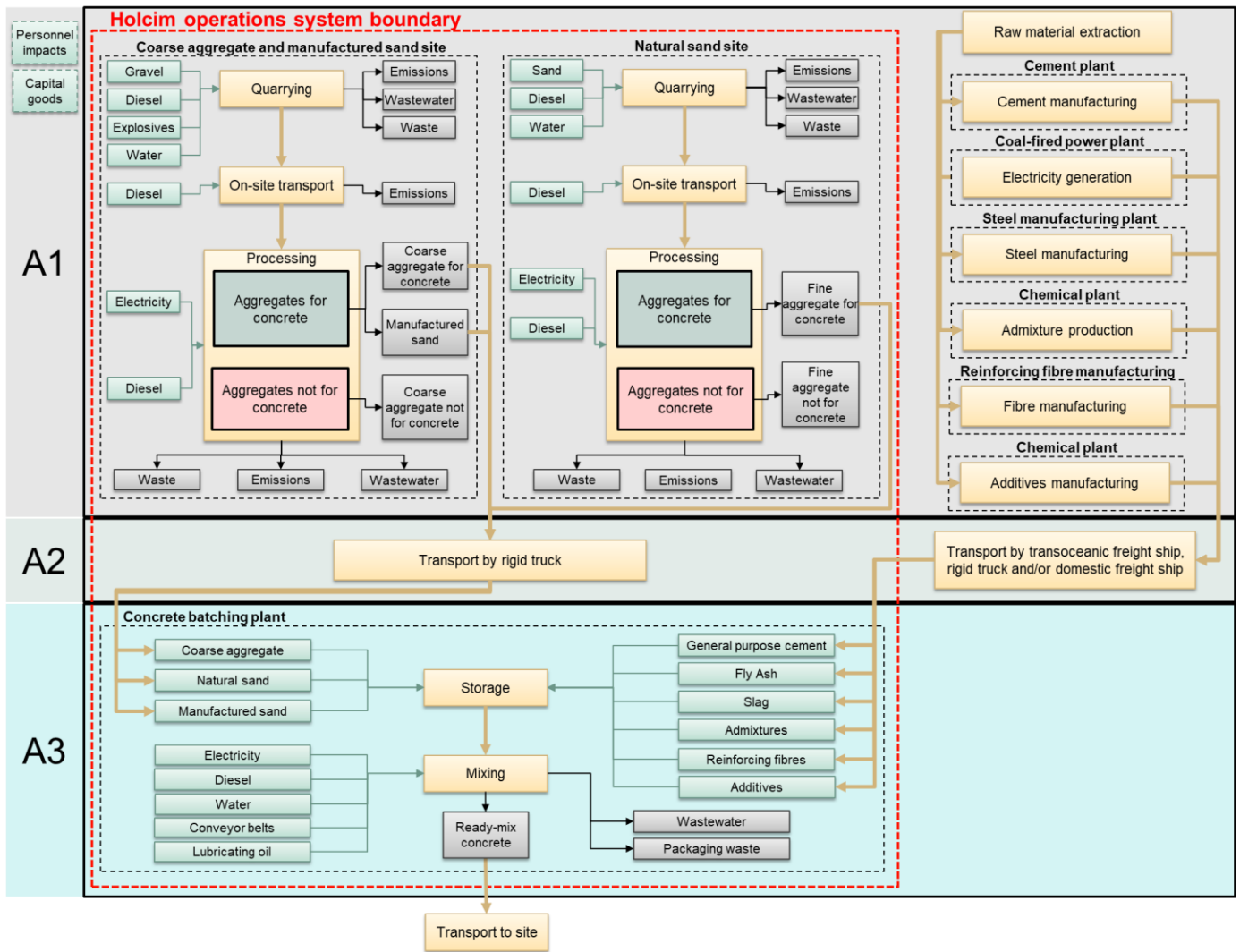
Data quality for the foreground data was assessed in terms of geographic and temporal representativeness. All data sources were scored medium or higher.

Module	Input/outputs	Sub-processes	Data source	Temporal scope	Geographic scope	Quality
A1	Coarse aggregate Manufactured sand Fine aggregate	Electricity	Electricity provider invoices	2017	All states	High
		Diesel	Supplier invoices	2017	All states	High
		Pollutants	National Pollution Inventory (NPI) data	2017	All states	High
		Mains water	Water utility invoices	2017	All states barring NSW	Medium
		Water – other sources (lakes, groundwater, rainwater)	Metered withdrawal data	2017	All states barring NSW	Medium
		Water discharge from site	Measured site data	2017	All states barring NSW	Medium
		Explosives (Manufactured sand and Coarse aggregate only)	Invoices	2017	All states (excluding the Kalgoorlie Quarry in WA which purchases raw feed from an external source)	High
		Gravel	Calculated – spoil + production amount	2017	All states	High
		Spoil	Holcim waste records	2017	All states	High
A2	Aggregate transport	Background data used to model	Actual transport distances and loads per trip	2017	All states (excluding Lynwood Quarry which transports by freight rail)	High
A3	Concrete batching plant	Electricity	Electricity provider invoices	2017	All states	High
		Diesel	Supplier invoices	2017	All states	High
		Mains water	Water metres, with utility invoices as a back-up	2017	All states	High
		Water – other sources (lakes, groundwater, rainwater)	Estimate based on water balance	2017	All states	Medium
		Water discharge from site	Estimate based on Holcim site performance metrics	2017	All states	Medium
		Lubricating oil Conveyor belt	AusLCI concrete process	2015	National	Medium
	Concrete mix designs	Background data used to model	Holcim internal technical database containing mix designs	2017	All states	High
Packaging waste	Background data used to model	Estimate based on researched packaging material and sizes	N/A	N/A	Medium	

Background data sources were also assessed with respect to their timeliness, with all data sources being updated within the 10 years required under PCR 2019:14 version 1.11.

System Diagram

The processes included in the LCA are presented in a process diagram in the figure below.



Description of System Boundaries and Excluded Lifecycle Stages

The scope of the LCA and EPD is from cradle to gate. Life cycle stages beyond Holcim's gate are excluded from the LCA (see figure below).

Environmental impacts relating to personnel, infrastructure and production equipment not directly consumed in the process are excluded from the system boundary as per the Product Category Rules (2019:14 Construction Production version 1.11).

Product Stage			Construction Stage		Use Stage							End of Life Stage				Benefits & loads for the next product system
Raw Material Supply	Transport	Manufacturing	Transport	Construction/installation process	Use	Maintenance incl. transport	Repair incl. transport	Replacement incl. transport	Refurbishment incl. transport	Operational Energy Use	Operational Water Use	De-construction & demolition	Transport	Re-use recycling	Final Disposal	Reuse, Recovery Recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

*Module not declared (MND)

EPD Product Description and Use

ViroDecs™ Ready-mix concrete – NWS – Northern New South Wales – ECOPact

A detailed breakdown of the functional properties of the ready-mix concrete included in this EPD are provided below. Product environmental information should only be compared with consideration of the product's requisite function.

NSW - Northern Rivers

Strength (MPa)	Mix code	Description of use	Strength (MPa)	Mix code	Description of use
20	NE201LBMX/ NZ201LBMX	S20/10/200 Blockmix ECOPact	20	NE201L/ NZ201L	S20/10/80 Concrete ECOPact
25	NE251LBMX/ NZ251LBMX	S25/10/200 Blockmix ECOPact	20	NE201L100/ NZ201L100	S20/10/100 Concrete ECOPact
32	NE321LBMX/ NZ321LBMX	S32/10/200 Blockmix ECOPact	20	NE201L120/ NZ201L120	S20/10/120 Concrete ECOPact
40	NE401LBMX/ NZ401LBMX	S40/10/200 Blockmix ECOPact	25	NE251L/ NZ251L	S25/10/80 Concrete ECOPact
50	NE501LBMX/ NZ501LBMX	S50/10/200 Blockmix ECOPact	25	NE251L100/ NZ251L100	S25/10/100 Concrete ECOPact
20	NE207LBMX/ NZ207LBMX	S20/7/200 Blockmix ECOPact	25	NE251L120/ NZ251L120	S25/10/120 Concrete ECOPact
25	NE257LBMX/ NZ257LBMX	S25/7/200 Blockmix ECOPact	32	NE321L/ NZ321L	S32/10/80 Concrete ECOPact
32	NE327LBMX/ NZ327LBMX	S32/7/200 Blockmix ECOPact	32	NE321L100/ NZ321L100	S32/10/100 Concrete ECOPact
40	NE407LBMX/ NZ407LBMX	S40/7/200 Blockmix ECOPact	32	NE321L120/ NZ321L120	S32/10/120 Concrete ECOPact
50	NE507LBMX/ NZ507LBMX	S50/7/200 Blockmix ECOPact	40	NE401L/ NZ401L	S40/10/80 Concrete ECOPact
20	NE202L/ NZ202L	S20/20/80 Concrete ECOPact	40	NE401L100/ NZ401L100	S40/10/100 Concrete ECOPact
20	NE202L100/ NZ202L100	S20/20/100 Concrete ECOPact	40	NE401L120/ NZ401L120	S40/10/120 Concrete ECOPact
20	NE202L120/ NZ202L120	S20/20/120 Concrete ECOPact	50	NE501L/ NZ501L	S50/10/80 Concrete ECOPact
25	NE252L/ NZ252L	S25/20/80 Concrete ECOPact	50	NE501L100/ NZ501L100	S50/10/100 Concrete ECOPact
25	NE252L100/ NZ252L100	S25/20/100 Concrete ECOPact	50	NE501L120/ NZ501L120	S50/10/120 Concrete ECOPact
25	NE252L120/ NZ252L120	S25/20/120 Concrete ECOPact	50	NE501LDUF/ NZ501LDUF	S50/10/650 Ultraflow ECOPact
32	NE322L/ NZ322L	S32/20/80 Concrete ECOPact	40	NE401L180/ NZ401L180	S40/10/180 Concrete ECOPact
32	NE322L100/ NZ322L100	S32/20/100 Concrete ECOPact	40	NE401L220/ NZ401L220	S40/10/220 Concrete ECOPact
32	NE322L120/ NZ322L120	S32/20/120 Concrete ECOPact	40	NE4022A41/ NZ4022A41	S40/20/100 Concrete ECOPact
40	NE402L/ NZ402L	S40/20/80 Concrete ECOPact	40	NE4022A42/ NZ4022A42	S40/20/120 Concrete ECOPact
40	NE402L100/ NZ402L100	S40/20/100 Concrete ECOPact	50	NE501L200/ NZ501L200	S50/10/200 Concrete ECOPact
40	NE402L120/ NZ402L120	S40/20/120 Concrete ECOPact	50	NE502L200/ NZ502L200	S50/20/200 Concrete ECOPact
50	NE502L/ NZ502L	S50/20/80 Concrete ECOPact			
50	NE502L100/ NZ502L100	S50/20/100 Concrete ECOPact			
50	NE502L120/ NZ502L120	S50/20/120 Concrete ECOPact			

NSW - Newcastle

Strength (MPa)	Mix code	Description of use	Strength (MPa)	Mix code	Description of use
20	NE202L195	S20/20/100 Concrete ECOPact	20	NE201L295	S20/10/120 Concrete ECOPact
25	NE252L195	S25/20/100 Concrete ECOPact	25	NE251L295	S25/10/120 Concrete ECOPact
32	NE322L195	S32/20/100 Concrete ECOPact	32	NE321L295	S32/10/120 Concrete ECOPact
40	NE402L195	S40/20/100 Concrete ECOPact	40	NE401L295	S40/10/120 Concrete ECOPact
50	NE502L195	S50/20/100 Concrete ECOPact	50	NE501L295	S50/10/120 Concrete ECOPact
20	NE202L295	S20/20/120 Concrete ECOPact	20	NE201R195	S20/10/100 Rapidcrete ECOPact
25	NE252L295	S25/20/120 Concrete ECOPact	25	NE251R195	S25/10/100 Rapidcrete ECOPact
32	NE322L295	S32/20/120 Concrete ECOPact	32	NE321R195	S32/10/100 Rapidcrete ECOPact
40	NE402L295	S40/20/120 Concrete ECOPact	40	NE401R195	S40/10/100 Rapidcrete ECOPact
50	NE502L295	S50/20/120 Concrete ECOPact	20	NE201LB95	S20/10/180 Blockmix ECOPact
20	NE202R195	S20/20/100 Rapidcrete ECOPact	25	NE251LB95	S25/10/180 Blockmix ECOPact
25	NE252R195	S25/20/100 Rapidcrete ECOPact	32	NE321LB95	S32/10/180 Blockmix ECOPact
32	NE322R195	S32/20/100 Rapidcrete ECOPact	40	NE401LB95	S40/10/180 Blockmix ECOPact
40	NE402R195	S40/20/100 Rapidcrete ECOPact	50	NE502LT95	S50/20/200 Tilt-Up ECOPact
20	NE201L195	S20/10/100 Concrete ECOPact			
25	NE251L195	S25/10/100 Concrete ECOPact			
32	NE321L195	S32/10/100 Concrete ECOPact			
40	NE401L195	S40/10/100 Concrete ECOPact			
50	NE501L195	S50/10/100 Concrete ECOPact			

NSW - Coffs Harbour

Strength (MPa)	Mix code	Description of use	Strength (MPa)	Mix code	Description of use
20	NE202L8	S20/20/80 Concrete ECOPact	20	NE202L2	S20/20/120 Concrete ECOPact
25	NE252L8	S25/20/80 Concrete ECOPact	25	NE252L2	S25/20/120 Concrete ECOPact
32	NE322L8	S32/20/80 Concrete ECOPact	32	NE322L2	S32/20/120 Concrete ECOPact
20	NE202L1	S20/20/100 Concrete ECOPact	40	NE4022L2	S40/20/120 Concrete ECOPact
25	NE252L1	S25/20/100 Concrete ECOPact	25	NE251L2	S25/10/120 Concrete ECOPact
32	NE322L1	S32/20/100 Concrete ECOPact	32	NE321L2	S32/10/120 Concrete ECOPact
40	NE402L1	S40/20/100 Concrete ECOPact	20	NE201LBX	S20/10/200 Blockmix ECOPact
20	NE201L1	S20/10/100 Concrete ECOPact	25	NE251LBX	S25/10/200Blockmix ECOPact
25	NE251L1	S25/10/100 Concrete ECOPact	32	NE321LBX	S32/10/200 Blockmix ECOPact
32	NE321L1	S32/10/100 Concrete ECOPact			

Note: Some customer invoices may have a Z as the second character in their mix code (e.g. QZ202E). This indicates that the mix was sold as a carbon neutral ready-mix concrete (i.e. the residual Global Warming Potential was offset). To find the applicable mix code, please substitute the second character in the mix code with an E (e.g. QE202E).]

Content Declaration

The following table provides a summary of the materials included in Holcim ready-mix concrete and their relative composition by weight.

Material	Content
General purpose cement	5-21%
Aggregate	67-84%
Supplementary cementitious materials	0-11%
Water	11.6-12%
Admixtures	0.01-0.02%

Holcim Ready-mix concrete is classified as Non-Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. The [safety data sheet for pre-mixed concrete](#) lists all associated hazard phrases.

The gross weight of this declared material makes up a minimum of 99% of the products covered by this EPD.

Packaging

Holcim ready-mix concrete is delivered in bulk with no packaging.

Default background data from LCA databases was used to model the above co-products:

Recycled Material

BS EN 16757:2017 specifically lists the following materials relevant to the study as co-products:

- Fly ash;
- Ground granulated blast furnace slag; and
- Silica fume

- Fly ash: AusLCI process for fly ash treats it as a waste material and only includes transport impacts.
- Ground granulated blast furnace slag: the AusLCI process for slag is allocated based on economic value, as the product has a significant economic value at the point of collection.
- Silica fume: the ecoinvent process for silica fume treat it as a waste material and only includes transport impacts.

As such, the above materials are considered as co-products of their production process and the impacts for their production process are allocated according to PCR 2019:14 Construction Products version 1.11 (co-produced goods, multi-output allocation).

The allocation approach of the AusLCI LCA database was adopted as a default for secondary data and processes (e.g. secondary fuel in cement production). The AusLCI dataset conforms to EN 15804 when applying allocation to its various processes and sub-processes.

Environmental Performance

The environmental impacts considered in this EPD are listed in the table below. All further tables from this point will contain abbreviation only.

Impact Category	Abbreviation	Measurement Unit
Potential Environmental Impacts		
Total global warming potential	GWPT	kg CO ₂ equivalents (GWP100)
Global warming potential (fossil)	GWPF	kg CO ₂ equivalents (GWP100)
Global warming potential (biogenic)	GWPB	kg CO ₂ equivalents (GWP100)
Global warming potential (land use/ land transformation)	GWPL	kg CO ₂ equivalents (GWP100)
Ozone depletion potential	ODP	kg CFC 11 equivalents
Acidification potential	AP	mol H ⁺ eq.
Eutrophication – aquatic freshwater	EP - freshwater	kg PO ₄ ³⁻ equivalents
Eutrophication – aquatic freshwater	EP - freshwater	kg P equivalent
Eutrophication – aquatic marine	EP - marine	kg N equivalent
Eutrophication – terrestrial	EP – terrestrial	mol N equivalent
Photochemical ozone creation potential	POCP	kg NMVOC equivalents
Abiotic depletion potential (elements)	ADPE	kg Sb equivalents
Abiotic depletion potential (fossil fuels)	ADPF	MJ net calorific value
Water Depletion Potential	WDP	m ³ equivalent deprived
Resource use		
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	PERE	MJ, net calorific value
Use of renewable primary energy resources used as raw materials	PERM	MJ, net calorific value
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	PERT	MJ, net calorific value
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	PENRE	MJ, net calorific value
Use of non-renewable primary energy resources used as raw materials	PENRM	MJ, net calorific value
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	PENRT	MJ, net calorific value
Use of secondary material	SM	kg
Use of renewable secondary fuels	RSF	MJ, net calorific value
Use of non-renewable secondary fuels	NRSF	MJ, net calorific value
Use of net fresh water	FW	m ³

Impact Category	Abbreviation	Measurement Unit
Waste categories and Output flows		
Hazardous waste disposed	HWD	kg
Non-hazardous waste disposed	NHWD	kg
Radioactive waste disposed/stored	RWD	kg
Components for reuse	CFR	kg
Materials for recycling	MFR	kg
Materials for energy recovery	MFEE	kg
Exported energy	EE - e	MJ per energy carrier
Exported energy, thermal	EE - t	MJ per energy carrier
Additional environmental impacts		
Particulate matter	PM	disease incidence
Ionising radiation - human health	IRP	kBq U-235 eq
Eco-toxicity (freshwater)	ETP-fw	CTUe
Human toxicity potential - cancer effects	HTP-c	CTUh
Human toxicity potential - non cancer effects	HTP-nc	CTUh
Soil quality	SQP	dimensionless

New South Wales – Northern New South Wales – ECOPact

Primary indicators - 1m³ of ViroDecs™ ready-mix concrete

NSW - Northern Rivers

PRIMARY ENVIRONMENTAL INDICATORS		GWPT	GWPF	GWPB	GWPL	ODP	AP	EP - freshwater	EP - freshwater2	EP - marine	EP - terrestrial	POCP	ADPE	ADPF	WDP
Strength (MPa)	Mix Code	kg CO2 eq.	kg CO2 eq.	kg CO2 eq.	kg CO2 eq.	kg CFC 11 eq.	mol H+ eq.	kg PO43- eq.	kg P eq.	kg N eq.	mol N eq.	kg NMVOC eq.	kg Sb eq.	MJ	m3
20	NE201LBMX	216	216	0.12	1.21E-03	4.12E-06	9.05E-01	1.84E+00	2.97E-03	2.81E-01	3.19E+00	8.06E-01	1.12E-04	7.65E+02	8.95E+02
25	NE251LBMX	228	228	0.12	1.23E-03	4.24E-06	9.45E-01	1.87E+00	3.08E-03	2.94E-01	3.33E+00	8.42E-01	1.16E-04	7.96E+02	9.41E+02
32	NE321LBMX	266	266	0.15	1.37E-03	4.67E-06	1.08E+00	2.09E+00	3.53E-03	3.36E-01	3.81E+00	9.62E-01	1.31E-04	9.05E+02	1.09E+03
40	NE401LBMX	330	330	0.18	1.61E-03	5.33E-06	1.31E+00	2.47E+00	4.26E-03	4.08E-01	4.64E+00	1.17E+00	1.54E-04	1.08E+03	1.34E+03
50	NE501LBMX	422	422	0.23	2.14E-03	6.42E-06	1.65E+00	3.26E+00	5.85E-03	5.11E-01	5.83E+00	1.46E+00	1.86E-04	1.36E+03	1.70E+03
20	NE207LBMX	216	216	0.12	1.21E-03	4.10E-06	9.03E-01	1.84E+00	2.97E-03	2.81E-01	3.19E+00	8.05E-01	1.12E-04	7.63E+02	8.94E+02
25	NE257LBMX	227	227	0.12	1.23E-03	4.22E-06	9.43E-01	1.87E+00	3.08E-03	2.93E-01	3.32E+00	8.40E-01	1.16E-04	7.94E+02	9.39E+02
32	NE327LBMX	266	266	0.15	1.37E-03	4.67E-06	1.08E+00	2.09E+00	3.52E-03	3.36E-01	3.81E+00	9.61E-01	1.31E-04	9.05E+02	1.09E+03
40	NE407LBMX	330	330	0.18	1.61E-03	5.33E-06	1.31E+00	2.47E+00	4.26E-03	4.08E-01	4.64E+00	1.17E+00	1.54E-04	1.08E+03	1.34E+03
50	NE507LBMX	422	422	0.23	2.14E-03	6.42E-06	1.65E+00	3.26E+00	5.85E-03	5.11E-01	5.83E+00	1.46E+00	1.86E-04	1.36E+03	1.70E+03
20	NE202L	214	213	0.11	9.68E-04	3.81E-06	8.77E-01	1.53E+00	2.22E-03	2.79E-01	3.13E+00	7.96E-01	1.10E-04	7.35E+02	8.90E+02
20	NE202L100	217	217	0.12	9.80E-04	3.84E-06	8.90E-01	1.55E+00	2.25E-03	2.83E-01	3.18E+00	8.07E-01	1.11E-04	7.45E+02	9.04E+02
20	NE202L120	217	217	0.12	1.01E-03	3.84E-06	8.90E-01	1.61E+00	2.25E-03	2.83E-01	3.18E+00	8.07E-01	1.11E-04	7.45E+02	9.03E+02
25	NE252L	228	228	0.12	1.08E-03	3.97E-06	9.28E-01	1.73E+00	2.36E-03	2.95E-01	3.31E+00	8.41E-01	1.15E-04	7.77E+02	9.46E+02
25	NE252L100	230	230	0.12	1.10E-03	3.97E-06	9.34E-01	1.77E+00	2.36E-03	2.97E-01	3.33E+00	8.46E-01	1.16E-04	7.81E+02	9.53E+02
25	NE252L120	235	234	0.13	1.14E-03	4.02E-06	9.52E-01	1.83E+00	2.42E-03	3.02E-01	3.39E+00	8.61E-01	1.18E-04	7.95E+02	9.71E+02
32	NE322L	261	260	0.14	1.19E-03	4.33E-06	1.05E+00	1.92E+00	2.66E-03	3.32E-01	3.73E+00	9.46E-01	1.28E-04	8.70E+02	1.08E+03
32	NE322L100	267	267	0.14	1.23E-03	4.40E-06	1.07E+00	1.98E+00	2.72E-03	3.40E-01	3.82E+00	9.67E-01	1.31E-04	8.90E+02	1.10E+03
32	NE322L120	268	268	0.14	1.23E-03	4.50E-06	1.08E+00	1.92E+00	3.10E-03	3.40E-01	3.83E+00	9.68E-01	1.30E-04	8.96E+02	1.10E+03
40	NE402L	306	306	0.17	1.42E-03	4.81E-06	1.21E+00	2.30E+00	3.09E-03	3.83E-01	4.31E+00	1.09E+00	1.45E-04	1.00E+03	1.26E+03
40	NE402L100	314	314	0.17	1.45E-03	4.88E-06	1.24E+00	2.37E+00	3.16E-03	3.91E-01	4.40E+00	1.11E+00	1.48E-04	1.02E+03	1.29E+03
40	NE402L120	314	314	0.17	1.47E-03	5.01E-06	1.24E+00	2.31E+00	3.61E-03	3.91E-01	4.42E+00	1.11E+00	1.48E-04	1.03E+03	1.29E+03
50	NE502L	408	408	0.23	1.92E-03	5.85E-06	1.57E+00	3.18E+00	4.04E-03	4.97E-01	5.59E+00	1.41E+00	1.82E-04	1.29E+03	1.66E+03
50	NE502L100	409	408	0.23	1.97E-03	6.00E-06	1.58E+00	3.18E+00	4.55E-03	4.97E-01	5.62E+00	1.41E+00	1.83E-04	1.30E+03	1.66E+03
50	NE502L120	409	409	0.23	1.98E-03	6.03E-06	1.58E+00	3.18E+00	4.67E-03	4.97E-01	5.63E+00	1.41E+00	1.82E-04	1.30E+03	1.66E+03
20	NE201L	217	217	0.12	9.90E-04	3.83E-06	8.89E-01	1.57E+00	2.25E-03	2.83E-01	3.18E+00	8.07E-01	1.11E-04	7.44E+02	9.03E+02
20	NE201L100	217	217	0.12	1.01E-03	3.83E-06	8.89E-01	1.61E+00	2.25E-03	2.83E-01	3.18E+00	8.06E-01	1.11E-04	7.43E+02	9.02E+02
20	NE201L120	217	217	0.12	1.04E-03	3.89E-06	8.94E-01	1.61E+00	2.50E-03	2.83E-01	3.19E+00	8.07E-01	1.11E-04	7.49E+02	9.02E+02

PRIMARY ENVIRONMENTAL INDICATORS		GWPT	GWPF	GWPB	GWPL	ODP	AP	EP - freshwater	EP - freshwater2	EP - marine	EP - terrestrial	POCP	ADPE	ADPF	WDP
Strength (MPa)	Mix Code	kg CO2 eq.	kg CO2 eq.	kg CO2 eq.	kg CO2 eq.	kg CFC 11 eq.	mol H+ eq.	kg PO43- eq.	kg P eq.	kg N eq.	mol N eq.	kg NMVOC eq.	kg Sb eq.	MJ	m3
25	NE251L	234	234	0.13	1.12E-03	4.02E-06	9.51E-01	1.79E+00	2.42E-03	3.02E-01	3.39E+00	8.61E-01	1.18E-04	7.94E+02	9.71E+02
25	NE251L100	234	234	0.13	1.14E-03	4.01E-06	9.50E-01	1.83E+00	2.42E-03	3.02E-01	3.39E+00	8.60E-01	1.17E-04	7.94E+02	9.70E+02
25	NE251L120	234	234	0.13	1.14E-03	4.01E-06	9.50E-01	1.83E+00	2.42E-03	3.02E-01	3.39E+00	8.60E-01	1.17E-04	7.93E+02	9.70E+02
32	NE321L	267	267	0.15	1.24E-03	4.39E-06	1.07E+00	2.00E+00	2.72E-03	3.40E-01	3.81E+00	9.66E-01	1.30E-04	8.87E+02	1.10E+03
32	NE321L100	275	275	0.15	1.27E-03	4.45E-06	1.10E+00	2.06E+00	2.79E-03	3.48E-01	3.91E+00	9.89E-01	1.33E-04	9.08E+02	1.13E+03
32	NE321L120	275	275	0.15	1.31E-03	4.56E-06	1.10E+00	2.06E+00	3.17E-03	3.48E-01	3.93E+00	9.91E-01	1.33E-04	9.16E+02	1.13E+03
40	NE401L	314	314	0.17	1.46E-03	4.87E-06	1.24E+00	2.38E+00	3.16E-03	3.91E-01	4.40E+00	1.11E+00	1.47E-04	1.02E+03	1.28E+03
40	NE401L100	320	320	0.18	1.50E-03	4.93E-06	1.26E+00	2.45E+00	3.22E-03	3.98E-01	4.48E+00	1.13E+00	1.50E-04	1.04E+03	1.31E+03
40	NE401L120	321	321	0.18	1.51E-03	5.06E-06	1.27E+00	2.39E+00	3.68E-03	3.98E-01	4.50E+00	1.13E+00	1.50E-04	1.05E+03	1.31E+03
50	NE501L	419	419	0.23	1.97E-03	5.96E-06	1.61E+00	3.26E+00	4.15E-03	5.10E-01	5.74E+00	1.45E+00	1.86E-04	1.32E+03	1.70E+03
50	NE501L100	420	420	0.23	2.02E-03	6.11E-06	1.62E+00	3.26E+00	4.67E-03	5.10E-01	5.76E+00	1.45E+00	1.86E-04	1.33E+03	1.70E+03
50	NE501L120	420	420	0.23	2.03E-03	6.14E-06	1.62E+00	3.26E+00	4.79E-03	5.10E-01	5.77E+00	1.45E+00	1.86E-04	1.33E+03	1.70E+03
50	NE501LDUF	403	403	0.22	2.14E-03	6.33E-06	1.59E+00	3.19E+00	6.26E-03	4.90E-01	5.63E+00	1.40E+00	1.80E-04	1.32E+03	1.62E+03
40	NE401L180	314	314	0.17	1.56E-03	5.13E-06	1.25E+00	2.38E+00	4.10E-03	3.92E-01	4.45E+00	1.12E+00	1.47E-04	1.04E+03	1.28E+03
40	NE401L220	315	315	0.17	1.57E-03	5.17E-06	1.26E+00	2.38E+00	4.28E-03	3.92E-01	4.46E+00	1.12E+00	1.47E-04	1.04E+03	1.28E+03
40	NE4022A41	314	314	0.17	1.45E-03	4.88E-06	1.23E+00	2.37E+00	3.16E-03	3.91E-01	4.40E+00	1.11E+00	1.48E-04	1.02E+03	1.29E+03
40	NE4022A42	303	303	0.17	1.46E-03	4.89E-06	1.21E+00	2.30E+00	3.51E-03	3.80E-01	4.29E+00	1.08E+00	1.43E-04	1.00E+03	1.24E+03
50	NE501L200	422	421	0.23	2.11E-03	6.38E-06	1.64E+00	3.26E+00	5.58E-03	5.11E-01	5.82E+00	1.46E+00	1.87E-04	1.35E+03	1.70E+03
50	NE502L200	410	410	0.23	2.06E-03	6.26E-06	1.60E+00	3.18E+00	5.44E-03	4.99E-01	5.68E+00	1.42E+00	1.83E-04	1.32E+03	1.66E+03

NSW - Newcastle

PRIMARY ENVIRONMENTAL INDICATORS		GWPT	GWPF	GWPB	GWPL	ODP	AP	EP - freshwater	EP - freshwater2	EP - marine	EP - terrestrial	POCP	ADPE	ADPF	WDP
Strength (MPa)	Mix Code	kg CO2 eq.	kg CO2 eq.	kg CO2 eq.	kg CO2 eq.	kg CFC 11 eq.	mol H+ eq.	kg PO43- eq.	kg P eq.	kg N eq.	mol N eq.	kg NMVOC eq.	kg Sb eq.	MJ	m3
20	NE202L195	209	208	0.14	8.88E-04	3.89E-06	8.60E-01	6.84E-01	2.45E-03	2.71E-01	3.05E+00	7.75E-01	1.08E-04	7.56E+02	8.67E+02
25	NE252L195	232	231	0.15	9.43E-04	4.16E-06	9.43E-01	7.62E-01	2.71E-03	2.97E-01	3.34E+00	8.48E-01	1.17E-04	8.21E+02	9.58E+02
32	NE322L195	266	266	0.17	1.02E-03	4.52E-06	1.06E+00	8.63E-01	3.07E-03	3.35E-01	3.77E+00	9.55E-01	1.30E-04	9.15E+02	1.09E+03

40	NE402L195	309	309	0.19	1.11E-03	5.00E-06	1.22E+00	9.97E-01	3.54E-03	3.83E-01	4.33E+00	1.09E+00	1.46E-04	1.04E+03	1.27E+03
50	NE502L195	356	356	0.22	1.22E-03	5.54E-06	1.39E+00	1.15E+00	4.06E-03	4.36E-01	4.92E+00	1.24E+00	1.63E-04	1.17E+03	1.45E+03
20	NE202L295	209	209	0.14	8.94E-04	3.91E-06	8.61E-01	6.84E-01	2.51E-03	2.71E-01	3.05E+00	7.75E-01	1.08E-04	7.57E+02	8.67E+02
25	NE252L295	232	232	0.15	9.49E-04	4.18E-06	9.44E-01	7.62E-01	2.77E-03	2.97E-01	3.35E+00	8.48E-01	1.17E-04	8.23E+02	9.58E+02
32	NE322L295	266	266	0.17	1.02E-03	4.54E-06	1.07E+00	8.63E-01	3.14E-03	3.35E-01	3.78E+00	9.55E-01	1.30E-04	9.17E+02	1.09E+03
40	NE402L295	309	309	0.19	1.12E-03	5.02E-06	1.22E+00	9.97E-01	3.62E-03	3.83E-01	4.33E+00	1.09E+00	1.46E-04	1.04E+03	1.27E+03
50	NE502L295	356	356	0.22	1.23E-03	5.56E-06	1.39E+00	1.15E+00	4.15E-03	4.36E-01	4.93E+00	1.24E+00	1.64E-04	1.17E+03	1.45E+03
20	NE202R195	208	208	0.13	6.02E-04	3.89E-06	8.57E-01	1.45E-01	2.45E-03	2.71E-01	3.05E+00	7.74E-01	1.08E-04	7.47E+02	8.67E+02
25	NE252R195	231	231	0.14	6.21E-04	4.16E-06	9.39E-01	1.54E-01	2.71E-03	2.96E-01	3.34E+00	8.46E-01	1.17E-04	8.11E+02	9.58E+02
32	NE322R195	265	265	0.16	6.47E-04	4.52E-06	1.06E+00	1.69E-01	3.07E-03	3.34E-01	3.77E+00	9.54E-01	1.29E-04	9.04E+02	1.09E+03
40	NE402R195	309	309	0.18	6.80E-04	4.99E-06	1.21E+00	1.87E-01	3.54E-03	3.83E-01	4.32E+00	1.09E+00	1.45E-04	1.02E+03	1.27E+03
20	NE201L195	214	214	0.14	9.02E-04	3.93E-06	8.79E-01	7.06E-01	2.51E-03	2.77E-01	3.12E+00	7.91E-01	1.10E-04	7.69E+02	8.88E+02
25	NE251L195	237	237	0.15	9.57E-04	4.19E-06	9.61E-01	7.83E-01	2.76E-03	3.02E-01	3.41E+00	8.64E-01	1.19E-04	8.34E+02	9.78E+02
32	NE321L195	276	276	0.17	1.03E-03	4.60E-06	1.10E+00	8.86E-01	3.17E-03	3.46E-01	3.90E+00	9.87E-01	1.33E-04	9.40E+02	1.13E+03
40	NE401L195	316	316	0.19	1.13E-03	5.06E-06	1.24E+00	1.02E+00	3.61E-03	3.91E-01	4.41E+00	1.11E+00	1.48E-04	1.05E+03	1.29E+03
50	NE501L195	363	363	0.22	1.23E-03	5.59E-06	1.41E+00	1.17E+00	4.12E-03	4.43E-01	5.00E+00	1.26E+00	1.65E-04	1.19E+03	1.48E+03
20	NE201L295	214	214	0.14	9.08E-04	3.95E-06	8.80E-01	7.06E-01	2.57E-03	2.77E-01	3.12E+00	7.91E-01	1.10E-04	7.71E+02	8.88E+02
25	NE251L295	237	237	0.15	9.63E-04	4.21E-06	9.62E-01	7.83E-01	2.83E-03	3.02E-01	3.41E+00	8.64E-01	1.19E-04	8.35E+02	9.78E+02
32	NE321L295	276	276	0.17	1.04E-03	4.62E-06	1.10E+00	8.86E-01	3.24E-03	3.46E-01	3.91E+00	9.87E-01	1.33E-04	9.42E+02	1.13E+03
40	NE401L295	316	316	0.19	1.13E-03	5.08E-06	1.24E+00	1.02E+00	3.69E-03	3.91E-01	4.42E+00	1.11E+00	1.48E-04	1.06E+03	1.29E+03
50	NE501L295	363	363	0.22	1.24E-03	5.62E-06	1.41E+00	1.17E+00	4.22E-03	4.43E-01	5.01E+00	1.26E+00	1.66E-04	1.19E+03	1.48E+03
20	NE201R195	214	214	0.14	6.05E-04	3.93E-06	8.75E-01	1.47E-01	2.51E-03	2.76E-01	3.11E+00	7.90E-01	1.10E-04	7.60E+02	8.88E+02
25	NE251R195	237	237	0.15	6.24E-04	4.19E-06	9.58E-01	1.57E-01	2.76E-03	3.02E-01	3.40E+00	8.62E-01	1.18E-04	8.23E+02	9.78E+02
32	NE321R195	275	275	0.17	6.52E-04	4.60E-06	1.09E+00	1.73E-01	3.17E-03	3.46E-01	3.90E+00	9.85E-01	1.32E-04	9.29E+02	1.13E+03
40	NE401R195	315	315	0.19	6.85E-04	5.05E-06	1.24E+00	1.90E-01	3.61E-03	3.90E-01	4.41E+00	1.11E+00	1.47E-04	1.04E+03	1.29E+03
20	NE201LB95	214	214	0.14	9.98E-04	4.15E-06	8.92E-01	7.83E-01	3.01E-03	2.76E-01	3.14E+00	7.94E-01	1.11E-04	7.79E+02	8.79E+02
25	NE251LB95	238	237	0.15	1.05E-03	4.42E-06	9.78E-01	8.51E-01	3.30E-03	3.03E-01	3.44E+00	8.70E-01	1.19E-04	8.46E+02	9.72E+02
32	NE321LB95	279	279	0.18	1.13E-03	4.85E-06	1.13E+00	9.48E-01	3.78E-03	3.50E-01	3.98E+00	1.00E+00	1.34E-04	9.60E+02	1.14E+03
40	NE401LB95	333	333	0.20	1.23E-03	5.41E-06	1.32E+00	1.08E+00	4.41E-03	4.11E-01	4.67E+00	1.17E+00	1.53E-04	1.11E+03	1.35E+03
50	NE502LT95	402	402	0.23	8.48E-04	6.27E-06	1.56E+00	2.27E-01	5.51E-03	4.88E-01	5.57E+00	1.39E+00	1.79E-04	1.30E+03	1.63E+03

NSW - Coffs Harbour

PRIMARY ENVIRONMENTAL INDICATORS		GWPT	GWPF	GWPB	GWPL	ODP	AP	EP - freshwater	EP - freshwater2	EP - marine	EP - terrestrial	POCP	ADPE	ADPF	WDP
Strength (MPa)	Mix Code	kg CO2 eq.	kg CO2 eq.	kg CO2 eq.	kg CO2 eq.	kg CFC 11 eq.	mol H+ eq.	kg PO43- eq.	kg P eq.	kg N eq.	mol N eq.	kg NMVOC eq.	kg Sb eq.	MJ	m3
20	NE202L8	218	218	0.17	9.40E-04	3.88E-06	8.83E-01	1.90E-01	2.25E-03	2.81E-01	3.15E+00	8.02E-01	1.11E-04	8.01E+02	8.98E+02
25	NE252L8	244	243	0.19	9.56E-04	4.15E-06	9.73E-01	2.01E-01	2.49E-03	3.10E-01	3.47E+00	8.82E-01	1.20E-04	8.71E+02	9.99E+02
32	NE322L8	275	274	0.20	9.74E-04	4.45E-06	1.08E+00	2.14E-01	2.77E-03	3.45E-01	3.87E+00	9.81E-01	1.31E-04	9.53E+02	1.12E+03
20	NE202L1	216	216	0.17	9.38E-04	3.85E-06	8.76E-01	1.89E-01	2.23E-03	2.79E-01	3.13E+00	7.97E-01	1.10E-04	7.96E+02	8.90E+02
25	NE252L1	237	237	0.18	9.52E-04	4.08E-06	9.50E-01	1.98E-01	2.43E-03	3.03E-01	3.39E+00	8.62E-01	1.18E-04	8.53E+02	9.73E+02
32	NE322L1	279	279	0.20	9.77E-04	4.49E-06	1.10E+00	2.16E-01	2.82E-03	3.50E-01	3.93E+00	9.96E-01	1.33E-04	9.66E+02	1.14E+03
40	NE402L1	337	337	0.23	1.02E-03	5.12E-06	1.30E+00	2.41E-01	3.37E-03	4.15E-01	4.66E+00	1.18E+00	1.54E-04	1.12E+03	1.37E+03
20	NE201L1	213	213	0.17	9.38E-04	3.83E-06	8.66E-01	1.87E-01	2.21E-03	2.75E-01	3.08E+00	7.86E-01	1.09E-04	7.88E+02	8.79E+02
25	NE251L1	240	240	0.18	9.54E-04	4.10E-06	9.60E-01	1.99E-01	2.45E-03	3.05E-01	3.42E+00	8.70E-01	1.18E-04	8.59E+02	9.83E+02
32	NE321L1	282	281	0.20	9.80E-04	4.53E-06	1.11E+00	2.17E-01	2.84E-03	3.52E-01	3.95E+00	1.00E+00	1.34E-04	9.72E+02	1.15E+03
20	NE202L2	216	216	0.17	9.38E-04	3.85E-06	8.76E-01	1.89E-01	2.23E-03	2.79E-01	3.13E+00	7.97E-01	1.10E-04	7.96E+02	8.90E+02
25	NE252L2	237	237	0.18	9.52E-04	4.08E-06	9.50E-01	1.98E-01	2.43E-03	3.03E-01	3.39E+00	8.62E-01	1.18E-04	8.53E+02	9.73E+02
32	NE322L2	270	270	0.20	9.74E-04	4.43E-06	1.07E+00	2.12E-01	2.74E-03	3.39E-01	3.81E+00	9.66E-01	1.30E-04	9.44E+02	1.10E+03
40	NE4022L2	340	340	0.23	1.02E-03	5.15E-06	1.31E+00	2.42E-01	3.40E-03	4.18E-01	4.70E+00	1.19E+00	1.55E-04	1.13E+03	1.38E+03
25	NE251L2	240	240	0.18	9.54E-04	4.10E-06	9.60E-01	1.99E-01	2.45E-03	3.05E-01	3.42E+00	8.70E-01	1.18E-04	8.59E+02	9.83E+02
32	NE321L2	273	273	0.20	9.76E-04	4.47E-06	1.08E+00	2.13E-01	2.77E-03	3.42E-01	3.84E+00	9.75E-01	1.31E-04	9.51E+02	1.12E+03
20	NE201LBX	221	220	0.18	9.48E-04	3.98E-06	8.97E-01	1.91E-01	2.29E-03	2.83E-01	3.17E+00	8.09E-01	1.12E-04	8.08E+02	9.04E+02
25	NE251LBX	246	246	0.19	9.63E-04	4.24E-06	9.87E-01	2.01E-01	2.53E-03	3.12E-01	3.50E+00	8.90E-01	1.21E-04	8.77E+02	1.01E+03
32	NE321LBX	283	283	0.21	9.85E-04	4.59E-06	1.12E+00	2.17E-01	2.86E-03	3.54E-01	3.97E+00	1.01E+00	1.35E-04	9.75E+02	1.15E+03

Resource use parameters - 1m³ of ViroDecs™ ready-mix concrete

NSW - Northern Rivers

PARAMETERS DESCRIBING RESOURCE USE		PERE	PERM	PERT	PENRE	PENRM	PENRT	SM	RSF	NRSF	FW
Strength (MPa)	Mix Code	MJ _{NCV}	MJ _{NCV}	MJ _{NCV}	MJ _{NCV}	MJ _{NCV}	MJ _{NCV}	kg	MJ _{NCV}	MJ _{NCV}	m ³
20	NE201LBMX	2.32E+01	2.08E-03	2.32E+01	7.34E+02	2.06E+02	9.40E+02	1.06E+02	1.38E-05	0.00E+00	1.26E-01
25	NE251LBMX	2.43E+01	2.10E-03	2.43E+01	7.66E+02	2.04E+02	9.70E+02	1.14E+02	1.40E-05	0.00E+00	1.32E-01
32	NE321LBMX	2.80E+01	2.35E-03	2.80E+01	8.71E+02	2.01E+02	1.07E+03	1.34E+02	1.57E-05	0.00E+00	1.51E-01
40	NE401LBMX	3.43E+01	2.77E-03	3.43E+01	1.04E+03	2.02E+02	1.24E+03	1.36E+02	1.84E-05	0.00E+00	1.82E-01
50	NE501LBMX	4.33E+01	3.67E-03	4.33E+01	1.29E+03	2.26E+02	1.51E+03	1.22E+02	2.67E-05	0.00E+00	2.26E-01
20	NE207LBMX	2.31E+01	2.08E-03	2.31E+01	7.33E+02	2.05E+02	9.37E+02	1.06E+02	1.38E-05	0.00E+00	1.26E-01
25	NE257LBMX	2.42E+01	2.10E-03	2.42E+01	7.64E+02	2.01E+02	9.65E+02	1.14E+02	1.40E-05	0.00E+00	1.31E-01
32	NE327LBMX	2.80E+01	2.35E-03	2.80E+01	8.70E+02	2.00E+02	1.07E+03	1.34E+02	1.57E-05	0.00E+00	1.50E-01
40	NE407LBMX	3.43E+01	2.77E-03	3.43E+01	1.04E+03	2.02E+02	1.25E+03	1.36E+02	1.84E-05	0.00E+00	1.82E-01
50	NE507LBMX	4.33E+01	3.67E-03	4.33E+01	1.29E+03	2.26E+02	1.51E+03	1.22E+02	2.67E-05	0.00E+00	2.26E-01
20	NE202L	2.32E+01	1.71E-03	2.32E+01	7.27E+02	1.71E+02	8.98E+02	6.58E+01	8.96E-06	0.00E+00	1.25E-01
20	NE202L100	2.35E+01	1.73E-03	2.35E+01	7.36E+02	1.72E+02	9.08E+02	6.68E+01	9.11E-06	0.00E+00	1.26E-01
20	NE202L120	2.35E+01	1.80E-03	2.35E+01	7.35E+02	1.74E+02	9.09E+02	6.68E+01	9.47E-06	0.00E+00	1.26E-01
25	NE252L	2.46E+01	1.94E-03	2.46E+01	7.66E+02	1.72E+02	9.37E+02	7.09E+01	1.02E-05	0.00E+00	1.32E-01
25	NE252L100	2.47E+01	1.98E-03	2.47E+01	7.70E+02	1.72E+02	9.42E+02	7.19E+01	9.66E-06	0.00E+00	1.32E-01
25	NE252L120	2.52E+01	2.05E-03	2.52E+01	7.82E+02	1.73E+02	9.56E+02	7.39E+01	1.07E-05	0.00E+00	1.35E-01
32	NE322L	2.78E+01	2.15E-03	2.78E+01	8.57E+02	1.72E+02	1.03E+03	8.20E+01	1.11E-05	0.00E+00	1.48E-01
32	NE322L100	2.85E+01	2.22E-03	2.85E+01	8.76E+02	1.73E+02	1.05E+03	8.50E+01	1.14E-05	0.00E+00	1.51E-01
32	NE322L120	2.84E+01	2.15E-03	2.84E+01	8.74E+02	1.82E+02	1.06E+03	8.50E+01	1.31E-05	0.00E+00	1.51E-01
40	NE402L	3.23E+01	2.58E-03	3.23E+01	9.82E+02	1.69E+02	1.15E+03	9.92E+01	1.33E-05	0.00E+00	1.70E-01
40	NE402L100	3.30E+01	2.65E-03	3.30E+01	1.00E+03	1.69E+02	1.17E+03	1.01E+02	1.36E-05	0.00E+00	1.74E-01
40	NE402L120	3.30E+01	2.58E-03	3.30E+01	1.00E+03	1.81E+02	1.18E+03	1.01E+02	1.57E-05	0.00E+00	1.74E-01
50	NE502L	4.23E+01	3.58E-03	4.23E+01	1.26E+03	1.67E+02	1.43E+03	1.18E+02	1.84E-05	0.00E+00	2.20E-01
50	NE502L100	4.23E+01	3.58E-03	4.23E+01	1.26E+03	1.80E+02	1.44E+03	1.18E+02	2.11E-05	0.00E+00	2.20E-01
50	NE502L120	4.23E+01	3.58E-03	4.23E+01	1.26E+03	1.87E+02	1.45E+03	1.18E+02	2.17E-05	0.00E+00	2.20E-01
20	NE201L	2.35E+01	1.75E-03	2.35E+01	7.35E+02	1.72E+02	9.07E+02	6.68E+01	9.22E-06	0.00E+00	1.26E-01
20	NE201L100	2.35E+01	1.80E-03	2.35E+01	7.34E+02	1.73E+02	9.07E+02	6.68E+01	9.42E-06	0.00E+00	1.26E-01
20	NE201L120	2.35E+01	1.80E-03	2.35E+01	7.33E+02	1.80E+02	9.13E+02	6.68E+01	1.08E-05	0.00E+00	1.26E-01
25	NE251L	2.52E+01	2.01E-03	2.52E+01	7.82E+02	1.73E+02	9.54E+02	7.39E+01	1.05E-05	0.00E+00	1.35E-01
25	NE251L100	2.52E+01	2.05E-03	2.52E+01	7.81E+02	1.73E+02	9.54E+02	7.39E+01	1.07E-05	0.00E+00	1.35E-01

PARAMETERS DESCRIBING RESOURCE USE		PERE	PERM	PERT	PENRE	PENRM	PENRT	SM	RSF	NRSF	FW
Strength (MPa)	Mix Code	MJ _{NCV}	MJ _{NCV}	MJ _{NCV}	MJ _{NCV}	MJ _{NCV}	MJ _{NCV}	kg	MJ _{NCV}	MJ _{NCV}	m ³
25	NE251L120	2.51E+01	2.05E-03	2.51E+01	7.80E+02	1.73E+02	9.53E+02	7.39E+01	1.07E-05	0.00E+00	1.34E-01
32	NE321L	2.84E+01	2.24E-03	2.84E+01	8.74E+02	1.74E+02	1.05E+03	8.50E+01	1.15E-05	0.00E+00	1.51E-01
32	NE321L100	2.91E+01	2.31E-03	2.91E+01	8.93E+02	1.73E+02	1.07E+03	8.70E+01	1.19E-05	0.00E+00	1.55E-01
32	NE321L120	2.91E+01	2.31E-03	2.91E+01	8.93E+02	1.84E+02	1.08E+03	8.70E+01	1.38E-05	0.00E+00	1.55E-01
40	NE401L	3.30E+01	2.68E-03	3.30E+01	1.00E+03	1.71E+02	1.17E+03	1.01E+02	1.37E-05	0.00E+00	1.74E-01
40	NE401L100	3.36E+01	2.75E-03	3.36E+01	1.02E+03	1.70E+02	1.19E+03	1.04E+02	1.41E-05	0.00E+00	1.77E-01
40	NE401L120	3.36E+01	2.68E-03	3.36E+01	1.02E+03	1.82E+02	1.20E+03	1.04E+02	1.62E-05	0.00E+00	1.77E-01
50	NE501L	4.34E+01	3.67E-03	4.34E+01	1.29E+03	1.69E+02	1.46E+03	1.22E+02	1.89E-05	0.00E+00	2.25E-01
50	NE501L100	4.34E+01	3.67E-03	4.34E+01	1.29E+03	1.83E+02	1.47E+03	1.22E+02	2.17E-05	0.00E+00	2.25E-01
50	NE501L120	4.33E+01	3.67E-03	4.34E+01	1.29E+03	1.90E+02	1.48E+03	1.22E+02	2.23E-05	0.00E+00	2.25E-01
50	NE501LDUF	4.13E+01	3.60E-03	4.13E+01	1.24E+03	2.44E+02	1.48E+03	1.32E+02	2.16E-05	0.00E+00	2.17E-01
40	NE401L180	3.29E+01	2.68E-03	3.29E+01	9.99E+02	2.03E+02	1.20E+03	8.82E+01	1.88E-05	0.00E+00	1.74E-01
40	NE401L220	3.29E+01	2.68E-03	3.29E+01	9.97E+02	2.13E+02	1.21E+03	8.82E+01	1.98E-05	0.00E+00	1.73E-01
40	NE4022A41	3.30E+01	2.65E-03	3.30E+01	1.00E+03	1.67E+02	1.17E+03	1.01E+02	1.36E-05	0.00E+00	1.74E-01
40	NE4022A42	3.19E+01	2.58E-03	3.19E+01	9.71E+02	1.89E+02	1.16E+03	8.52E+01	1.57E-05	0.00E+00	1.69E-01
50	NE501L200	4.34E+01	3.67E-03	4.34E+01	1.29E+03	2.13E+02	1.50E+03	1.22E+02	2.65E-05	0.00E+00	2.26E-01
50	NE502L200	4.23E+01	3.58E-03	4.23E+01	1.26E+03	2.15E+02	1.48E+03	1.18E+02	2.57E-05	0.00E+00	2.20E-01

NSW - Newcastle

PARAMETERS DESCRIBING RESOURCE USE		PERE	PERM	PERT	PENRE	PENRM	PENRT	SM	RSF	NRSF	FW
Strength (MPa)	Mix Code	MJ _{NCV}	MJ _{NCV}	MJ _{NCV}	MJ _{NCV}	MJ _{NCV}	MJ _{NCV}	kg	MJ _{NCV}	MJ _{NCV}	m ³
20	NE202L195	2.25E+01	1.20E-03	2.25E+01	7.13E+02	1.98E+02	9.11E+02	1.03E+02	1.49E-05	0.00E+00	1.22E-01
25	NE252L195	2.48E+01	1.28E-03	2.48E+01	7.77E+02	1.97E+02	9.74E+02	1.14E+02	1.59E-05	0.00E+00	1.34E-01
32	NE322L195	2.82E+01	1.38E-03	2.82E+01	8.70E+02	1.93E+02	1.06E+03	1.23E+02	1.72E-05	0.00E+00	1.50E-01
40	NE402L195	3.24E+01	1.52E-03	3.24E+01	9.89E+02	1.89E+02	1.18E+03	1.37E+02	1.90E-05	0.00E+00	1.72E-01
50	NE502L195	3.70E+01	1.68E-03	3.70E+01	1.12E+03	1.87E+02	1.31E+03	1.58E+02	2.11E-05	0.00E+00	1.95E-01
20	NE202L295	2.25E+01	1.20E-03	2.25E+01	7.13E+02	2.00E+02	9.13E+02	1.03E+02	1.51E-05	0.00E+00	1.22E-01
25	NE252L295	2.48E+01	1.28E-03	2.48E+01	7.77E+02	1.99E+02	9.76E+02	1.14E+02	1.62E-05	0.00E+00	1.34E-01

PARAMETERS DESCRIBING RESOURCE USE		PERE	PERM	PERT	PENRE	PENRM	PENRT	SM	RSF	NRSF	FW
Strength (MPa)	Mix Code	MJ _{NCV}	MJ _{NCV}	MJ _{NCV}	MJ _{NCV}	MJ _{NCV}	MJ _{NCV}	kg	MJ _{NCV}	MJ _{NCV}	m ³
32	NE322L295	2.82E+01	1.38E-03	2.82E+01	8.70E+02	1.95E+02	1.07E+03	1.23E+02	1.76E-05	0.00E+00	1.50E-01
40	NE402L295	3.24E+01	1.52E-03	3.24E+01	9.90E+02	1.91E+02	1.18E+03	1.37E+02	1.95E-05	0.00E+00	1.72E-01
50	NE502L295	3.70E+01	1.68E-03	3.70E+01	1.12E+03	1.89E+02	1.31E+03	1.58E+02	2.17E-05	0.00E+00	1.95E-01
20	NE202R195	2.25E+01	5.49E-04	2.25E+01	7.13E+02	1.90E+02	9.02E+02	1.03E+02	1.34E-05	0.00E+00	1.22E-01
25	NE252R195	2.48E+01	5.49E-04	2.48E+01	7.77E+02	1.87E+02	9.64E+02	1.14E+02	1.42E-05	0.00E+00	1.34E-01
32	NE322R195	2.81E+01	5.49E-04	2.81E+01	8.70E+02	1.82E+02	1.05E+03	1.23E+02	1.53E-05	0.00E+00	1.50E-01
40	NE402R195	3.24E+01	5.49E-04	3.24E+01	9.89E+02	1.76E+02	1.16E+03	1.37E+02	1.68E-05	0.00E+00	1.72E-01
20	NE201L195	2.30E+01	1.22E-03	2.30E+01	7.26E+02	2.00E+02	9.26E+02	1.07E+02	1.52E-05	0.00E+00	1.25E-01
25	NE251L195	2.53E+01	1.30E-03	2.53E+01	7.89E+02	1.98E+02	9.87E+02	1.18E+02	1.62E-05	0.00E+00	1.36E-01
32	NE321L195	2.91E+01	1.40E-03	2.91E+01	8.94E+02	1.95E+02	1.09E+03	1.22E+02	1.75E-05	0.00E+00	1.55E-01
40	NE401L195	3.30E+01	1.54E-03	3.30E+01	1.01E+03	1.91E+02	1.20E+03	1.40E+02	1.93E-05	0.00E+00	1.75E-01
50	NE501L195	3.76E+01	1.70E-03	3.76E+01	1.13E+03	1.87E+02	1.32E+03	1.61E+02	2.14E-05	0.00E+00	1.98E-01
20	NE201L295	2.30E+01	1.22E-03	2.30E+01	7.26E+02	2.01E+02	9.27E+02	1.07E+02	1.55E-05	0.00E+00	1.25E-01
25	NE251L295	2.53E+01	1.30E-03	2.53E+01	7.89E+02	2.00E+02	9.89E+02	1.18E+02	1.65E-05	0.00E+00	1.36E-01
32	NE321L295	2.91E+01	1.40E-03	2.91E+01	8.95E+02	1.97E+02	1.09E+03	1.22E+02	1.79E-05	0.00E+00	1.55E-01
40	NE401L295	3.30E+01	1.54E-03	3.30E+01	1.01E+03	1.93E+02	1.20E+03	1.40E+02	1.98E-05	0.00E+00	1.75E-01
50	NE501L295	3.76E+01	1.70E-03	3.76E+01	1.13E+03	1.90E+02	1.32E+03	1.61E+02	2.20E-05	0.00E+00	1.98E-01
20	NE201R195	2.30E+01	5.49E-04	2.30E+01	7.26E+02	1.90E+02	9.16E+02	1.07E+02	1.36E-05	0.00E+00	1.25E-01
25	NE251R195	2.53E+01	5.49E-04	2.53E+01	7.89E+02	1.88E+02	9.76E+02	1.18E+02	1.45E-05	0.00E+00	1.36E-01
32	NE321R195	2.91E+01	5.49E-04	2.91E+01	8.94E+02	1.83E+02	1.08E+03	1.22E+02	1.56E-05	0.00E+00	1.55E-01
40	NE401R195	3.30E+01	5.49E-04	3.30E+01	1.01E+03	1.78E+02	1.18E+03	1.40E+02	1.70E-05	0.00E+00	1.75E-01
20	NE201LB95	2.25E+01	1.31E-03	2.25E+01	7.23E+02	2.32E+02	9.54E+02	1.50E+02	1.87E-05	0.00E+00	1.25E-01
25	NE251LB95	2.48E+01	1.38E-03	2.48E+01	7.87E+02	2.32E+02	1.02E+03	1.55E+02	1.99E-05	0.00E+00	1.36E-01
32	NE321LB95	2.89E+01	1.47E-03	2.89E+01	8.99E+02	2.33E+02	1.13E+03	1.52E+02	2.14E-05	0.00E+00	1.57E-01
40	NE401LB95	3.42E+01	1.61E-03	3.42E+01	1.04E+03	2.33E+02	1.28E+03	1.54E+02	2.36E-05	0.00E+00	1.83E-01
50	NE502LT95	4.14E+01	5.49E-04	4.14E+01	1.24E+03	2.09E+02	1.45E+03	1.41E+02	2.47E-05	0.00E+00	2.17E-01

NSW - Coffs Harbour

PARAMETERS DESCRIBING RESOURCE USE		PERE	PERM	PERT	PENRE	PENRM	PENRT	SM	RSF	NRSF	FW
Strength (MPa)	Mix Code	MJ _{Ncv}	MJ _{Ncv}	MJ _{Ncv}	MJ _{Ncv}	MJ _{Ncv}	MJ _{Ncv}	kg	MJ _{Ncv}	MJ _{Ncv}	m ³
20	NE202L8	2.32E+01	1.10E-03	2.32E+01	7.32E+02	2.28E+02	9.60E+02	1.11E+02	1.85E-05	0.00E+00	1.26E-01
25	NE252L8	2.58E+01	1.10E-03	2.58E+01	8.03E+02	2.22E+02	1.03E+03	1.20E+02	1.91E-05	0.00E+00	1.39E-01
32	NE322L8	2.88E+01	1.10E-03	2.88E+01	8.85E+02	2.20E+02	1.10E+03	1.18E+02	1.98E-05	0.00E+00	1.54E-01
20	NE202L1	2.30E+01	1.10E-03	2.30E+01	7.27E+02	2.29E+02	9.56E+02	1.07E+02	1.84E-05	0.00E+00	1.25E-01
25	NE252L1	2.51E+01	1.10E-03	2.51E+01	7.85E+02	2.25E+02	1.01E+03	1.15E+02	1.89E-05	0.00E+00	1.36E-01
32	NE322L1	2.93E+01	1.10E-03	2.93E+01	8.99E+02	2.20E+02	1.12E+03	1.17E+02	1.99E-05	0.00E+00	1.56E-01
40	NE402L1	3.50E+01	1.10E-03	3.50E+01	1.06E+03	2.08E+02	1.27E+03	1.39E+02	2.15E-05	0.00E+00	1.85E-01
20	NE201L1	2.27E+01	1.10E-03	2.27E+01	7.19E+02	2.27E+02	9.46E+02	1.20E+02	1.85E-05	0.00E+00	1.24E-01
25	NE251L1	2.53E+01	1.10E-03	2.53E+01	7.91E+02	2.24E+02	1.01E+03	1.22E+02	1.91E-05	0.00E+00	1.37E-01
32	NE321L1	2.94E+01	1.10E-03	2.95E+01	9.05E+02	2.20E+02	1.12E+03	1.28E+02	2.01E-05	0.00E+00	1.57E-01
20	NE202L2	2.30E+01	1.10E-03	2.30E+01	7.27E+02	2.29E+02	9.56E+02	1.07E+02	1.84E-05	0.00E+00	1.25E-01
25	NE252L2	2.51E+01	1.10E-03	2.51E+01	7.85E+02	2.25E+02	1.01E+03	1.15E+02	1.89E-05	0.00E+00	1.36E-01
32	NE322L2	2.84E+01	1.10E-03	2.84E+01	8.76E+02	2.17E+02	1.09E+03	1.30E+02	1.99E-05	0.00E+00	1.52E-01
40	NE4022L2	3.52E+01	1.10E-03	3.53E+01	1.07E+03	2.08E+02	1.27E+03	1.40E+02	2.15E-05	0.00E+00	1.86E-01
25	NE251L2	2.53E+01	1.10E-03	2.53E+01	7.91E+02	2.24E+02	1.01E+03	1.22E+02	1.91E-05	0.00E+00	1.37E-01
32	NE321L2	2.86E+01	1.10E-03	2.86E+01	8.84E+02	2.17E+02	1.10E+03	1.37E+02	2.01E-05	0.00E+00	1.54E-01
20	NE201LBX	2.32E+01	1.10E-03	2.32E+01	7.39E+02	2.38E+02	9.77E+02	1.63E+02	1.95E-05	0.00E+00	1.28E-01
25	NE251LBX	2.57E+01	1.10E-03	2.57E+01	8.08E+02	2.34E+02	1.04E+03	1.68E+02	2.01E-05	0.00E+00	1.40E-01
32	NE321LBX	2.93E+01	1.10E-03	2.93E+01	9.08E+02	2.32E+02	1.14E+03	1.62E+02	2.08E-05	0.00E+00	1.58E-01

Waste categories and output flows - 1m³ of ViroDecs™ ready-mix concrete

NSW - Northern Rivers

WASTE CATEGORIES AND OUTPUT FLOWS		HWD	NHWD	RWD	CFR	MFR	MFEE	EE - e	EE - t
Strength (MPa)	Mix Code	kg	kg	kg	kg	kg	kg	MJ	MJ
20	NE201LBMX	5.23E+01	9.44E+00	3.37E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE251LBMX	5.29E+01	9.70E+00	3.41E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE321LBMX	5.92E+01	1.09E+01	3.82E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE401LBMX	6.97E+01	1.27E+01	4.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50	NE501LBMX	1.04E+02	1.60E+01	5.99E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	NE207LBMX	5.23E+01	9.43E+00	3.37E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE257LBMX	5.29E+01	9.68E+00	3.41E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE327LBMX	5.92E+01	1.08E+01	3.82E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE407LBMX	6.97E+01	1.27E+01	4.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50	NE507LBMX	1.04E+02	1.60E+01	5.99E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	NE202L	2.76E+01	8.70E+00	2.73E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	NE202L100	2.80E+01	8.80E+00	2.77E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	NE202L120	2.91E+01	8.91E+00	2.88E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE252L	3.13E+01	9.36E+00	3.10E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE252L100	3.13E+01	9.46E+00	3.17E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE252L120	3.32E+01	9.66E+00	3.28E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE322L	3.46E+01	1.03E+01	3.43E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE322L100	3.57E+01	1.06E+01	3.54E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE322L120	4.48E+01	1.05E+01	3.46E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE402L	4.16E+01	1.19E+01	4.13E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE402L100	4.27E+01	1.22E+01	4.24E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE402L120	5.39E+01	1.21E+01	4.17E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50	NE502L	5.76E+01	1.55E+01	5.72E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50	NE502L100	7.12E+01	1.55E+01	5.76E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50	NE502L120	7.43E+01	1.55E+01	5.76E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	NE201L	2.84E+01	8.82E+00	2.80E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	NE201L100	2.91E+01	8.89E+00	2.88E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	NE201L120	3.59E+01	8.90E+00	2.90E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE251L	3.25E+01	9.58E+00	3.21E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE251L100	3.32E+01	9.64E+00	3.28E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

WASTE CATEGORIES AND OUTPUT FLOWS		HWD	NHWD	RWD	CFR	MFR	MFEE	EE - e	EE - t
Strength (MPa)	Mix Code	kg	kg	kg	kg	kg	kg	MJ	MJ
25	NE251L120	3.32E+01	9.64E+00	3.28E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE321L	3.61E+01	1.06E+01	3.58E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE321L100	3.72E+01	1.09E+01	3.69E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE321L120	4.74E+01	1.09E+01	3.72E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE401L	4.31E+01	1.22E+01	4.28E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE401L100	4.42E+01	1.24E+01	4.39E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE401L120	5.56E+01	1.24E+01	4.31E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50	NE501L	5.91E+01	1.59E+01	5.87E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50	NE501L100	7.30E+01	1.59E+01	5.90E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50	NE501L120	7.64E+01	1.59E+01	5.91E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50	NE501LDUF	1.14E+02	1.55E+01	5.90E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE401L180	6.84E+01	1.23E+01	4.35E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE401L220	7.34E+01	1.23E+01	4.36E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE4022A41	4.27E+01	1.22E+01	4.24E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE4022A42	5.39E+01	1.19E+01	4.17E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50	NE501L200	9.73E+01	1.60E+01	5.97E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50	NE502L200	9.47E+01	1.56E+01	5.82E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

NSW - Newcastle

WASTE CATEGORIES AND OUTPUT FLOWS		HWD	NHWD	RWD	CFR	MFR	MFEE	EE - e	EE - t
Strength (MPa)	Mix Code	kg	kg	kg	kg	kg	kg	MJ	MJ
20	NE202L195	5.27E+01	8.55E+00	2.71E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE252L195	5.54E+01	9.13E+00	2.84E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE322L195	5.88E+01	9.94E+00	3.01E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE402L195	6.34E+01	1.10E+01	3.24E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50	NE502L195	6.88E+01	1.22E+01	3.51E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	NE202L295	5.42E+01	8.55E+00	2.71E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE252L295	5.70E+01	9.14E+00	2.85E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

WASTE CATEGORIES AND OUTPUT FLOWS		HWD	NHWD	RWD	CFR	MFR	MFEE	EE - e	EE - t
Strength (MPa)	Mix Code	kg	kg	kg	kg	kg	kg	MJ	MJ
32	NE322L295	6.07E+01	9.95E+00	3.02E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE402L295	6.56E+01	1.10E+01	3.25E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50	NE502L295	7.14E+01	1.22E+01	3.52E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	NE202R195	4.42E+01	7.45E+00	1.68E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE252R195	4.58E+01	7.90E+00	1.69E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE322R195	4.79E+01	8.53E+00	1.69E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE402R195	5.06E+01	9.35E+00	1.70E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	NE201L195	5.35E+01	8.67E+00	2.75E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE251L195	5.62E+01	9.24E+00	2.88E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE321L195	5.96E+01	1.01E+01	3.05E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE401L195	6.42E+01	1.11E+01	3.28E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50	NE501L195	6.96E+01	1.23E+01	3.55E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	NE201L295	5.50E+01	8.67E+00	2.75E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE251L295	5.79E+01	9.24E+00	2.88E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE321L295	6.15E+01	1.01E+01	3.06E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE401L295	6.64E+01	1.11E+01	3.29E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50	NE501L295	7.22E+01	1.23E+01	3.55E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	NE201R195	4.46E+01	7.53E+00	1.68E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE251R195	4.63E+01	7.96E+00	1.69E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE321R195	4.83E+01	8.68E+00	1.70E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE401R195	5.11E+01	9.45E+00	1.70E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	NE201LB95	6.86E+01	8.83E+00	2.93E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE251LB95	7.20E+01	9.40E+00	3.05E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE321LB95	7.66E+01	1.03E+01	3.21E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE401LB95	8.33E+01	1.15E+01	3.44E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50	NE502LT95	8.24E+01	1.11E+01	1.79E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

NSW - Coffs Harbour

WASTE CATEGORIES AND OUTPUT FLOWS		HWD	NHWD	RWD	CFR	MFR	MFEE	EE - e	EE - t
Strength (MPa)	Mix Code	kg	kg	kg	kg	kg	kg	MJ	MJ
20	NE202L8	6.82E+01	9.26E+00	3.30E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE252L8	6.89E+01	9.74E+00	3.30E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE322L8	6.96E+01	1.03E+01	3.31E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	NE202L1	6.81E+01	9.22E+00	3.30E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE252L1	6.87E+01	9.62E+00	3.30E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE322L1	6.97E+01	1.04E+01	3.31E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE402L1	7.13E+01	1.15E+01	3.31E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	NE201L1	6.83E+01	9.16E+00	3.30E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE251L1	6.89E+01	9.65E+00	3.30E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE321L1	6.99E+01	1.04E+01	3.31E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	NE202L2	6.81E+01	9.22E+00	3.30E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE252L2	6.87E+01	9.62E+00	3.30E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE322L2	6.97E+01	1.02E+01	3.31E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE4022L2	7.14E+01	1.15E+01	3.31E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE251L2	6.89E+01	9.65E+00	3.30E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE321L2	6.99E+01	1.03E+01	3.31E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	NE201LBX	6.93E+01	9.31E+00	3.31E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE251LBX	6.99E+01	9.78E+00	3.31E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE321LBX	7.06E+01	1.05E+01	3.31E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Additional indicators 1m³ of ViroDecs™ ready-mix concrete

NSW - Northern Rivers

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS		PM	IRP	ETP-fw	HTP-c	HTP-nc	SQP
Strength (MPa)	Mix Code	disease incidence	kBq U-235 eq	CTUe	CTUh	CTUh	dimensionless
20	NE201LBMX	5.79E-06	5.40E+01	1.47E+03	3.28E-08	1.46E-06	2.01E+02
25	NE251LBMX	6.04E-06	5.46E+01	1.53E+03	3.41E-08	1.52E-06	2.10E+02
32	NE321LBMX	6.88E-06	6.12E+01	1.72E+03	3.87E-08	1.74E-06	2.40E+02
40	NE401LBMX	8.29E-06	7.19E+01	2.04E+03	4.64E-08	2.11E-06	2.89E+02
50	NE501LBMX	1.03E-05	1.18E+02	2.50E+03	6.06E-08	2.69E-06	3.58E+02
20	NE207LBMX	5.78E-06	5.40E+01	1.47E+03	3.28E-08	1.46E-06	2.01E+02
25	NE257LBMX	6.02E-06	5.46E+01	1.53E+03	3.40E-08	1.52E-06	2.09E+02
32	NE327LBMX	6.88E-06	6.12E+01	1.72E+03	3.87E-08	1.74E-06	2.39E+02
40	NE407LBMX	8.29E-06	7.19E+01	2.04E+03	4.64E-08	2.11E-06	2.89E+02
50	NE507LBMX	1.03E-05	1.18E+02	2.50E+03	6.06E-08	2.69E-06	3.58E+02
20	NE202L	5.65E-06	1.44E+01	1.44E+03	2.84E-08	1.35E-06	1.99E+02
20	NE202L100	5.73E-06	1.47E+01	1.46E+03	2.88E-08	1.37E-06	2.02E+02
20	NE202L120	5.73E-06	1.52E+01	1.46E+03	2.88E-08	1.37E-06	2.02E+02
25	NE252L	5.96E-06	1.64E+01	1.51E+03	3.00E-08	1.43E-06	2.10E+02
25	NE252L100	6.00E-06	1.45E+01	1.52E+03	3.00E-08	1.44E-06	2.12E+02
25	NE252L120	6.10E-06	1.72E+01	1.55E+03	3.08E-08	1.47E-06	2.15E+02
32	NE322L	6.70E-06	1.80E+01	1.68E+03	3.37E-08	1.61E-06	2.36E+02
32	NE322L100	6.85E-06	1.86E+01	1.72E+03	3.44E-08	1.65E-06	2.42E+02
32	NE322L120	6.87E-06	3.82E+01	1.72E+03	3.64E-08	1.70E-06	2.41E+02
40	NE402L	7.69E-06	2.16E+01	1.91E+03	3.87E-08	1.86E-06	2.72E+02
40	NE402L100	7.86E-06	2.22E+01	1.95E+03	3.95E-08	1.90E-06	2.77E+02
40	NE402L120	7.90E-06	4.59E+01	1.95E+03	4.20E-08	1.96E-06	2.77E+02
50	NE502L	9.91E-06	2.98E+01	2.42E+03	5.00E-08	2.42E-06	3.50E+02
50	NE502L100	9.97E-06	5.67E+01	2.42E+03	5.28E-08	2.48E-06	3.50E+02
50	NE502L120	9.98E-06	6.29E+01	2.42E+03	5.35E-08	2.50E-06	3.50E+02
20	NE201L	5.72E-06	1.48E+01	1.46E+03	2.88E-08	1.37E-06	2.02E+02
20	NE201L100	5.72E-06	1.51E+01	1.46E+03	2.88E-08	1.37E-06	2.01E+02
20	NE201L120	5.74E-06	2.86E+01	1.46E+03	3.02E-08	1.40E-06	2.01E+02
25	NE251L	6.10E-06	1.70E+01	1.55E+03	3.07E-08	1.47E-06	2.15E+02
25	NE251L100	6.09E-06	1.72E+01	1.55E+03	3.07E-08	1.47E-06	2.15E+02

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS		PM	IRP	ETP-fw	HTP-c	HTP-nc	SQP
Strength (MPa)	Mix Code	disease incidence	kBq U-235 eq	CTUe	CTUh	CTUh	dimensionless
25	NE251L120	6.09E-06	1.72E+01	1.55E+03	3.07E-08	1.47E-06	2.15E+02
32	NE321L	6.83E-06	1.87E+01	1.72E+03	3.44E-08	1.65E-06	2.41E+02
32	NE321L100	6.99E-06	1.93E+01	1.75E+03	3.52E-08	1.69E-06	2.47E+02
32	NE321L120	7.03E-06	3.94E+01	1.75E+03	3.73E-08	1.74E-06	2.46E+02
40	NE401L	7.85E-06	2.23E+01	1.95E+03	3.95E-08	1.90E-06	2.77E+02
40	NE401L100	7.99E-06	2.29E+01	1.98E+03	4.02E-08	1.94E-06	2.82E+02
40	NE401L120	8.03E-06	4.72E+01	1.98E+03	4.28E-08	1.99E-06	2.82E+02
50	NE501L	1.02E-05	3.08E+01	2.48E+03	5.12E-08	2.48E-06	3.59E+02
50	NE501L100	1.02E-05	5.82E+01	2.48E+03	5.41E-08	2.54E-06	3.59E+02
50	NE501L120	1.02E-05	6.50E+01	2.48E+03	5.49E-08	2.56E-06	3.59E+02
50	NE501LDUF	9.99E-06	1.32E+02	2.41E+03	6.01E-08	2.67E-06	3.44E+02
40	NE401L180	7.94E-06	7.25E+01	1.95E+03	4.48E-08	2.02E-06	2.77E+02
40	NE401L220	7.96E-06	8.24E+01	1.96E+03	4.58E-08	2.04E-06	2.76E+02
40	NE4022A41	7.85E-06	2.22E+01	1.94E+03	3.95E-08	1.90E-06	2.77E+02
40	NE4022A42	7.66E-06	4.59E+01	1.90E+03	4.09E-08	1.90E-06	2.69E+02
50	NE501L200	1.03E-05	1.06E+02	2.49E+03	5.93E-08	2.66E-06	3.59E+02
50	NE502L200	1.01E-05	1.03E+02	2.44E+03	5.79E-08	2.59E-06	3.51E+02

NSW - Newcastle

WASTE CATEGORIES AND OUTPUT FLOWS		HWD	NHWD	RWD	CFR	MFR	MFEE	EE - e	EE - t
Strength (MPa)	Mix Code	kg	kg	kg	kg	kg	kg	MJ	MJ
20	NE202L195	5.27E+01	8.55E+00	2.71E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE252L195	5.54E+01	9.13E+00	2.84E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE322L195	5.88E+01	9.94E+00	3.01E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE402L195	6.34E+01	1.10E+01	3.24E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50	NE502L195	6.88E+01	1.22E+01	3.51E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	NE202L295	5.42E+01	8.55E+00	2.71E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

WASTE CATEGORIES AND OUTPUT FLOWS		HWD	NHWD	RWD	CFR	MFR	MFEE	EE - e	EE - t
Strength (MPa)	Mix Code	kg	kg	kg	kg	kg	kg	MJ	MJ
25	NE252L295	5.70E+01	9.14E+00	2.85E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE322L295	6.07E+01	9.95E+00	3.02E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE402L295	6.56E+01	1.10E+01	3.25E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50	NE502L295	7.14E+01	1.22E+01	3.52E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	NE202R195	4.42E+01	7.45E+00	1.68E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE252R195	4.58E+01	7.90E+00	1.69E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE322R195	4.79E+01	8.53E+00	1.69E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE402R195	5.06E+01	9.35E+00	1.70E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	NE201L195	5.35E+01	8.67E+00	2.75E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE251L195	5.62E+01	9.24E+00	2.88E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE321L195	5.96E+01	1.01E+01	3.05E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE401L195	6.42E+01	1.11E+01	3.28E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50	NE501L195	6.96E+01	1.23E+01	3.55E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	NE201L295	5.50E+01	8.67E+00	2.75E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE251L295	5.79E+01	9.24E+00	2.88E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE321L295	6.15E+01	1.01E+01	3.06E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE401L295	6.64E+01	1.11E+01	3.29E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50	NE501L295	7.22E+01	1.23E+01	3.55E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	NE201R195	4.46E+01	7.53E+00	1.68E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE251R195	4.63E+01	7.96E+00	1.69E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE321R195	4.83E+01	8.68E+00	1.70E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE401R195	5.11E+01	9.45E+00	1.70E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	NE201LB95	6.86E+01	8.83E+00	2.93E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	NE251LB95	7.20E+01	9.40E+00	3.05E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	NE321LB95	7.66E+01	1.03E+01	3.21E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
40	NE401LB95	8.33E+01	1.15E+01	3.44E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50	NE502LT95	8.24E+01	1.11E+01	1.79E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

NSW - Coffs Harbour

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS		PM	IRP	ETP-fw	HTP-c	HTP-nc	SQP
Strength (MPa)	Mix Code	disease incidence	kBq U-235 eq	CTUe	CTUh	CTUh	dimensionless
20	NE202L8	5.69E-06	1.64E+01	1.45E+03	2.87E-08	1.36E-06	2.01E+02
25	NE252L8	6.25E-06	1.84E+01	1.58E+03	3.15E-08	1.50E-06	2.21E+02
32	NE322L8	6.92E-06	2.03E+01	1.74E+03	3.48E-08	1.67E-06	2.44E+02
20	NE202L1	5.65E-06	1.61E+01	1.44E+03	2.84E-08	1.35E-06	1.99E+02
25	NE252L1	6.11E-06	1.78E+01	1.55E+03	3.08E-08	1.47E-06	2.16E+02
32	NE322L1	7.03E-06	2.06E+01	1.76E+03	3.54E-08	1.70E-06	2.48E+02
40	NE402L1	8.31E-06	2.53E+01	2.05E+03	4.19E-08	2.02E-06	2.93E+02
20	NE201L1	5.58E-06	1.67E+01	1.43E+03	2.82E-08	1.34E-06	1.97E+02
25	NE251L1	6.16E-06	1.84E+01	1.56E+03	3.11E-08	1.48E-06	2.17E+02
32	NE321L1	7.08E-06	2.13E+01	1.77E+03	3.57E-08	1.71E-06	2.50E+02
20	NE202L2	5.65E-06	1.61E+01	1.44E+03	2.84E-08	1.35E-06	1.99E+02
25	NE252L2	6.11E-06	1.78E+01	1.55E+03	3.08E-08	1.47E-06	2.16E+02
32	NE322L2	6.84E-06	2.07E+01	1.71E+03	3.45E-08	1.65E-06	2.42E+02
40	NE4022L2	8.37E-06	2.55E+01	2.07E+03	4.22E-08	2.03E-06	2.96E+02
25	NE251L2	6.16E-06	1.84E+01	1.56E+03	3.11E-08	1.48E-06	2.17E+02
32	NE321L2	6.90E-06	2.13E+01	1.73E+03	3.49E-08	1.67E-06	2.44E+02
20	NE201LBX	5.76E-06	1.96E+01	1.49E+03	2.93E-08	1.39E-06	2.02E+02
25	NE251LBX	6.31E-06	2.13E+01	1.62E+03	3.21E-08	1.53E-06	2.22E+02
32	NE321LBX	7.12E-06	2.33E+01	1.80E+03	3.61E-08	1.73E-06	2.50E+02

Other life cycle stages not included in this EPD

While the LCA study and EPD only consider the cradle to gate environmental impacts of Holcim's ready-mix concrete, practitioners using the EPD for the purpose of whole-of-life building studies or the functional comparison of different building products on a whole-of-life basis will consider concrete's other life cycle stages. Some of the environmental impacts of benefits associated with other life cycle stages not included in this EPD are described in the following sections.

Lifetime absorption of CO₂

Carbonation is a natural process whereby concrete absorbs carbon dioxide (CO₂) from the atmosphere through a chemical reaction between the CO₂ in the ambient air and hydration products within the concrete (CaOH₂). Ready-mix concrete can be subject to carbonation from the use stage onward (i.e. after construction and curing). From a life cycle impact accounting perspective, this process can also be referred to as 'reabsorption', since the CO₂ emitted during the cement manufacturing process can be partly offset by the lifetime absorption of CO₂, therefore reducing the net CO₂ emissions associated with concrete over its lifetime.

The carbonisation process is a commonly known process in building design and is typically taken into consideration by engineers when specifying special-class concrete.

The total amount of CO₂ absorption during the life cycle of concrete is subject to a range of factors and varies over time. The calculation has been standardised in the British and European Standard BS EN 16757:2017 *Sustainability of construction works – Environmental Product Declarations – Product Category Rules for concrete and concrete elements*. It is recommended that practitioners make use of this standard when conducting whole-of-life building studies and if the building materials include substantial amounts of concrete. Please note that CO₂ absorption has not been considered in this EPD and is not reflected in the EPD results tables.

End of life scenarios

BS EN 16757:2017 presents four end of life scenarios for concrete:

1. Disposal of concrete at a landfill site,
2. Reuse of recovered concrete elements in new construction works,
3. Use of concrete debris, e.g. In land restoration, or
4. Crushing/recycling of concrete:
 - a. Crushed concrete substitutes primary material without further processing, or
 - b. Substitution of natural aggregates in fresh concrete.

Scenarios 2, 3 and 4 can all result in benefits and loads outside the system boundary and thus should be considered in a whole-of-life building study or when comparing concrete products on a functional basis in line with BS EN 16757:2017.

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Programme-related information and verification

Declaration Owner	Holcim (Australia) Pty Ltd Level 7, 799 Pacific Highway Chatswood NSW 2067, Australia Web: www.holcim.com.au Phone: +61 2 9412 6600	
Regional Programme Operator	EPD Australasia Limited 315a Hardy Street Nelson 7010, New Zealand Web: www.epd-australasia.com Email: info@epd-australasia.com Phone: +61 2 8005 8206	
Programme Pperator	EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden, E-mail: info@environdec.com	
EPD Process Certified by	Epsten Group Suite 2600, 101 Marietta St NW, Atlanta, Georgia 30303, USA Web: www.epstengroup.com	
EPD Registration Number	[S-P-03713]	
Valid From	[17 August 2021]	
Version	[2.0]	
Valid Until	[17 August 2026]	
Product category rules	PCR 2019:14 Construction Products, Version 1.11, 2021-02-05	
Product group classification	UN CPC 54	
Geographical Scope	Australia	
Reference Year for Data	2017 Plant Data, [2024] Mix/Materials Data	

CEN standard EN 15804:2012+A2:2019 served as the core PCR

Product category rules	PCR 2019:14 Construction Products, Version 1.11, 2019-02-05	
PCR review was conducted by	The Technical Committee of the International EPD® System. Chair: Massimo Marino. Contact via info@environdec.com	
Independent third-party verification of the declaration and data, according to ISO 14025:2006:	<input checked="" type="checkbox"/> EPD process certification <input type="checkbox"/> EPD verification	
EPD Process Certified by	Epsten Group, Inc., Katherine McFeaters: Accredited by: A2LA, Certificate #3142.03	
Procedure for follow-up of data during EPD validity involves third party verifier:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

Programme-related information and verification:

The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804.



Contact your Holcim representative today for more information.

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